

SCOMM

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Alaska State Legislature

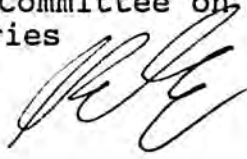
SENATOR RICHARD I. ELIASON

President of the Senate

P.O. Box V
Juneau, Alaska 99811
(907) 465-3755

MEMORANDUM

TO: Members of the Senate Special Committee on Domestic and International Commercial Fisheries

FROM: Senator Dick Eliason, Chairman 

DATE: December 21, 1992

RE: Final action on Hatchery Review Project

The Special Committee on Fisheries which was established by Senate Resolution for the duration of the 17th Alaska Legislature, will be officially disbanding at the close of the interim. It is time to conclude the committee's review of the Alaska Salmon Enhancement Program which we have been working on for over a year and a half.

The economic studies (benefit-cost analysis) contracted to the University of Alaska have taken considerably longer than expected, so our original plan to hold public hearings during the interim on those studies has not been possible. The draft of the economic report is finally nearing completion and should be ready to distribute very soon.

Legislative staff members are continuing to work on the overall project and expect the rest of the report (all but the economic study) to be ready to publish in final form within the next week. As you recall, after the draft report was distributed statewide last winter, our committee held a long teleconference to take public comment on the draft, and received numerous written comments from the public which were circulated to the committee. Staff have made minor revisions to the chapters in the report based on public comment.

In order to complete this project, I propose that we publish the report in "final," minus the economic study, and to simultaneously publish the economic study in "draft." Together, the two documents will then be sent to everyone on the original mailing list of interested parties. The two documents would also be sent to both incoming House and Senate Resource Committee chairs and chairs of

Memorandum to Senate Fisheries Committee
December 21, 1992
Page 2

any special committees on fisheries. A cover letter to those committee chairs will explain the history of the project and urge them to carry on the work, further explore the options which we have laid out for legislative consideration, as well as facilitate the public review and comment process for the economic study.

From the very beginning of this project, we have assured the public that they would be given ample opportunity to review and participate in the review process of the enhancement program. Since the findings of the University's economic study are likely to be significant and possibly controversial, I believe they should undergo scientific peer review as well as review by the interested public. At the end of each of the other chapters in our project report we have listed "options to consider," based on the content of the chapter. Such a list of options for the economic portion of the report should not be labeled "final" until public comments are made and considered. For these reasons, the chapter on economics will remain in draft form.

I hope that this plan for the conclusion of the Senate Fisheries Committee's work meets with the approval of committee members. If you have any questions or objections, please contact my office at 465-4916 before December 29. A copy of the two documents will be sent to you as soon as they are available.

ALASKA STATE LEGISLATURE SENATE

SENATOR RICHARD I. ELIASON

PRESIDENT OF THE SENATE
LABOR & COMMERCE COMMITTEE
RESOURCES COMMITTEE
RULES COMMITTEE
CHAIRMAN, SPECIAL COMMITTEE ON
DOMESTIC & INTERNATIONAL
COMMERCIAL FISHERIES

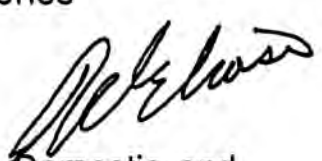


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FAX (907) 465-4928

TO: Bob Clasby, Director
Division of Commercial Fisheries
Dept. of Fish and Game

FROM: Sen. Dick Eliason, Chairman 
Senate Special Committee on Domestic and
International Commercial Fisheries

DATE: August 26, 1992

RE: Alaska Salmon Enhancement Program Review Commercial
Fishery Management Cost Guidelines/Net Management Costs
of Enhancement Program

As outlined in my July 16 memo to you, the Senate Special Committee on Domestic and International Commercial Fisheries has been looking forward to your continuing assistance with the Salmon Enhancement Review project in the form of management cost estimates and review of the enhancement facility cost surveys. The information the Committee is relying on your division to provide is required for the completion of research being conducted by University of Alaska researchers.

Enclosed is a memorandum from Ginny Fay providing suggestions for deriving fair and accurate estimates of management costs. I believe these are valuable guidelines and I recommend that they be incorporated into your approach to the task at hand. Ms. Fay proposes that the Division of Commercial Fisheries compile the information by September 18. I recognize that the task is one of significant magnitude, and that it will be a challenge to meet this target, however I hope that you will make every effort to do so. I believe that the information which you will have in hand upon completion of the task will prove to be of lasting value to the department (especially at a time of shrinking budgets), in addition to

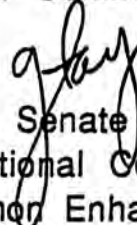
Bob Clasby
August 26, 1992
page two

proving valuable to the hatchery review project being conducted by the Legislature.

Thank you for your help, and please let me know if you have questions or concerns, including concerns about the division's ability to make the target date for completion.

cc: Jeff Koenigs

TO: Senator Dick Eliason, Chairman
Senate Special Committee on Domestic and
International Commercial Fisheries

FROM: Ginny Fay 
Staffperson, Senate Special Committee on Domestic
and International Commercial Fisheries
Alaska Salmon Enhancement Review Project

DATE: August 26, 1992

RE: Alaska Salmon Enhancement Program Review
Commercial Fishery Management Cost Guidelines

The review of the Alaska salmon enhancement program being conducted by the Senate Special Committee on Domestic and International Commercial Fisheries includes an economic benefit-cost analysis of the program.

A comprehensive survey process was undertaken as part of the analysis to determine the level and cost of enhanced salmon production in Alaska. In reviewing the original legislative study plan, the Alaska Department of Fish and Game, Division of Commercial Fisheries expressed concerns that the additional costs of managing enhanced fish stocks not be overlooked.

The guidelines outlined in this memorandum provide some suggestions for deriving fair and accurate estimates of the management costs. Any costs that are shared by the divisions should be discussed and an agreed-upon methodology established that avoids double- or under-counting costs.

The ultimate objective of the exercise is to determine the additional net management costs imposed by the enhancement program. "Net" is emphasized because the enhancement program has undoubtedly benefitted, as well as complicated, the management of commercial fisheries. For example, information provided by the coded-wire tag laboratory program has also assisted in the management of wild stocks. In addition, the net management costs should only include the additional costs of enhanced production for commercial fisheries'

Sen. Dick Eliason
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harvests.

While enhanced production has complicated fisheries management, most of the fisheries were a management challenge prior to enhancement and would continue to be even if enhancement did not occur. The management costs to be identified are the incremental management costs or the amount the Division of Commercial Fisheries budget could be reduced if enhanced production were eliminated.

It may be argued that without enhanced production, wild stocks could be more effectively managed with existing funding, however, current fisheries management funding includes enhanced production costs and could arguably be reduced without these costs.

The enhanced-production cost survey asked private facility and state facility operators to estimate their costs under a variety of circumstances. These included current, actual planned, and hypothetical decreased and increased production scenarios (see the attached survey and cover letter with instructions for more detailed information).

The Division of Commercial Fisheries is best able to estimate management costs for each of these scenarios. The management cost estimates should be consistent with levels the legislature is likely to fund given the various production cases. It should be noted that some of the cases refer to the elimination of portions of the salmon enhancement program and may result in negative net management costs.

To facilitate this review, copies of all the production and cost surveys are provided. The cost surveys contain a space for the estimation of net management costs. However, ultimately the management costs used in the benefit-cost analysis will be net commercial fisheries management costs by species and region, for example: pink salmon in Prince William Sound or sockeye salmon in Cook Inlet. Since there is more than one facility operating in many regions, it may be simpler to ignore the facility or aquaculture survey results and instead identify management costs by

Sen. Dick Eliason
August 26, 1992
page three

species and region.

Estimating these costs may be difficult, but research deadlines require that this information be provided to the University of Alaska researchers as soon as possible. If Fish and Game can provide the information by September 18, we will be able to pass it along to the University researchers. Otherwise, I would suggest using the following assumptions: net management costs equal 5 percent of facility operating costs and any increases or decreases in production would result in a five percent increase or decrease in facility net operating costs. Management costs will be allocated between commercial and personal use fisheries in proportion to the harvest by these user groups.

I have appreciated the continued assistance and cooperation of the Division of Commercial Fisheries on this project.

ALASKA STATE LEGISLATURE SENATE

SENATOR RICHARD I. ELIASON

PRESIDENT OF THE SENATE
LABOR & COMMERCE COMMITTEE
RESOURCES COMMITTEE
RULES COMMITTEE
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FAX (907) 485-4928

Dear :

We would like to thank you for the time and effort you have invested in responding to the survey of **intensively** modeled enhancement projects sent to you as part of the Legislative Enhancement Program Review Project. The contractor for the salmon population modeling research is using the survey data to complete that aspect of the study.

Enclosed is the last survey portion of the project; we would again like your assistance by completing two additional forms (enclosed). The first form is the **Salmon Enhancement Project production** survey for the non-intensively modeled projects. This pink survey form is shorter and simpler than the survey form for more intensively modeled enhanced fisheries which you have already completed.

There are three primary reasons for modeling some of the enhancement projects less intensively--1) enhanced production is a relatively small portion of a particular fishery's commercial harvest, 2) Alaska Department of Fish and Game (ADF&G) data are insufficient for more extensive modeling efforts, and 3) the scope of the review project does not allow intensive population modeling of all enhanced fisheries.

As with the more intensively modeled production survey, a separate survey form is included for each "project." The first page of each production survey has been partially completed based on ADF&G, FRED Division staff identification of salmon enhancement projects. If you have any

corrections to the project name or other identifying data, or if there are additional projects not included in the surveys provided, please make the appropriate corrections or additions. Blank forms are attached.

The second (blue) form is a cost-of-production survey for each facility identified under FACILITY NAME in the SALMON ENHANCEMENT PRODUCTION SURVEY. This form is called the **FACILITY OPERATING, CONSTRUCTION, AND MANAGEMENT COST SURVEY** and is designed to be similar to budget forecasting that your facility probably does for any upcoming fiscal year. Only one of these production cost survey forms is to be completed for each facility. You also should not adjust any future costs for inflation.

It is important to note that in completing the one production cost survey form for your facility that "years" in this form refers to state fiscal years (July 1 - June 30) while the production surveys refer to calendar years. However, if your fiscal year does not begin on July 1, please indicate the starting date on your survey form.

There are some special hypothetical production cost cases in the survey that will require you to project costs for production levels that may not be likely or feasible for your facility's operations. For example, question four asks you to estimate how your production costs would change if a portion of your production was excluded. These hypothetical cases are necessary to create a mathematical model of operating and construction costs for the statewide enhancement program, which allows the computation of costs of production levels not included in the survey. These cases will only be analyzed in aggregate and will not be used to determine benefits and costs of individual hatchery outputs.

Operating and construction costs for some increased production scenarios are also requested in the survey form. These production increases are combined together by species (not projects) while production survey forms have been completed on a project basis. Some facilities will have more than one project and release location for a given species; this may cause some confusion in determining how to apportion these costs between projects. In these cases, the total incremental production costs (for the 15 percent increase scenario) should be estimated for the most likely and efficient combination of production from each project that would result in

the increased production. For all of the hypothetical cases in questions 4 and 5, the total annual costs for a facility should be entered on the survey form rather than the estimated change in annual costs. For example:

Two sockeye projects (Project 1 and Project 2) are carried out at Facility Z. Together they produce 20,000 sockeye harvests in 1996 and are projected to produce 30,000 harvests in 1999 to 2021.

Increased production of Project 1 for sockeye salmon (producing harvests of 10,000 fish in 1996 from smolt releases in previous years) would be difficult to increase by 15 percent without some radical changes in operation or new construction.

On the other hand, Project 2 also produces 10,000 harvested fish in 1996 but fry releases could easily be increased to 15 percent of the total sockeye production of 20,000 harvested fish ($20,000 \times 1.15 = 23,000$ fish from Project 2). Thus, costs for the increase production should be estimated for Project 2, the most likely source of increased production in this example.

For the 15 percent incremental increased production scenario, it may not be possible to increase production for a particular species in your facility. If there is simply no way to do this without adding a new project, leave the associated 15 percent production case blank for that species but note why you could not carry it out on the form.

Finally, the cost projections for the 15 percent production level increase should be based upon obtaining the increased harvests in one single salmon life cycle or as nearly as possible to that time interval.

The completed survey forms need to be sent to Steve McGee at the ADF&G, FRED Division Headquarters Office by June 15, 1992. There will undoubtedly be questions about how to fill out the survey. Please address these to Jeff Hartman or Steve McGee, ADF&G, 465-4160.

Again, thank you for your time and cooperation.

Sincerely,

Senator Dick Eliason
Senate President

Jeff Koenings, Director
Division of FRED

**SALMON ENHANCEMENT FACILITY
OPERATING, CONSTRUCTION, AND MANAGEMENT COSTS**

Please describe the annual operating and construction costs for your facility. Your cost estimates should correspond to a specific fiscal year and should be for all salmon produced by your facility rather than on a project basis. (This is different from the production survey.) For each fiscal year or series of years, provide your estimated total annual costs, as well as how costs can be allocated between commercial, sport/personal use, and cost-recovery fisheries. The percentage of total annual costs allocated to these fisheries should account for the "TOTAL ANNUAL COSTS." The "management costs" column is to be completed by Alaska Department of Fish and Game fisheries managers.

The results of the survey will be strictly confidential. No results will be reported on an individual facility basis. Instead the results will be used collectively to calculate an average incremental or "marginal" cost of increases or decreases in enhanced salmon production.

1. This question refers to the annual operating and construction costs of your facility's *currently permitted production*. For each fiscal year or series of fiscal years, please include the costs of all salmon production by your facility, and how these costs are allocated between commercial and sport/personal use fisheries production.

Fiscal Year		Costs		Percentage of Total Annual Costs			Management Costs (ADF&G Use Only)
From	To	Operating	Construction	Comm.	Sport/ Personal	Cost- Recovery	
1992							
	2021						

2. Please provide information on the source of funds for your facility production costs listed in question one. The information should be reported in percentages that add up to 100 percent for fiscal year 1992.

Fiscal Year	Source of Funds (Percentages)						
	Loans	Enhance- ment Tax	Cost Recovery	Federal Grants	US/Canada Treaty	Interest	Other
1992							

3. This question refers to the annual costs of your facility's *future expected permitted production*. For each fiscal year or series of years, please include the expected operating and construction costs of all salmon production by your facility, and how you expect these costs to be allocated between commercial, sport/personal use, and cost-recovery fisheries.

Fiscal Year		Costs		Percentage of Total Annual Costs			Management Costs (ADF&G Use Only)
From	To	Operating	Construction	Comm.	Sport/ Personal	Cost- Recovery	
1992							
	2021						

The next series of questions are intended to provide information to determine the potential change in costs of the salmon enhancement program as a result of increases or decreases in production. These scenarios are required for creating a mathematical model of enhancement costs. Each scenario is completely hypothetical and are not being proposed by either the Legislature or the Alaska Department of Fish and Game.

Question 4 contains five parts, each of which hypothetically eliminates the enhancement of one species while holding the production of all other species at their currently permitted level in a facility. The results of question 4, together with the results of questions 1 and 3, will be used to calculate the "zero" point on the "production cost curves" for each species. If your facility does not produce the specific species, mark "NA" as appropriate.

- 4a. The *pink* salmon portion of the salmon enhancement in a facility is eliminated while all other components of the program remain at their currently permitted capacity. Please estimate how this would change the total annual costs (fiscal year) at your facility and the allocation of those costs between commercial, sport/personal use, and cost-recovery fisheries.

Fiscal Year		Costs		Percentage of Total Annual Costs			Management Costs (ADF&G Use Only)
From	To	Operating	Construction	Comm.	Sport/ Personal	Cost- Recovery	
1992							
	2021						

- 4b. The *chum* salmon portion of the salmon enhancement in a facility is eliminated while all other components of the program remain at their currently permitted capacity. Please estimate how this would change the total annual costs (fiscal year) at your facility and the allocation of those costs between commercial, sport/personal use, and cost-recovery fisheries.

Fiscal Year		Costs		Percentage of Total Annual Costs			Management Costs (ADF&G Use Only)
From	To	Operating	Construction	Comm.	Sport/ Personal	Cost- Recovery	
1992							
	2021						

- [illegible]

- | <u>Fiscal Year</u> | | <u>Costs</u> | | <u>Percentage of
Total Annual Costs</u> | | | <u>Management
Costs</u> |
|--------------------|-----------|------------------|---------------------|---|----------------------------|---------------------------|-----------------------------|
| <u>From</u> | <u>To</u> | <u>Operating</u> | <u>Construction</u> | <u>Comm.</u> | <u>Sport/
Personal</u> | <u>Cost-
Recovery</u> | (ADF&G Use Only) |
| 1992 | | | | | | | |
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| 2021 | | | | | | | |

- 4e. The *chinook* salmon portion of the salmon enhancement in a facility is eliminated while all other components of the program remain at their currently permitted capacity. Please estimate how this would change the total annual costs (fiscal year) at your facility and the allocation of those costs between commercial, sport/personal use, and cost-recovery fisheries.

Fiscal Year		Costs		Percentage of Total Annual Costs			Management Costs (ADF&G Use Only)
From	To	Operating	Construction	Comm.	Sport/ Personal	Cost- Recovery	
1992							
	2021						

Question 5 also contains five parts. In this question, however, each part hypothetically *increases* by 15 percent the production level of one species while holding the production of all other species at their currently permitted levels. The results of question 5, together with the results of questions 1, 3, and 4, will be used to finish calculating the "production cost curves" for each species. If your facility does not produce the specific species, mark "NA" as appropriate.

- 5a. The *pink* salmon portion of the salmon enhancement program is increased by 15 percent while all other components of the program remain at their currently permitted capacities. Please estimate how this would change the annual costs (fiscal year) at your facility and the allocation of those costs between commercial, sport/personal use, and cost-recovery fisheries.

Fiscal Year		Costs		Percentage of Total Annual Costs			Management Costs (ADF&G Use Only)
From	To	Operating	Construction	Comm.	Sport/ Personal	Cost- Recovery	
1992							
	2021						

- 5b. The *chum* salmon portion of the salmon enhancement program is increased by 15 percent while all other components of the program remain at their currently permitted capacities. Please estimate how this would change the annual costs (fiscal year) at your facility and the allocation of those costs between commercial, sport/personal use, and cost-recovery fisheries.

Fiscal Year		Costs		Percentage of Total Annual Costs			Management Costs (ADF&G Use Only)
From	To	Operating	Construction	Comm.	Sport/ Personal	Cost- Recovery	
1992							
	2021						

- 5c. The *sockeye* salmon portion of the salmon enhancement program is increased by 15 percent while all other components of the program remain at their currently permitted capacities. Please estimate how this would change the annual costs (fiscal year) at your facility and the allocation of those costs between commercial, sport/personal use, and cost-recovery fisheries.

Fiscal Year		Costs		Percentage of Total Annual Costs			Management Costs (ADF&G Use Only)
From	To	Operating	Construction	Comm.	Sport/ Personal	Cost- Recovery	
1992							
	2021						

- 5d. The *coho* salmon portion of the salmon enhancement program is increased by 15 percent while all other components of the program remain at their currently permitted capacities. Please estimate how this would change the annual costs (fiscal year) at your facility and the allocation of those costs between commercial, sport/personal use, and cost-recovery fisheries.

Fiscal Year		Costs		Percentage of Total Annual Costs			Management Costs (ADF&G Use Only)
From	To	Operating	Construction	Comm.	Sport/ Personal	Cost- Recovery	
1992							
2021							

- 5e. The *chinook* salmon portion of the salmon enhancement program is increased by 15 percent while all other components of the program remain at their currently permitted capacities. Please estimate how this would change the annual costs (fiscal year) at your facility and the allocation of those costs between commercial, sport/personal use, and cost-recovery fisheries.

Fiscal Year		Costs		Percentage of Total Annual Costs			Management Costs (ADF&G Use Only)
From	To	Operating	Construction	Comm.	Sport/ Personal	Cost- Recovery	
1992							
2021							

ALASKA STATE LEGISLATURE SENATE

SENATOR RICHARD I. ELIASON

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February 25, 1992

Rhonda Wolfe
630 Chatham
Ketchikan, AK 99901

Dear Ms. Wolfe:

Thank you for your letter regarding the problems facing the troll fishery. I am a troller myself, and have been one for most of my life, so I certainly share your frustrations and concerns about the direction the troll fishery is heading.

The U.S./Canada Salmon Treaty (and the chinook quota which it imposes) is one of the most crucial elements in the determination of the troll fishery's future. It is important that we all keep urging the Governor and the Department of Fish and Game to get tough in the negotiation process and keep fighting for an increase in the quota for Alaska.

There is also the growing charter boat problem. We are all tired of trollers making sacrifices in the name of rebuilding the stocks and then losing quota share to the burgeoning charter industry. I am very hopeful that the Board of Fish will make a firm allocation to the troll fishery at their March meeting. I believe it is an issue of fairness and common sense, and I have written to the Board of Fisheries to urge them to act.

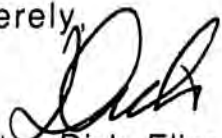
Whether the Board makes a troll allocation or not, there is still another angle on the growth of the charter industry that I believe needs to be dealt with. That is the need to give the Board of Fisheries the tools it will need to guide the future growth in the charter industry. To that end, I have introduced SB 397 which simply spells out that the Board may treat "sportfishing" and "guided sportfishing" as two separate fisheries in making regulations or allocations.

Rhonda Wolfe
February 25, 1992
page two

It is another fairness issue in that the traditional Alaskan sportsman is going to be in the same predicament that trollers are in now, if they have to continuously lose their share to the uncontrolled growth of the charter industry. This bill would give clear statutory direction to the Board that the legislature sees sport and guided sport as two different fisheries and supports the concept of differential regulation if and when the Board finds it necessary. I think this is a good first step in getting a handle on current and future problems.

Many of us are concerned about the current status of the troll fishery and challenges it is facing. There must be ways to preserve the troll fishery without causing harm to the sport and charter fisheries. All three are important. There are no simple answers or quick-fixes so we need to all keep working together to find some solutions. Please feel free to keep in touch with my staff and with me to share your ideas and concerns.

Sincerely,

A handwritten signature in dark ink, appearing to read "Dick", written over the word "Sincerely,".

Senator Dick Eliason

ALASKA STATE LEGISLATURE SENATE

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P.O. Box 5012
Ketchikan, AK 99901

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Sincerely

A handwritten signature in cursive script, appearing to read "Dick", written in dark ink.

Senator Dick Eliason

AREA	HATCHERY NAME, ADDRESS, PHONE NUMBER. & MANAGER	SPECIES
Petersburg	Crystal Lake Hatchery P.O. Box 1088 Petersburg, AK 99833-1088 <u>Manager:</u> Jim Billi <u>Phone:</u> (907)772-4772 <u>Fax:</u> (907)772-9336	Chinook and coho salmon, and steelhead trout
Ketchikan	Deer Mountain Hatchery 2030 Sea Level Drive, Suite 205 Ketchikan, AK 99901 <u>Manager:</u> David Bright <u>Phone:</u> (907)225-6760 <u>Fax:</u> (907)225-0599	Chinook and coho salmon, and steelhead trout
Anchorage (Elmendorf AFB)	Elmendorf Hatchery 716 Steel Street Anchorage, AK 99501 <u>Manager:</u> Darrell Keifer <u>Phone:</u> (907)274-0065 <u>Fax:</u> (907)274-0065 (call first)	Chinook and coho salmon
Anchorage	Fort Richardson Hatchery P.O. Box 5-337 Fort Richardson, AK 99505-0337 <u>Hatchery Manager:</u> Gary Wall <u>Rainbow Trout Broodstock Development</u> <u>Leader:</u> Irv Brock <u>Phone:</u> (907)428-1347, 1348 <u>Fax:</u> (907)428-3548	Rainbow and steelhead trout, and chinook and coho salmon
Glennallen	Gulkana Hatchery P.O. Box 47 Glennallen, AK 99588-0047 <u>Manager:</u> Ken Roberson <u>Phone:</u> (907)822-5520 <u>Fax:</u> (907)822-3811	Sockeye and chinook salmon
Sitka (remote) (Eastern Baranof Island)	Hidden Falls Hatchery 1308 SMC Road Sitka, AK 99835 <u>Manager:</u> Northern Southeast Regional Aquaculture Association* <u>Phone:</u> (907)788-3215 <u>Fax:</u> (907)747-1470	Chum, coho, and chinook salmon

* Hatchery operations contracted to private aquaculture association. See last page for address.

AREA	HATCHERY NAME, ADDRESS, PHONE NUMBER. & MANAGER	SPECIES
Kodiak (remote) (Afognak Island)	Kitoi Bay Hatchery* 211 Mission Road Kodiak, AK 99615-6399 <u>Manager:</u> Tim Joyce <u>Phone:</u> (907)486-6559 <u>Fax:</u> (907)269-5468 (call first)	Pink, chum, sockeye, and coho salmon, and rainbow trout
Klawock (Prince of Wales Island)	Klawock Hatchery P.O. Box 101 Klawock, AK 99925-0101 <u>Manager:</u> Steve Hansen <u>Phone:</u> (907)755-2232 <u>Fax:</u> (907)755-2440	Coho and sockeye salmon, and steelhead trout
Baranof Island (remote)	Little Port Walter Research Station Little Port Walter P.O. Box 9040 Sitka, AK 99835-9040 <u>Manager:</u> Frank Thrower (NMFS & ADF&G)** <u>Phone:</u> Marine Radio WRY8219 <u>Fax:</u> none	Chinook salmon and steelhead trout (pen-reared)
Cordova (remote) (Northwestern Prince William Sound)	Main Bay Hatchery P.O. Box FLJ Cordova, AK 99574 <u>Manager:</u> Prince William Sound Aquaculture Corporation* <u>Phone:</u> (907)269-5451 <u>Fax:</u> (907)269-5452 (call first)	Sockeye and pink salmon
Kodiak	Pillar Creek Hatchery 211 Mission Road Kodiak, AK 99615-6399 <u>Manager:</u> Chris Clevenger <u>Phone:</u> (907)486-4791 <u>Fax:</u> (907)486-4969	Sockeye salmon
Cold Bay (Alaska Peninsula)	Russell Creek Hatchery P.O. Box 50 Cold Bay, AK 99571-0050 <u>Manager:</u> Richard (Butch) Cobb <u>Phone:</u> (907)532-2373 <u>Fax:</u> (907)532-2450	Sockeye and pink salmon

* Hatchery contracted to Kodiak Regional Aquaculture Association; state employees in charge of hatchery operations.

** Experimental research station jointly funded by the FRED Division and the National Marine Fisheries Service.

AREA	HATCHERY NAME, ADDRESS, PHONE NUMBER. & MANAGER	SPECIES
Kotzebue (remote) (Noatak River)	Sikusuilag Springs Hatchery P.O. Box 1030 Kotzebue, AK 99752-1030 <u>Manager:</u> Peter Rob <u>Phone:</u> (907)485-2160 <u>Fax:</u> (907)485-2160 (call first)	Chum salmon
Juneau (remote)	Snettisham Hatchery P.O. Box 20 Douglas, AK 99824-0020 <u>Manager:</u> John McNair <u>Phone:</u> (907)586-3838-11 <u>Fax:</u> (907)586-3838-34	Chum, coho, sockeye, and chinook salmon
Moose Pass (Kenai Peninsula)	Trail Lakes Hatchery P.O. Box 49 Moose Pass, AK 99631-0049 <u>Manager:</u> Cook Inlet Aquaculture Association* <u>Phone:</u> (907)288-3606 <u>Fax:</u> (907)283-9433	Sockeye, chinook, and coho salmon
Homer (remote) (Kachemak Bay)	Tutka Lagoon Hatchery 3298 Douglas Street Homer, AK 99603-1942 <u>Manager:</u> Cook Inlet Aquaculture Association* <u>Phone:</u> (907)235-8486 <u>Fax:</u> (907)235-8486 (call first)	Pink, chum, and sockeye salmon

* Hatchery operations contracted to private aquaculture association. See last page for address.

**ADDRESSES OF PRIVATE NONPROFIT AQUACULTURE
ASSOCIATIONS CURRENTLY CONTRACTED TO OPERATE SEVEN STATE FACILITIES**

Cook Inlet Aquaculture Association

HC 2, Box 849

Soldotna, AK 99669-9707

Office: (907)283-5761

Fax: (907)283-9433

Tom Mears, Executive Director

State Hatcheries Operated: Trail Lakes Hatchery and Tutka Hatchery

Kodiak Regional Aquaculture Association

P.O. Box 3407

Kodiak, AK 99615

Office: (907)486-6555

Fax: (907)486-5932

Larry Malloy, Executive Director

Norma Holt, Administrative Assistant

State Hatchery Operated (partially): Kitoi Bay Hatchery

Northern Southeast Regional Aquaculture Association

1308 SMC Road

Sitka, AK 99835

Office: (907)747-6850

Fax: (907)747-1470

Peter Esquiro, General Manager

State Hatchery Operated: Hidden Falls Hatchery

Prince William Sound Aquaculture Corporation

P.O. Box 1110

Cordova, AK 99574

Office: (907)424-7511, 7512

Fax: (907)424-7514

Bruce Suzumoto, President

State Hatcheries Operated: Cannery Creek Hatchery and Main Bay Hatchery

Southern Southeast Regional Aquaculture Association

1621 Tongass Avenue, #103

Ketchikan, AK 99901

Office: (907)225-9605

Fax: (907)225-1348

Donald F. Amend, General Manager

State Hatchery Operated: Beaver Falls Hatchery

**STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
DIVISION OF FISHERIES REHABILITATION, ENHANCEMENT
AND DEVELOPMENT (FRED)**

AREA	HATCHERY NAME, ADDRESS, PHONE NUMBER, & MANAGER	SPECIES
Ketchikan	Beaver Falls Hatchery 2030 Sea Level Drive, Suite 205 Ketchikan, AK 99901 <u>Manager:</u> Southern Southeast Regional Aquaculture Association* <u>Phone:</u> (907)225-9605 <u>Fax:</u> (907)225-1348	Sockeye salmon
Big Lake	Big Lake Hatchery P.O. Box 520509 Big Lake, AK 99652-0509 <u>Manager:</u> Dan Moore <u>Phone:</u> (907)892-6816 <u>Fax:</u> (907)892-7513	Sockeye and coho salmon
Whittier (remote) (Northern Prince William Sound)	Cannery Creek Hatchery P.O. Box 788 Whittier, AK 99693-0788 <u>Manager:</u> Prince William Sound Aquaculture Corporation* <u>Phone:</u> (907)424-7511, 7512 <u>Fax:</u> (907)424-7514	Pink and chum salmon
Clear (60 miles SW of Fairbanks)	Clear Hatchery P.O. Box 40219 Clear, AK 99704-0219 <u>Manager:</u> Dave Parks <u>Phone:</u> (907)582-2964 <u>Fax:</u> (907)582-2964 (call first)	Rainbow and lake trout, Arctic grayling, Arctic char, and sheefish
Kasilof (Kenai Peninsula)	Crooked Creek Hatchery P.O. Box 430, Route 2 Kasilof, AK 99610-0430 <u>Manager:</u> Bob Och <u>Phone:</u> (907)262-4159 <u>Fax:</u> none	Sockeye, coho, and chinook salmon, and steelhead trout

* Hatchery operations contracted to private aquaculture association. See last page for address.

Hatchery ~~Comms~~ Review

Feb. 126 - Bonds
CFEC

Mar. 11

1. Economic development example - Paint River
2. Cotten - how much new production
3. Send copy of exec summary to all UA reviewers.
4. Gen group ~~opting out~~ by research report
5. Tom DIPAC + Snethisham
6. Cotten - have jt FRED budget subcom.

Wrangler Sentinel
Petersburg Pilot

874-2301 - Lou
772-9393 - Laurie Thorne

✓ call Ole Mathison @ Monday meeting.

✓ call Paul Rayton
- 201

Internal water Permit process

✓ loan requests this year. - 2510

✓ Martin Richard

✓ Doug Rickey

✓ call ASMI

586-2902
Kim

✓ Linda Snow - Legles
+ Glen Gray CAA

Hatchery Review Teleconference 2/4/92

John McMullen - PWS 4C - written testimony

oppose loan forgiveness, but not loan deferrals.
carried thru by contingency funds.
differential level - on loan deferrals - based
on species (longer level for sockeye chinook)

~~James May - Dillingham - Bristol Bay tribal conf.~~
~~Fred Ziegler -~~

Don Ament - SSRAA

funding -

2 concerns - no written policy or regulation
for 6.10% interest rate
6 yr deferralment + 9.5%.

Bart Watson - Armstrong - Keta

loan fund not up to full production. Still depend on
revolving loan fund for operating costs.
don't get 3/10 tax & mitigation money.

need to look at lowering interest rates, but
need to make sure loan fund stays solvent.

marketing - ^{hatcheries} can enter into long-term contract for
value added products - give price stability

PNP: - share profit sharing ventures -
can take lead in marketing
channel efforts into areas that don't compete
w/ traditional markets.
fund AFDP

tagging important for in season mgmt.
stock is most viable.

has to be a state program - our tags show up
in a dozen processors - we can't be in charge of
recovery. has to be state-funded for recovery.

no tagging so can't determine actual #'s of
contribution to common property fishing.

peaks paying bill
chenook - who - more for common property.

have board of dir - no slots allocated by gear groups
make point of consulting w/ gear groups.

pro forma

peaks generate cash flow guidelines - 2 yrs
who - 3 yrs
chenook - 4 yrs

Henry Mitchell, BSFA - Anchorage

in western AK - small, but important commercial fisheries
complements subsistence lifestyle.

low-tech enhancement -

not much money available
had to use other funds.

Chenok, Hooper Bay, Nelson I, Nunivak I

small scale projects.

↑ funding to FRED

will respond in writing.

similar to Gulkana R. projects. - river egg boxes.

NSRAA - has done a lot.

Robert Giger Anchorage - Greenpeace.

1989, 90, 91 -

Estu I Hatchery -

small pink salmon 4-5" long. hundreds of
millions.

algae bloom

Nancy Hillstrand - Homer

concerned @ other species - crabs + shrimp,
all competing for same food source.

major predator control problem at hatcheries -
land otters, birds, fox bears. - put something

in permitting system to protect them.

quality over quantity -

until we know more, should be more cautious.

support moratorium on hatcheries.

problem w/ carcasses.

feeding in spring

taking eggs - don't get young males w/ females.

take smaller fish -

health of natural stocks - #1 priority.

agree w/ repairing systems & habitat over hatcheries



mitigation - should repair streams as mitigation instead of use hatcheries.

SE Series - Jim Bacon

success of state enhancement program has made mgmt more complicated.

major component is wild stocks - needs to be primary focus. wild stock priority needs to be in statute.

costs more money to raise fish in hatcheries -

cost recovery goals - economic development -

hatchery need for fish can supersede our ability to access wild stocks.

tighter language "significant" contribution.

try to better segregate stocks
skeptical of ability to do that.

Chris Chasse, Homer

hatchery program at inception good.

give bird of fish clear statutory authority to
protect wild stocks.

identify wildstock rearing ground - protect
habitat.

carrying capacity -

report is species specific - include impacts on all
species in ecosystem.

concerned that already impacted bird species.

- 1) restrict hatchery rearing & releases -
- 2) provide adequate authority for wild stocks
- 3) & id depressed wild salmon stocks.

provide statutory authority for emergency action
climate change impacts, ozone change impacts
sterilization of disease
id pollution sources.

disaster assistance

decrease in birds from 72 baseline studies,
not directly related to oil spill.

Fred File, Petersburg -

salmon planning must be done on regional basis
On NSRAA RPT for 6 yrs - done " " "
my only regret - needed bigger teeth & hairs?
little done on rehab of wild stock. most
effort on hatchery production.
should be plan to rehab natural systems.

Dave McFadden, P'burg - trapper

chap. 11 - treaty mitigation.

problem w/ trappers. - much has gone to ADIFG.
no real intent -

Kris Noroz - P'burg - will send written

wild stock priority, cleanup not recovery & broader
significant contribution of.
need mechanism for doing hatcheries that aren't contributing
need way for gear groups to opt out of agree assn
or to pay proportional to benefits.

Debra Lyons - Bur of Fish

Pete Esquivel, NSRAA - will send written testimony

1) need mark recovery program securely in place year to year. not consistent in past.
should be required whenever wiped stock occurs.
but sometimes - no big concern - ^{due to} run timing.

2) legal issues

broodstock - pretty clear, eggs are necessary.
cost recovery - never assumed it was guaranteed.
must be opportunistic in years of abundance.

3) plan + permit

regional planning is best.
permitting - FRED but chairs should have same permits.
reg. planning - state grants.
- should be state funded.

4) funding

didn't see "audits" mentioned. Payment of taxes should be audited.

groups w/ loans should have independent audits
raise 3% tax - no

Larry Malloy, Kodiak - will send written

- 1) priority for wild stocks
- 2) traditl. fishing patterns recognized & ^{sacred} protected by user group & kind of fish.
- 3) rehab efforts - must define how that stock will be maintained to keep healthy
- 4) ^{sh} impacts of hatchery production on wild stocks. protect fishery right baseline programs. protect too

supplemental production - should be closely monitored. bycatch can be addressed early on.

Oliver Holmes, Kodiak

new salmon treaty - should look at carrying capacity of ocean
Japan - has capped chum program
Russia -

need to look at whole N. Pacific.

need wild stock priority & protect traditl fisheries.
problems w/
non-regional POPs - area to be managed for west
recovery should be specified in plan early on.

— needs to be evaluation of non-profit status.
half of money goes back into operating budget.

RPT in Kotick works well.

still hamstrung by lack of clarification—
once we approve permit — management

FRED not always followed own rules. on genetics.
eggs from Kitor. to Russell C to St. George.

w/ some more effort, enhancement can be positive.

Bruce Eagle, Wrangell.

Tom Means Soldatno CIAA — no written testimony.
overwhelming.

Tutka — lucky to get broodstock, no fish came back.

Chap 4 & 5 — should be plenty on wild stocks.

Upper Cook Inlet — always assumed wild stock
should be high purity.

define term "significant contribution to common
property."

~~F.P. intercept~~

regional is only way to go.

Bruce Eagle, Wrangell

former SSRAA brd,
much of income from enhanced fish.

~

planning - extremely important
RPTs be changed to include other users groups
and federal agencies.
must be able to recommend allocations
to board.

small hatcheries. need RPT review.

restructure loan program. need more cost
recovery to make loan payments.

siting - impacts on communities.

— need to look at spreading benefits around.

Paul ~~Van~~ Callum, Voldez Fish Develop Assoc
support PWSA comments written

chap 4. mgmt.

need for regional control.

mixed stock

user pay philosophy - concept is vague,
where are we going for this?
can't keep changing hatchery program.

quality - 1989 - oil spill.

91 - late run, considered ^{local processing requirements}
both years were disaster.

run all fish thru cost recovery process,
pay flat -

avoid build up in matching harvest areas.

cape fishery - SE

terminal fishery PWS

tagging - vicious circle. can't tag unless get
cost recovery.

put mass marketing in production.

PWP policy - make cost recovery ^{guaranteed} ~~required~~ once you
give out a permit. especially ^{critical} to non-
regional since no assessment funds

funding - need flexibility - loan deferment or
emergency loans.

marketing - support Kerkira bill - want it ^{top} voluntary
restructure ASME Bd - more fishermen

historical fluctuation of wild stocks -

John Carter - pres of DIPAC

marking - many of problems come from lack of info.

DIPAC done tagging to determine contribution,
then no tag recovery work done

if you require tagging, must ensure there
is a recovery program.

if you add costs to hatching, adds to need for
cost recovery.

encourage product development -

farmed salmon not being canned.

moratorium - don't object. hope it doesn't include
moratorium on funding existing projects.

permitting - difficult process.

wel more fishermen on ASMI board*

→ Jerry McGatchem, Anchorage
too many fish temporary.

FISH Committee

3/18/92

Elison

Cotten

Hoffman

approved introduction of legislation.

- Loan Fund.

6-10 yrs.

no loans issued beyond 6 yr period.

6-OK for pinks

- not OK for soybean & chicken.

Drafting

commerce

draft regulations -

Dir of Investments,
structured loan payment to

SSERAA - used reserve funds to too low

interest rates - maximum -

→ letter of intent - to work w/ f'g -
commerce -
never been followed thru.

work
w/ Mary

draft letter from committee - to Comm.

paper to deal w/ these issues, -

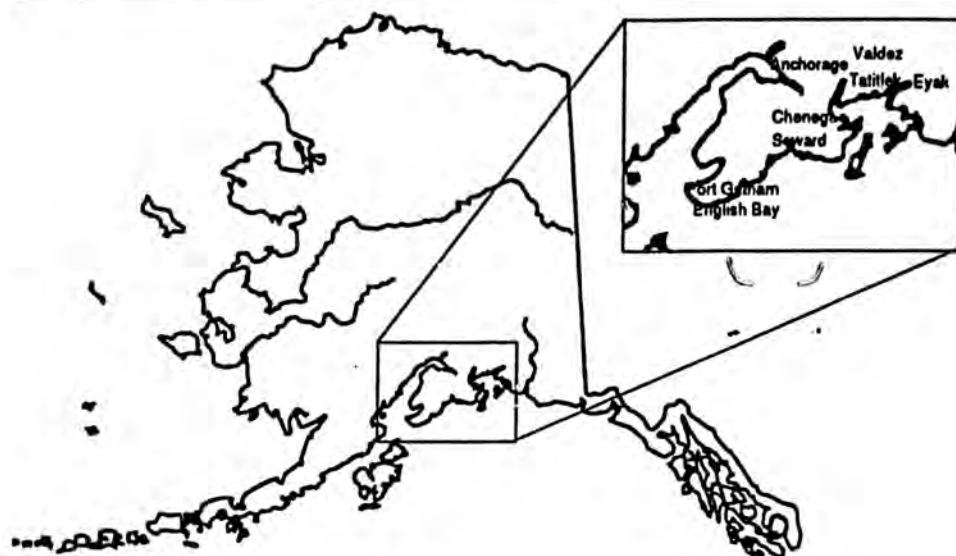
entire problem/ refer to report.

Cash flow



CHUGACH REGIONAL RESOURCES COMMISSION NEWSLETTER

Spring 1992 Vol. I No. 1



CRRC NEWSLETTER

Welcome to the first edition of the Chugach Regional Resources Commission (CRRC) Newsletter. CRRC is a native tribal organization concerned with natural resource issues in the Chugach Region of Southcentral Alaska. Its seven member board has one representative from each of the following native villages and two associations: Chenega Bay, English Bay (Nanwalek), Eyak, Mt. Marathon Native Association (Seward), Port Graham, Tatitlek, and Valdez Native Association.

In 1990 CRRC initiated a fisheries development program. Its goal is to enhance Native economic well-being by providing local employment and business opportunities to native village residents and native association members through the development of the local fisheries resource. Each project in this program is designed to pay for itself beyond the development stage. With the aid of grants and a congressional appropriation, this program has gotten off to an excellent start.



OYSTER FARMS

Mariculture projects began in Tatitlek and Chenega Bay in 1991. The objective is to train residents in shellfish mariculture techniques and have viable operations going in each village producing 1000 dozen oysters per week by 1995. So far, it looks like the oyster farms in Tatitlek and Chenega Bay will be very successful. Over 30 Tatitlek residents participated in the training last year and 15 are signed up to work on the project in Chenega Bay. The oysters in Tatitlek will be harvested this summer, one year ahead of schedule. Chenega Bay is one year behind Tatitlek's schedule.

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NANWALEK SCKEYE SALMON ENHANCEMENT PROJECT

In cooperation with the Alaska Department of Fish and game, the process of building the Nanwalek (formerly known as English Bay) sockeye run from its current depressed level of 3 - 5 thousand to historic levels of 60 - 100,000 has begun, the potential for a sockeye hatchery is also being investigated. See article "Next door in Nanwalek" in the Port Graham Hatchery Newsletter (final issue).



SHELLFISH HATCHERY

As we begin to expand production, we may run into problems getting a reliable source of seed for the project. Shellfish do not spawn in the cold Alaska waters, and seed must be imported from one of two lower 48 sources that is allowed to import into the state. If expansion of the farms goes as planned, we will have enough demand to justify building a shellfish spat hatchery of our own projects. However, others are also interested in obtaining shellfish seed in Alaska. As demand for the seed increases, it will be tougher and tougher to find. To get around the problem, we are proposing to construct our own shellfish hatchery. Seward seems to be an ideal place for the hatchery. In fact, the state compared several locations, and Seward emerged as one of the best. We are working with cooperation of the University of Alaska and the Department of Fish and Game, and hope to reach an agreement with them for the state to construct a research and development center adjacent to our hatchery where the state does research and we will build the hatchery. It will be built on Institute for Marine Science land owned by the University. We are currently pursuing funding for the project.

This newsletter is published quarterly by TNPR to keep you updated on the progress of CRRC. Look for the Summer 1992 issue due out in June. For questions or comments concerning this publication, or to be added to the mailing list, please contact:

CHUGACH REGIONAL RESOURCES COMMISSION
3300 C STREET
ANCHORAGE, AK 99503-3920
(907) 562-4155
FAX (907) 563-2891

PORT GRAHAM HATCHERY NEWSLETTER

A final Port Graham Hatchery Newsletter is being published concurrently with CRRC's first newsletter. From now on all stories and information regarding Port Graham's Salmon Development Project, including the hatchery will be contained in CRRC's new newsletter.

THE NORTH PACIFIC RIM
CHUGACH REGIONAL RESOURCES COMMISSION
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HATCHERY TIMELINE

The following timeline is a brief outline of the cycle that will occur each year in the hatchery.

SUMMER 91
Year One Egg Take

FALL/WINTER 91
Incubate Year One Eggs

SPRING 91
Year One Egg Release

SUMMER 91
Year Two Egg Take

FALL/WINTER 91
Incubate Year Two Eggs

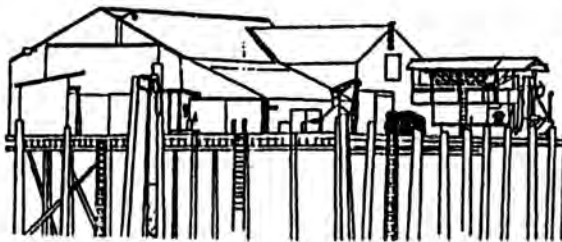
✓ SPRING 92
Year Two Egg Release

SUMMER 92
First Year Return
Year Three Egg Take

and so on...

make their sockeye salmon project work. Household surveys will be conducted and a community profile created that surveys skill levels, job interests, infrastructure needs, and processing potential. The project will include a joint meeting with the village of Port Graham in May, the object of which is to look into how the villages can work together on their fisheries projects.

About 1/2 million sockeye fry are incubating in the Big Lake Hatchery and when ready, will be transported to Nanwalek. Some of the fry will be released directly into the water and some will be put into pens and reared into smolt, and be released later in the year. We have hired Mark Schollenberger as Project Leaders. Mark, a biologist by training, will be spending most of the summer in Nanwalek setting up the program and training the village crew.



CEDC: Management and Administration of Grant, Funding. Davis Nashalook
TNPR: info. and General Assistance, Funding. Tasha Chmielewski, Natural Resources Planner, Christalina Jager, Newsletter Layout & Design
Fisheries Development Consultant: Dave Daisy

The Village of Port Graham: Elenore McMullen, Chief

Port Graham Corporation: Pat Norman, President

Hatchery Staff: Day to Day Operations, Manager Robert Carlough, Assistants Gerald Robert, Gordon Norman, Thomas Sawden, Sr. and Ephim Anahonak, Jr.

This newsletter was published quarterly by TNPR to keep you updated on the Hatchery. As stated on page 1, the Chugach Regional Resources Commission Newsletter will keep you updated from now on. Questions or comments concerning this publication, or to be added to the mailing list for future updates, please contact:

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NEXT DOOR IN NANWALEK...

English Bay is in the process of changing its name to the Native Village of Nanwalek, which means "place by the lagoon". Nanwalek Traditional Council received an ANA grant in October to help fund studies to look into what is required of the village to

STATUS OF PRIVATE NON PROFIT PERMIT

We are applying for a nonprofit hatchery permit. Last June we submitted our application. Step 1 was a review by Fish and Game and there were no big problems. Step 2 was a review by Cook Inlet Regional Planning Team who's responsibility it is to see if this fits in with overall plan for Cook Inlet. Although the application does fit with the overall Cook Inlet plan, there were some reservations expressed about the commercial fisherman not getting their fair share. Step 3 is to develop a management plan for the hatchery's returning fish. During step 4 public hearings will be held where residents will have a chance to comment whether or not they think the hatchery is a good or bad idea. Finally, in step 5 the Commissioner of Fish and Game decides whether or not to award the hatchery permit. We are still expecting to receive the permit in June or July of this year.

Where are we at in the process? Right now we are at step 3, developing a management plan. It is very important that there is some vocal support for the hatchery in the community during the public comment period in a couple of months. We will keep you posted as to when the hearings are held.



Port Graham Hatchery

Newsletter funded by a grant from the U.S. Department of Health and Human Services, Office of Community Services, Discretionary Grants Program

Spring 1992

LAST ISSUE OF NEWSLETTER

The federal grant from the Department of Health and Social Services that initiated this project is coming to a close. *This will be the last issue of the Port Graham Hatchery Newsletter*, and Community Enterprise Development Corporation (CEDC) will no longer be involved in the project. However, the Chugach Regional Resources Commission (CRRC) will begin a quarterly newsletter about natural resource issues and fisheries projects in the Chugach Native region, of which the Port Graham Hatchery is a big part, so we will still be able to keep you updated about the hatchery's progress.

MARKETING

We are going forward with a marketing study, the results of which will tell us the kind of salmon products the processing plant should create and what sort of revenues to expect. This will help us determine how to renovate the processing facilities to create value added pink salmon products.

SPRING / SUMMER ACTIVITIES

Three million eggs are currently being incubated in the hatchery, the fry will emerge in mid April and be held and fed in pens until the plankton densities in the water are optimum, at which point the fry will be released (around May 20th or so).

We will be increasing the capacity of the hatchery to 15 million eggs. That means we will need 27 new incubators to put all those eggs into. We did receive funding from BIA to purchase the incubators.

We also hope to dam off Cannery Creek and build a water line so that the fish will have a fresh water area to "ripen" in, before the eggs are taken. Extra workers will again be hired for the egg take this year.



FUTURE HATCHERY FUNDING

It was our hope to receive some grants for funding various aspects of the salmon project, however 2 requests have been denied recently for the hatchery project. The bulk of funds are coming from a congressional appropriation made to the Chugach Regional Resources Commission and will pay for basic operating expenses this year. Things will be tight, and we will continue to look for funding until the hatchery is able to generate its own income.

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THE FOLLOWING DOCUMENT MAY NOT FILM
LEGIBLY BECAUSE OF THE POOR QUALITY OF THE
ORIGINAL

City settles drowning lawsuit

3.19.92
JLV

JUNEAU — The city has agreed to pay \$25,000 to the family of a 5-year-old girl who drowned at Twin Lake three years ago. Vanessa Villandro drowned July 10, 1988, when the popular park near downtown was crowded with families swimming, boating and picnicking. Parents Kathy and Dale Villandro claimed the city had developed the area for wading and swimming and had a duty to provide safety equipment and supervision. No illegal act was alleged to the state, and on the day of the accident a sign warning of potential danger was missing. The city, however, did not admit liability for the accident. In a recent out-of-court settlement, city attorneys had argued that the couple and their baby sitter were at least partly responsible for the accident. The Villandros asked for more than \$3 million in expenses and punitive damages in the lawsuit filed last May in state Superior Court. The lawsuit also named as defendants the state and the killer, Denise Sattarfield, now of Paso Robles, Calif.

Shelter set up for children

JUNEAU — A five-bed emergency shelter for runaway children is set to open April 1 in Ketchikan. The non-profit Juneau Youth Services will run the shelter, funded by a \$56,000 grant from the state Department of Health and Social Services. The group bought a three-bedroom house to use as the shelter in a residential area near Ketchikan High School. It will employ three people, with at least one staff member in the house at all times. Patricia Chambers, staff manager for the Southeast regional office of the Family and Youth Services Division, said the shelter is needed because Ketchikan runaways now must go to Juneau or Sitka for emergency stays. As many as one-quarter of the children in Juneau's emergency shelters are from Ketchikan, said Jody Engelman, Juneau Youth Services' executive director.

Borough faces \$3.5 million shortfall

FAIRBANKS — The Fairbanks North Star Borough faces a \$3.5 million shortfall in the budget year starting July 1, even without an increase in services. Mayor Jim Sampson said, Sampson said he will present a balanced budget proposal to the assembly April 2, but he did not say how he will erase the shortfall. "Our challenge is to deliver services in a time of declining revenues. And we may have to make some difficult decisions," Sampson said. Some of the shortfall stems from the \$1.9 million the borough received from the state for the current fiscal year as reimbursement for putting up a school office building. The assembly spent the money to help run borough government. But in the coming fiscal year, the assembly won't get more such money from the state. And a borough tax cap prevents it from collecting more taxes to replace the \$1.9 million. An additional \$150,000 of the shortfall is caused by lower interest rates cutting earnings on borough investments, Sampson said. About \$800,000 is the additional amount the borough will have to pay on its school debt. Sampson said the borough must divert its tax base. He said property owners are paying more than a fair share.

EPA exemption to save city money

JUNEAU — An exemption from new federal regulations will save the city as much as \$14 million in filtration equipment at Salmon Creek reservoir, officials said Wednesday. The U.S. Environmental Protection Agency last week told Juneau it would not have to build a filtration plant. Instead, the city will have to modify its current treatment plant, but at a much lower cost. The federal government's drinking water regulations are intended to prevent viruses and parasites from reaching consumers. Salmon Creek reservoir has been plagued at times by a large amount of suspended material in the water, but the reservoir's water quality is relatively high, compared to some systems elsewhere in the nation, said Bill Cissel of EPA.

By James W. Hynes

TAKING A STAND

Cut down on size of Permanent Fund dividend to close fiscal gap

Is the sky falling on Alaska's state government? No, at least not yet, but don't throw away your padded hat.

Those who follow the news, which almost certainly includes those reading these editorial pages, should know that by some estimates the state is facing a \$300-million to \$900-million shortfall in state revenues in the next fiscal year. If that shortage fell on us all at once, it might indeed take a chunk of the economic sky with it.

But what Alaska needs is wise leadership and some difficult policy calls by government and the people it represents. There are no easy answers. Slashing the budget abruptly, for instance, would just make the problem worse, since it would require laying off large numbers of government employees and cutting back on programs that now support the economy. Change is essential and now is the time to start if we are to avoid disaster in the future.

As usual, Alaska is not entirely in charge of its own fate. Consider these factors:

- The price of oil worldwide, including that from Alaska, is set by the Organization of Petroleum Exporting Countries, in international cartel dominated by



Larry Baker

Middle Eastern countries.

- The rapid lowering of barriers to international trade and investment has created brisk competition for petro dollars that could otherwise be spent in Alaska.

- The decision on opening the coastal plain of the Arctic National Wildlife Refuge to oil and gas exploration will be made by members of the U.S. Congress, many of whom put the interests of Alaskans far down on their priority lists. ANWR could create jobs in virtually every state in the union, but with a presi-

dential election this year, drilling supporters may need to keep their heads down until some time around Groundhog Day of 1993.

- Construction of a natural gas pipeline from the North Slope depends on factors mostly outside the control of Alaskans, including market prices, the international economy, gas availability, investor interest and the salesmanship of those with Alaska gas or investment positions.

Some of these questions may be resolved in Alaska's favor, but we are unlikely to get any near-term economic relief from the unavoidable problems that oil production from existing fields is on the decline—and significant new production is years away, at best. Since oil provides 85 percent of all state revenues, a crunch seems inevitable.

I reject the idea of reviving the personal income tax now because it would simply take more money out of an already tight economy. There is very little loose cash floating around which could be captured by such a tax; it would be a self-defeating way to shift the state spending burden.

These appear to be our best near-term

options:

- Draw down on the legislative reserve funds this year and begin a systematic reduction in state spending.

- Use reserves judiciously over the next few years to cushion the effect of continuing spending reductions.

- When spending is reduced to cover essential state services and whatever non-essentials the public is willing to support, a ceiling could be set on the size of the Permanent Fund dividend checks. A portion of Permanent Fund earnings could then be used to fund state government.

Certainly before voters will accept a cap on Permanent Fund dividends, they must be convinced that government spending is under control and that the additional fund earnings will be well used.

At present, the state has approximately \$600 million in its budget reserve. Spending it all—or a major portion of it—in a single year would be irresponsible and merely postpone the crisis. And postponing a problem is often the best way to turn it into a disaster.

It will not be possible to do more with less money, believe it or not, most state employees do work hard. Adding signif-

icantly to their workload would accomplish nothing. If the state has less money, it must cut services and gradually reduce the size of the state work force.

When the coffers are bulging, new services and programs were added to the point where our per-capita expenditures lead the nation. With less cash to work with, we must get realistic about which services are essential, which can be cut back and which can be eliminated altogether.

Making such cuts will require some difficult policy decisions. Every program has its own constituency. I doubt there is any state program which doesn't have friends, people who support or benefit from it who will howl loudly if it is trimmed.

We will not be able to afford the size government we have for long. If we don't address the problem now—and phase in cutbacks gradually—we will eventually face an emergency which we cannot avoid, and the pain will be far greater than if we start facing it now.

Republican Larry Baker represents Anchorage District 10-A in the State House. Opinions expressed in Taking a Stand do not necessarily reflect the editorial position of The Anchorage Times.

BEATING UP ON SALMON

Another blow

HERE WE GO again. On Feb. 27, The Los Angeles Times published a story on seafood that threatened to further taint the image of Alaska's salmon, albeit indirectly.

But the story was wrong, according to the FDA. The reporter incorrectly linked data from one FDA survey of plant sanitation and manufacturing to another more recent survey of seafood samples. The reporter applied statistics from one survey to reach conclusions on the other survey.

Then the story went out over the wire nationwide.

The California newspaper asserted that the FDA's survey of seafood processing facilities showed that "as many as 20 percent" of the samples analyzed "showed evidence of microbiological contamination, decomposition and filth."

Within a day, the FDA said the Los Angeles Times statement "was in error."

IF ONLY WE could philosophically shrug our shoulders and say, "bad reporting — it happens." But we can't, not when it comes to one of Alaska's most important industries.

It's a replay of the bad press salmon got when Consumer Reports published a sweeping indictment of seafood in its February issue.

Incidents like these do not help Alaskans struggling to promote seafood in general, and salmon in particular, to a larger Outside market.

But it looks like it's not going to stop. The National Fisheries Institute has alerted the industry that continued assaults on seafood safety are in the works.

A small group called Public Voice for Food and Health Policy reportedly is planning more attacks over the next few months using the media. In March look for a challenge to the FDA and Centers for Disease Control statistics on seafood-related illness. In April, expect a release of "victims' case studies." And in May, another challenge to the FDA when it releases its major diet study.

THE SEAFOOD industry makes up one-sixth of the state's economy, according to Kim Elton, executive director of the Alaska Seafood Marketing Institute. Mr. Elton spoke to a Resource Development Council meeting in Anchorage following the Los Angeles story.

Fish are the second-largest revenue generator in the state, and Alaska's annual harvest represents approximately 55 percent of all seafood landings in the United States.

Alaska seafood gets lumped in with Lower 48 problems at the very time it is striving to tempt more palates. World production of salmon exceeds 2 billion pounds annually, with world consumption at about 1.8 billion pounds — thus the glut on the market.

What's needed is a strong coalition between fishermen, the industry and the state to mount an effective communications campaign about Alaska's seafood. At the same time, there needs to be a stronger federal seafood inspection program — one that works in cooperation with the state Department of Environmental Conservation — to assure consumers they're getting a wholesome product. The FDA currently has a program, but its resources are primarily aimed at imports. It needs to turn its attention to domestic seafood as well.

A strong inspection program combined with effective public information will convince consumers that Alaska seafood, in particular salmon — as we can testify — is safe and nutritious.

Lawmakers move on school bond measure

ASSOCIATED PRESS

JUNEAU — Lawmakers are considering a statewide bond issue to raise money for school construction and repairs, as it appears less likely there will be much of revenue for such projects next year.

A new version of a House bond bill Wednesday moved out of a committee where it had been stuck for two months. And two similar Senate bills also are getting attention.

Lawmakers have to find a way to fund new classrooms because of the increasing number of school-age children in Alaska, said Sen. Jay Kortula, D-Palmer, and co-chairman of the Senate Finance Committee.

Two years ago the Legislature adopted a new system for funding school construction projects. School districts annually submit a yearly list of their construction needs to the Education Department, which ranks them. Priority for full state funding is given to projects that replace or repair schools so old or damaged that they are dangerous.

The problem is little money has been available to fund any but the top several projects.

Hickel's \$300 million public works budget proposes about \$27 million in school spending, only enough to pay for work on six schools. The full list of projects submitted to the department totals about \$640 million.

To raise more money, Kortula and several other legislators are advocating a statewide bond issue of between \$170 million and \$383 million.

Sen. Pat Pourchot, D-Anchorage, and the other Finance co-chairman, said that approach is gaining popularity because bond issues do not take money out of the public works budget. Bonds are loans that must be paid back from future state revenues.

Rep. Mark Boyer, D-Fairbanks, advocates a bond issue with payments of seven to 10 years.

"We're not talking about future generations, we're talking about us," Boyer said. "I think there's more and more interest all the time."

But administration officials say they are concerned about the long-term costs. The state already faces a \$600 million share of municipal school bond debt over the next 20 years, Education Department spokesman Harry Gamble said.

Under the old system, communities were reimbursed by the state for most of the cost of school construction and renovation financed by bond issues. The state, however, did not choose the projects.

That lack of full control was behind the 1990 legislative push in favor of full state funding with tighter control.

Hickel budget director Shelby Stusny said the administration might consider bonds for construction as long as local communities pay a share of the cost and lawmakers pursue some of Hickel's legislation.

There is no guarantee a bond issue will be passed this session for submission to the voters. For a bond issue to pass, it must provide projects to all of the state and not just the most needy Bush communities, said Sen. Jim Duncan, D-Juneau.

"The challenge is going to be to put together a package in the Legislature that will get political support," he said.

Rep. Fran Ulmer, D-Juneau, said that is part of the problem with bonds.

"They become Christmas trees people hang things on because you have to keep adding things to gain support," she said. "I think we're a long way from getting a big bond issue together this year."

The Legislature is considering three school bond proposals. Kortula has a \$170 million plan; Sen. Paul Fisher, R-Soldotna, has a \$200 million package; and Boyer has a \$383 million bill.



INSTACOOOL FRESH: MINI MOBILE PROCESSING UNIT

In addition to ex-vessel business, fishermen can now sell value added products to the ever growing, premium quality, domestic seafood market targeted by the "InstaCool Fresh" marketing network. Where 10,000 lbs round weight has an ex-vessel value of \$8,000.00 the "InstaCool Fresh" H&G market would be \$20,160.00.

The additional cost of packaging and labor to produce H&G product will be off-set by selling roe as shown in the following proforma. Value added steak and filet sales as well as post harvest use of the Mini Mobile Processing Unit will only enhance the overall profit picture.

Ideally suited for remote locations, InstaCool's 24' Mini Mobile Processor can convert 10,000 lbs/day of round weight sockeye salmon into value added, "InstaCool Fresh" H&G, steak and filet products.

InstaCool's 24' Mini Mobile Processing Unit will have a positive economic impact on rural and under developed fisheries. InstaCool's marketing network, "InstaCool Fresh", puts even the remotest fisherman into a direct contact customer relationship.

PROFORMA

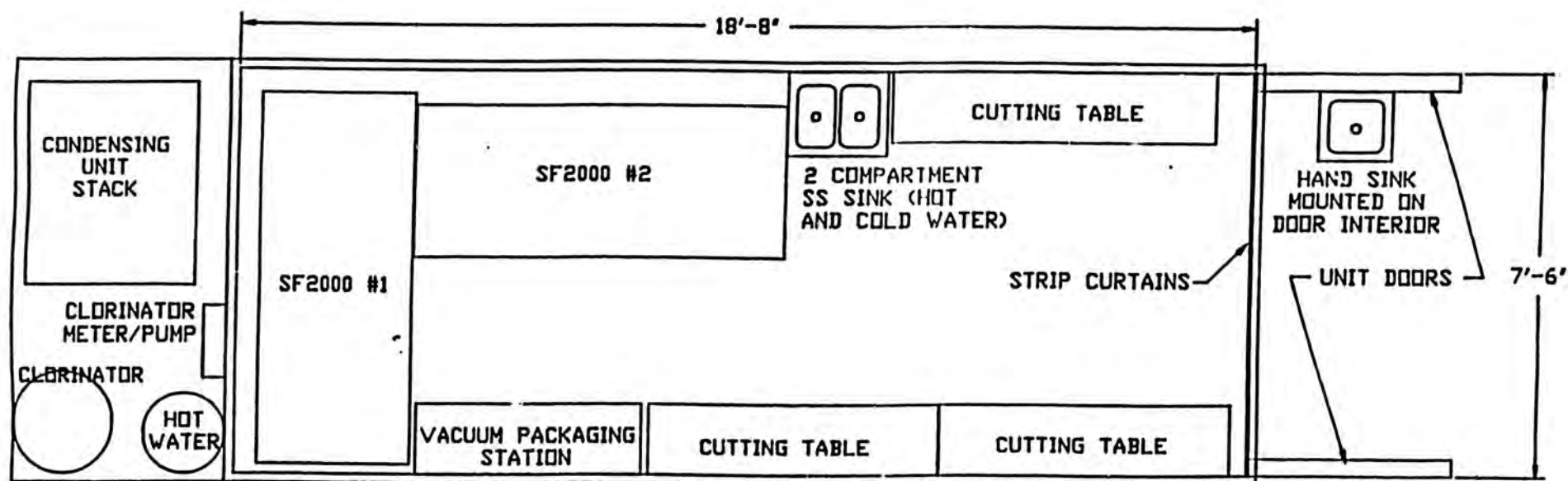
Limited Entry: Sockeye Salmon Fishery: 50 Day Season: 500,000 Pounds Total Round Weight

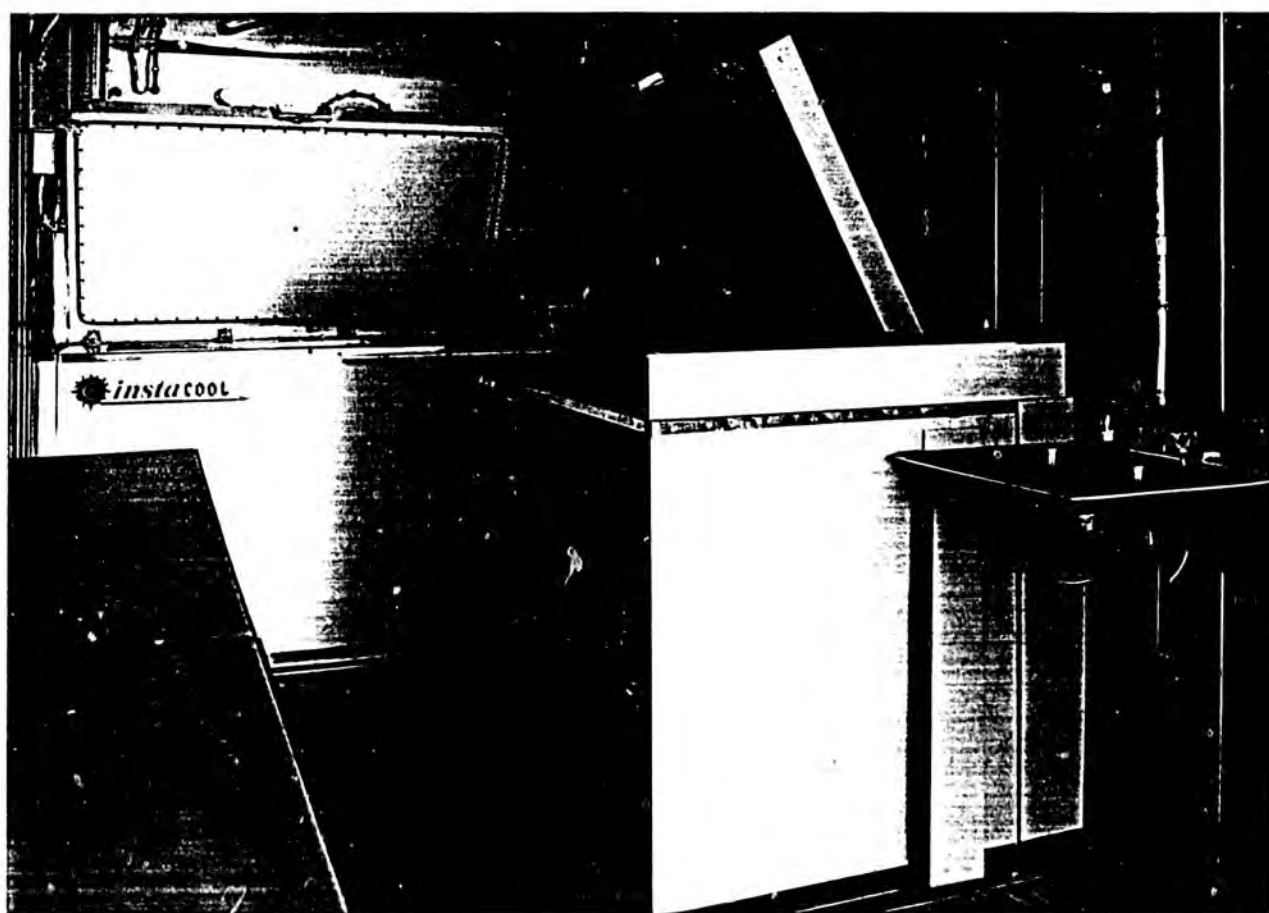
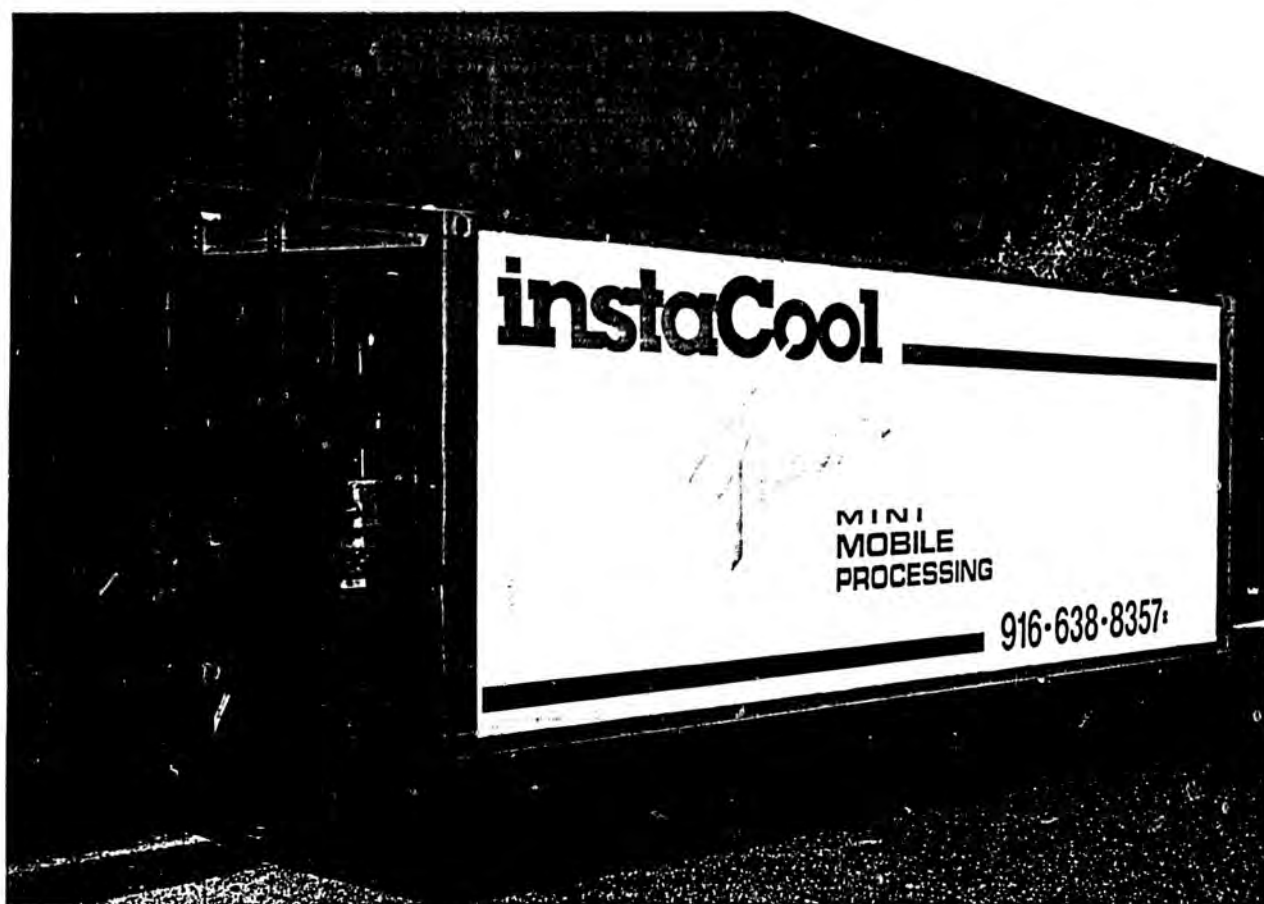
H&G, "InstaCool Fresh" sales @ \$2.52	\$ 1,008,000
Green Roe Sales to AK Processor @ \$4.65	<u>116,250</u>
Total Revenue	\$ 1,124,250
Round Weight Value @ .80/lb	\$ < 400,000>
Local Labor	< 80,000>
InstaCool Freezing	< 63,000>
Packaging	< 20,000>
Storage & Shipping	< 20,000>
Fuel/Utilities	< 9,000>
Completed Products Insurance	< 5,000>
Licn, Fees, Permits & Misc.	< 3,000>
Total Cost	\$ < 600,000>
Net Before Tax	<u>524,250</u>

The "InstaCool Fresh" total revenue of \$1,124,250.00 presumes several things:

1. The Mini Mobile Processing plant in question was designed for a 400 lb/day through-put of frozen H&G product.
2. The intensity of an Alaskan fishing season will necessitate a 24 hr/day plant operation.
3. Fish sold "InstaCool Fresh" will bring \$2.80 per pound as per the Umer Barry Seafood Price Current Publication. Marketing costs of 10% will result in a net "InstaCool Fresh" H&G sales price of \$2.52 per pound.
4. Green roe production of 1/2 pound per female fish can be sold for \$4.65 per pound to local AK processors.
5. Local labor: burden rate of \$20.00/hr. 100 man hours/24 hour plant operation.
6. An InstaCool 60 month lease with \$10,500.00 down and \$5,250.00/month minimum usage fee or \$.05/pound of product frozen whichever is greater would allow a fisherman to process 1,260,000 pounds per year. The Alaskan season is short and intense, resulting in under-utilization of the capital equipment. Therefore, the minimum usage fee (\$63,000.00) also becomes the effective maximum usage fee.
7. Utilities are calculated based on a 28¢/kwhr electrical cost and a known yield of 12.8 pounds of frozen fish per kwhr. The other expenses are taken from vender quotes for services rendered.

MINI MOBILE PROCESSING UNIT LAYOUT SHOWING DOORS OPEN





Crab Pot Limits in AK

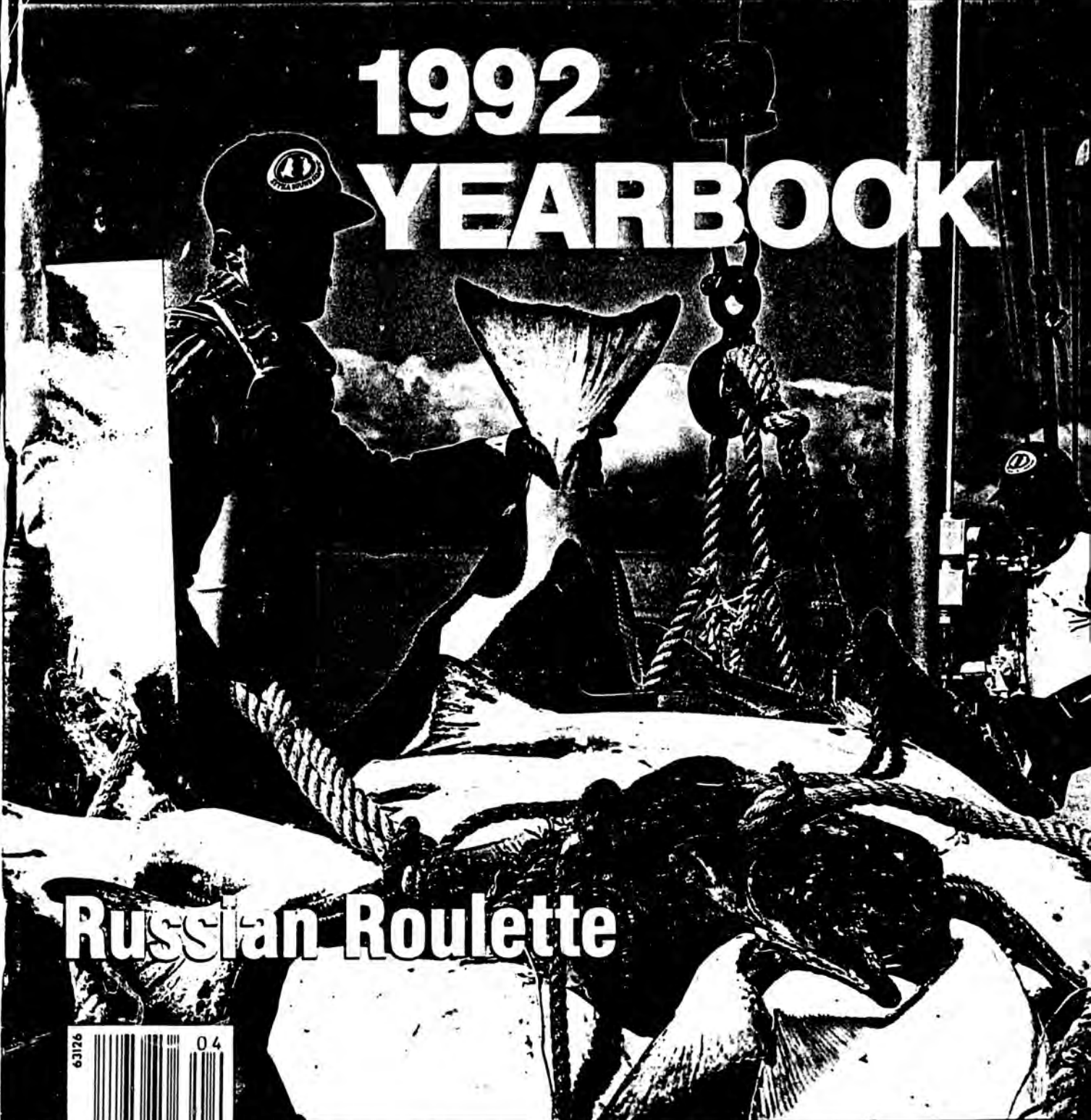
Halibut Quota Up

Coastal Coho Quandary

Pacific Fishing

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1992 YEARBOOK



Russian Roulette



CORDOVA, AK

AK Ponders Hatchery Programs

From Shining Star to Falling Star

Alaska's 20-year-old salmon enhancement program, once touted as the savior of the pink fishery, has come under increasing scrutiny of late. Even before the disastrous season last year, the Alaska Board of Fisheries requested that the state legislature take a look at all aspects of the program in a general overview. Since then, rock-bottom prices, underweight fish, and reduced escapement of wild

fish have inflamed the passions of fishermen standing on either side of the hatchery issue.

Responding to the board's request of February 1991, the Alaska legislature initiated an examination of the program and began hearings on the topic in February of this year. A recently submitted draft report lists possible changes that include creation of a statewide hatchery planning board that could impose regional production caps, guidelines for the Board of Fisheries on management of mixed wild and enhanced stocks, and the funding of studies that will help determine how much straying of hatchery stocks occurs and what effect it has on local gene pools. Concur-

rent with this overview on hatcheries, an additional study is being conducted looking into questions affecting all aspects of wild and hatchery price and production. The study will be submitted to the legislature in April.

According to the report, intermingling of wild and hatchery stocks causes concerns among fisheries scientists for numerous reasons. While hatchery stocks in Prince William Sound have become the mainstay of the pink fishery, biologists are told to manage to sustain the viability of wild stocks at the same time. This mandate dictates that hatchery fish must be separated from wild stocks when harvested. The only practical way to do this is to harvest them at the terminal area of the hatchery, by which time they have deteriorated in quality and are less valuable. This, in turn, increases the pressure to harvest them in outside waters while they are still fresh but co-mingling with wild fish.

Scientists have other causes for worry about increasing interactions between hatchery and wild salmon stocks as well. Some fear that diseases could be passed along that would result in the loss of indigenous species. While this has never happened in Alaska, it is not uncommon in the vicinity of other hatchery programs. Some scientists also believe that the carrying capacity of the near-shore and high-seas waters may be exceeded by large-scale releases of hatchery salmon. Evidence from last year's fishery indicates this would affect the size of the fish rather than the total number.

Biologists also worry that

widespread sexual interactions among the stocks will reduce the genetic diversity of wild stocks. Such interactions often come about through the practice of remote releasing of hatchery fish in order to disperse them throughout a large district. It is known, said the report, that the greater the distance between the remote release site and the hatchery, the more likely it is that the fish will follow their instincts and "stray" up nearby streams to spawn with wild fish.

"Many scientists are concerned about extensive remote releases practiced by many hatchery operators today," the report said. "They fear that such straying could potentially, in time, destroy genetic diversity—resulting in permanent, irreversible loss." Scientists believe the practice should either be banned or should be permitted only under stringent controls, the report said.

The legislative report included options that would create a state policy on management of mixed wild and hatchery stock fisheries, a statewide planning board that could impose production caps, increased tagging and marking studies, and a study that would analyze the quality of salmon at different distances from terminal areas. The report also examined the state funding of enhancement programs which, since 1972, has totaled \$210 million. It offered options for the legislature to consider that included analysis of the enhancement tax program, a more extensive cost-benefit analysis and a possible moratorium on state enhancement loans.

continued on p.102

KODIAK, AK

Trawlers Bow to By-catch

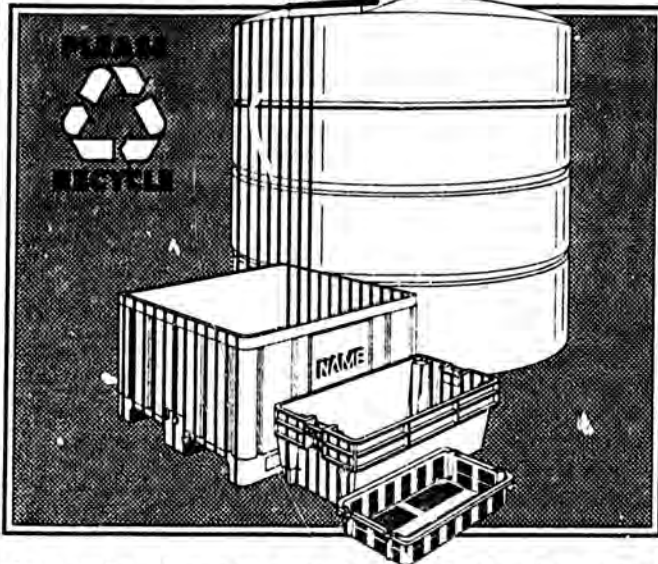
After only three weeks of fishing, the Bering Sea was closed to all bottom trawling for cod and pollock February 16 when the halibut by-catch cap was topped at a record pace. Factory trawlers took most of the halibut at a by-catch rate double that of shore-based vessels. With only about a third of the valuable pollock roe harvest landed, trawlers may continue to fish using mid-water gear.

Pacific cod will also be off-limits to bottom trawlers in that region until April 1 when the second quarter release of by-catch will be made available. Bottom trawling for all species is also prohibited in Zone 1, which encompasses most of the area east of the Pribilof Islands, because by-catch of Baird Tanner crab has exceeded the limit. And despite a delay in the pollock fishery that was intended to reduce chinook salmon by-catch numbers, 9,000 had been taken in the Bering Sea. In the Gulf of Alaska, 3,200 chinooks were taken, mostly by mid-water pollock fishermen. Though the North Pacific Fishery Management Council passed chinook by-catch standards at its December meeting, they have yet to be approved in Washington.

—Donna Parker

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however—the disagreement is not likely to be a treaty-breaker. While both Chamut and Blum acknowledged the seriousness of the issue, they also stressed their perception that the commissioners on both sides intended to resolve the issue with a minimum of rhetoric and, they hinted, a great deal of horse trading.

Chamut says that, although the U.S. offer to not fish early Stuart stocks did not change the situation because it didn't mean they would cut back on their overall catch, he was encouraged by their willingness to look for solutions. He added that Canada might be willing to consider higher catch levels in the convention area if the U.S. were willing to cut back on catch levels of Fraser River-bound fish in Alaska's Noyes Island fishery.

Says Blum, "We are not out to stiff Canada; but on the other side, you can imagine it can be very disruptive to have 510,000 fish taken out of the 7.09 million you were anticipating." And while he would not indicate what new offers his side might be prepared to put on the table, he did say that the Noyes Island catch issue should be seen against the larger backdrop of the treaty negotiations. Says Blum, "With or without this issue, both sides would naturally come into the situation attempting to improve their share of the resource."

In any case, fishermen following the debate will most likely have to wait until at least April, when the commissioners meet again, before they hear what solution the two countries reach.

—T. J. Doherty

AK Ponders Hatcheries

continued from p.26

In its look at marketing, the report's options included a review of the state's role in marketing of Alaska seafood and development of a national salmon marketing council. However, most of the discussion centered on the Alaska Seafood Marketing Institute. One option asks that ASMI's statutes be expanded to include new market development.

PWSAC Talks Back

Most of the hatchery backlash finger-pointing has been directed at the Prince William Sound Aquaculture Corporation whose huge hatchery production contributes over 30 million fish to that region annually. Detractors blame PWSAC for the price crash that last sum-

mer saw pink salmon go for a mere 12 cents a pound; but PWSAC's Armin Koernig says they are pointing their fingers in the wrong direction.

"There are people who have wanted to blame someone and they are saying the crash wouldn't have happened if hatchery production in PWSAC hadn't been so high. Some people say we should curtail our pink production to match market capabilities, but the answer fishermen give here is that we don't believe we're overproducing, we believe industry is underselling. We need to find new product forms and develop better consumer acceptance, not cut back production," says Koernig.

Koernig has been so intimately tied to the development of salmon enhancement programs that one of the state's largest hatchery facilities is named for him. He blames the price crash on the antiquated market manipulation used by processors. In the past, said Koernig, processors were

able to control the size of the pack by setting the fleet on delivery limits, and unwanted fish escaped up the streams. However, with hatchery production, they can no longer do that. Uncaught fish typically return to the hatchery where they mill around and die, but last year the large volume required that they be caught and dumped at sea. "So the old approach of the processing industry doesn't work anymore," said Koernig. "It causes real social and environmental problems as we saw last summer in PWS."

In answer to accusations that increased hatchery production in PWS increases the likelihood of intermingling and dilution of wild stock gene pools, Koernig says the state and aquaculture associations select hatchery brood stock that will have the least effect on natural stocks. The problem, he says, is trying to find a brood stock that will satisfy both managers and geneticists. Managers would like fish whose return timing is significantly different than the nearby wild stocks so that over-harvest of wild stocks and fishing in terminal areas can be avoided.

"The perfect situation for a manager is to separate wild fish from hatchery fish; but when it comes to proper selection of brood fish, the geneticists have concerns about introducing a stock that is alien to the environment. So what is great for the manager to protect wild fish is unacceptable to the geneticist for the protection of wild fish—and that causes a gridlock. We are wrestling with this problem in PWS and for anyone to think we are indiscriminately farming fish is a misconception," Koernig said.

While Koernig welcomes examination of the state's hatchery programs, he fears that this legislature review

may be nothing more than a witch hunt.

"I don't want to bad-mouth this whole thing and we have participated in many discussions and course changes in the enhancement program for years; however, this time there seems to be a number of enemies of the hatchery program that have gotten together and are using this economic situation to voice their biological concerns," he said.

Koernig said there have always been people in the wings with bias against hatchery programs. "They would be happy if there were no hatchery programs at all... but I think it comes down to a philosophical difference. In the future," says Koernig, "a large portion of the world's food will come from the ocean. We need to figure out how to do this without being environmentally destructive. What you're looking at here is the beginning of a future that will feed people on this earth and, unfortunately, the theory that you just take what Mother Nature gives you is no longer good enough to support the world population."

—Donna Parker

Sunken Gillnets On the Rise

continued from p.39

developing fishery, said Management Branch Chief Galen Tromble, and "we're somewhat concerned about it, because we don't know what the implications are for the future. If it's two or three vessels, no problem. If it's 150 or 200, we'd have some things to decide."

The Alaska Board of Fisheries convened a special meeting March 3-6 to revisit the matter of sunken gillnets as *Pacific Fishing* went to press.

—Joel Gay

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April 8, 1992

The Honorable Lyman Hoffman
P.O. Box 886
Bethel, Alaska 99559

Dear Lyman:

This is in response to the Jan. 27 letter to the Congressional delegation signed by all members of the Legislature.

While it now appears that the Consumer Reports article criticizing salmon (and other seafood) quality has not changed consumer perceptions or behavior, we haven't seen the last of this issue.

During the last Congress, there was an effort to craft mandatory federal seafood inspection legislation. I was an enthusiastic supporter of this effort, as I firmly believe it would go far toward solving some of the very real problems that even good seafood suffers on its long trip from the sea to the table. I gave my support to a proposal patterned after the State of Alaska's program, which is widely considered to be the best in the nation. Unfortunately, this effort foundered because some others favored an approach backed by the meat and poultry industries, which I believe would have been detrimental to seafood in the long run.

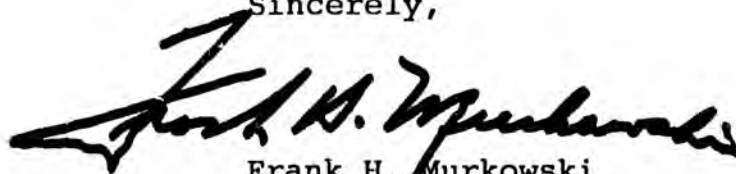
Labeling of farmed salmon has been suggested many times, and may well be one method of helping differentiate Alaska's wild fish from the pack. Many farms use chemical and drug treatments to increase the survival rate of their fish, and that information should be available to consumers, as should information on the fish's country of origin. It remains to be seen, however, whether such a labeling requirement could be imposed administratively, or would require Federal legislation. My preference, frankly, is for the former approach, if it is possible to achieve it.

I assure you that this issue is never far from my mind, and I will be working with the other members of the

The Honorable Lyman Hoffman
April 8, 1992
Page 2

delegation to achieve a result that benefits this critical
Alaska interest.

Sincerely,

A handwritten signature in dark ink, appearing to read "Frank H. Murkowski". The signature is stylized with a large, sweeping initial "F" and a long, horizontal stroke extending to the right.

Frank H. Murkowski
United States Senator

SALMON NEWS

April 1992

No. 2

The U.S. Salmon Market

There are 250 million potential salmon consumers now living in the United States. On average, they are highly educated, health conscious, and among the most affluent consumers of any nation. In recent years, nutritional experts have urged Americans to eat more seafood. In particular, they have encouraged us to eat seafoods rich in Omega-3 fatty acids, like salmon.

These characteristics make the U.S. the largest potential market for increased sales of Alaska salmon. Yet, in 1989, Americans ate only about one pound of salmon per person — in any form — compared to 130 pounds of beef and pork and 80 pounds of poultry. Of the salmon we did eat, about 75% was Alaska salmon. The remaining 25% was supplied by other states, Canada, northern Europe and South America.

Why aren't U.S. consumers eating more salmon, and specifically, more Alaska salmon? The best available current information tells us the following:

- *U.S. consumers lack knowledge about salmon purchasing, species, size and quality;*
- *Consumers prefer fresh salmon to frozen, and very little Alaska salmon is sold fresh;*
- *Consumers age 55 and older are the largest purchasers of canned salmon, and this group represents only a small percentage of the U.S. market;*
- *Consumers perceive canned salmon as old-fashioned;*
- *Consumers who buy canned fish prefer tuna to salmon;*
- *Consumers, in general, have a low awareness of salmon;*
- *Restaurants do not generally serve canned salmon; and*
- *Sellers are not able to build long-term marketing programs for Alaska salmon due to irregular supplies and/or prices, nor do they have access to good, detailed information about U.S. salmon consumption patterns.*

Current U.S. Consumption of Alaska Salmon

Precise data on how much and what species of Alaska salmon is eaten in the U.S. is not available, however, we can get an estimate based on data for U.S. produced salmon.

Alaska harvests have comprised about 91% of U.S. salmon harvests during the last five years (Figure 1). Most U.S. salmon has been exported during this period, with the exception of pink and chinook salmon (Figure 2). Figures 3 and 4 show domestic consumption compared to export, separately, for both for canned and fresh/frozen U.S. salmon production.

Figure 1. Alaska Salmon Harvests as a Percentage of U.S. Salmon Harvests, 1986-1990
(in millions of pounds)

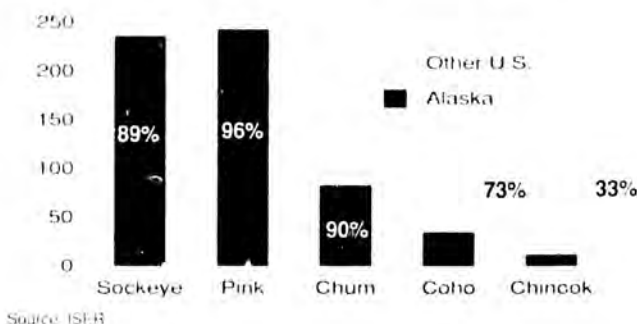
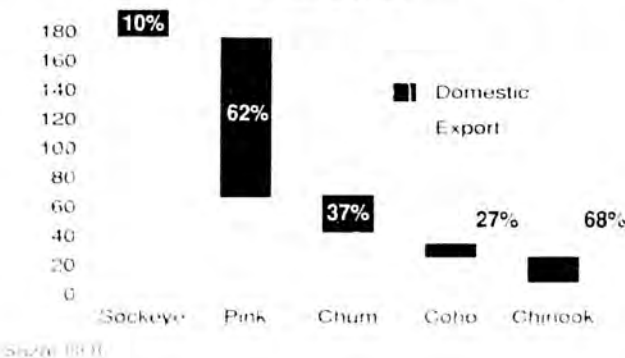


Figure 2. Domestic vs. Export Markets for Canned and Fresh/Frozen U.S. Salmon Production, 1986-1990
(in millions of pounds)



This paper is by Eini Eklöv, a national marketing specialist. It is the second in a series of papers, a video program, and regional workshops intended to provide information and encourage fishermen and others to work together to improve the market for Alaska salmon. The project sponsors are the Alaska Commercial Fishing and Agriculture Bank (CFAR) and the Alaska Dept. of Commerce, Division of Business Development. For more information, contact Eini Eklöv, project coordinator, 119 Seward St., N. 7, Anchorage, Alaska 99501. Phone: 407-780-3333; Fax: 407-580-4444.

Figure 3. Domestic vs. Export Markets for Canned U.S. Salmon Production (5-Year Average, 1986-1990)
(in millions of pounds)

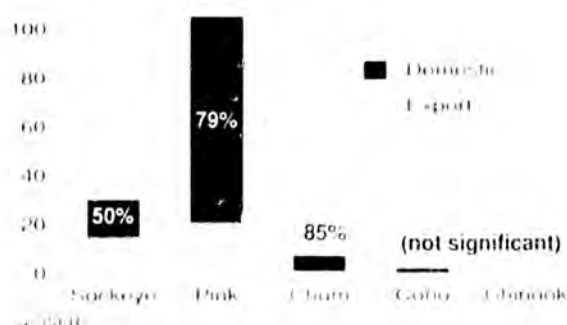
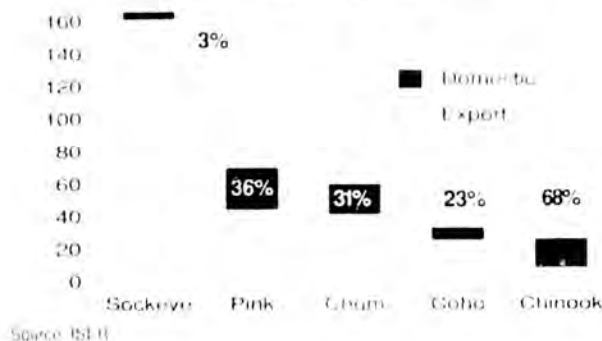


Figure 4. Domestic vs. Export Markets for Fresh/Frozen U.S. Salmon Production (5-Year Average, 1986-1990)
(in millions of pounds)

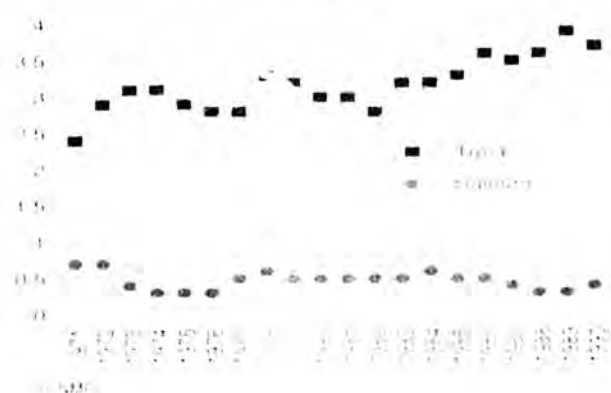


Source: ISIRI

Trends in U.S. Salmon Consumption

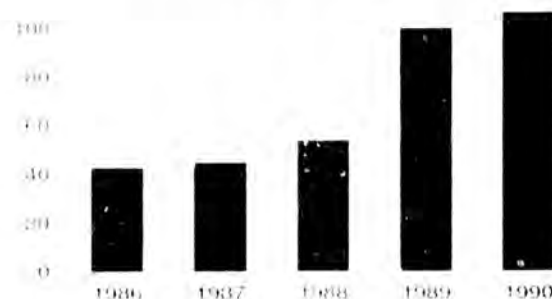
Recent surveys show an increase in total sales volume of canned salmon in the U.S. for the years 1990 and 1991, although per capita consumption declined 57% in the twenty year period prior to 1990. Figure 5 shows domestic consumption of canned salmon compared to canned tuna during this period, in which tuna consumption increased by 65%.

Figure 5. Canned Consumption Tuna vs. Salmon, 1971-1990
(in millions of pounds)



Consumption of fresh/frozen salmon in the U.S. increased almost 30% over the five year period 1985 to 1989, while imports of salmon increased almost 250% during this period. Figure 6 shows imports of fresh and frozen salmon into the U.S. for 1986-90. U.S. Census statistics do not differentiate between 'farmed' and 'wild' salmon imports, but since 'fresh, whole salmon' account for 86% of 1990 imports, we can assume that a large percentage of the increase in U.S. salmon consumption during the past five years can be attributed to farmed salmon.

Figure 6. Fresh and Frozen Salmon Imports to the U.S., 1986-1990
(in millions of pounds)



Source: AOAC (U.S. Census)

Preferences of U.S. Salmon Consumers

About 90% of Americans eat seafood. Of that group, about half, or 45%, eat salmon. On average, during the past five years, these Americans have consumed more fresh/frozen salmon than canned (Figure 7). Most canned-salmon consumers do not eat fresh/frozen salmon, and most fresh/frozen consumers do not eat it canned.

Figure 7. Fresh/Frozen vs. Canned Salmon Consumption in the U.S. (5-Year Average, 1985-1989)
(in millions of pounds)



Reasons Why U.S. Consumers Eat Salmon

- They like the taste 65
- For good health benefits 50
- Adds variety to diet 45

Source:

ASMP's Salmon 2000 study estimates that 68% of all salmon consumed in the U.S. is currently purchased through foodservice outlets. In the food trade, 'foodservice' includes restaurants as well as institutions, like schools and hospitals. According to the study, the remaining 32% is purchased by consumers in retail outlets (supermarkets or fish markets) and eaten at home.

The Salmon 2000 study also found that in-home salmon consumption in the U.S. has declined over the past five years from 2.1 to 2.1 ratings person year. This is related primarily to declining canned salmon consumption, which is still estimated to account for more than half of in-home consumption.

In the food-service category, only 35% of U.S. restaurants have salmon on their menus; 75% of those which carry salmon are white tablecloth or hotel restaurants. ***This pattern of consumption explains the increase in market share of farmed salmon over Alaska salmon in the U.S. over the past five years: Americans are primarily buying fresh/frozen salmon in higher-priced restaurants. In this setting, they prefer fresh salmon, regardless of price. Fresh, farmed salmon can be delivered to these restaurants 52 weeks per year, allowing restaurateurs to keep salmon on their menus year-round, at relatively stable prices.***

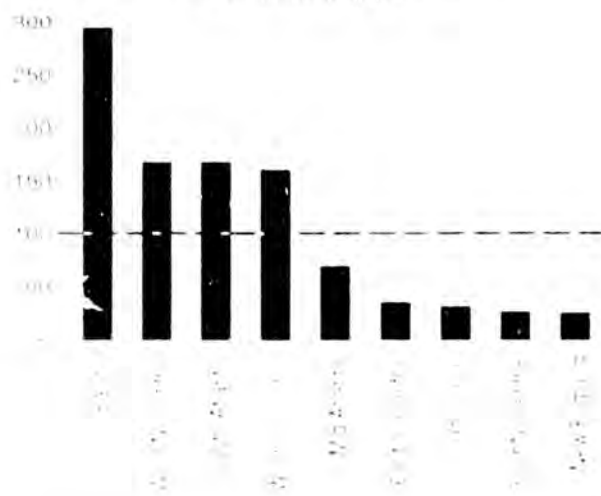
Geographic Preferences

Most canned salmon sold in America is pure, used in major population centers in the southern, eastern and midwestern states.

Metropolitan Areas with the Highest Per Capita Consumption of Canned Salmon, 1990-1991

1 Charlotte, NC	6 Washington, D.C.
2 Birmingham, AL	7 Indianapolis, IN
3 Atlanta, GA	8 Pittsburgh, PA
4 Nashville, TN	9 Memphis, TN
5 Cincinnati, OH	10 Detroit, MI

Figure 8. Fresh Frozen Salmon Regional Consumption Index, 1990



There are no statistics which indicate the top buy-in areas for fresh frozen salmon in the U.S., although a study of consumer food purchasing habits indicates the Pacific states area has the highest per capita consumption (Figure 8). The 'index' for each area represents regional consumption divided by national consumption. An index of 100 is average.

Prices

In the past, U.S. salmon prices have varied considerably. Prices were based on variable domestic harvest and consumer demand, which was often affected by foreign exchange rates. Recent price drops in most species demonstrate the effects of increased world salmon supply with no increase in demand. This was outlined in a study prepared for *Salmon News* by economist Gunnar Knapp. Mr. Knapp predicts that in the future, U.S. salmon pricing will be tied less to domestic supply and more to the cost of producing farmed salmon; any large increase or decrease in prices as a result of supply or demand, will cause farmers to increase or decrease salmon production.

Figure 9 shows prices for Pacific and Atlantic salmon over the past five years. ***Note that all species of Alaska salmon wholesale for less than farmed Atlantic salmon, on average, during this period.***

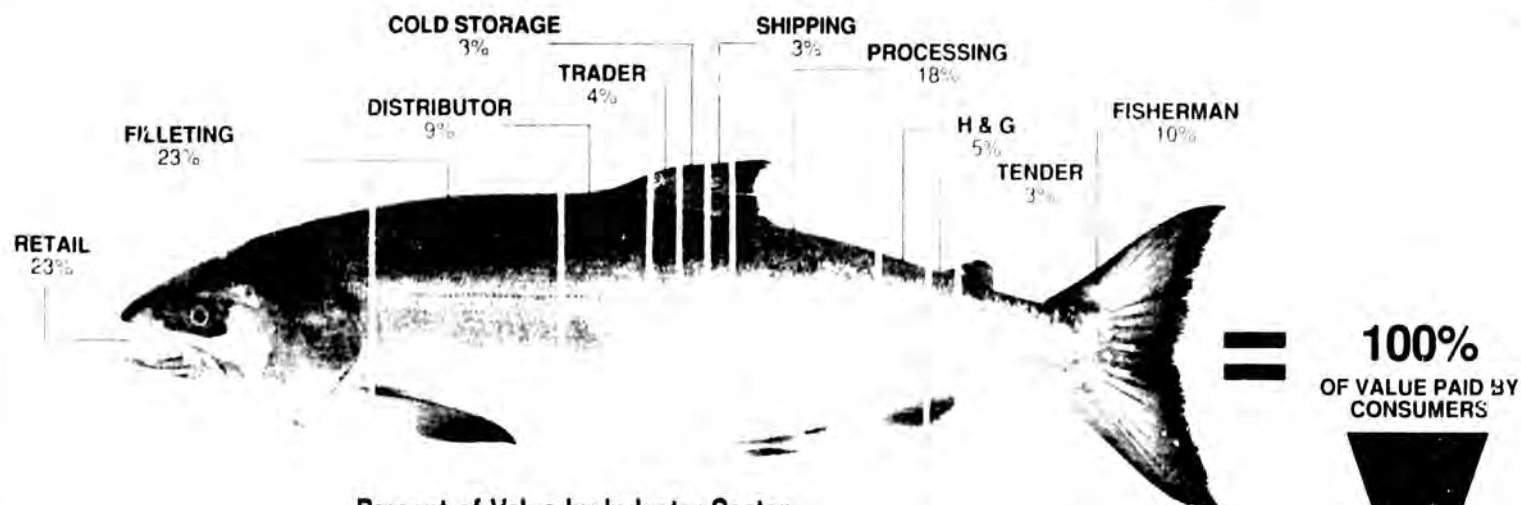
Figure 9. U.S. Wholesale Fresh Frozen Salmon Prices, 1987-1991

	1987	1988	1989	1990	1991	5-Year Avg
Atlantic	4.65	5.20	4.35	4.20	3.15	4.31
Sockeye	2.90	3.80	4.75	2.80	3.10	3.47
Wild King	3.75	3.70	3.55	2.80	2.25	3.21
Wild Coho	2.45	3.65	3.35	2.35	1.95	2.75
Chum	1.30	2.55	1.85	1.60	1.40	1.74
Pink	1.25	1.75	2.05	.90	.80	1.35

The Distribution Chain

There is no single path that Alaska salmon takes from fisherman to market in the U.S. The chart below illustrates a typical distribution chain and the margins that are generally available to businesses which make up the links in that chain. The size of a given margin is not necessarily related to profit at that level; every business associated with the production/marketing of salmon must pay for its labor, overhead, marketing, and capitalization from the margins they can get for the services they provide.

Because every penny made by anyone in the salmon business must ultimately come from the consumer, let's follow a typical salmon product backwards through a U.S. retail distribution chain:



**Percent of Value by Industry Sector
for Sample Chum Salmon Fillets Sold at Retail for \$3.99/lb.**

■ **Consumer.** The customer pays \$3.99 lb. for chum salmon fillets at a supermarket or other retail store.

■ **Retailer.** The retailer pays \$2.15 lb. to a distributor/wholesaler for a headed, gutted (H&G) fish. Filleting the fish results in a weight loss of about 30%, adding \$.92 lb. to the retailer's cost. The retailer then adds a markup of 20-50% of his total cost, to cover operating expenses and a profit. To illustrate, we're using an average of 30% or \$.92 lb., although retailers will take as little as 15% markup when an item is featured "on sale."

■ **Distributor.** The distributor/wholesaler pays a trader \$1.79 lb. for the H&G chums, and adds a markup of about 20%, in this case \$.36 lb., to cover his expenses and profit. A full-line distributor can carry as many as 15,000 items, supplying everything to stores and restaurants from silverware to salmon. Seafood distributors specialize in seafood, but often handle several hundred different items. Distributors typically own a fleet of trucks and a cold storage facility. They often steak or fillet salmon to add value and provide convenience for their buyers.

■ **Trader Broker.** The trader buys large lots of frozen salmon from a processor's cold storage holdings, for, in this case, \$1.63 lb. To cover his expenses and profit, he adds a 10% markup, or \$.16 lb. Traders and brokers are traditional middle men; however, brokers don't actually purchase product; they make sales for processors. A broker makes about a 5% commission, paid by the processor.

All of the remaining costs typically are paid by the processor. They include:

■ **Cold Storage.** Public cold storages charge about \$.01 lb. month, plus handling fees. They are private companies with large warehouses that hold millions of pounds of product at -10°F. Average cold storage fees add about \$.10 lb. to the cost of fish.

■ **Shipment from Alaska.** Transportation companies provide freezer vans to Alaska processors during the season. When the vans are full, they are shipped by barge to cold storages in the U.S., primarily in the Pacific Northwest. Shipper's fees for this service average about \$.10 lb.

■ **Processing.** A salmon loses about 25-30% of its weight when headed and gutted, making a fish purchased for \$.53 lb. worth about \$.73 lb. before processors add their markup. A typical processing markup, to cover expenses and profit, is about \$.40-.70 lb. Processors also sell salmon eggs separately, usually directly to Japanese buyers. A processor may receive an extra \$.15-.25 lb. for chum salmon roe, based on the round weight of the salmon.

■ **Tendering.** A processor pays salmon tenders on contract an average of \$.12 lb. for the season. This can vary greatly, depending on the size of the run and other factors.

■ **Fishermen.** Moving backwards through a typical U.S. retail distribution chain that begins with customers paying \$3.99 lb. for chum salmon fillets, a fisherman might realize \$.41 lb. for his fish.

	Pays:	Adds:	Gets:
Retailer	3.07	+ 30%	= \$3.99 lb.
Filleting	2.15	+ 70%	= 3.07
Distributor	1.79	+ 20%	= 2.15
Trader	1.63	+ 10%	= 1.79
Cold Storage	1.53	+ .10 lb.	= 1.63
Shipping	1.43	+ .10 lb.	= 1.53
Processing	.73	+ .70 lb.	= 1.43
H & G	.53	+ 73%	= .73
Tender	.41	+ .12 lb.	= .53
Fisherman			\$.41/lb.

SALMON NEWS
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Alaska State Senate
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MEMORANDUM

TO: Representative Ron Larson, Chair
Legislative Budget & Audit Committee

FROM: Senator Dick Eliason, Chair
Senate Special Committee on Domestic &
International Commercial Fisheries

DATE: June 15, 1992

RE: Request for legislative audit

I would like to formally request that the Legislative Budget and Audit Committee authorize a legislative audit of all the funding mechanisms for the state's Private Non-Profit (PNP) hatchery program. This would include, but not be limited to:

1. the Fisheries Enhancement Revolving Loan Fund administered by the Department of Commerce and Economic Development (AS 16.10.500-620), including, but not limited to: regulations concerning length of loans, interest rates, deferments and payback periods; the methods for approving and prioritizing loans including an analysis of benefit-cost analyses and financial analyses; the status of coordination efforts between the Departments of Commerce and Fish and Game; an analysis of how PNP costs are determined to be "reasonable"; and any other issues concerning this loan program; and

2. the Salmon Enhancement Tax (AS 43.76.010-.015), including, but not limited to: methods of determining the amount of tax to be collected and how it is allocated to the various aquaculture associations; analysis of whether costs are distributed in proportion to benefits; the impact of a mechanism to allow specific gear groups to opt out of the program or pay in proportion to the enhancement benefits they receive; and any other issues

The information derived from this audit will be used as part of the ongoing Legislative Hatchery Review Project. Molly McCammon, staff assistant to Senator Hoffman, will continue to coordinate that project during the interim and will be the contact person (4453) for this audit request.

THE FOLLOWING DOCUMENT MAY NOT FILM
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ORIGINAL

Prices expected to offset harvest

Salmon season estimated at 139 million

By MIRE NEMETH
TIMES BUSINESSWRITER

Alaska fishermen probably will harvest fewer salmon this summer, but higher prices for sockeye, or red, salmon should ease the economic pressure that led to a strike in Bristol Bay last year, state officials said Thursday.

Alaska's total salmon harvest — including pink, sockeye, chum, silver and chinook — is forecast at 139 million fish this summer, down 27 percent from 190 million last year, said Herman Savikko, chief statistician for the Alaska Department of Fish and Game.

Savikko unveiled his agency's predictions at a breakfast meeting of the Resource Development Council in the Anchorage Petroleum Club.

He said prices for the sockeye harvest would come close to \$1 to \$1.25 per pound, up from 1991's 11-year low of 76 cents per pound. Processors' initial offers of 60 cents per pound so angered Bristol Bay fishermen, they chose to strike for two weeks at

the height of the 1991 season.

"I don't think we're going to have a sour season like the industry had last year, but it's not going to be a particularly sweet one," he said.

Alaska's salmon industry generated \$310 million in 1991, down 44 percent from \$560 million in 1990.

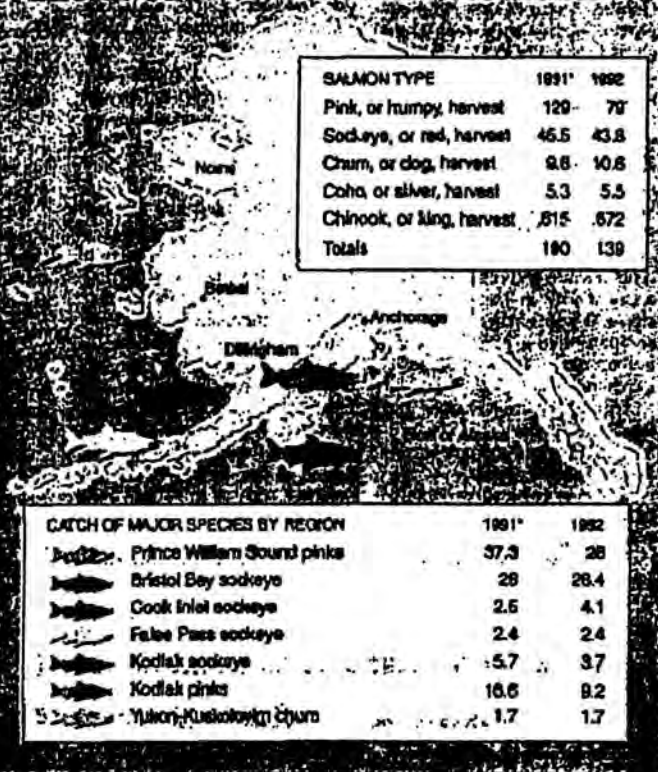
A four-year low in Japan's frozen salmon inventory has fueled optimism for higher prices, said Gunnar Knapp, an economist with the Anchorage-based Institute for Social and Economic Research. Knapp said the Japanese government's survey of its industry reported an inventory of 164 million pounds in February, down 18 percent from 187 million pounds last year.

"Generally, a favorable sign is that everybody is talking about higher prices," he said. "There isn't that sense of panic that there was last year. Things are more stable."

However, a poor Japanese economy that is shrinking financing opportunities in

See Harvest, page D8

Alaska salmon forecast for 1992



SOURCE: Alaska Department of Fish and Game

The Anchorage Times / LARRY LEXANDER

Harvest

Continued from page D1

that country and an influx of Russian salmon could further erode prices.

Exact sockeye salmon prices often remain elusive until the opening of the Copper River red season May 15.

Prices evolve at various levels of the industry, said Terry Johnson, an analyst in Dillingham

with the University of Alaska Marine Advisory Program. Processors wait until they get an indication from buyers, who wait for importers in Tokyo to give them an idea, he said. And the importers wait to make their move until fishing begins, he said.

"It's a chain reaction," he said.

This year's overall Alaska sockeye harvest is projected to be 43.8 million fish, down 4 percent from 45.5 million salmon caught last year, Savikko said.

Pink salmon prices, about 12

cents per pound last year, are expected to remain low, perhaps between 15 and 18 cents per pound, but lower returns could help shore up the sagging market, he said. In 1992, 79 million pink salmon are expected to be harvested, down 39 percent from last year's catch of 129 million, he said.

Fish and Game's forecasted harvests for other salmon species showed less change.

The 1992 chum forecast is 10.6 million salmon, up 10 percent

from 9.6 million salmon caught in 1991.

The 1992 coho, or silver, salmon forecast is 5.5 million, up 4 percent from 5.3 million caught in 1991. The 1992 chinook or king salmon forecast is 672,000, up 1 percent from 615,000 kings caught in 1991.

Savikko said new products could eventually help raise prices, but many market variables depend on farmed salmon production in Norway, Chile, Scotland and British Columbia.

LEGISLATURE 1992

House leaders worry bills will be delayed by Senate inactivity

By JAY CROFT

TIMES CAPITAL BUREAU

JUNEAU — As the Senate continued its week of closed-door budget negotiations, House leaders said they are worried bills will be delayed to death by inactivity of Senate committees.

"If they're in caucus for all day, and when they're not, they're on the floor, how can the standing committees meet?" said Speaker Ben Grussendorf, D-Sitka.

Grussendorf and other representatives said low-priority bills that otherwise would pass both houses might get lost in the rush toward May 12 adjournment.

Movement has been slow all session, with few important bills going to the governor for signature.

Senate President Dick Eliason acknowledged the problem during a brief break from the Senate's private spending talks Wednesday.

"There's still legislation in committees that's got to be dealt with," said Eliason, R-Sitka.

Not all senators are worried about it, though. "Good," said Sen. Rick Uehling, R-Anchorage.

"We don't need a lot of new bills. We have budget reductions to take care of."



Rules committee chairmen in both chambers determine which bills make it to the floors for full votes.

Schedules for committees and floor votes in the House and Senate list measures from the other side, but many have not been acted on.

In the Senate, chairman Fred Zharoff, D-Kodiak, also blamed the delays on budget work.

The problem is throughout the committees but unintentional, he said, and few bills have made it all the way to either Rules panel.

"The clock is ticking, and we need to be aware of that," Zharoff said.

"I don't know that there is a problem. It seems like this is a normal process we go through every year."

He said he is moving three to five bills after each Senate session, three days a week.

But just one or two are House bills, said his counterpart, Rep. Johnny Ellis, D-Anchorage.

Ellis is trying to free only as many Senate bills as Zharoff moves that came from the House.

"My anxiety level's very high," Ellis said.

"All these other bills building up are increasing the chances we're going to be embarrassed by the chaotic feeding frenzy on the last night," he said. No specific bill has been targeted for stalling, but "it's just the whole general flow of things around here."

"There are a few little sticks coming down the log flume, but when the logjam breaks, inevitably people get hurt," he said.

Ellis said he planned to ask Eliason to move the Senate's operating budget proposal to the House by Saturday so representatives could have time to act on other bills. "I would like to break the logjam earlier because this is not a good way to do business."

About two months ago, Ellis said he tried to hurry along the "personal bills" important to lawmakers, but it apparently has not happened.

Delaying those to the end only compounds last-days pressure as lawmakers struggle with the budget and more important issues.

"It's just too much," Ellis said. "That's asking for trouble."

SALMON POPULATION STRUCTURE: KEY TO EFFICIENT MANAGEMENT

Dr. Anthony Gharrett

Pink salmon constitute the largest volume fishery in Alaska and are an important worldwide protein source. Historically, management of this fishery has taken place on a regional basis because it is logistically and economically difficult to accomplish on a finer scale. Recent salmon genetics research by School of Fisheries and Ocean Sciences researchers indicates, however, that management based on knowledge of genetic variation within and among local salmon stocks may be the key to maximizing productivity and management efficiency.

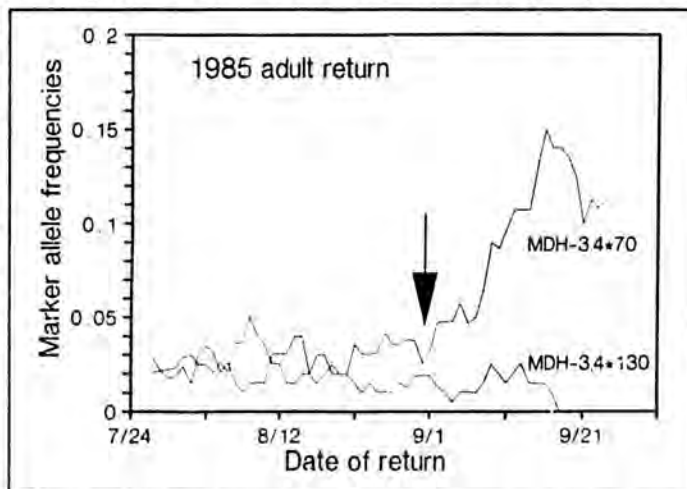
Because of large year-to-year fluctuations due to weather and predation, wild pink salmon stocks in Alaska have been augmented by hatchery-raised fish in an effort to stabilize major swings in population levels. One concern associated with salmon enhancement projects is the biological impact that hatchery fish may have on wild stocks. Biological problems may be ecological, including increased competition for limited resources, or genetic, including "swamping" of the genetic resources of wild stocks.

I have collaborated with Dr. William Smoker and others at the Juneau Center, School of Fisheries and Ocean Sciences to address some basic pink salmon biology questions and their implications for salmon enhancement and management activities. Our research has focused on genetic marking of salmon populations and on genetic components of life history traits (e.g., timing of migration) of pink salmon in Auke Creek, near Juneau. The site of a weir (fence that permits counting of migrating fish) and research hatchery operated by the National Marine Fisheries Service, Auke Creek represents an ideal pink salmon study location.

Pink salmon have a rigid two-year life cycle that segregates them into two populations that breed in alternate years ("even-" and "odd-year" stocks). Within each year, distinct "early" and "late" subpopulations were observed in Auke Creek, with early fish returning and spawning before September 1 and late fish returning to spawn after September 1. We suspected that these two subpopulations also are genetically distinct.

To test this theory, we genetically marked a subset of wild fish from the late upstream run in 1979 by spawning only late-run adults that possessed a certain allele (slightly different form of a gene) detectable by starch-gel electrophoresis, a process that separates alleles for the same gene based on their electrical charges. The frequency was monitored in subsequent spawning runs of adults and in seaward emigration runs of juvenile salmon. This work has revealed additional variation in timing within the subpopulations and indicates that genetic determination is important in the timing of returning adults and emigrating fry.

Run timing is clearly important to the survival of individuals and to the persistence of populations. If adults return too early or too late, streams often will not be suitable for spawning or for the development of embryos. If fry emigrate too early or too late, they will miss the seasonally important food essential to their early growth and survival. There is



Frequency of MDH-3,4 marker alleles during the 1985 adult return to Auke Creek. Approximately 10 fish were sampled daily. The arrow indicates the arrival of late-run (silver bright) pink salmon at the weir.

Genetic variation within a population enables it to adapt to a fluctuating environment



Dr. Anthony J. Gharrett.
(SFOS file photo)

Dr. Gharrett joined the faculty of the University of Alaska in 1976; he is currently a Professor of Fisheries at the Juneau Center, School of Fisheries and Ocean Sciences. He obtained his M.S. (1973) in Fisheries and Ph.D. (1975) in Genetics from Oregon State University.

His research interests focus on the distribution of genetic variability in several fish species, the maintenance of genetic variation in cultured populations, and the integration of qualitative and quantitative genetic variability estimates to promote more complete understanding of genetic/environment interactions in wild salmonids.

Future projects will build on the current pink salmon work and will include developing additional genetic markers using DNA techniques. Ongoing projects include examination of rates of straying of pink salmon from their natal streams, further study of genetic infrastructure of populations, and the rate of colonization in recently opened streams in Glacier Bay.

Related reports may be obtained from:

Publications Office
Institute of Marine Science
School of Fisheries and Ocean
Sciences
201 O'Neill Building
University of Alaska Fairbanks
Fairbanks, Alaska 99775-1090



Juneau Center, School of
Fisheries and Ocean Sciences

UNIVERSITY OF ALASKA FAIRBANKS

frequently only a small "window of opportunity" available for successful reproduction; variability within and among subpopulations allows them to make use of that window even though the window changes from year to year.

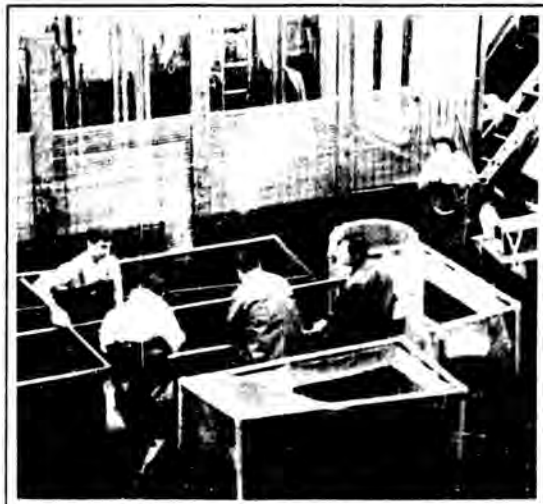
Most wild salmonid populations live in environments that vary over time, sometimes dramatically. Genetic variation within a population enables it to adapt to a fluctuating environment by ensuring that at least some individuals will have a phenotype (physical expression of the genetic makeup of the individual) that can survive environmental extremes. Similarly, maintenance of multiple, uniquely adapted local populations ensures that a population or even an entire species will be able to adapt to long-term environmental changes.

Our results confirm the wisdom of using native fish rather than transplants as a brood source for enhancement activities when possible. Selection pressures within specific environments have "pre-adapted" local fish to local conditions and enable them to function more efficiently, thereby maximizing production. Genetic diversity will be maintained, and knowledge of local variation in life history characteristics will allow managers to make more informed decisions regarding timing of egg collection and release of fry. The extent to which more localized or even stream-by-stream management can be accomplished is unclear, but it may prove more efficient as our understanding of salmon genetics increases.



Graduate students taking samples for genetic studies of Auke Creek pink salmon.
(Photo: A. Gharrett)

ACKNOWLEDGMENTS. Much of this research has been supported by the Alaska Sea Grant College Program and has been carried out in cooperation with the National Marine Fisheries Service Auke Bay Laboratory and the Alaska Territorial Sportsmen. The assistance of Moira Ingle, Institute of Marine Science Publications Office, with the preparation of this article is very much appreciated.



UAF students and staff grading pink salmon at spawning time above the Auke Creek weir.
(Juneau Center, SFOS file photo)

SHA rotation calendars, pages 6-7

Classified ad information, page 3

Cooperative enhancement projects,
page 4

Neets cost recovery contract, page 3

Financial white paper, page 8



DOCED agrees to adopt regs

Deferment attempts continue

SSRAA continues in attempts to have more than \$600,000 in loan payments deferred to help the organization more easily weather what General Manager Don Amend characterizes as a short-term cash flow problem.

The shortfall was foreseen

as early as 1989, when the association first asked the state Dept. of Commerce and Economic Development (DOCED) for a deferment.

Unpredicted run failure in 1989 and low salmon prices last season combined to create the shortfall. SSRAA did pay more

than \$600,000 in loan payments in January, and again asked DOCED to defer five loan payments and their interest.

When DOCED turned down SSRAA's request again this time, the association petitioned the department to adopt

regulations for deferring loan payments from six to 10 years, and to establish criteria for interest rates.

DOCED is authorized to defer payment for a minimum of six and maximum of 10 years, and to charge up to 9.5 percent interest. However, they have consistently charged the maximum allowed interest rate and allowed the minimum deferment.

SSRAA requested that DOCED establish regulations and then await a decision on SSRAA's request for deferment until the regulations are in

place.

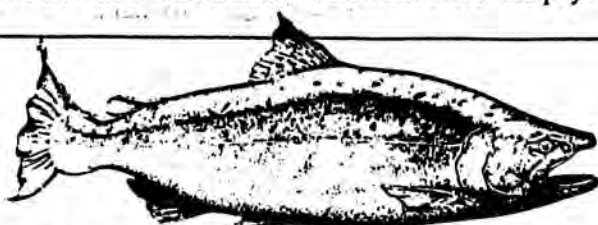
DOCED went for one out of two, and agreed to establish regulations, but said that SSRAA's deferment request would not be postponed until the regulations were established.

Raffle tickets benefiting SSRAA will be on sale by mid-May through Chamber of Commerce outlets; sales are expected to net SSRAA \$50,000

Negotiations continue, but in the interim, SSRAA's board met in an emergency session on April 10 to direct management.

The motion passed unanimously by the board at that time neither accepted nor rejected the latest offer by DOCED, instead authorizing SSRAA's Executive Committee to resolve the situation with DOCED through negotiation

(Turn to Page 10)



Attention gillnetters

SSRAA is seeking bids from gillnetters for harvesting hatchery fish in Special harvest Areas for cost recovery. Fishing will occur in July 1992, for Carroll Inlet chinook, Shrimp Bay and George Inlet sockeye, and possibly for chinook and coho in Earl West Cove.

Bids must be received by 5 p.m. Friday, May 29, 1992.

For information, contact Don Amend at SSRAA, 2721 Tongass Ave., Ketchikan, Alaska 99901, telephone (907) 225-9605.

Strategic objectives set by board

At their annual planning meeting in November, SSRAA's Board of Directors developed a strategic plan for the association. They revised and adopted it formally in December.

Here, with some minor editing, are the strategic objectives developed over two days of meetings and discussions:

FINANCE

1. Return to each gear group a minimum of the cumulative 3 percent tax paid by each group since SSRAA's inception.

2. Eliminate SSRAA's operating deficits by operating in a fiscally responsible manner (i.e., produce positive cash flow and use safe and sound

financial management practices and procedures such as budget preparation, financial reporting, present value techniques, divestiture of uneconomic projects, build-up of reserves during good years.)

3. Present-value all new hatchery projects plus apply present-value economic feasibility analysis to selected exist-

ing projects (i.e., economic feasibility of Neets Bay cost recovery, chums, cohos, kings and sockeye.)

4. Explore all possible means for acquiring/using other people's money to fund SSRAA's operations (i.e., loan deferment, grants, federal funding [mitigation, Dingle-

(Turn to Page 2)

Strategic objectives set by board

(Continued from Page 1)

Johnson funds), loan forgiveness, state capital investment injection, donations, etc.)

5. Engage a financial consultant to assist general manager with the preparation of economic feasibility analysis, financial reports, operating and capital expenditure budgets.

PRODUCTION

1. Determine/review economic viability of production capabilities at each SSRAA production site (i.e., continuing production of chum at Neets Bay; assurance of broodstock supply; other species alternatives, etc.)

2. Guide production decision in accordance with the fol-

lowing parameters:

- Control growth through the investigation of economically viable opportunities.
 - Make best use of existing facilities.
 - No immediate expansion of existing facilities (i.e., through new acquisitions, external additions.)
3. Beaver Falls Project
- Continue evaluating this option but at a slower pace.
 - Defer final commitment until 1994.
 - Complete economic feasibility analysis.
 - Continue lake fry stocking program at

current level (providing funds are obtained from the state, grants or donations.)

- Solicit funding from state for lake fry stocking program at Beaver Falls.
- Encumber \$3-\$5 million in state funding.
- Explore loan deferment (terms, conditions) from the state with or without the Beaver Falls Project.
- Investigate fry plants in non-anadromous lakes for cost recovery purposes.

MARKETING

1. Evaluate cost/benefits of direct sales versus contract sales alternatives in order to move from a reactive to a

proactive position with regard to the sale of cost recovery fish.

2. Explore moving toward a profit-sharing marketing position versus a minimum-risk marketing position.

3. Explore joint venture cost-recovery marketing alternatives.

4. Be more aggressive in seeking interest in the cost recovery contracts.

BOARD OPERATIONS

1. Annually, schedule a one-day meeting to review prior year accomplishments (re: association performance and update/revise strategic objectives.)

2. Develop and implement a quarterly Key Performance Indicator reporting system (i.e., finance, production, marketing, personnel, legislation.)

Castle appointed to seine seat

At the Feb. 28 Board of Directors meeting, SSRAA President Tom Fisher appointed Dan Castle of Ketchikan to serve out the remaining year of Rick Lindblom's term.

Lindblom, a seine representative from Marysville, Wa. (F/V *Corva May*), resigned for per-

sonal reasons earlier that month.

Castle had been recommended by the Southeast Alaska Seiners to fill the vacancy, and had attended several meetings previously.

There was no objection to his appointment.

BOARD OF DIRECTORS

Seine representatives:

Bryan Benkman, Seattle, *Kona Rose*
Dan Castle, Ketchikan, *Stephanie Ann*
Dave Street, Seattle, *Foremost*
Brian Wartman, Seattle, *Ariel*

Gillnet representatives:

Ken Duckett, Ketchikan, *Shiloh*
Chris Guggenbickler, Wrangell, *Ray's Cane*

Louie Munch, Pt. Townsend, *Sisu*
Rich Andrew, Ketchikan, *Defiance*

Power troll representatives:

Thomas Fisher, Ketchikan, *Antares*
Volney Smith, Wrangell, *Pat*
Dave Pitcher, Ketchikan, *Nevada*
Robert Rooney, Wrangell, *Dorothy*

Hand troll representative:

Curtis Tucker, Ketchikan, *Havoc*

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SSRAA, FRED, USFS join forces

Co-op ventures enhance sockeye

The sockeye salmon rehabilitation and enhancement program in Southern Southeast began in 1979 with lake fertilization projects at Hugh Smith and McDonald Lakes — a cooperative program involved SSRAA, the US Forest Service and the state's Division of Fisheries Rehabilitation, Enhancement and Development (FRED).

In the 13 years since then, a variety of projects have developed through those joint efforts. Enhancement projects have primarily consisted of building fish passes to open anadromous access to suitable sockeye spawning and rearing habitats, according to Mike Haddix of the FRED Division in Ketchikan.

In addition, there were bio-enhancement programs, such as Bakewell/Badger, Virginia, Margaret, Big Dog Salmon and Old Frank's Lakes, where salmon fry were planted into newly-accessible habitats.

Then there were rehabilitation projects, designed to rebuild sockeye systems that have become depressed. Those projects include Hugh Smith, Salmon (Karta), Heckman and Patching Lakes.

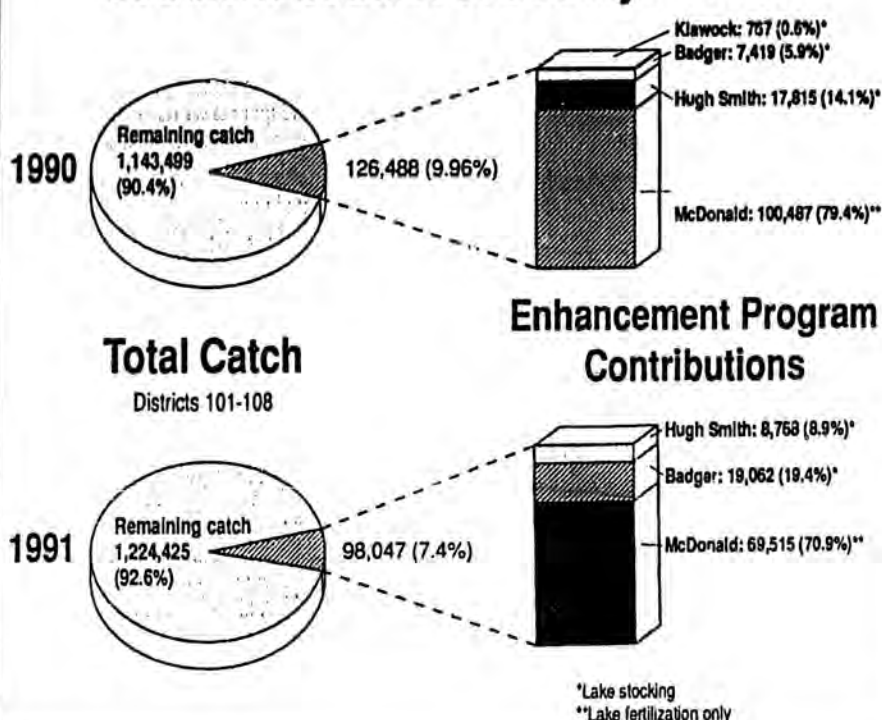
The state's Beaver Falls facility was developed in the mid-1980s to provide an incubation facility for those projects. The initial funding for Beaver Falls' construction came from several sources, including FRED, the Forest Service, and U.S./Canada Treaty mitigation funds.

The first eggs were taken and incubated in 1984, and sockeye fry plants totalling approximately 24 million have been made into seven different lakes since 1986. Those fry plants should translate into about 575,000 adult sockeye.

SSRAA, with grants from the state, currently operates the

(Turn to page 11)

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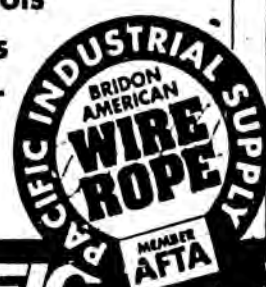
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June 1992— Earl West Cove						
SUN	MON	TUES	WED	THURS	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15 12:00 am	16	17 TROLL ONLY	18	19 GILLNET	20
21	22 SEINE 6 am - 6 pm	23	24 GILLNET	25	26	27 SEINE 6 am - 6 pm
28 GILLNET	29 SEINE	30 SEINE 6 am - 6 pm				

July 1992 — Earl West Cove						
SUN	MON	TUES	WED	THURS	FRI	SAT
			1 GILLNET	2 SEINE	3 GILLNET	4
5 -NET	6 SEINE 6 am - 6 pm	7 GILLNET	8 SEINE	9 GILLNET	10 SEINE	11
12 SEINE 6 am - 6 pm	13 GILLNET	14 SEINE	15 GILLNET	16 SEINE	17 GILLNET	18 SEINE
19 GILLNET	20 SEINE	21 GILLNET	22 SEINE	23 GILLNET	24 SEINE	25 GILLNET
26 -NET	27 SEINE 6 am - 6 pm	28 GILLNET	29 SEINE	30 GILLNET	31 SEINE	Aug. 1

August 1992		
SUN	MON	TUES
2 SEINE 6 am - 6 pm	3 GILLNET	4 GILLNET
9 GILLNET	10 SEINE	11 GILLNET
15 -NET	17 SEINE	18 GILLNET
23 SEINE	24 GILLNET	25 GILLNET
30 GILLNET	31 GILLNET	

1992 Special Harvest Ar

SSRAA is currently negotiating with the Department of Commerce and Economic Development for the deferment of loan payments. These management plans are based on those deferments being granted, which is by no means assured. If the deferments are not granted, additional program changes will have to be made that will include cost recovery in terminal areas and other adjustments in SSRAA's programs which are likely to change these harvest plans.

Thus, be aware that **NO SPECIAL HARVEST AREA ROTATIONS ARE GUARANTEED**; the calendars and information here will take effect only if the areas are declared open by emergency order through the ADF&G. Watch for announcements of any openings. If SHA openings are announced, rotations will follow the schedules printed here.

BROODSTOCK

Summer and fall chum broodstock (from up to 52,000 summer chum females and 32,000 fall chum, respectively) will be obtained from Neets Bay as the primary site and Nakat Inlet will be the secondary site. Coho broodstock (requiring 1,000 female coho) will be obtained from Whitman Lake, with Neets Bay as a secondary site. Neets Bay and Whitman Lake chinook broodstock (700 females) will come from Whitman Lake, with Little Port Walter as a back-up site. Sockeye broodstock (1,600 females) will be obtained from McDonald Lake and released at Shrimp Bay. Additional McDonald Lake stock will be used for releases at Virginia and Margaret Lakes. Salmon Lake stock will be used for releases in Salmon Lake. Hugh Smith stocks will be used for Hugh Smith Lake releases. No sockeye eggs will be taken if state funding is not adequate.

Broodstock collection at Neets Bay will be emphasized until at least 90 percent of the brood is obtained before cost recovery is conducted. If chum broodstock collection at Neets Bay falls more than 25 percent short of pre-determined weekly goals, the Nakat Inlet SHA will be closed to allow for broodstock collection there. The other back-up brood sources will be pursued only as needed and no special management considerations will be requested.

COST RECOVERY

Cost recovery in 1992 will be conducted at Neets Bay,

Carroll Inlet, Beaver Falls and Shrimp Bay. Cost recovery will start with chinook salmon in Neets Bay and Carroll Inlet about June 10. Only those fish in excess of broodstock needs will be sold.

SITE MANAGEMENT

CARROLL INLET

Will be managed only for cost recovery and to minimize escapement into the Carroll River.

Test fishing for the Terminal Area Troll Chinook Harvest Study will be allowed from June 10 through 30. A special effort will be made to harvest all chinook and this will include selected targeting with drift gillnet.

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1992 — Earl West Cove

SUN	MON	TUE	WED	THURS	FRI	SAT
4 NET 6 am - 6 pm	5 SEINE 6 am - 6 pm	6 GILLNET Noon - noon	7 GILLNET Noon - noon	8 SEINE 6 am - 6 pm		
11 SEINE 6 am - 6 pm	12 GILLNET Noon - noon	13 GILLNET Noon - noon	14 SEINE 6 am - 6 pm	15 GILLNET Noon - noon		
18 GILLNET Noon - noon	19 GILLNET Noon - noon	20 SEINE 6 am - 6 pm	21 GILLNET Noon - noon	22 GILLNET Noon - noon		
25 NET Noon - noon	26 SEINE 6 am - 6 pm	27 GILLNET Noon - noon	28 GILLNET Noon - noon	29 SEINE 6 am - 6 pm		

September 1992 — Earl West Cove

SUN	MON	TUE	WED	THURS	FRI	SAT
		1	2 SEINE 6 am - 6 pm	3	4 GILLNET Noon - noon	5 GILLNET Noon - noon
6	7 SEINE 6 am - 6 pm	8	9 GILLNET Noon - noon	10 GILLNET Noon - noon	11	12 SEINE 6 am - 6 pm
13	14 GILLNET Noon - noon	15 GILLNET Noon - noon	16	17 SEINE 6 am - 6 pm	18	19 GILLNET Noon - noon
20 NET Noon - noon	21	22 SEINE 6 am - 6 pm	23	24 GILLNET Noon - noon	25 GILLNET Noon - noon	26
27 SEINE 6 am - 6 pm	28	29 GILLNET Noon - noon	30 GILLNET Noon - noon			

October 1992 — Earl West Cove

SUN	MON	TUE	WED	THURS	FRI	SAT
				1	2 SEINE 6 am - 6 pm	3
4 GILLNET Noon - noon	5 GILLNET Noon - noon	6	7 SEINE 6 am - 6 pm	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Area Management Plans

PLEASE NOTE:

NO SHA ROTATIONS ARE GUARANTEED.

The information here will take effect only if the areas are declared open by emergency order through the ADF&G. Watch for announcements of any openings. If openings are announced, fishing will follow the calendars printed here.

Nakat Inlet and Earl West Cove will be managed by the Alaska Department of Fish and Game, in consultation with SSRAA, by emergency order for seine and gillnet fishing. *Trolling is allowed whenever an area is open to commercial fishing.*

EARL WEST COVE

Tentative plans are to manage the Earl West Cove Special Harvest Area for a rotational fishery only.

Eastern Passage is open south of 56°24'50" north latitude and west of 132°6'21" west longitude, except for the following restrictions:

Madan Bay is closed east of a line from the latitude of the channel marker in the Narrows to the Eastern tip of Channel Island (56°21'48" north latitude, 132°9'24" west longitude) to the navigational light on the northern tip of Point Madan at 56°22'39" north latitude, 132°9'42" west longitude.

Time allocation and legal gear

HARVEST SEASON: May extend from June 15 through October 7.

TROLL: The Earl West Cove Special Harvest Area will open for hand and power trolling during the entire harvest period, beginning with a 108-hour troll-only fishery on June 15 before the net rotations begin. Only legal troll gear may be used.

NET FISHERIES: Each rotation for the drift gillnet and purse seine fleet will include a 2:1 gillnet:seine rotation. The fishing period is 24 hours:12 hours, with the first net opening being for gillnets. Drift gillnets may not exceed 200 fathoms in length.

Forecast run strength

Based on pre-season projections, the run at Earl West Cove is expected to include approximately 23,500 coho, 14,100 king and 61,100 summer chum.

NAKAT INLET

Will be managed primarily for a rotational fishery, but SHA may be closed if broodstock cannot be met at Neets Bay Area.

The Nakat Inlet Special Harvest Area encompasses (Please turn the page)

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Tentative '92 Special Harvest Area plans

July 1992 — Nakat Inlet						
SUN.	MON.	TUES.	WED.	THURS.	FRI.	SAT.
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
				GILLNET Noon — Noon		
19	20	21	22	23	24	25
SEINE 6 am — 6 pm		GILLNET Noon — Noon			SEINE 6 am — 6 pm	
26	27	28	29	30	31	Aug. 1
GILLNET Noon — Noon			SEINE 6 am — 6 pm		GILLNET Noon — Noon	

PLEASE NOTE: NO SHA ROTATIONS ARE GUARANTEED. The information here will take effect only if the areas are declared open by emergency order through the ADF&G. Watch for announcements of any openings.

August 1992 — Nakat Inlet						
SUN.	MON.	TUES.	WED.	THURS.	FRI.	SAT.
2	3	4	5	6	7	8
	SEINE 6 am — 6 pm		GILLNET Noon — Noon			SEINE 6 am — 6 pm
9	10	11	12	13	14	15
	GILLNET Noon — Noon			SEINE 6 am — 6 pm		GILLNET Noon — Noon
16	17	18	19	20	21	22
NET Noon — Noon		SEINE 6 am — 6 pm		GILLNET Noon — Noon		
23	24	25	26	27	28	29
SEINE 6 am — 6 pm		GILLNET Noon — Noon			SEINE 6 am — 6 pm	
30	31					
GILLNET Noon — Noon						

September 1992 — Nakat Inlet						
SUN.	MON.	TUES.	WED.	THURS.	FRI.	SAT.
		1	2	3	4	5
			SEINE 6 am — 6 pm		GILLNET Noon — Noon	
6	7	8	9	10	11	12
	SEINE 6 am — 6 pm		GILLNET Noon — Noon			SEINE 6 am — 6 pm
13	14	15	16	17	18	19
	GILLNET Noon — Noon			SEINE 6 am — 6 pm		GILLNET Noon — Noon
20	21	22	23	24	25	26
NET Noon — Noon		SEINE 6 am — 6 pm		GILLNET Noon — Noon		
27	28	29	30			
SEINE 6 am — 6 pm		GILLNET Noon — Noon				

(Continued from previous page)

waters of Nakat Inlet between 54°50' north latitude, except for the 500-yard radius closures at the mouth of Nakat Inlet Creek (101-11-39).

Troll allocation and legal gear

HARVEST SEASON: May extend from July 16 through October 7.

TROLL: The Nakat Inlet SHA will be open for hand and power trolling whenever the waters are open to commercial fishing. Legal gear will be the same as that allowed in the adjacent district during the period.

NET FISHERIES: Each rotation for the drift gillnet and purse seine fleet will include a 2:1 gillnet:seine rotation. The fishing period is 24 hours: 12 hours, with the first opening being for gillnets. Legal gear for both net types will be that which is allowed in the adjacent district.

Forecast run strength

Pre-season projections for hatchery-produced salmon returning to the Nakat Inlet SHA include approximately 68,600 summer chum, 87,300 fall chum and 7,500 coho.

NEETS BAY

The Neets Bay Special Harvest Area will be managed for broodstock, cost recovery and then, if a surplus is declared, for a rotational fishery.

GEORGE INLET, SHRIMP BAY

Managed for cost recovery.

HERRING BAY

Managed for broodstock only.

October 1992 — Nakat Inlet						
SUN.	MON.	TUES.	WED.	THURS.	FRI.	SAT.
				1	2	3
					SEINE 6 am — 6 pm	
4	5	6	7	8	9	10
GILLNET Noon — Noon			SEINE 6 am — 6 pm			
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31



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SSRAA financial position paper

(Following is a slightly-edited version of a financial position paper SSRAA produced in conjunction with its petition to the Department of Commerce and Economic Development. For information on the status of SSRAA's petition, see article beginning on page 1. — Ed.)

In 1977, the Alaska legislature established the Fisheries Enhancement Loan Program under the Department of Commerce and Economic Development. This program allowed for capital and operational loans to private non-profit aquaculture organizations to initiate salmon enhancement projects. The commissioner may defer repayment of principal or accrual of interest during the initial period of the loan, and the initial period was defined as not less than six years or more than ten years from the date the loan was made. The policy of the program is to provide low interest loans and the interest rate for loans shall not exceed 9.5 percent.

SSRAA has obtained eleven loans totalling \$12,393,583 from 1979 through 1984. No loans have been obtained since 1984. All loans were issued for the minimum initial period of six years and the maximum interest rate of 9.5% was charged. Repayment of SSRAA's loans

started in 1986 and payment of all loans now totals \$1,376,617 annually. SSRAA has not defaulted any loan payments.

The legislative intent for the six-to-10 year deferment period was to allow several life cycles of salmon to occur before interest started accruing and payments being required. This would allow the organizations to reach full production and have sufficient fish to conduct cost recovery to pay the loans. The range of six to 10 years was established to encourage private non-profit organizations to develop programs for the more valuable species which have longer life cycles. For example, pink salmon have two-year life cycles and three life cycles could be obtained before the initial six year period was over. However, chum and sockeye have a predominate four year life cycles and only 1.5 cycles would be complete after six years, but 2.5 life cycles would be complete after ten years. SSRAA has never conducted pink salmon enhancement. All projects emphasize chum, coho, chinook, and sockeye salmon.

In order to reach full production within a six-year initial period, everything must go right. All capital improvements must be on schedule,

broodstocks developed, proforma ocean survival rates must be achieved, and prices must be near the forecast level.

However, as might be anticipated, everything has not gone right for SSRAA. The construction was completed on schedule, but the facilities did not operate as designed until 1991. Broodstocks needed for full production were not achieved until 1990. Although ocean survival rates exceeded our proforma rates during the early 1980s, ocean survival rates have been below average in recent years and substantially below in 1989. In addition, prices in 1991 dropped to pre-1980 levels. The combination of these events has put SSRAA on the financial edge.

When broodstocks did not develop as expected and when low survival rates occurred in 1989, SSRAA requested that the initial period be extended for most loans because poor returns were expected through 1993. This request was denied, but the loan committee allowed delaying payments for one year. However, the accrued interest was added to the principal

and amortized over the remaining term of the loan. This essentially increased our debt load.

After the poor prices of 1991, SSRAA's cost recovery was \$300,000 short of revenue need, and proceeds from the salmon enhancement tax was \$600,000 less than the average. SSRAA, again, requested that five loans be deferred to the maximum 10 years allowed by statutes and also requested that the interest rate be lowered to prevailing rates consistent with the policy of low interest loans.

Again, the loan committee denied our request and suggested a loan modification that would increase our loan debt, nearly deplete our cash reserves, and put SSRAA in an unsound financial position.

The legislative intent of the salmon enhancement program was to supplement the common property harvest of salmon and to allow fishermen to help pay for these activities. This took much of the burden of salmon enhancement off the state general funds. In recent years, the state has contracted

(Continued on next page)

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A white paper report on

(Continued from previous page) state salmon hatcheries to regional aquaculture associations. None of these hatcheries has been contracted to SSRAA, although SSRAA is operating the FRED Beaver Falls hatchery under a cooperative agreement. The hatcheries that have been contracted to other regional associations did not require any increase in debt, and in some cases, provided an immediate, substantial increase in cash flow. This is not available

to SSRAA.

SSRAA has been contributing significant numbers of fish to the common property fishery since 1984. Fishermen have paid \$16.6 million in enhancement tax since 1981, but have received \$28.9 million in increased benefits from SSRAA's production. For every dollar spent by SSRAA, \$1.56 has been returned to the fishermen and this is expected to increase to \$2.20 by 1996.

In 1991 commercial fisher-

men harvested 237,210 coho, 27,785 chinook salmon, and have averaged over 300,000 chum salmon annually. Nearly 70 percent of all salmon produced by SSRAA are caught by the common property fishery.

Sport fishermen have also benefited significantly from SSRAA's programs. In 1991 a

record harvest of chinook and coho salmon were caught by sport fishermen in the Ketchikan area. About 48 percent of all sport caught chinook were from SSRAA hatcheries and the Salmon Derby winner caught a 57.5 pound chinook which came from a SSRAA hatchery. Also, about 15,900 coho were

DOCED negotiations

(Continued from Page 1) or litigation.

Litigation would come in the form of an appeal in Ketchikan Superior Court to DOCED's decision not to defer either SSRAA's payment or a decision on deferral.

SSRAA's board met in closed session with the association attorney at that April 10 meeting.

In the open portion of that meeting, the board also voted on several possible actions to deal with the cash shortfall if the payments must indeed be made.

Among the decisions, based on recommendations from an ad hoc Revenue/Cost Reduction Committee:

- A raffle to benefit SSRAA will be held, with Chamber representative Angelo Martin of Ketchikan chairing the committee implementing the raffle.

The raffle tickets, under the Ketchikan Chamber of Commerce permit, will cost \$10 with donated prizes. Top prize will be a four-day, three-night fishing trip to the Waterfall Resort. It's expected that SSRAA will raise at least \$50,000 through the sale of raffle tickets.

- To request raw fish tax funds from the Ketchikan Gateway Borough. Approximately \$70,000 was thought to be available.

- To request \$5,000 from the Ketchikan Chamber of Commerce from proceeds of its king

salmon derby sales.

- To sell bait eggs for approximately \$8,000.

There was also a two-fold proposal to 1.) take cost recovery out of Earl West Cove near Wrangell after two net fishing rotations; and to request the closure of fishing — including sport fishing — of a portion of Carroll Inlet adjacent to SSRAA's Special Harvest Area there. Although a motion to do both of those things passed with seven opposed, it's on the agenda for reconsideration May 8 and is not at all "a done deal."

(EDITOR'S NOTE: See the article beginning on the previous page for the text of a financial position paper issued in March outlining the history of the loan payment issue.)

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SSRAA financial position

caught by sport fishermen or 31 percent of all coho caught. These harvests are larger than the catch rate before the hatcheries existed and have stimulated a large expansion of the charter fleet. The sport harvest of SSRAA fish benefits sport fishermen throughout the region.

In addition to the harvest by commercial and sport fishermen, the benefits of SSRAA's activities have had a significant economic impact region wide. Wrangell and Ketchikan have especially benefited. Processors have increased their employment and expanded their product line. It is apparent that

SSRAA is living up to the original legislative intent and is providing a broad public benefit.

SSRAA's current asset to liability ratio is 0.85; operating revenues are only 2.3 times the annual loan payments, and cash reserves are about 20 percent of the annual budget.

The Board of Directors approved an operating budget of \$2.4 million for 1992 which is 5.8 percent less than 1991. Further reductions will require elimination of projects and/or personnel reduction. Administrative overhead is less than 18 percent of operating expenses. It is apparent that SSRAA is not in a good short-term financial position nor are expenses excessive.

SSRAA believes the actions taken by the Department of Commerce and Economic De-

velopment will place SSRAA near insolvency. The request to defer five loan payments and reduce the interest rate is consistent with legislative intent, and if the loan committee adopted this request, SSRAA should be able to meet future financial obligations. The long term future of SSRAA is good but we need help now.

SSRAA has petitioned the Department of Commerce and Economic Development to develop regulations for deferring loan payments from six to 10 years, and to establish criteria for interest rates.

SSRAA believes that longer deferment periods are needed for salmon which have longer life cycles, and that interest rates should be adjustable to either the federal discount rate or the commercial prime rate.

FRED-SSRAA Sockeye Enhancement Projects 1992 return estimates

Lake	Wild Returns	Enhanced Returns	Total
Badger/Bakewell	0	23,080	23,080
Hugh Smith	32,169	13,760	45,929
Klawock	4,529	25,908	30,437
Margaret	0	3,327	3,327
McDonald	85,000	136,704	221,704
Salmon (Karta)	27,522	9,548	37,070
Totals	149,220	212,327	361,547

Joint sockeye programs

(Continued from Page 4)
south of Ketchikan. The state would like SSRAA to take over operation of that hatchery (a stone's throw from SSRAA's own Beaver Falls sockeye facil-

ity), but SSRAA's Board of Directors wants the programs there to be self-supporting before agreeing to a permanent transfer. SSRAA has run the hatchery for the state on a year-to-year basis.

Shucks, they couldn't have been 'replaced,' anyway

SSRAA employees Bill Vandevent and Kathy Herndon both resigned their positions.

Vandevent, who has been with SSRAA since 1983, has been assistant maintenance manager. Herndon, who ran SSRAA's tagging program, leaves after four years.

Due to budget constraints, neither position will be replaced at this time, according to General Manager Don Amend.

But, as Whitman Lake man-

ager Jay Creasy noted of Vandevent, "We might have hired another person, but we could never replace Bill."

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EXPLANATION OF CSSB 397 (RESOURCES), "RELATING TO THE AUTHORITY OF THE BOARD OF FISHERIES" BY SENATOR DICK ELIASON

Enactment of CSSB 397 would clarify the statutory language spelling out options open to the Board of Fisheries in its regulatory decisions. Currently state law lists the fisheries for which the Board may establish regulations and allocations as: PERSONAL USE, SPORT, and COMMERCIAL fisheries. SB 397 adds the GUIDED SPORT FISHERY to that list. This does not make the guided sport fishery into a "commercial fishery." The effect is simply to separate sport, for the purpose of regulation, into two categories: the "guided sport" fishery, and what is thought of as the traditional "sport" fishery.

The Senate Resources version of the bill also includes the addition of language to clarify that the Board of Fisheries may use residency considerations in making sport fish regulations. This is a power clearly given to the Board of Game in law, but not specifically spelled out for the Board of Fisheries. The residency distinction can ONLY be applied to sport USERS (unguided sport fishermen or the clients of sport fish guides), not to guides. The language in the bill would only ALLOW the board to apply residency criteria, not mandate it. Legally and constitutionally, the state cannot differentiate between resident and non-resident guided sport fish operators (the guides themselves), nor between resident and non-resident commercial fishermen (due to the protection of the right to engage in a livelihood or pursue a profession under the constitutional "privileges and immunities clause"). However, the state legally MAY distinguish between resident and non-resident recreational users, and has done so in many instances, particularly with respect to the use of game. The Board of Fisheries has assumed its ability to distinguish by residency in such actions as passage of regulations allowing resident Alaskans to sport harvest more clams than non-residents. They also use the 7 statutorily established criteria for making fishery allocation decisions, two of which depend on residency considerations. All of these actions could be challenged without adding the specific language in CSSB 397 to make it clear that the Legislature intends for them to be able to consider residency if they need to in making decisions.

The Board of Fisheries has made a number of important decisions in the past under the assumption that they already have the discretion

to promulgate regulations for sport and guided sport, and to distinguish between residents and non-residents. Over the years the Board has alternately been told by attorneys that they DO and DO NOT have the authority to make these distinctions. The most recent opinion by the Attorney General's office states that the Board's authority in both of these matters is "uncertain" due to ambiguities in law. **THE STATE FACES THE PROSPECT OF EXPENSIVE LAW SUITS IF THESE AMBIGUITIES ARE NOT CLEARED UP.** For example, the Kenai River sport/guided sport management plan that has brought stability to a volatile situation and protection of the opportunity for Alaskan sports anglers to fish on the Kenai, could be in jeopardy without the clarification in CSSB 397.

This bill does not require that sport and guided sport fisheries be regulated differently. It simply makes it clear that the state recognizes them as different use categories and has given the Board of Fisheries the authority to regulate them differently if and where they find a need to do so. The same is true with the authority to distinguish sport users by residency.

Finally, CSSB 397 (Resources) revises the definitions which are in current law for "fishery" and "gear." This inconsistency in statute was brought to the committee's attention by the Attorney General's office. The definition of these words in current law uses the word "commercial," even though we consistently refer to the "sport fishery" and the "personal use fishery" throughout statute. In keeping with the intent of the bill to clean up and clarify statutory language regarding the Board's authority, the definitions were corrected to reflect the way these terms are to be used by the Board.

Again, the goal of this bill is to ensure that the Board has the tools it needs to deal with conflicts that inevitably occur when resources are in high demand. The ability to distinguish between sport and guided sport, or resident and non-resident, may help to prevent the over restriction of resident Alaskan sports anglers as rapid growth in guided sport fishing throughout the state necessitates revision of sport regulations in order to protect resources and their historic uses.

The bill avoids "management by statute," and the inflexibility of that approach, by leaving specific decisions to the Board of Fish. Management by regulations through the Board process allows for far more flexibility over time than locking provisions into state law. Again, CSSB 397 does not require the Board to adopt different regulations for sport and guided sport fisheries, nor does it require or even suggest what sorts of regulatory distinctions they might consider. This bill provides the full public input process which is inherent in the Board's regulatory process, allowing for adequate participation in all decisions by all parties involved.

Please contact Sen. Eliason's office for further information. (Phone 465-4916, or write Sen. Eliason, State Capitol, Juneau, AK 99801).

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February 20, 1992

MEMORANDUM

TO: Senator Sam Cotten ✓
Senator Arliss Sturgulewski
Senator Fred Zharoff

FROM: Gordon S. Harrison, Director (gsh)

RE: North Pacific Fisheries Research Organizations
Research Request 92.108

You requested information about the various organizations that are involved in research regarding commercial fisheries of the North Pacific region.

Research is important to the work of all the organizations connected with North Pacific fisheries, but in different ways. That is, these organizations have different relationships to research. To emphasize these differences, this memorandum divides fisheries organizations into four general types: those that are primarily regulatory bodies that use the results of research for management decisions, and which set research priorities either directly or indirectly as a consequence of the management issues that confront them; those international and multi-state advisory bodies that provide a forum for coordination of policy and/or research; those organizations that fund fisheries research; and those organizations that actually conduct scientific investigation and technological experimentation. Only a few combine these functions.

Also, among all the organizations that touch North Pacific fisheries matters, some are far more consequential than others. Thus, this memorandum also distinguishes between research-oriented agencies that play a substantial role in North Pacific fisheries and those that have only a minor and peripheral role in the fisheries resources of this region.

The major regulatory, coordinating, funding, and research organizations are identified below. This information is summarized in the accompanying table.

Regulatory Agencies

The state Alaska Board of Fisheries and the federal North Pacific Fisheries Management Council are the main regulatory agencies with management jurisdiction over North Pacific fisheries. Their primary function is to regulate the fisheries in state and federal waters, respectively. As a consequence of their regulatory role, these bodies establish research

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priorities, either directly or indirectly, for research agencies. That is, specific policy conflicts and management issues demand specific information.

The policy boards can request information from the research agencies that support them. Nonaffiliated research agencies and funding organizations are aware of the information requirements of the policy boards, and they design their projects and set their research priorities accordingly.

There are three international treaty organizations that may be classified as quasi-regulatory agencies, because although technically they do not possess regulatory power (their role is strictly advisory to the member national governments) their recommendations are implemented and for all practical purposes they manage or participate in a fundamental way in the management of specific fisheries.

The International Pacific Halibut Commission is the oldest of such treaty organizations. It owes its existence to a 1923 convention between Canada and the U.S. for the preservation of halibut. It actively manages the pacific halibut fishery. Of the international commissions with regulatory responsibility, this one is the most directly involved in the day-to-day management of a fishery. It is also distinctive because it has its own scientific staff and collects the statistical and biological data it needs to manage the fishery. Thus, it may be characterized as both a regulatory agency and a research organization.

An organization with important management responsibility over west coast salmon is the Pacific Salmon Commission which implements the Canada-U.S. salmon treaty of 1985. The commission adopts harvest quotas (and other general management parameters) for the critical state and provincial salmon fisheries. State and provincial regulatory authorities implement the quotas set by the commission. For example, the commission establishes the annual southeast Alaska chinook quota. The Alaska Board of Fisheries then allocates this quota among the gear types, schedules openings, and otherwise manages the fishery within the limits of the quota. This commission does not engage in field research or directly fund such research, but it nonetheless plays a critical role in establishing research priorities and channeling money to the states for research. For example, the U.S. government has earmarked funds for the implementation of the treaty in appropriations to the Departments of State, Interior and Commerce. The commission reviews funding proposals from government agencies and tribes and recommends how these earmarked funds are to be allocated among the states for mitigation and research.

The International North Pacific Fisheries Commission (INPFC) is charged with implementing the International Convention for the High Seas Fisheries of the North Pacific Ocean of 1953, to which Canada, Japan and the United States are signatories. This commission manages the directed highseas salmon fishery of Japan (neither Canada nor the United States has a highseas salmon fishery).

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However, a new convention is presently being negotiated that will replace the 1953 treaty and result in the demise of the INPFC. The new "four-way salmon agreement" (Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean) will include the signatories to the 1953 pact and Russia. This treaty will end highseas salmon fishing (i.e., fishing beyond the 200-mile zone of each member nation), and therefore continued management oversight of this fishery will no longer be necessary. However, the treaty organization will monitor management issues in the North Pacific and recommend policies to members countries. The institutional dimension of this new agreement is not yet clear, but it will presumably be a continuation in some form of the INPFC organization. It is unlikely that the new organization will engage in or fund research. Rather, it will coordinate and recommend research on the part of member nations. Thus, without specific management responsibility, it may resemble the policy and research coordination organizations discussed below.

Policy and/or Research Coordinating Organizations

The Pacific States Marine Fisheries Commission is an interstate compact commission (AS 16.45.020) among Alaska, Washington, Oregon, California and Idaho. Its purpose is to provide a forum for the cooperative discussion of management and research issues common to the member states regarding marine resources within state jurisdiction. It does not have management responsibility or regulatory authority. It lobbies the federal government on behalf of the states for fisheries-related appropriations, and it coordinates state policy on federal legislation dealing with Pacific marine fisheries (for example, it has been coordinating state policy with respect to the federal Marine Mammal Protection Act). The commission may formulate policy advice on management issues to the member governments. It is not a research agency, nor is it a funding agency, although it has contracted with states for the preparation of management plans for species exclusively within state jurisdiction (for example, sea urchins, thresher shark and rockfish). These planning projects have been paid for from modest (approximately \$100,000) federal grants through the Interjurisdictional Fisheries Act. The agency maintains the Pacific Coast Fisheries Information Network (PacFin), which produces monthly statistics on groundfish landings. The agency also currently serves as a regional clearinghouse for coded wire tag data.

An international research coordinating body still in the formative stages is PISCES. The name of this fledgling agency is not an acronym. The organization will implement the terms of the Convention for North Pacific Marine Sciences Organizations among the United States, Canada, Russia and the Peoples Republic of China. This treaty has not yet been ratified by all parties, and the organization has not yet taken shape. However, it is intended that PISCES will facilitate and coordinate marine science research in the North Pacific (including the Bering Sea). Thus, its focus will be on oceanographic studies

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rather than fisheries research. PISCES will not have a regulatory role or management policy orientation.

Funding Organizations

North Pacific fisheries research has a variety of funding sources. The federal government is a major source of financial support. Federal money is appropriated to agencies for their own direct research activities and for grants to other organizations or a combination of both. State general fund appropriations are also a source of research funding for line agencies such as the Department of Fish and Game, for various programs at the University of Alaska, and for state agencies that make grants to others, such as the Alaska Science and Technology Foundation. Industry contributes to a few research projects, programs and organizations.

Two specific organizations are prominent on the Alaska research scene because of their role as an important source of funding for fisheries research: the National Marine Fisheries Service (NMFS), and the Sea Grant Program at the University of Alaska. The first of these, NMFS, is part of the National Oceanographic and Atmospheric Administration (NOAA), within the U.S. Department of Commerce, and it is the main federal research organization dealing with North Pacific fisheries resources in federal waters. It provides technical support to the North Pacific Management Council and to the International North Pacific Fisheries Commission. It not only makes research grants to universities and other organizations, it also has its own scientific research staff, research vessels and laboratories. Thus, it is both an important funding organization and an important research organization.

The Sea Grant Program at the University of Alaska is a conduit for federal funds to university-based researchers and others for a variety of research and outreach (educational) activities related to ocean fisheries. It is the primary source of funding for educational extension work of the Marine Advisory Program at the University of Alaska. The Sea Grant Program acts solely as a funding agent; it has only administrative and financial staff. The source of federal funding for the Sea Grant Program is the Office of Sea Grant in NOAA, U.S. Department of Commerce.

There are Sea Grant programs in all of the Pacific Coast states. The Pacific Sea Grant College Program is an association of these individual state programs. None of these state Sea Grant organizations conduct research directly; they fund research by others (mainly university marine research institutes and "outreach" agencies).

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Research Organizations

Most U.S. fisheries research is conducted by scientists with NMFS, state departments of fish and game and universities. There are only a few exceptions to this generalization. State fisheries agencies are generally not exclusively research organizations; they typically have additional responsibilities as well. Indeed, as is the case with the Alaska Commercial Fisheries Entry Commission, research may be a subsidiary activity. However, these agencies are classified as research organizations here because they *perform* research rather than utilizing research produced by others, funding research or coordinating research.

Before discussing individual research organizations, it is useful to distinguish between four broad categories of research activity: biological research, collection and analysis of harvest statistics, economic and market studies, and product development.

Types of Fisheries Research

Most of what is commonly referred to as "fisheries research" is biological and oceanographic science conducted in the field and in laboratories. All of this biological and related fisheries research is "applied science" in the sense that it aims to inform and improve the management of renewable marine resources, even if there is no immediate connection between the research and day-to-day management problems (studies of oceanographic currents, temperature and chemistry, for example, will presumably have long-term and indirect payoffs for the management of specific species). Nonetheless, the biological research carried out directly by the management agencies is likely to be more focused on practical management problems than the biological research conducted through the universities. For example, a major research priority of the management agencies and universities is understanding the migratory patterns of separate salmon stocks and identifying these stocks before they arrive at their natal streams. Thus, an agency research group may focus on perfecting coded wire tagging techniques while a university research project may approach the problem through more theoretical investigations of fish behavior and genetics.

In addition to the requirement for biological knowledge, sustained-yield management depends upon accurate harvest data. An imperative for the proper long-term regulation of individual species in the North Pacific is current information about the intensity and success of fishing effort. Therefore, collection and analysis of information about the number and characteristics of operating vessels and their landings of fish is another important general category of fisheries research. Harvest statistics are collected by management agencies.

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Economic and market studies focus on the value of the commercial fisheries to the fishing industry and consumers. Management decisions--limited entry programs, for example--are often instigated by economic rather than conservation concerns. Also, supply and demand and the competitiveness of the market profoundly affect the value of the resource to fishermen and processors. Economic and market studies examine these aspects of the fishery.

Finally, product development research seeks to improve the handling and processing of fish and to devise new uses for fish and fish by-products. Chilled sea-water systems for the holds of fishing vessels is an example of research in fish handling technology; surimi is an example of product research and development.

Research Agencies

Agencies which actually engage in research are both governmental and private. Governmental organizations exist at the international, national and state level. There is only one private research organization of significance in Alaska, and it receives most of its funding from federal grants. This section discusses international, national and Alaska state-level organizations. The counterparts of Alaska's state-level organizations in Washington, Oregon and the Canadian counterparts of the U.S. national and state-level organizations, are discussed in the following section.

At the international level of government organizations, the International Pacific Halibut Commission is an important research organization. It has a research staff of approximately 25 that is engaged in biological research and the collection and analysis of harvest data pertaining to halibut.

At the federal level, there is only one significant U.S. research organization: the National Marine Fisheries Service. Its research arm is the Alaska Fisheries Science Center in Seattle, which operates the Auke Bay laboratory in Juneau and smaller research stations in Alaska at Little Port Walter and Kodiak.

The major fisheries research organizations at the Alaska state level are either state government agencies or agencies affiliated with the university of Alaska. In the first category are the Commercial Fisheries Division (ComFish) and the Fisheries Rehabilitation, Enhancement and Development Division (FRED), both of the Alaska Department of Fish and Game. Also in the first category is the Commercial Fisheries Entry Commission (CFEC), an independent regulatory commission whose primary responsibility is implementation of limited entry laws. The Commercial Fisheries Division does biological research and collects and analyzes harvest data; FRED does primarily biological research; and CFEC engages in harvest-related research and market research (examples of recent research by CFEC are studies of permit distribution patterns, studies of permit

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sales and permit prices, examination of options for limiting entry in open crab and shrimp fisheries, and studies of the optimum number of permits in various fisheries).

A substantial program of marine research occurs within the University of Alaska. The institutional umbrella for this research is the School of Fisheries and Ocean Sciences. Within this school is the Institute of Marine Science (IMS), headquartered at the Fairbanks campus. The IMS operates the Seward Marine Center, the research vessel *Alpha Helix*, and a laboratory near Seldovia. Also within the school is the Juneau Center for Fisheries and Ocean Sciences, a teaching and research facility located at Auke Bay in Juneau. These academic institutions conduct biological research.

The Fishery Industrial Technology Center at Kodiak is another organization within the university's School of Fisheries and Ocean Science. Its mission is product development, seafood catching and handling methods, and processing technology. This agency also has an "outreach" program (education and training).

The Marine Advisory Program, also within the university's School of Fisheries and Ocean Science, is an "outreach" organization rather than a research agency. It is funded primarily by the Sea Grant Program. Its mission is to serve as a university-based extension service for the fishing industry. Thus, its relationship to research is to disseminate technical information of a practical nature that results from biological research and technological advances. It has offices in Sitka, Petersburg, Cordova, Homer, Kodiak, Dillingham, and Kotzebue.

There is only one important private, nonprofit research organization in Alaska, the Alaska Fisheries Development Foundation. This foundation was formed in 1978 as a consortium of seafood processors to conduct research in new product development and the harvesting and processing of seafood. Thus, its mission is similar to that of the university's Fishery Industrial Technology Center at Kodiak. The industrial sponsors of this organization make a financial contribution to it, but most of its money has come from the federal Saltonstall-Kennedy program, which makes grants for technological and product research by industry.

Research Agencies of Washington, Oregon, and Canada

The states of Washington and Oregon also have research programs in management agencies and universities that are comparable to those found in Alaska. Because of the considerable significance of the North Pacific fisheries resources to the economy of Washington, the organizations in this state are more prominent than those of Oregon (although the school of fisheries at the University of Oregon is an important academic research institution). Thus,

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within the Washington Department of Fisheries, the Division of Culture Assessment and Development conducts research comparable to that of the Alaska FRED Division (Washington operates 39 hatcheries), and the Division of Planning, Research and Harvest Management conducts biological and harvest research comparable that of Alaska's ComFish Division. Within the University of Washington's College of Ocean and Fishery Science, the Fisheries Research Institute carries out extensive biological research on salmon, shellfish and groundfish of the North Pacific.

The Canadian federal counterpart of the National Marine Fisheries Service is the Department of Fisheries and Oceans (DFO). It provides technical support to the Canadian representatives on international fisheries commissions. The Department operates the Institute of Ocean Science at Sydney, British Columbia, and the Pacific Biological Station at Nanamio, British Columbia.

The Canadian Province of British Columbia also has management agencies comparable to Alaska's FRED and ComFish Divisions. The University of British Columbia and Simon Fraser University also have substantial marine science research programs.

The following section identifies organizations of secondary importance to North Pacific fisheries issues.

Minor Research Organizations

The foregoing organizations may be considered "major players" in North Pacific fisheries research. There are several additional organizations that have a minor or peripheral research role in North Pacific fisheries. These organizations are classified as "minor players" either because they are comparatively small, low-budget institutions; they are concerned with research only in tangential fashion; or they are research organizations but deal with North Pacific fisheries research only occasionally or incidentally.

National Organizations

North Pacific fisheries are only an incidental concern of the Arctic Research Commission. This commission has no management authority nor does it fund research or review research proposals. It simply advises the executive branch about research priorities in the entire arctic. The commission may be best characterized as a lobbying organization for high latitude research scientists and institutes.

The National Science Foundation (NSF) is a scientific research funding agency that has made grants to scientists in academic institutions for projects involving North Pacific fisheries and marine science. However, NSF provides

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funding on a project-by-project basis, and this funding represents a small portion of the total federal support for such research.

The National Fisheries Education and Research Foundation is a private foundation supported by industry and federal (Department of Commerce) grants. It performs research on seafood handling and processing, such as model inspection programs and seafood safety surveillance procedures. It also sponsors consumer education projects. This organization does not have a special orientation to problems of Alaska seafood or fisheries of the North Pacific.

By virtue of their management responsibility for lands that touch the North Pacific or include significant bays and estuaries of the North Pacific, the U.S. Forest Service, U.S. Fish and Wildlife Service, and the National Park Service devote a portion of their research effort to anadromous fisheries and related habitat. The U.S. Fish and Wildlife Service, for example, is engaged in genetic studies of Yukon River salmon and sockeye spawning studies in the Tustumena Lake watershed. The U.S. Forest Service has an anadromous fish habitat research program which, for example, helps the agency understand the effects of logging on salmon streams.

State Agencies

The Alaska Seafood Marketing Institute (ASMI) is a promotional organization. It conducts no domestic market research, but because federal funding programs require some commitment to overseas market research, ASMI has contracted for market research in Europe and Asia (total FY 91 expenditure approximately \$180,000).

The Alaska Science and Technology Foundation is a state agency that makes grants for scientific research and technological development that hold promise for commercial application in Alaska. The agency has made grants in the area of fisheries and fish processing, but it does not have a particular focus on or special commitment to marine projects.

Alaska Department of Fish and Game, Subsistence Division, collects statistics on wildlife harvested by rural residents, including salmon, herring and shellfish. However, the volume of subsistence consumption is small in the context of the marine resources of the entire North Pacific, and the harvest data collected by the division is relatively insignificant. The Alaska Department of Fish and Game, Habitat Division, does not conduct research.

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University Agencies

From time to time, on a contract basis, the Institute of Social and Economic Research (ISER) conducts economic studies dealing with North Pacific fisheries and fisheries management. However, it does not have a special focus on or commitment to marine-related economic studies. A number of private consulting groups also perform the type of contract studies that ISER performs.

The Environment and Natural Resources Institute (formerly, the Arctic Environmental Information and Data Center [AEIDC]) occasionally contracts with a federal agency for natural resource research that involves North Pacific fisheries and anadromous fish habitat. However, this research is peripheral to the main stream of scientific research in these areas.

The Alaska Cooperative Fishery Research Unit at the University of Alaska concentrates exclusively on freshwater species.

The College of Community and Continuing Education at the University of Alaska, Anchorage, currently has a training program for fishery observers that are placed aboard highseas fishing vessels. While the information collected by the observers is valuable to fisheries research scientists, this training program is not a research activity.

From time to time individual university professors in the natural sciences, economics, and natural resource management receive contracts for research projects related to North Pacific fisheries, but these *ad hoc* studies do not constitute a major scientific resource in the broad field of North Pacific fisheries and marine studies.

Private, Nonprofit Organizations

Private, nonprofit aquaculture and fishermen's groups, of which there are many in Alaska, occasionally receive grants for special research projects. While individually these projects may be very valuable, collectively these organizations do not constitute a significant source of fisheries research.

The Center for Alaska Coastal Studies in Homer is primarily an educational facility that conducts classes and workshops on marine and intertidal biology. It is oriented mainly toward children and tourists. The center does not have a sizeable research program.

The Prince William Sound Science Center in Cordova, on the other hand, aspires to become an important marine science research organization. It is still in its formative stages. The center received a \$350,000 state appropriation to remodel a donated city building for office space. Staff of the center is trying to raise money from federal grants and contracts to expand its current

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research activities (cooperative study with U.S. Fish and Wildlife Service of sea otters).

I hope this information is useful. If you have any questions, please contact this agency.

Attachment

MAJOR INTERNATIONAL, REGIONAL AND ALASKA ORGANIZATIONS DEALING WITH NORTH PACIFIC FISHERIES

Organization	Government or Private	Parent Organization/ Affiliation/ Membership	Type of Agency	Research Activity
Alaska Board of Fisheries	State	ADF&G	Regulatory	Utilizes research; sets priorities for research.
North Pacific Management Council	Federal	U.S. Department of Commerce	Regulatory	Utilizes research; sets priorities for research.
International Pacific Halibut Commission	International	Canada/U.S.	Quasi-regulatory	Conducts its own biological and harvest research.
Pacific Salmon Commission	International	Canada/U.S.	Quasi-regulatory	Utilizes research; recommends allocations of federal treaty funds to research organizations.
International North Pacific Fisheries Commission	International	Canada/U.S. Japan	Quasi-regulatory	Utilizes research; coordinates research.
Pacific States Marine Fisheries Commission	Multi-state	Alaska, Washington, Oregon, California and Idaho	Policy & Research Coordinating	Funds management plans; coordinates state research; clearinghouse for statistical information.
PISCES	International	Canada, U.S., Japan Russia, Peoples Republic of China	Research Coordinating	Coordinates national marine highseas research activities.
National Marine Fisheries Service (NMFS)	Federal	NOAA; Department of Commerce	Funding; Research	Primary U.S. marine research agency; also funds research by state agencies and universities.
Sea Grant	State	University of Alaska	Funding	Makes grants for research and educational activities.
Alaska Fisheries Science Center (Seattle)	Federal	NMFS	Research	Research arm of NMFS for North Pacific; biological/ oceanographic research.
Commercial Fisheries Division	State	ADF&G	Research	Biological and harvest research.
Fisheries Rehabilitation Enhancement and Development Division (FRED)	State	ADF&G	Operates Hatcheries, Research	Biological research.
Commercial Fisheries Entry Commission (CFEC)	State	Independent	Implements Limited Entry; Research	Harvest research; research related to limited entry programs.

MAJOR INTERNATIONAL, REGIONAL AND ALASKA ORGANIZATIONS DEALING WITH NORTH PACIFIC FISHERIES

Organization	Government or Private	Parent Organization/ Affiliation/ Membership	Type of Agency	Research Activity
Institute of Marine Sciences	University of Alaska	School of Fisheries and Ocean Sciences	Research	Biological/oceanographic research.
Juneau Center for Fisheries and Ocean Sciences	University of Alaska	School of Fisheries and Ocean Sciences	Research	Biological/oceanographic research.
Fishery Industrial Technology Center (Kodiak)	University of Alaska	School of Fisheries and Ocean Sciences	Research	Product development; handling and processing technology.
Marine Advisory Program	University of Alaska	School of Fisheries and Ocean Sciences	Education; Extension Service	Not a research organization.
Alaska Fisheries Development Foundation	Private Nonprofit	Processing Industry	Research	Product development; handling and processing technology.

Prepared by the Legislative Research Agency, February 1992 (92.108).

Fisheries plan calls for more wild salmon

By Rob Taylor
P-I Reporter

The Washington Department of Fisheries is urging state legislators to shelve their ambitions for a massive new fish-hatchery program, saying such an effort would cost more than \$300 million and do more harm than good.

The agency, releasing a remarkable 339-page report yesterday, instead called for rebuilding the state's ailing salmon runs by imposing far-reaching and comprehensive changes in land-use controls, hatchery operation and fish harvest management.

Whether such initiatives stand much chance of being carried out was unclear yesterday. Leading state lawmakers had not seen the report.

The "Salmon 2000" report came in response to a 1988 state law calling for a plan to double the salmon catch by the end of the century.

The report spelled out ways that goal might be attempted, but made clear that the agency viewed it as a bad idea.

State Sen. Jack Metcalf, R-Langley, the law's leading sponsor, said he was "disgusted" that the report failed to recommend a doubling of fish production. He charged the agency had wildly

inflated the cost of doing so.

"They're lying," he charged. And he complained the department is run by "people who do not believe in enhancement," referring to artificial fish-production methods.

Legislative pressure for new hatcheries waned over the past year, but lawmakers failed to agree on alternative measures. A modest habitat-protection program that the House passed this year was blocked by Senate opposition.

The "Salmon 2000" report warned against inaction. Current rules governing development, logging and agriculture, it asserted,

doom the state to steady loss of salmon habitat and fish.

To reverse the trend, the agency recommended such bold actions as taxes on habitat destruction, "severe limitation" of the rate of logging in each watershed, buying back commercial fishing licenses, tightening controls on new water rights and purchasing land or development rights in prime habitat.

The report cautioned that past efforts to artificially boost fish production have often failed or gone awry — displacing wild fish, raising fish numbers at the expense of size, and wiping out valuable fish genes.

"It would be unwise to concentrate on producing vast numbers of fish to the detriment of quality, diversity and contributions to the catches providing the greatest value to Washington's economy," said former department director Joseph R. Blum, who signed a letter accompanying the report.

Specifically, the report faulted the state's past drives for salmon hatcheries, spawning channels and incubation boxes.

"Time and again we enthusiastically embraced new enhancement technology and used it extensively while it was still experimental," the report said. "Ultimately, the results have

proven disappointing."

Echoing a 1991 Post-Intelligencer series, it noted that hatchery production has often harmed wild fish by "predation, overharvest, disease transmission, genetic alteration of the native population, and competition for food and space." It stressed that wild runs are the key to maintaining production in the long run.

The report stopped short of recommending closure of any facility. Rather, it called for better integration of hatcheries with habitat protection, fishery management and the needs of wild

See SALMON, Page B2

Salmon: Emphasis on habitat

From Page 1

fish. It said, for instance, there is no point in pumping up hatchery production if the resulting large harvests would wipe out local wild runs that mix with the hatchery fish.

Hatchery growth should occur only where such conflicts can be resolved, the report suggested.

Metcalf argued that hatcheries could easily be harmonized with wild runs. Fisheries Department officials, he claimed, "support environmental extremists' point of view."

As for fish habitat, the agency called for accepting "no net loss," a slogan espoused by Gov. Gardner and President Bush only for wetlands. Far from that goal, the report said, "the real result of current laws and policies is a very definite and continuing net loss of salmon habitat."

Logging came in for special criticism. The report said that clearcuts, by accelerating runoff, can double peak flows in streams and raise water force tenfold. That can fill pools, disrupt spawning areas and shrink "overall carrying capacity for juvenile fish."

The report called for controls on the cumulative effects of multiple clearcuts, as well as urban development and other negative impacts on streams. The state Forest Practices Board recently approved a rule aimed at this goal. The report called for "a severe limitation on the percentage of a basin that can be harvested in any given decade."

The report even ventured into tax policy. Without providing details, "Salmon 2000" suggested that the state tax activities that damage salmon habitat. Alternatively, it suggested offering some payoff for protecting such things as stream banks in Eastern Washington and steep, unstable slopes in Western Washington.

And in a reference that could curb development, the report called for completing the statewide effort to set minimum standards for stream flow for fish. Only about one-third of the state's 64 river basins have been evaluated, it complained, making it hard to judge the impact of granting new water rights.

Turning to fishery management, the document urged:

■ Buying back commercial fishing licenses. It said fishing capacity far exceeds the level local runs can support.

■ Boosting the minimum catch required to keep a commercial license from lapsing. Currently the minimum is one fish per year for many licenses.

■ Raising license fees and the tax on fish brought ashore in the state. Yearly license fees currently cost \$510 for purse seiners and \$375 for troll and gillnet boats.

■ Eliminating the minimum size limit on salmon caught by sports fishers, which currently varies by species and location.

■ Marking all hatchery fish and requiring commercial fishing boats to release all wild, unmarked fish. In current law, the only release requirement for commercial fishers is that they must release chinook under 28 inches.

Frank Homan with CFEC sent this

Alaska State Legislature

Legislative Research Agency



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March 12, 1992

MEMORANDUM

TO: Senator Dick Eliason

FROM: Glenn T. Gray ^{GTG}
Legislative Analyst

RE: Use of Federal Funds for United States-Canada Salmon Treaties
Research Request 92.102 (REVISED)

You asked four questions about federal funding relating to the 1985 United States-Canada Pacific Salmon Treaty:

- 1) How are the Pacific Northwest states (Washington, Oregon and Idaho) and treaty tribes funded?
- 2) How has the Alaska Department of Fish and Game (ADF&G) spent treaty-related funds, and how dependent is the state on these funds for management of its fisheries?
- 3) Has the State of Alaska used salmon enhancement funds according to the purpose for which these funds were granted?
- 4) How would these federal funds be affected if the United States (U.S.) were to pull out of the treaty?

This memorandum begins with a summary and continues with an overview of federal funding of treaty-related activities in Alaska and other states.¹ Then it addresses federal funding of ADF&G, the intent of federal mitigation funds, and funding ramifications of terminating the treaty.

SUMMARY

Many different entities receive federal funding for treaty-related activities, including federal agencies (National Marine Fisheries Service, Fish and Wildlife Service, Department of State, and the U.S. Section of the Pacific

¹The information in this memorandum is presented with the assumption that the reader has a basic knowledge of the treaty. Legislative Research Agency Memorandum 92.014 furnishes a background to the treaty and its implementing body, the Pacific Salmon Commission.

Salmon Commission), state fisheries agencies (Alaska, Washington, Oregon and Idaho), and individual Indian tribes affiliated with three tribal organizations (Columbia River Inter-Tribal Fish Commission, Northwest Indian Fisheries Commission and Metlakatla Indian Community). Several other federal agencies "pass-through" funds to one or more of these organizations, and in some cases they tax a portion of the funds.

The ADF&G receives funds for three major categories of work: research and management activities, enhancement projects to mitigate losses by fishermen, and transboundary river enhancement activities. The ADF&G also receives funds which are used for U.S.-Canada fisheries including money for Yukon River treaty negotiations and funds for interjurisdictional fisheries authorized by the Anadromous Fish Conservation Act. Most of the treaty-related funds are first reviewed by the U.S. Section of the Pacific Salmon Commission and later receive three levels of scrutiny within the Department of Commerce. The Division of Legislative Audit completes an annual statewide audit of federal programs, but until state fiscal year (FY) 1991, treaty-related funding was not considered a major federal program, and therefore treaty contracts did not receive much review.²

Reduced state funding for ADF&G in the mid-1980s resulted in a greater dependence on federal treaty money to fund its commercial fisheries and enhancement programs. A 1987 ADF&G memorandum shows that about one million dollars worth of research and data acquisition projects originally planned for the treaty money were terminated because treaty funds were used to supplement activities previously funded by the general fund.

During FY 92, about 49 percent of the Division of Commercial Fisheries' budget for salmon management in Southeast Alaska was funded with treaty money (about \$2.7 million). The department received additional U.S.-Canada funds for a treaty coordinator position, transboundary river enhancement projects, enhancement for mitigation of fishermen losses, and through the Anadromous Fish Conservation Act. About \$17.5 million in mitigation money has been used for the operation of fish hatcheries, for contract administration, and for computer hardware and software for the coded-wire tag laboratory. Since FY 86, total treaty-related funding of ADF&G has ranged between \$3.8 and \$8.4 million per year with other U.S.-Canada funds ranging between \$635,000 and \$690,000 per year. Mitigation funds, however, are expected to end in the near future when a final payment will fulfill the original \$20 million commitment.

Written intent for the so-called mitigation money is sketchy and often conflicting. A pretreaty verbal agreement by the Reagan Administration to fund future enhancement projects for Alaska's support of the treaty has been interpreted differently by various interests that participated in treaty negotiations. Trollers believe that the treaty would not have been signed

²Throughout this memorandum FY denotes state fiscal year and FFY denotes federal fiscal year.

without their consent and that their approval was contingent upon an agreement to provide 100,000 additional enhanced chinook salmon for their fleet. The seiners and gillnetters believe that the mitigation money was also intended to provide enhanced salmon for their fleets.

The congressional record supports the notion of a pretreaty commitment by the federal government to fund enhancement projects for mitigation, for conservation purposes and to compensate Canada for possible future imbalances should they be shown to exist. The record, however, contains no reference to a target number of salmon or to specific amounts of money.

State intent for the mitigation funds evolved over time and the written record provides conflicting direction. An early proposal to develop a single world-class facility for chinook and chum production was replaced by a multihatchery approach with increased emphasis on sockeye enhancement. While ADF&G correspondence consistently stated that chinook enhancement was a priority, we found no written understanding of the amount of money that was to be provided. Instead, the department considered new proposals each year the mitigation funds were received. According to figures provided by the Fisheries Rehabilitation, Enhancement and Development (FRED) Division, 56.5 percent of the funds have been spent on chinook projects, 32.6 percent on sockeye enhancement and 9.0 percent on chum projects. Although full production goals have not yet been reached, the ADF&G has made a concerted effort to produce more salmon for harvest by commercial fishermen.

It is not clear how federal funding of ADF&G would be affected if the treaty ended. Without the treaty, however, the U.S. Section of the Pacific Salmon Commission would no longer exist and its review of and lobbying for funding proposals would terminate. Competition for federal funding would likely increase by agencies currently receiving funding, and it is likely that Congress would decrease current funding levels. Additionally, the Indian tribes would likely sue the State of Alaska in an effort to obtain rights to fish currently caught by Alaska fishermen.

FEDERAL FUNDING OF TREATY-RELATED ACTIVITIES

Congress appropriates funds related to the Pacific Salmon Treaty to many agencies. For example, during federal fiscal year (FFY) 92, the U.S. Departments of Commerce, Interior, Agriculture and State received treaty-related funds. The Department of Commerce funneled money to five state and federal agencies: National Marine Fisheries Service (NMFS), ADF&G, Washington Department of Fisheries, Oregon Department of Fish and Wildlife, and Idaho Department of Fish and Game. The Department of Interior provided funds to the Fish and Wildlife Service (FWS) and the Bureau of Indian Affairs (BIA). The FWS received some funds directly and also provided "pass-through" funds for the Pacific Marine Fisheries Commission. The BIA funded the three major Indian organizations: Columbia River Inter-Tribal Fish Commission, Northwest Indian Fisheries Commission, and Metlakatla Indian Community. Funds to the Department

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of Agriculture were passed-through the Forest Service to fund the ADF&G's transboundary rivers enhancement program. Finally, the Department of State received money to fund its role in treaty negotiations and to fund operations of the U.S. section of the Pacific Salmon Commission.

The U.S. Section of the Pacific Salmon Commission prepares an annual budget justification for treaty-related funds. The actual appropriation, however, is often less than the funding request in the budget justification. Attachment A contains a summary of the budget justifications for FFY 92 and FFY 93 which illustrates how much money was requested for these agencies. Table 1 compares the funding requests for the various agencies.

The tribal organizations rely on federal funding for research and other treaty-related activities. Larry Rutter, a policy analyst for the Northwest Indian Fisheries Commission, said that 75 percent of the money received by his commission funds research contracts completed by individual tribes.

TABLE 1
 Pacific Salmon Commission Funding Requests: FFY 92 & FFY 93

Agency	FFY 92 Request	Percent of Total	FFY 93 Request	Percent of Total
National Marine Fisheries Service	2,356,773	16.7	2,467,351	16.6
U.S. Fish and Wildlife Service	519,169	3.7	591,877	4.0
Department of State	2,000,000	14.2	2,100,000	14.2
Pacific Marine Fisheries Commission	200,000	1.4	200,000	1.3
Columbia River Inter-Tribal Fish Commission	802,101	5.7	856,238	5.8
Northwest Indian Fisheries Commission	1,992,083	14.1	2,091,627	14.1
Metlakatla Indian Community	176,352	1.3	185,666	1.3
Washington Department of Fisheries	1,272,298	9.0	1,335,914	9.0
Oregon Department of Fish and Wildlife	775,671	5.5	814,455	5.5
Idaho Department of Fish and Wildlife	305,171	2.2	316,470	2.1
Alaska Department of Fish and Game*	3,305,399	23.5	3,470,669	23.4
Transboundary Enhancement	380,000	2.7	399,000	2.7
Total	14,085,017	100.0	14,829,267	100.0

* These totals do not include funding for mitigation enhancement projects or for Yukon River treaty negotiations.

Source: Pacific Salmon Commission

Prepared by the Legislative Research Agency, March 1992 (92.102A)

FEDERAL FUNDS RECEIVED BY ADF&G

Alaska has received funds related to the U.S.-Canada Pacific Salmon Treaty since 1983 although the treaty was not signed until January 28, 1985. Congress funds three basic categories of treaty-related activities in Alaska:

- performance of research and management activities as recommended by the U.S. Section of the Pacific Salmon Commission,
- completion of salmon enhancement projects for mitigating treaty-related losses to Alaska fishermen (as a result of reduced quotas), and
- achievement of joint enhancement activities on transboundary rivers.

Although not directly related to the treaty, the State of Alaska also receives funds to negotiate a treaty for the Yukon River. Each of these funding categories are discussed below in more detail. Also, the state receives funds to manage interjurisdictional fisheries (inter-state or international) from the Anadromous Fish Conservation Act. Table 2 summarizes federal funding from these sources.

The Alaska Department of Fish and Game receives most of its treaty-related funds from the National Marine Fisheries Service (NMFS), an agency of the U.S. Department of Commerce, but during FY 92 it also received transboundary river enhancement funds from the U.S. Forest Service. Federal agencies, however, sometimes tax a percentage of the Congressional appropriation.³ Generally, grants received through NMFS are reviewed at three levels: by Alaska NMFS personnel, by the National Oceanographic and Atmospheric Agency's Grants Management Division in Maryland and by the U.S. Department of Commerce Financial Assistance Review Board in Washington D.C.⁴

³For example, in the past NMFS or one of its parent agencies (the National Oceanographic and Atmospheric Agency--NOAA and the U.S. Department of Commerce) has placed an 8 percent tax on money which it "passes through" to ADF&G. Such taxes have not been levied every year.

⁴The U.S. Section of the Pacific Salmon Commission also scrutinizes project proposals that are included in its budget justification document.

TABLE 2
Federal Contributions to Alaska for United States – Canada Fisheries Issues
(Thousands of Dollars)

State Fiscal Year	Management and Research Funding		Enhancement Funding		Total Treaty Funding FY 83 – FY 92	Other Related Funding	
	Treaty Coordinator	Southeast Region	Mitigation Funding*	Transboundary Rivers Enhancement		Yukon River Treaty Negotiation Funding	Anadromous Fish Conservation Act**
1983	0	776.1	0	0	776.1	0	***
1984	0	835.7	0	0	835.7	0	***
1985	0	869.6	0	0	869.6	0	***
1986	0	1205.8	2,680	0	3,885.8	0	***
1987	81.5	2557.5	494	0	3,132.5	200	490.4
1988	84.6	2845.8	3,844	0	6,774.2	250	490.4
1989	84.6	2745.8	394	0	3,224.7	215	401.6
1990	82.2	2585.1	3,518	0	6,185.1	234.3	402.8
1991	78.6	2585.2	5,707	0	8,370.6	234.3	404.6
1992	48.6	2729.5	1,393	378.0	4,549.1	232.3	403.6
1993	***	***	1,971		***	***	***
Total	460.1	19,736.1	20,000.0	378.0	38,603.4	1,365.9	2,593.4

* Mitigation money for FY 93 has not yet been received by ADF&G.

** These programs require state matching funds.

*** Data not available.

Sources: Aven Anderson, National Marine Fisheries Service – Alaska Region; Scott Marshall, Alaska Department of Fish and Game.

Prepared by the Legislative Research Agency, March 1992 (92.102B)

The federal government has audited some treaty-related expenditures in the past, and the Division of Legislative Audit completes annual federal compliance reviews for state agencies receiving federal funds. According to Legislative Auditor Randy Welker, major federal programs (those receiving federal contracts in excess of three million dollars) receive more scrutiny than contracts under this amount.⁵ Mr. Welker said that prior to FY 91 each federal treaty-related contract was considered separately and therefore was not considered a major federal program. For FY 91, however, the federal government considered treaty-related contracts as one program and therefore these contracts will receive more analysis for the state's single audit.⁶ According to Aven Anderson of NMFS, the U.S. Inspector General has audited the state matching funds for the so-called mitigation funding.

Research and Management Funds

The U.S. Section of the Pacific Salmon Commission requires agencies to explain how proposed projects relate to the treaty before the commission includes the projects in its annual request for funds (budget justification). The budget justification for federal FY 87 outlined three criteria used by the commission in reviewing projects: 1) the program must be directly required to implement the treaty, 2) the program must not duplicate other programs, and 3) the program must be cost-effective and coordinated with other efforts.

Beginning in 1986, the legislature reduced its funding for the Division of Commercial Fisheries. Rather than making across-the-board cuts for all regions, ADF&G transferred some of the funding from Region 1 (Southeast Alaska) to other regions of the state. The department replaced about one million dollars of state funding with U.S. treaty-related funding. A memorandum from David Cantillon, a former ADF&G regional supervisor, to Representative Sund's office provides more detail about how ADF&G responded to funding cuts (Attachment B). Mr. Cantillon said that:

[T]he availability of U.S./Canada Treaty implementation funds have allowed the continuation of a number of activities that we had to cut from the general fund budget. However, a number of research and data acquisition activities originally planned for U.S./Canada funding have been dropped or reduced to allow the continuation of more basic fishery monitoring activities that were cut from the State budget [emphasis added].

⁵Legislative Audit completes audits for all federal programs under a single audit for the State of Alaska.

⁶The completion date of the FY 91 single state audit of federal programs is expected to be completed by June or July of 1992.

Today, ADF&G is dependent on treaty-related funds to manage its salmon fisheries. According to Scott Marshall, regional supervisor of ADF&G's Southeast Regional Office for the Division of Commercial Fisheries, the department funded about 49 percent of its salmon budget for Southeast Alaska (Region 1) during FY 92 with treaty-related funds.⁷ Additionally, the department has used some of the mitigation funds for operating salmon hatcheries.

According to a memorandum dated April 8, 1991, from the department's Division of Administration director, 46 full-time equivalent positions are funded from all federal funds relating to U.S.-Canada fisheries (Attachment C). It is unclear from the division's memorandum if these positions are for FY 90 or FY 91. Attachment D however, contains more detailed information of the Division of Commercial Fisheries personnel expenses for FY 92.

Four attachments to this memorandum provide details about specific research and management projects. Several spreadsheets supplied by Scott Marshall provide some of the data used in Table 2 (Attachment D). The figures for treaty-related funding in these spreadsheets match the funding amount for FY 92 identified in a list of funds by contract number (Attachment E). Information provided by the Division of Commercial Fisheries from its FY 93 budget request document known as the "Yellowbook" provides project-level information for FY 89 to FY 91 and proposed FY 93 activities (Attachment F).⁸ Program justifications supplied by the Division of Commercial fisheries for FY 92 treaty-related funds are included in Attachment G, but the totals for the projects listed do not equal the amount of funds listed in Attachment E for FY 92.⁹ We hope that the Legislative Finance Division report about treaty funding will provide more complete information.

Yukon River Treaty Negotiation Funds

Article VIII of the Pacific Salmon Treaty specifies some parameters for U.S.-Canada negotiations concerning the Yukon River. Although the Pacific Salmon Commission is not directly involved in these negotiations, the U.S. Section of

⁷This does not include funding related to the Anadromous Fish Conservation Act, mitigation enhancement projects, the treaty coordinator, or transboundary river enhancement. Funding for the Yukon River treaty negotiations are not included in this figure either because this activity occurs outside of Southeast Alaska.

⁸The Yellowbook for FY 93 does not contain FY 92 budget information.

⁹According to Bob Clasby of ADF&G, this is because the "Yellowbook" projects are prepared over one year in advance of actual congressional appropriations. The document serves as a long-range planning tool and to obtain legislative spending authority.

the commission has recommended funding for negotiations. Alaska has received funds for these negotiations and to conduct research since FY 87, and through FY 92 almost \$1.4 million has been received by ADF&G (see Table 2).

Transboundary River Enhancement Funds

Article VII of the Pacific Salmon Treaty addresses the transboundary rivers and authorizes joint U.S.-Canada enhancement projects or enhancement projects by one of the countries with consent of the Pacific Salmon Commission. Chapter 1 of Annex IV also addresses the transboundary rivers. During renegotiation of this annex in 1988, Canada and the U.S. completed an agreement about joint enhancement of transboundary salmon stocks.

An add-on to the Forest Service's budget of federal FY 91 included \$378,000 for transboundary river enhancement. These funds were transferred to ADF&G and were shared between the divisions of Commercial Fisheries and FRED.

At this time, funding for transboundary river enhancement during FFY 92 (state FY 93), however, is in question. According to the ADF&G, the problem in obtaining these funds is that they are not carried in an agency's budget and Alaska's congressional delegation must attach these spending requests to an agency's budget during the period the budget is reviewed by committees.

Mitigation Funds

So-called mitigation funds refer to those funds provided by the federal government to mitigate adverse effects of the treaty on Alaska fishermen. The intent for the mitigation funds is to develop salmon enhancement projects to provide Alaska fishermen with additional fish as compensation for treaty-related reductions in their catches. For example, enhanced salmon produced after 1984 can be added to Alaska's chinook quota. A more detailed discussion of the specific intent of these funds is provided in the next section of this memorandum.

Originally, Alaskans expected to receive the mitigation funds in a single payment. Congressional budget cuts, however, made it necessary to appropriate the mitigation money over a number of years. Congress appropriates this money through "add-ons" to the budget rather than through an agency's budget request. To date, between \$17.6 and \$18.0 million of federal mitigation funds have been disbursed to ADF&G.¹⁰ Aven Anderson, of the Juneau NMFS office, expects that

¹⁰Records of Aven Anderson, of the Juneau NMFS office in Juneau, show that the state has received \$18,029,220. Gordon Garcia, of the ADF&G Fisheries Rehabilitation, Enhancement and Development Division, however, only has records for \$17,649,800, and a July 19, 1990 letter from former ADF&G Commissioner Collinsworth to Senator Ted Stevens stated that the state has received

the last mitigation fund payment of \$1,970,780 will be dispersed later this year. An additional \$220,000 may also be carried over from last year, although Mr. Anderson said that there is no guarantee that these funds will reach ADF&G.

The mitigation funds have been spent to enhance chinook, chum and sockeye salmon, for contract administration, and for computer hardware and software for the coded wire tag laboratory. Table 3 illustrates how this money have been allocated by category, and Table 4 indicates who has received these funds. Table 3 shows that while most of the funds have been used for chinook salmon enhancement, a significant amount of the money has been used for sockeye enhancement and a lesser amount has been allocated to chum enhancement projects (chinook - 56.5 percent, sockeye - 32.6, and chum - 9.0).¹¹ It should be noted, however, that ADF&G does not expect that the number of potential adult salmon production indicated in Table 3 to be reached until four or five years after all of the projects come on line. Although ADF&G accounted for natural losses during calculation of the potential adult production, it is unknown how many of these fish will eventually be harvested by Alaska fishermen. Actual catch depends on many factors including harvest and natural survival rates.

TABLE 3
Use of Federal Mitigation Funds by ADF&G by Category

Funding Category	Potential Adult Production*	Funds Allocated	Percent of Total
Chinook Salmon	194,600	\$9,972,200	56.5**
Sockeye Salmon	1,966,200	5,761,000	32.6
Chum Salmon	2,040,00	1,593,100	9.0
Contract Administration	n/a	213,500	1.2
Tag Lab Computer Software & Hardware	n/a	110,000	0.6
Total Funds Allocated***		\$17,649,800	100.0

* This potential production would not be reached until four or five years after the projects have been completed.

** A July 19, 1990 letter from ADF&G commissioner Collingsworth to Senator Ted Stevens states that \$10,082,200 out of \$17,710,700 was spent for chinook salmon enhancement projects (56.9 percent).

*** National Marine Fisheries Service records indicate that \$18,029,220 were distributed to the state.

Prepared by the Legislative Research Agency, March 1992 (92.102C)

¹¹Gordon Garcia of the FRED Division provided the data for this table.

TABLE 4
Ultimate Distribution of Federal Mitigation Funds by Recipient

Recipient	Amount	Percent of Total
Northern Southeast Regional Aquaculture Association	\$6,499,100	36.8
Southern Southeast Regional Aquaculture Association	3,086,000	17.5
Alaska Department of Fish and Game	8,064,700	45.7
Total Distributed	\$17,649,800	100.0

Source: Gordon Garcia, FRED Division, Alaska Department of Fish and Game

Prepared by the Legislative Research Agency, March 1992 (92.102D)

INTENT OF FEDERAL SALMON ENHANCEMENT FUNDS FOR MITIGATION

The Pacific Salmon Treaty, pretreaty negotiations, and renegotiations of specific annexes of the treaty established direction for salmon enhancement projects in Alaska. Salmon enhancement was proposed to address four matters: conservation issues, equity concerns with Canada, mitigation for losses by Alaska fishermen and transboundary rivers. Other than a cursory reference to enhancement for conservation purposes by the chief U.S. treaty negotiator during an address to Congress, we found no further mention of enhancement for this purpose.¹² During treaty negotiations and soon after it was signed, some people speculated that enhancement could be used to address equity concerns

¹²Enhancement could conceivably protect wild salmon stocks because theoretically there would be less pressure on them by fishermen, but this would require fishing terminal areas where fish quality may be poor. Enhancement could also have negative conservation affects due to biological interactions with wild stocks and over-fishing of mixed stock fisheries in an attempt to recover hatchery salmon before they lose their silver.

with Canada if a determination was ever made that an equity imbalance existed. Other than a few references to equity concerns in documents written soon after the treaty was signed, we found no record of additional discussions about initiating enhancement projects to resolve equity concerns. Transboundary river enhancement, discussed above, is covered by a separate agreement signed during 1988. Alaskans, however, have paid much attention to enhancement projects that mitigate treaty-related losses to Alaska fishermen and hence this money is commonly referred to as mitigation funds.

Mitigation funds appropriated to ADF&G through NMFS resulted from the commitment in the treaty for salmon enhancement (Article V) as well as a pre-treaty unwritten agreement between representatives of Alaska fishermen gear groups and U.S. treaty negotiators. Unfortunately, written intent for the federal mitigation funds is sketchy and often conflicting and opinions vary greatly about the precise content of the oral agreement. The lack of clear direction for the use of these funds has resulted in confusion about how much of the funds were intended for chinook enhancement for trollers, sockeye enhancement for gillnetters and chum enhancement for seiners.

We gathered written information about the intent of the federal mitigation funds from state memorandums, letters and interviews. Attachment H contains appropriate portions of the written correspondence. We begin this section with a description of the pretreaty oral agreement, continue with a discussion of congressional intent for the funds, and end with a discussion of how State of Alaska intent for the funds has changed throughout time.

Pretreaty Agreement

Apparently, during treaty negotiations the federal government agreed to provide salmon enhancement funding to mitigate losses suffered by Alaska fishermen as a result of the treaty. This agreement was not in writing and unfortunately participants have different recollections about the exact nature of the agreement. Members of the commercial troll fleet feel the treaty would not have been signed without their consent and that their approval was contingent on mitigation funds promised to them to produce more chinook salmon. Some other people think that the funds were meant also to include chum and sockeye enhancement.

During a telephone interview with the chief U.S. negotiator for the original treaty, Theodore Kronmiller stated that he did not recall an agreement to produce a specific number of salmon. He said, however, that gillnetters, trollers and seiners took part in discussions about enhancement projects. Also, Mr. Kronmiller said that enhancement was considered as a means to offset an equity imbalance between Canada and the U.S. if one developed.

In a letter from the Alaska Trollers Association (ATA) dated June 1, 1990 to ADF&G Deputy Commissioner Norman Cohen, Executive Director Dale Kelley stated ATA's belief that the original intent of the mitigation funding was to put

"100,000 additional chinook in the holds of the troll fleet on an annual basis." In another letter, ATA Director Dale Kelley said that trollers understood that mitigation projects would provide the trollers with this number of chinook salmon by 1990. Gary Slaven, a former alternate commissioner for the State of Alaska to the Pacific Salmon Commission, said that the federal government opposed a \$30 million proposal to buy back troll permits, but that the trollers and the federal government agreed to an enhancement program that would result in 100,000 chinook harvested by the trollers.

Gillnetter Jev Shelton, current vice-chair of the commission's Northern Panel and one of Alaska's delegation to the treaty negotiations, said that it was unclear how the mitigation money would be spent. He said that discussions about targets for salmon enhancement during treaty negotiations did not necessarily obligate the government to produce specific numbers of chinook, chum and sockeye salmon. Mr. Shelton said that when the treaty was negotiated, the technology was not present to successfully produce sockeye salmon and therefore less emphasis was placed on sockeye production.

Congressional and U.S. Administration Intent

Written references to the mitigation funds provide little insight into how Congress intended the funds to be spent. During testimony before the Subcommittee on Fisheries and Wildlife of the House Merchant Marine and Fisheries Committee, chief U.S. negotiator Theodore Kronmiller stated that an obligation for enhancement existed for conservation purposes, for equity adjustments, and to mitigate harvest losses resulting from the treaty.¹³ During his testimony, Mr. Kronmiller noted that there were no commitments to spend a specific amount of money, "but there were expectations that we would meet rather large obligations."

A letter from Secretary of State George Shultz to Senator Stevens dated March 7, 1985 and later published in the congressional record, states that salmon enhancement will restore salmon harvests limited by the treaty and "compensate Canada for any imbalances that might occur with respect to Article III of the Treaty, the so-called equity provisions [emphasis added]." The letter also stated that "U.S. negotiators, including representatives of the Department of State, deemed Federal support of local enhancement programs to be one of the key elements in enabling the states to agree to harvest cutbacks . . ." The letter, however, does not differentiate between the different groups of fishermen.

Senator Stevens, in a 1986 article in *Environmental Law*, stated that "[t]he Reagan Administration recognized the need to restore the salmon stocks by

¹³Fish and Wildlife Miscellaneous, Part 1. Hearings before the Subcommittee on Fisheries and Wildlife, House Merchant Marine and Fisheries Committee, February 21, 25, 27, March 5, 1985, pp. 92 - 104.

enhancement as soon as resources permitted in order to mitigate any economic dislocation resulting from the treaty fishing limits."

A 1985 report to the Senate Committee on Appropriations stated that "[t]he Committee recognized the commitments made by the administration to Alaska during the negotiations" but that initiatives to reduce the budget would only permit \$3.5 million in matching funds rather than the state's request for \$25 million.¹⁴ The committee agreed to this appropriation "for the express purpose of contracting with Alaska Department of Fish and Game to carry out enhancement efforts which implement the United States-Canada Salmon Treaty [emphasis added]."

The September 3, 1986 Senate Report accompanying the Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriation Bill for FFY 87, also contained similar language. The bill appropriated \$4 million of matching funds "for the express purpose of contracting with the Alaska Department of Fish and Game to carry out the enhancement efforts which supplement the stock rehabilitation initiative mandated by the United States-Canada Salmon Treaty [emphasis added]." Congress required that the Pacific Salmon Commission "be appraised of the specific nature and results of the enhancement efforts, to enable coordination with all regional samon [sic] enhancement activities."

Senator Ted Stevens reaffirmed that Congress had no specific intent for the use of the mitigation funds in a letter dated June 29, 1990 to ATA Director Dale Kelley: "It was clear to all concerned in the negotiations that the enhancement of chinook stocks would be a priority [emphasis added]," but that Congress delegated the State of Alaska the authority to allocate the enhancement funds to specific projects. Senator Stevens wrote that "there was no Congressional intent on how the funds would be specifically allocated. We simply did not address it at that time because the State assured us that it would allocate the funds fairly [emphasis added]."

Other Evidence of Intent for Mitigation Funding

Written correspondence by the governor and ADF&G officials provides information about the how the state intended to use the mitigation funds. Although officials often acknowledged that chinook enhancement was a priority, an early emphasis on chinook projects gradually expanded to include sockeye and chum projects.

Soon after the treaty was signed, Governor Sheffield wrote Senator Stevens providing one of the first indications of how the state intended to spend the mitigation funds.

¹⁴Senate Committee on Appropriations Report 99-150 dated 30 September 85.

In the near future, the United States may have to propose a plan to Canada to balance U.S. interceptions of Canadian origin fish with Canadian interceptions of U.S. origin fish either through modifying fishery regimes or enhancing into Canadian fisheries . . . It is our view that mitigation for economic impacts of the treaty is a federal responsibility. Accordingly we are submitting the enclosed enhancement proposal which would: 1) facilitate the production of 100,000 adult chinook salmon and 1,000,000 chum salmon annually for harvest; 2) provide for sockeye enhancement in transboundary rivers, and; 3) provide for required research, and management to support treaty obligations [emphasis added]."

This letter provides the first written record of specific intent for the enhancement funds that we found. Governor Sheffield requested \$1,720,000 for operational costs and a one-time payment of \$20,400,000 for capital expenses. The governor mentioned that enhancement goals would include production of a specific number of chinook and chum, but no number was specified for transboundary river sockeye enhancement. The governor mentioned that the enhancement funds would be used for research and management (a separate proposal in the letter requested additional funds for research).

Congressional determination to cut the budget encouraged the state to modify its proposal. A month after the governor's letter to Senator Stevens, ADF&G Commissioner Collinsworth wrote that funding for the Pacific Salmon Commission seemed assured, but funding for "research, management, and enhancement in Alaska" has not solidified.¹⁵ During April, John Katz, director of state/federal relations sent a letter to the Alaska congressional delegation modifying the governor's proposal. Mr. Katz suggested that the maximum federal contribution be \$20,000,000 with a limit of \$4,000,000 per year and that the state match the federal contribution.¹⁶ This represented a reduction in the amount and timing of federal assistance for enhancement and omitted the governor's earlier reference to using enhancement to balance U.S. interceptions of Canadian origin fish.

In a letter dated February 21, 1985 to ATA Director Earl Krygier, ADF&G Commissioner Collinsworth said that two purposes for enhancement "had been part of the delegation discussion since at least 1980": offset losses due to fisheries quota reductions and "the accommodation of Canadian harvest." Additionally Commissioner Collinsworth said that "[p]articular reference has been made to compensation for transboundary river losses and reductions in the chinook troll fishery." Commissioner Collinsworth added that the governor's letter to the congressional delegation was "somewhat generic in nature since

¹⁵February 21, 1985 letter to ATA Director Earl Krygier from Commissioner Collinsworth.

¹⁶Letter from John Katz, director of state/federal relations, to the Alaska congressional delegation, April 10, 1985.

there are different ways that in particular, the chinook enhancement could be carried out."

Alaska Department of Fish and Game appointed the Chinook Technical Team during March 1985 to "prepare a plan to produce 100,000 additional chinook salmon to offset fishery reductions required under the treaty to rebuild coast wide chinook natural stocks."¹⁷ The plan was entitled Evaluation of Chinook Mitigation Hatchery Proposals by the Southeast Alaska Chinook Technical Planning Team and was reviewed by the Northern and Southern Southeast Regional Planning Teams November 18-19, 1985.¹⁸ Draft minutes of the meeting provide conflicting messages about ADF&G's intent for allocation of federal enhancement funds.¹⁹ At the beginning of the meeting Deputy Commissioner Steve Pennoyer said that during treaty negotiations \$22,000,000 was proposed for "mitigation of chinook, sockeye, and chum." Mr. Pennoyer said that chinook mitigation projects were addressed first because chinook enhancement is "the most complex of these species and requires the greatest lead time," but that "[t]he door has not been closed to use of federal funds for other species enhancement. . . ." Responding to a statement by ATA Director Earl Krygier that the treaty discussion only addressed 100,000 king salmon, Mr. Pennoyer said:

Transboundary sockeye mitigation was also discussed but not in terms of specific figures. The treaty only references hatchery add-on for chinook. Chum salmon possibilities were discussed in terms of future equity mitigation.

According to the draft minutes, later during this meeting Mr. Pennoyer implied that the \$22,000,000 for enhancement was intended for a single facility that would produce 100,000 chinook for mitigation purposes:

During treaty discussions, a number for chinook enhancement was required. 100,000 chinook was arbitrarily determined as a most-likely estimate of mitigation need. \$22 million was determined as commensurate with a most-likely estimate of a one-time appropriation to fund a world-class facility to achieve this mitigation [emphasis added].

Although it is not always clear if the figure of 100,000 chinook meant salmon produced or salmon harvested by the trollers, two statements made during this

¹⁷Steve Pennoyer, letter to Southeast Alaska Chinook Technical Team members, April 8, 1985.

¹⁸Regional planning teams composed of ADF&G and regional aquaculture association personnel complete comprehensive salmon enhancement plans.

¹⁹The Chinook Planning Team operated under the assumption that \$20 to \$30 million would be available for funding capital expenses and additional moneys would be available for operating chinook programs.

meeting imply that the intent was to have the trollers catch this number of fish. Mr. Pennoyer said that "[i]deally, we would like to get the mitigation chinook taken by existing troll fisheries" but he acknowledged that treaty commission constraints could inhibit this objective [emphasis added]. During the meeting, Steve McGee of the ADF&G Private Nonprofit office said that "[t]he consensus is to retain the 100,000 annual harvest goal of chinook primarily for trollers, but to adjust the number of smolt releases upwards in order to remain conservative" (i.e., account for possible low catch and survival rates). The meeting ended with the regional planning team's endorsement of a multi-hatchery concept (rather than a single large hatchery) to produce 100,000 harvestable chinook salmon.

First year mitigation money was used to initiate chinook salmon enhancement projects, but throughout time projects for chum and sockeye were included. The ADF&G received the first increment of money from the federal government for mitigation during April 1986. The commissioner decided to use the initial allocation of mitigation funds for two chinook projects: a Whitman Lake hatchery and the Medvejie Creek hatchery.²⁰ During 1986, after consultation with gear groups and aquaculture associations, ADF&G funded a variety of projects using mitigation money. Throughout the remaining years of mitigation funding project proposals, differences in opinion arose between the different gear groups about how the mitigation money should be spent.

The first written documentation we found mentioning a specific target for sockeye salmon was in a February 6, 1987 letter from ADF&G Deputy Commissioner Steve Pennoyer to Alaska fishermen requesting ideas for mitigation projects:

Originally, a sum of \$20 million had been discussed as an appropriate total to design and construct enhancement projects to produce 100,000 chinook, 1 million chum, and 20,000 sockeye salmon on an annual basis.

The ADF&G hoped to make these numbers of salmon available for harvest by Alaska fishermen. As the length of the summer troll season decreased, however, trollers realized that more fish would have to be produced to reach a goal of 100,000 chinook salmon harvested because of reduced harvest rates.²¹

²⁰July 19, 1990 letter to Senator Ted Stevens from Commissioner Collinsworth.

²¹A harvest rate high enough to assure catch of all these numbers of fish in a mixed-stock fishery could result in an over-harvest of fish originating from Canada and the Pacific Northwest. Therefore, as the length of the chinook harvest season is shortened to assure the catch remains below the quota, the harvest rate also declines. The attached letter from ATA Executive Director Dale Kelley, dated June 1, 1990, further explains how harvest rates could result in less than 100,000 chinook being caught by trollers.

During 1987 and 1988, gear groups continued to express conflicting desires about how the mitigation money should be used, and at one point Deputy Commissioner Pennoyer suggested Board of Fisheries involvement in the allocation of funds for salmon enhancement projects.²² Mr. Pennoyer, however, stated a preference to commit "a significant portion of the remaining available funds" to chinook salmon enhancement. A March 25, 1988 letter to mitigation fund reviewers from FRED Division Director Brian Allee also stated that "[t]he priority of chinook salmon with these funds still remains," but that "this priority was not meant to preclude the submittal of project proposals for sockeye and chum salmon enhancement."

In a letter to Senator Stevens, Commissioner Collinsworth said the "[i]nitial goals of 100,000 harvestable chinook salmon, 1 million chum salmon and 20,000 to 40,000 sockeye salmon were established as a beginning basis for mitigation." The letter stated that approximately 208,000 adult chinook should be available on an annual basis when these enhancement projects are completed.

During 1988, Donald Amend of the Southern Southeast Regional Aquaculture Association, Inc. expressed concern to Governor Cowper that mitigation funds were being used for operating expenses as well as capital expenses. In a letter to the governor dated April 27, 1988, Mr. Amend stated that \$891,000 of \$10,382,100 in mitigation funds had been used for operational expenses and that ADF&G proposed to use \$471,440 to operate FRED facilities. The letter also expressed concern about how the hatchery programs would be funded when the mitigation funds ran out if the state became dependent on the federal mitigation money to operate the hatcheries.

Alaska Trollers Association Director Early Krygier wrote about his disappointment with the mitigation program in a May 24, 1988 letter to ADF&G Commissioner Collinsworth. Mr. Krygier said that he understood that the mitigation program was originally meant for the troll fleet and that a disproportionate amount of the funds were allocated to other gear groups.²³ Mr. Krygier also expressed concern that the legislature did not fully fund operational expenses for the hatcheries because federal mitigation funds were available.

²²Steve Pennoyer, ADF&G deputy commissioner, Letter to ATA Director Earl Krygier, May 6, 1987.

²³Mr. Krygier said that the money had been allocated as follows: two million for the trollers, four million for the gillnetters, and four to five million for the seiners. Commissioner Collinsworth replied in a letter dated June 16, 1988 that funds for FFY 86 and FFY 87 and proposed spending for 1988 chinook projects would receive the bulk of the funding (chinook - 67.5 percent, sockeye - 29.5 percent, and chum - 3.0 percent). According to information provided by ADF&G for Table 3, however, allocation of the mitigation funds by salmon species were as follows: chinook - 56.5 percent, sockeye - 32.6 percent and chum - 9.0 percent.

Representatives of the ATA continued to be critical of the enhancement program during 1990 and 1991 including concerns that:

- only 18,000 chinooks were added on to the chinook quota for 1989,²⁴ "far less than the 100,000 goal,"²⁵
- the harvest rate for chinook salmon decreased with the shortened length of the troll season and therefore more chinook would have to be produced than previously estimated to reach the 100,000 harvest goal,²⁶
- the 1990 proposal for use of enhancement funds was unfairly weighted toward sockeye enhancement, "71 times the original stated loss of 20 - 40K sockeye,"
- the "funds were not dedicated to assist the State develop new sockeye technology, rehabilitate stocks that have fallen victim to management error or natural decline, or address obligations under the Transboundary Annex," and that
- "With or without a Treaty it remains the responsibility of the State to assure sound management of our fisheries. . ."²⁷

In summary, we found no specific congressional intent for how the enhancement funds would be allocated among salmon species. Intent by the ADF&G seems to have evolved over time. Written correspondence does not answer questions about the amount of money that should be spent on each salmon species; specific targets for fish production, and whether these fish were to be harvested or just produced; how operational expenses of the hatcheries were to be funded; and how to accommodate reduced catches of enhanced fish resulting from a reduction in the length of openings. Although the mitigation program has not yet reached its production goals, the ADF&G has made a concerted effort to produce more enhanced salmon for commercial harvest.

²⁴A January 3, 1992 ADF&G informational report about chinook harvests to the Alaska Board of Fisheries indicates that in 1991 the troll component of the hatchery add-on was 38,234.

²⁵Dale Kelly, ATA executive director, letter to Brian Allee, director of the FRED Division, January 30, 1990.

²⁶Dale Kelley, ATA executive director, letter to ADF&G Deputy Commissioner Norman Cohen, June 1, 1990.

²⁷Dale Kelley, ATA director, letter to Kevin Duffy, ADF&G FRED Division, June 17, 1990.

EFFECT OF TERMINATING THE TREATY

Article XV of the treaty permits either the U.S. or Canada to terminate the treaty one year after notification of the other party. While it is possible that discontent from Alaska could lead to termination of the treaty, the agreement is between the two national governments and its formal termination could only be initiated at the federal level.

It should also be noted that if the treaty were to end, it is likely that Indian tribal interests would initiate a law suit against the State of Alaska to reduce the state's salmon catch.²⁸ Twenty-four Indian tribes agreed not to sue Alaska over salmon allocation as long as the Pacific Salmon Treaty remains in effect.

It is not clear how federal funding of ADF&G would be affected if the treaty terminated. Currently, the Pacific Salmon Commission oversees agency requests for federal research and management funds. According to Earl Comstock, fisheries specialist for Senator Ted Stevens, if the treaty terminated, the Alaska congressional delegation would attempt to retain federal funding for ADF&G, but it is likely that federal and state agencies would become more competitive for the funds.

Since the Pacific Salmon Treaty was implemented in 1985, the State of Alaska has used federal treaty-related funds to support a significant portion of its commercial fisheries and hatchery programs. Treaty-related money funds about 43 percent of the budget for management of the commercial finfish fisheries in Southeast Alaska. Over \$17.5 million has been used to provide capital and some operating expenses of hatcheries. Additionally, the state has received funds for transboundary river enhancement and to fund a treaty coordinator position. These funds, as well as funds provided the Anadromous Fish Conservation Act, could be in jeopardy if the treaty were to terminate.

I hope this memorandum answers your questions about the treaty. We will forward additional information to you as soon as the Legislative Finance Division completes its current inquiry about salmon treaty funds spent by ADF&G. Please contact this agency if may provide further assistance.

Attachments

²⁸For example, ADF&G biologists estimate that approximately 80 percent of the chinook salmon caught in Alaska originate from outside of the state (about 40 percent from British Columbia and 40 percent from Washington and Oregon).

ATTACHMENT A

PACIFIC SALMON COMMISSION

BUDGET JUSTIFICATIONS FOR FFY 92 AND FFY 93

UNITED STATES SECTION
of the
PACIFIC SALMON COMMISSION

BUDGET JUSTIFICATION

Fiscal year 1992



PACIFIC SALMON TREATY

* BUDGET JUSTIFICATION - FISCAL YEAR 1992 *

1. Introduction

The Pacific Salmon Treaty Act of 1985, Public Law 99-5, charges the United States Section of the Pacific Salmon Commission with responsibility for implementation of the Pacific Salmon Treaty, a bilateral treaty entered into with Canada in 1985. As in previous years, responsibility for funding Treaty related programs rests with the United States Government. This document represents the U.S. Section's best judgement of the funding required in fiscal year 1992 to implement the Treaty. The requests, by agency, are as follows:

Department of Commerce	<u>\$8,015,312</u>
National Marine Fisheries Service	2,356,773
Alaska Department of Fish and Game	3,305,399
Washington Department of Fisheries	1,272,298
Oregon Department of Fish and Wildlife	775,671
Idaho Department of Fish and Game	305,171
Department of Interior	<u>3,689,705</u>
<u>U.S. Fish and Wildlife Service</u>	<u>719,169</u>
U.S. Fish and Wildlife (direct)	519,169
Pacific Marine Fisheries Commission (FWS pass-through)	200,000
<u>Bureau of Indian Affairs</u>	<u>2,970,536</u>
Columbia River Inter-Tribal Fish Commission	802,101
Northwest Indian Fisheries Commission	1,992,083
Metlakatla Indian Community	176,352

Department of Agriculture

380,000

U.S. Forest Service

Alaska Department of Fish and Game
Transboundary Enhancement
(USFS pass-through)

380,000

Department of State

2,000,000

Yukon River Support

704,238

The U.S. Section of the Commission has agreed to endorse for funding only those programs that meet the following criteria:

The program must be directly required to implement the Treaty, not merely of incidental benefit to that goal;

The program must not, in whole or part, duplicate any other program;

The program must be cost effective, coordinated to the greatest possible degree with other efforts, and of immediate, ascertainable benefit to the treaty implementation effort.

2. Justification of Funding Requested

For fiscal year 1992, the U.S. Section is requesting \$8,015,312 for the Department of Commerce, \$3,689,705 for the Department of the Interior (\$719,169 for U.S. Fish and Wildlife Service, \$2,970,536 for the Bureau of Indian Affairs), \$380,000 for the Department of Agriculture and \$2,000,000 for the Department of State.

The amount that has been requested for the Department of Commerce represents a 6.3% increase from the amount requested in FY91 to cover inflationary costs. No new projects are requested.

The proposed budget for the Department of the Interior includes a 6.3% increase to cover inflationary costs and an expansion of one project. Under the U.S. Fish and Wildlife Service, there is a request for \$200,000 to fund the Pacific States Marine Fisheries Commission to serve as the single data base for the U.S. Section under the Treaty. Funding for this project last year was \$62,500. As part of the effort to improve the collection and distribution of data on stocks, both parties have agreed to develop a single repository of such information.

In FY91 a request was included under the U.S. Fish and Wildlife Service, for funding salmon enhancement programs on the transboundary rivers of Alaska and Canada. Congress, however, appropriated funds through the U.S. Forest Service (Department of Agriculture) for this program. The State of Alaska now prefers that funding source because

of the low overhead and expeditious pass-through. This funding is needed to fulfill ongoing bilateral commitments made in 1988. This document includes a funding request for \$380,000 through the U.S. Forest Service (Department of Agriculture) rather than the U.S. Fish and Wildlife Service (per FY 91). The governments of the two countries agree that increased salmon production through enhancement programs is essential to resolving very contentious harvest sharing disputes on these rivers.

Under the Department of State, the U.S. Section is requesting an increase in the contributions of the Parties from the current level of \$725,000 (\$ Canadian) to \$1,000,000 U.S. (\$1,150,00 Canadian) to fund the Pacific Salmon Commission Secretariat. There is also a FY91 shortfall request of \$135,600 to fulfill the U.S. obligation for the Pacific Salmon Commission FY91-92 fiscal year. This was requested but not funded in FY91. The Pacific Salmon Commission was formed five years ago. At that time, the parties made a good faith attempt to predict the costs of operating the offices of the Secretariat. Over the past five years it has become apparent that the initial fiscal predictions did not accurately reflect the needs of the Commission, particularly with regard to the management of fisheries on the Fraser River. In addition, there has been no increase in the Parties contributions for the last five years and inflation has effectively decreased the Parties support. For the past several years, the Commission has relied on carryovers from the previous commission (IPSFC) and surpluses brought about by high prices for fish caught in Fraser River test fisheries to fund necessary programs. In FY91 this practice has jeopardized the scientific integrity of the test fishing program and caused a funding shortfall. The increased funding from the U.S. would, of course, be contingent upon Canada providing a matching increase in their contribution. It is the Parties intent that, if full funding of the ongoing programs is secured, any surpluses from the test fishing program would be used to reduce the contributions of the Parties for the subsequent year.

3. Background

In 1985, after years of arduous negotiations, the United States and Canada entered into a treaty on the interception of salmon stocks shared between the two countries. The Treaty is based on the concepts of conservation and equity; protection of a unique and priceless resource; and the equitable sharing of these resources between the two countries. The Treaty established a bilateral commission, the Pacific Salmon Commission, to establish fishery regimes in accordance with the principles of the Treaty.

The salmon of the Northwest and Alaska are a tremendous economic, recreational, and cultural resource. To commercial fishers, they are their livelihood. To recreational fishers, they are the prize sought above all other fish. To the Indian tribes of the Northwest, they provide spiritual as well as physical sustenance. Hatched in the inland rivers, lakes and streams and maturing in the ocean, the salmon return to their natal waters to spawn and renew the cycle. Their

incredible journeys link the oceans and the rivers and bind together people throughout the Northwest, Canada, and Alaska.

Much of the research funds that have been requested this year, as in past years, will be spent on research that enables the agencies to better determine the migratory patterns of salmon stocks and where, when, and by whom the fish are caught. This, in turn, provides the necessary data for the countries to properly allocate and conserve the salmon stocks.

Among the techniques that are used for stock identification are coded wire tagging, scale sampling, and genetic stock identification. Coded wire tagging, the most commonly used technique, involves inserting a small, coded piece of microwire in the snout of a fish, usually a hatchery fingerling. The adipose fin of the fish is then clipped, identifying it as a fish that has been tagged. If the fish is caught, either in a recreational or a commercial fishery, or recovered in a spawning ground survey, the snout is removed and sent to one of the management agencies. The tag is then read, providing researchers with valuable insight as to which stocks are involved in a particular fishery.

In an area such as the west coast of Vancouver Island, British Columbia, fish from a variety of stocks mingle and are caught in mixed stock fisheries. Techniques such as coded wire tagging tell fishery managers what effect a fishery is having on individual stocks, such as Columbia River spring chinook or Queets River coho, what steps must be taken to rebuild depressed stocks and what healthy stocks can withstand fishery pressures. These techniques are also providing the information necessary to meet the goal of the Treaty that each party should benefit from the production of salmon originating in its waters.

4. Yukon River Studies in Support of Negotiations

The last set of program justifications included in this document detail two program proposals from the U.S. Fish and Wildlife Service and one from the Alaska Department of Fish and Game that concern research in support of current negotiations with Canada regarding sharing of Yukon River salmon stocks. Alaska Fish and Game requests \$275,600; U.S. Fish and Wildlife Service requests a total of \$425,200.

The Pacific Salmon Treaty established a framework for conduct of Yukon River negotiations, but the treaty itself is not the vehicle through which the negotiations proceed nor will the terms of the Treaty necessarily apply to the Yukon. In other words, the Yukon River negotiations are a separate matter from direct implementation of the Pacific Salmon Treaty, and, thus, we have separated Yukon River program requests from other programs. The U.S. Section believes the programs are fully justified and recommends that they be funded.

5. National Marine Fisheries Service Pre-existing Pacific Salmon Related Programs

The National Marine Fisheries Service has carried out a series of Pacific Salmon Treaty related programs, since before the Pacific Salmon Treaty was signed. These programs are beneficial to overall Pacific salmon management and production and have important incidental benefit to the implementation of the treaty.

The U.S. Section is composed of state, federal, and tribal fishery managers. In our domestic managerial capacities, we support those pre-existing programs and urge that they be funded. Nevertheless, we believe that those programs should be appraised on their own merits, independent of the Treaty.

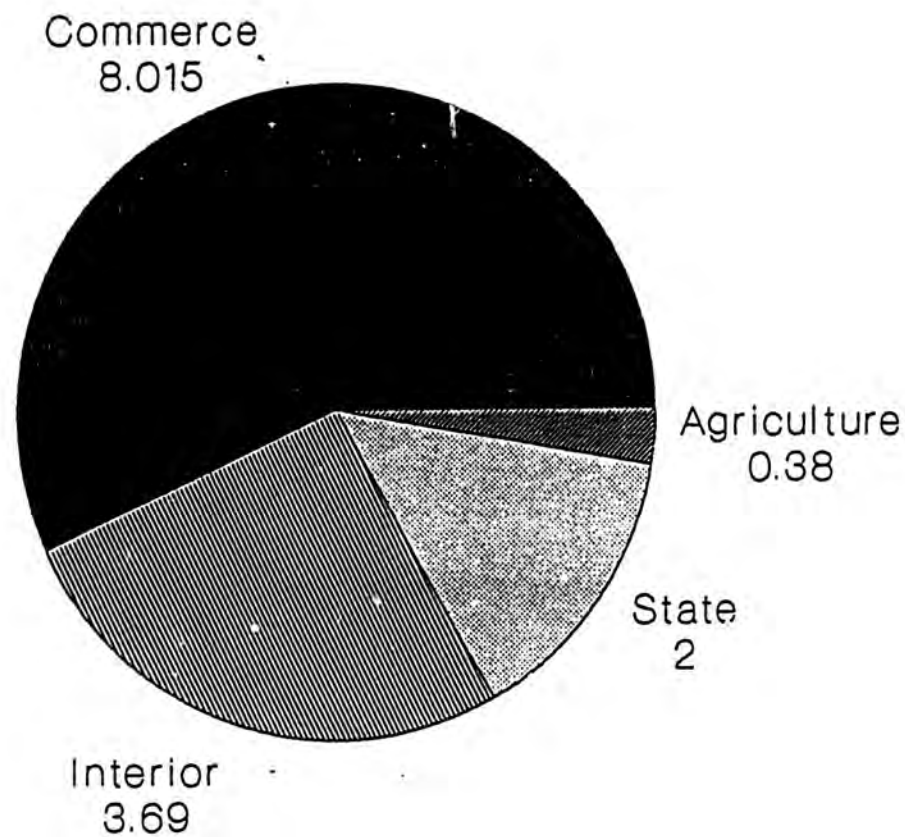
SUBMITTED BY:



Guy R. McMinds, Chairman
Budget Committee

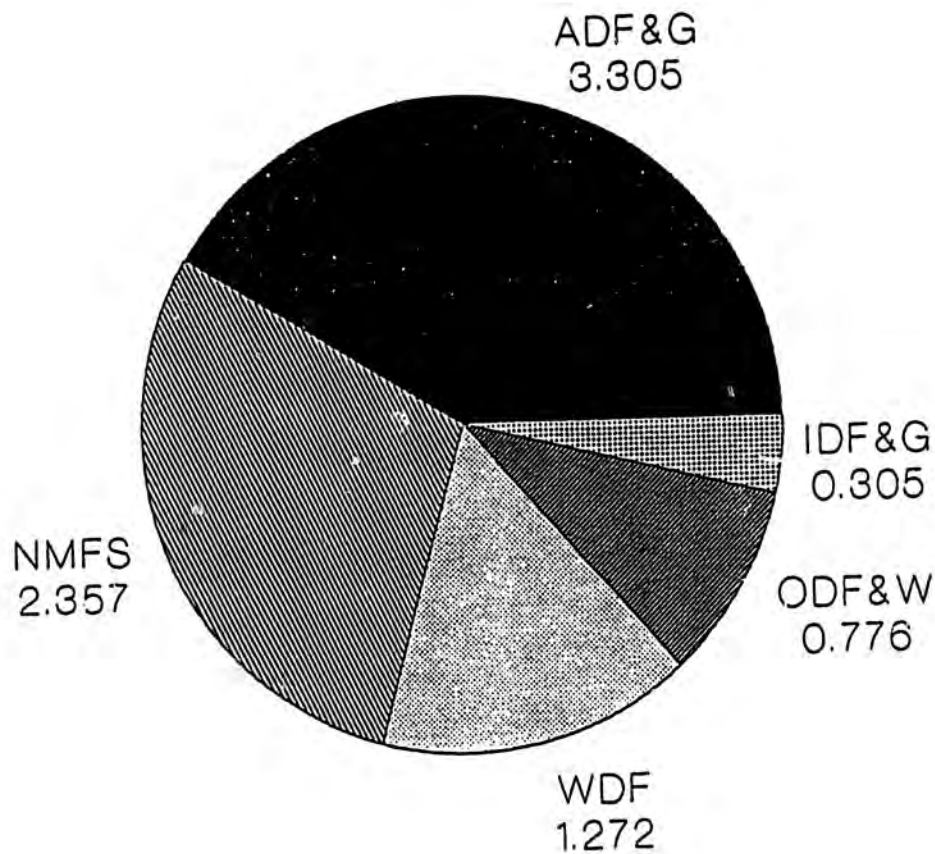
U.S. Section, Pacific Salmon Commission

Fiscal Year 1992 Total PSC Recommended Funding Total funds: \$13,743,017



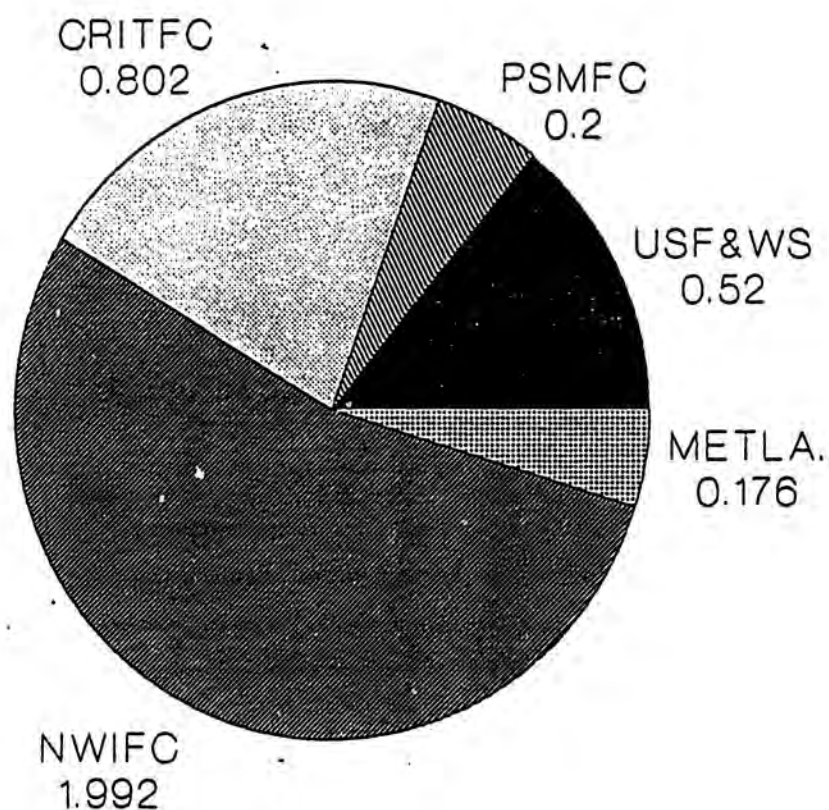
(\$ x 1.0 Million)

FY 92 Commerce Total PSC Recommended Funding Total Funds: \$8,015,312



(\$ x 1.0 Million)

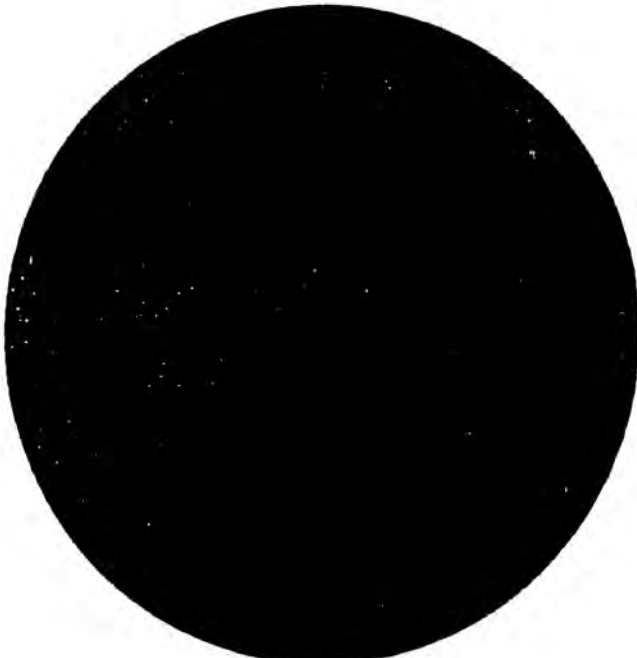
FY 92 Interior Total PSC Recommended Funding Total Funds: \$3,689,705



(\$ x 1.0 Million)

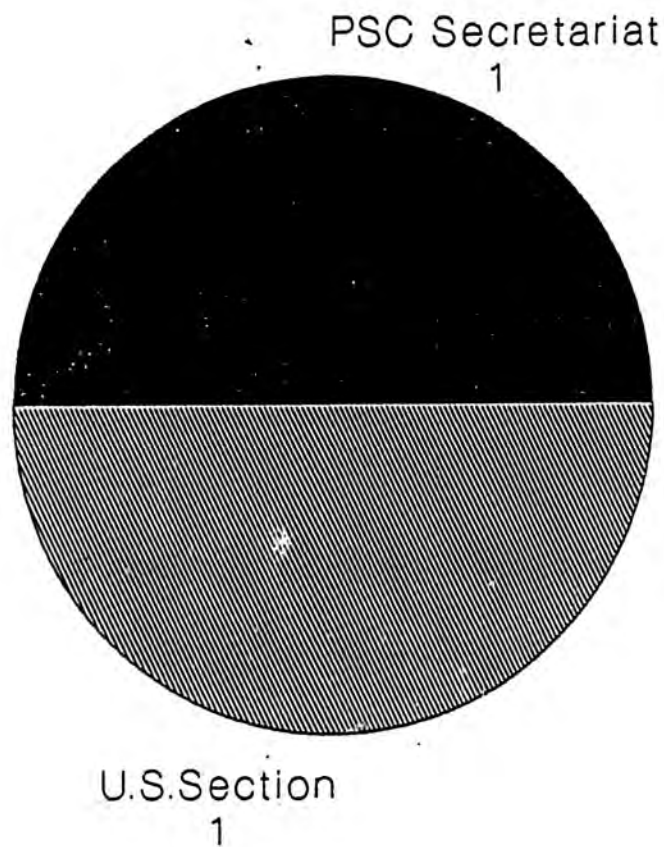
FY 92 Agriculture Total
PSC Recommended Funding
Total Funds: \$380,000

USFS/ADF&G
0.38



(\$ x 1.0 Million)

FY 92 State Total
PSC Recommended Funding
Total Funds: \$2.00



(\$ x 1.0 Million)

UNITED STATES SECTION
of the
PACIFIC SALMON COMMISSION

BUDGET JUSTIFICATION

Fiscal Year 1993



PACIFIC SALMON TREATY

* BUDGET JUSTIFICATION - FISCAL YEAR 1993 *

1. Introduction

The Pacific Salmon Treaty Act of 1985, Public Law 99-5, charges the United States Section of the Pacific Salmon Commission with responsibility for implementation of the Pacific Salmon Treaty, a bilateral treaty entered into with Canada in 1985. As in previous years, responsibility for funding Treaty related programs rests with the United States Government. This document represents the U.S. Section's best judgement of the funding required in fiscal year 1993 to implement the Treaty. The requests, by agency, are as follows:

Department of Commerce	<u>\$ 8,404,859</u>
National Marine Fisheries Service	2,467,351 ¹
Alaska Department of Fish and Game	3,470,669
Washington Department of Fisheries	1,335,914
Oregon Department of Fish and Wildlife	814,455
Idaho Department of Fish and Game	316,470
Department of Interior	<u>3,925,408</u>
<u>U.S. Fish and Wildlife Service</u>	<u>791,877</u>
U.S. Fish and Wildlife (direct)	591,877
Pacific Marine Fisheries Commission (FWS pass-through)	200,000
<u>Bureau of Indian Affairs</u>	<u>3,133,531</u>
Columbia River Inter-Tribal Fish Commission	856,238
Northwest Indian Fisheries Commission	2,091,627
Metlakatla Indian Community	185,666

¹ The National Marine Fisheries Service funding request includes \$1,476,700 for Auke Bay Laboratory Pacific Salmon Treaty Northern Area research. This research has been ongoing since 1982 and is funded in a separate NMFS budget line item, but is included here to reflect the actual amount of NMFS funds spent on Pacific Salmon Treaty implementation.

Department of Agriculture

399,000

U.S. Forest Service

Alaska Department of Fish and Game
Transboundary Enhancement
(USFS pass-through)

399,000

Department of State

2,100,000

The U.S. Section of the Commission has agreed to endorse for funding only those programs that meet the following criteria:

The program must be directly required to implement the Treaty, not merely of incidental benefit to that goal;

The program must not, in whole or part, duplicate any other program;

The program must be cost effective, coordinated to the greatest possible degree with other efforts, and of immediate, ascertainable benefit to the treaty implementation effort.

2. Justification of Funding Requested

For fiscal year 1993, the U.S. Section is requesting \$8,404,859 for the Department of Commerce, \$3,925,408 for the Department of the Interior (\$791,877 for U.S. Fish and Wildlife Service, \$3,133,531 for the Bureau of Indian Affairs), \$399,000 for the Department of Agriculture and \$2,100,000 for the Department of State.

The amount that has been requested for the Department of Commerce represents a 5% increase from the amount requested in FY92 to cover inflationary costs. No new projects are requested.

The proposed budget for the Department of the Interior includes a 5% increase to cover inflationary costs and an expansion of one project. Under the U.S. Fish and Wildlife Service, there is a request for \$46,750 to fund continued tagging of coho and chinook indicator stocks at the Quinalt hatchery, previously funded by the NWIFC.

3. Background

In 1985, after years of arduous negotiations, the United States and Canada entered into a treaty on the interception of salmon stocks shared between the two countries. The Treaty is

based on the concepts of conservation and equity; protection of a unique and priceless resource; and the equitable sharing of these resources between the two countries. The Treaty established a bilateral commission, the Pacific Salmon Commission, to establish fishery regimes in accordance with the principles of the Treaty.

The salmon of the Pacific Northwest and Alaska are a tremendous economic, recreational, and cultural resource. To commercial fishers, they are their livelihood. To recreational fishers, they are the prize sought above all other fish. To the Indian tribes of the Pacific Northwest, they provide spiritual as well as physical sustenance. Hatched in the inland rivers, lakes and streams and maturing in the ocean, the salmon return to their natal waters to spawn and renew the cycle. Their incredible journeys link the oceans and the rivers and bind together people throughout the Pacific Northwest, Canada, and Alaska.

Much of the Pacific Salmon Treaty Support funding that has been requested this year, as in past years, will be spent on research that enables the agencies to better determine the migratory patterns of salmon stocks and where, when, and by whom the fish are caught. This information establishes the ability for the countries to properly allocate and conserve salmon stocks.

Among the techniques that are used for stock identification are coded wire tagging, scale characteristic analysis and genetic stock identification. Coded wire tagging, the most commonly used technique, involves inserting a small, coded piece of microwire in the snout of a fish, usually a hatchery fingerling. The adipose fin of the fish is then clipped, identifying it as a fish that has been tagged. If the fish is caught, either in a recreational or a commercial fishery, or recovered in a spawning ground survey, the snout is removed and sent to one of the management agencies. The tag is then read, providing researchers with valuable insight as to which stocks are involved in a particular fishery.

In an area such as the west coast of Vancouver Island, British Columbia, fish from a variety of stocks mingle and are caught in mixed stock fisheries. Techniques such as coded wire tagging tell fishery managers what effect a fishery is having on individual stocks, such as Columbia River spring chinook or Queets River coho, what steps must be taken to rebuild depressed stocks and what healthy stocks can withstand fishery pressures. These techniques are also providing the information necessary to meet the goal of the Treaty that each party should benefit from the production of salmon originating in its waters.

4. Yukon River Studies in Support of Negotiations

The last set of program justifications included in this document detail three program proposals from the U.S. Fish and Wildlife Service and one from the Alaska Department of Fish and Game that concern research and management support for current negotiations with Canada regarding sharing of Yukon River salmon stocks. Alaska Department of Fish and Game requests \$745,000; U.S. Fish and Wildlife Service requests a total of \$1,021,460.

The Pacific Salmon Treaty established a framework for conduct of Yukon River negotiations, but the treaty itself is not the vehicle through which the negotiations proceed nor will the terms of the Treaty necessarily apply to the Yukon. In other words, the Yukon River negotiations are a separate matter from direct implementation of the Pacific Salmon Treaty, and, thus, we have separated Yukon River program requests from other programs. The U.S. Section believes the programs are fully justified and recommends that they be funded.

5. National Marine Fisheries Service Pre-existing Pacific Salmon Related Programs

The National Marine Fisheries Service has carried out a series of Pacific Salmon Treaty related programs, since before the Pacific Salmon Treaty was signed. These programs are beneficial to overall Pacific salmon management and production and have important incidental benefit to the implementation of the treaty.

The U.S. Section is composed of state, federal, and tribal fishery managers. In our domestic managerial capacities, we support those pre-existing programs and urge that they be funded. Nevertheless, we believe that those programs should be appraised on their own merits, independent of the Treaty and therefore not included in this document.

SUBMITTED BY:

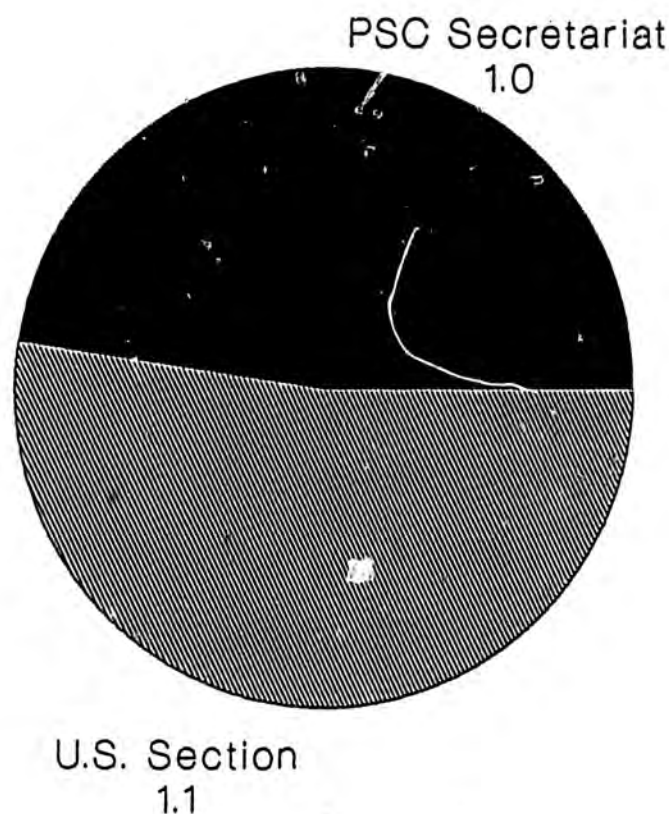

Guy R. McMind, Chairman
Budget Committee

U.S. Section, Pacific Salmon Commission

FY 93 Dept. of State

Total PSC Recommended Funding

Total Funds: \$2,100,000



(\$ x 1.0 Million)

FY 93 Agriculture
Total PSC Recommended Funding
Total Funds: \$399,000

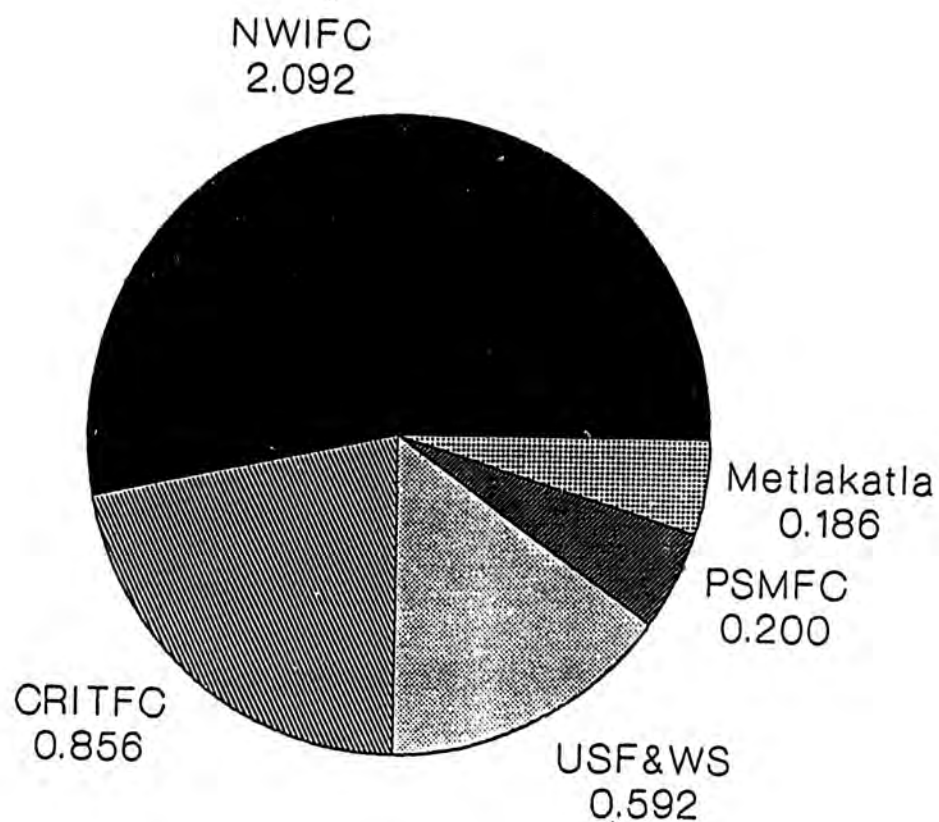
USFS/ADF&G
0.399



(\$ x 1.0 Million)

FY 93 Interior

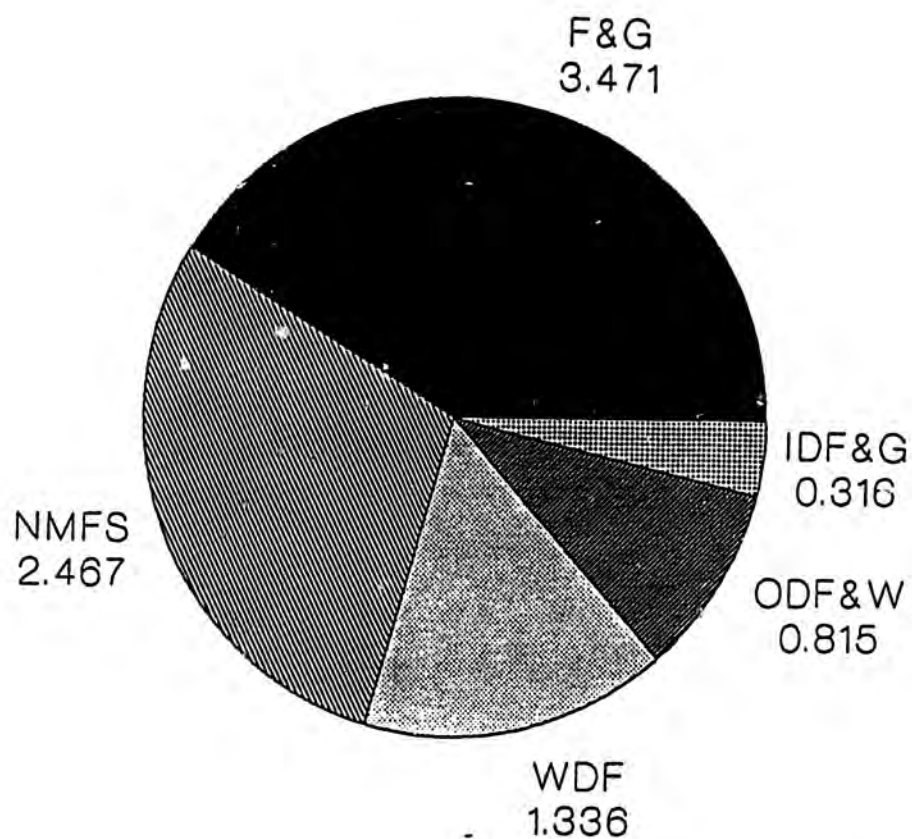
Total PSC Recommended Funding
Total Funds: \$3,925,408



(\$ x 1.0 Million)

FY 93 Commerce

Total PSC Recommended Funding
Total Funds: \$8,404,859



(\$ x 1.0 Million)

ATTACHMENT B

**MEMORANDUM FROM DAVID CANTILION, ADF&G TO
NEVETTE BOWEN, OFFICE OF REPRESENTATIVE SUND**

APRIL 1, 1987

TO: Noyette Bowen
Legislative Assistant
Office of Representative Sund

DATE: April 1, 1987

FILE NO.:

THRU:

TELEPHONE NO.: 465-4250

SUBJECT: Budget Information

FROM: David Cantillon⁰⁴
Regional Supervisor
Division of Commercial Fisheries
Douglas

Attached is a list of the State funding cuts from the Region I Division of Commercial Fisheries budget in FY 87 and the current Governor's FY 88 budget. I was not able to exactly match the dollar difference from the FY 86 actual costs and the new FY 88 base because some minor cost changes and savings are difficult to document. Also, the vessels section operational budget was combined with regional budgets beginning in FY 87 and I do not have good cost documentation by each vessel for FY 86. The dollar amounts on the list represent our best estimate of the cost of replacing the items that were cut or reduced.

In order to make the Region I cuts more understandable, I have divided them into the following three categories:

1. Cuts that represent a direct loss to our regional program.
2. Positions that were lost from the regional program but the individuals were reassigned new U.S./Canada program responsibilities.
3. Positions or functions that were U.S./Canada related and State funded prior to the Treaty; and were switched to federal treaty implementation funding during the drastic FY 87 cuts.

One point should be made clear. The availability of U.S./Canada Treaty Implementation funds have allowed the continuation of a number of activities that we had to cut from the general fund budget. However, a number of research and data acquisition activities originally planned for U.S./Canada funding have been dropped or reduced to allow the continuation of more basic fishery monitoring activities that were cut from the State budget.

The Region I Commercial Fisheries budget peaked in FY 85 and in establishing the FY 86 budget a number of items were cut or switched to U.S./Canada funding and are not reflected in the figures you received from Ken Parker, Division Director.

Within the three categories I have prioritized specific items with the most important listed first.

cc: Roland Shanks, Special Assistant
Ken Parker, Director

Category I - General Fund Items Lost Entirely

switch
Banda to air

1. Aerial Survey Reduction - 20.8
Management budget reduction in post fishery salmon escapement documentation regionwide. FY 87
2. Coho Investigations - 16.5 -
Reduce natural stock coded wire tagging. FY 87
3. Shellfish FT V - 55.9
Reduce shellfish port sampling program and data base. FY 87
4. Juneau FB II - 55.8
Reduce shellfish fishery monitoring, sampling, onboard observer work and reporting. Reduce land use activity review in Juneau area. Reduce Northern Southeast salmon and herring fishery monitoring. FY 88
5. Vessel Sundance - 53.0
Cut 4 months. Reduce winter herring stock assessment and winter herring fishery monitoring. FY 87
6. Vessel Kittiwake - 178.2
Eliminated. A major reduction in herring and salmon fishery monitoring and research program support. Vessel support in Region I reduced to lowest level in decades. FY 87
7. Coho Project Leader - FB III - 60.0
With intensification of coho issues both biological and allocative, the one remaining coho research position is inadequate to oversee an effective data collection program. FY 87
8. CT II - Sitka - 11.5
5 mm. Clerical support for Sitka Troll Fishery and Groundfish Project personnel. Shared with Habitat Division. FY 88
9. Escapement & Catch Data Base - 19.0
Funding for maintaining regionwide salmon catch and escapement data bases. FY 87
10. King Crab Index - 14.4
Operational funding for Southeast red king crab index cruise. State vessel and permanent personnel costs not included. FY 88
11. Northern Southeast Salmon Forecast - 49.8
Cut pre-emergent fry sampling used to predict pink salmon returns to northern southeastern. Includes transportation costs and 4 seasonal positions, 2 in Juneau and 2 in Sitka. FY 87
12. Sitka Fishery Monitoring - 13.2
Reduced funds for monitoring salmon fisheries in the Sitka area. FY 87

Category I - General Fund Items Lost Entirely
(Continued)

- | | | | |
|-----|---|---|-------|
| 13. | <u>Groundfish Seasonals</u> | - | 34.4* |
| | Funds were reduced eliminating seasonal time for port sampling activities. FY 87 | | |
| 14. | <u>Regional Clerical & Office Support</u> | - | 9.9 |
| | Reduce level of clerical staff and office operations in the Juneau Regional Office. FY 87 | | |
| 15. | <u>Catch Sampling Regionwide</u> | - | 30.0 |
| | Reduce level of catch, scale and escapement sampling. FY 88 | | |
| 16. | <u>Chilkat-Chilkoot Weir</u> | - | 11.7 |
| | Reduce amount of time the two sockeye weirs at the head of Lynn Canal are operated. FY 87 | | |
| 17. | <u>Chinook Scale Analysis</u> | - | 9.8 |
| | Eliminate department efforts to delineate coastwide chinook stock groupings by scale characteristics. FY 87 | | |
| 18. | <u>CT III - Juneau</u> | - | 18.6 |
| | 8 mm of clerical support for Juneau Regional Office. FY 87 | | |

Category Total - 662.5

* Latest Governor's budget provides the Division some Groundfish funding which may be used to offset this cut.

Category II

1. Fisheries Biologist II - Sitka - 56.2
Pink salmon assistant project leader in Sitka reassigned to U.S./Canada duties. FY 87
2. Analyst Programmer II - 47.4
Programmer in Sitka reassigned to duties with a U.S./Canada related project. FY 87
3. Fisheries Biologist II - Ketchikan - 28.8
Assistant project leader reassigned for 6 mm per year to U.S./Canada related activities.

Category Total - 132.4

Category III

1. Kadashan Weir - Tenakee Inlet - 23.2
Pink and chum salmon weir used for inseason management and research. FY 87
2. Data Processing Clerk - 27.4
10 mm time for data entry and editing used primarily for salmon fish tickets in Juneau. FY 87
3. Clerk Typist III - Juneau - 27.8
Regional office support staff in Juneau. FY 87
4. Chinook Biometrician - 64.2
Provides coastwide coordination with other management resources agencies to develop a data base for regulation of chinook fisheries. FY 87
5. Petersburg Fishery Monitoring - 60.0
Provides funds for monitoring harvests and for 6 mm of a Fisheries Biologist II Management Assistant in Wrangell. FY 87
6. Fishery Biologist II - Sitka - 59.2
Supervises staff of seasonals for catch sampling activities in the Sitka management area. FY 87
7. Fishery Biologist II - Juneau - 52.0
Supervises a staff of seasonals for catch sampling activities in the Juneau management area. Supervises salmon run monitoring project on the Taku River. FY 87
8. Tree Point Field Station - 47.1
Provides a field station for collecting catch and effort data from the Tree Point commercial gillnet fishery and 6 mm time for a Fisheries Biologist II Management Assistant in Ketchikan. FY 87

Category Total - 360.9

ATTACHMENT C

MEMORANDUMS ABOUT ADF&G PERSONNEL SERVICES

FUNDED BY FEDERAL FUNDS RELATING TO U.S.-CANADA FISHERIES

ALASKA STATE LEGISLATURE

LEGISLATIVE BUDGET AND AUDIT COMMITTEE

Division of Legislative Audit



P. O. Box W
Juneau, AK 99811-3300
(907) 465-3830
FAX (907) 465-2347

MEMORANDUM

TO: The Honorable Bill Hudson
Alaska State House

FROM: Randy S. Welker *Randy*
Legislative Auditor

DATE: August 22, 1991

RE: US/Canada Salmon Treaty Contract administered by the Department of Fish and Game

At your request, we obtained information from the Department of Fish and Game (DFG) concerning "administrative" charges, particularly personal services, against the US/Canada Salmon Treaty Contract (the contract).

We have reviewed the departmental-supplied data and offer the following information.

As can be seen below, and the attached memos from the former director and current finance officer of DFG, personal services charges against the contract appear to have been reduced over the past three fiscal years. Personal services expenditures for the past three fiscal years have been:

1989	\$2,486,980
1990	2,056,785
1991(ytd as of 4/91)	1,562,968

This was previously verbally relayed to your office.

This information has not been subjected to audit. If you desire an audit to address any concerns you may have, please direct your audit request to the Legislative Budget and Audit Committee.

If I can be of further assistance do not hesitate to contact Bob Bilden or me at 465-3830.

Enclosure

MEMORANDUM**RECEIVED**
JUN 21 1991State of Alaska
Department of Fish and Game**LEGISLATIVE AUDIT****TO:** Bob Bilden
Legislative Auditor
Division of Legislative
Audit**DATE:** June 19, 1991**FILE NO:****TELEPHONE NO:** (907) 465-4120**FROM:** Douglas S. Hanon
Finance Officer
Division of Administration
Department of Fish and Game**SUBJECT:** FY89 US/Canada
Personal Services
Costs.

As requested, below are the Department of Fish and Game's "actual" US/Canada personal service expenditures for FY89. The actual expenditures are derived from summary audit trail reports for COA Year 1989, selected on specific grant codes by appropriation.

GRANT	DESCRIPTION	PERSONAL SVS \$
41716	CF FY88 US/CANADA ENHANCEMENT	\$ 14,990.00
41717	CO FY89 US/CANADA ENHANCEMENT	268,272.19
41720	FRED FY89 US/CANADA ENHANCEMENT	0.00
41721	CF FY89 US/CANADA ENHANCEMENT	2,203,717.15
TOTAL		\$ 2,486,979.76

If you need any additional information, please do not hesitate to contact this office.

cc: Lawrence Jones, Director, Division of Administration

MEMORANDUM

RECEIVED
APR - 9 1991State of Alaska
Department of Fish and Game

LEGISLATIVE AUDIT

TO: Bob Bilden
Incharge Auditor
Legislative Audit

DATE: April 8, 1991

FILE NO:

TELEPHONE NO: 465-4120

FROM: *Beverly Reaume*
Beverly Reaume
Director
Division of AdministrationSUBJECT: US/Canada Personnel
Expenditures

The following are the actual personnel expenditures for the US/Canada grants for COA 1990-1991. The 1989 expenditure reports cannot be pulled until April 13, 1991. We will send FY89 numbers separately.

1990 Expenditures by Grant

Grant 41717	\$ 99,808.42
Grant 41723	1,956,976.83

TOTAL	\$2,056,785.25

1991 Expenditures by Grant

Grant 41717	\$ 151,257.75
Grant 41725	1,411,710.23

	\$1,562,968.08

We have a total of 24 full-time (22 Commercial Fisheries, 1 FRED, and 1 Commissioner's Office), and 76 (75 Commercial Fisheries, 1 FRED) seasonal/nonpermanent positions assigned to these projects. The budgeted full-time equivalent is 46 positions.

Please let me know if you have additional questions.

cc: Ron Somerville

not clear yet

WORKING REPORT

GRANT EXPENDITURES BY ACCOUNT

41717-15 0 US CANADA ENHANCE ORIG:88 LEVEL 70

COA:1990

RRN:0117714 RSN:01963 12/06/90

HISTORICAL

PT 1

ENTITY NUMBER - DESCRIPTION

S** 70000 TOTAL EXPENDITURES	2,646,053.74
S** 70008 OPERATING ACCT TOTAL	2,646,053.74
S** 70100 GROUP CTRL-PER SER	99,808.42
S** 71000 PERSONAL SERVICES	99,808.42
S** 71100 WAGES	94,336.60
S** 71150 REGULAR DUTY	84,450.58
S** 71170 REGULAR COMPENSATION	83,940.58
S** 71172 REGULAR PAY	83,940.58
S** 71230 AREA DIFFERENTIAL	510.00
S** 71240 SUBSISTENCE (LTC)	510.00
S** 71300 PREMIUM PAY	8,579.69
S** 71320 OVERTIME	6,006.47
S** 71322 OT STRAIGHT TIME	110.00
S** 71324 OT - TIME & ONE-HALF	5,456.64
S** 71326 DOUBLETIME	439.80

FOR NEXT SECTION ENTER=> NUMBER _____ YEAR _____ LEVEL LIMIT ____

PF1=MENU

PF3=PAGE FORWARD

PF6=RPT REQUEST MAINTENANCE

KING REPORT

NT EXPENDITURES BY ACCOUNT

23-15 1 US/CANADA FY90 ORIG:90

:1990

LEVEL 70

RRN:0117714 RSN:01963 12/06/90

HISTORICAL

PT 1

ENTITY NUMBER - DESCRIPTION

70000 TOTAL EXPENDITURES	2,773,948.03
70008 OPERATING ACCT TOTAL	2,773,948.03
70100 GROUP CTRL-PER SER	1,956,576.83
71000 PERSONAL SERVICES	1,956,976.83
71100 WAGES	1,442,261.62
71150 REGULAR DUTY	1,347,213.66
71170 REGULAR COMPENSATION	1,347,213.66
71172 REGULAR PAY	1,345,621.39
71300 PREMIUM PAY	59,596.26
71320 OVERTIME	48,768.74
71322 OT STRAIGHT TIME	374.40
71324 OT - TIME & ONE-HALF	48,394.34
71360 SHIFT DIFFERENTIAL	870.05
71362 REGULAR SHIFT	799.90
71366 OVERTIME SHIFT	70.16

2 NEXT SECTION ENTER==> NUMBER _____ YEAR _____ LEVEL LIMIT ____

1=MENU

PF3=PAGE FORWARD

PF6=RPT REQUEST MAINTENANCE

WORKING REPORT

ARN:0117714 RSN:02057 04/03/91

GRANT EXPENDITURES BY ACCOUNT

HISTORICAL

41717-15 0 US CANADA ENHANCE ORIG:66 LEVEL 70

COA:1991

PT 1

ENTITY NUMBER - DESCRIPTION

S** 70000 TOTAL EXPENDITURES	1,009,224.63
S** 70008 OPERATING ACCT TOTAL	1,009,224.63
S** 70100 GROUP CTRL-PER SER	151,257.75
S** 71000 PERSONAL SERVICES	151,257.75
S** 71100 WAGES	122,376.92
S** 71150 REGULAR DUTY	105,398.06
S** 71170 REGULAR COMPENSATION	104,848.06
S** 71172 REGULAR PAY	104,848.06
S** 71230 AREA DIFFERENTIAL	550.00
S** 71240 SUBSISTENCE (LTC)	550.00
S** 71300 PREMIUM PAY	16,978.66
S** 71320 OVERTIME	12,868.08
S** 71322 OT STRAIGHT TIME	1,200.04
S** 71324 OT - TIME & ONE-HALF	9,170.92
S** 71326 DOUPLETIME	2,497.12

FOR NEXT SECTION ENTER=> NUMBER _____ YEAR _____ LEVEL LIMIT ____

PF1=MENU

PF3=PAGE FORWARD

PF6=RPT REQUEST MAINTENANCE

PT-1-16

BOOKING REPORT

ANT EXPENDITURES BY ACCOUNT

725-15 1 US/CANADA FY91 ORIG:91

LEVEL 70

A:1991

RRN:0117714 RSN:02057 04/03/91

HISTORICAL

PT 1

ENTITY NUMBER - DESCRIPTION

* 70000 TOTAL EXPENDITURES	1,947,865.94
* 70008 OPERATING ACCT TOTAL	1,947,865.94
* 70100 GROUP CTRL-PER SER	1,411,710.33
* 71000 PERSONAL SERVICES	1,411,710.33
* 71100 WAGES	923,825.75
* 71150 REGULAR DUTY	871,757.26
* 71170 REGULAR COMPENSATION	871,757.26
* 71172 REGULAR PAY	871,757.26
* 71300 PREMIUM PAY	48,549.45
* 71320 OVERTIME	40,760.18
* 71322 OT STRAIGHT TIME	831.50
* 71324 OT - TIME & ONE-HALF	39,923.38
* 71360 SHIFT DIFFERENTIAL	456.73
* 71362 REGULAR SHIFT	347.02
* 71366 OVERTIME SHIFT	109.71

R NEXT SECTION ENTER==> NUMBER _____ YEAR _____

LEVEL LIMIT ____

1=MENU

PF3=PAGE FORWARD

PF6=RPT REQUEST MAINTENANCE

ATTACHMENT D

ADF&G SPREADSHEETS ABOUT PACIFIC SALMON TREATY

EXPENDITURES DURING FY 92

Received from Scott Marshall 1/13/92 ADF&G

Table 5. Summary of costs to manage the finfish fisheries of Southeast Alaska in FY 92 — SHORT SUMMARY FOR SCOTT.

Fishery	Regional Office Expenses	Area Management	Area Project Costs	Biometrics	Data Processing	Vessels	Regional Stock Assessment	Total	General Fund	Anad.	Test Fish	PSC	Other	Longterm Value	FY92 Cost as Percent of Longterm Value
I. SALMON a	592.7	1528.9	473.8	121.3	480.3	145.6	1696.3	5038.9	1780.6	383.6	265.3	2343.4	266.0	108511.2	4.2
II. HERRING	68.2	329.5	0.0	45.7	1.0	220.7	77.7	742.7	690.6	0.0	22.1	0.0	30.0	9224.0	8.0
III. SHELLFISH	84.1	456.9	0.0	82.9	35.5	138.2	61.9	859.5	810.0	0.0	31.5	0.0	18.0	23986.0	3.5
IV. GROUNDFISH	69.3	159.0	0.0	33.2	62.1	59.9	200.3	583.9	204.8	0.0	48.5	0.0	330.6	9492.0	6.2
V. INTERDIVISIONAL ACTIVITIES b	34.0	124.0	0.0	1.3	4.6	25.9	103.0	292.7	198.9	4.2	0.4	70.0	19.2	NA	
VI. EXTERNAL FISHERY ACTIVITIES c	109.9	195.0	0.0	48.3	0.0	0.0	196.1	549.4	56.0	15.8	16.8	364.8	96.1	NA	
GRAND TOTALS d	958.2	2793.4	473.8	332.7	583.4	590.3	2335.3	8667.1	3740.9	403.6	384.6	2778.1	759.9	151213.2	4.4
Check total	958.2	2793.4	473.8	332.7	583.4	590.3	2335.3	8667.1	3305.3	839.2	384.6	2778.1	759.9	151213.2	5.4
Percent	11.9	34.6	5.9	4.1	7.2	7.3	28.9	100.0	46.4	5.0	4.3	34.4	9.4		

a Cost/value percent does not include \$266.0 for Transboundary River enhancement and \$200.4 in unused test fish authority.

b Includes habitat, sport fish, game, and subsistence activities.

c Includes \$497.7 for Pacific Salmon Treaty obligations and \$96.1 for federal offshore groundfish activities.

d Cost/value percent does not include \$266.0 TBR enhancement, interdivisional activities, external fishery activities, and \$233.5 in unused TF authority.

Table 5. Summary of costs (1,000's) to manage the finfish fisheries of Southeast Alaska in FY 92.

Fishery	Budget Category								Budget Source					FY92 Cost as Percent of Longterm Value	
	Regional Office Expenses	Area Management	Area Project Costs	Biometrics	Data Processing	Vessels	Regional Stock Assessment	Total	General Fund	Anad.	b Test Fish	c PSC Other	Longterm Value		
I. SALMON TROLL	\$128.9	\$211.3	\$7.6	\$35.1	\$177.5	\$0.0	\$414.7	\$975.1	\$207.6	\$117.3	\$33.4	\$616.8	\$0.0	\$29,513.0	3.2
II. SALMON PURSE SEINE															
JUNEAU MGMT. AREA	\$29.7	\$110.1	\$7.6	\$3.6	\$15.4	\$32.7	\$76.1	\$275.1	\$182.0	\$31.0	\$16.8	\$45.3	\$0.0	\$5,019.0	5.2
KETCHIKAN MGMT. AREA	\$102.1	\$233.8	\$94.3	\$26.5	\$115.2	\$40.2	\$173.5	\$785.5	\$193.7	\$41.2	\$24.0	\$526.6	\$0.0	\$37,856.0	2.1
PETERSBURG MGMT. AREA	\$27.0	\$125.6	\$0.0	\$2.3	\$14.5	\$26.1	\$41.4	\$236.8	\$151.0	\$17.7	\$8.7	\$58.6	\$0.0	\$4,697.0	4.8
SITKA MGMT. AREA	\$24.4	\$116.7	\$0.0	\$2.3	\$19.9	\$6.5	\$49.4	\$219.3	\$160.6	\$19.7	\$2.5	\$36.5	\$0.0	\$4,512.0	4.8
SUBTOTAL PURSE SEINE	\$183.2	\$586.1	\$101.9	\$34.8	\$165.0	\$105.5	\$340.2	\$1,516.7	\$688.1	\$109.6	\$52.0	\$667.6	\$0.0	\$52,083.0	2.9
III. SALMON DRIFT GILLNET															
TREE POINT (District 101)	\$48.7	\$101.1	\$86.5	\$2.3	\$14.5	\$19.2	\$94.7	\$367.0	\$73.1	\$17.1	\$24.0	\$252.8	\$0.0	\$4,686.0	7.3
PRINCE OF WALES (District 106) of	\$32.5	\$116.3	\$5.4	\$7.8	\$11.3	\$10.4	\$72.3	\$256.1	\$90.8	\$10.7	\$21.7	\$133.0	\$0.0	\$3,663.0	6.6
STIKINE (District 108) of	\$9.5	\$39.2	\$2.6	\$3.1	\$0.5	\$2.6	\$18.0	\$75.4	\$21.4	\$1.8	\$13.0	\$39.2	\$0.0	\$106.0	65.5
TAKU (District 111) f	\$52.8	\$123.5	\$137.5	\$6.8	\$6.8	\$1.3	\$79.1	\$407.9	\$91.2	\$9.6	\$50.4	\$256.7	\$0.0	\$2,311.0	15.8
LYNN CANAL (District 115)	\$53.8	\$175.9	\$89.9	\$9.5	\$23.6	\$6.6	\$139.4	\$498.7	\$337.1	\$48.1	\$62.5	\$51.0	\$0.0	\$7,612.0	6.7
SUBTOTAL DRIFT GILLNET	\$197.3	\$556.0	\$321.9	\$29.6	\$56.7	\$40.2	\$403.5	\$1,605.0	\$613.5	\$87.3	\$171.5	\$732.7	\$0.0	\$18,429.0	8.1
IV. SALMON SET NET	\$32.0	\$117.1	\$0.0	\$1.7	\$56.7	\$0.0	\$65.4	\$272.9	\$159.5	\$22.0	\$0.0	\$91.4	\$0.0	\$4,107.0	6.1
V. SALMON SUBSISTENCE-PERSONAL USE	\$7.5	\$52.2	\$0.0	\$0.4	\$4.5	\$0.0	\$2.0	\$66.6	\$49.8	\$0.2	\$0.0	\$16.6	\$0.0	NA	
VI. SALMON ENHANCEMENT/HATCHERY	\$51.3	\$58.5	\$42.5	\$20.2	\$24.4	\$0.0	\$472.3	\$669.2	\$112.0	\$47.4	\$8.4	\$235.4	\$266.0	\$3,187.3	12.1
VII. PSC TREATY OBLIGATIONS h	\$109.9	\$98.9	\$0.0	\$48.3	\$0.0	\$0.0	\$196.1	\$453.3	\$56.0	\$15.8	\$16.8	\$364.8	\$0.0	NA	
SUBTOTAL SALMON Salmon Percents	\$710.1 12.8	\$1,680.1 30.2	\$473.8 8.5	\$170.0 3.1	\$484.8 8.7	\$145.6 2.6	\$1,894.4 34.1	\$5,558.8 100.0	\$1,886.4 33.9	\$399.6 7.2	\$282.1 5.1	\$2,724.7 49.0	\$266.0 4.8	\$108,511.2	4.1
VIII. HERRING															
PURSE SEINE SAC ROE	\$20.1	\$92.7	\$0.0	\$13.0	\$0.3	\$63.7	\$22.2	\$212.0	\$203.9	\$0.0	\$8.1	\$0.0	\$0.0	\$5,081.4	4.1
GILLNET SAC ROE	\$23.7	\$91.6	\$0.0	\$15.5	\$0.3	\$75.4	\$26.3	\$232.8	\$226.1	\$0.0	\$6.6	\$0.0	\$0.0	\$2,749.5	8.1
BAIT	\$17.2	\$58.0	\$0.0	\$11.2	\$0.2	\$54.6	\$19.0	\$160.2	\$155.4	\$0.0	\$4.8	\$0.0	\$0.0	\$664.0	24.1
SPAWN ON KELP k	\$7.2	\$87.2	\$0.0	\$6.0	\$0.1	\$27.1	\$10.2	\$137.7	\$105.2	\$0.0	\$2.6	\$0.0	\$0.0	\$729.0	18.1
SUBSISTENCE/PERSONAL USE	\$3.6	\$12.2	\$0.0	\$0.9	\$0.0	\$6.7	\$1.6	\$25.0	\$24.6	\$0.0	\$0.4	\$0.0	\$0.0	NA	
SUBTOTAL HERRING Herring Percents	\$71.8 9.3	\$341.7 44.5	\$0.0 0.0	\$46.6 6.1	\$1.0 0.1	\$227.4 29.6	\$79.3 10.3	\$767.7 100.0	\$715.2 93.2	\$0.0 0.0	\$22.5 2.9	\$0.0 0.0	\$30.0 3.9	\$9,224.0	8.1
IX. SHELLFISH (includes misc. sp)	\$84.1	\$456.9	\$0.0	\$82.9	\$35.5	\$138.2	\$61.9	\$859.5	\$810.0	\$0.0	\$31.5	\$0.0	\$18.0	\$23,986.0	3.1
X. GROUND FISH	\$69.3	\$255.1	\$0.0	\$33.2	\$62.1	\$59.9	\$200.3	\$680.0	\$204.8	\$0.0	\$48.5	\$0.0	\$426.7	\$9,492.0	6.1
XII. HABITAT	\$9.0	\$32.0	\$0.0	\$0.0	\$0.0	\$0.0	\$46.1	\$87.1	\$86.3	\$0.0	\$0.0	\$0.8	\$0.0	NA	
XIII. SPORTFISH AND GAME ACTIVITY	\$13.8	\$27.6	\$0.0	\$0.0	\$0.0	\$19.2	\$53.3	\$114.0	\$38.2	\$4.0	\$0.0	\$52.5	\$19.2	NA	
GRAND TOTALS	\$958.2	\$2,793.4	\$473.8	\$332.7	\$583.4	\$590.3	\$2,335.3	\$8,067.1	\$3,740.9	\$403.6	\$384.6	\$2,778.1	\$759.9	\$151,213.2	5.1
FINFISH TOTALS	\$781.9	\$2,021.7	\$473.8	\$216.6	\$485.8	\$373.0	\$1,973.7	\$6,326.5	\$2,601.6	\$399.6	\$304.6	\$2,724.7	\$296.0	\$117,735.2	4.1
Finfish Percents	12.4	32.0	7.5	3.4	7.7	5.9	31.2	100.0	41.1	6.3	4.8	43.1	4.7	77.9	

a Includes program managers, capital replacement, early retirement, clerical, accounting, travel, vehicle, and misc. expenses.

b Allocated test fish revenue authority is shown — \$284.6 for salmon, \$22.5 for herring, and \$31.5 for shellfish; the authority is generally not used in entirety and test fish costs (charters, personnel, and equipment) are generally offset by test fish revenues (sale of fish), resulting in little actual charge to the budget. For example, in FY92 salmon test fish expenses were \$85.6, offset by \$81.7 in revenue; net charge to other budget line items was \$3.9.

c Cost/value percents include only test fish revenue that was used in FY92.

d Other funding sources for finfish include \$266.0 from U.S. Forest Service for TBR enhancement and \$30.0 from Klavock-Heenya Corp. for Craig spawn on kelp herring fishery.

e View salmon program as whole; some individual fisheries may show high cost/value ratios due to overlapping programs, interceptions, PSC treaty sharing, etc.

f District 106 and 108 salmon gill net fisheries have many overlapping programs; combined cost/value for both is 91.

g High cost/value for Districts 111, 108, and 106 gillnet fisheries are due to intensive management of these fisheries necessitated by Pacific Salmon treaty harvest sharing agreement.

h Costs include \$266.0 for development of technology for stock assessment of future enhanced returns of transboundary river sockeye; these costs are not included in cost/value percent.

i Costs associated with Pacific Salmon Treaty obligations from which no direct management benefit for Southeast fisheries is received.

j Value includes \$1,191.9 from misc. harvests (test fish, trap, confiscated fish, special harvests).

k Cost/value percent does not include \$266.0 for TBR enhancement, \$479.7 for PSC treaty obligations, and \$66.6 for subsistence/personal use.

l Cost/value percent does not include \$25.0 for subsistence/personal use and 2.5 in unused test fish revenue authority.

m Herring spawn on kelp fishery harvests began in 1990; value is estimated current value of Hoonah Sound and Craig fisheries.

n Cost/value percent does not include TBR enhancement, PSC treaty obligations, interdivisional activities, and unused test fish authority.

Table 6. Administrative budget for Pacific Salmon Commission funding for FY92.

Project and Activity	Yellowbook Project Number	Budget Manager	Budget Code	100	200	Line Item 300	(1,000s) 400	500	Total	General Fund	Anad.	Test Fish	PSC	Other
ADMINISTRATION														
PSC Salmon Treaty Coordinator		Meachum		48.6					48.6				48.6	
PSC Program Management PFT's	SP-140	Costello	11051921-11581501											
Pub. Tech. - Anderson (1274)				43.2					43.2				43.2	
CT III - Beler (1053)				33.8					33.8				33.8	
AC II - Flannigan (1951)				31.0					31.0				31.0	
CLERK V - Kaczmarek (1883)				41.6					41.6				41.6	
FB IV - Gunstrom (1003)*				41.5					41.5				41.5	
Student Intern I - Newman (0811)				12.6					12.6				12.6	
AC II - Vacant (1841)				0.0					0.0				0.0	
AC III - Welling (1747)*				18.5					18.5				18.5	
Subtotal				222.2	0.0	0.0	0.0	0.0	222.2				222.2	
PSC Program Management Support	SP-140	Costello	11001921-11081501	15.0	6.9	75.2	6.0		103.1				103.1	
PSC Fishery & Program Response	SP-141	Marshall	11001921-11081521		18.0	3.0	6.6	26.3	54.1				54.1	
Administrative Overhead		Marshall				18.0			18.0				18.0	
Administration Subtotal				285.8	24.9	96.2	12.6	26.5	446.0				446.0	
TECHNICAL SUPPORT & DATA SHARING														
PSC Technical Support PFT's	SP-150	Costello	11051921-11581521											
AP IV - Talley (1091)				70.3					70.3				70.3	
AP III - Johnson (1338)				58.7					58.7				58.7	
AP III - Kelly (1821)*				31.3					31.3				31.3	
AP III - Druyvestein (1340)				53.8					53.8				53.8	
DPC II - Vacant (1619)*				19.8					19.8				19.8	
Fishery Scientist I - Sands (1091)*				38.3					38.3				38.3	
BIOM. III - Clark (1276)*				36.8					36.8				36.8	
Subtotal				309	0	0	0	0	309.0				309.0	
PSC F.R.E.D. CWT Lab	SP-152	Crandall	11001921-11081681	95.8		7.7	4.5		108.0				108.0	
PSC Data Sharing	SP-153	Talley	11001921-11081701	16.9	8.0	118.8	34.6	41.3	219.6				219.6	
TS & DS Subtotal				421.7	8.0	126.5	39.1	41.3	636.6				636.6	
TRANSBOUNDARY RIVERS ANNEX														
PSC Transboundary Rivers PFT's	SP-160	Costello	11051921-11581511											
BIOM. II - Blick (1257)*				31.2					31.2				31.2	
FT IV - Frank (1730)*				23.3					23.3				23.3	
FB II - Jensen (1777)				53.3					53.3				53.3	
CT III - Johnson (1304)*				16.1					16.1				16.1	
FB II - Lynch (1297)*				30.6					30.6				30.6	
FB III - McGregor (1698)				64.6					64.6				64.6	
FB II - Muir (1067)*				31.2					31.2				31.2	
FB II - Timothy (1013)*				31.5					31.5				31.5	
Fld. Office Assis. - Tyson (1012)*				19.6					19.6				19.6	
Subtotal				301.4					301.4				301.4	
PSC Dis. 6 & 8 DGN Monitoring	SP-161	Bergman	11001921-11081511	5.6		4.2	2.3		12.1				12.1	
PSC Stikine River Stock Assess.	SP-162	McGregor	11001921-11081591	9.7	1.1		2.0		12.8				12.8	
PSC Taku Sockeye Stock Assess.	SP-163	McGregor	11001921-11081571											
Port Sampling				21.7	0.8				22.5				22.5	
Stock Identification				18.2		2.0	1.3		21.5				21.5	
Subtotal				39.9	0.8	2.0	1.3	0.0	44.0				44.0	
PSC Taku River Escapement Est.	SP-164	McGregor	11001921-11081531	37.7		19.6	18.7		76.0				76.0	
PSC Port Snettisham Weirs	SP-165	Bergander	11001921-11081611	29.7		7.2	5.5		42.4				42.4	
PSC Taku Coho CWT	SP-166	Shaul	11001921-11081661											
Tatsamenie R. CWT Indicator Stock				6.5		2.5	2.0		11.0				11.0	
Upper Taku Escapement Surveys				0.0		3.6			3.6				3.6	
Regional Coho Stock Assessment				24.8		6.4	3.7		34.9				34.9	
Subtotal				31.3	0.0	12.5	5.7	0.0	49.5				49.5	
TBR Subtotal				455.3	1.9	45.5	35.5	0.0	538.2				538.2	
NORTHERN BOUNDARY AREA ANNEX														
PSC Boundary Area PFT's	SP-170	Costello	11051921-11581631											
BIOM. II - Blick (1257)*				31.2					31.2				31.2	
FB I - Farrington (1880)				45.9					45.9				45.9	
FT IV - Frank (1730)*				23.3					23.3				23.3	
FB II - House (1016)*				30.3					30.3				30.3	
FB II - Koerner (1823)				64.2					64.2				64.2	
Fld. Off Assis. - Swearingen (1018)*				20.7					20.7				20.7	
CT III - Urquhart (1233)*				16.5					16.5				16.5	
FB IV - Van Allen (1398)				71.7					71.7				71.7	
Subtotal				303.8					303.8				303.8	

-Continued-

Table 6. Administrative budget for Pacific Salmon Commission funding for FY90. -- Page 2 of 3

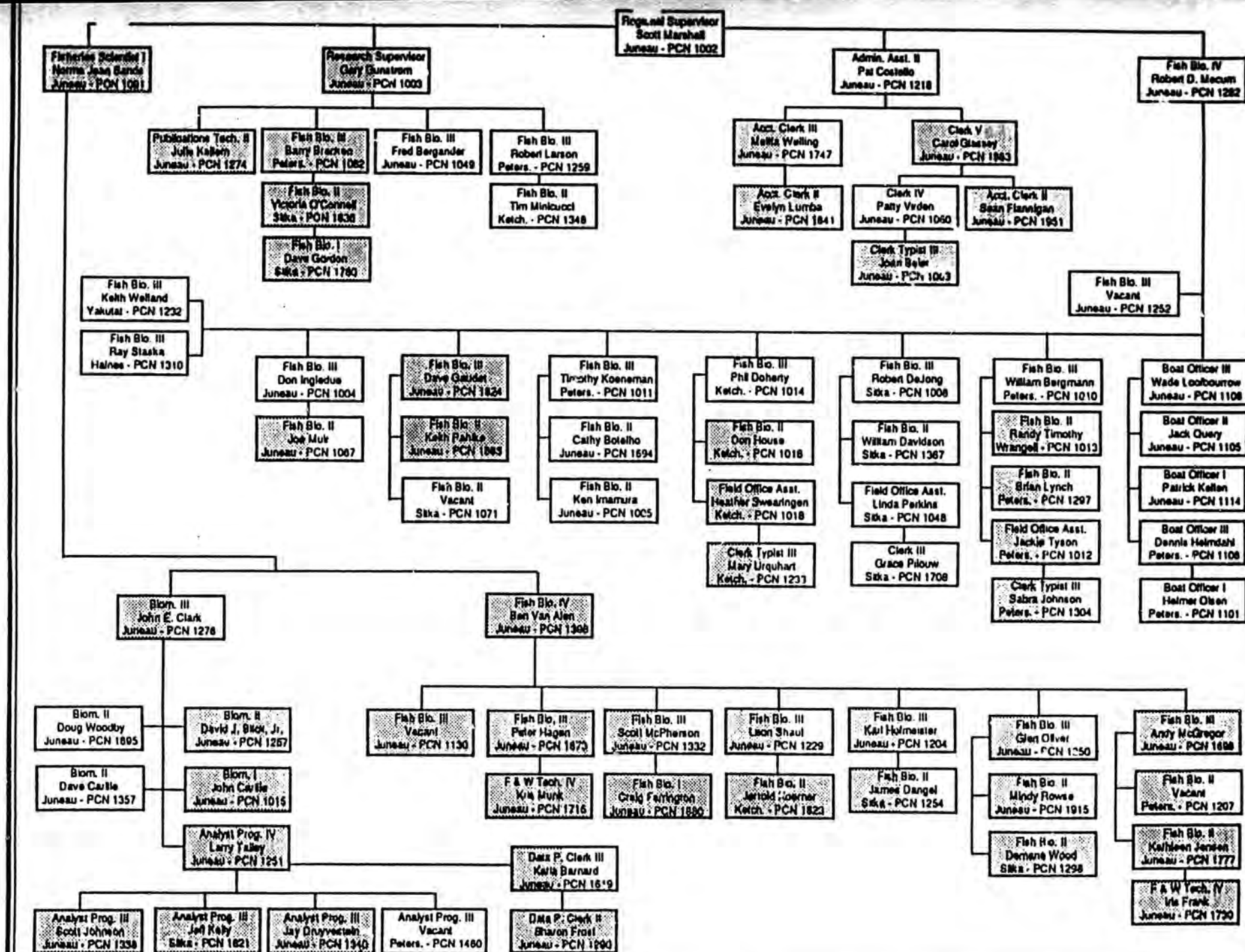
Project and Activity	Yellowbook Project Number	Budget Manager	Budget Code	100	200	Line Item (1,000s)			Total	General Fund	Anad.	Test Fish	PSC	Other
PSC Boundary Area In-Season Mgmt.	SP-171	Doherty	11001921-11081631	27.5	2.5	16.0	3.4	65.0	114.4				114.4	
PSC Boundary Area Sockeye SPA	SP-172	Oliver	11001921-11081551	91.5	2.7	9.4	3.9		107.5				107.5	
PSC Hugh Smith Weir	SP-173	Van Allen	11001921-11081621	17.0		14.1	5.9		37.0				37.0	
PSC Boundary Area Coho Escapement	SP-174	Shaul	11001921-11081581											
Escapement Surveys						12			12.0				12.0	
Hugh Smith Weir and CWT Recovery				6.1		6.2	6.8		19.1				19.1	
Regional Coho Stock Assessment				3.3		1.4	1.9		6.6				6.6	
Subtotal				9.4	0.0	19.6	8.7	0.0	37.7				37.7	
PSC Vessel Support	SP-176	Loofbourrow	11001921-11081651				15.0		15.0				15.0	
PSC Portland Canal Chum CWT	SP-175	Hoffmeister	11001921-11081541	42.2	3.5	7.0	11.5		64.2				64.2	
Boundary Area Subtotal				491.4	8.7	66.1	48.4	65.0	679.6				679.6	
CHINOOK ANNEX														
PSC Chinook Fishery Mngmt PFT's	SP-180	Costello	11051921-11581711											
BIOM. I - CarlisleJ(1015)				55.6					55.6				55.6	
FB III - Gaudet(1824)				70.8					70.8				70.8	
AP III - Kelly(1821)*				31.3					31.3				31.3	
FB II - Pahlke(1863)				58.9					58.9				58.9	
Fishery Scientist I - Sands(1091)*				38.3					38.3				38.3	
FB II - Wood(1298)				62.3					62.3				62.3	
Subtotal				317.2					317.2				317.2	
PSC Troll Fishery Management	SP-181	Gaudet	11001921-11081711			13.0			13.0				13.0	
Fishery overflights		Oliver												
Winter Chinook Port Sampling		Gaudet		56.4	3.6		0.4		60.4				60.4	
PSC Chinook Stock Assessment	SP-182	Gaudet	11001921-11081561											
Unuk River CWT Project				30.3	1.1	8.0	6.7		46.1				46.1	
Other CWT Projects				28.0	1.0	7.0	5.0		41.0				41.0	
Subtotal				58.3	2.1	15	11.7	0	87.1				87.1	
Chinook Annex Subtotal				431.9	5.7	28.0	12.1	0.0	477.7				477.7	
SUBTOTAL - Pacific Salmon Commission Funding				2086.1	49.2	362.3	147.7	132.8	2778.1				2778.1	

Table 6. Administrative budget for Southeast fisheries programs for FY 92.

Table 6. Administrative budget for Southeast fisheries programs for FY 92.										Purse Seine				PSC TREATY				MISC				SF			
				GILLNET																					
				TROLL	SETN	101	106	108	111	115	KET	PTG	JNU	STK	PU	HAT	OBL	SHELL	HERR	GRND	FISH	HAB	GAME	TOTAL	
Project and Activity		Total	Budget Category	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
																								0.0	
ADMINISTRATION			Category																						
PSC Salmon Treaty Coordinator	48.6	RA	PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	49	0	0	0	0	0	0	0	49
PSC Program Management PFT's																									
Pub. Tech. - Anderson (1274)	43.2	RA	PSC																						
CT III - Beier (1053)	33.8	RA	PSC																						
AC II - Flannigan (1951)	31.0	RA	PSC																						
CLERK V - Kaczmarek (1883)	41.6	RA	PSC																						
FB IV - Gunstrom (1003)*	41.5	RA	PSC																						
Student Intern I - Newman (081)	12.6	RA	PSC																						
AC II - Vacant (1841)	0.0	RA	PSC																						
AC III - Welling (1747)*	18.5	RA	PSC																						
Subtotal	222.2	RA	PSC	49	7	20	11	3	21	4	42	5	4	3	1	19	29	0	0	0	0	0	0	4	222
PSC Program Management Suppo	103.1	RA	PSC	23	3	9	5	1	10	2	20	2	2	1	1	9	14	0	0	0	0	0	0	2	103
PSC Fishery & Program Respon	54.1	RA	PSC	12	2	5	3	1	5	1	10	1	1	1	0	5	7	0	0	0	0	0	0	1	54
Administrative Overhead	18.0	RA	PSC	4	1	2	1	0	2	0	3	0	0	0	0	2	2	0	0	0	0	0	0	0	18
Administration Subtotal	446.0			88	13	36	19	6	37	7	75	8	6	5	2	34	101	0	0	0	0	0	8	446	
TECHNICAL SUPPORT & DATA SHARING																									
PSC Technical Support PFT's																									
AP IV - Talley (1091)	70.3	DP	PSC	25	9	2	2	0	1	4	18	2	2	2	1	3	0	0	0	0	0	0	0	0	70
AP III - Johnson (1338)	58.7	DP	PSC	21	7	2	1	0	1	3	15	2	2	2	1	2	0	0	0	0	0	0	0	0	59
AP III - Kelly (1821)*	31.3	DP	PSC	11	4	1	1	0	0	2	8	1	1	1	0	1	0	0	0	0	0	0	0	0	31
AP III - Druyvestein (1340)	53.8	DP	PSC	19	7	2	1	0	1	3	14	2	2	2	1	2	0	0	0	0	0	0	0	0	54
DPC II - Vacant (1619)*	19.8	DP	PSC	7	2	1	0	0	0	1	5	1	1	1	0	1	0	0	0	0	0	0	0	0	20
Fishery Scientist I - Sands (10)	38.3	DP	PSC	7	2	1	0	0	0	1	5	1	1	1	0	1	19	0	0	0	0	0	0	0	38
BIOM. III - Clark (1276)*	36.8	B	PSC	13	2	0	0	0	1	2	9	0	1	0	0	1	7	0	0	0	0	0	0	0	37
Subtotal	309.0			101	33	8	6	0	4	15	74	8	10	8	3	12	27	0	0	0	0	0	0	0	309
PSC F.R.E.D. CWT Lab	108.0	RS	PSC	44	0	1	1	1	1	1	1	1	1	0	0	44	0	0	0	0	0	0	11	108	
PSC Data Sharing	219.6	DP	PSC	77	27	7	5	0	3	11	56	7	7	7	2	9	0	0	0	0	0	0	0	0	226
TS & DS Subtotal	636.6			222	61	16	13	2	9	28	130	16	18	14	5	64	27	0	0	0	0	0	11	637	
TRANSBOUNDARY RIVERS ANNEX																									
PSC Transboundary Rivers PFT's																									
BIOM. II - Blick (1257)*	31.2	B	PSC	0	0	0	8	3	6	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	31
FT IV - Frank (1730)*	23.3	RS	PSC	4	1	0	9	4	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	23
FB II - Jensen (1777)	53.3	RS	PSC	0	1	0	16	5	5	0	0	0	0	0	0	3	23	0	0	0	0	0	0	0	53
CT III - Johnson (1304)*	16.1	AM	PSC	2	0	0	4	1	0	0	0	6	0	0	3	0	0	0	0	0	0	0	0	0	16
FB II - Lynch (1297)*	30.6	AM	PSC	6	0	0	7	2	0	0	0	10	0	0	0	0	6	0	0	0	0	0	0	0	31
FB III - McGregor (1698)	64.6	RS	PSC	0	6	0	10	3	13	0	0	0	3	0	1	3	26	0	0	0	0	0	0	0	65
FB II - Muir (1067)*	31.2	AM	PSC	1	0	0	0	0	24	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	31
FB II - Timothy (1013)*	31.5	AM	PSC	5	0	0	16	3	0	0	0	4	0	0	0	0	3	0	0	0	0	0	0	0	32
Fld. Office Assis. - Tyson (10)	19.6	AM	PSC	1	0	0	3	3	0	0	0	8	0	0	3	0	1	0	0	0	0	0	0	0	20
Subtotal	301.4			19	8	0	73	25	49	1	1	28	3	0	6	7	80	0	0	0	0	0	0	0	301
PSC Distrs. 6 & 8 DGN Monitor	12.1	AM	PSC	0	0	0	8	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
PSC Stikine River Stock Asses	12.8	AP	PSC	0	0	0	5	3	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	13
PSC Taku Sockeye Stock Asses																									
Port Sampling	22.5	AP	PSC	0	0	0	0	0	13	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	23
Stock Identification	21.5	AP	PSC	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
Subtotal	44.0			0	0	0	0	0	34	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	44
PSC Taku River Escapement Es	76.0	AP	PSC	8	0	0	0	0	61	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	76
PSC Port Snottisham Weirs	42.4	AP	PSC	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
PSC Taku Coho CWT																									
Tatsamenie R. CWT Indicato	11.0	RS	PSC	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	11
Upper Taku Escapement Surv	3.6	RS	PSC	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
Regional Coho Stock Assess	34.9	RS	PSC	17	0	3	3	0	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	35
Subtotal	49.5			23	0	3	3	0	12	3	0	0	0	0	0	0	0	0	0	0	0	0	0	6	50
TBR Subtotal	538.2			50	8	3	89	32	198	3	1	28	11	0	6	21	80	0	0	0	0	0	6	538	

Table 6. Administrative budget for Southeast fisheries programs for FY 92. Page 2

Table 6. Administrative budget for Southeast fisheries programs for FY 94. Page 2				GILLNET										Purse Seign SUB				PSC TREATY				MISC				SF	
Project and Activity		Total	BudgeBdg CateoSour	TROLL	SETH	101	106	108	111	115	KET	PTG	JNU	STK	PU	HAT	OBL	SHELL	HERR	GRND	FISH	HAB	GAME	TOTAL			
				\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$			
NORTHERN BOUNDARY AREA ANNEX																											
PSC Boundary Area PFT's																											
BIOM. II - Blick (1257)*		31.2	B	PSC	0	0	2	0	0	0	17	2	2	2	0	0	5	0	0	0	0	0	0	0	31		
FB I - Farrington (1880)		45.9	RS	PSC	0	1	10	1	0	0	1	25	0	0	0	0	2	2	0	0	0	0	0	2	46		
FT IV - Frank (1730)*		23.3	RS	PSC	4	1	5	1	0	0	1	10	0	0	0	0	1	0	0	0	0	0	0	23			
FB II - House (1016)*		30.3	AM	PSC	3	0	8	0	0	0	15	0	0	0	0	0	5	0	0	0	0	0	0	30			
FB II - Koerner (1823)		64.2	RS	PSC	14	0	24	3	0	0	0	22	0	0	0	0	1	0	0	0	0	0	0	64			
Fld. Off Assis. - Swearingen (		20.7	AM	PSC	2	0	4	0	0	0	10	0	0	0	2	0	2	0	0	0	0	0	0	21			
CT III - Urquhart (1233)*		16.5	AM	PSC	2	0	5	0	0	0	8	0	0	0	0	0	1	0	0	0	0	0	0	17			
FB IV - Van Alen (1398)		71.7	RS	PSC	4	0	7	1	0	1	11	3	3	3	1	7	29	0	0	0	0	1	0	72			
Subtotal		303.8			28	2	65	6	0	2	3	119	6	6	5	3	11	45	0	0	0	0	1	2	304		
PSC Boundary Area In-Season		114.4	AM	PSC	0	0	29	0	0	0	86	0	0	0	0	0	0	0	0	0	0	0	0	114			
PSC Boundary Area Sockeye SP		107.5	AP	PSC	0	0	19	0	0	0	60	0	0	0	0	28	0	0	0	0	0	0	0	108			
PSC Hugh Smith Weir		37.0	AP	PSC	0	0	22	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	37			
PSC Boundary Area Coho Escapement																											
Escapement Surveys		12.0	RS	PSC	7	0	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	12		
Hugh Smith Weir and CWT Re		19.1	RS	PSC	11	0	3	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	19		
Regional Coho Stock Assess		6.6	RS	PS	4	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7			
Subtotal		37.7			21	0	5	5	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	3	38		
PSC Vessel Support		15.0	V	PSC	0	0	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	15			
PSC Portland Canal Chum CWT		64.2	AP	PSC	0	0	45	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	64			
Boundary Area Subtotal		679.6			50	2	193	11	0	3	4	309	6	6	5	3	39	45	0	0	0	1	4	680			
CHINOOK ANNEX																											
PSC Chinook Fishery Mngmt PFT's																											
BIOM. I - CarlisleJ(1015)		55.6	B	PSC	22	0	0	0	0	0	0	0	0	0	0	11	22	0	0	0	0	0	0	0	56		
FB III - Gaudet(1824)		70.8	AM	PSC	39	0	0	0	0	0	0	0	0	0	0	11	21	0	0	0	0	0	0	0	71		
AP III - Kelly(1821)*		31.3	DP	PSC	19	0	0	0	0	0	0	0	0	0	6	0	6	0	0	0	0	0	0	31			
FB II - Pahlke(1863)		58.9	RS	PSC	18	3	0	0	0	6	6	6	0	0	0	0	6	12	0	0	0	0	0	3	59		
Fishery Scientist I - Sands(10		38.3	RS	PSC	4	0	0	0	0	0	0	0	0	0	0	4	31	0	0	0	0	0	0	38			
FB II - Wood(1298)		62.3	RS	PSC	37	4	0	0	0	0	3	0	0	0	5	0	9	0	0	0	0	0	0	3	62		
Subtotal		317.2			139	7	0	0	0	6	9	6	0	0	11	0	47	86	0	0	0	0	0	6	317		
PSC Troll Fishery Management																											
Fishery overflights		13.0	AM	PSC	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13			
Winter Chinook Port Sampl		60.4	RS	PSC	25	0	0	0	0	0	0	0	0	0	0	24	11	0	0	0	0	0	0	60			
PSC Chinook Stock Assessment																											
Unuk River CWT Project		46.1	RS	PSC	18	0	5	1	0	0	5	0	0	0	0	5	9	0	0	0	0	0	0	4	46		
Other CWT Projects		41.0	RS	PSC	10	0	0	0	0	4	0	0	0	4	0	2	6	0	0	0	0	0	0	14	41		
Subtotal		87.1			29	0	5	1	0	4	0	5	0	4	0	7	15	0	0	0	0	0	0	18	87		
Chinook Annex Subtotal		477.7			206	7	5	1	0	10	9	11	0	4	11	0	78	112	0	0	0	0	0	24	478		
SUBTOTAL - PSC BUDGET		2778.1			617	91	253	133	39	257	51	527	59	45	37	17	235	365	0	0	0	0	1	53	2778		



Indicates Percentage of Federal Funding

ATTACHMENT E

LIST OF U.S.-CANADA PACIFIC SALMON TREATY

CONTRACTS .. FY 83 - FY 92

U.S./CANADA CONTRACT BUDGETS, 1983 TO Present

<u>State FY*</u>	<u>Contract No.</u>	<u>Treaty Coor.</u>	<u>Yukon</u>	<u>S.E. Ak</u>	<u>Total</u>
1983	NASO-82-00134	NA	NA	776.1	776.1
1984	WASC-83-00157	NA	NA	835.7	835.7
1985	WASC-84-00179	NA	NA	869.6	869.6
1986	85-ABC-00142	NA	NA	1,205.8	1,205.8
1987	NA85-ABH-00050	81.5	200.0	2,557.5	2,839.0
1988	NA87-ABH-00025	84.6	250.0	2,845.8	3,180.4
1989	NA88-ABH-00045	84.6	215.0	2,745.8	3,045.4
1990	NA90AA-H-FM010	82.2	234.3	2,585.1	2,901.6
1991	NA90AA-H-FM674	78.6	234.3	2,585.2	2,898.1
1992	NA17FPO250-01	48.6	232.3	2,729.5	3,010.4

 * Subtract one year to obtain the corresponding Federal fiscal year, and the principle field season of work.

ATTACHMENT F

ADF&G DIVISION OF COMMERCIAL FISHERIES

DESCRIPTIONS OF PACIFIC SALMON TREATY PROJECTS

IN THE "YELLOWBOOK" FOR FY 89 - FY 91 AND FY 93 (PROPOSED)

PROJECT TITLE: Program Management, EE/USC
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: ADMINISTRATION
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-140
 LEDGER:
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

Please write a project description for this project

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project.

*****NOTE - \$30.5 of line 300 transferred to Line 100 of dummy project SP-142 for the purposes of adjusting the FY93 request.

BUDGET MANAGER: 1003 - Gary Gunstrom -

BUDGET DETAIL: CODE/LINE ITEM	PRIOR YEAR ALLOCATIONS			PAGE2 SUMMARY	
	FY89	FY90	FY91		
100 PERSONAL SERV	0.0	144.9	179.9	227.2	192.2 PFT
200 TRAVEL	0.0	18.8	18.8	6.9	35.0 Other
300 CONTRACTUAL	0.0	8.3	8.3	0.0	
400 COMMODITIES	0.0	6.1	6.1	13.0	
500 EQUIPMENT	0.0	6.1	0.0	0.0	
700 GRANTS	***	***		0.0	
PROJECT TOTALS:	0.0	178.1	213.1	247.1	
FEDERAL RECEIPTS	0.0	178.1	213.1	247.1	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	0.	46.	57.	59.	

YELLOW PAGES PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Program Management, SE/USC
UNIT: SE U.S./Canada Studies
COMPONENT: Special Projects BPS# 4700

PROJECT NUMBER: SP-140
LEDGER CODE:
PRINT ORDER: No order
REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range			days		hours			TOTAL COST
					91	93	MM	SEADUTY	Premium Pay	OT	HAZ	SHIFT	
1003	FB IV - Gunstrom, Gary P	F		AWA	20L	20L	6.0	0	0	0.	0.	0	\$42,849
1053	CT III - Beier, Joan A	F		AWA	08C	08D	12.0	0	0	0.	0.	0	\$35,867
1274	PUB TECH - Anderson, J A	F		AWA	13D	13E	12.0	0	0	0.	0.	0	\$48,659
1747	AC III - Welling, Meli A	F		AWA	10B	10D	6.0	0	0	0.	0.	0	\$19,896
1883	CLERK V - Glassey, Car A	F		AWA	11D	11F	12.0	0	0	0.	0.	0	\$44,900
1951	CLERK III - Flannagan, A S			AWA	08A	09C	11.0	0	0	0.	0.	0	\$35,016
Personnel Totals =							59.0	\$0		\$0		\$227,189	

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72240	Field Travel	6.9	Outside travel
72240	Field Travel	0.0	Ballance of \$3267.2 allocation
73100	Professional Services	0.0	TRAINING \$4
73300	Communication	0.0	PHONE \$8.6
73400	Trasportation	0.0	FRIEGHT \$1
73500	Advertising, Printing & Bind	0.0	REPORT DUPLICATION \$4
73700	Minor Repair & Maintenance	0.0	VEHICLE \$1
73700	Minor Repair & Maintenance	0.0	REPAIRS \$4.6
73860	Rental Machinery & Equipment	0.0	COPIER \$7.3
74220	Office & Library Supplies	13.0	POSTAGE
TOTAL LINES 200 - 700		19.9	
TOTAL PROJECT COST		247.	

FY 93 Budget Req

01/13/1992

PROJECT TITLE: PSC Fishery & Program Response
 FISHERY UNIT: SE U.S./CANADA STUDIES
 COMPONENT: Special Projects BPS# 4700
 LOCATION: JUNEAU
 SUBCOMPONENT: ADMINISTRATION
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-141
 LEDGER: 11071521
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

-0-

PROJECT OBJECTIVES

NOTE: LINE 200 - 500 AMOUNTS SHIFTED AROUND TO BALLANCE THE FY93 REQUEST.

BUDGET MANAGER: 1002 - Scott Marshall -

BUDGET DETAIL:	PRIOR YEAR ALLOCATIONS			PAGE2	
CODE/LINE ITEM	FY89	FY90	FY91	SUMMARY	
	=====	=====	=====	=====	21.0 PFT
100 PERSONAL SERV	0.0	0.0	0.0	21.0	0.0 Other
200 TRAVEL	0.0	0.0	0.0	44.6	
300 CONTRACTUAL	0.0	0.0	0.0	0.0	
400 COMMODITIES	0.0	0.0	0.0	14.8	
500 EQUIPMENT	0.0	0.0	0.0	0.0	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	0.0	0.0	80.4	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	0.0	0.0	80.4	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY REPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	0.	0.	0.	6.	

YELLOWBOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: PSC Fishery & Program Response
 UNIT: SE U.S./CANADA STUDIES
 COMPONENT: Special Projects BPS# 4700

PROJECT NUMBER: SP-141
 LEDGER CODE: 11071521
 PRINT ORDER: No order
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R S LOC	Range		MM	days		hours			TOTAL COST
			91	93		SEADUTY	Premium Pay	OT	HAZ	SHIFT	
1619	DP CLK III - Barnard, A F AWA	11C	11D	6.0	0	0	0.	0.	0	\$20,982	
Personnel Totals =					6.0	\$0	\$0	\$0	\$20,982		

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72240	Field Travel	20.6	
72240	Field Travel	14.0	Was line 300
72500	Per Diem	10.0	Was line 300
74520	Professional Scientific	14.8	
TOTAL LINES 200 - 700		59.4	
TOTAL PROJECT COST		80.3	

PROJECT TITLE: UNBUDGETED PCNS
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION: Juneau
 SUBCOMPONENT: BALLANCE BUDGET
 LEGISLATIVE DISTRICTS : NONE

PROJECT NUMBER: SP-142
 LEDGER: NONE
 PRINTORD: no order
 REGION: 1
 PRIORITY:

PROGRAM ELEMENT: Budget abuse
 FISHERIES AFFECTED: none

USER GROUPS AFFECTED: none

SPECIES AFFECTED: none

PROJECT DESCRIPTION

Budget unbudgeted PCNs and add \$\$\$\$\$\$ to Line 100 of the special projects budget. *****DELETE THIS PROJECT BEFORE MAKING THE FY93 ALLOCATION*****

PROJECT OBJECTIVES

Budget unused PCNs, and transfer approximately \$\$\$\$ to Line 100 for the FY92 Allocation and FY93 request for special projects. *****FUNDING 100% FED***** NOTE: PCN 1064 is used to budget \$136.9 which was added as an adjustment to the FY93 base, but ordered removed as a decrement to get to the request, which is one of the stupidest assinine things I have ever seen.

BUDGET MANAGER: REG5 - MCCONNAUGHEY

BUDGET DETAIL:	PRIOR YEAR ALLOCATIONS			PAGE2	
CODE/LINE ITEM	FY89	FY90	FY91	SUMMARY	
	=====	=====	=====	=====	151.2 PFT
100 PERSONAL SERV	0.0	0.0	0.0	183.7	32.4 Other
200 TRAVEL	0.0	0.0	0.0	0.0	
300 CONTRACTUAL	0.0	0.0	0.0	0.0	
400 COMMODITIES	0.0	0.0	0.0	0.0	
500 EQUIPMENT	0.0	0.0	0.0	0.0	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	0.0	0.0	183.7	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	0.0	0.0	183.7	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	0.	0.	0.	63.5	

YELLOWBOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: UNBUDGETED PCNS
UNIT: SE U.S./Canada Studies
COMPONENT: Special Projects

BPS# 4700

PROJECT NUMBER: SP-142
LEDGER CODE: NONE
PRINT ORDER:
REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range		MM	days		hours			TOTAL COST
					91	93		SEADUTY	Premium	Pay	OT	HAZ	
1064	DP CLK II - Vacant,	A	F	ARA	09A	09A	4.0	0	0	0.	0.	0	\$11,639
1064	DP CLK II - Vacant,	A	F	ARA	09A	09A	48.9	0	0	0.	0.	0	\$139,597
1401	DP CLK II - Vacant,	A	S	ARA	09A	09A	4.6	0	0	0.	0.	0	\$14,027
1502	FT II - Vacant,	A	S	CRB	09A	09A	2.0	0	0	0.	0.	0	\$6,310
1504	FT II - Vacant,	A	P	AKA	09A	09A	2.0	0	0	0.	0.	0	\$6,047
1526	FT II - Vacant,	A	P	ARA	09A	09A	2.0	0	0	0.	0.	0	\$6,047
Personnel Totals =							63.5	\$0		\$0		\$183,668	

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72390	Non-Employee Travel	0.0	EXCESS FED
TOTAL LINES 200 - 700		0.0	
TOTAL PROJECT COST		183.6	

FY 93 Budget Request -3b-

01/13/1992

PROJECT TITLE: PSC Technical Support PFT's
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION: Juneau
 SUBCOMPONENT: TECHNICAL SUPPORT & DATA SHAR
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-150
 LEDGER: 11571521
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

Please provide a description for this project, (one paragraph).

PROJECT OBJECTIVES

Please provide an objective for this project, (One paragraph).

BUDGET MANAGER: 1218 - Patrick Costello -

BUDGET DETAIL:	PRIOR YEAR ALLOCATIONS			PAGE2	
CODE/LINE ITEM	FY89	FY90	FY91	SUMMARY	
	=====	=====	=====	=====	385.6 PFT
100 PERSONAL SERV	0.0	0.0	179.9	407.4	21.7 Other
200 TRAVEL	0.0	0.0	18.8	0.0	
300 CONTRACTUAL	0.0	0.0	8.3	0.0	
400 COMMODITIES	0.0	0.0	6.1	0.0	
500 EQUIPMENT	0.0	0.0	0.0	0.0	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	0.0	213.1	407.4	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	0.0	213.1	407.4	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	0.	0.	57.	73.	

YELLOWBOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: PSC Technical Support PFT's
 UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700

PROJECT NUMBER: SP-150
 LEDGER CODE: 11571521
 PRINT ORDER: No order
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range		MM	days		hours			TOTAL COST
					91	93		SEADUTY	Premium Pay	OT	HAZ	SHIFT	
1091	FISH SCI I - Sands, No P F AWA	22B	22D	12.0	0	0	0.	0.	0			\$84,047	
1251	A/P IV - Talley, Larry A F AWA	19F	19J	12.0	0	0	0.	0.	0			\$75,803	
1276	BIOMET III - Clark, Jo P F AWA	20D	20F	6.0	0	0	0.	0.	0			\$39,268	
1290	DP CLK II - FROST, ROB A S AWA	09A	09B	7.0	0	0	0.	0.	0			\$21,743	
1338	A/P III - Johnson, Sco A F AWA	17C	17E	12.0	0	0	0.	0.	0			\$62,931	
1340	A/P III - Druyvestein, A F AWA	17A	17C	12.0	0	0	0.	0.	0			\$59,053	
1821	A/P III - Kelly, Jeffr P F AWA	17E	17F	12.0	0	0	0.	0.	0			\$64,508	
Personnel Totals =								73.0	\$0		\$0	\$407,356	

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
77570	Health Benefits	0.0	Filler line
TOTAL LINES 200 - 700		0.0	
TOTAL PROJECT COST		407.3	

FY 93 Budget Request -4b-

01/13/1992

PROJECT TITLE: FRED CWT Lab RSA
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION: Juneau
 SUBCOMPONENT: TECHNICAL SUPPORT & DATA SHAR
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-152
 LEDGER: 11071681
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

PROJECT OBJECTIVES

BUDGET MANAGER: 1218 - Patrick Costello

BUDGET DETAIL:	PRIOR YEAR ALLOCATIONS			PAGE2	
CODE/LINE ITEM	FY89	FY90	FY91	SUMMARY	
	=====	=====	=====	=====	
100 PERSONAL SERV	0.0	0.0	320.4	0.0	0.0 PFT
200 TRAVEL	0.0	0.0	0.0	0.0	0.0 Other
300 CONTRACTUAL	0.0	0.0	0.0	100.0	
400 COMMODITIES	0.0	0.0	0.0	0.0	
500 EQUIPMENT	0.0	0.0	0.0	0.0	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	0.0	320.4	100.0	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	0.0	320.4	100.0	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	0.	0.	60.	0.	

YELLOWBOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: FRED CWT Lab RSA
 UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects

BPS# 4700

PROJECT NUMBER: SP-152
 LEDGER CODE: 11071681
 PRINT ORDER: No order
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R S LOC	Range		MM	days		hours			TOTAL COST
			91	93		SEADUTY	Premium Pay	OT	HAZ	SHIFT	
REG1	PROJ ASST - Project, L A F AWA	22A	22A	0.0		0	0	0.	0.	0	\$0
Personnel Totals =					0.0		\$0		\$0		\$0

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENTS
73100	Professional Services	100.0	RSA to FRED
TOTAL LINES 200 - 700		100.0	
TOTAL PROJECT COST		100.	

FY 93 Budget Request -5b-

01/13/1992

PROJECT TITLE: ADF&G Coastwide Data Sharing
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: TECHNICAL SUPPORT & DATA SHAR
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-153
 LEDGER: 11071701
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED: -0-

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

Please write a project description for this project

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project

*****NOTE \$117.9 WAS IN LINE 300, BUT TRASFERED TO LINE 100 FOR DUMMY
 PROJECT*****

BUDGET MANAGER: 1003 - Gary Gunstrom -

BUDGET DETAIL: CODE/LINE ITEM	PRIOR YEAR ALLOCATIONS			PAGE2 SUMMARY	
	FY89	FY90	FY91		
100 PERSONAL SERV	0.0	160.1	6.3	0.0	0.0 PFT
200 TRAVEL	0.0	6.0	0.9	8.0	0.0 Other
300 CONTRACTUAL	0.0	33.0	16.5	0.0	
400 COMMODITIES	0.0	8.8	8.4	34.6	
500 EQUIPMENT	0.0	8.8	3.5	34.6	
700 GRANTS	***	***		0.0	
PROJECT TOTALS:	0.0	321.4	35.6	77.2	
FEDERAL RECEIPTS	0.0	321.4	35.6	77.2	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	8.	35.	2.	0.	

YELLOW R PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: ADF&G Coastwide Data Sharing
 UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700

PROJECT NUMBER: SP-153
 LEDGER CODE: 11071701
 PRINT ORDER: No order
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range		days		hours			TOTAL COST
					91	93	MM	SEADUTY	Premium Pay	OT	HAZ	
REG1	PROJ ASST - Project, L A F AWA	22A	22A	0.0	0	0	0.	0.	0			\$0
Personnel Totals =					0.0		\$0		\$0			\$0

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72300	Conventions and Meeting Travel	8.0	Outside Travel
73300	Communication	0.0	Data Comm. - WAS \$117.9
73700	Minor Repair & Maintenance	0.0	Computer Srv.
74520	Professional & Scientific	34.6	Computer Suply
75830	Data Processing Equipment	34.6	Computers
TOTAL LINES 200 - 700		77.2	
TOTAL PROJECT COST		77.1	

FY 93 Budget Request -6b-

01/13/1992

PROJECT TITLE: Transboundary River's PFT's
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION: Juneau
 SUBCOMPONENT: TRANSBOUNDARY RIVERS ANNEX
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-160
 LEDGER: 11571511
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

PROJECT OBJECTIVES

BUDGET MANAGER: 1218 - Patrick Costello -

BUDGET DETAIL: CODE/LINE ITEM	PRIOR YEAR ALLOCATIONS			PAGE2 SUMMARY	
	FY89	FY90	FY91		
100 PERSONAL SERV	0.0	0.0	0.0	357.7	357.7 PFT
200 TRAVEL	0.0	0.0	0.0	0.0	0.0 Other
300 CONTRACTUAL	0.0	0.0	0.0	0.0	
400 COMMODITIES	0.0	0.0	0.0	0.0	
500 EQUIPMENT	0.0	0.0	0.0	0.0	
700 GRANTS	***	***		0.0	
PROJECT TOTALS:	0.0	0.0	0.0	357.7	
FEDERAL RECEIPTS	0.0	0.0	0.0	357.7	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	0.	0.	0.	72.	

YELLOW BOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Transboundary River's PFT's
UNIT: SE U.S./Canada Studies
COMPONENT: Special Projects **BPS#** 4700

PROJECT NUMBER: SP-160
LEDGER CODE: 11571511
PRINT ORDER: No order
REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range		MM	days		hours			TOTAL COST
					91	93		SEADUTY		Premium	Pay	SHIFT	
1012	FOA - Tyson, Jacquelin	A	F	AKA	10E	10F	6.0	0	0	0.	0.	0	\$20,982
1013	FB II - Timothy, Randa	P	F	AKB	16K	16L	6.0	0	0	0.	0.	0	\$33,236
1067	FB II - Muir, Joseph	P	F	AWA	16K	16L	6.0	0	0	0.	0.	0	\$33,236
1207	FB II - Vacant,	P	F	AWA	16A	16A	12.0	0	0	0.	0.	0	\$51,537
1257	BIOMET II - Blick, Dav	A	F	AWA	19A	19C	6.0	0	0	0.	0.	0	\$33,460
1297	FB II - Lynch, Brian	P	F	AKA	16J	16K	6.0	0	0	0.	0.	0	\$32,254
1698	FB III - McGregor, And	P	F	AKA	18D	18F	12.0	0	0	0.	0.	0	\$68,789
1730	FT IV - Frank, Iris	A	F	AWA	13E	13F	6.0	0	0	0.	0.	0	\$25,125
1777	FB II - Jensen, Kathle	A	F	AWA	16C	16E	12.0	0	0	0.	0.	0	\$59,053
Personnel Totals =							72.0	\$0		\$0		\$357,677	

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
77570	Health Benefits	0.0	Filler line
TOTAL LINES 200 - 700		0.0	
TOTAL PROJECT COST		357.6	

FY 93 Budget Request -7b-

01/13/1992

PROJECT TITLE: Dist. 106/108 D. Gillnet Mon.
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: TRANSBOUNDARY RIVERS ANNEX
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-161
 LEDGER: 11071511
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:
 USER GROUPS AFFECTED:
 SPECIES AFFECTED:

PROJECT DESCRIPTION

Please write a project description for this project

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project

BUDGET MANAGER: 1003 - Gary Gunstrom -

BUDGET DETAIL:	PRIOR YEAR ALLOCATIONS			PAGE2	
CODE/LINE ITEM	FY89	FY90	FY91	SUMMARY	
	=====	=====	=====	=====	
100 PERSONAL SERV	0.0	51.7	20.4	64.2	17.5 PFT
200 TRAVEL	0.0	0.1	1.2	0.0	46.8 Other
300 CONTRACTUAL	0.0	8.6	4.6	1.1	
400 COMMODITIES	0.0	1.4	7.8	2.7	
500 EQUIPMENT	0.0	1.4	8.1	0.0	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	61.8	42.1	68.0	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	61.8	42.1	68.0	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	0.	13.5	6.	19.7	

YELLOWBOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Dist. 106/108 D. Gillnet Mon.
 UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700

PROJECT NUMBER: SP-161
 LEDGER CODE: 11071511
 PRINT ORDER: No order
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range		MM	days		hours			TOTAL COST
					91	93		SEADUTY	Premium Pay	OT	HAZ	SHIFT	
1304	CT III - Johnson, Sabr A F Aka	08B	08C	6.0	0	0	0.	0.	0			\$17,459	
1447	PILOT I - Marifern, Lo A S AKA	16F	16F	0.0	0	0	0.	0.	0			\$0	
1589	FT III - Hagen, Patric A S AKA	11A	11a	12.0	0	0	0.	0.	0			\$40,385	
1713	FT III - Rockre, Thoma P S AKB	11C	11E	1.7	0	0	0.	0.	0			\$6,389	
Personnel Totals =							19.7	\$0		\$0		\$64,234	

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
73860	Rental Machinery & Equipment	1.1	
74600	Other Operating Supplies	2.7	
TOTAL LINES 200 - 700		3.8	
TOTAL PROJECT COST		68.	

FY 93 Budget Request -8b-

01/13/1992

PROJECT TITLE: Stikine R. Sockeye Stock Asses
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: TRANSBOUNDARY RIVERS ANNEX
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-162
 LEDGER: 11071591
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

Please write a project description for this project

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project

BUDGET MANAGER: 1003 - Gary Gunstrom -

BUDGET DETAIL: CODE/LINE ITEM	PRIOR YEAR ALLOCATIONS			PAGE2 SUMMARY	
	FY89	FY90	FY91		
100 PERSONAL SERV	0.0	175.7	18.8	10.9	0.0 PFT
200 TRAVEL	0.0	1.0	0.0	1.1	10.9 Other
300 CONTRACTUAL	0.0	0.3	4.5	0.0	
400 COMMODITIES	0.0	0.3	4.0	1.4	
500 EQUIPMENT	0.0	0.3	0.0	0.0	
700 GRANTS	***	***		0.0	
PROJECT TOTALS:	0.0	177.3	27.3	13.4	
FEDERAL RECEIPTS	0.0	177.3	27.3	13.4	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	61.	46.	5.	3.4	

YELLOWBOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Stikine R. Sockeye Stock Asses
 UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700

PROJECT NUMBER: sp-162
 LEDGER CODE: 11071591
 PRINT ORDER: No order
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R S LOC	Range		MM	days		hours			TOTAL COST
			91	93		SEADUTY	SWD RDO	OT	HAZ	SHIFT	
1657	FT II - Vacant,	A P AKA	09A	09A	1.0	0	0	0.	0.	0	\$3,023
1735	FT III - Fisher, Kim	A P AKA	11A	11A	1.5	0	0	0.	0.	0	\$4,879
1876	FT I - Vacant,	A P AKA	09A	09A	1.0	0	0	0.	0.	0	\$3,023
Personnel Totals =					3.5		\$0		\$0		\$10,927

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72240	Field Travel	1.1	
74520	Professional & Scientific	1.4	
TOTAL LINES 200 - 700		2.5	
TOTAL PROJECT COST		13.4	

FY 93 Budget Request -9b-

01/13/1992

PROJECT TITLE: Taku Sockeye Stock Assessment
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION: Juneau
 SUBCOMPONENT: TRANSBOUNDARY RIVERS ANNEX
 LEGISLATIVE DISTRICTS : 4

PROJECT NUMBER: SP-163
 LEDGER: 11071571
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT: stock assessment
 FISHERIES AFFECTED: district 111 gillnet

USER GROUPS AFFECTED: commercial, personal use

SPECIES AFFECTED: sockeye

PROJECT DESCRIPTION

Provides stock composition for sockeye for dist 111 gillnet

PROJECT OBJECTIVES

NOTE: \$1.9 of line 300 moved to dummy project SP-142 to balance line 100 for the FY93 request.

BUDGET MANAGER: 1698 - Andrew McGregor - Transboundary River Guru

BUDGET DETAIL:	PRIOR YEAR ALLOCATIONS			PAGE2	
CODE/LINE ITEM	FY89	FY90	FY91	SUMMARY	
	=====	=====	=====	=====	0.0 PFT
100 PERSONAL SERV	0.0	0.0	55.9	45.3	45.3 Other
200 TRAVEL	0.0	0.0	1.5	0.8	
300 CONTRACTUAL	0.0	0.0	16.0	0.1	
400 COMMODITIES	0.0	0.0	4.9	1.3	
500 EQUIPMENT	0.0	0.0	5.0	0.0	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	0.0	83.3	47.5	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	0.0	83.3	47.5	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	0.	0.	14.5	14.	

YELLOWBOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Taku Sockeye Stock Assessment
UNIT: SE U.S./Canada Studies
COMPONENT: Special Projects BPS# 4700

PROJECT NUMBER: sp-163
LEDGER CODE: 11071571
PRINT ORDER: No order
REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R S LOC	Range			days		hours			TOTAL COST
			91	93	MM	SEADUTY	Premium Pay	OT	HAZ	SHIFT	
1345	FT II - Dodson, Carol	A S AWA	09A	09B	2.5	0	0	0.	0.	0	\$7,765
1581	FT III - Vacant,	A S AWA	11A	11A	6.0	0	0	0.	0.	0	\$20,192
1896	FT II - Andrews, Clyde	A S AWA	09D	09F	3.5	0	0	0.	0.	0	\$12,068
k649	- Vacant,	A N AWA	12A	12A	2.0	0	0	0.	0.	0	\$5,227
=====											
Personnel Totals =					14.0	\$0		\$0			\$45,254

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72240	Field Travel	0.8	
73500	Advertising, Printing & Bind	0.1	Was \$2.0
74520	Professional & Scientific	1.3	
		=====	
TOTAL LINES 200 - 700		2.2	
TOTAL PROJECT COST		47.4	

PROJECT TITLE: Taku River Escapement Estim
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: TRANSBOUNDARY RIVERS ANNEX
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-164
 LEDGER: 11071531
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

Please write a project description for this project

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project. LINE
 ITEMS AMOUNTS SHIFTED FOR FY93 REQUEST.

BUDGET MANAGER: 1003 - Gary Gunstrom -

BUDGET DETAIL:	PRIOR YEAR ALLOCATIONS			PAGE2	
CODE/LINE ITEM	FY89	FY90	FY91	SUMMARY	
	=====	=====	=====	=====	0.0 PFT
100 PERSONAL SERV	0.0	131.2	0.0	46.6	46.6 Other
200 TRAVEL	0.0	0.2	0.0	0.0	
300 CONTRACTUAL	0.0	10.4	0.0	0.0	
400 COMMODITIES	0.0	17.9	0.0	33.4	
500 EQUIPMENT	0.0	17.9	0.0	3.0	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	161.7	0.0	83.0	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	161.7	0.0	83.0	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	28.	35.	0.	10.5	

YELLOWBOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Taku River Escapement Estimat
 UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700

PROJECT NUMBER: sp-164
 LEDGER CODE: 11071531
 PRINT ORDER: No order
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R S LOC	Range		MM	days		hours			TOTAL COST
			91	93		SEADUTY	OT	Premium Pay	HAZ	SHIFT	
1635	FT II - Starostka, And A P AWA		09B	09C	3.0	0	0	100.	0.	0	\$12,014
1696	FB I - Lemond, Dennis A S AWA		14B	14B	4.5	0	0	120.	0.	0	\$22,330
1787	FT II - Fleek, Courtne A S AWA		09B	09C	3.0	0	0	110.	0.	0	\$12,260
Personnel Totals =					10.5		\$0		\$7,121		\$46,605

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
74480	Household & Institutional	6.0	Groceries
74480	Household & Institutional	14.4	Air Charter
74520	Professional & Scientific	7.0	
74600	Other Operating Supplies	6.0	fuel
75870	Laboratory & Scientific Equip	3.0	wheel
TOTAL LINES 200 - 700		36.4	
TOTAL PROJECT COST		83.	

FY 93 Budget Request -11b-

01/13/1992

PROJECT TITLE: Port Snettisham Weirs
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: TRANSBOUNDARY RIVERS ANNEX
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-165
 LEDGER: 11071611
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

Please write a project description for this project

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project. NOTE:
 LINE ITEM AMOUNTS SHIFTED AROUND FOR FY93 REQUEST.

BUDGET MANAGER: 1003 - Gary Gunstrom -

BUDGET DETAIL:	PRIOR YEAR ALLOCATIONS			PAGE2	
CODE/LINE ITEM	FY89	FY90	FY91	SUMMARY	
	=====	=====	=====	=====	0.0 PFT
100 PERSONAL SERV	0.0	81.8	8.3	22.9	22.9 Other
200 TRAVEL	0.0	4.4	1.5	0.0	
300 CONTRACTUAL	0.0	22.0	4.5	0.0	
400 COMMODITIES	0.0	33.3	20.2	15.9	
500 EQUIPMENT	0.0	33.3	0.0	3.0	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	162.0	34.5	41.8	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	162.0	34.5	41.8	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	33.5	29.	2.	6.	

YELLOW BOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Port Snettisham Weirs
UNIT: SE U.S./Canada Studies
COMPONENT: Special Projects

BPS# 4700

PROJECT NUMBER: sp-165
LEDGER CODE: 11071611
PRINT ORDER: No order
REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range		MM	days		hours			TOTAL COST
					91	93		SEADUTY	Premium Pay	OT	HAZ	SHIFT	
1358	FT III - Demartini, Al	A	S	AWA	11C	11D	1.5	0	0	25.	330.	0	\$6,645
1623	FT I - Vacant,	A	S	AWA	07A	07A	1.5	0	0	25.	330.	0	\$4,973
1739	FT III - Dreyer, David	A	S	AWA	11A	11B	1.5	0	0	25.	330.	0	\$6,292
1940	FT I - Rounds, Bryanne	A	P	AWA	07A	07A	1.5	0	0	25.	330.	0	\$4,973
Personnel Totals =							6.0	\$0		\$3,156		\$22,884	

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
74520	Professional & Scientific	0.2	
74520	Professional & Scientific	7.2	Aircraft Charters
74560	Data Processing Supplies	0.5	
74600	Other Operating Supplies	8.0	
75940	Special Equipment	3.0	
TOTAL LINES 200 - 700		18.9	
TOTAL PROJECT COST		41.7	

FY 93 Budget Request -12b-

01/13/1992

PROJECT TITLE: Taku River Coho Salmon CWT
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: TRANSBOUNDARY RIVERS ANNEX
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-166
 LEDGER: 11071661
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

Please write a project description for this project

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project. NOTE:
 LINE ITEMS SHIFTED AROUND FOR BALANCEING FY93 REQUEST.

BUDGET MANAGER: 1003 - Gary Gunstrom -

BUDGET DETAIL: CODE/LINE ITEM	PRIOR YEAR ALLOCATIONS			PAGE2 SUMMARY	
	FY89	FY90	FY91		
100 PERSONAL SERV	0.0	151.7	48.5	33.7	0.0 PFT 33.7 Other
200 TRAVEL	0.0	0.6	0.0	0.0	
300 CONTRACTUAL	0.0	31.7	6.7	0.0	
400 COMMODITIES	0.0	11.6	4.4	14.1	
500 EQUIPMENT	0.0	11.6	17.1	1.0	
700 GRANTS	***	***		0.0	
PROJECT TOTALS:	0.0	195.6	76.7	48.8	
FEDERAL RECEIPTS	0.0	195.6	76.7	48.8	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	11.	33.	11.5	8.1	

PROJECT TITLE: Taku River Coho Salmon CWT
 UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700

PROJECT NUMBER: sp-166
 LEDGER CODE: 11071661
 PRINT ORDER: No order
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range		MM	days		hours			TOTAL COST
					91	93		SEADUTY	Premium Pay	OT	HAZ	SHIFT	
1359	FT II - Wilson, Rebecc	A	S	ACA	09B	09C	0.5	0	0	70.	0	\$1,677	
1670	FT II - Jordan, Susan	A	S	ARE	09B	09C	1.0	0	0	150.	0	\$3,368	
1706	FT III - Derby, Lawren	P	S	AWA	11F	11J	0.5	0	0	0.	0.	\$1,973	
1874	FB I - Crabtree, Kent	A	S	AWA	14C	14D	6.1	0	0	0.	50.	\$26,678	
Personnel Totals =							8.1	\$0	\$280		\$33,697		

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
74480	Household & Institutional	2.0	Food, misc
74520	Professional & Scientific	9.6	Air Charters
74600	Other Operating Supplies	2.5	Coded-wire Tagging Equipment
75940	Special Equipment	1.0	Fuel & Misc.
TOTAL LINES 200 - 700		15.1	
TOTAL PROJECT COST		48.7	

FY 93 Budget Request -13b-

01/13/1992

PROJECT TITLE: Boundary Area PFTs
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION: Juneau
 SUBCOMPONENT: NORTHERN BOUNDARY AREA ANNEX
 LEGISLATIVE DISTRICTS : 1-4

PROJECT NUMBER: SP-170
 LEDGER: 11571631
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT: Permanent salaries
 FISHERIES AFFECTED: District 1-5 salmon sein & district 1 gillnet

USER GROUPS AFFECTED: commercial

SPECIES AFFECTED: salmon (100%)

PROJECT DESCRIPTION

PROJECT OBJECTIVES

BUDGET MANAGER: 1218 - Patrick Costello - Regional Budget master

BUDGET DETAIL:	PRIOR YEAR ALLOCATIONS			PAGE2	
CODE/LINE ITEM	FY89	FY90	FY91	SUMMARY	
	=====	=====	=====	=====	
100 PERSONAL SERV	0.0	0.0	187.7	350.1	350.1 PFT
200 TRAVEL	0.0	0.0	6.0	24.1	0.0 Other
300 CONTRACTUAL	0.0	0.0	33.0	0.0	
400 COMMODITIES	0.0	0.0	8.8	0.0	
500 EQUIPMENT	0.0	0.0	113.5	0.0	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	0.0	349.0	374.2	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	0.0	349.0	374.2	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	0.	0.	40.	72.	

YELLOWBOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Boundary Area PFTs
UNIT: SE U.S./Canada Studies
COMPONENT: Special Projects

BPS# 4700

PROJECT NUMBER: SP-170
LEDGER CODE: 11571631
PRINT ORDER: No order
REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range		MM	days		hours			TOTAL COST
					91	93		SEADUTY	RDO	OT	HAZ	SHIFT	
1016	FB II - House, Edward	P	F	aca	16F	16K	6.0	0	0	0.	0.	0	\$32,254
1018	FOA - Swearingen, Heat	A	F	ACA	10J	10K	6.0	0	0	0.	0.	0	\$22,197
1233	CT III - Urquhart, Mar	A	F	aca	08C	08D	6.0	0	0	0.	0.	0	\$17,933
1257	BIOMET II - Blick, Dav	A	F	AWA	19A	19C	6.0	0	0	0.	0.	0	\$33,460
1298	FB II - Wood, Demarie	P	F	ara	16K	16K	12.0	0	0	0.	0.	0	\$64,508
1398	FB IV - Van Alen, Benj	P	F	AWA	20C	20E	6.0	0	0	0.	0.	0	\$37,904
1730	FT IV - Frank, Iris	A	F	AWA	13E	13F	6.0	0	0	0.	0.	0	\$25,125
1823	FB II - Koerner, Jerro	P	F	aca	16K	16L	12.0	0	0	0.	0.	0	\$66,473
1880	FB I - Farrington, Cra	A	F	AWA	14B	14D	12.0	0	0	0.	0.	0	\$50,251
Personnel Totals =								72.0	\$0		\$0	\$350,110	

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72500	Per Diem	24.1	Ballance budget
TOTAL LINES 200 - 700		24.1	
TOTAL PROJECT COST		374.2	

FY 93 Budget Request -14b-

01/13/1992

PROJECT TITLE: Boundary Area Inseason Manage
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: NORTHERN BOUNDARY AREA ANNEX
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-171
 LEDGER: 11071631
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

Provide catch & escapement data for regulating boundary area seign & gillnet fisheries.

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project

BUDGET MANAGER: 1014 - Phil Doherty

BUDGET DETAIL: CODE/LINE ITEM	PRIOR YEAR ALLOCATIONS			PAGE2 SUMMARY	
	FY89	FY90	FY91		
100 PERSONAL SERV	0.0	49.9	208.5	40.3	0.0 PFT
200 TRAVEL	0.0	1.5	4.0	2.5	40.3 Other
300 CONTRACTUAL	0.0	16.0	14.7	0.0	
400 COMMODITIES	0.0	4.9	3.0	17.3	
500 EQUIPMENT	0.0	4.9	2.0	0.0	
700 GRANTS	***	***		0.0	
PROJECT TOTALS:	0.0	77.3	232.2	60.1	
FEDERAL RECEIPTS	0.0	77.3	232.2	60.1	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	5.	14.	46.6	11.4	

YELLOW BOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Boundary Area Inseason Manage
UNIT: SE U.S./Canada Studies
COMPONENT: Special Projects **BPS#** 4700

PROJECT NUMBER: SP-171
LEDGER CODE: 11071631
PRINT ORDER: No order
REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range		MM	days		hours			TOTAL COST
					91	93		SEADUTY	SWD	RDO	OT	HAZ	
1387	FT II - Vacant,	A	S	ACA	09A	09A	2.5	0	0	0.	0.	0	\$7,558
1755	DP CLK I - VACANT, VAC	A	S	ACA	08A	08A	3.0	0	0	0.	0.	0	\$8,616
1866	FB I - Walker, Scott	A	P	ACA	14A	14B	5.9	0	0	0.	0.	0	\$24,139
Personnel Totals =							11.4		\$0		\$0		\$40,314

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72240	Field Travel	2.5	Observer Trips
74220	Office & Library Supplies	13.9	Air Charter
74480	Household & Institutional	3.4	Groceries & fuel
		=====	
TOTAL LINES 200 - 700		19.8	
TOTAL PROJECT COST		60.1	

FY 93 Budget Request -15b-

01/13/1992

PROJECT TITLE: Boundary Area Sockeye SPA
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: NORTHERN BOUNDARY AREA ANNEX
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-172
 LEDGER: 11071551
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

Please write a project description for this project

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project

BUDGET MANAGER: 1003 - Gary Gunstrom -

BUDGET DETAIL: CODE/LINE ITEM	PRIOR YEAR ALLOCATIONS			PAGE2 SUMMARY	
	FY89	FY90	FY91		
100 PERSONAL SERV	0.0	170.3	141.9	69.1	0.0 PFT 69.1 Other
200 TRAVEL	0.0	2.9	2.0	17.0	
300 CONTRACTUAL	0.0	17.1	13.5	0.0	
400 COMMODITIES	0.0	4.6	5.6	13.3	
500 EQUIPMENT	0.0	4.6	12.9	0.0	
700 GRANTS	***	***		0.0	
PROJECT TOTALS:	0.0	213.7	175.9	99.4	
FEDERAL RECEIPTS	0.0	213.7	175.9	99.4	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	28.	49.	43.	20.5	

YELLOW BOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Boundary Area Sockeye SPA

UNIT: SE U.S./Canada Studies

COMPONENT: Special Projects

BPS# 4700

PROJECT NUMBER: SP-172

LEDGER CODE: 11071551

PRINT ORDER: No order

REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range		MM	days		hours			TOTAL COST
					91	93		SEADUTY		Premium Pay	OT	HAZ	
1582	FT III - Mckinstry, Cr A	S		AWA	11A	11B	4.0	0	0	0.	0.	0	\$13,792
1622	FT III - Reischling, K A	P		AKA	11A	11B	1.5	0	0	0.	0.	0	\$5,172
1647	FT II - Vacant,	A	P	AEB	09A	09A	2.5	0	0	0.	0.	0	\$7,558
1657	FT II - Vacant,	A	P	AKA	09A	09A	3.0	0	0	0.	0.	0	\$9,070
1697	FB I - Johnson, Lane	P	S	ACA	14D	14F	3.0	0	0	0.	0.	0	\$13,880
1731	FT I - Hiatt, Bret	A	P	ACA	07A	07B	2.0	0	0	0.	0.	0	\$5,607
1745	FT III - Vacant,	A	P	ACA	11A	11A	2.5	0	0	0.	0.	0	\$8,413
1945	FT I - Gaylord, Lawren	A	P	ACA	07A	07B	2.0	0	0	0.	0.	0	\$5,607
Personnel Totals =								20.5	\$0		\$0	\$69,102	

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72240	Field Travel	2.7	
72360	Moving or Relocation Expense	14.3	Ballance budget
74520	Professional & Scientific	2.0	
74600	Other Operating Supplies	9.4	Air Charter
74600	Other Operating Supplies	1.9	Fuel
TOTAL LINES 200 - 700		30.3	
TOTAL PROJECT COST		99.4	

FY 93 Budget Request -16b-

01/13/1992

PROJECT TITLE: Hugh Smith Weir
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: NORTHERN BOUNDARY AREA ANNEX
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-173
 LEDGER: 11071621
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPFCIES AFFECTED:

PROJECT DESCRIPTION

Please write a project description for this project

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project

BUDGET MANAGER: 1003 - Gary Gunstrom -

BUDGET DETAIL: CODE/LINE ITEM	PRIOR YEAR ALLOCATIONS			PAGE2 SUMMARY	
	FY89	FY90	FY91		
	=====	=====	=====	=====	0.0 PFT
100 PERSONAL SERV	0.0	10.1	18.8	18.0	18.0 Other
200 TRAVEL	0.0	0.0	0.0	0.5	
300 CONTRACTUAL	0.0	0.0	4.5	0.0	
400 COMMODITIES	0.0	0.0	4.0	8.7	
500 EQUIPMENT	0.0	0.0	0.0	0.0	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	10.1	27.3	27.2	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	10.1	27.3	27.2	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	57.	3.5	5.	5.	

PROJECT TITLE: Hugh Smith Weir
 UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects

BPS# 4700

PROJECT NUMBER: SP-173
 LEDGER CODE: 11071621
 PRINT ORDER: No order
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R S LOC	Range		MM	days		hours			TOTAL COST
			91	93		SEADUTY		Premium Pay	HAZ	SHIFT	
1530	FT II - Preus, John	A S ACA	09C	09D	2.5	0	0	10.	0.	0	\$8,429
1765	FT III - Taylor, Kent	P S ACA	11E	11F	2.5	0	0	0.	0.	0	\$9,562
Personnel Totals =						5.0	\$0		\$198		\$17,992

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72240	Field Travel	0.5	Ballance budget
74440	Agricultural Supplies	2.2	Food for Field Crews
74560	Data Processing Supplies	4.0	Aircraft Charters
74600	Other Operating Supplies	2.0	
74600	Other Operating Supplies	0.5	REPAIR & MAINTENACE
TOTAL LINES 200 - 700		9.2	
TOTAL PROJECT COST		27.1	

FY 93 Budget Request -17b-

01/13/1992

PROJECT TITLE: Boundary Area Coho Escapment
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: NORTHERN BOUNDARY AREA ANNEX
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-174
 LEDGER: 11071581
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

Please write a project description for this project

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project

BUDGET MANAGER: 1003 - Gary Gunstrom -

BUDGET DETAIL: CODE/LINE ITEM	PRIOR YEAR ALLOCATIONS			PAGE2 SUMMARY	
	FY89	FY90	FY91		
	=====	=====	=====	=====	0.0 PFT
100 PERSONAL SERV	0.0	65.2	29.2	9.2	9.2 Other
200 TRAVEL	0.0	2.5	0.0	1.6	
300 CONTRACTUAL	0.0	15.5	0.0	0.0	
400 COMMODITIES	0.0	1.5	5.0	10.6	
500 EQUIPMENT	0.0	1.5	0.0	8.1	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	105.7	34.2	29.5	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	105.7	34.2	29.5	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS.	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	0.	15.8	6.	2.6	

YELLOWBOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Boundary Area Coho Escapment
 UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700

PROJECT NUMBER: SP-174
 LEDGER CODE: 11071581
 PRINT ORDER: No order
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range		MM	days		hours			TOTAL COST
					91	93		SEADUTY	Premium Pay	OT	HAZ	SHIFT	
1359	FT II - Wilson, Rebecc A S AWA 09B 09C				1.4			0	0	0.	0.	0	\$4,456
1706	FT III - Derby, Lawren P S AWA 11F 11J				1.2			0	0	0.	0.	0	\$4,735
Personnel Totals =							2.6	\$0		\$0		\$9,192	

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72240	Field Travel	1.6	
74520	Professional & Scientific	2.7	
74600	Other Operating Supplies	7.9	Air Charters
75750	Vehicles and Transportation	8.1	Air Charters
TOTAL LINES 200 - 700		20.3	
TOTAL PROJECT COST		29.4	

FY 93 Budget Request -18b-

01/13/1992

PROJECT TITLE: Portland Canal Chum Salmon CWT
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: NORTHERN BOUNDARY AREA ANNEX
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-175
 LEDGER: 11071541
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

Please write a project description for this project

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project

BUDGET MANAGER: 1003 - Gary Gunstrom -

BUDGET DETAIL:	PRIOR YEAR ALLOCATIONS			PAGE2	
CODE/LINE ITEM	FY89	FY90	FY91	SUMMARY	
	=====	=====	=====	=====	0.0 PFT
100 PERSONAL SERV	0.0	95.0	90.6	69.8	69.8 Other
200 TRAVEL	0.0	5.0	5.0	6.4	
300 CONTRACTUAL	0.0	42.9	42.9	29.9	
400 COMMODITIES	0.0	24.6	24.6	26.3	
500 EQUIPMENT	0.0	24.6	5.5	0.0	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	173.0	168.6	132.4	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	173.0	168.6	132.4	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	0.	31.5	26.	19.5	

TELEPHONE PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Portland Canal Chum Salmon CWT
 UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700

PROJECT NUMBER: SP-175
 LEDGER CODE: 11071541
 PRINT ORDER: No order
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R S LOC	Range		MM	days		hours			TOTAL COST
			91	93		SEADUTY	OT	Premium Pay	HAZ	SHIFT	
1311	FT III - Gaede, Michae	A S ACA	11A	11B	2.5	0	0	42.	0.	0	\$9,753
1325	FB I - Wendt, Kathleen	A S ACA	14A	14C	1.0	0	0	0.	0.	0	\$4,220
1387	FT II - Vacant,	A S ARA	09A	09A	3.0	0	0	30.	0.	0	\$9,767
1743	FT III - Wendt, Kathle	A S ACA	11A	11C	3.5	0	0	30.	0.	0	\$13,231
1765	FT III - Taylor, Kent	P S ACA	11E	11F	3.5	0	0	30.	0.	0	\$14,297
1935	FT I - Nebl, Erik	A P ARA	07C	07D	3.0	0	0	30.	0.	0	\$9,506
1947	FT I - Minn, Beverly	A P ARA	07B	07C	3.0	0	0	20.	0.	0	\$9,054
Personnel Totals =						19.5	\$0	\$3,675			\$69,831

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72240	Field Travel	6.4	
73300	Communication	5.9	
73700	Minor Repair & Maintenance	1.0	
73700	Minor Repair & Maintenance	2.8	
73800	Rental Land, Buildings Space	7.2	Housing/Storag
73860	Rental Machinery & Equipment	13.0	Air Charter
74220	Office & Library Supplies	1.8	
74480	Household & Institutional	8.1	Food/Misc
74520	Professional & Scientific	10.2	Coded Wire Tag
74600	Other Operating Supplies	1.6	
74650	Repair & Maintenance Supply	4.6	
TOTAL LINES 200 - 700		62.6	
TOTAL PROJECT COST		132.4	

FY 93 Budget Request -19b-

01/13/1992

PROJECT TITLE: Vessel Support
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: NORTHERN BOUNDARY AREA ANNEX
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-176
 LEDGER: 11071651
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

Please write a project description for this project

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project

BUDGET MANAGER: 1003 - Gary Gunstrom -

BUDGET DETAIL:	PRIOR YEAR ALLOCATIONS			PAGE2	
CODE/LINE ITEM	FY89	FY90	FY91	SUMMARY	
	=====	=====	=====	=====	
100 PERSONAL SERV	0.0	25.4	8.3	0.0	0.0 PFT
200 TRAVEL	0.0	1.5	1.5	0.0	0.0 Other
300 CONTRACTUAL	0.0	4.5	4.5	0.0	
400 COMMODITIES	0.0	20.2	20.2	15.0	
500 EQUIPMENT	0.0	20.2	0.0	0.0	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	51.6	34.5	15.0	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	51.6	34.5	15.0	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	10.5	6.	2.	0.	

Salaries computed using FY93 rates.

PROJECT TITLE: Vessel Support
 UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects

BPS# 4700

PROJECT NUMBER: SP-176
 LEDGER CODE: 11071651
 PRINT ORDER: No order
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range		MM	days		hours			TOTAL COST
					91	93		SEADUTY	SWD	RDO	OT	HAZ	
REG1	PROJ ASST - Project, L A F AWA	22A	22A	0.0				0	0	0.	0.	0	\$0
Personnel Totals =							0.0		\$0		\$0		\$0

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
74440	Agricultural Supplies	2.0	Food
74600	Other Operating Supplies	13.0	FUEL
TOTAL LINES 200 - 700		15.0	
TOTAL PROJECT COST		15.	

FY 93 Budget Request -20b-

01/13/1992

PROJECT TITLE: Boundary area Pink escapement
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION: Ketchikan
 SUBCOMPONENT: NORTHERN BOUNDARY AREA ANNEX
 LEGISLATIVE DISTRICTS : 1

PROJECT NUMBER: SP-177
 LEDGER: 11071601
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT: Stock Assessment
 FISHERIES AFFECTED: Boundary area seign

USER GROUPS AFFECTED: commercila

SPECIES AFFECTED: pinks

PROJECT DESCRIPTION

Estimate pink salmon escapements

PROJECT OBJECTIVES

BUDGET MANAGER: 1204 - Karl Hofmeister -

BUDGET DETAIL: CODE/LINE ITEM	PRIOR YEAR ALLOCATIONS			PAGE2 SUMMARY	
	FY89	FY90	FY91		
	=====	=====	=====	=====	0.0 PFT
100 PERSONAL SERV	0.0	0.0	0.0	0.0	0.0 Other
200 TRAVEL	0.0	0.0	0.0	0.0	
300 CONTRACTUAL	0.0	0.0	0.0	5.0	
400 COMMODITIES	0.0	0.0	0.0	0.0	
500 EQUIPMENT	0.0	0.0	0.0	0.0	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	0.0	0.0	5.0	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	0.0	0.0	5.0	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	0.	0.	0.	0.	

BOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Boundary area Pink escapement
 UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700

PROJECT NUMBER: SP-177
 LEDGER CODE: 11071601
 PRINT ORDER: No order
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R S LOC	Range		MM	days		hours			TOTAL COST
			91	93		SEADUTY	Premium Pay	OT	HAZ	SHIFT	
REG1	PROJ ASST - Project, L A F ACA	22A	22A	22A	0.0	0	0	0.	0.	0	\$0
Personnel Totals =					0.0		\$0		\$0		\$0

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
73860	Rental Machinery & Equipment	5.0	
TOTAL LINES 200 - 700		5.0	
TOTAL PROJECT COST		5.	

FY 93 Budget Request -21b-

01/13/1992

PROJECT TITLE: Chinook Fishery Mgmt PFT's
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION: Juneau
 SUBCOMPONENT: CHINOOK ANNEX
 LEGISLATIVE DISTRICTS : 1-4

PROJECT NUMBER: SP-180
 LEDGER: 11571711
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED: SE Troll, gillnet, seine

USER GROUPS AFFECTED: Commercial, sport

SPECIES AFFECTED: Chinook (100%)

PROJECT DESCRIPTION

Budget PFT's for Chinook stock assessment staff

PROJECT OBJECTIVES

BUDGET MANAGER: 1218 - Patrick Costello - Administrative assistant

BUDGET DETAIL: CODE/LINE ITEM	PRIOR YEAR ALLOCATIONS			PAGE2 SUMMARY	
	FY89	FY90	FY91		
100 PERSONAL SERV	0.0	0.0	0.0	199.7	199.7 PFT
200 TRAVEL	0.0	0.0	0.0	59.0	0.0 Other
300 CONTRACTUAL	0.0	0.0	0.0	0.0	
400 COMMODITIES	0.0	0.0	0.0	0.0	
500 EQUIPMENT	0.0	0.0	0.0	0.0	
700 GRANTS	***	***		0.0	
PROJECT TOTALS:	0.0	0.0	0.0	258.7	
FEDERAL RECEIPTS	0.0	0.0	0.0	258.7	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	0.	0.	0.	37.	

Salaries computed using FY93 rates.

PROJECT TITLE: Chinook Fishery Mgmt PFT's
 UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700

PROJECT NUMBER: SP-180
 LEDGER CODE: 11571711
 PRINT ORDER: No order
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range		MM	days		hours			TOTAL COST
					91	93		SEADUTY	Premium Pay	OT	HAZ	SHIFT	
1015	BIOMET I - Carlile, Jo	A	F	AWA	17B	17D	12.0	0	0	0.	0.	0	\$61,016
1130	FB III - Vacant,	P	F	AWA	18A	18A	1.0	0	0	0.	0.	0	\$4,888
1824	FB III - Gaudet, David	P	F	AWA	18K	18K	12.0	0	0	0.	0.	0	\$73,214
1863	FB II - Pahike, Keith	P	F	AWA	16F	16F	12.0	0	0	0.	0.	0	\$60,610
Personnel Totals =							37.0	\$0		\$0		\$199,729	

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72240	Field Travel	59.0	Filler line
TOTAL LINES 200 - 700		59.0	
TOTAL PROJECT COST		258.7	

FY 93 Budget Request -22b-

01/13/1992

PROJECT TITLE: Troll Fish Management
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: CHINOOK ANNEX
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-181
 LEDGER: 11071711
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

Please write a project description for this project

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project

BUDGET MANAGER: 1824 - Dave Gaudet

BUDGET DETAIL: CODE/LINE ITEM	PRIOR YEAR ALLOCATIONS			PAGE2 SUMMARY	
	FY89	FY90	FY91		
100 PERSONAL SERV	0.0	51.9	208.5	44.8	0.0 PFT
200 TRAVEL	0.0	0.0	4.0	3.2	44.8 Other
300 CONTRACTUAL	0.0	0.0	14.7	14.2	
400 COMMODITIES	0.0	0.0	3.0	0.0	
500 EQUIPMENT	0.0	0.0	2.0	2.9	
700 GRANTS	***	***		0.0	
PROJECT TOTALS:	0.0	51.9	232.2	65.1	
FEDERAL RECEIPTS	0.0	51.9	232.2	65.1	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	6.	12.	46.6	13.7	

OK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Troll Fish Management
UNIT: SE U.S./Canada Studies
COMPONENT: Special Projects

BPS# 4700

PROJECT NUMBER: SP-181
LEDGER CODE: 11071711
PRINT ORDER: No order
REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R S LOC	Range		MM	days		hours			TOTAL COST
			91	93		SEADUTY	Premium Pay	OT	HAZ	SHIFT	
1647	FT II - Vacant,	A P ARA	09A	09A	2.5	0	0	0.	0.	0	\$7,558
1705	FT II - Lebowitz, Gary	A P ARA	09B	09C	2.5	0	0	0.	0.	0	\$7,958
1728	FT III - Lemaster, Dav	A P ARA	11A	11B	2.1	0	0	0.	0.	0	\$7,241
1735	FT III - Fisher, Kim	A P ARA	11A	11A	2.0	0	0	0.	0.	0	\$6,730
1741	FT I - Culver, Vivian	A S ARA	07B	07C	1.6	0	0	0.	0.	0	\$4,595
1837	FT III - Robinson, Cat	A S ARA	11C	11D	2.0	0	0	0.	0.	0	\$7,274
1896	FT II - Andrews, Clyde	A S ARA	09D	09F	1.0	0	0	0.	0.	0	\$3,448
Personnel Totals =					13.7		\$0		\$0		\$44,807

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72240	Field Travel	3.2	
73100	Professional Services	1.3	Computer Maintenance
73300	Communication	2.0	
73700	Minor Repair & Maintenance	1.8	
73700	Minor Repair & Maintenance	0.3	
73800	Rental Land, Buildings Space	0.6	
73860	Rental Machinery & Equipment	7.0	Air Charter
73900	Other Expenditures & Services	0.2	Postage
73900	Other Expenditures & Services	1.0	Air Freight
75750	Vehicles and Transportation	2.9	
TOTAL LINES 200 - 700		20.3	
TOTAL PROJECT COST		65.1	

FY 93 Budget Request -23b-

01/13/1992

PROJECT TITLE: Chinook Salmon Stock Assess.
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION:
 SUBCOMPONENT: CHINOOK ANNEX
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-182
 LEDGER: 11071561
 PRINTORD: No order
 REGION: 1
 PRIORITY: 1.00

PROGRAM ELEMENT:
 FISHERIES AFFECTED:

USER GROUPS AFFECTED:

SPECIES AFFECTED:

PROJECT DESCRIPTION

Please write a project description for this project

PROJECT OBJECTIVES

Please write a Project Objectives statement for this project

BUDGET MANAGER: 1003 - Gary Gunstrom -

BUDGET DETAIL: CODE/LINE ITEM	PRIOR YEAR ALLOCATIONS			PAGE2 SUMMARY	
	FY89	FY90	FY91		
100 PERSONAL SERV	0.0	101.5	197.0	49.3	0.0 PFT 49.3 Other
200 TRAVEL	0.0	2.0	3.3	2.9	
300 CONTRACTUAL	0.0	50.3	9.8	16.5	
400 COMMODITIES	0.0	1.4	6.3	11.4	
500 EQUIPMENT	0.0	1.4	1.7	0.0	
700 GRANTS	***	***		0.0	
PROJECT TOTALS:	0.0	155.2	218.1	80.1	
FEDERAL RECEIPTS	0.0	155.2	218.1	80.1	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	22.	30.	46.	13.6	

LOWEY K PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Chinook Salmon Stock Assess.

PROJECT NUMBER: SP-182

UNIT: SE U.S./Canada Studies

LEDGER CODE: 11071561

COMPONENT: Special Projects

BPS# 4700

PRINT ORDER: No order

REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R	S	LOC	Range		MM	days		hours			TOTAL COST
					91	93		SEADUTY	Premium Pay	OT	HAZ	SHIFT	
1614	FT III - Menard, James A	S		AWA	11A	11A	7.1	0	0	0.	0.	0	\$23,894
1722	FT III - Olsen, Mark A	S		AWA	11A	11B	4.0	0	0	0.	0.	0	\$13,792
4113	SF CHF - Magnus, David P	S		AWA	14F	14F	2.5	0	0	0.	0.	0	\$11,567
Personnel Totals =							13.6	\$0		\$0		\$49,254	

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72240	Field Travel	2.9	
73500	Advertising, Printing & Bind	2.0	Publishing, Photocopying
73860	Rental Machinery & Equipment	7.0	Airplane Charters
73860	Rental Machinery & Equipment	3.5	Vehicle Rental
73860	Rental Machinery & Equipment	4.0	Helicopter Charters
74440	Agricultural Supplies	4.0	Groceries
74600	Other Operating Supplies	1.0	Auto/Boat/Helicopter Fuel
74600	Other Operating Supplies	0.5	
74600	Other Operating Supplies	5.4	
74650	Repair & Maintenance Supply	0.5	Lumber/Building Supplies
TOTAL LINES 200 - 700		30.8	
TOTAL PROJECT COST		80.	

FY 93 Budget Request -24b-

01/13/1992

PROJECT TITLE: Stikine/Taku Salmon Enhancmnt
 FISHERY UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700
 LOCATION: Juneau
 SUBCOMPONENT: USDA Forest Service Contract
 LEGISLATIVE DISTRICTS :

PROJECT NUMBER: SP-269
 LEDGER: 11032691
 PRINTORD: no order
 REGION: 1
 PRIORITY:

PROGRAM ELEMENT: Fisheries enhancement
 FISHERIES AFFECTED: Stikine & Taku

USER GROUPS AFFECTED: All

SPECIES AFFECTED: Sockeye

PROJECT DESCRIPTION

This project pays for the US portion of a joint US and Canada initiative to enhance sockeye salmon in the transboundary river systems. The US will pay construction and operational costs of the central incubation facility used to incubate eggs, (at Snettisham), and transport fry to the enhancement site.

PROJECT OBJECTIVES

The contract runs for 5 years, on a Jan-Dec fiscal year. RSA to Fred for the hatchery is \$112.0. Funding for FY92 = \$378,009, Total 5 year project costs estimate is \$1,477,500. **** Funding 100% FED ****

BUDGET MANAGER: 1002 - Scott Marshal - Regional Supervisor

BUDGET DETAIL: CODE/LINE ITEM	PRIOR YEAR ALLOCATIONS			PAGE2 SUMMARY	
	FY89	FY90	FY91		
	=====	=====	=====	=====	52.4 PFT
100 PERSONAL SERV	0.0	0.0	0.0	76.3	23.8 Other
200 TRAVEL	0.0	0.0	0.0	20.0	
300 CONTRACTUAL	0.0	0.0	0.0	112.0	
400 COMMODITIES	0.0	0.0	0.0	20.0	
500 EQUIPMENT	0.0	0.0	0.0	170.0	
700 GRANTS	***	***		0.0	
	=====	=====	=====	=====	
PROJECT TOTALS:	0.0	0.0	0.0	398.3	
	=====	=====	=====	=====	
FEDERAL RECEIPTS	0.0	0.0	0.0	398.3	
GENERAL FUND	0.0	0.0	0.0	0.0	
INTERAGENCY RECPTS	***	***	0.0	0.0	
PROGRAM RECEIPTS	0.0	0.0	0.0	0.0	
GENERAL FUND MATCH	***	***	0.0	0.0	
STAFF MONTHS	0.	0.	0.	16.	

FELLOWBOOK PAGE 2 PROJECT DESCRIPTION
Salaries computed using FY93 rates.

PROJECT TITLE: Stikine/Taku Salmon Enhancmnt
 UNIT: SE U.S./Canada Studies
 COMPONENT: Special Projects BPS# 4700

PROJECT NUMBER: SP-269
 LEDGER CODE: 11032691
 PRINT ORDER:
 REGION: 1

PERSONAL SERVICES DATA

PCN	TITLE & NAME	R S LOC	Range			days		hours			TOTAL COST
			91	93	MM	SEADUTY	Premium Pay	OT	HAZ	SHIFT	
1716	FT IV - Munk, Kristen	A S AWA	13A	13C	6.0	0	0	0.	0.	0	\$23,825
1873	FB III - HAGEN, PETER	A F AWA	18A	18C	10.0	0	0	0.	0.	0	\$52,442
Personnel Totals =						16.0	\$0	\$0	\$0	\$0	\$76,267

PROJECT LINE ITEM DETAIL

LINE#	DESCRIPTION	Thousand \$\$\$ AMOUNT	COMMENT
72240	Field Travel	20.0	Field Travel
73100	Professional Services	112.0	RSA to FRED Division
74480	Household & Institutional	20.0	Total supplies
75870	Laboratory & Scientific Equip	170.0	equipment for otolith lab
TOTAL LINES 200 - 700		322.0	
TOTAL PROJECT COST		398.2	

FY 93 Budget Request -25b-

01/13/1992

ATTACHMENT G

ADF&G DIVISION OF COMMERCIAL FISHERIES

DESCRIPTIONS OF PACIFIC SALMON TREATY PROGRAM

JUSTIFICATIONS FOR FY 92

PACIFIC SALMON TREATY IMPLEMENTATION

PROGRAM JUSTIFICATION

FEDERAL FISCAL YEAR 1991

(STATE FISCAL YEAR 1992)

AGENCY: Alaska Department of Fish and Game
CATEGORY: Administrative and Technical Support
SUBCATEGORY: Administrative Liaison
TOTAL COST: \$ 48,600

JUSTIFICATION:

This program provides the salary for a senior level administrator to assist Alaska's Commissioners of the Pacific Salmon Commission and the chair of the Northern Panel to: 1) facilitate and coordinate functions of the U.S. Section of the Northern Panel and the Commission during the interim periods between bilateral meetings, 2) gather, analyze, and disseminate information and data to panel members, 3) to coordinate program and policy development relative to salmon interests vital to the northern area, and 4) to be a liaison between the public, other agencies, panels, and commission.

Alaska's PSC Commissioner and Chair of the Northern Panel must prepare and convey information and data to members of the U.S. Section of the Pacific Salmon Commission in preparation for bilateral meetings. This coordinator position will have the primary responsibility for preparing such materials and communicating them to the appropriate parties. Additionally, the incumbent will arrange meetings and participate in program budget and publicity development functions.

Due to the reduction in the funds being received for this program in this fiscal year, this position will only be filled 57% of the year.

COST BREAKDOWN:

Salaries and Benefits	\$ 48,600
Travel	0
Equipment and Supplies	0
Contractual Services	0
Publishing and Communications	0
Total	\$ 48,600

ADMINISTRATIVE LIAISON

Cost Element Breakdown

a.	<u>Personnel - Salaries¹</u> Special Assistant	7.2 mm @ 5,130	36,936
		<u>Subtotal</u>	\$ 36,936
b.	<u>Fringe Benefits¹</u> Special Assistant	7.2 mm @ 1,620	11,664
		<u>Subtotal</u>	\$ 11,664
c.	<u>Travel</u>		
		<u>Subtotal</u>	\$ 0
d.	<u>Equipment</u> (>\$5,000)		
		<u>Subtotal</u>	\$ 0
e.	<u>Supplies</u>		
		<u>Subtotal</u>	\$ 0
f.	<u>Contractual</u>		
		<u>Subtotal</u>	\$ 0
g.	<u>Construction</u> N.A.		
h.	<u>Other (Publishing and Communications)</u>		
		<u>Subtotal</u>	\$ 0
		<u>Total</u>	\$ 48,600

¹ Salaries and Fringe Benefits are based on actual and projected costs for each position. The amount may vary with who is in the position, how long they have worked for the State, and what type of retirement plan they have.

PACIFIC SALMON TREATY IMPLEMENTATION

PROGRAM JUSTIFICATION

FEDERAL FISCAL YEAR 1991
(STATE FISCAL YEAR 1992)

AGENCY: Alaska Department of Fish and Game

CATEGORY: Administrative and Technical Support

SUBCATEGORY: Administrative Support

TOTAL COST: \$ 314,000

JUSTIFICATION:

Implementation of the Treaty has required significant expansion of agency salmon management and stock assessment programs and has increased the need for coordination of many of these programs with Canadian programs. Treaty provisions (Articles IV & V, Annex IV, and the Memorandum of Understanding) require annual exchange with Canada of preseason fishery management plans, postseason fishery reports, catch and effort data, and stock identification information. This program funds the salaries of personnel providing these Treaty support activities in the Regional office: a Federal Aid Coordinator (6 mm), an Administrative Clerk, a Clerk-Typist, a Publications Technician, an Accounting Clerk (5.5 mm), and an assistant to the Southeast Alaska Management Coordinator (6 mm).

This program provides funding for Treaty-related office expenses in the Juneau Regional Office and for travel expenses incurred by administrative and technical support staff for staff and planning meetings, field site visits, and professional meetings and workshops. Due to the need for expanded lab and office space for the salmon aging and stock identification programs, this program will provide \$40,000 in funds for rental and renovation of office/lab space.

COST BREAKDOWN:

Salaries and Benefits	\$ 225,558
Travel	6,900
Equipment and Supplies	5,342
Contractual Services	50,000
Publishing and Communications	26,200
Total	\$ 314,000

ADMINISTRATIVE SUPPORT

Cost Element Breakdown

a. <u>Personnel - Salaries¹</u>				
Fisheries Biologist IV	6	mm @	5,184	31,104
Fisheries Biologist III	6	mm @	3,377	20,262
Publications Technician	12	mm @	2,639	31,668
Overtime	80	hr @	15.7	1,256
Clerk V	12	mm @	2,452	29,424
Clerk Typist III	12	mm @	1,924	23,088
Clerk III	5.5	mm @	1,813	9,972
Student Intern (part time)	12	mm @	1,250	15,000
<u>Subtotal</u>				\$ 161,774
b. <u>Fringe Benefits¹</u>				
Fisheries Biologist IV	6	mm @	1,801	10,806
Fisheries Biologist III	6	mm @	1,269	7,614
Publications Technician	12	mm @	1,076	12,912
Clerk V	12	mm @	1,027	12,324
Clerk Typist III	12	mm @	889	10,668
Clerk III	11	mm @	860	9,460
<u>Subtotal</u>				\$ 63,784
c. <u>Travel</u>				
Travel for staff & professional meetings				3,000
Travel to area offices for planning meetings				3,000
Per Diem	10	d @	90	900
<u>Subtotal</u>				\$ 6,900
d. <u>Equipment (>\$5,000)</u>				
<u>Subtotal</u>				\$ 0
e. <u>Supplies</u>				
General office supplies				2,442
Computer paper and disks				2,900
<u>Subtotal</u>				\$ 5,342

¹ Salaries and Fringe Benefits are based on actual and projected costs for each position. The amount may vary with who is in the position, how long they have worked for the State, and what type of retirement plan they have.

ADMINISTRATIVE SUPPORT Cost Element Breakdown (Continued)

f. <u>Contractual</u>				
				3,000
				3,000
				4,000
				20,000
				20,000
			<u>Subtotal</u>	\$ 50,000
g. <u>Construction</u> N.A.				
h. <u>Other (Publishing and Communications)</u>				
				16,000
	12	@	100	1,200
				3,000
				3,000
				3,000
			<u>Subtotal</u>	\$ 26,200
			<u>Total</u>	\$ 314,000

PACIFIC SALMON TREATY IMPLEMENTATION

PROGRAM JUSTIFICATION

FEDERAL FISCAL YEAR 1991
(STATE FISCAL YEAR 1992)

• • •

AGENCY: Alaska Department of Fish and Game

CATEGORY: Administrative and Technical Support

SUBCATEGORY: Technical Support

TOTAL COST: \$ 743,682

JUSTIFICATION:

This program provides funding for 1) salary support for senior level technical staff who coordinate, direct, and participate in activities necessary for implementation of the Pacific Salmon Treaty; 2) support of a computer services group to aid in U.S./Canada data sharing activities; and 3) partial support of a State micro-wire-tag decoding laboratory. Senior staff supported by this program include: 1) a Fishery Scientist (6 mm), responsible for coordination of U.S./Canada Treaty related activities, including planning, budgets, and meeting assignments, within the Regional Office; 2) a Biometrician III (6 mm), responsible for the statistical and sampling integrity of all data collection and analyses funded by this cooperative agreement; 3) an Analyst Programmer IV, responsible for computer services; and 4) a Fisheries Biologist IV (2 mm), responsible for the tag decoding laboratory. These positions also serve on various technical committees and working groups established by the Commission, Northern Panel, and U.S. Section of the PSC.

The Treaty specifies that the Parties maintain a coastwide data system that includes catch, effort, escapement, and coded-wire-tag information. The computer services group provides the support necessary for various U.S./Canada data sharing and research tasks which require computer and database resources, including: 1) facilitating electronic communications between members of PSC process; 2) development and maintenance of regional database management systems that ensure accurate and efficient data access; and 3) development and maintenance of data processing and analytical applications required by the various Treaty related projects. The coded-wire-tag decoding laboratory plays an essential role in the efficient and timely availability of tagging information recovered from coastwide tagging efforts and sport and commercial sampling programs such that the U.S. can take advantage of the enhancement addition provision of the Treaty. Due to space limitations at the Regional office, additional space must be rented to house the growing stock identification laboratory and associated personnel.

COST BREAKDOWN:

Salaries and Benefits	\$ 398,309
Travel	25,982
Equipment and Supplies	171,162
Contractual Services	146,629
Publishing and Communications	1,600
Total	\$ 743,682

TECHNICAL SUPPORT

Cost Element Breakdown

a. <u>Personnel - Salaries¹</u>				
REGIONAL OFFICE				
Fisheries Scientist	6	mm @	4,843	29,058
Biometrician III	6	mm @	4,528	27,168
Analyst Programmer IV	12	mm @	4,395	52,740
Analyst Programmer III	6	mm @	3,708	22,248
Analyst Programmer III	12	mm @	3,339	40,068
Analyst Programmer III	6	mm @	3,339	20,034
Analyst Programmer III	6	mm @	3,220	19,320
Data Entry Clerk	6	mm @	1,924	11,544
TAG LA				
Fisheries Biologist IV	2	mm @	4,566	9,132
Analyst Programmer IV	2	mm @	4,294	8,588
Fish Culturist III	3	mm @	4,248	12,744
Data Processing Clerk	3	mm @	2,618	7,854
Fish & Wildlife Tech IV	7	mm @	2,618	18,326
2 Fish & Wildlife Tech II's	6	mm @	1,941	11,646
Subtotal				\$ 290,470
b. <u>Fringe Benefits¹</u>				
Fisheries Scientist	6	mm @	1,708	10,248
Biometrician III	6	mm @	1,622	9,732
Analyst Programmer IV	12	mm @	1,535	18,420
Analyst Programmer III	6	mm @	1,398	8,388
Analyst Programmer III	12	mm @	1,259	15,108
Analyst Programmer III	6	mm @	1,259	7,554
Analyst Programmer III	6	mm @	1,228	7,368
Data Entry Clerk	4	mm @	889	3,556
Fisheries Biologist IV	2	mm @	1,631	3,262
Analyst Programmer IV	2	mm @	1,509	3,018
Fish Culturist III	3	mm @	1,543	4,629
Data Processing Clerk	3	mm @	1,167	3,501
Fish & Wildlife Tech IV	7	mm @	1,097	7,679
2 Fish & Wildlife Tech II's	6	mm @	896	5,376
Subtotal				\$ 107,839
c. <u>Travel</u>				
Travel to area offices in Southeast Alaska				6,000
Travel for training in Anchorage				4,000
Travel for training/meetings outside state				7,982
Travel for training for programmers				4,000
Travel by programmers for network maintenance	8	trps @	500	4,000
Subtotal				\$ 25,982

¹ Salaries and Fringe Benefits are based on actual and projected costs for each position. The amount may vary with who is in the position, how long they have worked for the State, and what type of retirement plan they have.

TECHNICAL SUPPORT Cost Element Breakdown (Continued)

d. <u>Equipment (>\$5,000)</u>					
Mass Storage backup device/software	1	@	5,000		5,000
VAX 4000 Capacity Upgrade	1	@	15,700		15,700
LAN Server Upgrades	4	@	11,250		45,000
Router for Craig	1	@	6,000		6,000
PC's	4	@	7,000		28,000
Laser printer	2	@	5,500		11,000
				<u>Subtotal</u>	<u>\$ 110,700</u>
e. <u>Supplies</u>					
Computer and printer supplies					2,357
Miscellaneous office supplies					8,000
Western Digital network boards	5	@	200		1,000
Monitrix problem solver	4	@	900		3,600
Modems for Craig office setup	2	@	1,000		2,000
Printer for Craig	1	@	3,000		3,000
SOFTWARE					
Biometrician supplies	2	@	2,500		5,000
Brief Editor	5	@	200		1,000
Saber Menu	3	@	400		1,200
Grandview	3	@	300		900
Harvard Graphics LAN Server	4	@	600		2,400
Harvard Graphics LAN Node	3	@	270		810
ROUTINE SOFTWARE UPGRADES					
Network Courier	4	@	200		800
XTreeNet	4	@	100		400
EM4105	30	@	150		4,500
MS-DOS	30	@	75		2,250
QEMM 386	10	@	65		650
Quatro Pro 3.0	15	@	100		1,500
WordPerfect 6.0	30	@	125		3,750
Lotus Freelance upgrade	5	@	150		750
Close-up upgrade	3	@	150		450
Borland C++ upgrade	1	@	100		100
Aldus Pagemaker upgrade	2	@	150		300
Correl Draw upgrade	1	@	150		150
Meta Design	2	@	150		300
Brief Editor upgrade	10	@	100		1,000
Saber Menu upgrade	4	@	150		600
Grandview upgrade	1	@	150		150
CISCO firmware updates	7	@	1,000		7,000
MICROWIRE TAG LABORATORY					
Sampling Supplies					2,045
Laboratory Supplies					1,000
Data Processing Supplies					1,500
				<u>Subtotal</u>	<u>\$ 60,462</u>

TECHNICAL SUPPORT Cost Element Breakdown (Continued)

f. <u>Contractual</u>				
VAX 4000 Hardware Maintenance	12	@	867	10,404
VAX VMS DOC CDROM's	12	@	250	3,000
Other Hardware Maintenance				2,500
LICENSES				
INGRES Support	1	yr @	20,000	20,000
SAS license (VAX 4000)	1	yr @	9,000	9,000
Istat Support	1	yr @	4,000	4,000
IMSL Support	1	yr @	1,300	1,300
Diskkeeper Support	1	yr @	500	500
TES Support	1	yr @	1,000	1,000
NPS Support	1	yr @	1,000	1,000
Netware/VMS Support	1	yr @	1,100	1,100
Netware Update Service -Douglas	1	yr @	875	875
Netware Update Service -area offices	3	yr @	750	2,250
Network Management				2,400
TELEPHONE LINES				
3 Telephone Lines (modems)	36	mo. @	100	3,600
Alascom WAN dataline charge (to area offices)	1	yr. @	35,800	35,800
WAN line cost	12	mo. @	1,100	13,200
PMSFC Cooperative Agreement				27,000
Technical Training, Programmers				4,000
Freight (Shipment of fish heads)				4,700
Printing of Tag Lab standard forms				300
Vehicle rental				1,100
			<u>Subtotal</u>	\$ 146,629
g. <u>Construction</u> N.A.				
h. <u>Other (Publishing and Communications)</u>				
Telephone at Tag Lab				1,600
			<u>Subtotal</u>	\$ 1,600
			<u>Total</u>	\$ 743,682

PACIFIC SALMON TREATY IMPLEMENTATION

PROGRAM JUSTIFICATION

FEDERAL FISCAL YEAR 1991

(STATE FISCAL YEAR 1992)

AGENCY: Alaska Department of Fish and Game
CATEGORY: Fisheries Management and Stock Assessment
SUBCATEGORY: Transboundary Rivers Annex
TOTAL COST: \$ 511,554

JUSTIFICATION:

Annex IV, Chapter 1, of the Treaty specifies harvest sharing, conservation, and enhancement requirements for transboundary river salmon stocks that requires fisheries management actions and stock assessment programs by both Parties. The Chapter also specifies that the Parties shall maintain a Joint Transboundary Technical Committee that will assemble and refine information on migrator patterns, exploitation and spawning of transboundary stocks, review management regimes for achieving escapement goals, and identify enhancement opportunities. This program funds the personnel and activities necessary to manage the Alaskan fisheries that occur off the transboundary rivers, conduct the necessary catch monitoring and stock identification programs, evaluate and refine sampling methodology and analytical analyses, and participate in joint technical committee meetings and work groups.

Harvest sharing of Stikine River sockeye stocks is regulated by a management model that must be updated with catch, effort, and stock composition data from both Parties' fisheries on a weekly basis. Management of Taku sockeye stocks is also based on data collected in-season. Additional summer staff is needed to provide this data in a timely manner during the fishing season. Escapement surveys are conducted and postseason refinements are made on stock composition estimates in order to complete run reconstructions for the salmon stocks and to make predictions the run strength for the following year. In order to collect the necessary stock identification samples and to conduct adult tagging and weir operations for escapement estimation, summer field camps are staffed at Canyon Island on the Taku River land at Port Snettisham. In addition, ADF&G personnel are sent to a field camp in Canada on the Tatsamenie River, a tributary to the Taku River, to help with juvenile coho tagging operations which are designed to determine migration routes and exploitation rates for these Taku coho stocks.

COST BREAKDOWN:

Salaries and Benefits	\$ 422,424
Travel	1,900
Equipment and Supplies	39,590
Contractual Services	44,640
Publishing and Communications	3,000
Total	\$ 511,554

TRANSBOUNDARY RIVERS ANNEX: FISHERIES MANAGEMENT AND STOCK ASSESSMENT

Cost Element Breakdown

a. Personnel - Salaries¹

REGIONAL OFFICE PERMANENT STAFF

Fisheries Biologist III	12	mm @ 3,963	47,556
Fisheries Biologist II	6	mm @ 3,963	23,778
Fisheries Biologist II	6	mm @ 3,837	23,022
Fisheries Biologist II	6	mm @ 3,837	23,022
Fisheries Biologist II	12	mm @ 3,220	38,640
Biometrician I	6	mm @ 3,827	22,962
Fish & Wildlife Tech IV	6	mm @ 2,705	16,230
Clerk Typist III	4	mm @ 1,924	7,696

IN-SEASON MANAGEMENT

Fish & Wildlife Tech	1.7	mm @ 2,303	3,915
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STIKINE RIVER PROJECTS

Fish & Wildlife Tech III (Wrgl)	1.5	mm @ 2,174	3,261
Fish & Wildlife Tech II (Ptbg)	1	mm @ 1,924	1,924
Fish & Wildlife Tech I (Ptbg)	1	mm @ 1,718	1,718

TAKU RIVER SOCKEYE PROJECT

Fish & Wildlife Tech III	6	mm @ 2,174	13,044
2 Fish & Wildlife Tech II's	6	mm @ 1,984	11,904
College Intern	2	mm @ 2,303	4,606

TAKU RIVER ESCAPEMENT PROJECT

Fisheries Biologist I	4.5	mm @ 2,617	11,777
3 Fish & Wildlife Tech II's	7	mm @ 1,984	13,888
Overtime			2,114

PORT SNETTISHAM WEIR

2 Fish & Wildlife Tech III's	3	mm @ 2,235	6,705
2 Fish & Wildlife Tech I's	3	mm @ 1,718	5,154
Overtime			1,700

TAKU RIVER COHO PROJECT

Fisheries Biologist I	6.5	mm @ 2,705	17,583
Fish & Wildlife Tech I	0.5	mm @ 1,528	764
2 Fish & Wildlife Tech II's	1.5	mm @ 1,984	2,976
Overtime			2,000

Subtotal \$ 307,939

b. Fringe Benefits¹

Fisheries Biologist III	12	mm @ 1,468	17,616
Fisheries Biologist II	6	mm @ 1,468	8,808
Fisheries Biologist II	6	mm @ 1,433	8,598
Fisheries Biologist II	6	mm @ 1,433	8,598
Fisheries Biologist II	12	mm @ 1,228	14,736
Biometrician II	6	mm @ 1,388	8,328
Fish & Wildlife Tech IV	6	mm @ 1,093	6,558
Clerk Typist III	4	mm @ 889	3,556
Fish & Wildlife Tech	1.7	mm @ 1,015	1,726

¹ Salaries and Fringe Benefits are based on actual and projected costs for each position. The amount may vary with who is in the position, how long they have worked for the State, and what type of retirement plan they have.

TRANSBOUNDARY RIVERS ANNEX Cost Element Breakdown (Continued)

b. <u>Fringe Benefits (Continued)</u>				
Fish & Wildlife Tech III (Wrgl)	1.5	mm @	832	1,248
Fish & Wildlife Tech II (Ptbg)	1	mm @	780	780
Fish & Wildlife Tech I (Ptbg)	1	mm @	738	738
Fish & Wildlife Tech III	6	mm @	859	5,154
2 Fish & Wildlife Tech II's	6	mm @	787	4,722
College Intern	2	mm @	224	448
Fisheries Biologist I	4.5	mm @	980	4,410
3 Fish & Wildlife Tech II's	7	mm @	793	5,551
2 Fish & Wildlife Tech III's	3	mm @	844	2,532
2 Fish & Wildlife Tech I's	3	mm @	793	2,379
Fisheries Biologist I	6.5	mm @	941	6,117
Fish & Wildlife Tech I	0.5	mm @	1,047	524
2 Fish & Wildlife Tech II's	1.5	mm @	905	1,358
<u>Subtotal</u>				\$ 114,485
c. <u>Travel</u>				
Travel Juneau-Petersberg	6	@	160	960
Per Diem	6	d @	90	540
Per Diem aboard tenders	16	d @	25	400
<u>Subtotal</u>				\$ 1,900
d. <u>Equipment (>\$5,000)</u>				
<u>Subtotal</u>				\$ 0
e. <u>Supplies</u>				
IN-SEASON MANAGEMENT - TREE POINT FIELD STATION				
Gas	350	gal @	1.70	595
Groceries, 1 person, 42 days	42	p-d @	12	504
Rain gear, gloves, etc.				300
Spare and replacement parts for boat				700
PETERSBURG AREA OFFICE				
Office supplies				201
STOCK ASSESSMENT - DOUGLAS OFFICE				
Scale sampling supplies (forms, tweezers, acetates, etc.)				1,000
Office supplies				1,000
TAKU RIVER FIELD CAMP - CANYON ISLAND				
Sampling supplies				1,300
Groceries for field camp	480	p-d @	12	5,760
Fuel: gas, oil, propane				4,900
Field camp hardware and supplies				5,000
Lumber for fish wheel				3,000
POR1 SNETTISHAM WEIR FIELD CAMP				
Sampling supplies (forms, tags, etc.)				720
Groceries for field camp	240	p-d @	12	2,880
Fuel: gas, oil, propane				700
Field camp hardware and supplies				2,000
Weir materials and lumber				3,300

p-d = per-person/per-day

TRANSBOUNDARY RIVERS ANNEX Cost Element Breakdown (Continued)

c. Supplies (Continued)

TAKU RIVER FIELD CAMP - TATSAMENIE

Coded-wire tags	30,000	@	0.04	1,200
Fish Anesthetic	1	kg @	200	200
Other sampling supplies				500
Minnow trap bait	150	lbs. @	2	300
Groceries for field camp	90	p-d @	12	1,080
Fuel: gas, oil, jet fuel, propane				1,000
Rain gear	3	pr @	150	450
Field camp hardware and supplies				1,000

Subtotal \$ 39,590

f. Contractual

PETERSBURG

Outboard & skiff repair & maintenance				600
Wannigan repairs				600

TAKU RIVER SOCKEYE PROJECTS

Advertising, printing, binding				2,000
Air charter, sockeye escapement sampling	4	tr @	1,760	7,040
Air charter for supply flights	12	nr @	330	3,960
Freight flights for camp setup	5	tr @	480	2,400
Helicopter flight, camp transport	2	tr @	1,100	2,200
Helicopter flight, tag recoveries	2	tr @	2,000	4,000

PORT SNETTISHAM WEIR CAMP

Air charter - fixed wing	20	hr @	330	6,600
Helicopter flight, escapement survey	1	tr @	2,000	2,000
Boat engine maintenance, repair				500
Vehicle Lease				200

TAKU RIVER COHO PROJECTS

Air charter - C185 (flt)	7	hr @	240	1,680
Air charter - Twin Beech (flt)	7	hr @	480	3,360
Air charter - Piper Supercub	10	hr @	150	1,500
Helicopter - Bell 206B	10	hr @	500	5,000
Equipment maintenance and repair				1,000

Subtotal \$ 44,640

g. Construction N.A.

h. Other (Publishing and Communications)

PETERSBURG AREA OFFICE

Photocopying				1,200
Telephone				1,200
Postage				600

Subtotal \$ 3,000

Total \$ 511,554

p-d = per person/per day

**TRANSBOUNDARY RIVERS ANNEX:
FISHERIES MANAGEMENT AND STOCK ASSESSMENT**

PROGRAM OPERATIONAL PLAN

Program Leader:	Andy McGregor
Agency:	Alaska Department of Fish and Game, Commercial Fisheries, Region 1
Date Submitted:	April 15, 1991
Fiscal Year:	Federal FY 91, State FY 92
Total Program Cost:	\$ 511,544

INTRODUCTION

Annex IV, Chapter 1, of the Treaty requires that the two Parties share the harvest of the Stikine and Taku sockeye stocks in a manner that necessitates close monitoring of the District 106, 108 and 111 catch and fishing effort, and requires stock identification programs to identify the different stocks in the mixed stock catches of these districts. Most of this information must be made available to the fisheries managers in-season so they can make informed decisions about the next week's fishery openings. In addition, a more detailed analysis of the data is made postseason to enable the best estimates of run strength and timing, and as a base for the next year's run forecast.

A preseason forecast of Stikine River run strength is used to determine fishing patterns for the first two weeks of the season for the District 106 and 108, and the Canadian Stikine River fisheries. After that time, in-season CPUE and stock identification data are used to determine run strength and allowable catches through the use of a jointly used management model.

The District 111 gill net fishery harvests sockeye salmon bound for the Taku River and Crescent and Speel Lakes in the Port Snettisham drainage. The Treaty specifies that the U.S. portion of the Total Allowable Catch (TAC) of the Canadian Taku River salmon that originate on the Canadian side of the border be 82%. Accurate in-season estimates of the inriver Taku River sockeye salmon run strength, as well as the relative abundance of Taku River stocks in the District 111 fishery are needed to effectively manage the fishery. The inriver mark/recapture program, together with a scale-pattern-based stock identification program in District 111, provides managers with in-season data necessary for adjusting fishing patterns and catches to comply with the Pacific Salmon Treaty provision on escapement and harvest sharing.

In addition to sockeye salmon, concerns about coho and pink salmon run strengths exist such that these species are also closely monitored. Spawning escapement estimates are made using mark-recapture methods for all three species on the Taku River to help determine long term viability of the stocks. Counting weirs are used to enumerate the sockeye escapement to Port Snettisham systems.

TRANSBOUNDARY RIVERS ANNEX: Program Operational Plan

Coho salmon support important commercial, recreational, and subsistence fisheries. Increasingly intense competition between gear groups for the right to harvest coho salmon is being demonstrated both on the fishing grounds and at Board of Fisheries meetings. Use of more efficient gear and increased targeting on coho salmon because of their high value, and restrictions on other species, has placed increased pressure on the stocks. There is an urgent need for more technical information on the migratory patterns, harvest rates, stock contributions, and status of coho salmon stocks to guide the Department, Board of Fisheries and Pacific Salmon Commission in making sound management decisions.

Coded-wire tagging studies provide useful information for evaluating management needs and options by determining the migratory characteristics of discrete stocks and groups of stocks, and harvest rates by sequential fisheries. Associated escapement enumeration projects also provide comparable escapement estimates that can be used for annual management assessment. Coded-wire tagging studies also provide information that will be of use in implementing the U.S./Canada Pacific Salmon Treaty, including estimates of harvest percentages by nation, fishery, and time period for selected stocks. Improved annual escapement assessment and harvest distribution information is needed for coho salmon stocks in the transboundary rivers in order to set management objectives for U.S. and Canadian fisheries that achieve both allocation and conservation goals.

OBJECTIVES

1. Manage the District 106, 108, and 111 commercial net fisheries in such a manner as to abide by Treaty harvest sharing arrangements.
2. Provide estimations of the stock composition of the sockeye salmon harvested in Subdistricts 106-41, 106-30, District 108 and District 111 gill net fisheries each week, and present results to managers prior to the next fishery opening announcement.
3. Estimate the number of Transboundary Stikine River sockeye harvested in Subdistricts 106-41, 106-30, District 108, and Transboundary Taku River sockeye harvested in District 111.
4. Estimate the escapement of sockeye salmon in the Taku River on an in-season basis, and pink and coho salmon on a postseason basis using mark-recapture methods.
5. Document the stock timing of the sockeye salmon escapements to the Taku River drainage.

TRANSBOUNDARY RIVERS ANNEX: Program Operational Plan

6. Enumerate and document the timing of sockeye salmon escapements to Crescent and Speel Lakes.
7. Collect sockeye salmon scale samples and associated biological data throughout the period of escapement to these systems for stock identification and age composition purposes.
8. Statistically reconstruct the sockeye runs in the Stikine and Taku Rivers and Port Snettisham drainage.
9. Estimate escapement, fisheries contribution, harvest rate, migratory timing, juvenile or smolt to adult survival rate, and age composition for one coho stock in the upper Taku River. This information will be used to monitor fishery harvest patterns and to establish objective escapement goals for the stock.
10. Develop escapement index sites on the Taku River for coho salmon where comparable escapement counts can be obtained annually by conducting helicopter and foot surveys.

FIELD SAMPLING METHODS

In-season monitoring, mid-June to early August, of the Stikine drift gill net fishery in District 108 will be accomplished by skiff from either Petersburg or Wrangell, while personnel will work from a wannigan stationed in Salmon Bay to monitor the Prince of Wales fishery (District 106). Fishing vessels will be sampled each week for catch by species, area and times fished, gear used, and any additional factors that might influence the fishery. Except for the first day of each fishing period, vessels will be interviewed randomly each day of the fishery. Sampling will vary depending upon the area open and the target species.

Sampling of fishing vessels throughout each week's fishery will provide daily in-season catch trends and account for vessel movements. Vessel interviews will produce an initial estimate of fishery performance and serve as a basis for extensions of ongoing weekly fishing periods. In addition to the interviews, effort levels, fleet dispersement, and fishing conditions will be recorded. Aerial surveys of the fishery will also be periodically flown to assist with monitoring the distribution of the fleet and to record vessel names to help verify fish ticket effort by location. Fish tickets will be collected in Petersburg and Wrangell and processed through an in-season fish ticket program to obtain overall weekly catches. This information will be evaluated to gauge weekly run strength and serve as a basis for establishing future open periods.

TRANSBOUNDARY RIVERS ANNEX: Program Operational Plan

Commercial fishery landings (and some test fishery landings) will be sampled at processing plants and aboard tender boats. Scales will be collected and fish length and sex recorded. A sample goal of 700 sockeye per week (for age composition estimation) has been established to achieve the desired precision for stock and age composition estimates. One hundred scales from age 1.3 fish will be digitized each week, in-season, from Subdistricts 106-30, 106-41, and Districts 108 and 111. Up to 100 scales from each of the 1.2, 2.2, and 2.3 age groups will be digitized postseasonally. The data will be shipped to Juneau where scales will be aged and digitized. Stock compositions will be estimated with models developed from the previous year's escapements. Scales will also be collected from spawning escapements in the fall and used in a postseason analysis to update the in-season analysis.

The District 111 gill net fishing area is located immediately south of Juneau, Alaska. The Taku River flows from its headwaters in northwestern British Columbia through Southeast Alaska and empties into Stephens Passage at Taku Inlet, approximately 40 km southeast of Juneau. Fish wheels will be operated at Canyon Island, approximately 18 km above saltwater. The Canadian inriver fishery operates upstream from the international border for approximately 20 km. Estimation of the inriver return of Taku River sockeye, pink and coho salmon will be made using mark-recapture techniques. Salmon will be captured in two fish wheels at Canyon Island, tagged with numbered spaghetti tags, and recaptured in the upstream Canadian gill net fishery and on the spawning grounds. Marked:unmarked ratios of sockeye salmon caught in the Canadian commercial fishery will be used to generate in-season estimates of the sockeye salmon escapement (lagged approximately 10-14 days from the District 111 fishery). Marked:unmarked ratios in the Canadian commercial and test fisheries will be used to develop the coho salmon escapement estimate. Pink salmon recovered on the Nakina River spawning grounds will be used to estimate the escapement of this species.

Fish wheels at Canyon Island will operate 24-hours per day. AWL data (scales, sex, length) will be collected from all uninjured salmon (except pink salmon) captured in the fish wheels. Tagging and sampling at the fish wheels will be conducted at least three times per day, or more often when catches are high. All uninjured sockeye and coho salmon captured in fish wheels will be sampled and tagged. One out of every ten pink salmon will be tagged because catches are normally so high that they can only be subsampled.

Canadian gill net catches of sockeye salmon will be sampled on a weekly basis for AWL, scales, sex, and length data. Catches of other species will be sampled for biological data when time permits. Approximately 200 sockeye per week will be sampled for AWL data from the Canadian Taku River fishery to provide scales from the principal age class each week for stock identification studies. Samples from three weeks can then be pooled to provide estimates of the proportion of each age class in the catch

TRANSBOUNDARY RIVERS ANNEX: Program Operational Plan

to within +/-5 percentage points with a level of precision of 95%. AWL sampling goals of 600 fish per season have been set for Canadian in-river catches of chinook, coho and chum salmon.

Weirs are operated on the outlets of Crescent and Speel Lakes to enumerate sockeye escapements. They also serve as collection sites for AWL and scale data used for baseline stock separation data. Sockeye salmon escapement enumeration and biological sampling will commence 1 July and continue through 31 August; data analysis will be performed postseason. Data from the weirs will include daily escapements, scale samples, mid-eye-to-fork-of-tail length measurements, sex of sampled fish, water temperature in degrees C, and daily water level fluctuations.

Coho salmon juveniles and smolts will be coded-wire tagged with discrete tag codes at Little Tatsamenie Lake on the Taku River. Tagged adults will return in one to two years and will be recovered from Alaskan fisheries by the Coded-wire Tag Recovery Project. Returning tagged fish will be enumerated at the weir. The following parameters will be estimated for the four tagged stocks: contribution of the tagged stock by area, gear type, and time period; total escapement; harvest rate (total and for sequential fisheries; and survival rate.

Minnow traps will be used to capture rearing coho juvenile salmon at Little Tatsamenie Lake. Fifty minnow traps baited with salmon roe will be checked and set three to four times daily at two hour intervals to capture rearing juveniles at the other sites. Traps will be moved frequently to maintain high catch rates and to systematically "fish out" the habitat. Juveniles will be held in pens before tagging until a total of 1,000 to 4,000 is captured, but not for a period longer than four days. Outmigrating smolts captured at smolt weirs and traps will be tagged and released daily. Rearing juveniles 62 mm in length and larger, and smolts 80 mm and larger will be tagged with a full length coded-wire tag and the adipose fin removed.

The minimum statistical objective for individual studies has confidence limits from 0.50 to 0.70, for a total harvest rate point estimate of 0.60. Given average or slightly lower survival rates for tagged fish, a total escapement count, and a 20% average fishery sampling rate, this objective can be achieved by tagging 5,000 juvenile coho salmon (or 2,500 smolts). These are absolute minimum tagging objectives for any system. The actual number tagged is the number that can be feasibly captured in most cases. For example, minnow trap catches decline sharply as accessible habitat is trapped out. A small system can be trapped to the point of greatly diminished returns in two to three weeks by a four person crew. All smolts captured at smolt weirs or in downstream migrant traps will be tagged. Based on past experience, the minimum tagging objective for rearing juveniles will be 12,000 for Little Tatsamenie Lake.

TRANSBOUNDARY RIVERS ANNEX: Program Operational Plan

A weir will be constructed on the outlet stream of Little Tatsamenie Lake. All adult coho salmon passing the weir will be counted and examined for missing adipose fins. Those with adipose clips will be examined with a magnetic field detector to determine whether or not there is a tag. Marked fish that register a strong, consistent signal will be released, while those that do not will be sacrificed and the head sent to the Coded-Wire Tag Lab in Juneau for further examination. All fish passing the weirs will be examined for fishery marks. Scale samples (four scales per fish) and mid-eye-to-fork-of-tail length measurements will be taken from 600 fish. Separate escapement records will be kept for jacks (age .0) and adults (age .1). Exploitation rate estimates will be based only on adult (age 1.) returns.

Helicopter surveys will be conducted on the Nahlin and Dudidontu Rivers in the upper Taku River system and on U.S. tributaries of the Stikine River. Surveys of lower Taku River tributaries will be conducted by ADF&G's Sport Fish Division. Survey locations will be chosen for good visibility in holding and spawning areas of adult coho salmon. Surveys will be timed as near as possible to the period of peak abundance of coho in the survey area. One to three surveys will be conducted in each index area during the run depending on funding, weather, and the results of early surveys. The helicopter will be flown the full length of the survey area at 6-20 m above the ground at a ground speed of 8-30 km per hour, depending on visibility and the presence of fish. The door will be removed on the observer's side and the helicopter maneuvered so that the observer will be looking directly into the stream at all times. The observer will wear polarized glasses and a billed cap to reduce interference from reflection and propwash. All visible adult coho salmon will be counted. Time, weather, and visibility conditions will be recorded, as well as any other pertinent observations (distribution and condition of the fish, observations of other species, etc.).

ANALYTICAL METHODS

Linear discriminant function (LDF) analysis will be used for determining stock composition of scale samples from catches of sockeye salmon. Stock composition of the sockeye harvest by district and week will be determined by applying stock estimates from LDF, with adjustments for classification errors, to the entire catch, and 90% confidence intervals will be calculated. Contingency table analysis will be used to test if the in-season stock composition analysis is accurate (with respect to the postseason analysis). Z-tests and log-likelihood (G) tests will be used to examine differences in age, sex, and length compositions, as well as between in- and postseason SPA stock composition estimates.

TRANSBOUNDARY RIVERS ANNEX: Program Operational Plan

Percent age and sex composition of catch and escapement will be estimated. A stratified mark-recapture estimator will be used to determine escapement estimates for the Taku River. Migratory timing statistics will be computed for each species in the Taku River and for sockeye salmon in the Stikine River.

Point estimates will be computed for coho contributions to fishery catches by area and gear type, percent of total harvests by area and gear type, escapements, total harvest rates, harvest rates by sequential fisheries, mean migration times, densities by area and gear type, escapements, total harvest rates, harvest rates by sequential fisheries, mean migration times, densities by area and gear type for major fisheries, survival rates from tagging to recovery, total smolt outmigrations, age compositions, and total returns by brood year. Ninety-five percent confidence limits will be computed for escapement and smolt outmigration. Standard error will be computed for age composition. Confidence limits for other estimates generated from coded-wire tag data will be computed pending biometrics and computer programming support.

PACIFIC SALMON TREATY IMPLEMENTATION

PROGRAM JUSTIFICATION

FEDERAL FISCAL YEAR 1991
(STATE FISCAL YEAR 1992)

• • •

AGENCY: Alaska Department of Fish and Game
CATEGORY: Fisheries Management and Stock Assessment
SUBCATEGORY: Northern Boundary Area Annex
TOTAL COST: \$ 678,361

JUSTIFICATION:

Annex IV, Chapter 2, of the Pacific Salmon Treaty specifies limitations in catches of sockeye salmon in the district 4 purse seine and District 1 gill net fisheries. It also requires that conservation actions be taken to ensure rebuilding of Portland Canal chum stocks. Catch and effort must be monitored in these areas and stock identification programs conducted in order to determine interceptions of Canadian salmon in these waters. The Chapter also states that a joint Northern boundary Technical Committee shall be maintained and report to the Northern Panel on, among other things, the effectiveness of management actions, the status of the salmon stocks, and information on efforts to determine optimal escapement goals. This program funds the personnel and activities necessary to manage pertinent Alaskan fisheries, conduct catch monitoring and stock identification programs, evaluate sampling and analytical methodologies, and participate in joint technical committee meetings and work groups.

Monitoring of the boundary area fisheries is conducted primarily for the Noyes Island purse seine fishery and the Tree Point/Cape Fox gill net fishery. Due to the increased interest within the PSC of monitoring catches of Fraser sockeye salmon in our Northern Boundary fisheries and in order to improve our ability to make timely estimates of catch and effort, to sample catches, and to conduct surveys of fleet fishing patterns, a permanent field station at Craig is being established this year. This program will supply a vehicle and boat for use by this office. Additional fisheries monitoring is accomplished by aerial overflights. Extensive port sampling is conducted at fish processing plants and on tenders in order to sample catches for biological data and scales for use in stock identification. Coded-wire tag studies are used on chinook, chum, and coho salmon to help determine migration patterns and exploitation rates. Aerial and foot surveys are used to estimate spawning escapement for important salmon stocks. A weir at Hugh Smith, one of Southeast Alaska's larger sockeye producers, is manned to estimate spawning levels and timing to that system.

COST BREAKDOWN:

Salaries and Benefits	\$ 475,131
Travel	8,700
Equipment and Supplies	128,450
Contractual Services	63,080
Publishing and Communications	3,000
Total	<u>\$ 678,361</u>

NORTHERN BOUNDARY ANNEX: FISHERIES MANAGEMENT AND STOCK ASSESSMENT

Cost Element Breakdown

a. Personnel - Salaries¹

REGIONAL PERMANENT STAFF

Fisheries Biologist IV	6	mm @ 3,708	22,248
Fisheries Biologist II	12	mm @ 3,963	47,556
Fisheries Biologist I	12	mm @ 2,617	31,404
Biometrician II	6	mm @ 3,837	23,022
Fish & Wildlife Tech IV	6	mm @ 2,705	16,230
Clerk Typist III	6	mm @ 2,234	13,404

IN-SEASON MANAGEMENT, SEASONALS

Fish & Wildlife Tech	2.5	mm @ 1,924	4,810
Fisheries Biologist I	3	mm @ 2,617	7,851
Data Processing Clerk	3	mm @ 1,866	5,598
Overtime			1,136

STOCK IDENTIFICATION TECHNICIANS, SEASONALS

Fisheries Biologist I	3	mm @ 2,901	8,703
5 Fish & Wildlife Tech III's	17.5	mm @ 2,174	38,045
2 Fish & Wildlife Tech II's	5	mm @ 1,924	9,620
2 Fish & Wildlife Tech I's	4	mm @ 1,763	7,052

HUGH SMITH WEIR SEASONALS

Fish & Wildlife Tech III	2.5	mm @ 2,452	6,130
Fish & Wildlife Tech II	2.5	mm @ 1,984	4,960
Overtime			1,000

COHO PROJECT SEASONALS

Fish & Wildlife Tech III	1.2	mm @ 2,528	3,034
Fish & Wildlife Tech II	1.4	mm @ 1,984	2,778
Overtime			1,000

PORTLAND CANAL CHUM SEASONALS

Fisheries Biologist I	4.5	mm @ 2,617	11,777
Fish & Wildlife Tech II	4.5	mm @ 1,924	8,658
Fish & Wildlife Tech I	4.5	mm @ 1,718	7,731
Overtime			1,500

Subtotal \$ 339,583

b. Fringe Benefits¹

Fisheries Biologist IV	12	mm @ 1,622	19,464
Fisheries Biologist II	6	mm @ 1,398	8,388
Fisheries Biologist I	12	mm @ 1,468	17,616
Fisheries Biologist I	12	mm @ 1,100	13,200
Biometrician II	6	mm @ 1,389	8,334
Fish & Wildlife Tech IV	6	mm @ 1,093	6,558
Clerk Typist III	6	mm @ 970	5,820
Fish & Wildlife Tech	2.5	mm @ 889	2,223
Fisheries Biologist I	3	mm @ 1,070	3,210
Data Processing Clerk	3	mm @ 874	2,622

¹ Salaries and Fringe Benefits are based on actual and projected costs for each position. The amount may vary with who is in the position, how long they have worked for the State, and what type of retirement plan they have.

b. Fringe Benefits (Continued)

Fisheries Biologist I	3	mm @	1,178	3,534
5 Fish & Wildlife Tech III's	17.5	mm @	955	16,713
2 Fish & Wildlife Tech II's	5	mm @	889	4,445
2 Fish & Wildlife Tech I's	4	mm @	847	3,388
Fish & Wildlife Tech III	2.5	mm @	1,055	2,638
Fish & Wildlife Tech II	2.5	mm @	905	2,263
Fish & Wildlife Tech III	1.2	mm @	1,076	1,291
Fish & Wildlife Tech II	1.4	mm @	905	1,267
Fisheries Biologist I	4.5	mm @	1,070	4,815
Fish & Wildlife Tech II	4.5	mm @	889	4,001
Fish & Wildlife Tech I	4.5	mm @	835	3,758
<u>Subtotal</u>				\$ 135,548

c. Travel

Field travel for management				2,500
Port sampling trips from Juneau	5	@	320	1,600
Port sampling trips from Ketchikan	3	@	100	300
Juneau to Ketchikan (round trip)	4	@	200	800
Travel to Portland Canal				1,700
Ferry vehicles to/from Hyder				1,500
Per Diem				300
<u>Subtotal</u>				\$ 8,700

d. Equipment (>\$5,000)

Vehicle (4x4) for Craig office	1	@	20,000	20,000
Boat for Craig office	1	@	60,000	60,000
<u>Subtotal</u>				\$ 80,000

e. Supplies

ADF&G Vessel Support (Groceries, fuel, etc.)				15,000
TREE POINT FIELD STATION				
Groceries	90	p-d @	12	1,080
Rain gear, gloves, etc.				320
Other field supplies				1,000
Ketchikan office supplies				1,000
Douglas office Supplies				620
Fuel oil for Klawock trailer				800
ESCAPEMENT SAMPLING TRIPS				
Groceries	4	trps@	145	580
Sampling supplies (forms, counters, tweezers, nets, etc)				600
Gas and oil for boats and vehicles				700
Field camp supplies (stoves, lanterns, radios, etc)				600
HUGH SMITH WEIR FIELD CAMP				
Groceries for field crews	180	p-d @	12	2,160
Replacement of weir materials				2,000
Field camp supplies				1,000
Sampling supplies (forms, counters, tweezers, etc)				300
Fuel for heating and cooking				500

p-d = per-person/per-day

NORTHERN BOUNDARY ANNEX Cost Element Breakdown (Continued)

e. Supplies (Continued)

COHO TAGGING FIELD CAMP

Groceries	90	p-d @	12	1,080
Sampling supplies				2,200
Chestwaders	3	pr @	120	360
Rain gear	3	pr @	150	450
Field supplies				2,000
Coded-wire tags	30,000	@	0.04	1,200
Fish anesthetic	1	kg @	200	200
Fuel: gas, oil, jet fuel, propane				1,200

PORTLAND CANAL CHUM FIELD CAMP

Sampling supplies				1,800
Groceries for field camp	400	p-d @	12	4,800
Fuel: gas, oil, propane				1,000
Field camp hardware and supplies				400
Weir materials (pickets, sandbags, etc)				3,500

Subtotal \$ 48,450

f. Contractual

IN-SEASON MANAGEMENT PROJECT

Outboard and skiff repair and maintenance				400
Supply flight to Tree Point Field Station				1,300
Aerial escapement surveys of Portland Canal				7,000
District 104 overflights for effort levels				4,300

SOCKEYE ASSESSMENT PROJECT

Shipping (gear, samples to and from port)				500
Vehicle and skiff maintenance and repair				200
Air Charter for escapement trips	6	trips @	1,100	6,600
Space rental, Klawock trailer				2,100

HUGH SMITH WEIR PROJECT

Air Charter - fixed wing	16	hr @	330	5,280
Helicopter Charter	6	hr @	550	3,300
Transport, McDonald Lake foot surveys				5,000
Outboard motor maintenance, repair				500

COHO TAGGING PPROJECT

Air Charter - PA-18 Supercub	15	hr @	150	2,250
Air Charter - C185 or C206 float	15	hr @	240	3,600
Helicopter Charter - Hughs 500	15	hr @	550	8,250
Air Charter - Beaver float	7	hr @	300	2,100
Air Charter - Otter float	5	hr @	480	2,400
Equipment repair and maintenance				1,000

PORTLAND CANAL CHUM PROJECT (Continued)

Air Charter, air freight				1,200
Air Charter, remote sampling				4,500
Equipment storage, Hyder				500
Equipment repair				800

Subtotal \$ 63,080

p-d = per-person/per-day

NORTHERN BOUNDARY ANNEX Cost Element Breakdown (Continued)

g. Construction N.A.

h. Other (Publishing and Communications)

KETCHIKAN

Photocopying

1,200

Telephone

1,200

Postage

600

Subtotal

\$ 3,000

Total

\$ 678,361

**NORTHERN BOUNDARY ANNEX:
FISHERIES MANAGEMENT AND STOCK ASSESSMENT**

PROGRAM OPERATIONAL PLAN

Program Leader: Ben Van Alen
Agency: ADF&G, Commercial Fisheries, Region I, Southeast Alaska
Date Submitted: April 15, 1991
Fiscal Year: Federal FY 91, State FY 92
Program Cost: \$ 678,361

INTRODUCTION

The Pacific Salmon Treaty places numerical limits on the catches of sockeye salmon in Districts 101 and 104 net fisheries and calls for conservation actions to be taken on catches of chum salmon outside Portland Canal. While the sockeye limits are for catches of all sockeye, the intent is to reduce interceptions of Canadian sockeye stocks. Significant numbers of both Canadian and Alaskan origin sockeye salmon are taken in boundary area fisheries. As part of an equity exercise, both Parties are required to determine interceptions in their fisheries of the other Party's salmon. In order to determine the percentage of catch by nation of origin, stock identification programs are needed. Alaska has used scale pattern analysis to determine sockeye stock compositions in most fisheries with high interception rates.

Effective management of a mixed stock fishery requires knowledge of the harvest rate by the fishery, migratory timing routes of all major stocks harvested by the fishery, and percent stock composition in the catch. This information is especially critical if some of the natural stocks contributing to the fisheries become weak or if large numbers of hatchery fish are migrating through the fisheries, such that harvest of the weak stocks may be reduced while allowing for optimum harvest of the more productive stocks.

Information related to the magnitude and timing of spawning escapements to southern Southeast Alaskan systems is essential to the estimation of their production potential. Sockeye salmon escapements to Hugh Smith and McDonald Lakes have been enumerated annually since 1979. Escapements to Hugh Smith lake are counted as they pass through a weir. Escapements to McDonald Lake are estimated using intensive foot surveys which are calibrated to total escapement based on a historical foot-to-weir survey conservation factor. Data collected here will provide accurate stock status information that may be used in relation to U.S./Canada Treaty allocations and special management actions.

NORTHERN BOUNDARY ANNEX: Program Operational Plan

The chum salmon stocks in upper Portland Canal have been designated as stocks of special concern to the Pacific Salmon Commission. The stocks returned to their home streams by complicated and often poorly understood migration routes and are intercepted by the fisheries of both countries. Coded-wire mark-recovery studies on the Fish and Marx Creek stocks can provide accurate information on the timing and abundance of these stocks in Alaskan and Canadian fisheries.

In addition to the commercial harvest, coho stocks support important recreational and subsistence fisheries. Increasingly intense competition among gear groups for the right to harvest coho salmon is being demonstrated both on the fishing grounds and at Board of Fisheries meetings. Use of more efficient gear and increased targeting on coho salmon because of their high value (and restrictions on other species) has placed increased pressure on the stocks. There is an urgent need for more technical information on the migratory patterns, harvest rates, stock contribution, and status of coho salmon stocks to guide the Department, Board of Fisheries, and Pacific Salmon Commission in making sound management decisions. Coded-wire-tagging studies provide useful information for evaluating management needs and options by determining the migratory characteristics of discrete stocks and groups of stocks, and exploitation rates by sequential fisheries. Associated escapement enumeration projects also provide comparable escapement estimates that can be used for annual management assessment. Estimates of escapement, total return and age composition will be useful for refining escapement objectives for index systems. Coded-wire-tagging studies also provide information that will be of use in implementing the U.S./Canada Pacific Salmon Treaty including estimates of harvest percentages by nation, fishery, and time period for selected stocks. Improved annual escapement assessment and harvest distribution information is needed for coho salmon stocks in the northern boundary area in order to set management objectives for U.S. and Canadian fisheries that achieve both allocation and conservation goals.

OBJECTIVES

1. Estimate, in-season, the sockeye salmon harvest in the District 104 purse seine fishery prior to statistical Week 31 so as to remain within the catch limits imposed by the U.S./Canada Pacific Salmon Treaty.
2. Manage the Tree Point gill net fishery to stay within the average annual harvest of sockeye salmon stipulated by the Treaty.
3. Estimate in-season, chinook salmon harvest rates in the gill net and purse seine fisheries so as to remain within the chinook salmon quota level.

NORTHERN BOUNDARY ANNEX: Program Operational Plan

4. Estimate the stock composition of sockeye salmon in major boundary net fisheries (District 101 purse seine and gill net and District 104 purse seine) to nation and/or system of origin. Commercial catches and escapements on the Boundary Area need to be representatively sampled for sex, length, and scale data.
5. Estimate the sockeye spawning escapements to Hugh Smith and McDonald Lakes in southern Southeast Alaska. Collect run timing information and scale and biological samples from these escapements.
6. Estimate escapement of chum salmon to Fish Creek in upper Portland Canal and the expansion factor between foot and weir survey estimates.
7. Use the coded-wire tag mark-recovery study to estimate the total contribution and harvest rate of Fish and Marx Creek chum salmon by the gill net and purse seine fisheries in Alaska and the net and troll fisheries of British Columbia. Estimate the catch distribution and migratory routes and timing of these chum stocks.
8. Estimate escapements, fisheries contributions, exploitation rates, migratory timing, juvenile or smolt to adult survival rates, and age compositions for three coho salmon stocks in Southeast Alaska. Estimate smolt outmigration for two stocks in Southeast Alaska.

FIELD SAMPLING METHODS

Catch information is collected through fish ticket information and daily communication with the fish processors and from interviews conducted by field personnel with fishermen on the grounds. Catch information is collected on a "real-time" basis with daily contact with as many processors as possible. This is done with telephone and radio calls to companies and packers. The information received includes catch by area and number of individual boat deliveries. Although no formal data base is generated with this information it is the most important day to day catch information we utilize.

Fishing effort by area is collected through aerial and skiff surveys and from fish ticket information. The field observations give us real-time effort information, where as the fish tickets give us final fishing effort. The fish ticket information is used for managements final data base. Environmental conditions are noted because it greatly affects aerial surveys and fishing effort and success. No formal data base is formulated to encompass environmental conditions such as weather, sea conditions, water temperatures, etc.

NORTHERN BOUNDARY ANNEX: Program Operational Plan

Salmon escapement surveys are conducted using fixed wing aircraft. These surveys represent visual estimates of the number of fish, both live and dead, and the species composition. Aerial overflights of District 104, prior to Statistical Week 31, are done once a week during an open fishing period. Skiff surveys in the Tree Point/Cape Fox gill net fishery are conducted each week during an open fishing period. Salmon escapement surveys of index systems are done as warranted depending on weather, usually once a week depending on the development of the fishery.

Weekly landings of sockeye salmon from major drift gill net and purse seine fisheries in Districts 101 and 104 are sampled for scales, sex, and length data at processors in Ketchikan, Petersburg, Craig, and Steamboat Bay. Samples are collected when fishing boats and tenders deliver to processors. Escapement scale samples will be collected from eight to ten of the most productive sockeye systems contributing to southern Southeast Alaska fisheries. Systems most likely to be sampled are McDonald, Karta, Naha, Salmon Bay, Petersburg, Luck, Warm Chuck and Kegan. However, these priorities may be changed based on observed abundances of escapements. Sampling occurs approximately 5 days a week, depending on the length of fishery openings.

A sampling goal of 600 sockeye per week was established to achieve age composition estimates within $\pm 5\%$ with 90% confidence. Up to 100 scales from each of the 4 major age groups (1.2, 1.3, 2.2, 2.3), which account for over 95% of the catch, are analyzed (digitized) for each gear type and weekly fishery opening.

Sockeye salmon escapement enumeration at the Hugh Smith weir will commence 1 June and continue through 15 September biological sampling will be conducted 1 June through 15 September data analysis will be performed post-season. Stream surveys at McDonald Lake will commence on September 1 and continue through October 15. Scale samples, mid-eye to fork of tail length measurements in mm, and sex of sampled fish are taken. Data are recorded on standard AWL form and the Departments Mark Sense form. Water temperature in degrees C and daily water level fluctuations are also taken. Scale sample collections are set at a level that will provide an estimate of age composition within $\pm 5\%$ with 90% confidence. This requires a minimum of 600 readable scales per season.

Juvenile chum salmon were coded-wire tagged for four years (1988-91) in Fish Creek and four years (1986-89) in Marx Creek. These tagged chum salmon will be returning through 1995. Both systems are tributaries to the Salmon River which drains into the upper end of Portland Canal near Hyder Alaska. The mouth of the two streams are separated by approximately one statute mile with the Marx Creek Spawning channel entering the Salmon Rivers upstream of Fish Creek.

NORTHERN BOUNDARY ANNEX: Program Operational Plan

A weir will be operated on Fish Creek. Returning adults will be examined for coded-wire tag data and sampled for age, sex, and size data. A study to calibrate foot survey counts with weir (total) counts will be conducted.

Outmigrating coho smolts are captured for tagging at Hugh Smith Lake with a smolt weir that is operated at the outlet. Drop traps installed at spillways on Beaver Ponds and wire-mesh minnow traps placed in the main slough are used to capture smolts on the Berners River. Minnow traps are used to capture rearing juveniles at Ford Arm Lake. Fifty minnow traps baited with salmon roe are checked and set three to four times daily at 2 hour intervals to capture rearing juveniles at the other sites. Traps are moved frequently to maintain high catch rates and systematically "fish out" the habitat. Juveniles are held in pens before tagging until a total of 1,000 to 4,000 is captured, but not for a period longer than 4 days. Outmigrating smolts captured at smolt weirs and traps are tagged and released daily. Rearing juveniles 62 mm in length and larger and smolts 80 mm and larger are tagged with a full length coded-wire tag and the adipose fin is removed. Snout-fork length and scales are taken approximately 600 smolts captured throughout the run at Hugh Smith Lake. Twenty samples are taken on days when less than 200 smolts are captured while 10% of the catch is sampled when more than 200 fish are caught.

Weirs are constructed on the outlet streams of three systems (Ford Arm and Hugh Smith Lakes). All coho salmon passing the weirs are counted and examined for missing adipose fins. Those with adipose clips are examined with a magnetic field detector to determine whether or not there is a tag. Marked fish that register a strong, consistent signal are released while those that do not are sacrificed and the head is sent to the coded-wire tag lab in Juneau for further examination. All adult coho salmon that pass through the Ford Arm and Hugh Smith Weirs are dorsal clipped. These tagged fish help insure an unbiased escapement estimate if the weir does not remain fish-tight. All fish passing the weirs are examined for fishery marks. Scale samples (four scales per fish) and mid-eye-fork length measurements are taken from 600 fish. Separate escapement records are kept for jacks (age .0) and adults (age .1). There is a slight overlap in the size distributions of the two ocean age groups, so there is a small degree of subjectivity in assigning fish to these categories. Age-length data is taken randomly over both ocean age groups which allows some correction to be made later. Harvest rate estimates are based only on adult (age 1.) returns. Tagged jacks are very seldom recovered from the fisheries and some pass between the weir pickets uncounted. Tag recovery surveys are conducted in inlet streams of the lake if there is any suspicion that adults escaped past the weir uncounted. Three to six trips are made to each system during the spawning period (late October through mid-February). Fish are sampled by almost any feasible means including beach seine, dipnet, sport gear, and on rare occasions, gill net. The presence or absence of a floy tag and secondary mark is recorded. The secondary mark is important because tag loss rates for floy tags are commonly as high as 20-30%.

NORTHERN BOUNDARY ANNEX: Program Operational Plan

Adult coho salmon are captured in pools in the lower Berners River during 15 September-7 October soon after they arrive from saltwater. All captured fish are given a mark with an opercular punch, examined for the presence of a coded-wire tag and released. The opercular punch location/pattern is changed weekly to identify fish tagged in specific weekly periods. The upper Berners River is surveyed and sampled during the last 10 days of October. There is a window of time coinciding with this period when virtually the entire escapement has entered the river but very little actual spawning and, subsequently, very little mortality has occurred. The water is clear and the dark fish are highly visible against the light colored bottom as they hold in pools. Visibility is normally excellent in all holding areas. The entire upper drainage is surveyed on foot while the lower river is surveyed by helicopter before departing. A total count is made and as many fish as possible are seined or dipnetted and sampled for coded-wire tags and opercular punch marks. The tag sampling objective is 25% or more of the total escapement count. Scales and lengths are taken from 600 fish. However, the age-length sampling objective is dropped to as low as 400 fish if necessary to allocate more time toward achieving the tag recovery sampling objective.

Helicopter surveys are conducted on selected coastal streams in southern Southeast. Survey locations are chosen for good visibility in holding and spawning areas of adult coho salmon. Surveys are timed as near as possible to the period of peak abundance of fish in the survey area. One to three surveys are conducted in each index area during the run depending on funding, weather, and the results of early surveys. The helicopter is flown the full length of the survey area at 6-20 m above the ground (except to clear taller trees) and at a ground speed of 8-30 km per hour depending on visibility and the presence of fish. The door is removed on the observer's side and the helicopter is maneuvered so that the observer is looking directly into the stream at all times. The observer wears polaroid glasses and a billed cap to reduce interference from reflection and propwash. Foot surveys are conducted on selected streams in southern Southeast. All holding and spawning areas of each are walked. All visible adult coho salmon are counted. Time, weather, and visibility conditions are recorded as well as any other pertinent observations (distribution and condition of the fish, observations of other species, etc.).

All data from weirs, coded-wire tagging operations and escapement surveys are initially recorded in field notebooks. Weir counts are summarized daily, on standard forms. AWL data is transferred daily to mark-sense forms. Data from CWT samples (heads sent to the tag lab) is recorded in field notebooks and summarized on standard forms provided by the tag lab. Escapement survey data and total weir counts by species are transferred from field notebooks to standard escapement survey forms.

The minimum statistical objective for individual studies has been confidence limits from 0.50 to 0.70 for a total harvest rate point estimate of 0.60. Given average or slightly lower survival rates for tagged fish, a total escapement count, and a 20% average fishery sampling rate, this objective can be achieved by

NORTHERN BOUNDARY ANNEX: Program Operational Plan

tagging 5,000 juvenile coho salmon (or 2,500 smolts). These are absolute minimum tagging objectives for any system. The actual number tagged is the number that can be feasibly captured in most cases. For example, minnow trap catches decline sharply as accessible habitat is trapped out. A small system can be trapped to the point of greatly diminished returns in 2-3 weeks by a four person crew. All smolts that are captured at smolt weirs or in downstream migrant traps are tagged. Based on past experience, minimum tagging objectives by system for rearing juveniles are: Ford Arm Lake - 7,000 and Hugh Smith Lake and the Berners River - 10,000 smolts at each location.

Every attempt is made to examine all of the escapement, or as much as possible, for tags. The minimum objective of 25% for the Berners River escapement is based on the percentage that a crew can reasonably expect to capture during a 10 day trip. Many of the fish hold in pools with snags or overhanging brush and are difficult or impossible to capture with a seine.

All adult coho salmon that are passed through the Ford Arm and Hugh Smith Weirs are tagged. Rare exceptions occur when a very large number of fish passes the weir in a single day and all cannot feasibly be tagged. Mark-recapture sampling is conducted in inlet streams if there is any reason to believe that fish have escaped uncounted. Recapture sampling objectives are established to provide 95% confidence limits that are $\pm 10\%$ of the point estimate. As much productive effort as possible is put into sampling until this objective is achieved. In some cases, weather and fish behavior make this confidence level impossible to achieve.

The age-length sampling objective for adults and smolts is 600 fish. A minimum of 454 samples is the standard established by the Stock Biology Group for a 3 age class population. If one age class is estimated to comprise 50% of an infinite population, this sampling level results in 90% confidence limits of 45% and 55%, respectively. The higher sampling objective (600) was established to allow for a high scale regeneration rate observed in coho salmon and to tighten confidence limits somewhat beyond the established standard. The sampling objective is sometimes relaxed to as low as 400 fish for the Berners River to allocate more sampling effort to tag recovery. The Berners River population is comprised almost entirely (98%+) of age 1.1 and 2.1 fish and, therefore, can realistically be treated as a 2 age class population.

Coho salmon are often elusive animals during their freshwater phase. Therefore, instead of setting fixed target tagging and sampling rates, all efforts are maximized as much as is feasible under current funding levels in order to hedge our bets, statistically. All of these tagging and sampling rates are interrelated statistically so that increasing samples above a minimum target level for one parameter can compensate

NORTHERN BOUNDARY ANNEX: Program Operational Plan

for reduced sampling effort in another area because of conditions beyond our control. There needs to be a much thorough statistical evaluation of these studies for both project planning and data presentation.

ANALYTICAL METHODS

Early in a fisheries opening, weekly catch rates are projected from limited raw data collected during skiff and aerial surveys and from available fish ticket information. These estimates are revised as the week progresses and more information becomes available.

Biologists from the Alaska Department of Fish and Game and Canadian Department of Fisheries and Oceans will cooperate in research to estimate stock composition of sockeye salmon harvested in Northern Boundary (U.S. and Canadian) fisheries. ADF&G, CDFO, and Pacific Salmon Commission biologists will also cooperate in scale pattern-based stock identification of the contribution of Fraser River sockeye salmon to Northern Boundary fisheries. Scale samples will be processed, aged, and analyzed at the scale lab in Douglas. A combination of discriminant models will be used to estimate the return and/or stock of origin of sockeye salmon sampled from Boundary Area fisheries.

Linear Discriminant Function models based on scale circuli counts and incremental distances between circuli of scale samples collected in escapements will be used to allocate samples of weekly catches by gear type and fishing district to nation and/or stock of origin. A proportional cutpoint analysis classification procedure will also be used to discriminate between Alaskan and Canadian origin sockeye salmon in some fisheries.

Three day moving averages are used to estimate escapement curves; daily averages of past years escapements for comparison with current year; estimate of interception rates using Peterson method; expansion of observed escapements from stream surveys to provide estimates of total escapement to McDonald Lake.

Estimates will be computed for chum salmon fishery contributions by area and gear type, percent of total harvest by area, and gear type, escapement, total harvest rate, harvest rate by fishery, migratory timing and routes, survival rates, total age composition, and return by brood year. Ninety percent confidence limits with an accuracy of +/- 10%, are targeted for all data analyses whenever possible.

Comparisons of harvest rates determined from recoveries of wild stock and hatchery-reared chum salmon will be conducted following each year's recovery programs. Analysis of age structure, migration route

NORTHERN BOUNDARY ANNEX: Program Operational Plan

and timing, plus other key characteristics deemed useful for management proposes, will be conducted. Final determination of which statistical test are appropriate for this analysis is pending biometrics review.

All statistical analysis of the chum salmon coded-wire-tagging data will be geared towards providing reliable harvest rate information for all concerned fisheries. Ultimately, derivation of interception rates for each fishery that these stocks transverse will be the target of this project. In addition, data on optimum escapement levels, total age composition, and the effects of environmental factors on survival will be a side benefit of this research.

Linear and multiple regression analysis will be used to evaluate: (1) relationships between age .0 and age .1 returns; (2) correlation between escapement and environmental factors and adult return; (3) correlation among smolt outmigration timing, smolt age and size, environmental factors, marine survival rates and ocean age composition at the time of return; and (4) relationships between in-season tag recoveries vs. total returns and survival rates of tag releases. These tests will be conducted after several years of data are available for individual stocks. They will help in evaluating the predictive relationship between jacks and adult returns; optimum level of escapement; effect of environmental variables on marine survival, total return, and ocean age composition; and the effect of smolt migratory timing and size on ocean age composition.

ATTACHMENT H

**LETTERS, MEMORANDUMS, AND TESTIMONY RELATING TO THE
INTENT OF THE SALMON ENHANCEMENT MITIGATION FUNDS**

ATTACHMENT H
Letters, Memorandums and Testimony Relating to the Intent
of the Salmon Enhancement Mitigation Funds

- ADF&G. Chinook Salmon Fisheries and Harvests in Southeast Alaska: Report to the Alaska Board of Fisheries. January 3, 1992.
- Allee, Brian. Director FRED Division, ADF&G. Letter to mitigation fund reviewers. March 25, 1988.
- Amend, Donald. Manager, Southern Southeast Regional Aquaculture Association, Inc. Letter to Governor Cowper. April 27, 1988.
- Anderson, Aven. National Marine Fisheries Service. Report to the Inspector General. May 12, 1988.
- Collinsworth, Don. Commissioner, ADF&G. Letter to Early Krygier, executive director of the Alaska Association. February 21, 1985.
- Collinsworth, Don. Commissioner. Letter to Senator Ted Stevens. July 19, 1990.
- Congress. Fish and Wildlife Committee. Part 1. Hearings before Subcommittee on Fisheries and Wildlife, House Merchant Marine Fisheries Committee. February 21, 25, 27 and March 5, 1985. Pp. 104.
- Congress. Senate Committee on Appropriations. Report 99-150. September 30, 1985.
- Congress. Senate Committee on Appropriations. Report 99-425. September 3, 1986.
- Katz, John. Special Counsel to the Governor. Memorandum to Alaska Congressional delegation. April 10, 1985.
- Kelley, Dale. Executive director, Alaska Trollers Association. Letter to Norm Cohen, deputy director of ADF&G. June 1, 1990.
- Kelley, Dale. Executive director, Alaska Trollers Association. Letter to Kevin Duffy, ADF&G FRED Division. June 17, 1990.

ATTACHMENT H (continued)

Kelley, Dale. Executive director, Alaska Trollers Association. Letter to Brian Allee, director FRED Division, ADF&G. January 30, 1990.

Krygier, Earl. Executive director, Alaska Trollers Association. Letter to Commissioner Collinsworth. May 24, 1988.

Northern and Southern Southeast Regional Planning Teams. Draft minutes of joint planning team meeting. November 18 - 19, 1985.

Pennoyer, Steve. Deputy commissioner, ADF&G. Letter to Southeast Alaska Chinook Technical Team. April 8, 1985.

Pennoyer, Steve. Deputy commissioner, ADF&G. Letter to Alaskan fishermen. February 6, 1987.

Pennoyer, Steve. Deputy commissioner, ADF&G. Letter to Earl Krygier, executive director, Alaska Trollers Association. May 6, 1987.

Sheffield, Bill. Governor. Letter to Senator Ted Stevens. January 28, 1985.

Shultz, George. Secretary of State. Letter to Senator Ted Stevens. March 5, 1985.

Stevens, Ted. "United States-Canada Salmon Treaty Negotiations: The Alaskan Perspective. *Environmental Law*. 16: 422 - 430.

Stevens, Ted. Senator from Alaska. Letter to Dale Kelley, executive director of the Alaska Trollers Association. June 29, 1990.

CHINOOK SALMON FISHERIES AND HARVESTS IN SOUTHEAST ALASKA

Informational Report to the Alaska Board of Fisheries

January 3, 1992

Prepared By:

Alaska Department of Fish and Game

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(updated 10/23/91)
ALASKA HATCHERY ADDON

YEAR	Total Alaska Hatchery	Sport Component	Troll Component	Net Component	Risk Factor	Addon
1965	0	0	0	0	0	0
1966	0	0	0	0	0	0
1967	0	0	0	0	0	0
1968	0	0	0	0	0	0
1969	0	0	0	0	0	0
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	0	0	0	0
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	0	0	0	0	0
1977	0	0	0	0	0	0
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	872	872	0	0	0	0
1984	1,904	1,904	0	0	0	0
1985	13,872	3,372	8,100	2,400	700	8,172
1986	17,610	5,010	9,900	2,700	1,400	11,210
1987	24,008	5,108	16,600	2,300	2,300	16,708
1988	30,415	5,545	19,716	5,154	1,700	23,715
1989	33,986	6,351	18,804	8,831	2,300	26,686
1990	58,993	16,612	30,040	12,341	5,700	48,293
1991	79,546	26,700	38,234	14,612	9,000	65,546

Appendix 3.

Total Southeast Alaska harvest of chinook salmon produced by Alaska hatcheries, by gear, with calculated "addon".

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

DIVISION OF FISHERIES REHABILITATION,
ENHANCEMENT & DEVELOPMENT (FRED)

STEVE COWPER, GOVERNOR

P.O. BOX 3-2000
JUNEAU, ALASKA 99802-2000
PHONE: (907) 465-4160

March 25, 1988

Dear U.S./Canada Mitigation Fund Reviewer:

The Alaska Department of Fish and Game (ADF&G) plans to hold a meeting in the ADF&G Headquarters conference room on April 13 to review project matrices and receive advice and guidance regarding which projects to undertake with the next increment of federal funding for U.S./Canada mitigation enhancement. At the January 28 meeting held in Juneau, it was agreed that any new projects should be written in a narrative format similar to the Crystal Lake proposal (enclosed) that was provided at the meeting.

Based on previous decisions, priority status for funding still remains with the Snettisham sockeye salmon central incubation facility, the Medvejie Creek/Hidden Falls chinook salmon project, and the Southern Southeast Regional Aquaculture Association (SSRAA) Beaver Falls sockeye salmon program. All of these projects have been initiated but not completed. It is our intent to again review the particulars associated with each of these projects because construction costs associated with the first two projects have increased. Additionally, construction associated with the initial phase of the heat exchanger project at SSRAA's Beaver Falls facility has not yet been completed.

We are requiring that any new project proposals for enhancement of chinook, chum, or sockeye salmon as part of the U.S./Canada mitigation program be submitted to Kevin Duffy in the ADF&G, Fisheries Rehabilitation, Enhancement and Development (FRED) Division by Wednesday, April 6 so they can be incorporated into the appropriate matrix and be distributed for review and comment at the April 13 meeting.

The priority for production of chinook salmon with these funds still remains. We will be looking primarily for chinook salmon projects that have a production potential of 30,000 or more fish, will deliver fish to the troll fishery in areas where they can be selectively harvested while minimizing the impact on our all-gear chinook salmon quota, and have the potential for expansion in the future. However, this priority is not meant to preclude the submittal of project proposals for sockeye and chum salmon enhancement.

**SOUTHERN SOUTHEAST REGIONAL
AQUACULTURE ASSOCIATION, INC.**

1621 Tongass Ave., #103

(907) 225-9605

Ketchikan, Alaska 99901

Governor Steve Cowper
Governor's Office
P.O. Box A
Juneau, AK 99811-0101

April 27, 1988

Dear Governor Cowper:

The Board of Directors of the Southern Southeast Regional Aquaculture Association (SSRAA) wishes to express concern that the budget of the Department of Fish and Game (FRED Division) continues to decrease, and to make up this shortfall, the FRED Division has used, and continues to use for operational expenses, the mitigation funds which resulted from the signing of the treaty with Canada.

The fishermen of Alaska had to give up a significant loss of their fishery when the treaty was signed with Canada. The Alaskan fishermen only agreed to the treaty conditions on the promise from the federal government that these fish would be mitigated by replacing them with "new" salmon produced in Alaska. As a consequence of this treaty, twenty million dollars was to be used to enhance salmon in Southeast Alaska, and this figure is in serious question now.

The regional planning teams emphasized in 1985 that the funds were to be used for capital projects to construct new production facilities. To date, \$10,382,100 of the mitigation dollars have been received by the state. The Department of Fish and Game has used \$891,000 and proposes to use an additional \$471,400 in FY89 for operational expenses. The enclosed table summarizes how the Department of Fish and Game has used the funds for operations. These figures do not include capital improvements and SSRAA has no objection for the capital expenditures.

It is unfortunate that the state government has not fully funded the state hatcheries. However, even with the transfer of four state hatcheries to the Regional Associations, the Department is

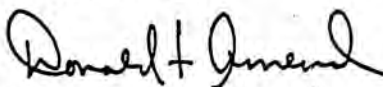
PRIVATE NON PROFIT HATCHERIES

still proposing to use \$471,400 of mitigation funds in FY89 to operate FRED facilities. The concern of fishermen is that the mitigation funds will be spent on operational expenses and the goal of replacing the fish given up by signing the treaty will not be realized. SSRAA urgently requests that the \$471,000 in operational expenses be added to the FRED budget so that the mitigation funds can be used to increase production capacity!

If the state does not add the \$471,000 for operations now, what will happen to the projects when the mitigation money is gone? There is a possibility that there will be no mitigation funds next year. Please consider increasing the FRED budget this year to cover these operational expenses. If this cannot be done, it does not seem like a wise use of the money to continue operating facilities which may be closed down. Better use of the money should go into projects which have the potential of producing more fish and have the potential of being self supporting.

I would very much appreciate having your staff look into this matter. The use of mitigation funds to support FRED operational expenses should be stopped now unless there is a commitment by the state to cover these costs when the mitigation funds are gone.

Sincerely,



Donald F. Amend
General Manager

cc: Senator Lloyd Jones
Representative John Sund
Representative Robin Taylor
Earl Krygier, Alaska Trollers Association
John Peckham, SE Alaska Seine Boat Owners
Geron Bruce, SE Alaska Gillnetters Association

USE OF U.S./CANADA FUNDS
TO SUPPORT ADF&G (FRED)
OPERATIONAL COSTS

FY1987

Sockeye Projects	
Beaver Falls	\$185,000
Turner Lake	\$63,200
Speil Lake	\$48,000
Commercial Fisheries Projects	\$30,200
Contract Adminstration	\$20,000
=====	
TOTAL FY1987	\$346,400

FY1988

Sockeye Projects	
Beaver Falls	\$168,600
Naha River	\$76,800
Karta River	\$76,800
Klawock	\$40,000
Neck Lake	\$10,000
Snettisham	\$100,000
Chum Projects	
Marx Creek	\$18,100
Contract Administration	\$54,500
=====	
TOTAL FY1988	\$544,800

FY1989

Sockeye Projects	
Beaver Falls	\$192,000
Naha River	\$115,000
Karta River	\$46,800
Klawock	\$45,000
Chum Projects	
Marx Creek	\$18,100
Contract Administration	\$54,500
=====	
TOTAL FY1989	\$471,400

TOTAL OPERATIONAL COSTS (FY87-FY89)	\$1,362,600
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A REVIEW OF ALASKA'S SALMON ENHANCEMENT PROGRAM UNDER THE PACIFIC SALMON TREATY AND THE STATE'S MATCHING OF FEDERAL FUNDS

I. SUMMARY

The Congress of the United States and the State of Alaska agreed that some salmon enhancement would be necessary to mitigate the adverse impacts of the Pacific Salmon Treaty on Alaska salmon fishermen. The State and the Federal Government agreed to support equal shares of the cost, up to a maximum of about \$25 million. The specific enhancement projects (methods, sites, species) were never specified but were required to be related to the Pacific Salmon Treaty. The State selected the projects it would fund during 1986 and 1987 by a public process, and it reported to the Pacific Salmon Commission about those projects. The projects selected for funding in any given year were only one part of the total mitigation enhancement program. To date, the State has provided at least \$7,024,505 for this salmon enhancement program and the Federal government has contributed \$7,017,300. Thus, the State has matched the dollar-for-dollar matching requirement.

II. BACKGROUND

Details are poorly documented, but the Congressional appropriations for salmon enhancement in Alaska resulted from an agreement reached between Alaska's congressional delegates and the Reagan Administration through the chief U.S. Negotiator for the Pacific Salmon Treaty. The agreement was basically this: If Alaska's State government and its congressional delegates would agree to the treaty, then the Reagan Administration would support Congress appropriating \$25 million to Alaska to "mitigate" the impacts of the treaty on Alaska salmon fishermen. Some evidence of this agreement appears in the following documents: (a) the letter dated March 7, 1985, from Secretary George P. Shultz to Senator Ted Stevens (attachment 1), (b) the memorandum dated April 10, 1985, from John W. Katz to Senators Stevens and Murkowski and Congressman Young (attachment 2), and (c) the 1986 article by Senator Stevens in Environmental Law (attachment 3; see p. 426 and 429).

(The letter dated January 28, 1985, from Governor Sheffield to the Alaska congressional delegation might shed more light on the agreement, but we have been unable to obtain a copy. If the Office of the Inspector General needs a copy of the Governor's letter, we will do our best to obtain one.)

The original agreement for the \$25 million was to build a "world-class" chinook and chum salmon hatchery somewhere in Southeast Alaska and to do some enhancement of transboundary rivers sockeye (See attachment 4, the "Request for Federal Funding for Alaska Salmon Enhancement, Research and Management Programs for Implementation of Proposed U.S./Canada Salmon Treaty" dated January 1985.) As time went on, the State decided a new hatchery was not the best way to use the money; that the best use might be to increase or improve present artificial production facilities so they could produce more salmon.

Congress, apparently, was unconcerned about specific salmon enhancement projects; it was only concerned that its appropriations be used for enhancement projects that Alaska deemed appropriate for mitigating the alleged adverse effects of the treaty. The report of the Senate Committee on Appropriations (attachment 5) makes no mention of specific enhancement projects or even which salmon species should be enhanced. It notes that "Alaska has already contributed \$25,000,000 to build facilities and enhance salmon runs which provide benefits related to" the treaty, and that the State agreed to match "any Federal enhancement moneys dollar for dollar" and had requested \$25 million for FY86.

For the FY86 appropriations, the Committee reports that it recognized the commitments the Reagan Administration made to Alaska during the treaty negotiations but felt, in view of its budget-reduction initiatives, it should constrain its FY86 appropriations. "Therefore," the report states, for FY86 "the Committee has agreed to an appropriation of \$3,500,000 to NMFS for the express purpose of contracting with Alaska Department of Fish and Game to carry out enhancement efforts which implement the United States-Canada Salmon Treaty."

For FY87, the Senate appropriated \$4 million more to Alaska for salmon enhancement as a part of the Department of Commerce appropriations (attachment 6). The Senate Committee on Appropriations reported it was providing this funding "for the express purpose of contracting with the Alaska Department of Fish and Game to carry out the enhancement efforts which supplement the stock rehabilitation initiative mandated by the United States-Canada Salmon Treaty."

The Senate report makes no mention of any specific enhancement projects, facilities, or salmon species, but notes that the Pacific Salmon Commission should be appraised of the specific nature and results of the enhancement efforts. The report concluded that the appropriation "is contingent upon the State's agreement to match the Federal contribution."

It is worth noting here that the Congress appropriated money for Alaska salmon enhancement on its own volition. Neither the

Department of Commerce (attachment 7) nor the U.S. Section of the Pacific Salmon Commission (attachment 8) requested these funds in their budget submissions. To date, the U. S. Section of the Commission has not been involved in the process of obtaining funding for salmon enhancement (attachments 8, 9, and 10).

III. SALMON ENHANCEMENT PROJECTS FUNDED BY FEDERAL FUNDS

The salmon enhancement projects in Alaska funded by Federal funds to mitigate the effects of the treaty have varied from year to year. The particular sites, species, and nature of the enhancement projects are determined by a public participation process and are reviewed by a number of groups, including the Pacific Salmon Commission.

A. Public Process Selects the Enhancement Projects.

Each year, the Alaska Department of Fish and Game requests suggestions from fishermen and others as to what enhancement projects should be funded by the Federal enhancement money (they operate with the understanding that they can match new Federal money with current-year appropriations and prior-year investments). For example, Attachment 11 is a copy of the 1988 request. Attachment 12 is a copy of the list of projects considered for State fiscal year 1988 and includes a list of the attendees at the first meeting. A second meeting was held Friday, 13 May 1988, to refine priorities. After the Commissioner of the Alaska Department of Fish and Game and his staff review the list of projects proposed by the review group, he will decide which of the projects to fund. Attachment 13 lists the projects selected for State fiscal year 1987.

Note, some of the projects proposed and some of those funded are not projects of the Alaska Department of Fish and Game but are projects of cooperating groups, such as the Southern Southeast Regional Aquaculture Association (SSRAA) and the National Marine Fisheries Service (NMFS) facility at Little Port Walter, Alaska.

B. Review of Projects Ensures Relation to the Treaty

All the supported enhancement projects (whether State, nonprofit, or Federal) are carefully reviewed to ensure that they are related to the Pacific Salmon Treaty. Reviewers included the U.S. Section of the Northern Panel of the Pacific Salmon Commission (see attachment 14) and NMFS (attachment 15).

Under Article V of the treaty, any enhancement project that either country might establish must be consistent with the principles of Article III of the treaty, and each year each country must provide the other country and the Pacific Salmon Commission with information on its existing enhancement projects and any plans for new enhancement projects. Accordingly, Alaska's enhancement projects are reviewed not only by interested groups in Alaska, but by representatives from Washington, Oregon, and Idaho and by Canada.

Enhancement activity on the transboundary rivers is a special case. These projects must be undertaken cooperatively or with the consent of the other country (Article VII). In February 1988, the Pacific Salmon Commission agreed to an "Understanding Between the United States and the Canadian Sections of the Pacific Salmon Commission Concerning Joint Enhancement of Transboundary River Salmon Stocks" (attachment 16). Parts of this agreement relate directly to ongoing and proposed salmon enhancement projects funded in part by Federal enhancement money.

In 1987, the Pacific Salmon commission directed the two countries to begin some background studies on the potential benefits of enhancing salmon runs on the transboundary rivers (attachment 17). The result of this directive is summarized in attachment 18. Central to proposed enhancement of sockeye salmon on the transboundary rivers is the planned Snettisham Central Incubation Facility (CIF, attachment 19), on which the State has placed a high priority for funding with Federal enhancement money.

C. Federal Funds Support A Variety of Enhancement Projects

To date, Federal funds have been appropriated for three Federal fiscal years: 1986, 1987, and 1988. Duffy's memorandum of 12 April 1988 to Allee (Attachment 12) summarizes the projects and allocations of funds for FY86 and FY87. Details on these projects are contained in the Alaska Department of Fish and Game's annual proposals for the cooperative agreements. The projects and proposed allocations of funds for FY88 are pending the decision of the Commissioner of ADF&G.

IV. STATE MATCHING FUNDS

A. Relevant Agreements and Requirements

The agreement between the Congress and the State of Alaska for Federal funds to support salmon enhancement projects in

Alaska was contingent upon Alaska matching the Federal funds "dollar for dollar" (see attachment 5). Details on how the State intended to provide those matching funds are presented in John W. Katz's letter of 10 April 1985 to the Alaska congressional delegation (see attachment 2).

Relevant Federal standards and requirements governing matching funds are contained in the General Services Administration's Federal Management Circular 74-7: "Uniform Administrative Requirements for Grants-in-Aid to State and Local Governments," particularly Attachment F: "Matching Share." According to this document, the matching share can consist of cash or in-kind contributions.

In essence, cash contributions can include money contributed to the matcher by other public agencies and institutions, private organizations, and individuals; in-kind contributions represent the value of noncash contributions and may consist of charges for real property, equipment, and goods and services directly benefitting and specifically identifiable to the program.

Department of Commerce standard terms and conditions for financial assistance provides that DOC expects the recipient to pay out its funds "at the same general rate as the 'Federal Share' expenditure" although, "in any event one-half of the Recipient's share of project costs shall be available, incurred or expended by the time two-thirds of the Federal share has been disbursed." Thus, DOC allows the recipient to have expended all of its share before any of the Federal share is disbursed.

B. NOAA Legal Advice

During June and July 1987, we discussed the legality of the matching funds the State of Alaska had proposed with NOAA general counsel in Alaska and Washington State. Attorney Charles E. Albertson (GCNW) raised the issue. He questioned the State's use of prior-year investments to match current-year Federal funds. The acting NOAA Regional Counsel for Alaska, Jay S. Johnson, was of the opinion that prior-year investments were appropriate, and he discussed the issue with his colleague, Mr. Albertson. The conclusion of this discussion was that any appropriations or investments the State made in relevant salmon enhancement programs from the date the Pacific Salmon Treaty was signed (15 March 1985) would be appropriate for use as matching funds.

Our understanding was that the State could use appropriations and expenditures of cash made after 15 March 1985. Further, we understood it could use prorated amounts of the present value of even earlier capital investments (hatcheries, rearing ponds, etc.) if the State used those facilities in the projects. Thus, if the State built a hatchery

in 1960 and that hatchery would be used to produce salmon to support the Pacific Salmon Treaty, the State could determine the present value of the hatchery (which might be considerably greater than the original investment), determine what proportion of that hatchery would be used for treaty work during the year, and use a prorated amount of the present value of that proportion to help match the current-year Federal funds. For example, if the State had a small hatchery with a present value of \$100,000 and a useful life of 10 more years, and 25 percent of that hatchery was used for salmon treaty work during 1988; then, the present value of the hatchery for 1988 would be about \$10,000 (\$100,000 divided by 10 years), and the 25% being used would be worth \$2,500 (1/4 of \$10,000). Thus, the State could use that hatchery to match \$2,500 of Federal funds during 1988.

C. The State Matching Program

On 15 June 1987, the State submitted its proposal for enhancement projects for the FY87 cooperative agreement (see attachment 15). This proposal included a description of the capital and operating funds the State was using to match the Federal funds. NOAA attorney Albertson (GCNW) reviewed the proposal and objected to the matching funds proposed because they included funds Alaska had spent for salmon enhancement capital improvements and operations before the treaty was signed.

As a result of NOAA's legal opinion, Alaska agreed to revise its list of matching funds to include only those spent on salmon enhancement costs beginning with 1 July 1985 (attachment 20). This list shows that Alaska expended or would have expended a total of \$7,914,400 for treaty-related salmon enhancement during the period from 1 July 1985 to 30 June 1988. That amount corresponded to Federal contributions of \$7,017,300. In summary, the State had provided funds exceeding the Federal share.

In November 1987, the State provided a more detailed list of its expenditures (attachment 21). The numbers differ slightly from the earlier document because the two documents use different bases and because of rounding. The July document did not have the actual amount for FY87, whereas the November document did. And the July document rounded off to the nearest hundred dollars. Nevertheless, the grand totals were quite close: \$7,914,400 for the July document and \$7,024,505 for the November one. Both exceeded the Federal contribution of \$7,017,300.

At this point, we should discuss the cooperative project the State has with NMFS at Little Port Walter. Since about 1974, the State has helped support salmon enhancement activities at the NMFS facility at Little Port Walter. The goal of these activities was to develop techniques for spawning and rearing chinook salmon. The State has contributed funds, materials, and

personnel. In fact, the State paid for the original freshwater pipeline at the facility. The State agreed to continue to support these activities in 1987. Accordingly, NMFS withheld \$60,000 of the \$3,903,800 made available for the mitigation enhancement activities in 1987 for work at Little Port Walter (attachment 22).

Thus, with the \$60,000 withheld for Little Port Walter in FY87, the total amount of Federal funds made available to the State for mitigation enhancement activities was \$3,173,500 in FY86 and \$3,843,800 in FY87 for a total of \$7,017,300.

In regard to matching the Federal funds, the State has pointed out that up to this time it has not used three sources for matching that it could: (1) capital and operating expenses of the private nonprofit aquaculture associations and (2) prorated amounts of the present value of prior-year capital investments, and (3) State capital and operating expenditures between the time the treaty was signed (15 March 1985) and the start of the State fiscal year (1 July 1985).

In summary, the State contributed at least \$7,024,505 to salmon enhancement projects related to the Pacific Salmon Treaty between 1 July 1985 and 30 June 1988. The Federal contribution during this time amounted to \$7,017,300. The State has three additional sources it could use as matching funds but has not yet done so.

V. CONCLUSION

The State of Alaska and the Congress of the United States agreed that salmon enhancement was necessary to mitigate the adverse impacts of the Pacific Salmon Treaty on Alaska salmon fishermen. Congress agreed to match State contributions dollar for dollar. The State claimed it had invested or would invest \$25 million in salmon enhancement programs related to the Pacific Salmon Treaty. Congress appropriated \$3.5 million in 1985 and \$4.0 million in 1986, a total of \$7.5 million; the State received \$7,017,300. In an itemized report, the State claims it matched the Federal money it received with at least \$7,024,505. Thus, the State and the Federal Government have met the matching requirements.

The salmon enhancement projects supported by the Federal money are directly related to the Pacific Salmon Treaty. Congress did not propose which projects should be funded nor which species should be enhanced. The projects the State funded with the Federal money were selected by a public process and were reviewed by the Pacific Salmon Commission as well as others. The State has reported to the Pacific Salmon Commission about its existing and planned salmon enhancement projects.

Those enhancement projects funded during the period 1 July 1987 to 30 June 1988 are only a part of the total salmon enhancement program to mitigate the adverse effects of the Pacific Salmon Treaty; they must be viewed in the context of the complete enhancement picture. There is no requirement that Federal dollars spent on a particular aspect of the enhancement program be matched exactly by State dollars. Thus, Federal funds used to purchase incubators for salmon eggs at the Snettisham hatchery need not be matched by State dollars spent on incubators at Snettisham. The requirement is that for every Federal dollar spent on the multi-year, multi-species, multi-facility salmon enhancement program be matched by a State dollar spent on the program. Therefore, according to the State documents and this report, the State has appropriately matched the Federal funds dollar for dollar.

V. LIST OF ATTACHMENTS

<u>Number</u>	<u>Description of the Attachment</u>	<u>Pages</u>
1	Sec. Shultz letter of 7 MAR 85 to Sen. Stevens.	1
2	Katz letter of 10 APR 85 to Senators Stevens and Murkowski and Congressman Young.	3
3	Article by Sen. Stevens in Environmental Law Vol. 16, No. 3. 1986.	8
4	Alaska's JAN 85 Request for Federal Funding.	8
5	Senate Committee on Appropriations, extract of Report 99-150, dated 30 SEP 85.	2
6	Senate Committee on Appropriations, extract of report 99-425, dated 3 SEP 86.	3
7	Extract of NOAA's Budget Submission to Congress for Fiscal 1987.	4
8	Extract of the U.S. Section of the Pacific Salmon Commission's Budget Justification for FY 1987.	6
9	U.S. Section Chairman Wapato's letter of 30 March 1987 announcing allocation of funds to implement the Pacific Salmon Treaty during FY 87.	2
10	Chairman Wapato's letter of 6 JUN 86 announcing a meeting to prepare the FY 88 budget.	4
11	Alaska's letter requesting advice on which salmon enhancement projects to undertake.	5
12	Duffy's memorandum of 12 APR 88 to Allee on funds and projects associated with the enhancement mitigation program (and list of attendees).	7
13	Alaska's letter to fishermen announcing which enhancement projects would be funded in FY 87.	2
14	Pennoyer's memorandum of 22 JAN 87 to the U.S. Section of the Northern Panel of the Pacific Salmon Commission on Federal Mitigation Monies.	2
15	Collinsworth's letter of 15 JUN 87 to Andersen transmitting Alaska's proposal for FY 87 salmon enhancement programs.	2

16	Wapato letter of 19 FEB 88 to Secretary Shultz reporting on understandings by the Pacific Salmon Commission, including the Understanding Between the U.S. and Canada Concerning Joint Enhancement of Transboundary River Salmon Stocks.	8
17	Shinners' letter of 25 MAR 87 to the Honorable Joe Clark on understandings by the Pacific Salmon Commission for 1987 (The first relates to the Transboundary Rivers and enhancement).	2
18	Report from the Transboundary Rivers Technical Committee on Enhancement Potentials (JAN 88).	6
19	Extract from a report on the Port Snettisham Central Incubation Facility.	1
20	Alaska's 17 JUL 87 summary of the State matching funds and a list of the projects.	4
21	Alaska's 20 NOV 87 summary of the State matching funds and detailed accounting of expenses.	29
22	Collinsworth's letter of 21 APR 87 to McVey about an allocation of \$60 thousand to the cooperative State-Federal salmon enhancement project at Little Port Walter.	4

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 Revised 23MAY88:ama

February 21, 1985

Mr. Earl Krygier
130 Seward Street, Suite 213
Juneau, AK 99801

Dear Mr. Krygier:

The Senate and House have scheduled hearings on U.S./Canada implementing legislation for February 25 and March 1, respectively in Washington, DC. We do not anticipate any last minute changes or problems with the portions of the implementing legislation dealing with the commission, panels and advisory committee structure, function, and appointment procedures as we had reviewed them in Seattle in January. One aspect of the implementing legislation, however, is still undecided, and that is the funding to support Alaska's participation in the treaty process. While funding for commission operations is probably pretty well assured, funding levels for research, management, and enhancement in Alaska have not been solidified.

It now seems probable that funding for activities other than indirect support of the commission structure will be handled through the normal budget process as part of the appropriation to the Department of Commerce. It is too early to tell what the general level of support will be for this funding, but I think we can anticipate that given federal budget deficit problems, we may have to scrap for every dollar. I know that our delegation placed high priority on receiving federal funding to offset costs incurred by Alaska in implementation of the new treaty. Mitigation funding to promote enhancement to offset losses attributable to fisheries quota reductions or to the accommodation of Canadian harvests had been part of the delegation discussion since at least 1980. Particular reference has been made to compensation for transboundary river losses and reductions in the chinook troll fishery. At various times our delegation has received assurances that federal funding for these items was a justifiable expenditure.

February 21, 1985

As promised at our last meeting, I have enclosed a copy of the proposal we have sent to our congressional delegation from the Governor's Office. I believe the text is self-explanatory, particularly in regards to the research and management expenditures. The enhancement proposal is somewhat generic in nature since there are different ways that, in particular, the chinook enhancement could be carried out. For example, we may want more than one facility or we may want a combination of new production and expansion from existing facilities. Depending on the total funding received, of course, we may have to structure the program in different fashions.

We will keep you informed of the progress on this funding request. Thank you for your support.

Sincerely,

Don W. Collinsworth
Commissioner

Enclosure

DWC/SP/jao

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

STEVE COWPER, GOVERNOR

P.O. BOX 3-2000
JUNEAU, ALASKA 99802-2000
PHONE: (907) 465-4100

1990 JUL 27 4 51

July 19, 1990

The Honorable Ted Stevens
United States Senate
522 Hart Building
Washington, DC 20510

Dear Senator Stevens:

This is in response to your letter of June 29 which requested information on the U.S./Canada enhancement program in Alaska. I understand that concerns were expressed to you by the Alaska Trollers Association over rebuilding of chinook salmon stocks and implementation of the U.S./Canada Pacific Salmon Treaty (PST).

The Alaska Department of Fish and Game (ADF&G) initiated a fisheries program in 1985 designed to assist in implementation of specific provisions of the PST by providing newly enhanced salmon for harvest by Alaska fishermen. This effort constituted our plan for new chinook enhancement in addition to the regional chinook harvest ceiling of 263,000 fish imposed by the PST. Also considered at this stage were sockeye and chum salmon enhancement to offset harvest restrictions mandated in the PST. Initial goals of 100,000 harvestable chinook salmon, 1 million chum salmon, and 20,000 to 40,000 sockeye salmon were established as a beginning basis for mitigation. This hatchery production was expected to mitigate current reductions in harvest necessitated by natural stock conservation, while at the same time providing additional fish for future harvest.

In March 1985, ADF&G Deputy Commissioner Steven Pennoyer appointed the Southeast Alaska Chinook Salmon Technical Team, a multi-disciplinary team with members from the public and private sector agencies and organizations, to prepare a plan for production of 100,000 harvestable chinook salmon to offset reductions in the Alaskan harvest required under the terms of the PST. This team was appointed following a joint meeting of the Southern and Northern Southeast Regional Planning Teams (RPTs).

An appropriation of approximately \$20 million in federal funds was originally anticipated for enhancement projects. The funds were expected to be provided in increments over a five-year period beginning in federal fiscal year 1986. The first increment of \$3,173,500 was received in late April 1986.

July 19, 1990

The team evaluated a total of nine proposals for chinook salmon production according to a series of specific criteria. The Commissioner's Office, after a review of the technical team's efforts and discussions at the joint RPT meeting, elected to fund two projects for chinook salmon enhancement with the initial allocation of federal enhancement funds. They were an expansion of the Southern Southeast Regional Aquaculture Association's Whitman Lake Hatchery and an expansion of the Northern Southeast Regional Aquaculture Association's Medvejie Creek Hatchery.

In 1988, ADF&G solicited project proposals for enhancement of chinook, chum, or sockeye salmon as part of the U.S./Canada mitigation program. Three meetings were held in 1988 to review the project proposals and to receive advice and guidance from gear group representatives on which enhancement projects to undertake with federal mitigation funds. Participants in these meetings included representatives from the troll, seine, and gillnet fleets, private nonprofit hatchery operators, regional aquaculture association representatives, ADF&G staff, National Marine Fisheries Service representatives, and other interested parties.

In 1990, ADF&G held a mitigation meeting to discuss the current status and future direction of the U.S./Canada enhancement program. Following this meeting, project proposals were solicited and a project proposals packet, including comparative matrices, was distributed for review prior to a second meeting. At the meeting held this spring, all proposals were reviewed and gear group representatives attempted to reach consensus on which projects to fund with federal fiscal year 1989 and 1990 available funds. Based on these recommendations, ADF&G distributed to gear group representatives a proposed allocation of enhancement funds, by species. Project expenditures and adult production associated with each project were included for comparison purposes. ADF&G provided an opportunity for comments on the proposed allocation of federal enhancement funds, and the Alaska Trollers Association letter which you received constituted their response. The gear group comments were considered, and some proposed revisions to the initial allocation are currently under consideration by the Commissioner's Office.

Current production of chinook salmon resulting from projects funded with these mitigation monies should result in an annual adult return of 57,000 adults. As a result of additional chinook salmon projects which have been funded and are currently under way, annual returns of chinook salmon should increase to approximately 119,000 adults. Based on the revised allocation of project funds associated with federal FY 89 and 90 funds, an additional return of 89,000 chinook salmon adults will eventually be realized. Approximately 208,000 adult chinook salmon should be available for harvest on an annual basis when these enhancement projects are completed.

July 19, 1990

To date, ADF&G has received \$10,585,100 in federal mitigation funds, and \$7,182,600 has been either expended or dedicated toward chinook enhancement projects. With the revised allocation of \$7,125,600 in federal FY 89 and 90 funds, approximately \$10,082,200 out of \$17,710,700 in federal mitigation funds for the U.S./Canada enhancement program will have been dedicated towards chinook salmon enhancement projects.

We believe that we have been successful in initiating and conducting the U.S./Canada enhancement program for the benefit of the troll fleet in southeast Alaska. Due to a number of factors, harvest from chinook enhancement projects has not reached levels projected when the Treaty was signed in 1985. However, significant contributions are being made in southeast Alaskan fisheries, and these contributions will increase as planned production comes on line.

Thank you for your continued support of this enhancement program. If you have any additional questions or concerns, contact me at your earliest convenience.

Sincerely,



Don W. Collinsworth
Commissioner

cc: Mel Seibel
John Katz

Pacific Salmon Treaty Act of 1985

March 15, 1985

Public Law

- 1.1 Public Law 99-5, approved Mar. 15, 1985. (H.R. 1093)

(CIS85:PL99-5 9 p.)

"To give effect to the Treaty Between the Government of the United States of America and the Government of Canada Concerning Pacific Salmon, signed at Ottawa, January 28, 1985."

Provides for implementation of the 1985 U.S.-Canadian treaty establishing a basis for cooperative management, research, and enhancement activity pertaining to Pacific salmon and other species.

Includes provisions for appointment of representatives from Northwest States and Indian tribes to the U.S. Section and panels of the Pacific Salmon Commission established by the treaty.

Repeals the Sockeye Salmon or Pink Salmon Fishing Act of 1947.

P.L. 99-5 Reports

99th Congress

- 2.1 H. Rpt. 99-16 on H.R. 1093, "Pacific Salmon Treaty Act of 1985," Feb. 28, 1985.

(CIS85:H563-1 19 p.)
(Y1.1/8:99-16.)

P.L. 99-5 Debate

131 Congressional Record

99th Congress, 1st Session - 1985

- 4.1 Mar. 5, House consideration and passage of H.R. 1093.
- 4.2 Mar. 7, Senate consideration and passage of H.R. 1093.

P.L. 99-5 Hearings

99th Congress

- 5.1 "Fish and Wildlife Miscellaneous, Part 1," hearings before the Subcommittee on Fisheries and Wildlife, House Merchant Marine and Fisheries Committee, Feb. 21, 25, 27, Mar. 5, 1985.

(CIS85:H561-21 vi+345 p.)

(Y4.M53:99-3.)

- 5.2 "Pacific Salmon Treaty," hearings before the Senate Foreign Relations Committee, Feb. 22, 1985.

(CIS85:S381-22 iii+143 p.)
(Y4.F76/2:S.hrg.99-19.)

- 5.3 "Pacific Salmon Treaty Act of 1985," hearings before the Senate Commerce, Science, and Transportation Committee, Mar. 1, 1985.

(CIS85:S261-33 iii+72 p.)
(Y4.C73/7:S.hrg.99-25.)

P.L. 99-5 Documents

99th Congress

- 7.1 Treaty Doc. 99-2, "Treaty with Canada Concerning Pacific Salmon, Message from the President," Feb. 19, 1985.

(CIS85:S385-2 xix+23 p.)
(Y1.1/4:99-2.)

Mr. BREAUX. I would like to welcome up our first panel, and ask them to take their seats at the witness table, the Honorable Edward Derwinski and the Honorable Theodore Kronmiller.

It is not surprising to me that they have done such a good job as they both received their training here in the House.

Ed, of course, is a former colleague of all of us, and we are certainly pleased to have him. Ted Kronmiller was formerly our staff counsel for the Fish and Wildlife Subcommittee.

We felt confident we had a good team and the results are indicative of that. Since Ted was a former employee on my staff, I am trying to find something that pertains in the treaty to the Gulf of Mexico.

Ed is now counselor to the Secretary of State and here in that capacity. Ed, do you wish to go first?

STATEMENTS OF HON. EDWARD DERWINSKI, COUNSELOR TO THE SECRETARY OF STATE, U.S. DEPARTMENT OF STATE; AND HON. THEODORE G. KRONMILLER, U.S. NEGOTIATOR

Mr. DERWINSKI. Thank you, Mr. Chairman.

I would like to introduce Miss Mary Walker, the Deputy Solicitor of the Department of Interior, and Dave Colson, who heads the legal team at the Department of State that worked on the treaty and the legislation, and the other problems that arose.

I am mindful of the fact that the distinguished Governor of Washington will follow us and representing the administration that is dedicated to States' rights and home rule; therefore, I will be a bit brief, recognizing the preeminent role the respective States play in this issue.

I would like to point out the remarks that you and Don Young and others have made concerning Ted were very accurate. Ted Kronmiller has continued his efforts to put this Treaty together; if he had not, it wouldn't have been done. I came in rather late, I didn't know too many of the players, but he knew the issues, the technicalities and was able to put this thing together.

My role reflected the importance of developing U.S.-Canadian relations as Secretary Shultz stressed.

We have periodic meetings between our Secretary of State and the External Affairs Minister of Canada, discussing a range of issues, and we work to try to solve them. While we couldn't have better relations with a neighbor, probably the best example of neighborly relations in the world, there are problems that require periodic attention, and this problem was one of them.

The treaty, along with the annexes and a memorandum of understanding, were all signed on January 20th in Ottawa, after, depending on how one counts, 15 years of negotiations.

It is our hope, our firm belief, the treaty will serve to rebuild a valued salmon resource for the users of both countries along the Pacific Coast.

The Treaty is also a symbol of the Administration's effort to improve the quality of our bilateral relationship with our good neighbors and to resolve other outstanding problems.

Mr. Mitchell Sharp, former Minister of External Affairs, is very distinguished statesman. He was invaluable in helping to create a

positive atmosphere within the Canadian delegation that finally achieved the goal of the Treaty.

This was a fascinating negotiation. Very often, we had as many problems working out differences among the respective fishing interests in the United States as we did in dealing with the Canadians, and that is very understandable. I am told that earlier efforts in part failed because of the conflicts that arose between the conflicting fishing interests within the United States, and we worked hard to see that that did not happen.

At one time or another, by my amateur nose count, there must have been 150 participants in the U.S. delegation. No group, regional or otherwise, was left out, and as a result, we were able to reach an effective agreement.

We had the complete cooperation of the three State Governments mainly involved, Alaska, Washington, Oregon, and the respective Commissioners of the three States, Bill Wilkerson of Washington, Don Collingsworth of Alaska, and Jack Donaldson of Oregon. The Governors of the States were also most helpful. I am pleased to see Governor Gardner is here in support of the legislation and the Treaty.

We had tremendous leadership, and statesmanship, by the representatives of the Indian tribes and all the fishing interests who realized that now is the time to finally work out an agreement that is in everybody's long-term interest.

We can all see there are some short-term problems. This is neither surprising nor upsetting. In the long-term we believe everybody will be better served, and that is the purpose behind our urging you to pass this implementing legislation.

As you noted, Mr. Chairman, there is a timetable we would like to meet. It is not an artificial timetable in that we had indicated to all participants that we hoped to ratify the treaty and pass the enabling legislation before the 1985 fishing season started so that would have been a logical goal, anyway.

Instead, we have possibility of this package being the centerpiece of the President's visit to Canada in approximately 3 weeks to meet with Prime Minister Mulroney and this will highlight our increased efforts to solve this and many other problems that exist between us.

With that, Mr. Chairman, I would like to turn the testimony over to Mr. Kronmiller.

[The prepared statement of Mr. Derwinski follows:]

PREPARED STATEMENT OF HON. EDWARD J. DERWINSKI, COUNSELOR, DEPARTMENT OF STATE

Mr. Chairman, I am pleased to meet with you today to testify in favor of H.R. 1093, a bill to implement the U.S.-Canada Pacific Salmon Treaty.

Let me say a few words first about the political significance of the Treaty, to which H.R. 1093 is related, and then ask Mr. Ted Kronmiller to give the Administration's detailed views on H.R. 1093.

This Treaty, along with its annexes and a Memorandum of Understanding, was signed in Ottawa on January 25, 1985, after nearly 15 years of negotiations. The Treaty will serve to rebuild a valued salmon resource for the users of both countries along the Pacific Coast. The Treaty is also a symbol of the Administration's effort to improve the quality of our bilateral relationship with our good neighbors to the north, and to resolve outstanding problems in a mutually beneficial way.

Last summer, during one of his periodic meetings with his Canadian counterparts, Secretary Shultz and then-Foreign Minister MacEachen agreed to appoint "overseers" at a senior level to monitor the negotiations and provide assistance as required to get the talks moving again.

Mr. Shultz asked me to take on this job for the United States and the Canadian Government appointed Mr. Mitchell Sharp, a former Minister of External Affairs and former holder of other senior Cabinet posts. Mr. Sharp is a world-renowned statesman and an eloquent advocate of his country's interests. The new government of Prime Minister Mulroney retained Mr. Sharp in this position as an indication of his government's desire to insulate the negotiations from political partisanship and sustain the negotiating momentum then being developed.

The proposed U.S.-Canada Pacific Salmon Treaty is one of the first concrete results of the new dialogue between Canada and the United States. It is designed, as I mentioned, to rebuild the Pacific Salmon population for the long term benefit of users in both countries. To achieve this result, many user groups in both countries have had to make difficult adjustments or reallocations in the short run. However, there has been a remarkable consensus among both the American and Canadian delegations that despite the unhappy need to allocate scarcity in the short run, all parties will benefit greatly over time from the enhancement plans incorporated in the Treaty and from the careful management of the salmon resource by the U.S.-Canada joint Commission, as outlined in the Treaty and H.R. 1093.

The Treaty and its annexes thus represents a delicate balance of give and take, especially by tribal, commercial and sports groups in the Pacific Northwest and Alaska. The Treaty and its annexes, the implementing legislation contained in H.R. 1093, and a companion agreement to be submitted in the courts, reflect a set of delicate compromises. It is clear to all involved in these negotiations that changes or amendments to any one of these documents will have an adverse chain reaction that will fatally damage the consensus underpinning the Treaty. For these reasons, Mr. Chairman, the Administration is particularly anxious that H.R. 1093 be passed in its current, agreed form without further substantive changes.

I must mention that one of the important reasons the U.S. delegation was able to achieve a consensus during this last round of negotiations was the extraordinary work of the chief negotiator, Ted Kronmiller. Ted's performance has been truly outstanding. He has a complete grasp of all the complexities of the Pacific salmon issue, and has led his diverse delegation with unusual sensitivity and diplomatic skills.

I am pleased to report that the Governors of the states directly concerned—Governor Sheffield of Alaska, Governor Atiyeh of Oregon, Governor Evans of Idaho, and Governor Gardner of Washington (as well as former Governor Spellman) have all indicated their warm support of the Treaty.

The three state Commissioners, Mr. Don Collingsworth of Alaska, Mr. Bill Wilkerson of Washington, and Mr. Jack Donaldson of Oregon, constituted the backbone of the negotiating team. Without their leadership and cooperation, it is unlikely we could have succeeded. Many other individuals representing the treaty Indian Tribes, commercial and sports fishing groups, and the federal government agencies, all contributed enormous amounts of time and energy; unfortunately there are too many to list here.

Finally, Mr. Chairman, I want to thank you and members of this Committee who have been so helpful in arranging for prompt consideration of this implementing legislation, H.R. 1093.

If as a result of our mutual efforts all the legislative pieces fall into place in the next week or so, the Pacific Salmon Treaty will serve as a centerpiece during President Reagan's trip to Canada in mid-March and as a further example of the practical progress that the United States and Canada can achieve in an atmosphere of mutual confidence and understanding.

STATEMENT OF HON. THEODORE G. KRONMILLER

Mr. KRONMILLER. I appreciate the opportunity to appear before the subcommittee to testify on H.R. 1093, a bill to implement the United States-Canada Pacific Salmon Treaty. For the past 2 years, it was my honor to serve as the U.S. negotiator for the treaty.

Last week, Counselor Derwinski and I appeared before the Senate Foreign Relations Committee to urge advice and consent of the Senate to ratification of the treaty. I was pleased to do so with

the strong and widespread support of the affected States, treaty Indian tribes, and commercial and sports fishermen.

A detailed description of the treaty is found in my testimony before the Senate Foreign Relations Committee. I would like to request that those remarks be included in this hearing record.

Mr. Chairman, the administration strongly supports H.R. 1093 and believes that no changes are necessary for the United States to implement the treaty. It is a matter of record that non-Federal members of the U.S. delegation to the treaty negotiations seek only minor, fiscal amendments.

The negotiations began 15 years ago. As the talks proceeded, the United States confronted an internal negotiation among the treaty Indian tribes, the State of Alaska and the States of Washington and Oregon, among organizations of commercial and recreational fishermen, and among various commercial fishing gear groups.

Each was represented on the U.S. delegation, which grew over the years to number more than 100 persons. Often the disagreements made it difficult to put forward national positions. In the end, it was only because each member of our delegation was willing to respect and accommodate the basic interests of the others that we were able to reach consensus agreement on the treaty.

For his special contributions to the development of that consensus, we owe Counselor Derwinski, the political overseer of our delegation, a particular debt of gratitude.

The support of the U.S. delegation for the treaty and for its early implementation warrants prompt action by the administration and the Congress on this essential legislation. Early enactment of this legislation will make it possible to implement the treaty before the major 1985 Pacific salmon fishing seasons. The response of the executive branch and both Houses of Congress, with the support of the interested State and tribal managers, and the many user groups, reflects the importance that is attached to achieving an immediate and effective answer to the severe conservation problems of Pacific salmon.

The treaty provides for a new intergovernmental institution, the United States-Canada Pacific Salmon Commission, with three associated panels: Northern, Southern, and Fraser River. The Commission and Panels will have the responsibility to develop regimes for fisheries in which the fishermen of one country intercept Pacific salmon spawned in the rivers of the others, and to establish Fraser River fisheries regulations corresponding generally to those now developed by the International Pacific Salmon Fisheries Commission.

H.R. 1093 identifies the roles of the Federal Government, the States of Washington, Oregon, and Alaska, the treaty Indian tribes and the commercial and recreational fishing sectors. The bill also identifies how decisions will be taken by the U.S. section of the Commission and Panels.

As you might expect, these matters are of great importance to those concerned in the Pacific Northwest and Alaska. Most of the domestic salmon fisheries regulation that will be required by the treaty will relate to fisheries now under State or tribal management.

It is natural that those authorities insist that their management responsibilities not be supplanted by decisions of the Federal Government. On the other hand, it is reasonable that the Federal Government make certain that the United States can meet its obligations under the treaty.

The bill which has been introduced strikes an ideal balance of these legitimate interests.

H.R. 1093 leaves it entirely to the States and the treaty Indian tribes to regulate the fisheries subject to their jurisdiction in a manner consistent with our bilateral treaty obligations. At the same time, the bill provides the Federal Government the right to preempt State or tribal regulations which would violate those obligations.

Because preemption is an extraordinary power intended for only the most critical situations, the role reserved by H.R. 1093 to State and tribal managers is fundamental to the successful implementation of the treaty.

The proposed legislation provides for full participation by the States and treaty Indian tribes in the development of international obligations under the Pacific Salmon treaty. Indeed, as I shall describe, States and Indian treaty tribes are assured greater power in the U.S. section than is provided the Federal Government.

H.R. 1093 provides that the U.S. section of the Commission will be composed of four persons appointed by the President. There will be a Federal official, a person appointed from a list submitted by the Governors of Washington and Oregon, a person appointed from a list submitted by the Governor of Alaska, and a person appointed from a list provided by the treaty Indian tribes of Idaho, Oregon, or Washington.

Decisions of the U.S. section will be taken by consensus. The Federal Commissioner will not have a vote, but will be expected to play an important advisory and conciliatory role.

H.R. 1093 ensures that the composition and voting arrangements for the Panels will also be fair and reasonable. The bill provides an appropriate balance among the Federal agencies, the State and tribal management entities, and the fishermen.

As you know, following the *Boldt* decision, some difficulty was encountered in providing for U.S. treaty Indian participation in the regulatory process of the International Pacific Salmon Fisheries Commission. At long last, this matter will be put behind us.

The Pacific Salmon Treaty clearly provides for such participation, and this bill ensures the treaty Indian tribes will have a voice, not only in the U.S. section of the Commission, but also on the Fraser River and Southern Panels.

The U.S. section of the Fraser River Panel will be made up of a Federal official, an official from Washington State, a person nominated by the treaty Indian tribes that fish the Fraser River salmon, and a commercial fisherman.

These four must concur on the preseason management positions to be taken by the United States, thus ensuring industry, the tribes and the State of Washington important roles in the establishment of the basic regime for each season.

However, H.R. 1093 reflects the reality that, for in-season adjustments, the principal decisionmaking power should rest with Washington State and the treaty Indian tribes.

For such adjustments, a majority vote, with a concurrence of the State and tribal Panel members, is required. This permits the two principal management units to act expeditiously during the fishing season.

The United States will be represented on the Southern Panel by six members, one Federal, one from the State of Oregon, one from the State of Washington, two from the treaty Indian tribes, and one from the commercial or recreational sector, alternating each year.

At least one member will have to be a voting member of the Pacific Fishery Management Council. Decisions and recommendations of the Southern Panel will require a concurring vote of the Oregon and Washington representatives and one tribal representative. In addition, the Southern Panel will require concurring votes of the majority of all Panel members present.

The Northern Panel will be comprised of six members on the U.S. side, one Federal, one from the Government of the State of Alaska, and four others who are knowledgeable and experienced in salmon fisheries in the Northern Panel jurisdiction.

At least one member will have to be a voting member of the North Pacific Fishery Management Council. All decisions and recommendations of the Northern Panel will require concurring votes of the majority of panel members present.

Mr. Chairman, it was understood by all members of the U.S. delegation that, to resolve the critical issues relating to the management of Pacific salmon, it would be necessary, but not sufficient, to negotiate an acceptable treaty with Canada.

It was agreed that two domestic matters also had to be satisfactorily resolved. One of those matters was the adoption of implementing legislation which would resolve the domestic political, economic and legal issues. That legislation is before this subcommittee. In my estimation, any amendment to the provisions of H.R. 1093 that would relate to the essential balances of which I have spoken would be opposed by one or another of the constituent interests. Minor fiscal matters aside, H.R. 1093 as drafted is strongly supported by all concerned domestic interests as a pragmatic accommodation.

The other matter was the resolution of the *All Citizens* lawsuit. I am pleased to report that a stipulation settling critical issues of that lawsuit has been filed by representatives of Alaska, Washington, Oregon and the treaty Indian tribes, and the Federal Government.

Mr. Chairman, it has been a rewarding challenge to serve as the U.S. negotiator. It was a privilege to work with a delegation of Americans who successfully overcame, by enormous effort, by great patience, and by good will, the deep and painful conflicts of many years.

The treaty is not without its disappointments to various affected interests on both sides of the border. But the treaty has the support of the U.S. delegation and the administration, and of the Canadian Government, because bilateral cooperation is essential to

the effective conservation and management of the Pacific salmon stocks intercepted by the fishermen of each country.

With the enactment of this enabling legislation, a goal sought over 15 years by the thousands of fishermen, by their communities, by their Representatives in Congress, by the Federal agencies, and by the affected States and tribes, will at last be realized.

I urge you to act favorably on H.R. 1093 as quickly as possible.

Thank you.

Mr. BREAUX. I thank both you and Ed for your presentation, and we will proceed to questions.

I note that the term enhancement is defined by the treaty to mean either manmade improvements to habitat or applications of artificial culture technology.

I would imagine that means hatcheries that lead to the increase in the salmon stocks. The bill that we have before us authorizes, I would note for the members, such sums as may be necessary for enhancement and other activities necessary to carry out the U.S. responsibility under the treaty.

I also note that the principles in article III of the treaty speak to the question of salmon enhancement programs.

Can you give the committee an interpretation as to what we are talking about with regard to that, in light of the fact that the Administration, this year, is recommending zero funding for fish hatcheries. As this treaty speaks to enhancement activities and authorizes such sums as may be necessary, is this a potential conflict for us?

Mr. KRONMILLER. Mr. Chairman, an honest answer to that question probably would begin with a confession that perhaps the budget process is a little bit behind the power curve with respect to this treaty.

It has already been noted that we are on a very, very fast track in attempting to bring this treaty into effect before the 1985 Pacific salmon fishing season. There are inevitably some disconnects from what we are trying to do here.

I can assure you that it is my view that there is going to be required substantial sums to assure that this treaty is effectively implemented in accordance with our international obligations, and I hope administration recommendations to that effect will be forthcoming.

Mr. BREAUX. What about Interior's response on that or anybody else? We got a zero budget request for enhancement for fish hatcheries, and I am just concerned that this treaty authorizes, among other things, such sums as may be necessary, and I take it that some of the enhancement activities might include fish hatcheries, or does it not include fish hatcheries?

Mr. Kronmiller.

Mr. KRONMILLER. I think that it is only reasonable to expect that there will be a need for additional hatcheries and, most certainly, there will be a need for more aggressive utilization of the hatcheries that exist now, if we are to meet our treaty obligations.

I would like to elaborate for a moment on the expectations of the U.S. fishermen concerning this treaty. It is obvious that if we are going to conserve a resource that has been in a state of serious de-

cline for a considerable period of time, it is going to be necessary to cut back fishing.

When we cut back fishing, we will have an inevitable economic impact, though not over an extended period of time, on U. S. fishermen. The Canadians will suffer the same sort of impact on their side of the border.

When we attempt to deal with delicate issues of allocation of the available resources, we also inevitably have some impact upon the economics of certain fisheries.

As a result, it appears that enhancement is a way to address and mitigate the sorts of adverse impacts that can be expected in the short to medium term.

In the long term, we do expect that a great deal many more fish will be in the oceans and streams. In the meantime, we do have to deal with the rather severe economic consequences, and enhancement is the least painful way of doing that.

Mr. BREAUX. Does the treaty obligate the United States to additional fish hatchery operations in the United States?

Mr. KRONMILLER. The treaty speaks of an obligation to use enhancement to address the impacts of the conservation measures established by this treaty, to which I should add that there will also be in accordance with other perhaps less binding, but no less significant elements of this treaty, a need to address the impacts of equity adjustments. It might be found that the United States is in a deficit position in relation to its production of fish resources. In that case, we will have to make it up to Canada. Enhancement is a way to do that.

I can say it would be an expectation of U.S. fishermen that when we are carrying out our obligations to Canada, we try to take whatever measures are available to mitigate the impact upon our own fishermen.

Mr. BREAUX. Looking at the summary of costs for both the State Department and the Department of Commerce, I note that with regard to the Department of Commerce, they speak to management costs of \$200,000 and Federal research costs of \$3 million, saying that the research costs consist of \$1.2 million appropriated annually in recent years, plus an additional \$1.8 million more research on Pacific salmon stock.

They don't have anything in their budget request for hatcheries, or for any item that I would see to be more than research. Does this fulfill their obligations if the treaty were in effect?

Mr. KRONMILLER. No, it does not.

Mr. BREAUX. In what ways would it be deficient?

Mr. KRONMILLER. To provide for even minimal amounts of enhancement and research that would be required to accommodate the provisions of the treaty. I would note, however, that opinions differ widely concerning the requirements of funding for research.

There are many in the fishing community who believe strongly that a great deal more money than that which has been proposed is going to be required to meet the research needs established by this treaty.

Mr. BREAUX. Well, the problem I have is—and I will conclude and let others question—that the bill authorizes such sums as are necessary, and the Commerce Department apparently has no sums

which would go to the question of enhancement. I don't know who is going to make the cuts on what is sufficient.

Who is going to make that cut? You, the negotiators, are saying that what is in their summary of costs does not meet their obligation. Somebody at the Appropriations Committee is going to have to make a cut on this, and I am not sure what that cut is going to be, and I don't know how to solve that problem.

Such sums as are necessary is no limitation.

Mr. KRONMILLER. Mr. Chairman, I hope that the administration will be prepared to provide you with more detailed funding requests and analysis during the next several weeks.

We can't spend a dollar on enhancement this year and expect the fish to be in the oceans ready to be caught the following year. Ordinarily, it is several years before we begin to see the results of enhancement funding, and that needs to be addressed now very carefully.

I doubt that it has been addressed yet, however.

Mr. YOUNG. Ted, if there is enhancement in hatcheries on both sides, Canada and the United States, the money put in, development of those hatcheries, those fish produced from those hatcheries, they would be, shall I say, given back to the producers?

Mr. KRONMILLER. Congressman, it is not clear at this point precisely how that will fall out in any given case.

Mr. YOUNG. Wasn't the intent of that program to take where we cut back on our quotas, the first shot at the newly-enhanced production would go to those areas which were cut back?

Mr. KRONMILLER. Yes, that is right. In the longer term, if there is an equity deficit on the U.S. side, enhancement should be the primary and first means used to address that deficit, so there is a short to medium term conservation impact to be addressed and a long-term equity impact that needs to be addressed.

Mr. YOUNG. Both sides have enhancement programs, if they are successful, we can change the figures in the treaty as far as the total catch on all species?

Mr. KRONMILLER. Yes, as long as, in the case of chinook, for example, we don't draw the rebuilding period out beyond 1998, which is the year in which we are to have a completed rebuilding program.

Mr. YOUNG. Canada has been neglectful in their role in enhancement. It has worked well in Chile. You wanted to know what was in there in the gulf. I had dinner at McCormack's in Seattle, one of the best fishing houses. I was shocked to find out the eggs originated in Alaska, 1974, and we helped them down there with a little work, and now we are being imported into the Northwest salmon.

Anyway, I think this treaty is long overdue. Ed, I didn't forget you. You have called me up more times, more than anybody I know of, explaining where you were going during this period of time.

Congratulations.

Mr. DERWINSKI. I knew from our previous contact that I better keep you informed or I would have trouble somewhere along the line.

Mr. YOUNG. No further questions.

Mr. BREAU. Congressman Bonker.

Mr. BONKER. The funding requirements to carry out and implement the treaty—and I am sorry we have to dwell on one sore spot when you have done such an incredible job in bringing us to this point, and I don't deny your sincerity, but the fact is that you are no longer with the Government, as I understand it, and Mr. Colson is with the State Department, and we are left to deal with the usual witnesses who come before this committee recommending zero funding for a number of these programs.

And it seems to me that the administration's budget this year contains no money for research and data collection, which is vital if we are going to maintain any scientific basis upon which to make these allocation decisions in the future.

Zero funding for the hatcheries along the Columbia River, a long-standing and binding commitment by the Federal Government; and then, we have enhancement funds that are necessary to meet the terms of the treaty.

How do we reconcile what you are saying about funding requirements to meet the terms of the treaty and what this committee can fully expect in the course of the year, trying to take up this matter with OMB, and administration witnesses who really don't feel bound by that treaty, but feel more committed to carrying out the President's budget proposals that are submitted to Congress?

Mr. DERWINSKI. May I address the broader question, Mr. Bonker?

Ted mentioned earlier some of the budget approaches were a little behind the curve in the sense of our ability to first get the treaty approved by the U.S. delegation, and to move it along to the point where we have ratification and the legislation.

It seemed to me quite logical at that point that the obligations and the realities imposed by the legislation and the treaty would be such that the administration would properly look at the responsibility for enhancement that is called for.

I personally feel that that would not be a difficult point to make. In fact, it would be quite consistent.

Mr. BONKER. I don't doubt that the administration would want to adhere to the provisions of the treaty, but I would look for them to say, this is an obligation that rightly belongs to the States involved, and that has been the rationale for the budget cuts on Federal hatcheries, or that perhaps the Pacific Northwest Regional Power Commission, which now has a budget, ought to meet the terms and commitments inherent in the treaty.

Are we going to have the administration say that the funding requirements really don't belong to the Federal Government, but instead, belong to the States and the Regional Power Commission?

Mr. DERWINSKI. Speaking as the official of the State Department responsible for this treaty, I would make the argument, the rather valid one, that this is an international obligation. Therefore, the responsibility of the Federal Government to meet the conditions of the Treaty is obvious.

Mr. BONKER. Well, I hope that is obvious. The whole rationale behind termination of the hatcheries is that it is no longer a Federal responsibility. It belongs to the State, and that is why I am pleased that Governor Gardner is here, to ask him whether the State is prepared to assume this responsibility.

I am wondering whether the United States in the long term will be prepared to match Canada's pledge of \$200 million for salmon enhancement. I don't know if the amount was a source of discussion in the negotiations, but I understand that Canada a while back had set aside a \$200 million commitment for salmon enhancement pending the outcome and the ratification of the treaty.

It seems to me if Canada has made that pledge, set aside a large amount of money for salmon enhancement, that the United States is expected to make a similar commitment.

Is that what is at stake when you talk about additional requirements for hatcheries and additional salmon runs?

Mr. KRONMILLER. The negotiations did not involve matters pertaining to specific commitments for particular amounts of money on enhancement, no, but there were expectations that we would meet rather large obligations.

The amount of \$200 million was not discussed, and the United States did not indicate that it was going to commit any particular sum of money to this process.

Mr. BONKER. It seems to me, until we train salmon to respect territorial boundaries, we are going to have this problem, and Mr. Chairman, I would expect the implementing legislation, which is the authorizing bill before us, ought to contain the amount necessary to fully implement the treaty.

Otherwise, we are going to have problems downstream, if you forgive the pun, upstream.

Mr. BREAU. Questions on this side from anyone?

Mr. Lowry, from Washington.

Mr. LOWRY. Mr. Derwinski, last year, the National Marine Fisheries Service requested legislation that specifically shifts the funding for the hatcheries programs to the Bonneville Power Administration. We are expecting that to happen again this year. That would be asking the ratepayers within those utilities to pay for this international Treaty, as you are also well aware. That is why the concern.

We all agree the people sitting at this table are honorable people, but we can also understand the concern. The same organization has asked for the elimination, in this budget, of the fish count program necessary for treaty research and the other things that would make the treaty work.

Do you feel yourselves personally committed to, in the future, fight for the appropriations, for the enhancement dollars that were discussed during the negotiations? It is my understanding that many times, during the negotiations as the negotiations were running into trouble, we would talk of commitments, Federal dollar commitments for enhancement to be able to make the treaty work.

Do you feel committed to fight for the appropriations to get those dollars?

Mr. DERWINSKI. I personally feel committed, and if I may make the point, when I left you noble gentlemen, I became a diplomat, and diplomats tend to be above sordid matters like budgets and whatnot, but I feel a commitment to make the treaty work.

There is a commitment and the Federal responsibility, and I am quite confident that that would continue to be the view that the

State Department would very energetically pursue in any inter-agency deliberations.

Mr. LOWRY. A Federal commitment for future dollars to mitigate harvest loss?

Mr. DERWINSKI. In negotiating the treaty, we recognized the obvious, that there would be an enhancement factor that was a budgetary factor, that that was a commitment under the treaty, and that would require a Federal investment.

Mr. LOWRY. Mr. Kronmiller, I have been told that there would be times when we would be in trouble on this treaty, this great job in bringing this together, and then there would be a Federal commitment made for future enhancement dollars to mitigate harvest loss as a result of the treaty.

Mr. KRONMILLER. That is exactly so.

Mr. LOWRY. That was the understanding within the treaty negotiations that it would be the responsibility of this Government to go ahead and stick with that commitment for future dollars?

Mr. KRONMILLER. That is my view, yes.

Mr. BREAU. Any questions from the New York perspective?

Mr. MANTON. No questions, Mr. Chairman.

Mr. BREAU. Article VI, section 5, indicates that the parties are to review proposals made by the Fraser River Panel to determine "consistency with domestic legal obligations." Does that mean that certain domestic legal obligations such as some of our domestic legal obligations with regard to the U.S.-Indian treaty rights would be in a position to override some of the panel recommendations?

What are we talking about, domestic legal obligations, Indian treaty rights?

Mr. KRONMILLER. Yes, Indian treaty rights are an important part of the process. There is substantial participation by the treaty tribes in the Commission and in the various Panels. We believe there really is no possibility of a recommendation by the Commission that would be inconsistent with Indian treaty rights.

For the Commission to make a recommendation, both the U.S. section, which has one collective vote, and the Canadian section, which has one collective vote, must agree.

For the U.S. section to take a position before a vote in the Commission, the U.S. Commissioners who have votes must agree. The Federal member is not a voting member, but the members from Alaska and the member from Washington or Oregon, and the member from the treaty tribes, each has a vote, and they must, by consensus, reach positions to take to the Commission.

I doubt that the treaty tribe member would come up with something that is incompatible with the rights of the treaty tribes, and that is why that member is there, among a number of other reasons.

The same applies to the Panels that deal with these particular issues. They also have treaty Indian representation, so it is doubtful, if not inconceivable, that there would be any sort of legal problem arising.

I don't think it is an issue we will ever have to address.

Mr. BREAU. Is steelhead trout specifically covered by this treaty outside of the general statement that is contained in article IX?

Mr. KRONMILLER. Article IX is perhaps the most obvious, and one of the least substantive provisions in the treaty. In taking a look at this issue, which was brought to my attention recently, I came to the conclusion that article IX would mean whatever the U.S. section to the Commission wanted it to mean.

There is no obligation to establish conservation measures for steelhead. The language is, in fulfilling their functions, the Panels and Commission shall "take into account" the conservation of steelhead, so I think that if it is deemed by the U.S. section of the Commission to be important to address the steelhead issue, it will be addressed.

If it is felt better not to address it, it does not have to be addressed.

Mr. BREAUX. Our definition of salmon in the legislation before the committee includes steelhead as part of that definition.

Is that something that should be deleted from the legislation?

Mr. KRONMILLER. I wouldn't think so, Mr. Chairman. Steelhead is an undefined subject mentioned in article IX, so you might need some mention of steelhead in the legislation, and in its definitions. It is innocuous to have it there.

Mr. BREAUX. We do not have a definition, I am told, for enhancement in the legislation. Would you recommend that we try to reach a definition of enhancement that parallels the treaty. That would, I presume, include items under enhancement other than just hatcheries.

Mr. KRONMILLER. Mr. Chairman, the purpose of the legislation is quite narrow, to implement our treaty obligations. From that standpoint, since that is the sole purpose of that legislation, and since the treaty defines enhancement, I don't think it is necessary to have a definition of enhancement in the legislation.

Mr. BREAUX. I disagree. The legislation also funds such sums as are necessary for enhancement, and if we don't have a definition of enhancement, I am not going to be anxious to push such sums as necessary, if we are not sure what it does.

Someone better have a definition of enhancement. To say this legislation doesn't do anything but implement the treaty is not correct. I point out that we are authorizing whatever sums, \$1, \$10 million, whatever, as are necessary to implement the treaty, and one of the ingredients of the treaty is enhancement.

Does enhancement mean fish hatcheries, other actions that could be taken, stream improvements, reduced fishing opportunities, a limited entry program which would be an enhancement for the conditions of the stocks that we are talking about?

Enhancement could be all those things, and I would like to know what we are talking about before I am going to be very anxious to go forward with a definition of giving them whatever money is necessary to carry out the terms of the treaty, that is all.

Mr. KRONMILLER. I think I have your message, Mr. Chairman.

Mr. BREAUX. I echo what has been said; I think the delegation has done a superb job of putting to rest something that has been going on for 15 years, and I think you certainly are to be commended for an outstanding job in that regard.

Thank you, gentlemen.

DEPARTMENTS OF COMMERCE, JUSTICE, AND STATE, THE
JUDICIARY, AND RELATED AGENCIES APPROPRIATION
BILL, 1987

SEPTEMBER 3, 1986.—Ordered to be printed

Filed under authority of the order of the Senate of January 3, 1985

Mr. RUDMAN, from the Committee on Appropriations,
submitted the following

REPORT

[To accompany H.R. 5161]

The Committee on Appropriations, to which was referred the bill (H.R. 5161) making appropriations for the Departments of Commerce, Justice, and State, the Judiciary, and related agencies for the fiscal year ending September 30, 1987, and for other purposes, reports the same to the Senate with various amendments and presents herewith information relative to the changes made.

AMOUNT IN NEW BUDGET (OBLIGATIONAL) AUTHORITY

Amount of bill as passed by the House.....	\$12,311,620,000	a
Amount of Senate bill below House.....	378,300,251	b
Total bill as reported to Senate.....	11,933,320,000	c
Amount of appropriations, 1986.....	12,244,572,747	d
Amount of budget estimates, 1987, as amended.....	15,958,615,000	e
The bill as reported to the Senate:		
Under the appropriations for 1986.....	311,252,747	F = (d)
Under the estimates for 1987.....	4,025,295,000	G = (e)

Within the \$2,000,000 restored for resource survey activities, the Committee expects NMFS to continue contracting with South Carolina Wildlife and Marine Resources Department for resource surveys. The National Oceanic and Atmospheric Administration should continue with the development of procedures for multiyear contracts for maintaining ongoing resource survey activities in support of fisheries management activities.

The Committee has provided \$1,000,000 for fish oil research at the Charleston Seafood Laboratory of NMFS. These funds will permit continuation of the program to produce refined fish oil for use in medical research on the health benefits of fish oil.

The Committee is concerned with reports that the redfish population may be becoming seriously depleted. The Committee requests the Secretary of Commerce to undertake a scientific study sufficient to enable the Secretary to determine and report by October 1, 1986, what level of harvest is appropriate to ensure the survival of the redfish population.

The U.S. section of the Pacific Salmon Commission has recommended that approximately \$6,175,000 be appropriated to fund research and management programs of the Department of Commerce for implementation of the United States-Canada Salmon Treaty. The Committee recognizes that these programs are necessary to support the Pacific salmon management regime specified in the treaty. The Committee supports the U.S. section's recommendation and is providing \$6,175,000 to implement this program. Of this amount, \$2,924,000 shall be contracted to the Alaska Department of Fish and Game to conduct research and management activities as recommended by the U.S. section.

During the United States-Canada Salmon Treaty negotiations, State Department officials indicated that the Federal Government would support funding measures to help restore salmon stocks in Alaska. The State of Alaska has agreed to match any Federal money for the enhancement of salmon stocks dollar for dollar. The State of Alaska has already engaged in a substantial State-funded enhancement program. Therefore, the Committee is providing \$4,000,000 to the State for Alaskan salmon enhancement. This funding shall be for the express purpose of contracting with the Alaska Department of Fish and Game to carry out the enhancement efforts which supplement the stock rehabilitation initiative mandated by the United States-Canada Salmon Treaty. The Pacific Salmon Commission should be apprised of the specific nature and results of the enhancement efforts, to enable coordination with all regional salmon enhancement activities. The appropriation is contingent upon the State's agreement to match the Federal contribution.

The one issue left unresolved by the United States-Canada Salmon Treaty negotiations was bilateral fishery management in the extensive Yukon River system. The delegations of both nations have concluded that further data about chinook populations and spawning patterns is necessary before an agreement can be reached. The Committee recognizes the need to support continuing negotiations on this subject, and is

to
ADF 1.4

Salmon
enhancement project

Yukon
funds

The Committee is concerned about the proposed contracting weather observations at the Newark, NJ, Airport. Therefore, NOAA to submit for Committee approval, subject to the reaming procedures in section 606, any plan for contracting out observations at Newark Airport, along with an impact analysis, entering into a contract for weather observations or otherwise performing weather service functions.

The Committee is distressed that NOAA continues to promote elimination of operating budgets for programs for which capital expenditures have recently been made, such as the Colorado River flowing system and the Hawaiian weather data buoy network. Such actions are counterproductive and the Committee urges that this be changed in the fiscal year 1987 budget.

The Committee is seriously concerned about reports of the Office of Management and Budget's delay of the next generation weather [NEXRAD] procurement process. The Committee directs that a NEXRAD contract is awarded, that it be in substantial compliance with the specifications delineated in the request for proposals of the NOAA. The Committee is further concerned that the NEXRAD is concomitantly causing delays in the Terminal Doppler Radar [TDWR] Program and, therefore, directs NOAA to submit budget requests for fiscal year 1987 which are consistent with the orderly procurement of TDWR and NEXRAD.

The U.S. section of the Pacific Salmon Treaty Commission recommended that approximately \$6,600,000 be appropriated to support search and management efforts of the Department of Commerce in implementation of the United States-Canada Salmon Treaty. This recommendation is significantly less than the original proposal submitted to the Office of Management and Budget by the Department of Commerce. The Committee supports the U.S. section's recommendation and is providing \$6,000,000 to implement this program.

Of this amount, \$2,726,000 shall be contracted to the Alaska Department of Fish and Game to conduct research and management for the northern area as recommended by the U.S. section.

During the United States-Canada Salmon Treaty negotiations, Department officials indicated that the Federal Government would support funding measures to help restore salmon stocks in Alaska in recognition of the severe economic impact the rebuilding cycle would have on Alaskan fishermen. The support was confirmed by a letter from Secretary Shultz to Senator Ted Stevens dated March 7, 1985.

The State of Alaska has already contributed \$25,000,000 to the effort to enhance salmon runs which provide benefits related to the United States-Canada Salmon Treaty. The State has agreed to match any Federal enhancement monies dollar for dollar. The State requested that the Federal Government contribute \$25,000,000 to the enhancement effort for fiscal year 1986. The Committee recognizes the commitments made by the administration to Alaska during the negotiations, but the Senate's budget reduction initiatives constrain a

Enhancement
ADD ON

See
Cong. Record
Senate on 52675
5 MAR 87

SOURCE: SENATE COMMITTEE ON APPROPRIATIONS REPORT 99
30 SEP 85 [Revised 4 OCT 85] TO ACCOMPANY HR 290
222 111 29-150

priation of this amount. Therefore, the Committee has agreed to an appropriation of \$3,500,000 to NMFS for the express purpose of contracting with Alaska Department of Fish and Game to carry out enhancement efforts which implement the United States-Canada Salmon Treaty. The Pacific Salmon Commission should be appraised of the specific nature of these enhancement efforts and the results of this enhancement shall be reviewed by the Pacific Salmon Commission in order to coordinate all regional salmon enhancement activities. This appropriation is contingent upon the State's agreement to match the Federal contribution.

Last year, the Committee funded a study on the subarctic ecosystem performed jointly by the Oceanic Institute of Hawaii and the University of Alaska's School of Fisheries and Science. The Committee recognizes the need to determine the impact of the marine food chain on fish populations. Therefore, \$500,000 of the funds appropriated to NMFS for the FOCI Program shall go to the Oceanic Institute and the Alaska School of Fisheries to conduct the second phase of the subarctic study.

The United States and Canada have recently entered into bilateral negotiations on the Yukon River chinook fishery. Both delegations have reached an agreement that further discussion is inappropriate until an adequate data base is established on the chinook population and relative abundance. Therefore, \$250,000 is appropriated to NMFS for the express purpose of contracting with the Alaska Department of Fish and Game to conduct the study. The study will focus on the annual number of Yukon chinook caught in the domestic and foreign fisheries, including the marine and in river populations. The study will be designed to improve estimates of Canadian and Alaskan stock contributions to the subsistence and commercial fisheries along the Yukon, and provide better data on the abundance of individual stocks. The results of the study will also be used in the ongoing bilateral negotiations between Japan and the United States on the interception of chinook salmon by the Japanese mothership and land-based salmon fisheries. These funds are included in the total provided to the Alaska Department of Fish and Game for research related to the United States-Canada Salmon Treaty.

The Committee has provided \$1,000,000 for the National Coastal Resources Research and Development Institute authorized by Public Law 98-364. Last year, \$250,000 was appropriated for administrative expenses related to startup costs. The Committee is convinced of the continuing national need for economic diversification of coastal communities and the potential economic benefits which can be derived from short-term research and demonstration projects. The Committee is concerned, however, that funds not be used to promote redundant planning and scoping activities related to management of fisheries and coastal resources. Such management-related activities are the primary responsibility of several other existing State, regional, and national agencies and shall not be the subject of funding by the Institute.

The Committee is providing \$450,000 for the Limnological Research Center at the University of Nevada, Las Vegas, Environmental Research

LL SHEFFIELD
GOVERNOR

FILE



State of Alaska
OFFICE OF THE GOVERNOR
WASHINGTON, D.C.

April 10, 1985

RECEIVED
APR 15 1985

DEPARTMENT OF FISH AND GAME

MEMORANDUM

TO: THE HONORABLE TED STEVENS, U.S. Senate
THE HONORABLE FRANK MURKOWSKI, U.S. Senate
THE HONORABLE DON YOUNG, U.S. Congress

FROM: *JK* JOHN W. KATZ, Director of State/Federal Relations
and Special Counsel to the Governor

SUBJECT: U.S./CANADA SALMON ENHANCEMENT

On January 28, 1985, Governor Sheffield wrote to you outlining the State's proposals for federal financial support of costs related to implementation of the U.S./Canada Pacific Salmon Treaty. Since that time, the State has been working with the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and the Department of State on funding proposals for research and management costs. These proposals should be submitted by the appropriate federal agencies to the Appropriations Committees shortly. However, at this time proposals for funding enhancement projects are being pursued by the individual states involved and no joint proposals are currently anticipated.

In the Governor's letter, the State requested a total enhancement appropriation of approximately \$20,000,000 in capital construction costs with annual operating funding of nearly \$1,750,000. This proposal was intended to fund a chinook and chum salmon hatchery facility and a sockeye salmon facility. These facilities would provide for the restoration of fishing levels reduced as a result of the treaty's fishing limits on Southeast Alaska's salmon fisheries.

Since this initial proposal was sent to you, efforts to trim the federal budget have prompted us to review our proposal and to attempt to provide a more conservative approach to enhancement funding. Consequently, we suggest a federal/state matching fund to provide monies for

enhancement activities for the Southeast Alaska salmon fisheries. The funding formula we propose would include a maximum federal contribution of \$20,000,000, with a limit of \$4,000,000 per year. The annual federal contribution would be based upon a dollar-for-dollar match of the State's contribution for U.S./Canada treaty-related enhancement. The State's share would include funds appropriated by the Legislature for capital and operating costs of enhancement projects in Southeast Alaska with an effective date of July 1, 1984. In other words, if the State spent \$3,500,000 on enhancement projects related to the fisheries covered by the treaty, the federal match would be \$3,500,000. Subtracting this amount from the \$20,000,000 limit would leave \$16,500,000 available in subsequent years.

In our opinion, the advantages to this approach are threefold. First, our proposal does not require a large up front contribution by the federal government. Second, it requires the State to continue to participate financially while recognizing that the State has already made a large commitment. Finally, the proposal provides the flexibility to respond to changing conditions and needs.

The State is committed to a program to restore fisheries reductions required by the treaty. In fact, the State began this process prior to the latest round of negotiations in order to be moving forward when the treaty was finalized. The State has ten facilities in Southeast Alaska that provide benefits related to the U.S./Canada treaty. Recent expenditures include approximately \$22,000,000 in capital appropriations for facilities at Crystal Lake, Deer Mountain, Hidden Falls, and Snettisham. Operating costs for all ten facilities run about \$3,000,000 annually.

This state commitment is in place and is coming up to full fish production-potential. The federal dollars requested for enhancement (\$20,000,000) are the necessary mitigation to complete the "full package" of fish production to replace fish lost to Alaskan fishermen and those fishermen that fish in Alaska pursuant to the treaty.

Without including a lengthy discussion of the obligation of the federal government incurred by the treaty, it is appropriate that the national interest in achieving an accommodation with Canada be recognized through enhancement funding. Considerable time was spent during the Congress' action on the treaty to confirm the obligation of the federal government to fund enhancement projects in Alaska and the Pacific Northwest. We believe that this proposal is a responsible one which will go a long way toward fulfilling the promise of the treaty and will benefit the fishing industry of Southeast Alaska.

Thank you for your continued interest. We look forward to working with you on this matter.

cc: The Honorable Don Collinsworth, Commissioner, DF&G
John Shively, Chief of Staff



**Trollers
Association**

130 Seward St., No. 213
Juneau, Alaska 99801
(907) 586-9400

FEB 2 1990

January 30, 1990

Dr. Brian Allee, Director
ADF&G/FRED Division
P.O. Box 3-2000
Juneau, AK 99802

Dear Brian:

The trollers would like to commend FRED Division for the apparent success of the chinook fry outplant project undertaken by the Crystal Lake staff on the Farragut River. It is our understanding that the returns from this enhancement effort have been far more rewarding than expected. We are hoping to see the Farragut project continue, and request that you plan for sufficient appropriations, from either FRED or mitigation monies, to accommodate this program in the FY 91 budget. We wonder if there might also be a chance of incorporating this project into the FY 90 budget at this late date?

Many times we have expressed to you our fleet members concern over the inability to access the Alaska hatchery stocks, that were promised to them at the signing of the Pacific Salmon Treaty. With such a condensed chinook season, and the increased abundance of chinook in our mixed stock fishery, it is hard to realize what benefits may already be available from our current rebuilding program. In 1989 the troll fleet was expecting to approach the add-on target goal of 100,000 chinook - at 18,000 fish we fell a bit short!

Still, we are hopeful that as the Treaty process matures we will be able to gain enough additional fishing time to make the add-on program viable. With this thought in mind, we find it important to make every effort to find suitable projects to help us meet the add-on goal.

You and your staff have been working with our board to develop chinook enhancement alternatives. Options involving a hatchery facility dedicated to chinook are very costly, and do not present timely methods for meeting our mitigation needs. Though we would still would like to pursue a hatchery program, we need to see some relief soon and therefore encourage projects like the one at Farragut River.

Sound fry outplant programs offer a method of bioenhancement that is not only cost effective, but readily endorsed by the fishing fleets. With a spawner to recruit ratio of 1:10, the Farragut program appears very desirable. Brood stock development is an issue of concern in Southeast, and could be aided through this project. Further, if FRED Division is unable to find full funding resources, perhaps one of the

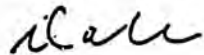
Page 2 Farragut River Chinook Fry Outplants

regional aquaculture associations would be interested in a cooperative effort based on the potential for brood stock acquisition.

An additional bonus to this particular effort is its terminal nature, which provides opportunities for other commercial and sports interests as well.

We hope you will consider our thoughts on this matter, and that you will also pass along our appreciation to your staff for a job well done!

Sincerely,



Dale A. Kelley
Executive Director

cc: Governor Steve Cowper
Don Collinsworth, Commissioner, ADF&G
Representative Cheri Davis
Representative Peter Goll
Representative Robin Taylor
Senator Dick Eliason
House/Senate Finance Committees
House/Senate Resources Committees



Alaska Trollers Association

REPRESENTING ALASKA TROLLERS

130 Seward St., No. 213
Juneau, Alaska 99801
(907) 586-9400

June 1, 1990

Norman Cohen, Deputy Commissioner
Alaska Department of Fish & Game
P.O. Box 3-2000
Juneau, AK 99802

Dear Norm:

The Alaska Trollers Association (ATA) would like to advise you of their priorities for the disbursement of the remaining US/Canada mitigation monies. What follows is some insight into the trollers perspective on mitigation, as well as an initial listing of projects for your review.

I would like to stress that ATA believes that the original intent of this funding was to provide for 100,000 additional chinook in the holds of the troll fleet on an annual basis. This number is well remembered by many members of the Treaty delegation, and has been documented through inter-departmental memos between ADF&G staff since 1985. Though the numbers promised to the other gear groups was not so clearly stated, the most widespread understanding has been 20-40,000 sockeye for the gillnetters and one million chum for the seiners.

The ATA appreciates the advantages of assisting all of the Southeast fleets to the greatest extent possible through the allocation of this funding but believes that, as the initiators of this funding, the trollers should come as close to their 100,000 goal as is practicable prior to further large expenditures toward other species enhancement.

In years past, the troll fleet enjoyed an exploitation rate on Alaska hatchery chinook somewhere in the neighborhood of 50%. Currently that rate hovers between 30 - 40% due to our compressed season. In effect, we need more fish in the water than previously estimated in order to achieve the 100,000 in the holds.

To date, there are just not enough chinook project proposals to garner the fish promised the troll fleet. Therefore, we suggest that some FY 1990 funds be held in reserve to allow the chinook planning team time to consider the viability of any additional options that might be available for new or expanded chinook programs. This would also provide an opportunity to examine more closely the merits of the

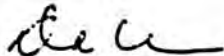
other species proposals, and consider the important inter-relationships between old, new, and future hatchery production and our current fishing regimes.

ATA PROJECT PRIORITIES

1. Chinook: Farragut R
Crystal Lk Renovations
Harding R
Deep Cove
Medvejie rearing space
Whitman Lk expansion
Hidden Falls netpens/freezer
2. Beaver Falls
3. NSRAA Redoubt Lk CIF
4. Neets Bay expansion
5. Hugh Smith Lk, et al
6. McDonald Lk
7. SSRAA Earl West Cove
8. SSRAA Whitman Lk

Thank you for the opportunity to express ATA's viewpoint. As I stated earlier, these are initial selections and may be open to further discussion. If I can provide you with additional information, please do not hesitate to contact me.

Sincerely,



*Dale A. Kelley
Executive Director*



Alaska Trollers Association

OFFICIAL LETTERHEAD

130 Seward St., No. 213
Juneau, Alaska 99801
(907) 586-9400

June 17, 1990

Mr. Edwin C. Duffy
ADF&G/FRED Division
P.O. Box 3-2000
Juneau, AK 99802

Dear Kevin:

In response to the call for comment on the proposed allocation of U.S./Canada mitigation funds, the Alaska Trollers Association (ATA) would like to offer the following remarks.

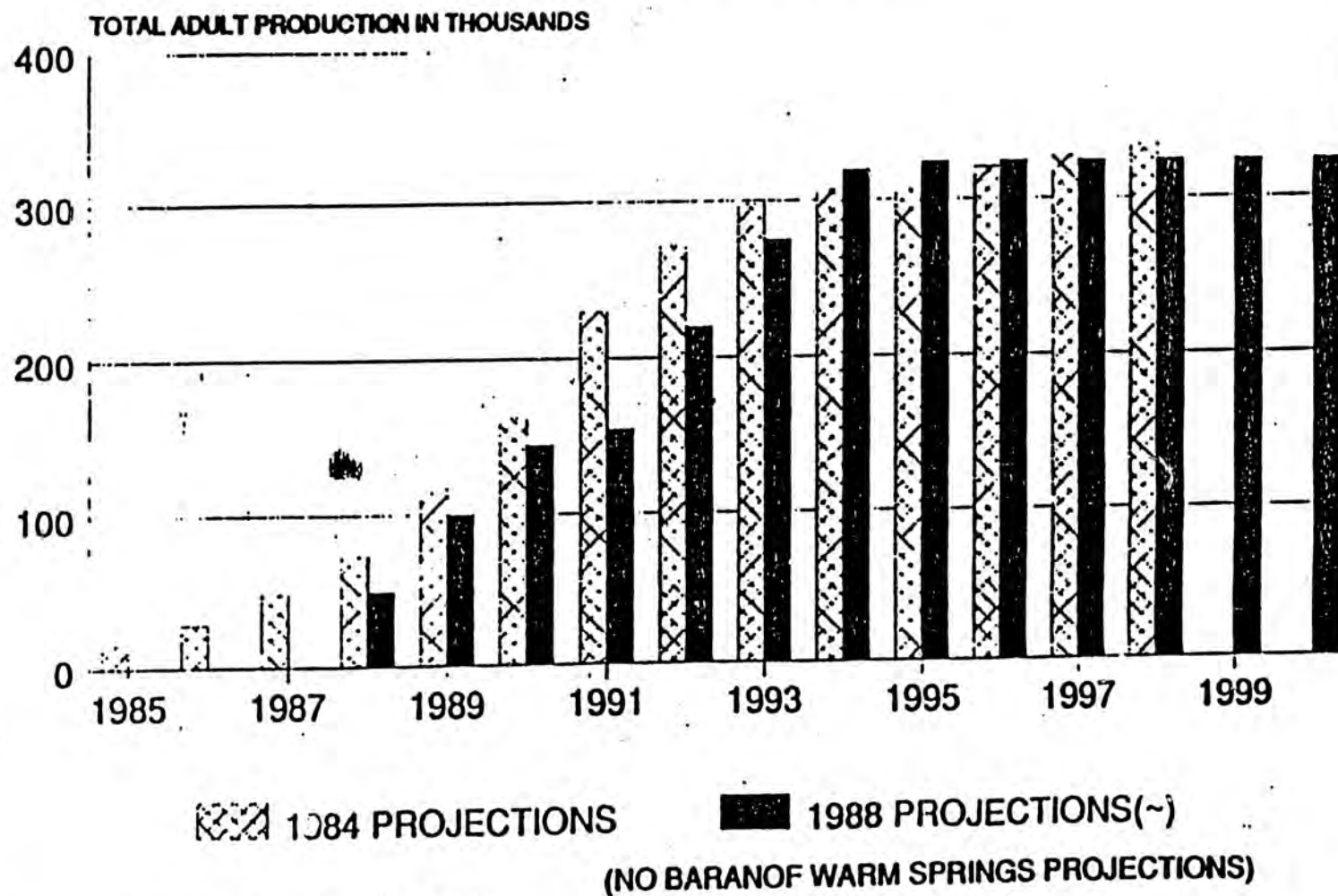
Chinook

The chinook proposals to date are inadequate to meet our goal of 100K harvested chinook per year. In our June 1 letter to Norm Cohen (enclosed) this fact was stated quite clearly, as was our suggestion to delay final decision making on a portion of the funds in order to discuss further chinook production, and to insure that any new or expanded hatchery production would not bring about unwanted allocative side-effects.

Chinook enhancement has not yet provided the benefits intended for the troll fleet. When the Treaty was signed it was projected that the mitigation funding would provide 100K additional chinook to the troll harvest by roughly 1990 (Table 1). In anticipation of the 1990 season, a pre-season forecast was issued for an add-on of 43.7K. This estimate has since been revised, based on hatchery contributions to the winter fishery, and predicts an add-on of only 20-30K; 21K appears to be the betting man's choice. The 1988 add-on of 21K was only half of the anticipated 42K. Table 2 depicts the pre-season and in-season predictions, as well as the post-season tally of the chinook add-on since 1985. Pre-season estimates are based on fish which are said to be in production. The numbers tallied at the end of the season reflect a hard reality; either the troll fleet is unable to effectively harvest the available hatchery fish, or the fish are not there to harvest.

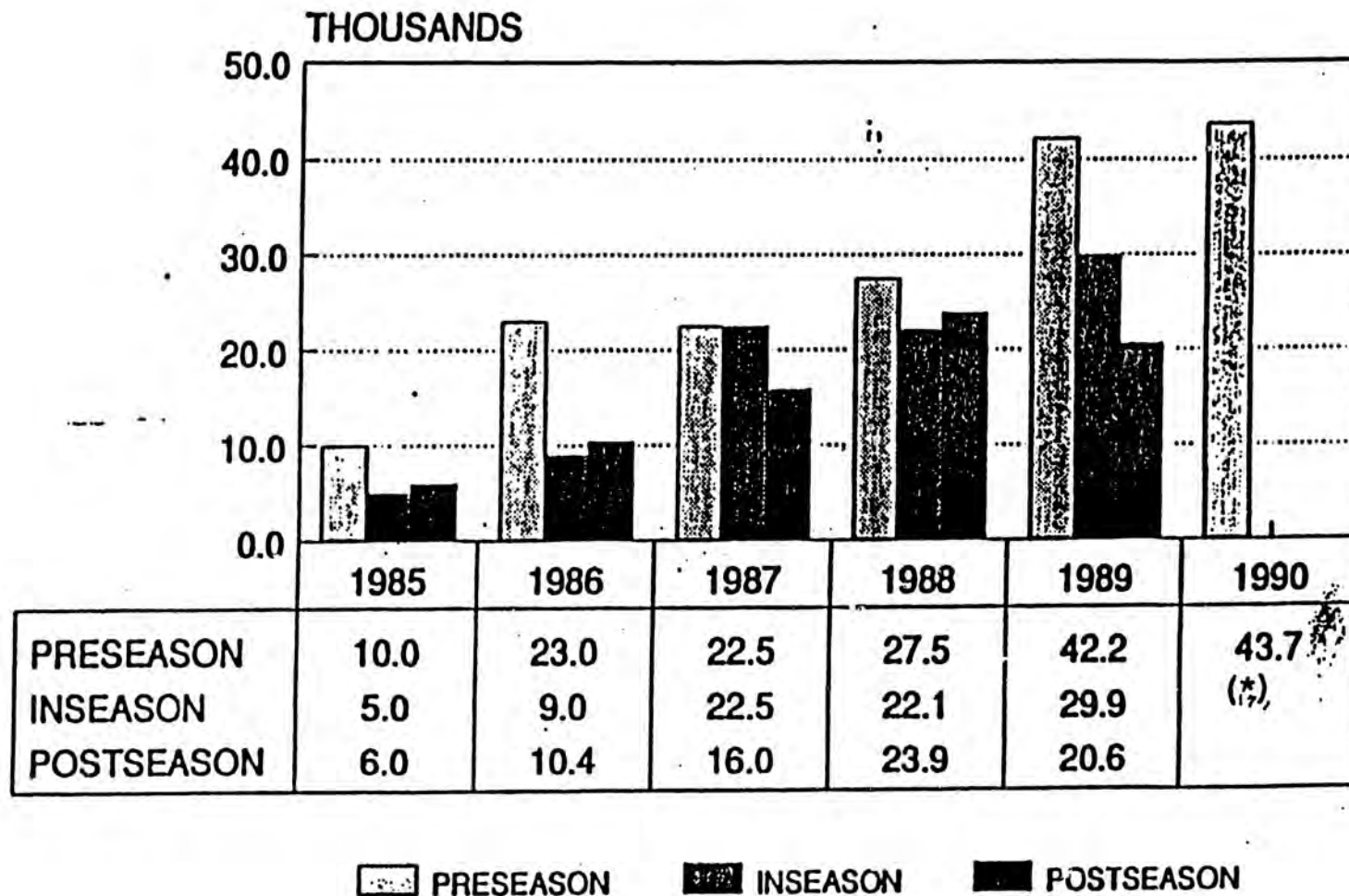
The troll fleet is no where near the 50% exploitation rate on hatchery fish that it once enjoyed. Recent figures indicate a rate of 30 to 35%. This adds up to a need to produce 300 - 350K adults in order to reach the minimum requirement of 100K; these figures reflect no margin of error whatsoever.

COMPARISON OF PROJECTIONS OF S.E. ALASKA HATCHERY CHINOOK PRODUCTION MADE IN NOV. 1984 AND JULY 1988



[FILE: HAT2.CHT; DISK: FEB '89 BOARD]

ADDON OF HATCHERY CHINOOK SALMON SOUTHEAST ALASKA, 1985 TO PRESENT



[FILE:ADDON2.CIT; DISK: 1990 US/CAN GEN]
2/22/90

Table 2

(*) The current estimate for 1990 is 20 - 30,000 based on the hatchery contribution of the winter fishery

Mitigation Funding Proposal

The numbers of mitigation fish which were originally promised to the other gear groups has been a rather hazy issue, but the most widespread understanding has been 20 - 40K sockeye for the gillnetters and one million chum for the seiners. It is interesting to compare this proposal's anticipated production figures relative to the margin of error allowed to produce those original mitigation fish. The following example reflects the pre-Treaty 50% exploitation rate for trollers on chinook and, assuming that the bulk of the hatchery fish will be taken terminally, a 90% exploitation rate for both the seine and gillnet fleets.

Species	Original Goal	Proposed Production	% Margin of Error
Chinook	100,000	208,000	4 %
Chum	1,000,000	2,500,000	125 %
Sockeye	20 - 40K	1,600,000	3500 - 7100%

The trollers recollection is that the mitigation agreement came about after our Treaty representatives prompted Senator Stevens to initiate funding to produce chinook salmon. We do not believe that this proposal sufficiently pursues our 100K production goal, and note that it is unfairly weighted toward sockeye enhancement. There is no doubt a need to help the other gear groups mitigate their Treaty losses through this funding as well, but somewhere along the way the original intent seems to have been lost. Any way you look at this proposal packet, the troll fleet is losing out in the mitigation scheme of things.

With respect to the particulars of the proposed chinook projects the ATA:

- * Supports items 1 - 7
- * Requests the addition of the Hidden Falls freezer
- * Protests the itemization of the computer under "chinook" expenditures!

Sockeye

As mentioned above, ATA is gravely concerned about the level of sockeye production that has been proposed. In a worst case scenario the sockeye produced will be 71 TIMES the original stated loss of 20 - 40K sockeye. We believe that mitigation monies are to be used to ameliorate the losses suffered by Southeast fishermen under Treaty management regimes. These funds were not dedicated to assist the State develop new sockeye technology, rehabilitate stocks that have fallen victim to management error or natural decline, or address obligations under the Transboundary Annex.

Considerable federal funding is provided annually to implement the Treaty in Southeast. Additionally, the Transboundary agreement carries a heavy fiscal note from which the Department also benefits. Those are the funds that should be used to administer the Treaty and

3 Mitigation Funding Proposal

meet Alaska's obligations under the process - not our limited mitigation dollars.

Although it was not indicated in the proposal packet, the ATA issued a resounding NO to the funding of Snettisham at any level. This facility has yet to prove itself worthy of such a large increment of funding. With over 10 million dollars already invested, Snettisham can boast very few successes. We believe that to invest an added 2 million dollars, at this time, would be throwing good money after bad. Snettisham Phase II comes as an irritating surprise; wasn't the reasoning behind Snettisham at the 40 million level just this - to meet transboundary commitments? This item was not openly discussed and will not be supported by our organization based on our contention that transboundary projects are an inappropriate use of mitigation funds.

Beaver Falls is a project that we have endorsed, however we have some questions with respect to projects and financial need. The legislature has given the State 244K, so why does the cost still reflect 450K? Also, didn't the original Beaver Falls package include the Hugh Smith, Bakewell, Badger Lakes rehabilitation? If so, why are we considering these projects separately? Since SSRAA may eventually take over this facility, we hope that their suggestions and concerns will be considered and addressed to the extent possible.

The Redoubt Lake rehabilitation project is another that we question. It was pointed out at the last mitigation meeting that the CIF could stand alone without the rehabilitation project, and three of the gear groups chose the CIF as the number one sockeye project, yet the rehabilitation program was selected - why? We still strongly support the CIF facility and believe it has the desirable advantage of providing benefits to both of the net groups.

ATA supports the Sweetheart/Speel Lake fry stocking, and the McDonald Lake evaluation.

Chum

It was disappointing that Neets Bay chum project was not on the roster, especially since it was supported by all of the gear groups. ATA strongly supports the chum portion of this proposal as it is likely to benefit all gear groups to some extent.

The saltwater netpen proposal is unacceptable to ATA. Limestone Inlet currently has a remote release program in place, but we find no justification for increased releases at this site until we see how the current program interacts with the management of local wild stocks. Further, our association cannot endorse enhancement of any kind in Taku Inlet due to coho bycatch concerns. Our fleet is impacted by both early and late run coho from the Taku River, though in different ways. The early run is an indicator used to manage our coho fishery, even though our exploitation on this stock is minimal. The late run is a stock that we do access and so we are economically dependent upon

ge 4 Mitigation Funding Proposal

the health of the run. Since most all of the Taku R. coho are of Canadian origin, we must also pay close attention to the ramifications that any enhancement program might have on our delicate Treaty relationships.

ATA endorses the Hidden Falls, Kendrick Bay, and Earl West Cove projects.

US/Canada Administration

This item was not discussed and ATA cannot endorse the expenditure without an explanation as to how this money is being used.

FFY91 Funds

Our association takes exception to the FFY 91 proposal that has been submitted for review. We were told that it was questionable whether or not these funds would be available and there has been no prior dialogue concerning their usage.

With or without a Treaty it remains the responsibility of the State to assure sound management of our fisheries and a new tag lab and computer link up are merely tools to carry out this charge. Agreed, new production is expected from the Treaty and therefore creates a heavier workload for tag lab staff, but the existing Treaty implementation funds already provide supplemental allocations to help decrease the burden. It is unclear how much, if any, responsibility we have to fund this program with mitigation money. ATA does not support the tag lab purchase with these funds, however, due to our need for timely reporting of hatchery contributions, we will support the computer link-up.

The "Contract Administration/Technical Support" item is again questionable and not supported by ATA.

The contingency fund is unacceptable to ATA. All proposals include some degree of "slop" to account for unanticipated costs. Allowing dollars to be appropriated in this manner encourages poor budgeting practices and has nothing to do with producing more fish!

This proposal offers nothing to realize additional chinook production and targets the bulk of the funds toward the ADF&G budget; we hope to see this sorry proposition withdrawn.

General Concerns

Perhaps the greatest concern that we have is that this mitigation process is moving along too fast, and without proper regard to the original intent or the final outcome.

Mitigation Funding Proposal

we trollers believe that their fleet should be considered first in this process, but are not asking for more than what they were promised. All gear groups in Southeast should be afforded equal consideration in terms of their Treaty losses.

The numbers of proposed sockeye and chum are of a level that should concern us all. ATA does not think that the division of commercial fisheries has had sufficient input into this process, and are concerned about complications that may arise as these fish return and be managed in tandem with our existing fisheries. The last thing that ATA wants is to compromise the wild stocks in the rush to "get re". Equally important, we don't want to buy allocative battles and/or lawsuits with these mitigation monies, which is fast becoming an alarming trend.

One avenue that has not been thoroughly explored is that of coho production. One option might be to produce the original numbers of fish promised, and then target any remaining funding toward habitat rehabilitation projects for coho. Coho is a "user-friendly" species that everyone enjoys in their hold. There are many coho systems that have suffered from the effects of logging. If we develop cooperative projects with the Forest Service this money could go a long way toward helping all of Southeast's fishermen. Coho is more and more becoming a topic of discussion within the Treaty forum, and it will become increasingly important to develop healthy Alaskan populations that we can count on.

ATA still believes that some portion of this money should be held in reserve to provide additional time for consideration of this important issue of mitigation enhancement.

In conclusion, we resubmit to you our original proposal for this year's allocation of mitigation funds:

Chinook: Farragut River
Crystal Lk Renovations
Harding River
Deep Cove
Medvejie rearing space
Whitman Lk expansion
Hidden Falls netpens & freezer

Beaver Falls @ 244K
NSRAA Redoubt Lk CIF
Neets Bay Expansion
Hugh Smith Lk, et al
McDonald Lk
SSRAA Earl West Cove
SSRAA Whitman Lk
Tag Lab computer link-up



**Trollers
Association**
130 Seward St., No. 213
Juneau, Alaska 99801
(907) 586-9400

May 24, 1988

Mr. Don W. Collinsworth
Commissioner, ADF&G
P.O. Box 3-2000
Juneau, AK 99802

Dear Don:

This letter is submitted to inform you of the serious conflict which has arisen over the U.S./Canada Federal Mitigation monies. We believe that there is a concerted effort by other gear groups to re-prioritize and redirect these monies from the original mitigation goals. Your strong stewardship is needed to re-establish the original goals of these mitigation funds.

It should be remembered that during the treaty ratification hearings, in Congress, three specific types of enhancement were discussed. The first method was to directly mitigate reductions in quotas to meet conservation needs. Ted Kronmiller stated it best when he said "...enhancement is a way to address and mitigate the sorts of adverse impacts that can be expected in the short to medium term". He and other dignitaries went on to define what was meant by this. The State Department then clarified who fell under these guidelines when they responded to a question by Senator Dodd, "In the short term, Alaskan trollers fishing in Southeast Alaska will realize cutbacks. In the longer term, conservation and enhancement should enable greater harvest by United States and Canadian fishermen....". Trollers were the only federally recognized group flagged as facing "cutbacks". Others might face restrictions, but our fleet took the brunt of the loss. Even the State of Alaska, through Mr. Norm Cohen, testified: "The State of Alaska's fisheries, especially the Chinook fishing in Southeast, had to undergo severe cutbacks in order to attain a treaty, and the understanding during the discussions in the negotiations was that there would be funding for enhancement in order to compensate or to mitigate for those cutbacks".

The second form of mitigation was not so clear cut, but implied other forms of short term enhancement. (This could be construed to cover issues like joint enhancement on the transboundary rivers [TBR's] which were needed to reach agreement in 1987.) Thirdly, Ted stated that in the long term, enhancement was a rational approach to solving Equity problems.

Don, the institutional memory of the troll delegates and the troll fleet is that we agreed to sign off on this treaty with the understanding we would be mitigated by the federal government with

an additional increment of 100,000 chinooks which trollers could harvest. This was in addition to other "new fish" which were planned by the state and/or regional associations supported by fishermen. We had requested a number of fish instead of a dollar amount because we knew that the costs might vary. You might recall a 20 million dollar figure which FRED came up with - but this was their best guess as to what it would take to give us our 100,000 fish. In the final days of the treaty trollers were the only ones asking to be mitigated with fish. While we know that seiners talked about a vessel buy-back program, none of the delegates remember gillnetters requesting any form of mitigation.

Despite what you have probably heard from some gillnetters, there are plenty of paper tracks on the intent of mitigation. After the treaty was ratified, trollers continued to lobby our congressional delegation for mitigation money. The November 1985 final draft of the "Evaluation of Chinook Mitigation Hatchery Proposals" prepared by the S.E. Alaska Chinook Planning Team, which included RPT's, ADF&G and NMFS, stated as its goal: "To evaluate proposals and to plan for new hatchery production of chinook salmon that would mitigate the losses to Alaskan fishermen due to chinook harvest ceilings imposed by implementation of the U.S./Canada Salmon Treaty. ...the team evaluated proposals for the production of a new increment of 100,000 harvestable chinook intended primarily for the troll fleet".

I doubt that I need take further space quoting State, Federal and regional authorities affirming the mitigation goal of 100,000 harvestable chinook for the trollers. Further, we do not disagree that some discussion, after negotiations were concluded (8-9 months later), did make attempts to include mitigation of chum and sockeye salmon. These discussions were in the neighborhood of 1,000,000 chum, which might help solve "Equity" problems in the future or mitigate the fact that there was no vessel buy-back program, and 20,000 - 40,000 adult sockeye for potential transboundary river sites. (Dave Cantillon has stated that the most gillnetters have lost on the TBR's is 20,000 fish, while 40,000 was the estimate from the 1985 production plan report suggesting a sockeye isolation facility).

The tables we have provided point out that the gillnetters 20,000 sockeye loss would be mitigated by 2,538 % if mitigation monies are spent as some gillnetters would like. While the troll fleet, who was singled out as the beneficiary of mitigation, will only approach 49.6% of its mitigation goal if we can increase our harvest rate to 50%. What we really find to be scandalous is the dollar value which each gear group will receive from the mitigation expenditures (2 million for the trollers, 4 million for the gillnetters, and 4-5 million for the seiners).

The fact that I have had to personally put up with the abuse of Mr. Jev Shelton during his unrelenting run at mitigation dollars, which he was unwilling to request or work for from the Feds in the first place, is untenable. That Mr. Shelton refused a seat on the

northern panel of the PSC where he could at least remain current to Alaska's enhancement plans, and now claims special knowledge of our bi-lateral agreements, makes his comments of little value. Additionally, we are very perplexed that mitigation dollars are flowing to FRED operational costs. We were told in 1985 that a one time request for operational funds for the Beaver Falls sockeye facility was all that was needed. Yet each of the last two years normal Beaver Falls funding were excluded from the Governor's budget because "there was another source of funding out there" (our mitigation money). We understand budget cuts, and I personally spent many hours lobbying on your Departments' behalf this year. The fact that Senator Jones went for the "House numbers" was because his constituents and their Representatives sent him a clear message of the importance of your budget. Never-the-less, mitigation dollars were not met for operational costs.

The Board of Directors of our association, the troll fleet in general, and myself are extremely upset with the direction the mitigation evaluation work group appears to be heading. The troll fleet is beginning to believe that they will never see the fish we were promised and that the gillnet fleet is being greatly advantaged. To have the Department re-arrange priorities toward sockeye production leads us to believe the tactic of the gillnet fleet (squeaky-wheel gets greased) is the method of choice. Our permits have not gone from \$30,000 to \$85,000 as the gillnetter's have since the signing of the treaty; you can still find troll permits for less than \$30,000. Furthermore, if the inequities in harvest continue there will be a lot more troll permits available as more of our fleet loses faith and buys Oregon, Washington, and California troll permits.

What we are saying is, ENOUGH IS ENOUGH!!! Even though many of those involved in this process believe we should build a CIF at Snettisham for \$1.1 million (we only reluctantly agreed to \$800,000. last year), it is the consensus of the troll fleet that not one penny further should be spent for sockeye mitigation until we are mitigated as we were promised. This means if we get more federal mitigation money next year, it goes to solve the trollers problem first. Once the original intent of mitigation is resolved then we should be looking at the production of coho which all gear groups can benefit from. We would ask that you reaffirm the original goals and that you direct these mitigation funds to reflect these goals.

Sincerely,

Earl E. Krygier
Executive Director

EEK/dk

Enclosures: Production Tables
Mitigation Fund Expenditures

MITIGATION FUND EXPENDITURES FY 88/89

<Alaska Trollers Association suggested allocation of funds>

\$ 5,163,800.

Available Funds

Generally Agreed Upon Expenditures:

- 2,377,803.	Hidden Falls	<set aside>
- 800,000.	CIF Snettisham (1)	<set aside>
- 353,000.	Beaver Falls Operations FY89	
- 54,000.	Central Administration	

\$ 1,579,000.	Total available funds	

Proposed Allocations:

- 420,000.	Crystal Lake renovation
- 100,000.	Baranof Warm Springs (BWS) project evaluation/preparation
- 90,000.	Little Port Walter (LPW) water pipe
- 200,000.	Hidden Falls chum incubation
- 469,697.	Burnett Inlet expansion for chinook (2)
- 300,000.	Further set aside for BWS

- (1) Many of those in the work group suggested 1.1 Million for the CIF, but only 750 -800,000 was agreed to.
- (2) [If Alaska Aquaculture does not receive matching funds for this project, at the Burnett Inlet, then the \$469,697. should be held for BWS development.]

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Joint Regional Planning Team Meeting

CHINOOK SALMON MITIGATION IN SOUTHEAST ALASKA

Northern and Southern Southeast Regional Planning Teams (NSERPT-SSERPT)

November 18-19, 1985

Room 202, Department of Labor Building

November 18, 1985

Unrecorded by Judy

The meeting was started by Steve McGee at 8:30 a.m.

Attending the meeting sometime during the two days were:

<u>NAME</u>	<u>REPRESENTING</u>
Donald Amend	SSRAA
Bruce Bachen	NSRAA
Jim Bray	SSERPT
Geron Bruce	United Southeast Alaska Gillnetters
Dave Cantillon	ADF&G/Commercial Fisheries
Bob Dewey	USDA/Forest Service
Dennis Eames	NSERPT
Gary Freitag	SSRAA
Marilyn George	Alaska Trollers Association
Bill Heard	NMFS/Auke Bay Laboratory
Harold Heinkel	ADF&G/FRED
Johnny Holland	ADF&G/FRED
Roger Ingman	SSERPT
Jake Jacobson	SSERPT
Earle Johnson	NSERPT
Karl Johnson	NSERPT

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<u>NAME</u>	<u>REPRESENTING</u>
Paul Kissner	ADF&G/Sport Fish
Earl Krygier	Alaska Trollers Association
Mark LaRiviere	NSERPT
Ken Leon	ADF&G/FRED
Bob Lium	Armstrong-Keta, Inc.
Jerry Madden	ADF&G/PNP Office
Steve McGee	ADF&G/PNP Office
Christopher Pace	ADF&G/PNP Office <i>took minutes</i>
Steven Pennoyer	ADF&G/Deputy Commissioner
Ben Pollard	ADF&G/FRED
Phil Rigby	ADF&G/Commercial Fisheries
Mel Seibel	ADF&G/Commercial Fisheries
George Snyder	NMFS/Auke Bay Laboratory
Frank Van Hulle	ADF&G/Sport Fish
Alex Wertheimer	NMFS/Auke Bay Laboratory

I. Comment: Steven Pennoyer, Deputy Commissioner, ADF&G:

The current funding picture indicates the federal government favors an incremental funding approach to treaty mitigation. The current appropriation in Congress is for \$3.5 million in federal funding per year up to a total amount of \$22 million over the next five years to be matched by the State of Alaska. However, this is subject to future appropriations by Congress.

Given the change in the schedule of funding by the federal government from Alaska's initial one-time funding proposal, it may be necessary to review the report of the Southeast Alaska Chinook Technical Planning Team with regard to the impacts of incremental funding on the development of the proposed mitigation project.

Ingman:

Is mitigation only for chinook?

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Pennoyer:

At the treaty discussions, it was proposed that \$22 million be appropriated for mitigation of chinook, sockeye, and chum. Discussion of chinook mitigation has been initiated at this time because it is the most complex of these species and requires the greatest lead time. Expanding existing chum enhancement projects may provide mitigation opportunities. The door has not been closed to use of federal funds for other species enhancement, and we will be working on development of an approach to this question.

Krygier:

The only specific item listed during the treaty discussions was the 100,000 king salmon.

Pennoyer:

Transboundary sockeye mitigation was also discussed but not in terms of specific figures. The treaty only references hatchery add-on for chinook. Chum salmon possibilities were discussed in terms of future equity mitigation.

Ingman:

Who comes up first with the matching funds, the state or the federal government?

Pennoyer:

The existing state investment in ongoing capital improvement projects comes first in the match. These amounts have already been budgeted and serve as the funding reference that the federal government will match. New state funding may prove to be more difficult to match.

II. Presentation of Report: "EVALUATION OF CHINOOK MITIGATION HATCHERY PROPOSALS," Southeast Alaska Chinook Technical Planning Team Members.

McGee:

(Steve gave a brief review of the methodology and findings of the report).

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The team was also concerned with the method of risk adjustment for new enhancement add-ons and the potential impact that method might have on the mitigation analysis. Specifically, it would be necessary to adjust the goal of 100,000 harvestable chinook upwards in relation to the risk adjustment. The team was concerned that the risk adjustment was based on extremely conservative assumptions and tended to suboptimize hatchery projects. The team believed that if conservative assumptions were to be employed in risk adjustment, the results should be compensated for by reciprocal conservative assumptions in the mitigation analysis and recommendations.

III. Discussion of Report: NSERPT, SSERPT Members, and others in attendance:

Jacobson:

(Regarding the cover page) - Thought the report was prepared at the request of the joint RPTs rather than the Commissioner.

Pennoyer:

All of the teams work at the request of the Commissioner. The report should emphasize the RPTs' role in the process. Regarding the fisheries management aspects of the analysis, we should be most concerned about management implications of coded wire tag (CWT) recoveries, by area, and future actions by the Board of Fisheries with regard to seasons and areas. The important aspect is the harvestability of the newly enhanced stocks - can they be taken in the troll fishery? And if so, where?

Seibel:

Because no data exists, the team had to resort to educated guesses when it came to evaluating management questions of new facilities in new areas. The ratings were made relative to the other proposals rather than independently or against an objective standard.

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Pennoyer:

How adequate was the existing information from CWT returns to make the evaluations? Will the team's ability to rate the proposals improve as we get more data?

Seibel:

At present, data is minimal. It indicates that the harvest of Alaska hatchery fish is 20 times greater in the inside areas than the outside areas, due to a number of factors.

Wertheimer:

The big question is the feasibility of terminal- and near-terminal directed troll harvests. Making projections on terminal-harvest feasibility was based on very inadequate data.

Ingman:

The inferences from tag recoveries were not presented in the report. It appears that the harvest and management evaluations are only somebody's guess.

Krygier:

Trollers are concerned about gear-group conflicts, Canadian interception of Alaskan fish, and the potentials, or lack thereof, of terminal harvest.

Bray:

Whitman Lake fish can only be harvested at the 50% exploitation level due to the rebuilding program and shortened seasons.

Wertheimer:

Little Port Walter and Deer Mountain harvests have declined from 76% to 50%.

Eames:

A goal should be to get fish into the winter fishery.

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Seibel:

Until hatchery terminal returns get large enough to produce a good CPUE, efforts will remain on the outer coast.

Pennover:

Are Alaskan stocks more prevalent in the winter fishery?

Seibel:

At present, five to six percent of the winter fishery harvest is Alaska hatchery stocks. In the summer, this proportion declines to three to four percent.

Krygier:

Winter troll fishery takes a higher proportion of whites, indicating predominantly Alaskan and northern British Columbia stocks.

Van Hulle:

The question is what portion of the 50% exploitation will come from outside of the terminal-harvest areas?

Freitag:

At Mountain Point during the June 3-12, 1985 troll season, 35%-40% of the harvest were Whitman Lake stocks. Similarly, 32% of the Whitman Lake fish were taken in all areas during the ten-day opening. During this time, a large number of Neets Bay and Deer Mountain tags were also recovered.

Pennoyer:

Terminal harvest of chinook may help mitigate losses by the net fisheries due to U.S./Canada Pacific Salmon Treaty provisions.

Ingman, Eames:

Did not like the quality of terminal harvest fish, especially chinook.

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Amend:

Regarding quality of Neets Bay chinook: 200 were taken by the terminal troll fishery through June of 1985. The quality was reported to be good. SSRAA took 1,000 after July 1 for cost-recovery, and the quality then was poor.

McGee:

What would be the decision criteria to break off attempts at terminal-troll harvest and salvage remaining terminal harvest with nets before quality deteriorates?

Ingman:

Feeding pattern of fish during 1985 was abnormal.

Heard:

It is more important to consider patterns of contribution in the mixed-stock fishery.

Bachen:

How do the reduced exploitation rates anticipated because of curtailed seasons and areas factor into the 100,000 harvestable chinook mitigation goal? Should it be compensated for by increased production?

Leon:

Alaska hatchery stocks are a low proportion of outer-coast harvest at present because our programs are just beginning.

Seibel:

As facilities become fully operational, the proportion of Alaska tags on the outer coast should increase until 1995 when the other parties to the treaty will have rebuilt natural stocks. Then the proportion of Alaska tags will begin to be diluted again.

10:30 - 10:50 BREAK

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Eames:

Management's goal should be to force trollers to fish more in the terminal areas.

Krygier:

Two kinds of terminal fishery: Near terminal (i.e., Frederick Sound, central Chatham Strait), and terminal (i.e., Neets Bay, Snettisham).

George:

Wrangell Narrows near Crystal Lake is also a limited terminal area with good segregation from the Stikine River stocks.

McGee:

The technical team was not convinced that terminal-troll harvests would work.

Amend:

What was meant in the analysis by "Gear Group Conflicts"?

Seibel:

All gear groups were considered. A goal of the team was to avoid adverse impacts of a troll harvest on chinook returns to net or sport fisheries - otherwise, they would need to be mitigated next as a result of the chinook effort.

IV. DISCUSSION OF PROPOSALS

Medvejie

Cantillon:

Does the potential expansion of Medvejie come at the expense of other species at the facility or other gear group's harvest of those species?

Bachen:

The proposal uses the last of the potentially available water. During times of low water, this could pose a risk to chinook or the other

species there. Under normal conditions, the proposal will not preclude existing production. Zero-check program was not pursued because it is untested at this time.

Krygier:

Interested in why the large variances in cost estimates exist between the NSRAA and ADF&G estimates.

Bachen:

ADF&G used mobilization cost estimates for a remote site rather than a roadside site. Also, there are some differences in estimates for saltwater rearing. Comparatively, the differences were smaller than for some of the other proposals.

Bray:

How soon could you be on-line? Is brood stock available?

Bachen:

This next season.

Cantillon:

Did you assume the state would carry the operating costs or would these come from special harvest?

Baranof Lake

Jacobson:

Could costs be reduced by running the facility as a multiple-species operation?

Heard:

Commissioner's charge to the group was to only consider single species.

Pollard:

Last winter, prior to the mitigation question, the Baranof Lake concept was for a \$20 million capital expenditure for a combined chinook and

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chum facility. Operating costs under the old scenario increase by only \$100,000 from the mitigation proposal for chinook only.

Eames:

If this were a NSRAA project at a projected cost of thirty-nine dollars per fish, he would be against it.

McGee:

The present-worth costs-analysis technique makes Baranof Lake look unfavorable because it biases against projects with a large lag-time in operational status from initial start-up.

Amend:

Any of these proposals can be improved by fiddling with the assumptions. Recommend viewing the potentials rather than the costs. The costs are only estimates and not facts.

Wertheimer:

Considering the large facilities over a 50-year project life improves the cost-per-fish estimates.

Holland:

Could modify this proposal to bring Baranof Lake on-line sooner by using prerelease similar to Neets Bay or Esther Lake development. FRED did not consider these scenarios because of interpretation of Commissioner's charge. Regarding Baranof as a multi-species facility, the disease risk would be greater than if there were only a single species.

E. Johnson:

Would like to see what the cost figures would be for a prerelease scenario at Baranof Lake.

Bray:

Terminal harvest given too high of a weighting. What about risk?

Ingman:

Who laid out the boundaries of the terminal and near-terminal areas?

McGee:

They were the consensus of the team.

George:

Recommends prerelease before committing large investment. Remembers lots of boats and fish at Morris Reef and Hoggut Bay in the 1940s.

McGee:

Team considered the merits of getting production on-line as soon as possible. If we wait and study the issue of siting a couple more years, will Alaska still have a troll chinook fishery?

Eames:

We should look at doing both the immediate upgrade of existing facilities and start prerelease at Baranof Lake.

Pollard:

The Baranof Lake proposal assumed a lump-sum funding scenario. Under an incremental funding schedule, it would take an additional year to get Baranof Lake fully operational.

Eames:

What about the feasibility of doing a remote release at Hidden Falls?

McGee:

This is getting off on an entirely new and different proposal.

Leon:

If funding were to come in increments, it would be possible to take Crystal Lake brood, incubate at Hidden Falls, and prerelease to net pens at Baranof very rapidly.

Krygier:

It may be necessary to consider several different funding scenarios. The decision rules and risks will differ under different levels or schedules.

Heard:

The RPTs would be assisted if we knew the harvest distributions.

Orchard Lake

McGee:

What about Orchard Lake? (The RPTs bypassed this because it had been eliminated by the technical team).

Port Armstrong

Cantillon:

Are the water rights necessary to this proposal secured?

McGee:

Not entirely. A condition for this proposal even being considered is a demonstration of a binding water right.

Pollard:

The Habitat Division was concerned about drawing down the stream at this site.

Ingram:

What about the large cost discrepancies?

Pollard:

The major variances were the cost of developing the water supply. ADF&G used a design comparable to that at Hidden Falls in order to avoid the potential danger of losing siphon. Another variance was labor costs during construction; ADF&G assumed union pay-scales while Armstrong-Keta proposed to use nonunion labor to save capital costs.

Osprey Lake

Cantillon:

What about past incidences of Diphyllbothrium infestation on fry planted there?

Wertheimer:

If the fry are fed fish food they won't graze on worm larvae.

Krygier:

Why are the costs greater than NMFS' previous proposal?

Wertheimer:

Remote operation costs not considered previously, also the capacity was scaled-up to rival Baranof Lake.

Pollard:

The ADF&G estimate incorporates modified costs based on past experiences of remote construction at Hidden Falls and Snettisham and adjusted for future inflation at time of proposed construction.

Snyder:

The NMFS proposal is only for capital construction. Operational costs would have to come from state and/or private funding. If NMFS built the Osprey facility, they could provide additional design and engineering work at no cost.

Heinkel:

Since this is a federal mitigation project, could the same design and engineering work be provided gratis to a state or PNP project if it were selected?

McGee:

The State Department of Transportation uses this method of federal support for other projects.

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Pollard:

20% of total capital costs are normally used in the design, engineering and construction categories. Federal engineering and construction would improve the other proposals as well as the Osprey Lake option.

Jacobson:

What strings are attached if a project is federally designed and built?

Heard:

NMFS could help in the design, construction, and start-up costs. The federal government is not into production or operation. They would want to see joint operation by the state and the PNP sector.

Ingman:

Could Osprey be operated as a multi-species facility?

Krygier:

Concerned about added risk of disease if it were a multi-species facility, and about the potential for gear-group conflicts caused by multi-species harvests.

Burnett Inlet

McGee:

What about Burnett Inlet? The team determined it had an inadequate near-terminal harvest area. (The RPTs decided not to discuss.)

Whitman Lake

Cantillon:

Does this proposal use the last of the available water? Does it detract from existing production for other species or other gear groups?

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Amend:

It would change the potential for Nakat Inlet chum releases from a Whitman Lake CIF.

George:

Would there be a problem with interception at Annette Island?

Freitag:

So far only three percent of Whitman Lake fish have been taken by the fish trap.

Ingman:

Why was it rated poorly under the Canadian interception criterion?

Seibel:

Because it was the most southerly of the proposals.

Krygier:

Are there any inferences from the Cape Muzon and Cape Chacon troll harvests of Deer Mountain returns that could be applied to evaluation of this proposal?

Heinkel:

This proposal rated poorly in terms of natural stock interactions with pink and chum fry. This could apply to any site. No effort has ever been expended to resolve this question anywhere in southeast Alaska.

Amend:

This same claim has curtailed Neets Bay production and release of coho and chinook. There have been large releases into Behm Canal and around Ketchikan, and, yet, in spite of this, there have been record harvests of pink and chum in the same areas. Is this problem only unique to Ketchikan or does it in fact exist all over?

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Cantillon:

In this case, the proposal calls for release in the mouth of a major river.

Jacobson:

If there is no data, then questions the use of multi-species interaction as a negative criterion.

Leon:

Cannot quantify what the potential Whitman Lake interaction could be. Studies in Fraser River and Hood Canal have shown a direct correlation between release of coho and declines in pink and chum returns.

Amend:

It is a very complex issue. Pollock are major predators of pink and chum, and yet coho and chinook eat juvenile pollock as well as pink and chum. It is hard to detect a net gain or loss to the prey species because of this compensatory interaction.

Jacobson:

What about gear-group conflicts?

Seibel:

Might be primarily between troll and sport. Conflicts occur if more than one gear group is trying to operate in the same area at the same time.

Wertheimer:

The team rated the conflicts through default. If no other gear groups were projected to be present when trollers were there for a near-terminal or terminal harvest, then the proposal got a high rating.

Ingman:

What about discrepancies in cost-estimates?

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Amend:

Mobilization costs should be lower because this is on the road system.

Pollard:

The department's estimate was based on the most-probable cost. ADF&G included a portion (25%) of the existing debt for Whitman Lake into the proposal. Without this the association would technically be subsidizing a large portion of the proposed costs and it would be impossible to compare costs on a fair basis between agencies.

Meyers Chuck and Santa Anna Inlet

McGee:

Meyers Chuck and Santa Anna? (The RPTs did not want to discuss).

1:00 p.m. - 2:15 p.m. LUNCH BREAK

IV. Determinations and Recommendations: RPTs to Commissioner of ADF&G.

Seibel and Kissner:

Presented a summary of 1985 CWT recoveries for chinook from U.S. and Canadian fisheries.

Pennoyer:

A conclusion would be: the farther south and farther inside a release occurs, the greater the contribution to the Alaskan fishery.

McGee:

Is there a breakdown of troll catch in the experimental terminal fisheries?

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Seibel:

Cannot break out into subareas except on ATA logbook or observer program vessels.

Pennoyer:

Ideally, we would like to get the mitigation chinook taken by existing troll fisheries. If that is not possible due to treaty commission constraints, then does it make sense to site south and inside for the directed fisheries?

Kissner:

Under the old management regime, yes; under the new regime, no conclusion yet.

Heard:

Central Chatham may be a good area to minimize catch of Stikine stocks but maximize catch of new hatchery stocks.

Pennoyer:

So, if we continue to fish everywhere (all areas) under the old regime, the best strategy would be to locate projects in the more southerly and inside areas. If we have to rely more on directed harvests, the central, intermediate area would be more desirable from a management standpoint.

Krvgier:

Is there a difference in the exploitation rates of Deer Mountain versus Crystal Lake fish?

Pennoyer:

Apparently, there is not enough data yet to conclusively establish a difference.

What would we need to know to manage on a directed basis for Alaska fish and, therefore, maximize exploitation rates on our own fish?

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Wertheimer:

We would need additional test fisheries in the spring adjacent to the terminal areas in order to develop information to allow future management decisions.

Heard:

The differences in catch distribution of Deer Mountain and LPW fish, both of which came from the same parent natural stock, must be attributable to hatchery release location.

Bachen:

Location decisions should also consider the equity of distributional effects, i.e., the equity of moving harvest from one community or gear group to another.

How do harvest rates change in relation to the radius from the release site? There could be locations on the outer coast that may be considered discreet depending on the distance from and the magnitude of, the release and the dilution factor.

Cantillon:

There is a spatial and temporal window that exists around the LPW fish that allows for their harvest without impacting the Stikine stock or outer-coastal, non-Alaskan stocks.

Holland:

We need to resolve the question of how many smolt we need to release if we need a certain number of adults produced in order to allow for mitigation harvest.

Wertheimer:

We need to resolve this plus determine the geographic area where we can harvest the adults with the least deleterious impacts. When we determine these two things, then we define the critical path in our analysis concerning optimal projects and what they will cost, project priorities, and trade-offs.

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Pennoyer:

During treaty discussions, a number for chinook enhancement was required. 100,000 chinook was arbitrarily determined as a most-likely estimate of mitigation need. \$22 million was determined as commensurate with a most-likely estimate of a one-time appropriation to fund a world-class facility to achieve this mitigation.

The people who will make these funding decisions need to know what could be achieved with different levels of funding. Our first proposal to the federal government was for \$22 million for mitigation funding. The technical team used this value to test out one scenario (i.e., do we have a proposal(s) that achieve mitigation for this amount)?

If not, or if the funding scenario changes, as it apparently has, then do we need a strategy(ies) to consider alternative funding scenarios (i.e., \$7 million over two years)?

Holland:

Should we try to ensure the 100,000 fish mitigation to the trollers?

Madden:

Should we consider adjusting the mitigation goal upwards to compensate for conservative survival, most-likely costs, low-exploitation rates, risk adjustments, etc?

Wertheimer:

We would leave ourselves a buffer by utilizing such conservative assumptions concomitantly with conservative management.

McGee:

The consensus is to retain the 100,000 annual harvest goal of chinook primarily for trollers, but to adjust the number of smolt releases upwards in order to remain conservative.

Amend:

If assumptions regarding funding are conservative too, then we should bias towards funding on-line or rapidly developing facilities.

Lium:

(Elaborated on Armstrong-Keta proposal) We would purchase property and water rights. Disagreed with ADF&G cost-estimate.

Heinkel:

None of the costs are technically or legally valid - that is why they are estimates.

Wertheimer:

Realities of funding indicate need for immediate development.

Eames:

Decision options limited by funding. Suggested looking at immediate production start-up of Medvejie and Whitman Lake.

Leon:

Will the state have to submit a detailed funding proposal to the federal government detailing project location?

Pennoyer:

Yes. Around the first of the year, presuming the funding bill is passed, we will negotiate a contract with NMFS for the year.

Leon:

If we ask low, aren't we assuming we'll receive a low amount?

Eames:

I make a motion that joint RPTs are in favor of: Stage I - expansion of Medvejie and Whitman Lake for immediate production; Stage II - use of additional funds for long-term production at desired harvest level.

Jacobson:

Seconded the motion.

(Discussion)

Pennoyer:

The team's report only looked at one funding level. Are there other proposals under consideration for production of major increments of chinook?

McGee:

Most facilities are now at capacity in relation to their water supply with other programs or species.

Madden:

The team only considered proposals received under the request for proposals.

George:

What about remote releases of Crystal Lake smolt in Thorne Bay or Vixen Inlet?

Wertheimer:

That is already considered under existing production. The team considered either new production, or expansion and upgrade of existing facilities without displacing previous programs, species, or users.

Pennoyer:

A problem with stocking projects is that the fish have to be tagged and recovered in order to count as an add-on or "new enhancement."

Are there other proposals the team could look at that could go on-line quickly?

Holland:

It is possible to take excess eggs from Crystal Lake, incubate at Hidden Falls, and prerelease at Baranof. This would require use of the \$3.5 million first-year appropriation in order to start the yearling smolt release.

Cantillon:

With regard to the motion, the real window of opportunity seems to be Chatham Strait. No data available on tag recovery that could be applied to Whitman Lake or Medvejie yet. Concerned about total commitment of all the first-year funds implied by the motion. Under management regime similar to 1985, it could result in only 30% exploitation rate.

Bachen:

What impact would increased, inside-troll effort have on the natural stock rebuilding schedules for the Stikine, Taku, or Chickamin?

Kissner:

Would probably occur at the expense of natural-stock escapements. That is why central-upper Chatham appears to be so promising because apparently there are none of these natural stocks present there. Will know better when 1985 CWT data is worked up.

E. Johnson:

That is because there is very little feed in the area.

Holland:

What is the latest start date for Medvejie and Whitman Lake expansions?

Amend:

Could start next June, 1986.

Madden:

Has the teams charter been broadened to look at the optimal mix of multiple sites under different funding levels?

Pennoyer:

Are there other things we should consider, given the delay and uncertainty in funding?

Madden:

The team has not done a mix-and-match of proposals because the Commissioner's Office charge did not designate them to do so.

Heinkel:

We should not accept the prospect of quickly compromising the full-funding potential of the mitigation obligation - should not sell out for \$3.5 million.

Pennoyer:

When the team was charged, we did not know that it would be incremental funding. We need to design a plan to ensure future funding scenarios up to the full \$22 million commitment.

E. Johnson:

Concerned that money should go into fish production as soon as possible and not into research or a savings account.

K. Johnson:

Does not want the motion on the floor to be the end of the mitigation effort.

Ingman:

Call for the question.

(Motion #1 6 yes, 3 no. Motion #1 passes. All association representatives were in favor; all department representatives were opposed).

Pennoyer:

Of those who were opposed to the motion, were you against the motion itself, or the process?

Van Hulle:

Other opportunities have not been elaborated. We are looking at different assumptions now, specifically funding, than we were at the start last spring.

Cantillon:

Acknowledges that it would be a mistake to bankroll funds and not do something. Favors additional time to make an informed decision.

Heinkel:

Favors starting production in 1986 but opposed to proposal that would be self-defeating to actual mitigation.

Pennoyer:

Interprets RPT's recommendation as in favor of starting as much production as possible in 1986, in favor of the 1986 funding as a phased increment of a total \$22 million funding package, but uncertain whether these two should be the only specific project recommendations. Are the two proposals good regardless of the 1985 season data?

Eames:

Not locked in tight to only two proposals.

E. Johnson:

Willing to look at additional proposals, but feels most confident that the association's proposals could be implemented given the recent alteration in funding.

Bray:

Prefer conservatism. Stay with two proposals.

Pennoyer:

Would the PNPs be able to carry the operational costs of the expanded facilities?

My analysis of the concensus of the motion is:

1. Produce chinook (not research or bankrolling)
2. Start in 1986.
3. Seek full mitigation funding to completion.

When could alternative project mix for different funding schedules be developed? How long would it take for tag data and modified proposals to be available?

LaRiviere:

Are you implying sending out a new request for proposals? If the team needs to do additional analysis then suggest a strong, explicit charge that outlines the new scenarios, assumptions, time constraints.

Pennover:

There is no time for a new request between now and the time we sit down with NMFS to negotiate a contract in January.

Madden:

Estimate it would take the team until the end of March to develop the alternative mix given other demands and commitments.

(Meeting adjourned at 5:30 p.m. on 11/18/85 and reconvened at 8:40 a.m. on 11/19/85).

November 19, 1985

Pennover:

Summarizing the team's report - they recommended that certain things be considered to achieve 100,000 harvestable chinook given a funding constraint of \$22 million.

They now realize that the total funding will still be sought after, but that it will come in increments.

The RPT recommendation is consistent with the report in that:

1. Recommends that money be used for production in 1986 (no studies, delay, put production on-line).
2. Will not accept the \$3.5 million for 1986 as the only increment or phase of mitigation funding. We expect there will be continuation of incremental funding up to the federal commitment of \$22 million. Contract proposals should reflect this incremental approach.
3. For the present, the team's data and analysis is the best available to use in guiding implementation of projects. No time remains for a proposal request prior to contract negotiations with the federal government. Instead will request modification of proposals to incorporate new funding assumptions. Before the Board of Fisheries meeting we will get the 1985 CWT recovery analysis. After the board meetings, we will know the seasons, areas, and the gear groups' desires.
4. Given the funding alteration, and based on additional input (above), may require modification of existing proposals.

We need to put a cover on the team's document. We will develop a contract with the federal government in January for one year with the implication of full funding through to completion. We do not want to cease consideration of our options until time of negotiations. If CWT data, seasons, areas, or modified proposals are available and imply significant modification in our strategy, then the joint RPT will need to convene again prior to January.

Chinook pose a real problem for all gear groups with regard to the quota and the transboundary rivers. In order to mitigate treaty hardships, we need to get production started this year. Remain optimistic about the long-term picture in terms of coastwide rebuilding program.

Leave the report in draft. Append a record of this discussion in the front of the report. Will need the draft report, and our future

hatchery projections for the Board of Fisheries meetings. Regarding Phase II, will keep the technical team functional. Will need a conceptual idea of Phases II, III, IV, and so on, prior to negotiating the 1966 contract with the federal government.

Bray:

Objects to the report. The technical team should not make the decisions, the RPT should. The report favors the Baranof Lake proposal.

Pennoyer:

Both teams make recommendations. They decide about data, quality, etc., but not the final decision. That occurs at the level of the Commissioner and the Board of Fisheries. The RPTs, association Board of Directors, advisory committees, etc., all have input. The RPT is not to make a decision that could have an allocative impact. Disagrees that the team's preference for one project is implicit in the report.

Madden:

The technical team stated that they did not want to make a recommendation.

E. Johnson:

The team needs the RPTs concerning single or projects. Reco

McGee:

Motion #1 de facto implied RPT favor for the multiple concept.

Pennoyer:

A 6 to 3 vote on a complex motion is meaningless. Will need to present the reasons for the vote and the split in votes to the Commissioner.

Eames:

Given the constraint of time and funding, the RPTs made the only choice available to them. Doubt anything will change that would cause them to

reconsider the motion or the concept of multiple projects to spread the risk.

Leon:

RPT has never formally considered risk analysis. (Presented a probability tree that illustrated that the risks of lost investment or opportunity are equal for multiple projects or a single, large project). Also, more risk with multi-species than single-species facility due to disease transmission between species.

Holland:

In terms of lost earnings to commercial fishermen, loss of production from a single facility, at worst, would represent a 5% annual loss in revenue to fishermen. The impact is diluted by the additional fish from the quota and the other new enhancement projects that would be available at the time any of the mitigation projects came up to full production.

Ingman:

How would this analysis apply to Snettisham?

Leon:

Snettisham has never had a chance to come to full production until now, because it was never completed.

E. Johnson:

Motion #2. Support concept of multiple over single sites.

Jacobson:

Seconded.

Pennover:

What is meant by multiple projects? We already have five major chinook production facilities in Southeast and several more research or minor facilities. If we add one more major facility, we have six. Don't we already have multiple projects?

From the start, we did not want to be dependent on only one site. That is why the program already has multiple sites. However, the intermediate and outer-coastal areas do not yet have production from the existing multiple system. Would we like to develop a new, directed fishery in that window of opportunity? If it is not possible to develop terminal or near-terminal fisheries, then the Medvejie proposal will not be viable due to the low exploitation rate probable in the mixed stock, quota-controlled, outside area of the fishery. C

Heinkel:

Suggest we consider amending the motion on the floor to limit the production increment at any single site to only thirty to forty thousand fish.

Pennoyer:

The department's aim is to produce fish where they will alleviate economic and allocative problems. That is why there are already multiple sites.

K. Johnson:

Acknowledge multiple sites. Given the source of the funding, it would be safer to spread it out.

Cantillon:

Consider the risk of no future common property fishery for the trawlers.

Van Hulle:

Like the present multiple system. Want to reserve option to secure a major opportunity in a single action.

Amend:

Clarify motion #2. Do you mean spread out 100,000 harvestable fish for mitigation to multiple sites?

E. Johnson:

Yes.

Ingman:

Question?

(9 yes, 0 no; Motion #2 passes unanimously).

10:00 a.m. - 10:20 a.m. BREAK

(General discussion of central Chatham area)

K. Johnson:

Noticed less feed in Stephens Passage north of Cape Fanshaw.

Wertheimer:

Chatham had a harvest of over 300,000 chinook in 1920s. It was one of the largest concentrations of trollers on the entire northeast Pacific Coast. The condition now is related to the loss of the strait's herring population to the reduction fisheries and to the construction of upriver dams on the Columbia.

Heard:

The whale predation studies show the largest concentrations of euphids in Frederick Sound and at Port Malmsbury. There is room for additional production.

Eames:

Desirable to put a production facility in Chatham area.

E. Johnson:

Recommend full funding be allocated in the following schedule:

Phase

- I Medvejie, Whitman Lake expansions
- II Operational costs for Medvejie and Whitman. Start prereleases in intermediate area.
- III Enlarge prereleases.
- IV Continue to enlarge, or go to chum, sockeye mitigation.

Heard:

NMFS is directed not to get involved in production but to stay with research. NMFS could help with the design and construction at Osprey. Proposed both the associations assume the operating costs and staffing in conjunction with FRED.

Amend:

Our (northern and southern) association Boards of Directors are in favor of joint projects.

Jacobson:

Who would have the final say on operation?

Heard:

At discretion of state or PNP corporations, NMFS would stay out of management.

Madden:

Under law, NMFS could contract with the associations for operations. Otherwise, it would require the associations have a PNP permit.

Eames:

What about cost-recovery (at Osprey). Expect opposition from community of Port Alexander if large net fishery initiated there. How would Osprey work as a multi-species facility? How much do you estimate the operating costs would be?

Heard:

It is the site of an old herring reduction plant that had its own water and hydro systems.

Bray:

Like Osprey proposal but uncertain whether associations could afford to operate.

Heard:

Would take a couple of months to get an independent cost-estimate. Preliminary design and cost-estimate would be separate from mitigation funds.

Pollard:

Could you do a similar independent cost-estimate for Port Armstrong also?

K. Johnson:

Baranof Lake, Osprey Lake, Port Armstrong are all recommendations for Phase II.

E. Johnson and Bray:

Opposed to Port Armstrong because it has a private Board of Directors.

Ingman:

Move the Hidden Falls chinook release to get it out of jeopardy of seine chum harvest there.

Holland:

The fast-track development of Baranof Lake would be via Hidden Falls. Propose the following modified development schedule:

Phase

I Net pens in place with minimal incubation at Hidden Falls and prerelease on site.

- II Scale-up production and release at Baranof by expansion of Hidden Falls capacity and solidifying Baranof facility on shore.
- III Pipeline and incubation facility installed at Baranof.
- IV Remaining construction and support facility at Baranof.

Krygier:

A problem for the state is the necessity to work through the extra layer of DOTPF. Could NMFS build Baranof and turn over to the state to operate?

Wertheimer:

Could the contract for independent cost-estimates of Baranof also be done by the same firm as the one that does Osprey?

Heard:

Can't answer whether NMFS could assume that for Baranof. Use of NMFS subsidies will be given a high priority. Would require a request from the state or the RPT.

Madden:

Believe we have enough direction to start on Phase II and commence Phase I.

Ingman:

Wants report labeled as a working document.

Van Hulle:

Motion #3. RPT is on the record as accepting the team's report while reserving the right to future revision. Further, the RPT recommends the multi-hatchery concept, and specifically, Medvejie and Whitman Lake.

Cantillon:

RPT needs to give the report some status to ensure NMFS' contracting and funding decision in Washington, D.C.

Ingman:

Wants technical team dismissed. RPT to give direction for future phases.

Heinkel:

Need to accept report to demonstrate that the process is in place. Without it, the message is clear that we do not agree on the need for mitigation.

Jacobson:

Report is only a tool. RPT uses it and then discards it when it is done. Does not want report to go to Washington, D.C.

Madden:

How can the team go on to Phase II if RPT does not accept the report that determined Phase I?

Ingman:

Team did as instructed by RPT. Report should include Pennoyer's four points.

E. Johnson:

Seconded Motion #3.

Wertheimer:

RPT is confusing an informational document with their own recommendation.

(Question: 9 yes, 0 no. Motion #3 passes).

Madden:

Summarizing:

1. Next couple of weeks information from CWT and Board of Fisheries regarding season and management.
2. Team has direction to consider Medvejie and Whitman Lake.

3. We will receive more information on funding and contract.
4. Should begin to consider Phase II.

The proposals could still be modified. The RPTs would reconvene if new events made it necessary.

Jacobson:

Southern RPT has to go back to its Board of Directors to discuss Phase II projects.

Heinkel:

FRED will start to modify the Baranof/Hidden Falls proposal.

Bachen:

Understood Pennoyer to imply that options remain open to reevaluate Medvejie and Whitman pending tag recoveries and Board of Fisheries action. NSRAA not ready to commit to Medvejie expansion until clear signals come out of Commissioner's Office. Will need this soon in order to get necessary Army Corps permit in time for 1986 season.

Cantillon:

Should know for certain by January..

Ingman:

How far can the associations go without a funding commitment?

Eames:

Cannot proceed without guaranteed funding.

Bachen:

Believes Pennoyer views this as an interim recommendation.

Madden:

The joint RPTs should transmit a letter to the Commissioner that informs him of their recommendations.

If data or board action poses a conflict, then Pennoyer indicated the RPTs would be called again for reconsideration.

If interim funding poses a problem for associations in order to stay on development schedule, the PNP office could contact DCED regarding finance for planning and design costs from the loan fund.

E. Johnson:

What about cost-recovery at FRED facilities?

Heinkel:

Do not know anything about it.

Eames:

Motion to adjourn.

Bray:

Seconded.

McGee:

What about instruction for modifying the report? Earle Johnson had some specific changes he asked to have made. Should the RPT take action to direct these changes? What if they entail major revisions?

(Question: 9 yes, 0 no).

Meeting adjourned.

(Minutes recorded by Christopher Pace).

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BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF FISH AND GAME
OFFICE OF THE COMMISSIONER

P.O. BOX 3-2000
JUNEAU, ALASKA 99802
PHONE: 907 / 465-4100

April 8, 1985

Southeast Alaska Chinook
Technical Team

Dear Team Members:

This letter is to outline the Southeast Alaska Chinook Technical Team's charge between now and September 1985. I appointed the team on March 12, 1985, following a joint meeting of the Southern and Northern Southeast Regional Planning Teams (RPT). The stated purpose of that meeting was to bring together groups and parties concerned with enhancement issues related to the recently-ratified U.S./Canada Salmon Treaty and to define an approach to dealing with those issues.

The primary charge of the team, of which you are a member, is to prepare a plan to produce 100,000 additional chinook salmon to offset fishery reductions required under the treaty to rebuild coastwide chinook natural stocks. The plan should be in final draft by September 1985, and should consider, region-wide, all aspects of chinook enhancement in Southeast Alaska. In September, the RPTs will meet again jointly to review the draft.

To accomplish this charge will require a multi-disciplinary effort. For that reason, we included on the team members of the current southeast chinook planning and harvest teams previously established by the Commissioner's Office. We also added representation from the private nonprofit (PNP) sector.

The two teams and the PNP sector have been working independently to accomplish specific tasks on chinook enhancement objectives. The Southeast Chinook Plan 1985 Draft Annex speaks to enhancement opportunity and fish culture technology, and technical personnel have met to discuss harvest and mark/tag methodology and recovery. Products of these efforts constitute the groundwork for further consideration of the management and fish culture aspects of new chinook mitigation enhancement related to the treaty. The PNP representation should provide the private sector perspective and expertise in chinook production technology.

The team should consider in its planning all aspects of chinook salmon production, including enhancement technology, fish culture, management, and harvest.

Specific discussion topics should include:

1. Enhancement strategies which minimize adverse impacts on natural stocks.
2. The 15-year chinook stock rebuilding program and its relationship to chinook enhancement as defined in the 1985 Draft Chinook Plan Annex and the Southeast Regional Comprehensive Salmon Plan;
3. Numbers of fish to mark (production lot marking must be mandatory);
4. Return forecast procedures on a hatchery-by-hatchery basis;
5. Establishment of revised harvest reporting sub-areas for enhancement return evaluation;
6. Enhancement strategies which provide maximum opportunity to selectively harvest Alaskan-enhanced fish separate from treaty-limited stocks;
7. Different techniques for chinook production and current success in identifying enhancement fish resulting from these techniques;
8. Opportunities identified in 1985 Draft Annex and consider new opportunities;
9. Project recommendations that go beyond the 1985 Annex. These recommendations should be based upon management considerations as well as enhancement technology, fish culture, and site analysis;
10. Site-specific recommendations on new facility construction or existing facility expansion.

In consideration of items 9 and 10, the team should concentrate on new opportunities before considering any changes in the mission or reductions in other species at existing facilities and should consider use of both proven as well as more experimental or unproven fish culture techniques. An important aspect of the planning will be demonstrating enhancement contributions through time and area segregation of returns. This will require examination of methods to identify hatchery fish and to more efficiently harvest them.

I do not yet know what level of funding may be provided from the federal government for mitigation of chinook and other species

affected by the treaty. I will inform the team when more fiscal information becomes available.

Whatever resources are available, the team's plan should yield the most "bang for the buck" in terms of numbers of harvestable chinook salmon. The team should establish a series of criteria and a process for prioritizing and selecting the best opportunities based on management and technology consideration, such as accessibility of the fish to fishermen and flexibility of sites for different fish cultural practices. The team should also provide sufficient documentation on each project to permit an objective evaluation. The matrix presented by Mel Seibel at the joint regional planning team meeting will serve as a starting point for developing this process.

When necessary, I expect the assistance and full cooperation of all departmental staff in addressing the tasks necessary to complete this assignment by the beginning of September.

Jerry Madden, team chairman, will be contacting you in the near future to arrange a meeting of the team in order to make more specific work assignments. If you have any questions regarding this matter, please contact Jerry at FRED Division headquarters.

Sincerely,



Steven Pennoyer
Deputy Commissioner

cc: NSRPT
SSRPT
Gear Groups
Division Directors

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

P.O. BOX 3-2000
JUNEAU, ALASKA 99802-2000
PHONE: (907) 465-4100

February 6, 1987

Dear Alaskan Fisherman:

The U.S./Canada Pacific Salmon Treaty ratified in 1985 contains provisions which limit or reduce certain southeast Alaskan fisheries. While in the long run the cooperative management and enhancement measures between the two countries envisioned in the treaty will, it is hoped, result in more salmon for both parties, short-term disruption of some fisheries is a reality. Accordingly, Congress authorized the expenditure of federal funds for enhancement projects to mitigate harvest losses in southeast Alaska. Funds have been allocated through the National Marine Fisheries Service (NMFS) to the Alaska Department of Fish and Game (ADF&G) on a one-to-one matching basis to fund this enhancement.

Originally, a sum of \$20 million had been discussed as an appropriate total to design and construct enhancement projects to produce 100,000 chinook, 1 million chum, and 20,000 sockeye salmon on an annual basis. Funding of this magnitude was not available at one time, and the federal government has been providing funding in annual increments. In FY 86 \$3,173,500 was passed through to ADF, and in FY 87 \$3.9 - \$4.0 million is being provided.

In 1986, after discussion with gear groups, aquaculture associations, and other concerned Alaskans, the department funded a mix of projects in Southeast totaling \$1,968,119. This leaves an unexpended balance of \$1,205,381 which, combined with the FY 87 funding, gives a total of \$5,105,381 for funding projects in 1987. We have requested continued federal funding of annual increments up to the full \$20 million, but, given federal budget problems, have no assurance they will be forthcoming. Another consideration is that state revenues have been declining and funding for additional facility operational costs will be a problem.

The Commissioner is seeking the advice of Alaskans concerned with the Southeastern commercial fishing industry on the proper mix of projects to conduct with this mitigation funding. Our staff has compiled lists of projects which were funded in 1986 or are

February 6, 1987

options for 1987 and beyond. These lists give the project description, status, cost, some comments on feasibility, and estimated adult production that would result from these projects. These projects are ones suggested by staff, gear groups, aquaculture associations, and others.

We would appreciate hearing the fishing industries' views on these projects. This request has gone to U.S./Canada delegates, organized gear groups, aquaculture associations, private nonprofit hatchery operators, and regional planning teams in southeast Alaska.

When we have had a chance to review responses, the department will schedule meetings where necessary to discuss the results. Based on the recommendations received and consideration of U.S./Canada Pacific Salmon Treaty implications, the Commissioner will decide on the mix of projects to be undertaken in 1987.

While we have not actually received the funding transfer from NMFS for 1987, we expect this will be accomplished within the next month. Time for preparation for the 1987 construction season is short and we would like to finalize the decision process in as short a time as possible. We would appreciate receiving your comments by the end of February. Comments should be sent to Jerry L. Madden, Salmon Rehabilitation and Enhancement Coordinator, PNP Program, Alaska Department of Fish and Game, P. O. Box 3-2000, Juneau, Alaska 99802.

Sincerely,



Steven Pennoyer
Deputy Commissioner

Enclosure

cc: Don Cellinsworth
Tom Kron
Ken Parker

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

May 6, 1987

P.O. BOX 3-2000
JUNEAU, ALASKA 99802
PHONE: 907 / 465-4100

Mr. Earl Krygier
Executive Director
Alaska Trollers Association
130 Seward Street, #213
Juneau, AK 99801

Dear Mr. ^{Earl}Krygier:

I am well aware of the concerns expressed in your letter of April 6. The allocation of funds between gear group targeted enhancement programs gets into a discussion arena that the Board of Fisheries is only beginning to address and for which there are no established criteria. At this stage we do not even have any way to evaluate what the ultimate federal program level will be and what will be available for project implementation. There are even other ways to evaluate the use of the mitigation funds such as benefit/cost that would further complicate the picture.

In my view, our best approach on chinook salmon is to commit to a major expanded effort in the north involving at least some combination of releases in Chatham Strait and Sitka Sound. Such an effort would require the commitment of a significant portion of the remaining available funds. Further major efforts on chinook salmon, such as a Hobart Bay release, should be held off until some of the current questions on the harvest of these fish can be resolved.

The funding of sockeye salmon projects will, to some degree, be guided by the funding availability after the technical reviews lay out options for incremental funding over several years for both species. Even the sockeye salmon project selection and funding has allocative aspects between net fishermen depending on the lakes or release sites that are chosen to work with.

Hopefully, by spreading costs out over time and by receiving additional installments of funding, we can accomplish all of the worthwhile proposals that have been suggested to date. By the time additional increments of funding become available, perhaps the Board of Fisheries will have been able to deal with the allocation criteria question.

Thank you for your input.

Sincerely,


Steven Pennoyer
Deputy Commissioner



STATE OF ALASKA
OFFICE OF THE GOVERNOR
JUNEAU

FEB 4 1985

DEPARTMENT OF FISH AND GAME

January 28, 1985

The Honorable Ted Stevens
United States Senate
147, Russell Senate Office Bldg.
Washington, DC 20510

Dear Senator Stevens:

The U.S./Canada Pacific salmon treaty which is scheduled for ratification in March, will have significant ramifications to southeastern Alaska commercial and recreational fisheries. Alaska's support of the treaty recognizes that only through coastwide and international management of certain stocks can the affected fishermen ultimately realize the maximum potential from our fisheries resources. For some stocks, basic conservation can only be assured through such cooperation in management.

Nevertheless, this long term benefit will not be attained without significant costs, particularly in the short term. These costs will fall unequally on certain fisheries subject to the fishing regimes agreed to in the treaty either through domestic fisheries adjustments or increases in the Canadian catch. In the near future, the United States may have to propose a plan to Canada to balance U.S. interceptions of Canadian origin fish with Canadian interceptions of U.S. origin fish either through modifying fishery regimes or enhancing into Canadian fisheries. In either case, we expect economic disruption due to a loss of fish available for U.S. harvest and for the cost of enhancement. These issues should be addressed at the earliest possible time.

It is our view that mitigation for economic impacts of the treaty is a federal responsibility. Accordingly, we are submitting the enclosed enhancement proposal which would: 1) facilitate the production of 100,000 adult chinook salmon and 1,000,000 chum salmon annually for harvest; 2) provide for sockeye enhancement in transboundary rivers, and; 3) provide for required research, and management to support treaty obligations.

Additional chinook salmon production is essential to compensate Alaskan fleets for the long-term reduced harvest

January 28, 1985

that will be required to rebuild key natural stocks, coastwide. For the next fifteen years, to protect certain stocks, our fisheries are to be managed in part by a harvest ceilings well below their historic average harvest levels. Other jurisdictions will be realizing greatly expanded harvests on stocks not needing conservation. The only increases in harvest available to Alaskan fishermen during the rebuilding period will be from proven enhancement production. Anticipating this, the state has already made a considerable investment in southeastern chinook production during the last three years. However, an additional increment is needed to keep these fleets economically viable and at a par with the coastwide harvest trends.

In the Dixon Entrance boundary area, the treaty allows increased interceptions of Alaskan pink salmon by Canada. It also requires a reduction in sockeye harvest from recent average catches in our Noyes Island seine fishery. In the transboundary rivers (Taku and Stikine) harvests of sockeye and coho salmon are provided to Canadian fisheries. While these catch levels are reduced from recent average Canadian harvest, they will continue to impact traditional Alaskan net fisheries targeting on these stocks. Consequently, chum salmon and transboundary river enhancement are requested as mitigation for our net fisheries.

The proposal to address these disruptions resulting from implementation of the treaty has a capital cost of \$20,400,000. Operational costs are \$1,720,000 in the first year.

The attached proposal Part B addresses the research obligations the United States will incur under the treaty. These numbers were developed jointly by my staff and that of the National Marine Fisheries Service (NMFS). I understand that NMFS, Juneau, has already submitted an identical proposal to their Washington office. Over the past two years, the research described in the proposal has been performed cooperatively by NMFS and the department. I would assume that this arrangement would continue. Please note that the initial four years include major stock separation (mostly tagging) studies required under the treaty in order that the commission can begin its deliberations on questions of equity between the countries. After that time, research costs are expected to decrease by approximately half. Periodic reassessments of stock contributions to various fisheries will be ongoing. First year cost is \$3,126,000.

The final part of the funding packet (Attachment C) addresses management and administrative costs to be incurred by the Department of Fish and Game to fulfill the requirements of the treaty's fishing regimes. I believe these are self-explanatory. Annual cost is estimated to be \$474,000.

January 28, 1985

I appreciate your assistance in obtaining this funding support. I believe that the proposed treaty and commission are a major step towards improved management and enhancement of Pacific salmon coastwide. The structure itself, however, provides only the outline for success and must be supported by adequate funding. I believe the enclosed package for southeastern Alaska will give us the necessary tools to achieve our objectives.

Sincerely,

Bill Sheffield

Bill Sheffield
Governor

Enclosures

COPY

This does not mean that the States and the tribes will be absolved from financial responsibility in restoring the salmon stocks. The States will be the ultimate beneficiaries of a vibrant fishery, and they must shoulder some of the cost. A joint effort by the Federal Government and the States will be necessary to ensure that the effectiveness of this management regime.

There being no objection, the letter was ordered to be printed in the Record, as follows:

THE SECRETARY OF STATE,
Washington, March 7, 1935.

Hon. TED STEVENS,
U.S. Senate.

DEAR SENATOR STEVENS: I would like to thank you for your firm support of the U.S.-Canada Pacific Salmon Treaty. I know you have long had special concern for the Treaty's impact on the state of Alaska, and your efforts have been indispensable to our success in bringing this treaty into force.

Your letter to me of February 13, 1935, enclosing a letter from Governor Sheffield, raised fundamental concerns regarding fair and effective implementation of the treaty. Specifically, you and the Governor emphasized the importance of salmon enhancement, both to restore salmon harvests necessarily limited by the Treaty and to compensate Canada for any imbalances that might occur with respect to Article III of the Treaty, the so-called equity provisions.

I fully appreciate the crucial role of enhancement in both these regards. Once the Treaty is in effect, its obligations and the concomitant requirement to enhance salmon stocks are national obligations. Accordingly, they will require support from the several states, the treaty Indian tribes and the Federal government. U.S. negotiators, including representatives of the Department of State, deemed Federal support of local enhancement programs to be one of the key elements in enabling the states to agree to harvest cutbacks, both to reach agreement with Canada and to resolve differences within the U.S. Delegation.

State and tribal interests already have taken the lead in formulating enhancement proposals. They have indicated that where Federal support is needed to buttress local contributions, they will submit such proposals to you and the other members of Congress directly. This conforms with the approach embodied in the Treaty's implementing legislation, which confers primary responsibility for policy and management issues on the states and treaty Indian tribes.

Counselor Ed Derwinski, who is overseeing initial implementation of the treaty on my behalf, has reaffirmed to the Congress the views of the Department of State on the fundamental role of enhancement to restore salmon harvests and satisfy our treaty obligations. You may expect our full support on this important principle.

Ed has repeatedly told me of the vital contributions you and your colleague Senator Frank Murkowski have made throughout the negotiations. I know he values your counsel and looks forward to continuing to work with you towards effective implementation of the Treaty.

Sincerely yours,

GEORGE F. SHULTZ.

have no objection.

Mr. STEVENS. Mr. President, the United States and Canada have been negotiating the treaty currently before the Senate for over 15 years. This is a historic occasion with respect to comprehensive management of our fisheries resources.

The United States has had to make tough concessions on catch levels in order to reach an agreement with Canada. Alaskans will have to curtail their Chinook fishery and the pink and Sockeye fisheries in the northern boundary area. Pacific Northwest fishermen have given up a great deal to obtain this treaty. The tribal leadership has also agreed not to sue Alaska, and has indicated a willingness to work out allocation problems with the other States.

These concessions were made because U.S. fishermen can see that in the longrun comprehensive management will pay off. Conservation efforts on the part of the States will no longer be offset by increases in Canadian catches. The task before us now is to restore the stocks as quickly as possible so that Alaskan and Pacific Northwest fishermen will not have to dicker over allocations of reduced catch levels. I hope that the time will come when we can all cross the rivers walking on the backs of the salmon.

The Federal commitment does not end on the floor of the Senate today. In order for this treaty to work, the Federal Government will have to assist in restoring the stocks. This means commitment to offset situations where there is an equity imbalance with the Canadians. It also means a Federal commitment to restore the salmon stocks to alleviate the economic hardships that will occur in the coming years. Secretary of

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UNITED STATES-CANADA SALMON TREATY NEGOTIATIONS: THE ALASKAN PERSPECTIVE

By
TED STEVENS*

The final ratification of the 1985 United States-Canada Pacific Salmon Treaty came as a result of Alaska's support for the Treaty. The initial Treaty, while tentatively approved, was opposed by Alaskan fishermen in general and Senator Stevens in particular. The Treaty as ultimately accepted by Canada and the United States provides for Alaska's fishery conservation practices and addresses the concerns of Alaskan fishermen regarding intercepting fisheries near the Canadian-Alaskan transboundary rivers. Senator Stevens explains his opposition to the draft 1982 Treaty, his support for the 1985 Treaty, and concludes that the final Treaty is a fair, reasonable document that equitably spreads the burdens of Pacific salmon restoration amongst Canada, the Northwest, and Alaska.

In December 1982, both the United States and Canada initiated a draft of the United States-Canada Pacific Salmon Treaty signifying their tentative approval of the Treaty.¹ While the Treaty negotiations were designed in large measure to revamp the 1930 Fraser River Convention,² the scope of the 1982 Treaty was extended to include all intercepting salmon fisheries. Many Alaskans criticized the detailed chinook provisions in the Treaty because if enacted, they would have had a devastating impact on southeast Alaska fishermen. Moreover, at the time of the 1982 draft, there was no implementing legislation available to consider in conjunction with the Treaty and Alaska fishermen faced the threat of treaty fishing rights litigation from Pacific Northwest

*United States Senator, State of Alaska. LL.B. 1957, Harvard Law School; B.A. 1947, University of California at Los Angeles.

1. Treaty Between the Government of Canada and the Government of the United States of America Concerning Pacific Salmon (Negotiators Draft) (Dec. 22, 1982) [hereinafter cited as 1982 Agreement].

2. United States-Canada Convention for the Protection, Preservation and Extension of the Sockeye Salmon Fishery in the Fraser River System, signed May 26, 1930, 50 Stat. 1355 (1930), 8 U.S.T. 1058, T.I.A.S. No. 3867 [hereinafter cited as Fraser River Convention].

Indian tribes.³

When it became apparent that the concerns of Alaskan fishermen were not addressed in the Treaty, Alaska's congressional delegation opposed final approval and ratification.⁴ This delegation wanted both the Canadian and United States Governments to reconsider the Treaty's impact upon Alaska. The ultimate result was a modified and improved Treaty, ratified in March 1985,⁵ in conjunction with the enactment of implementing legislation,⁶ and settlement of the pending treaty fishing rights litigation.⁷

The proposed 1982 Treaty provided some protection for Washington and Oregon fishermen operating in the Fraser River System by including the waters outside of the Fraser River Convention area in the management structure of the Treaty.⁸ But there was no guarantee that United States fishermen could continue fishing at reasonable levels for an appreciable period of time. The 1982 version of the Treaty also contained an accelerated rebuilding cycle for Columbia River chinook salmon which favored the fishermen of Canada and the Pacific Northwest United States.⁹ However, many of the concessions which formed the basis of the initialed 1982 agreement were burdens on Alaskan fishermen. The 1985 Treaty, while not perfect, has corrected this imbalance.¹⁰

During the many long years of negotiations with Canada, Alaskan fishermen made many unilateral sacrifices in conjunction

3. The tribes would have sued the State of Alaska to restrict Alaska harvest of Pacific Northwest salmon, particularly chinook. See *Confederated Tribes and Bands of the Yakima Indian Nation v. Baldrige*, 605 F. Supp. 833 (W.D. Wash. 1985).

4. My colleagues in the Alaska congressional delegation are Senator Frank Murkowski and Representative Don Young.

5. Treaty Between the Government of the United States of America and the Government of Canada Concerning Pacific Salmon, Treaty Doc. No. 99-2 (ratified Mar. 7, 1985) (entered into force Mar. 18, 1985) [hereinafter cited as 1985 Treaty].

6. Pacific Salmon Treaty Act of 1985, Pub. L. No. 99-5, 99 Stat. 7 (1985) (codified at 16 U.S.C.A. §§ 3631-3644 (West 1985)).

7. *Confederated Tribes and Bands of the Yakima Indian Nation v. Baldrige*, 605 F. Supp. 833 (1985).

8. See 1982 Agreement, *supra* note 1, at Annex IV, ch. 4, para. 1.

9. See 1982 Agreement, *supra* note 1, at Annex IV, ch. 3 (entitled *Conservation Measures for Chinook Salmon*).

10. See 1985 Treaty, *supra* note 5, at Annex IV, ch. 3.

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with the State of Alaska's effort to reverse the decline of the chinook salmon.¹¹ This was exemplified by the Alaska Department of Fish and Game's actions in 1980-1984 to reduce catch ceilings for southeast Alaska trollers and the incidental catch rates for other fisheries.¹² During that period, however, Canadian fishermen actually increased their harvest of southbound chinooks, thereby negating Alaska's attempts to enhance escapement for the benefit of all Pacific coast salmon fishermen.

The 1982 agreement did not reflect the conservation efforts already being carried out by Alaska. A two cycle rebuilding period of ten years for chinooks to enhance the Columbia River stocks was contemplated by the 1982 agreement,¹³ but there was no reasonable transition for southeast Alaska fishermen. Reductions in catch levels for the southeast troll fishery necessary to sustain such a short rebuilding period, in addition to the limits already imposed by the Alaska Department of Fish and Game,¹⁴ would

11. For example, the Alaska Department of Fish and Game implemented many conservation measures to protect chinook salmon in southeast Alaska. These measures included: closure of waters west of Cape Suckling to trolling (1974); limited entry for power trollers (1975); restrictions on sport fishing bag and possession limits (1975); elimination of directed net fisheries for chinook (1975-1977); closure of terminal areas to trolling (1975-1977); closures of inside areas to protect immature chinook (1975-1977); a 28-inch minimum size limit for chinooks (1977); closure of outside waters to hand trolling (1978-1980); establishment of eight-day opening/six-day closure fishing periods (1979); prohibition of sport fishing from commercial vessels (1979); reduced line limits for power and hand troll fisheries (1980); moratorium on entry into the hand troll fishery (1980) and limited entry for hand trollers (1981); establishment of a guideline harvest level of 320,000 chinook (1980) and then reduction of the guideline harvest level to 285,000 chinook (1981); prohibited use of any hooks other than single hooks (1981); reduced chinook fishing seasons in coastal and offshore waters from April 15 - October 30 to May 15 - September 20 (1981); closed entire troll fishery from April 15 to May 15 (1981); closed the troll fishery in-season to protect chinook and coho twice during 1980 and three times during 1981; and required fishermen to report catches before transporting fish out of state (1981). Alaska Dep't of Fish and Game, Commercial Fisheries Div., Conservation Measures Taken by Alaska to Protect Chinook Salmon in Southeast Alaska (unpublished data) (Mar. 12, 1982).

12. See Alaska Dep't of Fish and Game, Southeast Region Fisheries Div. Staff, Draft Preliminary Report on 1985 Southeast Alaska Chinook Salmon Catch and Escapement (unpublished report prepared for U.S.-Canada Pacific Salmon Comm'n) (Jan. 1986) [hereinafter cited as Alaska Salmon Catch Report].

13. See 1982 Agreement, *supra* note 1, at Annex IV, ch. 3 (entitled *Conservation Measures for Chinook Salmon*).

14. See *supra* note 9.

have forced almost all southeast Alaska fishermen out of the fishery, resulting in severe economic dislocations for Alaskan coastal communities.¹⁵

The 1985 Treaty, in contrast, takes into account the deep Alaskan commitment to conservation. It allows for an extended rebuilding period with protection against a sudden reduction of Alaskan harvests in order to achieve a gradual recovery of the Columbia River chinook stock without destroying the troll fishery.¹⁶

Although the 1982 agreement would have imposed restrictive quotas on all facets of the United States intercepting chinook fisheries, it did not include comprehensive restrictions on the Canadian fishery off of the west coast of Vancouver Island. As a practical matter, this "loophole" would have allowed Canadian fishermen to shift their efforts from restricted fisheries to the Vancouver Island fishery. The 1985 Treaty closed this loophole by imposing specific quotas on all significant Canadian intercepting chinook fisheries.¹⁷

Alaska's continuing effort to bolster the declining chinook stocks was incorporated into the 1985 Treaty. While the 1982 agreement would not have credited Alaskan fishermen for any future gains derived from the State of Alaska's restoration programs, the Treaty as adopted takes into account any demonstrated contributions of enhancement activities.¹⁸ This is particularly relevant to Alaska, because the State has already embarked on a comprehensive enhancement program which will provide over 200,000 additional chinooks by 1990.¹⁹

The establishment of a fishery regime in the northern boundary region between British Columbia and southeast Alaska was

15. Almost all communities in southeast Alaska rely on salmon for economic sustenance. See, e.g., G. ROGERS & R. COOLEY, ALASKA'S POPULATION AND ECONOMY: REGIONAL GROWTH, DEVELOPMENT AND FUTURE OUTLOOK 168-72 (Mar. 1962) (salmon account for 80% of total value of commercial fisheries; "southeast Alaska generally produced the largest portion of the total commercial fishery values during the decade . . .").

16. See 1985 Treaty, *supra* note 5, at Annex IV, ch. 3 (entitled *Chinook Salmon*).

17. See 1985 Treaty, *supra* note 5, at Annex IV, ch. 3, para. (d)(i)-(vi).

18. *Id.* at Annex IV, para. 2.

19. See ALASKA DEPT OF FISH AND GAME, PRE-SEASON MANAGEMENT PLAN FOR 1985 SOUTHEAST ALASKA CHINOOK FISHERIES 7 (Apr. 1985). See also Alaska Salmon Catch Report, *supra* note 12, at 10-14.

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also an integral element of the negotiations.²⁰ The critical issue involved the need to limit fishing effort in a way that would prevent high incidental catches of each Nation's salmon stocks by the other Nation. Early in the negotiations it was recognized that unreasonable limitations on United States harvests of Canadian sockeye would significantly impede the ability of southeast Alaska fishermen to harvest the Alaskan pink salmon resource. In spite of these concerns, the 1982 agreement imposed strict limitations on the sockeye catch at Noyes Island and Tree Point.²¹ These limitations would have forced United States fishermen to forego harvesting millions of pink salmon of United States origin.

The 1985 agreement moderated this adverse impact by permitting United States fishermen an incidental catch of 480,000 sockeye at Noyes Island for a four year period and 130,000 sockeye per year at Tree Point.²² The principle is clearly established that interception limits will not prevent the United States from harvesting its own fish.²³ The agreement does permit a larger Canadian incidental harvest of pink salmon, but the Canadian troll fishery will close down in the northern part of the boundary area upon reaching an incidental catch of 300,000 pinks.²⁴

The key feature of the Treaty which resulted from the prolonged negotiations on the northern boundary area,²⁵ is the recognition by all parties that the fish stocks should be managed to permit fishermen of each nation to continue "targeting" on stocks originating in their own waters.²⁶ The specific restrictions embodied in the 1985 agreement reflect that understanding.

The transboundary river controversy was another issue of

20. See 131 CONG. REC. S2687 (daily ed. Mar. 7, 1985) (statement of Sen. Lugar referring to the 1985 Treaty, *supra* note 5, at Annex IV, ch. 2).

21. See 1982 Agreement, *supra* note 1, at Annex IV, ch. 2 (entitled *Northern British Columbia-Southeastern Alaska Boundary Area*), para. 2(i) & (ii).

22. See 1985 Treaty, *supra* note 5, at Annex IV, ch. 2 (entitled *Northern British Columbia Southeastern Alaska*), paras. 2 & 3.

23. *Id.* at para. 4 ("the Parties shall implement appropriate management measures which will take into account the expected run-sizes and permit each country to harvest its own stocks").

24. *Id.* at para. 3(c).

25. This is the boundary between the United States and Canada in southeast Alaska. See *supra* note 18 and accompanying text.

26. See 131 CONG. REC. S2687 (daily ed. Mar. 7, 1985) (statement of Sen. Lugar).

concern for Alaska during the negotiations. Canada's increased harvests on the transboundary rivers located in southeast Alaska, especially the Stikine and the Taku Rivers, appear to have been promoted for the purpose of Canada's obtaining additional leverage in the overall negotiations. There were no traditional or viable commercial Canadian fisheries on these rivers before the negotiations. In fact, the Canadian Government had to subsidize the Taku River fishery to maintain a claim for future Canadian fishery development there.

The 1982 agreement called for an allocation regime that might have established an economically viable Canadian fishery for sockeye and coho on the Stikine and Taku Rivers.²⁷ For the years 1983 and 1984, the Canadians would have been allowed a sockeye harvest approximating fifty percent of the total allowable catch.²⁸ There was a dispute over whether Canada would be allowed thirty-five percent of the catch or fifty percent of the catch after 1984. That coho harvest was included at the last minute in the allocation scheme.²⁹

Many southeast Alaskan fishermen have traditionally depended on Stikine and the Taku River harvests. In the 1982 agreement, the benefits of the State of Alaska's strict conservation regime designed to restore these runs would have passed on to a previously non-existent Canadian fishery. The final Treaty moderates the impact of a transboundary allocation scheme on Alaskan fishermen. It expressly provides that the Canadians will be entitled to only thirty-five percent of the sockeye on the Stikine River,³⁰ and fifteen percent of the sockeye on the Taku River.³¹ The Canadians are also limited to 2000 coho on the Stikine and an incidental catch on the Taku.³²

The 1985 Treaty and agreed understandings largely resolved the questions presented by the "equity" principle.³³ The Canadi-

27. See 1982 Agreement, *supra* note 1, at Annex IV, ch. 1 (entitled *Transboundary Rivers*).

28. *Id.* at Annex IV, ch. 1, para. 3.

29. *Id.* at para. 3(b).

30. See 1985 Treaty, *supra* note 5, at Annex IV, ch. 1, para. 3(a).

31. *Id.* at para. 3(b).

32. *Id.* at para. 3.

33. See Jensen, *The United States-Canada Pacific Salmon Interception Treaty: An Historical and Legal Overview*, 16 ENVTL. L. 363, 400 n.106; see also Memorandum of Understanding, para. A, accompanying the 1985 Treaty, *supra*

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ans were, and still are demanding that they receive disproportionate compensation for Canadian fish caught by United States fishermen. It was contemplated that this compensation would come in the form of increased fishery allocations to be decided by the Commission. The 1985 Treaty allows the United States to assert its position forcefully, although Canada will doubtless keep up the pressure to obtain its claimed share.

The process of implementing the Treaty into domestic law has also served to protect United States interests. The Reagan Administration recognized the need to restore the salmon stocks by enhancement as soon as resources permitted in order to mitigate any economic dislocation resulting from the Treaty fishing limits.³⁴ The United States Department of State specifically stated that it would support funding for an enhancement program in Alaska.³⁵ The implementing legislation also mandates Commission positions³⁶ and provides veto authority for northern and southern delegations as a safeguard against unjustifiable tradeoffs between the north and the south.³⁷

The implementing process also put to rest the issue of whether the fishery allocation regime, established by Judge Boldt in *United States v. Washington*³⁸ applies to chinook harvests off Alaska. The "Boldt decision" held that the Pacific Northwest Indian Tribes, which are protected by the Stevens and Palmer Treaties, are entitled to fifty percent of all harvestable anadromous fish passing through their traditional fishing grounds.³⁹ Due

note 5.

34. See *Hearings Before the Subcomm. on Fisheries and Wildlife Conservation and the Environment of the House Comm. on Merchant Marine and Fisheries*, 99th Cong., 1st Sess. 102-03 (1985) (colloquy between U.S. Negotiator Kronmiller, Rep. Lowry, and State Dep't Counselor Derwinaki).

35. See Letter from Secretary of State George Shultz to Senator Ted Stevens (Mar. 7, 1985) (discussing the United States-Canada Salmon Treaty), reprinted in 131 CONG. REC. S2675 (daily ed. Mar. 7, 1985).

36. See 16 U.S.C.A. § 3632(a)-(h).

37. *Id.* § 3632(g). It should be noted that "north" means Alaska and "south" means everyone else except Canada.

38. 384 F. Supp. 312 (W.D. Wash. 1974), *aff'd*, 500 F.2d 676 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1976). See *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658 (1979).

39. See, e.g., Comment, *Empty Victories: Indian Treaty Fishing Rights in the Pacific Northwest*, 10 ENVTL. L. 413 (1980); Harrison, *The Evolution of a New Comprehensive Plan for Managing Columbia River Anadromous Fish*, 16 ENVTL.

to the ongoing, managerial nature of *United States v. Washington*, the issue of the tribal right to protection of the fishery resource throughout its range remained unresolved in 1982. In an effort to promote their positions in the Salmon Treaty negotiations, the Treaty tribes threatened to seek a court ruling which would have included Alaskan harvests under the Boldt decision.

In the final analysis, that tactic proved beneficial for both Alaska and the tribes. The tribes extracted a provision for equal representation on the United States Section of the Pacific Salmon Commission.⁴⁰ In exchange for supporting ratification of the Treaty and participation by the tribes, the State of Alaska obtained a legal commitment on the part of the Tribes not to seek inclusion of Alaskan harvests of Pacific Northwest salmon in the *United States v. Washington* allocation scheme as long as the 1985 Treaty remains intact.⁴¹

The 1985 Pacific Salmon Treaty imposes harsh burdens on many of southeast Alaska's fishermen, but there is a widespread perception in Alaska that sacrifices must be made in order to rebuild the salmon resources. Alaskans are willing to share part of this burden; however, it was necessary to ensure that the burden was spread fairly among all parties. The 1985 Treaty succeeded in achieving this goal.

L. 705 (1986) (discussion of equal share). See generally F. COHEN, HANDBOOK OF AMERICAN INDIAN LAW 220-28 (1982). The various Stevens Treaties are given in Holt, *Can Indians Hunt in National Parks? Determinable Indian Treaty Rights and United States v. Hicks*, 16 ENVTL. L. 207, 217 n.66 (1986).

40. See 16 U.S.C.A. § 3632(e)(3).

41. See *Confederated Tribes and Bands of the Yakima Indian Nation v. Baldrige*, 605 F. Supp. 833, 836-37 (1985).

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United States Senate

COMMITTEE ON APPROPRIATIONS
WASHINGTON, DC 20510-8025

JAMES H. ENGLISH, STAFF DIRECTOR
J. KEITH KENNEDY, MINORITY STAFF DIRECTOR

June 29, 1990

Dale Kelley
Executive Director
Alaska Trollers Association
130 Seward Street, No. 213
Juneau, Alaska 99801

Dear Dale:

Thanks for your second letter about Congressional intent over the mitigation of losses in chinook harvests caused by the implementation of the U.S.-Canada Pacific Salmon Treaty.

It was clear to all concerned in the negotiations that the enhancement of chinook stocks would be a priority. When Congress enacted the implementing legislation, however, the decision was made to delegate the decision making authority to the State of Alaska to allocate enhancement funds to projects chosen by the State. The State of Alaska agreed to this responsibility in exchange for the federal commitment of \$20 million enhancement funds.

The short answer is that there was no Congressional intent on how the funds would be specifically allocated. We simply did not address it at that time because the State assured us that it would allocate the funds fairly.

I share your concerns about the slow rebuilding of the chinook stocks, and have contacted Don Collinsworth on this matter.

With best wishes,

Cordially,


TED STEVENS

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Sincerely

Hatchery stocks may hurt wild gene pool

By LAINE WELCH
and DONNA PARKER
Special to the Daily News

FISHING REPORT

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The genes of wild salmon stocks should be protected. That is the strong recommendation of two reports on the interaction between wild and hatchery stocks. A draft report on Alaska's salmon hatchery programs just released to the legislature recommends a statute giving wild stocks priority status; giving management direction for mixed wild and hatchery stocks to the Board of Fisheries; increasing tagging studies; and installing a planning board to govern statewide hatchery policies.

The report also cites specific concerns over the increase of remote fry release in Prince William Sound. "The idea was to disperse the fishing effort and solve some allocation problems, but a large amount of the fish could be straying and spawning with wild stocks. Biologists are very concerned about that," said Molly McCammon, legislative report coordinator.

That concern is echoed in another report to be released this month, which compiles

the research shared at an international symposium held last fall in Cordova. According to coordinator Gary Thomas, the primary agreement was on the importance of retaining diversity in wild stocks. When Sweden and Norway switched their emphasis to hatchery reared fish, they soon lost most of their wild stocks through disease and parasites borne by non-indigenous species, he said.

In trying to develop new management strategies, Thomas said, the most difficult question is whether to impose caps on hatchery production. "Our main concern is that too many hatchery fish may spawn with wild fish and dilute the genetic strength of the salmon."

Cod seasons continue to get shorter each year in the Gulf of Alaska.

This year's cod quota could be finished off by March if fishing effort continues to accelerate. According to the Alaska Department of Fish and Game, 225

vessels, including 75 pot boats, are going after the westward region's 63,000 metric ton quota. Last year's catch of 77,000 metric tons was taken during April.

Although bycatch rates weren't available for the trawl fleet because of the delayed opener this year, preliminary numbers for the longliners look nasty. By Jan. 26, longliners showed a 3 percent bycatch rate, or 42 metric tons. If those levels continue, the longline fleet could be dropped from the cod fishery before long.

With the recent changes occurring in Russia, many feel that part of the 3 million tons of fish in the Okhotsk Sea soon will be made available to U.S. operators. According to market analyst Bill Atkinson, this is seen as part of an "agriculture-for-fish" plan, in which the United States would provide 26 agriculture-processing plants to Russia.

Atkinson said some Japanese observers wonder if the United States can meet the

challenge, saying they have limited experience in far-seas operations. There also are questions about the cost effectiveness of shipping processed products back to the United States.

The 1992 halibut catch will be up about 4 million pounds from last season. For Area 3A, the Central Gulf of Alaska, the catch limit will be 26.6 million pounds. For Area 3B, west of Kodiak, the limit is 8.8 million. Southeast fishermen in Area 2C can take 10 million pounds of halibut.

two 24-hour openers will occur, on June 8 and Sept. 7, with a possible cleanup fishery on Oct. 5.

Mayday! Mayday! For those who have ever wondered, the international distress call comes from the French "m'aidez," which means, "You come help me."

Laine Welch and Donna Parker are Kodiak-based fisheries journalists. Welch also produces public radio's weekly Fisheries Report. Their information column appears every other Sunday.

COOPERATIVE FISHERIES AND OCEANOGRAPHIC STUDIES (CFOS): SEEKING NEW ANSWERS TO OLD QUESTIONS ABOUT SALMON PRODUCTION VARIABILITY

Dr. Robert T. Cooney

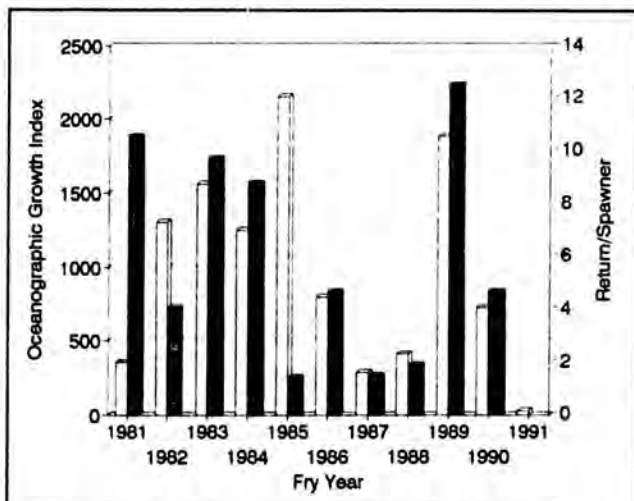
Oceanographers from the School of Fisheries and Ocean Sciences (SFOS) at the University of Alaska Fairbanks (UAF) and state and private fisheries scientists have joined forces to identify the causes of high- and low-production years for Alaska salmon. Members of this newly formed consortium – the Cooperative Fisheries and Oceanographic Studies (CFOS) program – have begun conducting research in Prince William Sound. Within CFOS, oceanographic monitoring is guided by researchers at the UAF Institute of Marine Science (IMS), and studies of salmon growth, production, management, and enhancement are carried out by the State and by private fisheries scientists.

CFOS research focuses on growth conditions experienced by juvenile salmon (fry) during the first two to four months after they migrate to the ocean. Scientific evidence indicates that most salmon mortality is due to predation during this critical growth period. In years with warm ocean temperatures and high food stocks, the rapid growth of salmon fry reduces losses to birds and fishes and produces a larger return of adults to fisheries and spawning grounds. In years with below-average temperatures and low food stocks, fry growth rates are reduced, the period of early risk is extended, and fewer adults return to spawn.

These salmon survival patterns are emerging from a new analysis of historical and contemporary databases provided by CFOS members. Jointly funded through SFOS by IMS and the Alaska Sea Grant College Program, CFOS scientists link time-series statistical analyses of ocean temperatures, local weather patterns, and plankton population levels over the past decade with production histories of wild and hatchery-released pink and chum salmon in Prince William Sound.

Another consortium member, the Alaska Department of Fish and Game (ADF&G), contributes historical catch and escapement data, wild fry population indices, and measurements of temperature, salinity, and zooplankton populations in the deep central basin of the Sound. ADF&G scientists are also examining factors that influence the annual migration of fry to the ocean and rates of fry growth and survival.

Regional salmon hatcheries (Prince William Sound Aquaculture Corporation and Valdez Fisheries Development Association, Inc.) provide records of spring ocean temperature, salinity, and zooplankton stocks. They also support faculty and graduate student experimental studies through contributions of lodging and small boat services. In addition, the corporations attempt to match hatchery releases with optimal growth conditions for salmon fry.



The relationship between growth conditions for fry (open bars) and the survival of adults (solid bars) for wild pink salmon in Prince William Sound. Causes for the 1981 and 1985 deviation from the established trend are currently being studied by Cooperative Fisheries and Oceanographic Studies researchers.

A major CFOS goal is the establishment of predictions for pink and chum salmon production based on coastal ocean conditions.



Dr. R. Ted Cooney (IMS File Photo)

Dr. Cooney joined the University of Alaska in 1970 to assist with the development of marine fisheries studies in the College of Biological Sciences. He obtained his Ph.D. from the University of Washington in 1971. In 1973 he became affiliated with the Institute of Marine Science and began studies of zooplankton in the Gulf of Alaska and the Bering Sea. This led to new understanding of the role of oceanic and coastal populations in marine food webs.

His work on juvenile salmon growth and food dependencies began in 1976 when the first non-profit hatchery in Prince William Sound began releasing fry. This effort eventually grew into the regional-level consortium study of juvenile salmon ecology and oceanography described in this issue of SFOS Highlights.

Related reports may be obtained from:

Publications Office
Institute of Marine Science
School of Fisheries and Ocean Sciences
201 O'Neill Building
University of Alaska Fairbanks
Fairbanks, Alaska 99775-1080



UNIVERSITY OF ALASKA FAIRBANKS

IMS researchers are analyzing oceanographic variables including sea-surface temperatures and wind-driven currents. They are also describing food requirements of juvenile salmon, growth ecology and energy composition of fry food stocks, and patterns in satellite-determined sea-surface temperature fields. These activities are made

possible in part by funding from the Alaska Science and Technology Foundation, which enabled CFOS to purchase and operate a modern meteorological and oceanographic buoy in Prince William Sound. Designated C-LAB 1, the buoy continuously measures upper-ocean temperatures, plankton stocks, and sea-surface weather. These observations are transmitted hourly to polar-orbiting satellites and retrieved later by phone modem. CFOS is one of the first programs to use this technology in investigations of fisheries enhancement and management.

A major goal of CFOS is to establish predictions for pink and chum salmon production based on coastal ocean conditions experienced by juveniles. This information will help ADF&G develop improved salmon forecasting procedures and assist in the management of important mixed-stock salmon resources in Prince William Sound. Eventually, this information will be applied to other commercially important fish and shellfish populations in Alaska.



A communication-linked automated buoy (C-LAB 1) moored near Smith Island in Prince William Sound continuously monitors weather and oceanographic conditions. Prior to deployment (right), the buoy underwent testing onboard the ADF&G M/V Montague. (Photos: John Smithhisler and Kevin Engle)



Over the past two decades, oceanographers at IMS have produced substantial information about temperature conditions, current patterns, and fry food stocks in the northern Gulf of Alaska. By pooling the resources and expertise of academic research, management, and commercial interests, CFOS provides a means to apply many of these fundamental results to questions about fish and shellfish resource production, management, and enhancement. The consortium approach assures that priority fisheries research is undertaken by acknowledged experts, and that study results are immediately distributed and applied. The resulting cooperative program is much more comprehensive and effective than any one of the single participants could manage alone.

OCEAN TEMPERATURE CYCLE

Dr. Thomas C. Royer

After more than a decade of increasing water temperatures in the northern Gulf of Alaska, temperatures are now decreasing. During the 1970s and early 1980s, temperatures increased by more than 1°C (nearly 2°F) throughout the water column; since 1985, temperatures have demonstrated a downward trend (Figure 1). Although more data are needed, this trend may confirm the existence of a natural 18.6-year temperature fluctuation cycle that also has been postulated to occur in other high latitude areas, including the Bering Sea, the North Pacific Ocean north of 55°N, the North Atlantic, and the Southern Ocean (Antarctica).

Institute of Marine Science researchers, working through the School of Fisheries and Ocean Sciences, have been measuring subsurface temperatures down to a depth of 250 m since 1970 at a sampling site at the mouth of Resurrection Bay, near Seward. These have been supplemented by sea-surface temperatures from ships taken since 1946 at sites near Seward and by air temperatures recorded at Sitka since 1828. The Sitka air temperatures correspond well with the Seward water temperatures and exhibit a similar pattern of periodicity (Figure 2).

The timing of the reversal of the warming trend appears to coincide with a cycle dictated by the lunar nodal tide, associated with changes in the moon's declination relative to the earth's equator. In contrast to the sun, which follows the same declination path each year, the moon's declination varies from 18 to 28 degrees above the equator over an 18.6-year period. The influence of the moon's gravitational pull on tides is well known; this and other research suggests that the moon also may affect ocean currents by influencing current speed as the moon changes position. Small changes in current speed can cause changes in average temperature by increasing or decreasing the

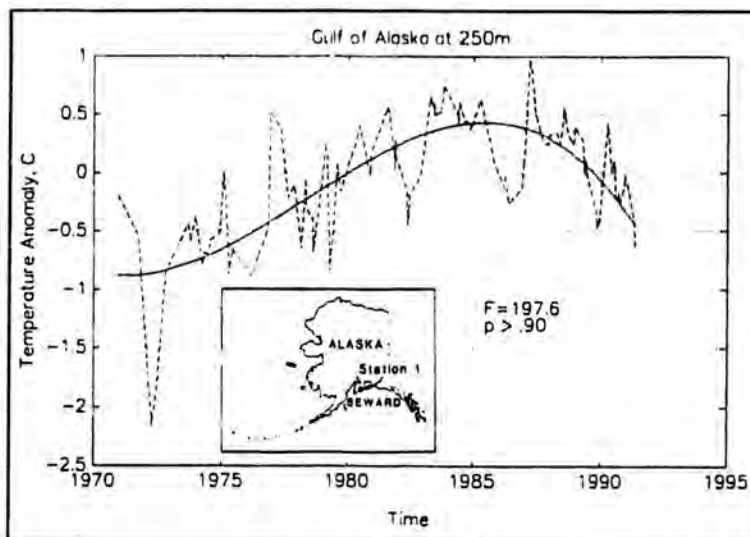


Figure 1. Water temperature anomalies at 250 m in the Gulf of Alaska. The third order polynomial suggests that the long term trend in temperature is cyclic rather than monotonic.

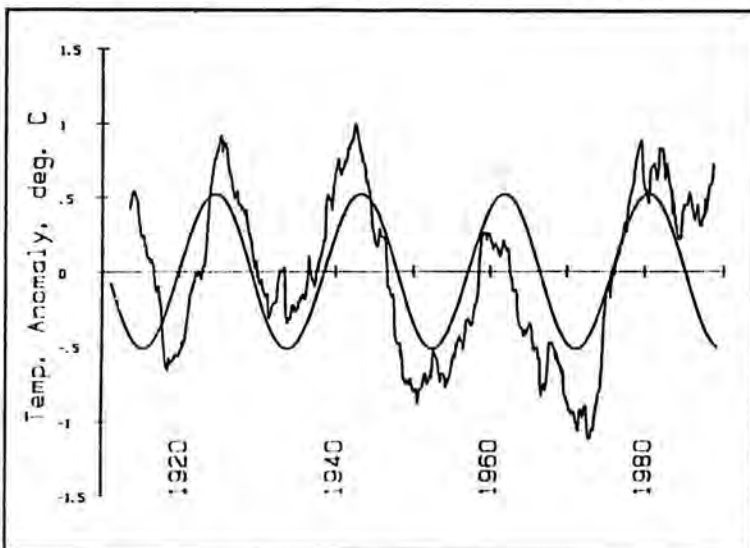


Figure 2. Sitka air temperature anomalies (five-year averages) with "best fit" 18.6-yr lunar tidal signal superimposed (smooth curve).

Changes in temperature suggest a tidal (lunar) influence rather than solar heating and cooling.



Dr. Thomas C. Royer (Photo: Cal White)

Dr. Royer has been a member of the Institute of Marine Science faculty since 1969. He obtained his Ph.D. (1969) and M.S. (1966) in Physical Oceanography from Texas A&M University. In the early 1970s he began oceanographic field work in the northern Gulf of Alaska to describe seasonal variations in physical parameters over the continental shelf and the adjacent ocean. His research combines oceanographic and meteorological approaches to examine the intricate coupling and forcing mechanisms of the ocean-atmosphere system in this region.

The research described in this issue of SFOS Highlights focuses on his investigations of water temperature variation since 1970, which indicate long-period fluctuations and demonstrate the interaction between the ocean and the atmosphere.

Related reports may be obtained from:

Publications Office
Institute of Marine Science
School of Fisheries and Ocean
Sciences
201 O'Neill Building
University of Alaska Fairbanks
Fairbanks, Alaska 99775-1080



UNIVERSITY OF ALASKA FAIRBANKS

rate at which warmer water from the equatorial regions is transported poleward into the northern Pacific.

Soviet researchers in the 1960s reported a similar cycle in sea-surface temperatures in the North Atlantic that they attributed to lunar tidal cycles. Others have suggested

sunspot activity, which follows a similar (22-year) cycle, as a possible cause. The Gulf of Alaska study, however, demonstrates changes in temperature throughout the water column, suggesting a tidal (and therefore lunar) influence rather than solar heating and cooling, which would affect primarily surface temperatures.

The warming trend observed initially was seen as a possible indicator of global warming, which is expected to be amplified in polar regions. The present cooling trend suggests instead the existence of a natural, cyclical pattern, although subsequent minimum temperatures could be modified by larger-scale global climate changes. Phenomena such as these point to the need for a long-term study of ocean and atmospheric conditions to discern long-period patterns, rather than drawing conclusions from results that are very short-term on a global climate-change scale.

If the cooling trend continues in the expected pattern, water temperatures should reach a low point in approximately five years. Regardless of its cause(s), the cyclical temperature pattern is expected to have some influence on thermally sensitive finfish and shellfish populations in the region. Some species may also provide additional evidence of the existence of the pattern: for example, an 18-year cycle is apparent in Pacific halibut. Other University of Alaska Fairbanks researchers have speculated on the influence of the current cooling trend on food stocks and on seasonal behavior. Salmon, for example, are expected to decline somewhat because the cooler water will affect the annual zooplankton bloom on which salmon fry feed. In contrast, crab populations are expected to increase because predator populations will move into warmer waters.

The research environment of the University, including the diligence and cooperation of the Institute of Marine Science boat crew members in collecting samples, has allowed for continued sampling since 1970 on an opportunistic basis with funding from a variety of sources. We hope to continue and expand the sampling program to deeper water off the continental shelf and to include nutrient sampling in the future to determine the influence of temperature fluctuations on nutrient abundance, transport, and distribution.



Institute of Marine Science technicians on board the R/V Alpha Helix collect Bering Sea water samples from the CTD rosette for shipboard and laboratory analysis. (Photo: Geoffrey Orth)

May, FYI for your hatchery file
32-92

Hatchery Proves Costly; State May Get It Back

ANCHORAGE (AP) — Fisheries management in the wake of the Exxon Valdez oil spill could result in the collapse of the Kenai River red salmon run in 1994, Alaska Fish and Game commissioner Carl Rosier said.

That, in turn, could trigger an economic disaster for Southcentral Alaska commercial fishermen, he said.

Addressing fellow members of the Exxon Valdez Oil Spill Trustees Council on Thursday, Rosier warned of a "major disaster on the Kenai Peninsula."

The trustees later voted to spend \$525,000 to study Kenai reds, despite questions over whether the decline was wholly a result of the spill.

Biologists wary of oil spilled by the Exxon Valdez in 1989 closed the Cook Inlet salmon fishery that year. So many sockeye salmon returned to Kenai Lake that summer that it became overloaded, and stocks plummeted, Rosier said.

When too many fish come back and spawn, the competition among young salmon is intense, causing them to grow up small and sickly, susceptible to predators and disease.

Biologists counted just 2.5 million juvenile salmon leaving Kenai Lake last spring. Those are the fish that were spawned the year of the spill.

That is one-tenth the number of juveniles, or smolt, migrating out two years earlier.

The Exxon Valdez spill followed two years of unusually high red salmon returns, or escapements, on the Kenai Peninsula. Biologists closed salmon fishing after the 1987 oil spill of the tanker Glacier Bay in Cook Inlet. And in 1988, a naturally large red salmon run filled the Kenai River.

Concern about floating oil kept the Cook Inlet drift fleet on shore in summer 1989. Setnetters, who didn't fish near the oil, caught some 4 million fish that year. And biologists opened a dipnet fishery when they realized too many fish were returning.

But it didn't alleviate an unhealthy escapement of 1.4 million fish.

Rosier said biologists like to see no more than 800,000 reds return to Kenai Lake.

"The key to managing those reduced runs is better information," Rosier said. "The heart of it is the Kenai River and how quickly you bring that back on line."

The study approved Thursday will look at what conditions in Kenai Lake

spill studies for the Department of Fish and Game.

Other factors like lake temperature, weather and availability of nutrients could have led to a low survival rate, he said.

"If next year is another very low year, we know we have a collapse of the fishery on our hands. If '92 showed good smolt production, we would be relieved," he said.

The Kenai River is the major producer of red salmon for an upper Cook Inlet commercial harvest, for more than 600 driftnet and 300 setnet fishermen. During the past half-decade, catch values have fluctuated widely from \$12 million to nearly \$100 million.

The fish also sustain a Kenai processing industry involving hundreds of seasonal workers.

Paul Krasnowski, Southcentral regional supervisor for the division of sport fish, said there is no evidence the Russian River system — a sport fishermen's haunt — would also crash.

"It seems to be handling large escapements and wasn't impacted as much as the rest of the Kenai River," Krasnowski said.

However just what is happening with the Russian is unclear, since the state doesn't monitor smolt leaving lake rearing grounds.

Women Voters Meeting Set

The Sitka League of Women Voters will meet 11 a.m. Saturday in the home of Clothilde Bahovec, 625 DeGroff Street, to set priorities for local action and make recommendations for national and state positions.

All those interested in knowing more about the League of Women Voters are invited to attend.

This past year the league has become a fully accredited league. It has held several voter registration drives in response to the national priority to "Take Back the System" and has assisted Raven Radio in providing live broadcasts of Sitka Assembly meetings.

Local issues the league has worked on include recycling, clean air and citizen's rights. The state and national portfolio focus on fields such as open

State Warns of D To Kenai Salmon

KENAI (AP) — Less than a year after taking over Tutka Hatchery from the state, Cook Inlet Aquaculture Association may give the troubled Kachemak Bay operation back.

Tom Mears, the association's executive director, said he will recommend backing out of the pink salmon hatchery when the board of the non-profit group meets Saturday.

Cook Inlet Aquaculture received the keys to Tutka in July. It planned to fund the hatchery by catching and selling excess fish.

When the run failed last year, the plan fell far short of its goal.

"It either makes it or breaks it on appropriations or fish returns," Mears said.

"If the cash doesn't show up one way or the other, we don't have any choice."

The association had hoped to catch and sell \$550,000 worth of Tutka pinks last summer.

Mears said the catch was only 105,000 fish — valued at \$58,000.

Another 60,000 fish were used for brood stock and provided roughly 36 million eggs.

Fry hatched from eggs taken last summer will be released this spring.

When the agency agreed to take over Tutka, the understanding was the hatchery would pay for itself, Mears said.

The board did not want to use aquaculture association funds, nor did it want to borrow money.

Cook Inlet Aquaculture is funded by a self-imposed tax on commercial salmon fishermen. That arrangement links the hatchery's fate to the competing interests of upper and lower Cook Inlet fishermen.

Some upper Cook Inlet fishermen, who provide the bulk of the association's money and are by far the larger group, have opposed acquiring the Tutka hatchery, along with other aquaculture association projects in the lower inlet.

Few set gillnet, and drift gillnet, and lowed south of A. A total of 82 and a handful of lower inlet.

The United C, ciation, which re upper Cook Inlet, generally oppose as well.

"The thing w the premise that and it's clearly DA administrative Mathews said.

"The rest of t to subsidize it."

The Kenai P Association, whi ily upper Cook has not taken a st

Pink salmon made up a large inlet salmon cat fishermen there (vital to their fish

If the aquacult sight of the Tut on next summer the project may b

Based on the survival average pinks should retu

But the run h the last four y summer when a j run never materia

The associati with \$400,000 i year.

The state also vide \$2 million improvements de hatchery's capaci venile pink salmc

Authorities sa delivered event: said it had hope make repairs.

Fairbanks Bar Owner Heart for Alcohol Tax

FAIRBANKS (AP) — Area bar owners say they probably will not seek repeal of the city's tax on alcohol sales, despite an Alaska Supreme

dent of the Inte Beverage Associa

"We talked a thing done in Ja

Salmon squeeze

Fisherman asked to reduce fleet

OLYMPIA (AP) — Commercial fishermen in Washington will be asked to come up with a way to shrink their numbers under a measure passed by the state Senate Feb. 10.

A task force of commercial fishermen would decide how much fish permit-holders need to catch to keep their licenses, how many licenses should be held, and how to reduce the current number of licenses. The task force would present its recommendations to the Legislature by next January.

Commercial fishermen who can't meet poundage requirements because of an emergency could appeal to a peer review board and get the requirements waived.

Sponsoring Sen. Linda Smith, R-Vancouver, said declines in the state's salmon stocks mean "there is going to be a gear reduction" on Washington waterways. Full-time fishermen should retain their licenses, but permit holders who view their licenses as an investment or a tax break should lose theirs, she said.

Sen. Sid Snyder, D-Long Beach, said in support of SSB6047 that "a lot of these people who have these licenses are inactive."

But Sen. Ann Anderson, R-Acme, criticized the bill for throwing the problem of salmon depletion in the lap of commercial fishermen. Other groups whose activities harm fish runs should also be part of the solution.

"To get commercial fishermen together and ask them to solve the problem among themselves is the wrong way to go," Anderson said.

The bill passed 36-10 and now goes to the House for a hearing.

The Senate also passed a measure that orders the directors of the Fisheries and Wildlife departments to create a new way to count salmon.

Current accounting systems are "mediocre to poor" said Sen. Jack Metcalf, R-Langley. "This bill will help in getting an accurate count."

The directors would work with federal officials, Indian tribes and Oregon state agencies to come up with a plan by Dec. 31. They would also study how incentives, including penalties and license rebates, could be used to improve catch reporting.

Sponsoring Sen. Scott Barr, R-Colville, said an accurate count of salmon catches is especially important because of the possible listing of more salmon stocks under the federal Endangered Species Act.

* — SB6150 passed 47-0 and will now be reviewed by a House panel.

The House Fisheries and Wildlife Committee has passed a separate package of bills designed to help declining fish stocks recover. The bills would establish a fish recovery panel, regulate farm practices on state lands, promote water conservation, require installation of fish screens, and set up a new education program.

State may get Tutka Hatchery back

ASSOCIATED PRESS

KENAI — Less than a year after taking over Tutka Hatchery from the state, Cook Inlet Aquaculture Association may give the troubled Kachemak Bay operation back.

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FOOD PRODUCT DEVELOPMENT CORPORATION

200 Anderson Street, Portland, Maine 04101 (207) 874-0098 FAX (207) 874-0212

TO: HEATHER McCARTY
FROM: BILL SEIDEL
RE: SALMON SAMPLES

FEB. 21, 1992

DEAR HEATHER,

ARRIVING TO YOUR ATTENTION VIA FEDERAL EXPRESS ON TUESDAY FEB. 25 ARE THE SALMON PRODUCTS. EACH ITEM HAS A LETTER DESIGNATION FOR REFERENCE. THE FOLLOWING IS A LIST OF THE SUBMITTED PRODUCTS. YOU MAY CHOOSE THE TWO PRODUCTS TO BE SCALED UP TO 100 LBS. EACH FOR THE SEAFOOD SHOW, WITH THE REMAINING SALMON I WOULD BE HAPPY TO DO SEVERAL OF THE OTHER PRODUCTS FOR THE SHOW ALSO. ALL ITEMS ARE PRECOOKED. NO NEED TO THAW BEFORE COOKING EITHER.

A: SALMON BURGER
B: SALMON BURGER
C: SALMON SAUSAGE
D: SALMON SAUSAGE
E: SALMON HAM
F: SALMON PATTIES/BALLS
G: SALMON PIE
H: SALMON CHOWDER
I: SALMON LASAGNA
J: SLICED COLD SMOKED SALMON
K: HOT SMOKED SALMON
L: COLD SMOKED SALMON (NOT SLICED)

DIRECTIONS: SAUSAGES, PATTIES, BURGERS AND BALLS MAY BE PAN FRIED, MICROWAVED OR EVEN DEEP FAT FRIED. BUT TO TEST, I RECOMMEND BAKING AT 350-375 FOR 14-18 MIN.

PIE- 30 MIN AT 350

HAM- THAW, SLICE AND EAT

SMOKED- " " " "

LASAGNA- 25 MIN AT 350

CHOWDER- BOIL IN BAG FOR 8 MIN OR HEAT IN POT. ADD ALITTLE MILK OR WATER IF YOU LIKE IT THINNER.

Bill

PRINCE WILLIAM SOUND / COPPER RIVER RPT
PROJECT CRITERIA CHECK LIST
January 9, 1992

The PWS/CR RPT will review salmon enhancement projects proposed by any agency or entity. Proposals should address criteria listed within the check list. Salmon projects proposed for PWS/CR should describe project intent and describe how the project goal will be achieved.

This screening is to provide Region-wide coordination of all enhancement efforts and is not intended to be a definitive technical analysis.

The Planning Team will ensure that project funding needs are identified when the actions of one agency/entity require funding on the part of another agency/entity. An example is the need to fund tag/recovery efforts within the fishery and at a hatchery.

GOAL:

Projects will be evaluated on their contribution to achieving objectives of the comprehensive regional plan. Objectives are established to facilitate achieving regional goals. Regional goals support developing and maintaining a comprehensive salmon fishery that addresses fish production, allocation, management, and net benefit. The integration of these four fishery elements is intended to provide the tools and process necessary to plan and implement strategies to fulfill user needs and expectations as outlined in the regional plan and regional allocation policy for enhanced salmon.

AN ACCEPTABLE PROJECT GENERALLY:

1. Addresses the objectives outlined within the regional allocation policy. These objectives provide for:
 - * reduced congestion and or conflict in the fishery,
 - * minimized impact on wild stocks,
 - * promoting highest possible fish quality,
 - * maximizing production,
 - * minimizing impacts to historic and traditional fisheries,
 - * supporting subsistence, sport and personal use needs,
 - * encouraging and supporting research and,
 - * recognition of healthy competition in the fishery.

In addition, an acceptable project generally:

2. Brings non-producing and underutilized areas of PWS/CR Region into production.

3. Rehabilitates stocks which are depleted below the threshold of reproductive viability.

I. PROJECT DESCRIPTION

1. Project location _____
2. Release location _____
3. Harvest location _____
4. Project type
- A. Hatchery
- New _____
- Expansion _____
- Remote release _____
- B. Wild stock rehabilitation _____
- C. Habitat improvement _____
5. Describe any new facilities to be constructed, including water quantity requirements and minimum anticipated discharge from the water source. _____
- _____
- _____
- _____
- _____
6. Target species:
- pink _____ chum _____
- coho _____ sockeye _____
- chinook _____
7. Project purpose
- A. Perceived user need _____
- B. Addresses a particular management issue _____
- C. Efficient use of _____ hatchery _____
- D. Stock is at reduced production level _____
- E. Site specific habitat opportunity _____
- F. Other _____
8. Are evaluation mechanisms included in the proposal?
- A. Hydroacoustic surveys _____
- B. Smolt enumeration _____
- C. Mark and recapture; coded wire tagging _____
- D. Adult contribution, enumeration _____
- E. Other _____

II. PROJECT FEASIBILITY

1. Are enhancement methods proven or experimental? _____

Describe them: _____

2. What is the project's cost recovery requirement? _____

3. What is the project's brood stock requirement? _____

4. How will brood stock be acquired? _____

5. If it is necessary to culture new brood stock, how long will it take? _____

6. How will juveniles be imprinted at release site? _____

7. How will juveniles be transported if remote released? _____

8. Will the project require involvement or permits from agencies other than ADF&G? _____

What agency(s)? _____

9. If implemented, will the project result in a need to revise existing regulations? _____

Please explain: _____

III. LAND USE

1. Is project compatible with adjacent land use policies?

2. The landholder is? _____
3. Can the project be implemented without interfering with existing uses of the area? _____

4. Will the project fully utilize the site potential? _____

IV. MANAGEMENT

1. Can enhanced fish be harvested while protecting natural stocks? _____
How? _____

2. Will the project contribute to a fishery that is manageable in time and area for all users? _____
3. Can the project be managed for corporate brood and cost recovery escapement? _____
4. Can the harvest be managed to achieve high fish quality? _____
5. Where will cost recovery occur to support the project?

V. BIOLOGY

1. Will water utilized by the project reduce habitat for local fish stocks? _____

2. Does the project conform with state genetic policy?

3. Will the proposed project cause disease transmission to local fish stocks? _____

4. What are possible impacts of fry/smolt on marine and aquatic ecosystems? _____

5. How will returning adults impact marine, aquatic and terrestrial ecosystems? _____

6. What is the run timing of the broodstock? _____

7. How will run timing be maintained from one generation to another, i.e. egg take schedule? _____

VI. ALLOCATION

1. Is the project consistent with the allocation policy? _____

2. What user groups will benefit? _____

3. What is the magnitude of the benefit to each user group? _____

4. Is there a loss of harvest opportunity to existing users? _____

5. If so, what mitigation options are proposed? _____

6. Have the most probable harvest scenarios for fish produced by this project been considered? _____

Please describe them: _____

7. Is there publicly owned space to create or expand recreational harvest support facilities? _____

Please identify: _____

8. Can the project be implemented without conflicting with an existing commercial, recreational or subsistence fishery? _____

Please explain: _____

VII. COST

1. What is the cost of the project?
Start-up _____
Annual _____
2. How do you intend to fund implementation? _____

3. How do you intend to fund operational costs? _____

4. Will the project result in costs to other entities? _____
Who? _____

5. Is the project financially feasible? _____

VIII. COST/BENEFIT

1. Of the adult salmon returning to the project, what percentage will be contributed to the CPF (common property fishery)? _____
2. What ex-vessel price are you using to calculate your cost recovery? _____
3. How is the ex-vessel price expected to respond to the production? _____

4. What marketing strategies do you propose for the new production? _____

5. How is the quality of the proposed production expected to effect ex-vessel prices? _____

- _____
- _____
- _____
6. What are the fishery management costs associated with conducting an orderly fishery? _____
- _____
7. What are the hatchery harvest costs? _____
- _____
8. What are the costs associated with marking and evaluation studies? _____
- _____
9. What are the capital and operating costs of the program? _____
- _____
10. Other economic information: _____
- _____
- _____
- _____

REGULATIONS GOVERNING THE ALASKAN PRIVATE NON-PROFIT HATCHERY PROGRAM

By John McMullen, Special Projects Manager

Have you wondered how Alaska's non-profit salmon enhancement program originated, and what limitations are placed on the activities of organizations such as the Prince William Sound Aquaculture Corporation? If so, you should be interested in this summary of the pertinent regulations, and the precautions taken by the State of Alaska to ensure that proper planning precedes the approval of each and every salmon enhancement project in the state.

Alaska state law in 1974 authorized private ownership of salmon hatcheries by qualified non-profit corporations for the purpose of contributing, by artificial means, to the rehabilitation of the state's depleted and depressed salmon fisheries. The group of local commercial fishermen who formed the Prince William Sound Aquaculture Corporation (PWSAC) as a private non-profit corporation in 1974 immediately applied for and received a hatchery permit under this state statute.

In addition to state statutes, private aquaculture corporations in Alaska must comply with the requirements of permits, policies, and procedures of the **Alaska Department of Fish & Game**, which includes the **Alaska Board of Fisheries** and the **Regional Planning Team (RPT)**. The ADF&G Commercial Fisheries Division also manages the salmon which return to the hatcheries, including brood stocks.

The **Alaska Board of Fisheries** allocates wild and hatchery salmon stocks to user groups, including hatcheries. In February, 1991, the Board adopted a salmon management plan for Prince William Sound, which provides for the long-term balance of the seine and gill net fisheries.

The **Regional Planning Team (RPT)**, which is composed of ADF&G and PWSAC representatives, is responsible for the development of a regional comprehensive salmon plan which defines salmon production goals by species, area, and time. The management plan adopted by the Board of Fisheries provides for the implementation of this regional comprehensive plan.

The RPT also reviews applications for hatchery permits, and requests for alterations in the production at existing hatcheries; its recommendations are forwarded to the ADF&G Commissioner.

ADF&G FISHERIES POLICIES

Several policies guide the development and ADF&G approval of hatchery basic and annual management plans, hatchery permits, permit alterations, and fish transport permits. These include specific policies regarding genetics, fish disease, fish stocking and fish transport.

The **Genetics Policy** protects the genetic integrity of important wild stocks and increases productivity of enhancement programs through brood stock selection and defined egg-take procedures.

ADF&G's **Fish Disease Policy** is a series of regulations that prevent dissemination of infectious diseases within or outside the borders of Alaska through diagnosis of wild stocks intended for hatchery use, and through utilization of disease prevention and treatment measures in hatchery stocks. Alaska is a leader among states with its fish disease prevention and treatment program.

The **Fish Stocking Policy** protects wild stocks as a first consideration in managing enhancement programs.

The state's **Fish Transport Policy** prohibits possession, transport, or release of live fish into the waters of the state without a permit issued by the ADF&G Commissioner. The permit holder must be in compliance with the conditions of the permit.

HATCHERY PERMITTING PROCESS

A hatchery permit application is submitted to the analysis of the Department of Fish and Game, and reviewed by the Regional Planning Team. The RPT then makes a recommendation to the ADF&G Commissioner, who alone may grant the permit to build and operate a hatchery.

Management Feasibility Analysis of a Proposed Hatchery: The ADF&G staff determines the desirability and compatibility of the proposed production with existing fisheries, and may provide recommendations to assist hatchery permit applicants.

Review of Applications for Permits and Permit Alterations: The Department has the responsibility to assess the technical feasibility of the proposed operations. It also estimates the impacts of hatchery production on wild stock management.

The Regional Planning Team also has responsibilities. The RPT must determine the compatibility of proposed operations with the goals of the Regional Salmon Plan. Also, the RPT determines if the proposed operations provide protection for wild stocks.

In addition, the RPT must provide for public comment on the proposals, then forward its recommendations to the ADF&G Commissioner. The hatchery permit applicant, in collaboration with ADF&G staff, must then develop a basic management plan -- an overview plan for hatchery production and for the management of returning fish. The basic management plan is presented at a public hearing, which provides guidance for the Commissioner's decision to issue a hatchery permit.

HATCHERY OPERATIONS AND REVIEW

Once a hatchery is operational, it must submit an **annual management plan** to the Department of Fish and Game. The plan must describe the annual production goals of the facility, and contain a statement of the number of returning fish needed for brood stock and cost recovery.

The hatchery management plan is prepared jointly by ADF&G and the hatchery operator, and requires the approval of the ADF&G Commissioner.

A **hatchery permit alteration** is required for changes in planned production or release locations of hatchery fish. Approval is based on past performance of the hatchery, and compatibility of the change with wild stock protection and the fishery management program. Each hatchery permit alteration must be approved by the ADF&G Commissioner.

A **hatchery performance review** is a process in which the ADF&G reviews hatchery operations to ensure adequacy of all phases of hatchery production, ranging from brood stock development to hatchery contributions in the fisheries.

Standard performance measures for egg and fish survivals in hatcheries are used to evaluate adequacy of fish culture methods.

EVALUATION OF PWSAC ENHANCEMENT PROGRAM

PWSAC cooperates with ADF&G and the University of Alaska Fairbanks to evaluate, through fish tagging and oceanographic studies: (1) ocean survival of hatchery fish, (2) performance of hatchery fish in the fisheries, (3) interactions between wild and hatchery salmon, and (4) utilization of food sources available to juvenile salmon.

Program evaluation will be the subject of an article in a later edition of the Sound Quarterly.

Dick -- One possible thing to consider is amending the loan program language that says commerce may defer loan payment from 6 to 10 years, to say that loans may be deferred "up to 10 years." Could also add some intent to encourage Dept. to allow for the deferrments in the upper end of that range when necessary to encourage production of non-pink species. By dropping the six year minimum, the Dept. may be able to save money on loans that don't NEED that long to be in a position of ability to re-pay and thereby save the loan program money and reduce the amount of additional general funds needed every year to keep the program going.

Dave Massey or Martin Richards of Commerce Dept. Div. of Investments should be attending and could discuss the idea.

How about a moratorium on granting permits for increased pink production?

* Section 1. AS 16.10 is amended by adding a new section to read:

ARTICLE 9A. MANAGEMENT OF FISHERIES.

Sec. 16.10.621. MANAGEMENT OF WILD AND HATCHERY STOCKS OF ANADROMOUS FISH. (a) The Board of Fisheries shall manage fisheries in the state to achieve sustained yield for wild anadromous fish stocks.

(b) In managing hatchery produced anadromous fish stocks, the board shall consider the need of anadromous fish hatcheries to obtain brood stock. The board may manage fisheries in the state to achieve an adequate return of hatchery produced anadromous fish stocks to hatcheries for brood stock; however, management to achieve an adequate return to hatcheries for brood stock may not prevent achievement of sustained yield for wild anadromous fish stocks.

(c) The board may consider the need of hatcheries authorized under AS 16.10.400 to harvest and sell fish produced by the hatchery that are surplus to needs for brood stock to offset the cost of operating the hatchery. The board may exercise its authority under this title as it considers necessary to provide a reasonable return of surplus fish to a hatchery to offset the cost of operating the hatchery. The board may adopt criteria for determining the reasonable needs of hatcheries for surplus fish and may adopt a management plan to provide surplus fish to a hatchery.

Prince William Sound Aquaculture Corporation

P.O. Box 1110 Cordova, Alaska 99574-1110 Phone (907) 424-7511 FAX (907) 424-7514
#21 N St. #101B Anchorage, Alaska 99501-3285 Phone (907) 274-6066 FAX (907) 274-1959



January 14, 1992

Honorable Dick Eliason, President
Alaska State Senate
P.O. Box V
Juneau, Alaska 99811

Dear Senator Eliason:

Prince William Sound Aquaculture Corporation (PWSAC), and its program, was built on pink salmon production and sales. What began as a two-hatchery system expanded to five facilities as PWSAC accepted financial and management responsibilities for three state hatcheries, two of which were incapable of generating cost recovery revenue in 1991.

The total commercial catch of Alaskan salmon in 1991 was a record 185 million fish, of which about 130 million were pink salmon. The abundance of pinks in Prince William Sound revealed the frailty of PWSAC's procedure of inviting daily bids for cost recovery fish. Processors refused to buy pink salmon which were caught at or near hatcheries. Several million pink salmon were wasted.

The failure of the daily bid sales procedure prompted the PWSAC Board to accelerate its plans to seek new markets for its stable supply of salmon, and to facilitate the development of new salmon products. To accomplish these objectives, the Board authorized the pre-sale of hatchery revenue fish which will return in 1992. In addition, the Board authorized multiple year sales and risk-sharing ventures, with the provision that to the extent possible, traditional markets not be impacted.

Our sales team has met with representatives of about 30 seafood processors to present the sales and marketing information included in the enclosed brochure. In addition, we have solicited indications of interest from an additional 80 companies. Results are encouraging. In this year of continued oversupply of pink salmon, we believe we will be able to sell the 20 million pounds of cost recovery pink salmon we have available, although price remains a question.

Our sales and marketing program is an important step in achieving some diversification within the industry. We believe it is the right thing to do.

Thank you for your support of the Prince William Sound salmon program and the industry at large.

Sincerely,

John McMullen, President

TABLE. SOUTHEAST ALASKA STATE HATCHERY CONTRIBUTIONS OF SALMON TO COMMON PROPERTY FISHERIES. DATA ARE FROM FRED DIVISION ANNUAL REPORTS TO THE LEGISLATURE.

Species	Year	Commercial	Sport	% Sport
Chinook	1988	9,688	2,058	17.52%
	1989	8,261	2,829	25.51%
	1990	18,358	3,660	16.62%
	1991	25,878	6,069	19.00%
	Total	62,185	14,616	19.03%
Coho	1988	18,772	3,249	14.75%
	1989	38,392	9,936	20.56%
	1990	57,797	3,187	5.23%
	1991	108,412	4,689	4.15%
	Total	223,373	21,061	8.62%
Pink	1988	68,000	100	0.15%
	1989	299,800	4,000	1.32%
	1990	167,300	1,100	0.65%
	1991	467,600	4,000	0.85%
	Total	1,002,700	9,200	0.91%
Chum	1988	229,011	0	0.00%
	1989	33,160	0	0.00%
	1990	12,194	0	0.00%
	1991	53,362	0	0.00%
	Total	327,727	0	0.00%
Sockeye	1988	20,400	2,200	9.73%
	1989	36,672	0	0.00%
	1990	110,007	50	0.05%
	1991	96,836	200	0.21%
	Total	263,915	2,450	0.92%
TOTAL ALL SPECIES (88-91)		1,879,900	47,327	2.46%
YEARLY AVERAGE (88-91)		375,980	9,465	2.46%

TABLE . SOUTHEAST ALASKA PNP AND RAA HATCHERY CONTRIBUTIONS TO COMMON PROPERTY FISHERIES, AS REPORTED BY HATCHERY OPERATORS.

Species	Year	Seine	Gillnet	Troll	Comm All	Sport	% Sport
Chinook	1988	337	1,355	7,101	8,791	1,990	18.45
	1989	2,155	1,154	9,671	12,980	2,082	13.82
	1990	190	1,176	13,096	16,462	1,508	8.59
	1991	2,911	11,506	17,325	31,742	7,510	19.13
	Total	5,593	15,191	49,193	69,977	13,090	15.76
Coho	1988	6,760	10,130	13,607	30,497	1,282	4.03
	1989	2,829	5,258	33,260	41,347	1,951	4.51
	1990	28,228	45,625	212,545	286,398	8,248	2.80
	1991	44,025	144,898	283,264	472,187	34,329	6.78
	Total	81,842	205,911	542,676	830,429	45,810	5.23
Pink	1988	27,217	19,373	4,195	50,785	850	1.65
	1989	414,977	160,257	52,375	627,609	7,115	1.12
	1990	253,900	28,802	48,684	331,386	4,867	1.43
	1991	545,809	66,038	12,960	624,807	10,550	1.66
	Total	1,241,903	274,470	118,214	1,634,587	23,382	1.41
Chum	1988	463,520	266,702	14,008	744,230	340	0.03
	1989	259,436	163,745	30,573	453,754	2,690	0.59
	1990	296,090	74,208	25,571	395,869	5,332	1.33
	1991	669,750	153,279	452	823,481	5,800	0.70
	Total	1,688,796	657,934	70,604	2,417,334	14,162	0.58
Sockeye	1988	0	0	0	0	0	0.00
	1989	0	0	0	0	0	0.00
	1990	0	0	0	0	0	0.00
	1991	445	1,570	0	2,015	0	0.00
	Total	445	1,570	0	2,015	0	0.00
ALL SPECIES (88-91)		3,018,579	1,155,076	780,687	4,954,362	96,444	1.91

Hatcheries and the Future of Salmon in the Northwest

Ray Hilborn

ABSTRACT

Artificial propagation is often seen as a way to maintain and increase or augment fish stocks that have suffered from habitat loss and overexploitation. Large-scale hatchery programs for salmonids in the Pacific Northwest have largely failed to provide the anticipated benefits; rather than benefiting the salmon populations, these programs may pose the greatest single threat to the long-term maintenance of salmonids. Fisheries scientists, by promoting hatchery technology and giving hatchery tours, have misled the public into thinking that hatcheries are necessary and can truly compensate for habitat loss. I argue that hatchery programs that attempt to add additional fish to existing healthy wild stocks are ill advised and highly dangerous.

Below my office window at the University of Washington School of Fisheries, is our small salmon hatchery. Every fall thousands of school children come to see the chinook salmon, *Oncorhynchus tshawytscha*, and coho salmon, *O. kisutch*, return to their natal waters. Our graduate students show them the fish and demonstrate how eggs are taken, mixed with sperm, and magically the life cycle of salmon is renewed. These tours are the most significant public relations activity of our school, and through these tours most Seattle school children are brought into their most direct touch with a major part of the environmental heritage of the Northwest.

It was only after 3 years of seeing the annual cycle of school visits that I began to wonder if we were really doing the right thing. Hatchery tours are common throughout the Northwest, and I fear that the message they convey is that (1) salmon come from hatcheries, (2) habitat loss and pollution are so widespread that natural spawning fish are dying out or are extinct, and (3) the long-term survival of salmon depends upon hatchery technology. My daughter's fourth grade teacher was planning a field trip to a state-run hatchery for a tour. He was unaware that only 20 minutes away thousands of natural spawning fish can be found and easily seen in streams and that most of our rivers still support runs of

wild spawning salmon. He told me he thought that all of the habitat had been destroyed and there were no wild fish to see.

I believe that fisheries scientists share a collective responsibility for the public belief that the maintenance of salmon runs depends upon hatcheries. This belief is particularly pernicious because it inexorably leads to the acceptance of hatcheries as a mitigative measure for further habitat loss and dam construction. This view can be expressed as "If the wild stocks are doomed anyway, let's just build the hatcheries and get it over with." This belief is not just found among the general public; many professional fisheries scientists also believe that the future of salmonids is in hatcheries. They believe that resources that could go into habitat protection and restoration would be better spent on artificial propagation.

The fisheries community in general is not aware that artificial propagation in the Northwest has failed to live up to expectations and in many cases has been an abysmal failure. Nor is the public or the fisheries community aware that artificial propagation poses a substantial, and perhaps major, threat to the long-term viability of our salmon heritage. Bruce Brown (1982) details the plight of wild salmon in the Northwest, but in the last 10 years even more evidence has accumulated on the failure of hatchery programs and the

threat they pose to the wild stocks of salmonids.

Many believe that the future of fisheries lies with artificial propagation. Indeed, throughout the world most management agencies seem to be relying on some form of artificial propagation to "rebuild" fish stocks that are depleted due to poor fisheries management or poor habitat management. Artificial propagation has been proposed for such diverse species as her- ring, tuna, abalone, and giant clams—the list is nearly endless. Thus, the lessons we have learned with salmonids in our part of North America are of direct and important relevance around the world.

Are Hatcheries Sustainable?

Fisheries management should be a long-term proposition, and our responsibility is to assure that the fisheries resource will be maintained by our generation for the next generation. We need to assure that 20, and even 100 years from now there will still be salmon in our rivers. This means that the time horizon for fisheries scientists and managers must be much longer than the engineering horizon for dams on our rivers. Once the dams have been taken down, we must be sure we will still have fish to use the rivers. While this may seem far-fetched, removal of the Elwah Dams on the Olympic Peninsula and the Hetch Hetchy

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Dam in California are now being considered.

If hatcheries are to be used as mitigative measures we must ask not only do they work now, but will they continue to work, and will they permit the maintenance of natural runs? Unfortunately, most evidence suggests that while hatcheries may work initially, their success decreases after a few years. Figure 1 shows the trends in survival for two major hatchery programs—coho in Oregon and chinook in British Columbia. In each case, as the hatchery programs have developed the success of the hatcheries has decreased. The British Columbia chinook example is an extreme point. Although more hatcheries were built throughout the 1980s (by the middle of the decade there were 10 times more chinook smolts released than in the mid-1970s),

there were no more hatchery chinook being caught; indeed there were fewer! This pattern of declining survival of hatchery-reared fish is found in nearly every hatchery program in North America. The two examples shown in Figure 1 are the longest, most reliable time series available. The one large-scale hatchery program I have examined that does not show a clear declining trend is chinook salmon in the Columbia River. From the mid-1970s to the mid 1980s the survival rates for these stocks varied greatly, with high survival rates in the early 1980s. Given the short time span of the survival estimates and the high variability it is difficult to determine any long-term trend.

There is no well-accepted explanation for the declining survivals from hatcheries (Walters 1988); it may be

genetic changes, predator build up, disease accumulation, or a host of other potential problems. The cause doesn't matter as much as the conclusion—hatchery production may not be sustainable. To assume it will work for a century is a bold assumption indeed and one that puts the salmon resources of our children at great risk.

Impacts of Hatchery Fish on Wild Stocks

I believe we must rely on wild fish for the long-term maintenance of our salmon populations. Wild fish are our heritage and we must, in turn, pass this heritage on to our descendants. The concern for wild fish has mounted, with Nehlsen et al. (1991) listing over 100 stocks from the lower 48 states having a high risk of extinction. Artificial production poses a great threat to the maintenance of wild fish. This threat comes in at least four forms: direct competition for food and other resources between wild and artificial fish, predation of artificial fish on wild fish, genetic dilution of wild fish stocks by artificial fish allowed to spawn in rivers and streams, and increased fishing pressure on wild stocks due to artificial production (Goodman 1990).

There is ample evidence that salmonids compete for resources at most stages of their life history. Figure 2 shows the survival rate of sockeye salmon, *Oncorhynchus nerka*, from Babine Lake, a tributary of the Skeena River in British Columbia. The number of juvenile sockeye leaving Babine Lake was increased by providing artificial spawning channels. The more fish that left Babine Lake and swam down the Skeena River, the smaller the proportion of them that survived their ocean life. A major effect of this change is that the wild runs from the Skeena River have declined approximately 50% (West and Mason 1987). Presumably the other sockeye on the Skeena were affected by the competition that is so obvious in the Babine Lake data. Salmon compete for food and space in fresh water and in the ocean. We should expect that as we increase artificial production these fish will compete with wild fish, and the survival of wild fish will decrease—it is folly to assume otherwise.

Proponents of artificial propagation like to think of their hatcheries augmenting the wild stocks, particularly

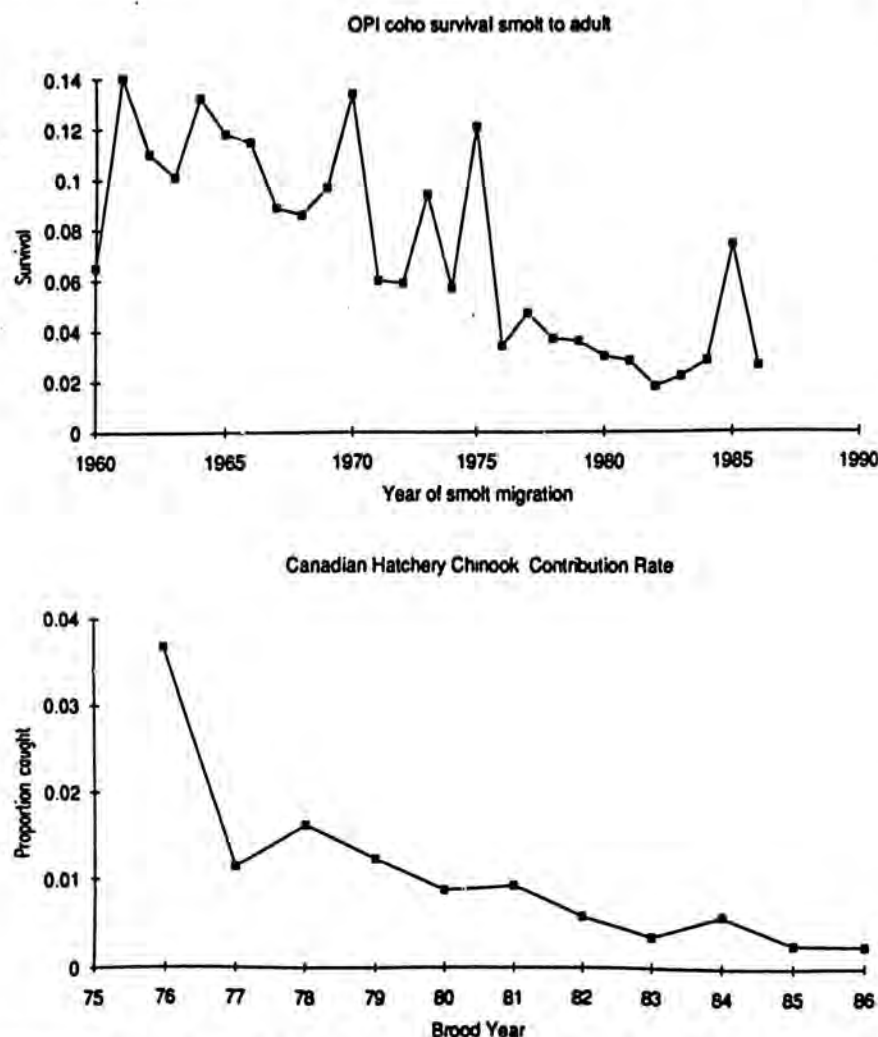


Figure 1. Survival trends in hatchery-produced coho in Oregon and hatchery chinook in British Columbia. Data for Oregon from Nickelson (1986) and Robert Francis (University of Washington, personal communication). Data for British Columbia chinook from P. J. Starr (Canadian Department of Fisheries and Oceans, personal communication).

by allowing surplus hatchery fish to spawn in the wild. These extra spawners, turned away from the hatchery, are hoped to add to the natural spawning population. Accumulating evidence suggests that hatchery fish often do poorly in the wild; the offspring of wild $\times$ hatchery matings do more poorly than wild $\times$ wild matings. Two mechanisms explain this. First, hatchery managers select for fish that do well in hatcheries, that is, fish that can hatch in plastic trays and learn to feed on a man-made diet. In the wild, fish must find mates, lay eggs in gravel, avoid predators, and find natural food. The requirements of a successful hatchery fish are very different from a successful wild fish; it should be no surprise that fish selected for by hatchery conditions may do poorly when they encounter the rigors of a real river. Second, hatchery practice in the past often involved taking fish from one watershed and using them in a hatchery elsewhere.

When hatcheries allow surplus fish to spawn in the wild, they are allowing all of the genes that have been brought in from elsewhere and have been selected for hatchery life to dilute the naturally adapted genes of the wild fish. The net result may be that after a few generations there are no more wild fish—we will, and indeed in many places we now do have, mongrel fish not well-adapted to any particular river. The great genetic diversity of the Northwest of 100 years ago is being lost at a horrifying rate, and hatcheries are accelerating this loss. Waples et al. (1990) review genetic concerns for salmonids.

When hatcheries have a poor return of adults they often capture wild fish to use as brood stock. This "creek robbing" would be a criminal offense if conducted by ordinary citizens and they would be called poachers. However, when conducted by hatchery staff it is somehow considered beneficial for the resource. There are documented instances where wild stocks have been almost totally eliminated by egg takes for hatcheries.

When hatcheries are successful at producing adult fish the potential harvest rate is very high; often 95% of the returning fish can be harvested because so few adults are needed for eggs. There is wide concern throughout the Northwest that we have allowed our

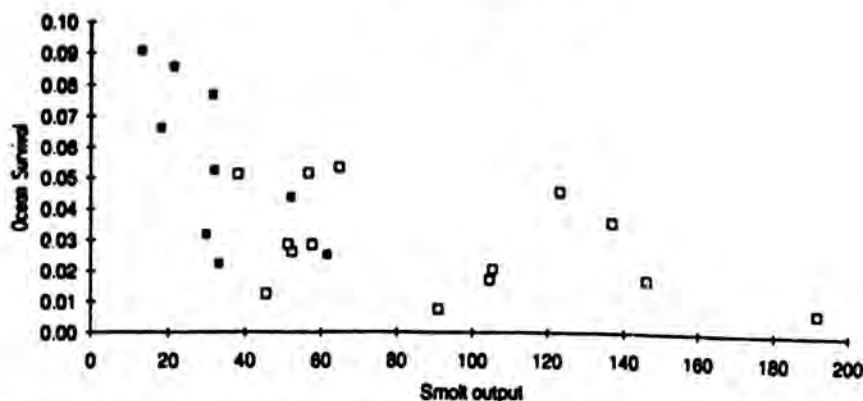


Figure 2. Survival trends of sockeye salmon from Babine Lake. As artificial production increased the total number of smolts leaving Babine Lake, the survival declined dramatically. Data from McDonald and Hume (1984).

fisheries harvest rates to match the potential productivity of hatchery stocks, causing wild stocks to be overfished. In some places this is striking. Parts of Puget Sound have been declared "hatchery management areas," and the harvest rates are so high that few wild fish make it back to spawn. Just north of Puget Sound, in Canadian waters between Vancouver Island and the mainland, harvest rates on coho salmon are as high as 95%; these are sustainable only by the most successful hatchery stocks. The net result of these high harvest rates is that as hatchery production has increased wild stocks have declined, and the Canadians have no more coho now than they did 15 years ago—but now many of their coho come from hatcheries (at great expense) instead of natural streams.

The Real Threat: the Technological Fix Syndrome

The real danger of hatcheries and other forms of artificial production is that they provide an excuse for habitat loss and poor fisheries management. If we believe in hatcheries, then we can allow the rivers to be dammed, silted, and destroyed. Just mitigate with a hatchery. Although it seems we should know better by now, the lessons haven't really sunk in. New hatcheries are still being built in Washington and Oregon. British Columbia and Alaska have both embarked on large-scale hatchery programs even though their catches from wild fish are now at or above historic highs.

Even more dangerous is the spread

of the technological fix syndrome. If hatcheries don't work now, we will try some other form of hatchery technology. The current new idea is "supplementation" in which eggs are incubated in a hatchery and then spread throughout a watershed to rear naturally. We don't know if supplementation will produce the desired increase in adults, but we can be confident that it will greatly alter the genetic structure of the wild stocks. The technological fix has spread beyond salmon hatcheries—now developers throughout the West Coast want to build "artificial" habitat to replace lost wetlands. This is where the fisheries community must accept its responsibility. We have been extremely eager to help in the design and testing of new technology; indeed, fisheries schools have been, in effect, salespersons of the technology.

Great Hatchery Successes

Whenever I speak out against the hatchery fetish, people ask about the great successes: trout in freshwater lakes, salmon in the Great Lakes, and the Japanese chum salmon hatcheries. Many of these programs are undoubtedly successful at narrow objectives. Introduction of exotic species or monoculture often works reasonably well. Rabbits did very well in Australia, starlings do well in North America. The widespread introduction of trout around the world has produced some valuable recreational fisheries. However, in most cases these introductions have replaced indigenous species by

new species, not boosted the production of an existing wild population.

Even with these great successes, we see echoes of our own concern here. Trout management is moving away from hatcheries and toward the nurturing of habitat for wild fish. This is documented by Ray White's (1989) article in *Trout*, "We're Going Wild: A 30-year Transition from Hatcheries to Habitat." In the Great Lakes, where introduced Pacific salmon generated a major recreational fishery, concern is mounting about declining hatchery survivals—they just don't know if their salmon fishery is sustainable. The highly successful chum fishery in northern Japan has produced large catches of chum salmon for Japanese fishers, but it is quite possible that Japanese chum have simply replaced the naturally-occurring mix of six species of salmon with a single species monoculture.

What Should Be Done

Is there a place for hatcheries? I really don't know. Certainly if all hatcheries were now closed, the catch of chinook and coho salmon in the Northwest would drop greatly. We could certainly expect some wild stock production to rebound, particularly if we devoted some of the resources that have gone for hatcheries to habitat protection and improvement. Closing all hatcheries now would certainly cause a lot of pain to recreational, subsistence, and commercial fishermen—but it might ensure the long-term survival of the fish and the fishermen who depend upon them.

On the Columbia River, where much of the habitat has been lost and the series of dams poses a severe barrier to downstream migration of juvenile salmon, most people believe that we must have hatcheries. I am not convinced. The most successful salmon stock on the Columbia is the wild spawning chinook of the Hanford Reach, the one free-flowing section of the main river. If we devoted all of the resources that now go into hatcheries on the Columbia to improving the downstream passage of fish, to reduc-

ing harvest, and to protecting habitat, we might be quite surprised what the natural spawning fish would do if given a chance.

I believe that we should declare a moratorium on building new hatcheries. The large pink salmon hatchery complex in Prince William Sound, and the potential sockeye hatcheries in British Columbia and Alaska seek to add hatchery production on top of very healthy wild stocks. There is no mitigative excuse for these facilities; they are the result of technology being sold by fisheries scientists to unwary fishers motivated by short-term greed. These programs should be terminated.

We have taken an enormous gamble with our children's heritage. Now we must find out what we are doing to the wild fish stocks, how to preserve and rebuild them. Goodman (1990) has proposed that hatcheries must have a federal license that is reviewed periodically. Hatcheries that don't produce adult fish and those that cause serious impacts on wild fish would be shut down. I believe this is an excellent proposal.

We need to make much better use of the hatcheries that we now have. In Washington and Oregon, where much habitat has been lost, there is little if any funding for research on methods of hatchery operation. Instead of building more hatcheries, we need to find out how to operate hatcheries to produce fish in the catch with as little an impact as possible on the wild stocks. Many hatchery managers still receive salary bonuses based on fish released from the hatchery, regardless of the survival of these releases or the impacts on wild stocks. This simply must be changed.

As I look out my window at another group of school children touring our hatchery I wonder what kind of salmon their children will see. Will their world be one of high technology, with genetically-engineered fish returning to computer-controlled hatcheries, or will we maintain and improve our wild streams? Will their classes visit streams instead of hatcheries? Instead of imi-

tating hatcheries by rearing fish in classrooms will the school children of the future adopt sections of streams for protection, know what wild spawning salmon need, and make sure they have it?

Alaska Acknowledgment

An earlier version of this paper appeared in *The Osprey*, a newsletter published by the Steelhead Committee of the Federation of Flyfishers.

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In salmon raising, man's a poor substitute for nature

By Dan Gallagher
The Associated Press

BOISE — While Idaho's once flourishing wild salmon runs sputter and die, salmon advocates say a multimillion-dollar hatchery system is producing little more than genetically inferior cannon fodder for dams.

In the spiral staircase of their DNA, wild salmon developed the genetic strength to migrate down the Columbia River system, then swim to southeastern Alaska before muscling back upstream to Idaho to spawn and die.

But eight hydroelectric dams built on the Columbia and Snake rivers in this century have wreaked havoc on the wild runs. And the millions of salmon produced at the region's federal and state hatcheries to help make up for the loss lack the natural heartiness to ensure their long-term survival.

"Darwin was onto something," said Ed Chaney, director of the Northwest Resource Information Center in Eagle.

"Over all those years, the salmon in the Columbia River Basin adapted to a wide variety of environments from the high desert in Nevada to the alpine country in the Sawtooths. They evolved to be as productive as you can get.

"Hatchery fish are raised in a controlled environment. Those 'hothouse fish' are re-

leased in a formidable environment and expected to perpetuate themselves. That's very unrealistic thinking."

The National Marine Fisheries Service designated the Snake River sockeye an endangered species in November. Last

Along with the wild fish, they must negotiate dam turbines, 345 miles of slack water reservoirs, predators and fishermen's nets to migrate to the Pacific Ocean. More than 95 percent don't make it back to Idaho waters.

gists are working to ensure enough wild fish remain to perpetuate the species.

The one wild female and three male sockeye that returned to Redfish Lake last summer produced about 1,000 fertilized eggs that are being kept at a hatchery in

les, but from a practical view you don't have a range of genetics to tap," said Bill Bakke, endangered species coordinator for Oregon Trout Unlimited. "Agriculture has shown that for a long time. They've saved wild seed for years. In fisheries, we've ignored that."

Bakke suggests a genetic data base to predict if the salmon strains are headed down a dead-end street.

The U.S. Army Corps of Engineers plans a test drawdown on Lower Snake River reservoirs this spring to gauge if the faster flow through the sluggish water will help more salmon smolts migrate downstream.

The corps, which financed some Idaho hatcheries to make up for salmon lost to its dams, now realizes wild fish are an integral part of the solution, said Sarah Wik, a biologist directing the agency's Columbia River mitigation efforts.

"We learned the hatcheries can't solve the problem," she said. "It's a big puzzle. You have to look at all the pieces. If you look at one piece and not the other, you can't solve it."

The corps has been investigating whether there are fall chinook nests, or redds, in Little Goose Reservoir on the Lower Snake that would be destroyed by the drawdown. So far, federal divers have been unable to prove they exist.

▲ Hatchery fish are raised in a controlled environment. Those 'hothouse fish' are released in a formidable environment and expected to perpetuate themselves. That's very unrealistic. . . .

— Ed Chaney, director of the Northwest Resource Information Center in Eagle, Idaho

summer only four sockeye returned to central Idaho's Redfish Lake to spawn.

A decision is expected this month on whether the fall and combined spring-summer chinook runs will get federal protection as threatened species.

About 500,000 wild chinook migrate from Idaho each year.

The Idaho Department of Fish and Game estimates 15 million spring and summer chinook could be produced at federal and state hatcheries in Idaho each year.

But with egg production limited by the number of migrating fish making it back to Idaho, only 6.1 million spring chinook and about 1 million summer chinook were released from Idaho hatcheries in 1991, said Dexter Pitman, anadromous fisheries chief for Fish and Game.

Pitman said Fish and Game intended to use a two-pronged approach, raising hatchery fish to maintain the sheer number of salmon in Idaho's rivers and streams while regularly infusing those populations with their wild counterparts to keep the gene pool vital.

"It's not a choice of only one working. They both have to work," he said.

But both have failed, and the Northwest is moving inexorably toward changing the way dams and reservoirs in the Columbia River Basin are run to help more wild salmon complete their lifetime's journey.

In fact, the Idaho Fish and Game Commission's new five-year migratory fish plan acknowledges that hatchery production is only treading water until migration to the sea becomes less deadly.

While those changes are debated, biolo-

Eagle and 1,000 more at a federal facility in Seattle.

Pitman hopes captive brood stock can be reintroduced to the wild as soon as possible, rather than keeping it in the hatchery for more generations until it is incapable of surviving the river.

But Chaney likens the project to attempts to save the California condor with captive breeding in cages.

He and others contend salmon recovery is a multifaceted problem that hatchery production alone stands no chance of solving.

"There's nothing wrong with hatchery fish. But they are more expensive and less productive. They are raised in an environment that is conducive to disease," he said.

"We're not saying get rid of the hatcher-

FRED Division Mission Statement

To sustain and enhance Alaskan fisheries through the development and application of technologies in supplemental production and natural stock rehabilitation.

FRED Division Roles

- Develop, implement, and evaluate technology for natural stock and habitat rehabilitation in lake, stream, and marine nearshore environments.
- Provide economic evaluation of the statewide fisheries rehabilitation, enhancement, and development aquaculture program.
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- Develop and maintain a computerized base of information on the fisheries rehabilitation, enhancement, and development program.
- Educate, inform, and involve the public in Alaska's fisheries rehabilitation, enhancement, and development program.

SMOLTS

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CARRIER ROUTE PRESORT 0104
SEN LYMAN HOFFMAN
AK ST SENATE, STATE CAPITOL
JUNEAU AK 99801

Coal Creek sockeye project moving toward spring stocking

Coal Creek, CIAA's newest sockeye enhancement project, is entering the final stages of preparation for the upcoming field season. Some minor paperwork needs to be

completed, but staff will soon begin constructing the net pens that will temporarily house over 90,000 sockeye smolt before they are released to Coal Creek, a tributary of

the Kaslof River.

The sockeye, which originated from Tustumena Lake broodstock, are now being held at the Trill Lakes Hatchery. Each fish

(Continued on Page 7)



CIAA Biologist Gary Fandrel takes flow measurements in a segment of Coal Creek

CIRPT reviews Port Graham Hatchery proposal

The Cook Inlet Regional Planning Team (CIRPT) held its first meeting since its summer recess on December 13, 1991. The members and the fifteen others in attendance briefly reviewed related events which had taken place since the last meeting and then considered a private non-profit application for a Pink Salmon Hatchery at Port Graham, the Susitna River Unit Plan and selection of the next watersheds to be worked on by the CIRPT.

The Port Graham Hatchery Corporation has submitted an application to the Alaska Department of Fish and Game to construct and operate a private non-profit pink salmon hatchery, which would at capacity production handle 110 million green eggs. The projected adult return from this capacity production would be approximately 3.53 million pink salmon.

In the application the applicant identifies what he expects "to accomplish by the operation of the proposed hatchery" in the following terms.

"The salmon cannery at

Port Graham had long been a mainstay of the economy in both Port Graham and English Bay. It was the principal employer of residents from both villages. During the last 10 years or so the salmon returns to the Port Graham/English Bay area have been decreasing. This made it more difficult to obtain sufficient quantities of salmon to run the cannery at a profit. The shock of the Exxon Valdez oil spill with its resultant restriction in the number of salmon that were harvested was enough to close the cannery. It has not been operated since.

"There was another problem with the Port Graham cannery. It produced, as the name implies, canned salmon. Unfortunately, the market for canned salmon is rapidly diminishing. To compete in today's market, the cannery will need to produce higher quality products.

"The loss of the cannery has caused a large amount of unemployment in both Port Graham and English Bay. Logging in

(Continued on Page 2)

Chelatna Lake data base increasing

Chelatna, located approximately 180 kilometers northwest of Anchorage, Alaska, has been the focus of CIAA enhancement efforts in the northern district of Cook Inlet since 1988. The lake lies at the base of the Alaska Range near Denali National Park where it forms the headwaters of Lake Creek, a tributary of the Yenena River and an important recreational waterway. It is also the largest of the 24 lakes within the Susitna River drainage system known to support sockeye salmon.

Interest in Chelatna Lake as a sockeye salmon rearing area really began in the 1930s and 1940s when the U.S. Fish & Wildlife Service completed several surveys to identify populations of spawning red salmon. Later, in the 1970s and early 1980s, sockeye escapement surveys were completed by the Alaska Department of Fish &

(Continued on Page 7)

CIAA Board seat up in election now underway

In the election now in progress one director will be elected to a three-year term on the Association's Board of Directors. Two Director/Alternate teams are contesting for the one at-large commercial fishermen's seat on the Board.

The two Director/Alternate teams are Eric Lindow/Ronald "Sid" Cox and David Blossom/Douglas M. Blossom.

The seat to be filled is currently occupied by the Director/Alternate teams of David Blossom/Douglas M. Blossom, who were elected in 1989.

Each of the two Director/Alternate teams completed a nominating procedure which required them to secure the signa-

(Continued on Page 6)



Erik Lindow



Ronald J. "Sid" Cox



David M. Blossom



Douglas M. Blossom

Paint River construction and Corps re-evaluation completed

On January 10 Colonel John W. Pierce, Alaska District Engineer for the U.S. Army Corps of Engineers, announced his decision in the reevaluation of CIAA's permit to build the Paint River fish ladder.

"I find that considerations of the overall public interest requires that I make a preliminary finding of no significant impact, and not revoke or suspend

the permit at this time. To ensure that I have the information necessary to determine whether the public interest dictates further modification, suspension, or revocation of the permit, I have initiated steps to modify the permit to add a special condition(s) which will ensure I receive the information essential to determine the additional future action I

must take.", Colonel Pierce said in his findings.

By allowing the permit to remain in force, the ladder can be declared operational, thereby expanding the Sanctuary and establishing the Refuge. This will provide additional protection to the bears, according to the Corps's Environmental

(Continued on Page 4)



Retired ADF&G engineer and CIAA's resident representative at the Paint River construction site finishes off a concrete sample for later testing at a laboratory in Soldotna

FROM THE EXECUTIVE DIRECTOR'S DESK:

Report to Cook Inlet Fishermen

Many Cook Inlet commercial fishermen support payment of the 2% salmon enhancement tax because they feel they probably owe something to, and, therefore, want to take good care of, the fishery which has provided for them over many years. Other fishermen express hope that spending the tax to produce more fish will lessen the intensity of the several long standing harvest allocation disputes. Still other fishermen prefer to look at the 2% salmon enhancement tax strictly as a financial investment like purchasing a new boat, playing the stock market or depositing money in a bank.

By annually investing part of the value of their catch in enhancement projects fishermen expect to be able to harvest fish which would otherwise not exist, thereby providing a substantial monetary return. In the remainder of this article I shall attempt to show how well the salmon enhancement tax investment performed in the 1991 season and offer a projection (sort of a prospectus) of future return on investment.

THE INVESTMENT

The 2% salmon enhancement tax was first collected in the 1981 season. As can be seen in Table 1, the amount collected each year has varied from about \$300,000 to about \$3,000,000. Tax revenues vary so wildly because of dramatic fluctuations in both the number of fish harvested and prices paid to fishermen from year to year. The average amount collected (if we include an estimate for the 1991 season) is about \$1,000,000. While the State makes no distinction between amounts collected from the Upper and Lower Inlet, I estimate that about 95% of the total (\$964,159) is derived from the Upper Inlet.

Table 1- COOK INLET SALMON ENHANCEMENT TAX COLLECTIONS

Season	Amount
1981	\$ 348,575
1982	715,122
1983	677,353
1984	348,028
1985	714,158
1986	934,410
1987	2,330,652
1988	2,516,857
1989	1,289,322
1990	971,466
1991 estimate	320,000
Average	\$1,014,904

THE 1991 ADULT RETURN

Not all CIAA projects are funded by salmon enhancement taxes. Tutka Hatchery (including Halibut Cove and Homer Spit Pink projects), Paint River and all Kachemak Bay-Kamishak Bay Sockeye stocking projects are supported by State and Federal grants or by Lower Inlet "cost recovery" harvest revenues. Table 2 shows only those CIAA tax supported projects to which adult fish returned in 1991. With the exception of Bear Lake coho, all of these projects were in the Upper Inlet.

Utilizing a variety of techniques I estimate that the

commercial harvest value for salmon returning to enhancement tax supported projects in 1991 was \$2,606,275; some 2.7 times the average amount of enhancement tax invested. This rate of return is comparable to 25.7% compounded quarterly over a 4 year period (the age of return of most of the fish harvested this year).

THE 1996 ADULT RETURN

By the 1996 season I would expect the value of tax supported harvests to grow to at least \$4,450,000 in the Upper Inlet and to about \$1,000,000 in the Lower Inlet (Table 3). Both harvest value figures will be much higher if salmon prices

improve from 1991 levels.

Any adult fish attempting to return to Eklutna Hatchery, Chelatna Lake and Habitat Project locations including Shell Creek, Trinity Creek, Threemile Creek, Blahop Creek and Daniels Lake must pass through the Northern District setnet, Central District setnet and drift gillnet fisheries. Adult fish returning to Packers Lake, Hidden Lake, Tustumena Lake, Coal Creek and Habitat Project locations including Blue Lake and Marten Lake must pass through the Central District setnet and drift gillnet fisheries.

Bear Lake and "Age 0" reds are harvested by seiners. Salmon are harvested by recreational fishermen; coho returning to Bear Lake are harvested exclusively by recreational fishermen.

TABLE 2- 1991 ADULT RETURN TO ENHANCEMENT TAX SUPPORTED PROJECTS

Project	Escape- ment	Sport Harvest	%Com Harv	Adult Return	Comm Harv	Avg. Weight	Price (\$)	Commercial Value
Eklutna Chum	4,604	674	85	38,027	30,749	7.0	0.35	\$75,336
Eklutna Coho	286	250	70	1,787	1,251	7.5	0.40	3,752
Packers Reds	44,879	0	69	142,781	97,902	4.5	1.10	484,616
Hidden Reds	35,576	72,060	50	215,272	107,636	4.4	1.10	520,958
Habitat Reds			75	200,000	150,000	5.0	1.10	825,000
Tustumena Reds			75	201,620	151,215	4.2	1.10	698,613
Upper Inlet Total				759,673	506,7531			Value \$2,603,275
				Chum	38,027			
				Coho	1,787			
Bear Lake Coho	7,716	3,000	0	10,716	0			

TABLE 3- 1996 ADULT RETURN TO ENHANCEMENT TAX SUPPORTED PROJECTS

Project	Smolts	Size (g)	Surv. (%)	Adult Return	Comm Harv	Avg. Weight	Price (\$)	Commercial Value
Eklutna Chum	7.7 M	5.1	1.00	77,000	65,450	7.0	0.35	\$160,353
Eklutna Reds	1 M	8.34	33.28	332,800	286,240	5.0	1.10	1,464,320
Eklutna Coho	50,000	19	10.00	5,000	3,500	7.5	0.40	10,500
Packers Reds	776,200	4.5	19.33	150,008	105,006	4.5	1.10	519,779
Hidden Reds	300,000	25.4	27.68	83,040	58,128	4.4	1.10	281,340
Chelatna Reds	360,000	4.9	21.20	76,320	53,424	7.2	1.10	423,118
Habitat Reds				200,000	150,000	5.0	1.10	825,000
Coal Creek Reds	100,000	4.73	20.37	20,370	15,278	4.2	1.10	70,582
Tustumena Reds				200,000	150,000	4.2	1.10	693,000
Upper Inlet Subtotal				1,062,538	798,0751			Value 4,447,991
				Chum	77,000			
				Coho	5,000			
Bear Lake Coho	90,000	20	7.00	6,300	0			
Bear Lake Reds	440,000	6.59	27.91	122,804	82,279	6.5	1.50	802,217
Age 0 Reds	75,000	14	39.63	29,723	19,914	6.5	1.50	194,162
Lower Inlet Subtotal				152,527	102,193			Value \$996,379

CIRPT... Continued From Page 1

the area has been able to take up some of the slack, but the opportunities are limited plus the logging is scheduled to be completed within 5 years. For the long term, the best opportunity for the village is to get back into fish processing. To achieve this there will need to be a reliable supply of high quality salmon for the processing plant. The solution is to develop a salmon hatchery in the village. This would provide a substan-

tial return directly to the processing plant and, since these fish would be harvested in the immediate vicinity of the plant, they would maintain their quality thus making it possible to produce higher quality products."

After several hours of discussion with a representative of the applicant, the CIRPT voted to forward the following recommendations to the Commissioner of the Alaska Department of Fish and

Game.

"In a regular meeting of the Cook Inlet Regional Planning Team (CIRPT) held on December 13, 1991 the above referenced application was considered by the Team for the purpose of formulating a recommendation to you.

"The CIRPT cannot recommend issuance of a simple permit signifying approval of this application as written. However, it can support issuance of

a permit with stipulations attached which would make the project acceptable.

"The Team discussed the project at length with a representative of the applicant and concluded the discussion by addressing each of the four criteria set out in 5 AAC 40.170.

Will the proposed hatchery make a contribution to the common property fishery? The CIRPT responded, "No".

"As the application

stands there is no way of assuring there will be an annual contribution to the common property fishery. This is true because of the unusual vertical integration of processing in the proposal. A stipulation attached to the permit requiring the hatchery to take no more than one third of the return thereby providing at least two thirds to the common property fishery would address this concern and make the project acceptable to the CIRPT.

able to the CIRPT.

"Several other points you may wish to consider were raised in the discussion related to assuring benefit to the common property fishery.

"There will be one or more life cycles, as the facility is building its broodstock to capacity, when there will not be fish excess to broodstock needs. Under these circumstances the one third limit on the returns avail-

(Continued on Page 7)

NOTE

SMOLTS attempts to make its readers aware of a variety of activities in the Cook Inlet drainage which have some bearing on the future of the salmon resources. This space is usually offered to someone outside the Cook Inlet Aquaculture Association who is involved with the salmon resource to present any message they feel is of significance to salmon users.

This article was prepared and submitted at the request of **SMOLTS** by Heather McCarty of the Prince William Sound Aquaculture Corporation.

The 1991 Prince William Sound pink salmon fishery could have been designed to confuse the public. Confronted with the image of 2.3 million pink salmon being deep-frozen, the public concludes that there are too many fish. Told that uncured pinks are rotting in front of the hatcheries, the public assumes that the hatchery system is making too many pinks. Informed that Governor Hickel, with Exxon money, is sending free fish to Russia, the public believes that the state has lost its ability to respond innovatively to changing world markets.

Was it too many fish, or not enough markets? Are Alaska's hatcheries making too many pinks, or is the processing industry continuing to put most of those pinks into products that the world doesn't want? Has the State — and the fishing industry — lost its head, or can we learn enough about the global fish market in time to save ourselves?

What happened in Prince William Sound in 1991? And what is being done to prevent it from happening in 1992 and beyond?

Anticipating a large pink salmon return both in Prince William Sound and statewide in 1991, Prince William Sound Aquaculture Corporation (PWSAC) began in November, 1990, to determine the intent of traditional processors for the upcoming season. PWSAC had already experienced a \$1.2 million revenue shortfall in 1990, caused by the lack of processor bidding for the cost recovery pinks at the peak of the season. And the projection was for 28 million to return in 1991 to the three PWSAC hatcheries that produce pinks.

Many on-shore processors told PWSAC in the fall of 1990 that they did not intend to process large numbers of PWSAC cost recovery pinks in 1991. PWSAC responded with a plan to sell up to 50% of the pinks pre-season, and with a request to the governor in December, 1990, that the process be initiated to permit entry of foreign processors into state waters to buy fish in 1991.

The state conducted a survey of domestic processing capacity, concluding in May, 1991, that capacity was adequate to process all of the projected salmon returns. Foreign processors were not to be allowed in state waters. Following the announcement in June that the two large Chugach Fisheries plants in Cordova would not operate in 1991, PWSAC and fishermen's groups asked for a review of the capacity survey. The results did not change, even though there 20 former Chugach fishermen without solid markets for

As the seine season began at the end of July, the pinks were late in returning to the Sound. Through the first week in August, PWSAC continued to maintain that all indicators backed up the eventual return of the projected 28 million hatchery fish, while ADF&G downgraded their prediction to 5 million and, later, upped it to 15 million. ADF&G continued to hold off on opening general seine

About ten days late, the pinks hit the Sound in large numbers; on August 10, 2 million pinks were harvested by the commercial fleet in 12 hours in the hatchery sub-districts only. On August 12, additional fishing areas were opened, 3.3 million fish were harvested in 12 hours, and PWSAC received no further daily bids for cost recovery fish.

In addition, many major processors began refusing to buy any fish caught close to the hatcheries, and three hatchery special harvest areas (SHA's) began to fill with pinks. The only fish PWSAC sold after August 12 were small numbers of pinks being taken by the four processors who had signed pre-season contracts with PWSAC. By August 19, all of those buyers had been released from their contracts, as old and new fish mingling in the SHA's produced a quality problem.

On August 13, the state declared a surplus of fish in PWS, but attempts to bring in additional domestic or foreign processors were fruitless. Meanwhile, in the commercial fishery, processors placed daily poundage limits on their fishermen, and many seiners on processor "B" lists were unable to sell fish at all. The fleets of some processors were able to deliver only six to eight days during the season.

To prevent hatchery operational problems, on August 19 PWSAC asked the state for help in clearing unsold common property pinks from the special harvest areas. The state agreed to fund a disposal operation administered by PWSAC, which discarded a total of 2.3 million fish in deep water. Governor Hickel, in a humanitarian gesture, arranged for the Exxon-funded canning of over a million pinks as a gift to the people of Russia.

PWSAC ended the 1991 season with an estimated

total pink return of 27 million — slightly fewer than the year before — a \$8 million revenue shortfall, and the resolution to effect positive changes before pinks returned again. The seiners of Prince William Sound ended their seasons, for the most part, with boat and insurance payments unpaid, a long winter ahead, and grim prospects for 1992.

Based on market research, PWSAC is acting on the conviction that there are not too many fish, but too few markets; not too many pinks produced, but too few consumers attracted by the products traditionally made from those pinks. PWSAC has developed a

The short-term goal, for 1992, is to sell 100% of the PWSAC cost recovery pinks before the season, to ensure that those fish are taken from the water and used. In addition, a number of the pinks will be used to help facilitate the development of new products, and begin the long process of marketing those products both domestically and overseas.

In the long-term, PWSAC will continue to support product and market development, in the belief that the pink salmon can and will be sold in convenient form: that appeal to the younger, health conscious consumer of the nineties.

PRE SEASON:

Concern about processing capacity, and the potential for Prince William Sound Aquaculture Corporation (PWSAC) to meet its cost recovery goal.

Nov.'90 Processors indicate intent not to process large numbers of PWSAC pinks.

ADF&G forecasts record pink return statewide

Dec.'90 PWSAC and fishing groups formally ask state to begin process of permitting foreign processors.

Jan.'91 PWSAC begins to contact foreign processors in anticipation of state's permission. Staff considers proposals for pre-season fish sales.

April PWSAC full Board, as special meeting, agrees to pre-season sales, at no less than grounds price plus Refrigerated Sea Water (RSW) and bonuses. Also agrees to front-end loading PWSAC harvest.

May Salmon Harvest Task Force (SHTF) agrees to front-end PWSAC harvest.

May

State determines domestic capacity adequate, denies requests for foreign processors.

June

Chugach Alaska Fisheries announces non-operation of Cordova canning plant in 1991. PWSAC, fishing groups, City of Cordova ask for review of state capacity survey results; results do not change.

EARLY SEASON:

PWSAC falls behind in cost recovery curve, maintains run late, single year anomaly. Contract buyers begin processing at hatcheries.

July 26

First pink salmon captured at Armin F. Koenig Hatchery (AFK), six days behind schedule.

July 28

First pinks sold at Wally Noerenberg Hatchery (WNH), high bid 15 cents, grounds price.



Cannery Creek Hatchery

July 28

Contract sale begins at AFK with Inlet Salmon, grounds price plus RSW, 15 cents advance.

July 29

Contract sale begins at WNH and Cannery Creek Hatchery (CCH) with Whitney and Deep Sea, same conditions.

Aug. 3

ADF&G announces PWSAC harvest 457,794, run 9% complete, indicating 5 million. (Continued on Page 5)

**CIAA
ANNUAL
MEETING**

**MARCH
28
1992**

**CIAA
BUILDING**

**PUBLIC
IS
WELCOME**

**We spawn success —
one fish at a time.**

Cook Inlet Aquaculture Association produced a return of 790 thousand adult salmon in 1991. More than 500 thousand of those were har-

vested by Cook Inlet fishermen who made over \$2.6 million from an investment of only \$1.5 million. That's what we call success. And it's only going to get better.



CIAA COOK INLET AQUACULTURE ASSOCIATION



(Above) The project as seen from upstream with Kamishak Bay in the background.
(Left) The completed Paint River Fish Ladder
(Below Left) The view inside the 160' channel through which fish will swim from the top of the ladder to the river. The top is grated to prevent bear entry.



Assessment. This will be accomplished by strengthening the management authority of the Alaska Department of Fish and Game and allowing the agency to complete its management plans. ADF&G has told the Corps that the plans will be completed by December 1992, and will specify threshold levels of impacts, how best to prevent impacts, and how to implement these protective procedures.

The proposed conditions to be added to the permit read as follows:

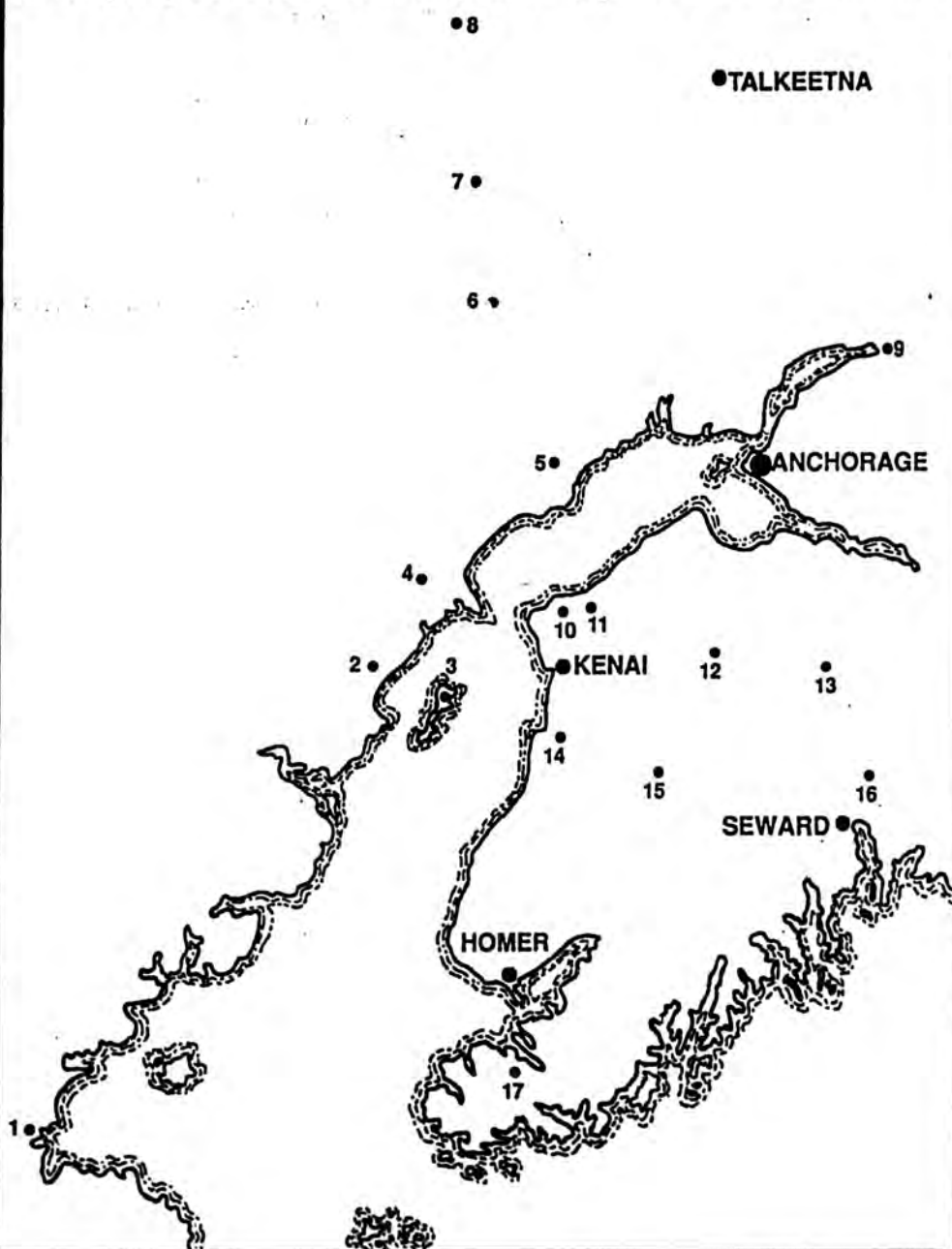
"That the permittee will meet with representatives of appropriate State and Federal agencies (e.g. State of Alaska - Department of Fish and Game and Department of Natural Resources and U.S. De-

partment of the Interior - U.S. Fish and Wildlife Service and the National Park Service) on an annual or emergency basis to determine the levels of impacts from salmon entering the Paint River on brown bear concentrations and behavior at the McNeil River State Game Sanctuary and Refuge and Katmai National Park and Preserve. Written reports, including a minority report if there is disagreement among the parties, will be submitted to the District Engineer for review to determine if future modification, suspension or revocation of the permit is warranted."

During the construction of the ladder, two related activities were proceeding; (1) a suit had been filed

(Continued on Page 7)

CIAA project sites mentioned in this issue of SMOLTS



1. Paint River
2. Blue Lake
3. Packers Lake
4. Marten Lake
5. Three Mile Creek

6. Trinity Creek
7. Shell Creek
8. Chelatina Lake
9. Eklutna Hatchery

10. Daniels Lake
11. Bishop Creek
12. Hidden Lake
13. Trail Lakes Hatchery

14. Coal Creek
15. Tustumena Lake
16. Bear Lake
17. Tutka Hatchery

COOK INLET INSIGHT

Continued From Page 3

lion return.

Aug. 15 CPF harvests record 4.37 M fish in 12

Aug. 3-8 PWSAC continues to maintain that the pinks are late, and that they will return at projected strength. Belief based on conditions at fry release, continued low female %, lateness of Valdez Fisheries Development Association (VFDA) return, and the VFDA run strength as forecast.

Aug. 4 Golden Age, fourth and final contract buyer, begins receiving fish at WNH.

Aug. 10 Common Property Fisheries (CPF) harvest 2 M fish in 12 hours, hatchery subdistricts only.

Aug. 11 SHTF convenes; ADF&G ups PWSAC projection to 15 M; PWSAC maintains 28 M.

ADF&G announces opening additional fishing area in SW District.

PEAK WEEK OF PWSAC RETURN

Processors plugged; Special Harvest Areas fill. PWSAC offers all fish at grounds price; contract sales stop.

Aug. 12 CPF harvests 3.3 M fish in 12 hours.

Aug. 12 PWSAC receives no daily bids for fish, and receives no further daily bids after this date.

PWSAC begins offering fish at grounds price instead of on daily bid basis.

Aug. 12 PWSAC begins (continues) search for additional foreign and domestic processors.

Aug. 13 PWSAC puts out 1 M fish for bid; no takers; fish begin to build in SHA's.

Aug. 13 State announces surplus of pinks in Prince William Sound.

Aug. 14 CPF harvest 1.8 M fish in 12 hours, hatchery subdistricts.

Aug. 14 Processors place poundage limits, suspend continuous buying, remove fleets from Special Harvest Areas (SHA's).

Aug. 14 ADF&G opens hatchery SHA's for CPF.

Aug. 15 Inlet ceases buying, quality issue.

Armin F. Koernig Hatchery hours

Aug. 16 Continuous CPF in hatchery subdistricts and SHA's, alternate-day openers in additional SW District areas.

Aug. 16 All PWSAC attempts to bring in additional processors unsuccessful.

Aug. 16 Golden Age and Deep Sea move to AFK.

Aug. 17 Deep Sea ceases buying, quality issue.

Aug. 18 Whitney Foods moves to AFK.

Aug. 19 Whitney, Golden Age cease buying, quality issue.

LATE SEASON:

SHA's must be cleared of unsold fish; disposal, processing of unsold pinks begin.

Aug. 19 PWSAC requests cooperative effort with state for clearing unsold common property pinks from SHA's, to prevent hatchery operational problems.

Aug. 20 ADF&G Commissioner Rosier sends letter of non-objection, state agrees to fund tenders for disposal up to \$150,000, EPA permits fish dumping. PWSAC administers catching, tendering and discharge of fish.

Governor Hickel activates plan to proportion of unsold pinks for humanitarian distribution in Soviet Union. (Exxon later

agrees to fund the processing and tender costs up to \$2 million.)

Aug. 22 Disposal begins at AFK

Aug. 23 Disposal begins at Noerenberg and Cannery Creek; harvest for Soviet project begins at AFK and WNH.

Aug. 24 Disposal and Soviet harvest end at AFK: 284,000 pinks discarded, 107,000 pinks processed by Cook Inlet Processing for Soviets.



Wally Noerenberg Hatchery

Aug. 26 Disposal ends at Cannery Creek: 693,000 pinks discarded.

Disposal temporarily suspended at WNH.

Aug. 30 Harvest for Soviets ends at WNH: 1.03 million pinks processed at North Pacific Processing (NPP) in Cordova, 267,000 pinks processed at Cook Inlet Processing.

Aug. 31 PWSAC gives 164,000 pinks from WNH to Western Alaska for experimental surimi project.

Sept. 3 Pinks continuing to enter SHA at Noerenberg; disposal resumed.

Sept. 3-13 Three shipments of pinks totaling 24,000 fish given away by charities in Anchorage and Fairbanks; donated labor and equipment for catching, delivering, transporting.

Sept. 13 Pink disposal ends at WNH: 1.65 million fish discarded.

CIAA BOARD ELECTION SCHEDULE

The schedule for the eighth at-large election appears below and is repeated in the "Important Dates" column on page 8.

Week of December 9 Nominating petitions will be mailed to all permit holders.

January 17 Deadline for postmarking completed nominating petitions.

January 24 Deadline for hand delivering completed nominating petitions to the CIAA office (5:00 p.m.)

February 7 Mail election ballots to all permit holders.

March 6 Deadline for postmarking ballots to be counted.

March 13 Deadline for hand delivering ballots to CIAA office (5:00 p.m.)

March 15 CIAA staff validates and counts ballots. The candidates are notified of election results

March 28 The newly elected director is seated at the Annual Meeting.



An investment with a high return.

Cook Inlet Aquaculture Association is investing in the future by continuing to bring Cook Inlet hatchery projects to maturity — projects like Coal Creek,

Chelatna Lake and Eklutna. As a result, Cook Inlet fishermen will make in excess of \$20 million over the next five years harvesting CIAA produced salmon. That's a return that benefits everyone.



COOK INLET AQUACULTURE ASSOCIATION

tures of twenty (20) Cook Inlet limited entry salmon permit holders. Those signatures were verified, and ballots will be mailed to all Cook Inlet limited entry

salmon permit holders on February 7, 1992.

There are two deadline dates for returning completed ballots. If the ballot is to be mailed back to

CIAA, it must be postmarked by March 6, 1992. If the ballot is to be hand-delivered, it must be at the CIAA office by 5:00 p.m. on March 13, 1992.

Ballots will be counted on March 18, 1992; and the candidates will be notified of the results on the same day.

The newly elected Di-

rector/Alternate team will be seated at CIAA's Annual Meeting on March 28, 1992.

All of the significant dates for this election pro-

cess can also be found in the column "Important Dates" on page 8 of this issue of SMOLTS.

DAVID M. BLOSSOM - DIRECTOR CANDIDATE

Mr. Blossom is a married Kaslof resident and has been involved in the east set net fishery his entire life. He has been a salmon seiner in Lower Cook Inlet for thirteen years and is a halibut fisherman. He is a herring seiner and a herring gill netter. He has four years' experience seining herring in Prince William Sound and in Togiak.

He is a current CIAA Board member having been elected at large in 1989. He is also a Board member of the Cook Inlet Fishermen's Fund, The Kenai Peninsula Fishermen's Association and a member of the Cook Inlet Seiners Association and the United Fishermen of Alaska.

His other experience includes a family history of over forty years of Cook Inlet fishing with most gear types for most species. He was a class officer for four

years in high school, chairman of the Physical Education Club at Central Washington University and is currently a basketball coach.

In response to a question about what he hopes to achieve and contribute as a member of the CIAA Board Mr. Blossom said, "Commercial and sport fishermen have enjoyed good or record years of fishing in the 1980's. Through our efforts in aquaculture I feel we can maintain these fisheries we already have and through our hatcheries and enhancement work we can develop other systems to their full potential. I would like to see our fisheries resources be here not only for my future but also for my children's future as well. This can be achieved through aquaculture. I feel that I represent all user groups as a Director on CIAA and not just the group from which permit I fish."

DOUGLAS M. BLOSSOM - CANDIDATE ALTERNATE

Mr. Blossom his wife and children are Clam Gulch residents and he has been involved with the east side set net fishery for his entire life. In addition he has thirteen years of experience salmon and herring seining and fifteen years of halibut fishing experience.

He is a member of the Kenai Peninsula Fishermen's Association and the United Fishermen of Alaska.

In response to a question about what he hopes to achieve and contribute as a member of the CIAA Board Mr. Blossom said, "I have lived in the area and have been raised around fishing all of my life and plan to stay fishing and raise my children in the fishing industries. I want to help keep all the current enhancement programs going and help develop new programs that will make more fish for everyone and, therefore, benefit all the fishermen."



David M. Blossom



Douglas M. Blossom



Erik Lindow



Ronald J. (Sid) Cox

ERIK LINDOW - CANDIDATE DIRECTOR

Mr. Lindow, his wife and three children are Kenai/Soldotna area residents; and he has thirteen years of fishing experience. He served one year as a deckhand and has fished his own drift gill net permit for the past twelve years. He has also longlined for halibut for the past six years.

He is a member of the United Cook Inlet Drift Association and the United Fishermen of Alaska.

Mr. Lindow is a journeyman plumber/pipfitter, holds a Coast Guard license as an operator of an uninspected passenger vessel (OUPV or "six-pack" license) and is a member of the Kenai/Soldotna Fish and Game Advisory Committee.

In response to a question about what he hopes to achieve and contribute as a member of the CIAA Board Mr. Lindow said, "As a lifelong Alaskan I believe that this state can provide rewarding lives for its residents and that those lives can be enhanced by increased opportunities for all. I feel CIAA is working to make life better for all, and I would like to be part of it."

RONALD J. (SID) COX - CANDIDATE ALTERNATE

Mr. Cox, his wife and four sons are Clam Gulch residents; and he has a total of eighteen years of fishing experience. He fished set net gear for seven years and has been fishing drift gill net gear for the last fourteen years, the last seven of those under his own permit. He

also fishes for halibut herring and crab.

He is a member of the United Cook Inlet Drift Association and the United Fishermen of Alaska.

His other experience includes two years as an ADF&G FRED Division employee, four years as a cannery worker and five years of college.

In response to a question about what he hopes to achieve and contribute as a member of the CIAA Board Mr. Cox said, "Cook Inlet is a complex drainage with multiple river systems, mixed stocks and varied user groups. The CIAA Board needs people with both the interest and the time to insure fair and intelligent use of the resources available to CIAA to maintain and promote a stable fishery for all parties concerned. I would like to be one of those people."

Trail Lakes Hatchery reports production status

The 1991-1992 production cycle at the Trail Lakes Hatchery is progressing as planned. Over 13 million sockeye salmon eggs were collected from the five brood sources during the 1991 field season. Most of the stocks have completed hatching and will be ponded in the next month or two. If all continues well with the incubation and rearing procedures, approximately 10 million fry will be stocked into Cook Inlet lakes next spring.

Commenting on the production, Assistant Hatchery Manager Robert Blankenship said, "Many of the projects are now maturing; that is they have been done for enough years that we can be reasonably sure there will be adequate broodstock

available each year. This removes a very significant variable from each year's efforts."

The winter months at the hatchery are very busy according to fish culturist Tom Prochazka. "We've already coded wire tagged (CWT) our coho smolts for Bear Lake and the sockeye salmon smolts for Coal Creek. We are presently marking 50,000 of our 800,000 age zero sockeyes destined for release into the Bear Lake/Bear Creek system and will be doing coho fingerling next month."

Another major effort has gone into the thermal marking (otolith banding) program. The staff is finishing cataloging the 1991 marks and getting the information entered into ADF&G's data base. As a

double check the otoliths are also being processed by the Washington Department of Fisheries.

The staff has also sampled and examined the fish marked this winter, and the marks look good. The fish will be resampled prior to release. Another project this spring will be to collect outmigrating smolts from the camps to determine the relative percentages of wild and enhanced smolts.

During December the Seward/Moose Pass area was hit with severe snow storms causing major electrical damage and power outages. The hatchery switched to standby power over 40 times.

CURRENT PRODUCTION STATUS AT TRAIL LAKES HATCHERY

BROODSTOCK	SITE FOR RELEASE	EYED EGGS	SMOLTS
Sockeye salmon			
Hidden Lake	Hidden Lake	2,100,000	
Packers Lake	Packers Lake	3,200,000	
Chelatna Lake	Chelatna Lake	1,350,000	
Upper Russian Lake	Bear Lake	980,000	
Big River Lakes	Bear Lake	1,780,000*	
Tustumena Lake	Coal Creek		90,000
Coho salmon			
Bear Lake	Bear Lake	590,000	75,000
Totals		10,000,000	165,000

* = 600,000 of these sockeye salmon are on an accelerated age growth program

Game.

These early observations suggested Chelatna Lake had the potential to produce large numbers of fish. As many as 100,000 fish were reported in the lake in 1949. However, more recent estimates of escapement were much lower and varied considerably. They have ranged from 0 in 1974, 1978 and 1979 to 23,180 in 1982.

Initially low nutrient levels were thought to be the cause of the poor sockeye production and CIAA, in cooperation with the ADF&G, began an investigation of the nutrient levels. These early studies soon lead to the conclusion that nutrient levels were not the cause of the low sockeye population, but lack of broodstock was. Additional studies based on euphotic volume measurements, i.e. the depth light penetrates in the lake, also suggested that Chelatna Lake could potentially produce more than 300,000 adult sockeye.

The goal of the Chelatna Lake Sockeye Salmon Enhancement Project is to rebuild sockeye salmon broodstock and increase production to levels that approximate the lake's potential.

CIAA began its current

enhancement effort in 1988 by monitoring adult escapement. Escapement monitoring has continued along with the addition of smolt out-migration monitoring and egg collection. The eggs are reared at the Association's Trail Lakes Hatchery and returned to Chelatna Lake as fry. CIAA collects 2 million eggs annually, but hopes to increase this number as more adult fish become available. Eventually, as the number of broodstock returning to the lake increase, egg collection and annual stocking may not be necessary.

CIAA will continue its enhancement efforts in 1992. The number of smolt migrating from the lake should be greater as hatchery reared fish begin to enter the population. The number of adults returning to the lake, however, is expected to be down from the escapements observed in 1990 and 1991. The 1992 escapement will likely approximate the level observed in 1989. As CIAA gains more experience with Chelatna Lake and the enhancement effort matures, the number of fish migrating from and returning to the Lake will increase and approximate historic levels.

Table 1. Chelatna Lake smolt out-migrations, 1989 - 1991

Year	Number	95% CI	Trap Efficiency
1989	36,914	± 9 086	4.13%
1990	375,216	± 81 409	4.83%
1991	262,287	± 153 990	0.903%

'9,102 hatchery fish.

Table 2. Adult Escapement at Chelatna Lake

Date	Estimated Number	Remarks
1988	217	Observation tower count turbid water
1989	3,725	Mark/recapture estimate
1990	5,283	Mark/recapture estimate
1991	7,689	Mark/recapture estimate

Coal Creek... Continued From Page 1

has been marked with an adipose fin clip and is carrying a coded wire tag inserted in its jaw. In addition, a small ear bone called an otolith has been marked by altering the temperature of the rearing water according to a fixed pattern. These marks will make Coal Creek fish recognizable for management of the fishery and project evaluation.

According to Jeff Hetrick, Trail Lakes Hatchery manager, the fish are currently averaging 8 grams in weight and are projected to reach 14 grams by May when they will be transferred to Coal Creek. All fish look very healthy and are expected to do well when released.

Once at Coal Creek the smolt will be held in net pens for two to four weeks to acclimate to the creek water. The smolt will then be released and, if all goes as planned, over 18,000 will return to Cook Inlet as adults in 1994.

Final corrections to the state and federal permits and a lease agreement with the landowner to secure access to the project site are expected to be completed soon. As these steps are completed attention will focus on the final preparations necessary. Net pens will be built and a seasonal camp established at the project site.

able to the facility may not be practical.

"It is conceivable the facility could substantially stretch the intent of "non-profit" in years when one third of the production would generate revenues considerably in excess of the money needed for operation. However, there was recognition that a legitimate item in an annual budget could be a contingency or "rainy day" account by which one could build up an appropriate surplus for those years when the one third harvest would not cover costs.

"Participants in the discussion were uneasy with some of the implications the hatchery's identified role in direct support of the operation of a processing facility. If a method existed or could be developed to provide some type of annual independent fiscal review of the Port Graham Hatchery and the method included some level of control, it would address that uneasiness.

Are there provisions to protect the naturally occurring stocks from any adverse effects originating from the proposed hatchery? Once again the CIRPT responded, "No".

"Concerns were expressed for stocks originating outside of Port Graham which might interact with or compete with stocks from the proposed hatchery. However, the primary interest was in the stock native to the Port Graham River, which will serve as the broodstock for the hatchery. These fish will pass through the Special Harvest Area for the proposed hatchery and will, inevitably, be harvested in that area. While a naturally spawning escapement can be provided through management, that escapement will shortly be made up of hatchery descendants and will differ to some degree from the stock which is now there. Although the Team could not attach a level of significance to this change, it felt the change should be recognized.

Is the proposed hatchery compatible with the goals and objectives of the comprehensive salmon plan for the region? The CIRPT responded, "Yes".

"The goals and objectives of the Cook Inlet Regional Salmon Enhancement Plan 1981-2000 were sufficiently broad to include a project such as the proposed hatchery, and there were no provisions in that Plan which would preclude its implementation. However, the Cook Inlet Regional Planning Team is developing "Phase II" salmon plans

(Continued on Page 8)

against the Corps of Engineers and the Economic Development Administration for permitting and funding the project, and (2) the Corps of Engineers initiated a reevaluation of the permit which they had issued for the project in 1988.

As has been previously reported after CIAA had let the contract to build the ladder, a suit was filed against start up of the project citing potential harm to the bears which feed at the McNeil River State Game Sanctuary and procedural errors on the part of the Corps of Engineers and the Economic Development Administration in issuing a permit and awarding a grant, respectively. Those filing the suit (plaintiffs) were the Friends of McNeil River (FOMR), the Wilderness Society, the National Wildlife Federation, the Alaska Chapter of the Sierra Club and the Wildlife Alliance. That suit remains in place.

Operating on instructions from the District Court the Corps of Engineers opened a reevaluation of the permit they had granted to CIAA in 1988. In this process they advertised the project in the Federal Register and again made a mailing to the individuals and organizations on their lists. The comment period ended on August 31, and over 260 comment letters were received. Colonel Pierce's announcement is the culmination of this process.

RETURNS

LETTERS To Smolts

BIRD TREATMENT AND LEARNING CENTER
PO BOX 230496
ANCHORAGE, ALASKA 99523

October 20, 1991

Dear Sir,

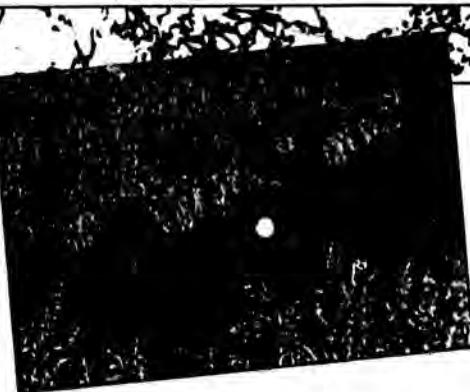
On behalf of the Bird Treatment and Learning Center I would like to express our thanks to the Cook Inlet Aquaculture Association for the donation of salmon for our bald eagles. As a non-profit we are always grateful for donations, but this one seems especially appropriate since it is a good use of the resource. We are aware that these fish become waste if a good use can not be found, so we are happy to provide a place for the fish to be used. It is so important that the bald eagles get quality fish for the long winter. If they were in the wild, they for sure would not dine on this quality of food consistently. We feel, however, that in order to maintain their good health it is imperative that a quality product be fed.

Throughout the year many birds will come through the center. Those who can be brought back to 100% are released. These birds along with our resident non-releasables are helped to a great degree by the quality of the food we provide. Given all we can do and the right medicines or procedures the finish to the job is their ability to rest and rehabilitate. This process is greatly enhanced by providing quality food for them to heal with.

In addition to the thank you for the fish we would like to send special thanks to Jeff Hetrick of the Trail Lakes Hatchery for all of his help and assistance. He is a very special friend to Bird TLC. Many are grateful to him for all of his efforts.

In closing I would like to extend to you a tour of the Flight Center any time you come to town. It is an experience to "walk with the eagles".

Thank you,
Linda D. Simmons
Bird TLC Executive Director



We can't allow this bank to fail.

We believe in putting money in the bank — because healthy river banks are key to healthy salmon spawning grounds and rearing areas. We're work-

ing to protect future salmon runs, and the future harvest of Cook Inlet fishermen, by investing time and resources in protecting habitat. Habitat protection — an investment that pays.



COOK INLET AQUACULTURE ASSOCIATION

IMPORTANT DATES

February 7	(Friday) Election ballots for the at large election of a director will be mailed to all permit holders.
February 15	(Saturday) Soldotna - 10 a.m. at the CIAA Building - Monthly meeting of the Cook Inlet Aquaculture Association's Board of Directors.
March 6	(Friday) Deadline for postmarking valid ballots for the election of an at large director.
March 13	(Friday) Deadline for hand-delivering valid ballots for the election of an at large director to the CIAA office (5:00 p.m.)
March 18	(Monday) CIAA staff validated and counts ballots in the election of an at large director. The candidates are notified of the election results.
March 28	(Saturday) Soldotna - 10 a.m. at the CIAA Building - Annual meeting of the Cook Inlet Aquaculture Association's Board of Directors. The newly elected at large director is seated at the Annual Meeting.
April 18	(Saturday) Soldotna - 10 a.m. at the CIAA Building - Monthly meeting of the Cook Inlet Aquaculture Association's Board of Directors.
May 16	(Saturday) Soldotna - 10 a.m., at the CIAA Building - Monthly meeting of the Cook Inlet Aquaculture Association's Board of Directors.
June 20	(Saturday) Soldotna - 10 a.m. at the CIAA Building - Monthly meeting of the Cook Inlet Aquaculture Association's Board of Directors.

Eklutna Hatchery reports good results

"The incubation and hatching phases of our annual production have gone very well this year," reported CIAA's Eklutna Hatchery Manager Loran Waldron. "Of the 4.0 million green chum salmon eggs we collected in the fall approximately 90 percent (3,600,000) survived to hatch."

All of the chum salmon fry will be placed in raceways ("ponded") in about one month. They will be fed and rear in these raceways until their release in May.

Waldron went on to say, "The survival rate percentage for the 100,000 coho salmon eggs we took appears to be in the mid-90's; and they, too, are doing very well."

Tutka Hatchery

CIAA's Tutka Hatchery Manager Dave Walte reported, "We expect approximately 33 million pink salmon fry to result from this year's cycle of incubation and hatching, and that will mean that our survival rates at each stage of development were good."

About May 1 the staff will move these fish into the 12 foot-by-12 foot net pens in the lagoon for additional rearing prior to their

Walte said, "The incubation and hatching stages were successful despite the potential threat posed by heavy snows and accompanying power outages, the longest of which lasted four days. The heavy snow loads (4.5' or more) required us to be aware of how the structures were handling the burden and move when necessary to clear roofs and floats which were nearing their capacities."

1990 CATCH SUMMARY

COMMERCIAL CATCH

	1990	NUMBER OF YEARS WITH CATCH HIGHER THAN 1990	RECORD CATCH	(Regional Plan Base Averages) 10-YEAR ANNUAL AVERAGE CATCH (1971-1980)	ANNUAL AVERAGE CATCH 5 EVEN YEARS (1972, 1974, 1976, 1978, 1980)
KING	17,665	30 Plus	187,513 (1951)	12,636	13,277
SOCKEYE	3,807,959	8	9,749,020 (1987)	1,282,931	1,521,043
COHO	509,728	8	824,103 (1982)	193,258	204,725
PINK	987,300	30 Plus	4,980,030 (1982)	1,472,494	1,488,549
CHUM	358,148	30 Plus	1,826,843 (1982)	723,639	548,927
TOTAL	5,680,800	12	11,072,997 (1987)	3,684,954	3,756,519

SPORT CATCH

	1990	HIGHEST CATCH OF THE LAST 14 YEARS	(Regional Plan Base Average) 4-YEAR ANNUAL AVERAGE CATCH 1977-1980	ANNUAL AVERAGE CATCH 2 EVEN YEARS (1978 and 1980)
KING	58,784	90,691 (1988)	19,181	17,331
SOCKEYE	197,854	443,043 (1987)	88,075	99,103
COHO	180,731	177,172 (1988)	69,302	86,631
PINK	52,230	105,595 (1980)	70,555	105,521
CHUM	4,018	19,566 (1988)	8,172	12,287
TOTAL	473,617	670,887 (1987)	253,285	320,873

NON-SPORT/NON-COMMERCIAL CATCH (SUBSISTENCE/NON-COMMERCIAL SET NET/DIP NET)

	1990	HIGHEST CATCH OF THE LAST 19 YEARS	(Regional Plan Base Averages) 10-YEAR ANNUAL AVERAGE CATCH (1971-1980)	ANNUAL AVERAGE CATCH 5 EVEN YEARS (1972, 1974, 1976, 1978, 1980)
KING	1,203	3,123 (1983)	252	466
SOCKEYE	21,574	61,096 (1989)	1,241	1,136
COHO	3,956	16,084 (1985)	3,182	3,473
PINK	885	8,333 (1980)	1,238	1,656
CHUM	389	517 (1980)	150	163
TOTAL	28,007	68,861 (1989)	5,968	6,893

COMBINED CATCH

	KING	SOCKEYE	COHO	PINK	CHUM	TOTAL
COMMERCIAL	17,665	3,807,959	509,728	987,300	358,148	5,680,800
SPORT	58,784	197,854	180,731	52,230	4,018	473,617
NON-SPORT/ NON-COMMERCIAL	1,203	21,574	3,956	885	389	28,007
TOTAL	77,652	4,027,387	674,415	1,040,415	362,555	6,182,424

CIRPT... Continued From Page 7

for all of Cook Inlet; and the Kachemak Bay Unit has yet to be addressed. It is uncertain how the CIRPT will address pink salmon enhancement for the Kachemak Bay Unit especially considering the current problems with pink salmon enhancement in the nearby Tutka Hatchery.

Would the proposed hatchery make the best use of the site's potential

to benefit the common property fishery? The CIRPT responded, "Yes".

"If the project performs as envisioned, it would make an efficient and productive use of the site's water supply. With the permit stipulation previously mentioned that productive use would benefit the common property fishery.

"The CIRPT has had little experience in review-

ing PNP hatchery proposals, and we understand the processing component of this proposal makes it unlike any other which has been considered in Alaska. We hope these comments will be of assistance to you in making your decision. Please feel free to contact us if any clarification of this letter is needed."

Because of the time consumed in the discussion of the hatchery pro-

posal, working discussion of the Susitna River Unit Plan was deferred. However, the CIRPT did decide that when the Susitna River Unit was completed it would next address the Kamishak Bay Unit and the Westside Unit, which together cover the area from Cape Douglas at the south end of Kamishak Bay to the western side of the mouth of the Susitna River.

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January, May and October



*John [unclear]
sen. develop.*

UCIDA

UNITED COOK INLET DRIFT ASSOCIATION

P.O. Box 4649 • Kenai, Alaska 99611

(907) 283-3600 • FAX (907) 283-3306

Sent by Telefax-hardcopy to follow

January 27, 1992

Commissioner Carl Rosier
Alaska Department of Fish & Game
P.O. BOX 25526
Juneau, AK 99802

RE: Port Graham Hatchery Corporation Private Nonprofit Salmon
Hatchery Application

Dear Commissioner Rosier,

At its last meeting on January 14, 1992, the United Cook Inlet Drift Association (UCIDA) Board of Directors discussed the pending application for a PNP salmon hatchery at Port Graham. UCIDA represents the interests of the 600 salmon drift permit holders in Upper Cook Inlet. While non-intercept activities in Lower Cook Inlet have few if any probable impacts on Upper Cook Inlet, the UCIDA Board has instructed me to make the following objections to the Port Graham application. UCIDA feels that precedents set in this case will eventually have negative impacts on a statewide basis:

A) There is not even a mention of contributions to the common property fisheries. The generally accepted "target" contribution rate for the Cook Inlet area is 66 2/3% to 75%. Furthermore, this is not meant to imply any guaranteed recovery rate and certainly not the "reliable supply of high quality salmon for the processing plant" contemplated in the application. (see p. 3 of application). As presented the operation would not be dissimilar to the fish trap concept of pre-statehood days.

B) The application sets a precedence for a vertically integrated operation whose exclusive goal is to provide jobs outside of the common property fisheries.

C) Given the stated purpose of providing jobs at the Port Graham "cannery", emphasis will clearly be put on maximizing the size of the return and, therefore, minimizing the contribution to the common property fishery.

D) Given the emphasis on jobs and, therefore, wages at the cannery, the operators clearly will be inclined to reduce the price paid for any fish that are harvested in the common property fishery. In other words, dollars not paid to commercial fishermen can be used for wages at the "cannery".

E) The concept of the proposed operation will inevitably be taken up statewide. Our present concerns over demands for "guaranteed cost recovery" at the expense of the common property fisheries will be compounded with a "new critter" never intended by the aquaculture enabling legislation - i.e. an organization purely dedicated to dollar production and wages outside of the common property fisheries.

F) The size of the proposed operation, when combined with the Tutka Hatchery output, raises serious concerns about the carrying capacity of the local region and increased competition with outmigrating fry from the systems of Upper Inlet. Further, the state and CIAA are currently struggling to make the Tutka Hatchery self-sufficient. The added fry competition combined with an increased supply of pink salmon will only serve to undermine the state's interests in Tutka.

G) The lack of financial oversight associated with PNP operations and the "non-profit" requirement for such operations, combined with successful returns could lead to large hidden dollar "profits". This will encourage other such operations statewide - which, in turn, will lead to further demands that common property fisheries be curtailed.

UCIDA requests that you deny this permit application at this time. The impacts of this "new critter" on existing fisheries and the implications for the future need to be considered by the legislature and all user groups prior to the state launching off in a new direction.

Sincerely,

Theo Matthews

Theo Matthews
Administrative Assistant

cc: Senator Paul Fischer
Rep. Mike Navarre
Rep. Gail Phillips
Steve McGee, FRED Division
Molly McCammon, Senate Special Fisheries Committee
UFA
CIAA

ALASKA

DEPARTMENT OF COMMERCE
AND ECONOMIC DEVELOPMENT

WALTER J. HICKEL, GOVERNOR

Division of Economic Development
P.O. Box D (9th Floor State Office Bldg.)
Juneau, Alaska 99811

Ricoh Fax 10
(Automatic)
(907) 586-8399

TELECOPIER TRANSMITTAL SHEET

DELIVER TO: Molly McConna
Sen Hoffman's Office

FROM: Tina Long
Rural Development
Coordinator

Number of pages INCLUDING transmittal sheet: 6

DATE: 2/5/92

OPERATOR: _____

TIME: _____

IF TELECOPY DOES NOT TRANSMIT PROPERLY, PLEASE CALL (907) 465-2017 IMMEDIATELY.

Project descriptions as
discussed.

Call me - need further info.

FYI - Port & Lacham's need for FY92
is > \$550.0

The total long term cost
of the project ~~is~~ is not
available in our current info.

The Port Graham Salmon Development Project

PROJECT DESCRIPTION

The village of Port Graham has embarked upon a pink salmon development project, the intent of which is to create a sustainable local economy based on high quality value added salmon products. This will create long term employment and business opportunities in the village in an industry that is culturally compatible with village life. The neighboring village of English Bay shares in the fisheries resources of the area and is conducting its own sockeye salmon rehabilitation project. English Bay will also benefit from research and development conducted for Port Graham's fisheries program. The attached project map outlines the major components of the overall salmon development project.

Port Graham plans to become involved in all aspects of the business from obtaining raw material to marketing the resultant products to the consumer. In order to ensure a successful business operation and maximum employment benefits to the village residents, a successful project design must include the following elements: 1) Establish a relatively constant and reasonably priced supply of high quality salmon for the processing plant; 2) Determine market demand for various high value pink salmon products; 3) Design and build a versatile marketing program for salmon products from Port Graham; and 4) Provide Port Graham residents with the skills needed to take advantage of the business and employment opportunities that will result from this program.

For the program to be successful, each step of this approach must be successful. Securing a supply of good quality salmon to process is futile if the processing plant cannot produce high-value products or if there is no marketing effort. Success also depends on the village residents having the skills and the interest to become involved in the operation. The hatchery project has been extremely successful thus far. There are currently 3 million eggs being incubated in the hatchery, and 3 full time and 2 long term part time hatchery employees. An additional 10 part time positions are created for the annual egg take that occurs each August. First returns from the 1991 release of the salmon are expected in June, 1992.

The first major step in the project was initiated in the summer of 1990 and was aimed at establishing a supply of high quality salmon for the processing plant. A study commissioned in late 1989 by the Chugach Regional Resources Commission (CRRC), the non-profit

corporation concerned with resource development in the Chugach Native Region, indicated that there was a good potential for developing a commercial sized pink salmon ocean ranching operation in Port Graham. The salmon ocean ranching process consists of producing juvenile salmon in a hatchery for release into the ocean where they grow to adult size, returning to the point of release to spawn. Developing such an operation in Port Graham will provide the salmon needed for the processing operation. Also, because these salmon are returning to the immediate vicinity of the processing plant, they can be harvested and delivered to the plant in sea bright condition.

The attached five year project plan outlines the various components of the overall salmon development project.

Kake Nonprofit Fisheries Corporation: The Future from the Sea; Economic Development Proposal

Proposal

The Kake Nonprofit Fisheries Corporation is proposing the expansion of our salmon enhancement facility (Gunnuk Creek Hatchery). This project will focus on the economic recovery of the village of Kake. The total cost of this project is 2.52 million dollars. The Kake Nonprofit Fisheries Corporation has secured \$1,260,000 of this funding amount. We are now seeking the participation of other agencies and foundations for the remaining funds needed to bring this project to completion.

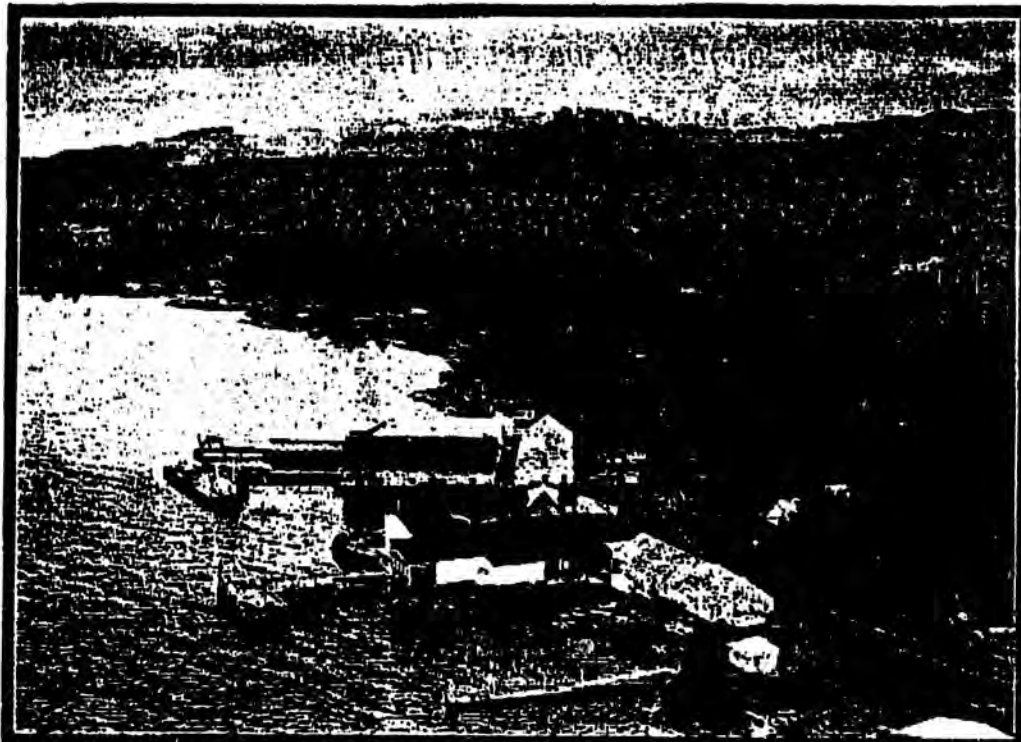
Grant Requests: \$1,260,000

Introduction:

Kake is a small Native community in the Southeast Alaska panhandle. The majority of the population are Tlingit and Haida Indians. A few of the roads through the village were paved for the first time in 1990, but most of the small road system is still dirt and gravel. Kake has is served by several air carriers who make several flights into Kake each day. There are two types of small plane traffic into Kake. Float planes land at the float plane dock, and wheeled aircraft land on our paved runway. It is a forty five minute flight to the nearest community.

Kake is located in the midst of abundant fisheries resources, and historically has always been a fishing village. Logging had replaced fishing as the major form of employment in this community, but the trees are nearly gone now. Opportunities for employment in Kake are

limited, and dwindling. There are no roads connecting Kake to any other community or job markets. The number of fishing boats and permits have declined over the years. Soon, workers may be forced to leave their homes in Kake and move out of town to provide an income for their families.



Kake, Alaska: (From bottom of picture) marine repair facility, deep water port, marine fuel station, cold storage, & cannery. The clearing above and to the right of the cannery is the airport, (1/2 mile from the cold storage).

Kake has the following underutilized infrastructure in place:

1. Boat harbor, with room for expansion.
2. Alaska Marine Highway System ferry terminal
3. deep water port, with regular barge service
4. paved runway and air service

Kake Nonprofit Fisheries Corporation: The Future from the Sea; Economic Development Proposal

5. state-of-the-art cold storage
6. cannery buildings
7. marine repair facility and boat lift
8. marine fuel station.
9. underdeveloped coastal property (suitable for industry)
10. underemployed work force
11. hatchery with developed returns of salmon and room for expansion

Marketing

FOOD PRODUCT DEVELOPMENT CORPORATION

200 Anderson Street, Portland, Maine 04101 (207) 874-0098 FAX (207) 874-0212

TO: HEATHER McCARTY
FROM: BILL SEIDEL
RE: SALMON SAMPLES

FEB. 21, 1992

DEAR HEATHER,

ARRIVING TO YOUR ATTENTION VIA FEDERAL EXPRESS ON TUESDAY FEB. 25 ARE THE SALMON PRODUCTS. EACH ITEM HAS A LETTER DESIGNATION FOR REFERENCE. THE FOLLOWING IS A LIST OF THE SUBMITTED PRODUCTS. YOU MAY CHOOSE THE TWO PRODUCTS TO BE SCALED UP TO 100 LBS. EACH FOR THE SEAFOOD SHOW, WITH THE REMAINING SALMON I WOULD BE HAPPY TO DO SEVERAL OF THE OTHER PRODUCTS FOR THE SHOW ALSO. ALL ITEMS ARE PRECOOKED. NO NEED TO THAW BEFORE COOKING EITHER.

A: SALMON BURGER
B: SALMON BURGER
C: SALMON SAUSAGE
D: SALMON SAUSAGE
E: SALMON HAM
F: SALMON PATTIES/BALLS
G: SALMON PIE
H: SALMON CHOWDER
I: SALMON LASAGNA
J: SLICED COLD SMOKED SALMON
K: HOT SMOKED SALMON
L: COLD SMOKED SALMON (NOT SLICED)

DIRECTIONS: SAUSAGES, PATTIES, BURGERS AND BALLS MAY BE PAN FRIED, MICROWAVED OR EVEN DEEP FAT FRIED. BUT TO TEST, I RECOMMEND BAKING AT 350-375 FOR 14-18 MIN.

PIE- 30 MIN AT 350

HAM- THAW, SLICE AND EAT

SMOKED- " " " "

LASAGNA- 25 MIN AT 350

CHOWDER- BOIL IN BAG FOR 8 MIN OR HEAT IN POT. ADD ALITTLE MILK OR WATER IF YOU LIKE IT THINNER.

Bill

PRINCE WILLIAM SOUND / COPPER RIVER RPT
PROJECT CRITERIA CHECK LIST
January 9, 1992

The PWS/CR RPT will review salmon enhancement projects proposed by any agency or entity. Proposals should address criteria listed within the check list. Salmon projects proposed for PWS/CR should describe project intent and describe how the project goal will be achieved.

This screening is to provide Region-wide coordination of all enhancement efforts and is not intended to be a definitive technical analysis.

The Planning Team will ensure that project funding needs are identified when the actions of one agency/entity require funding on the part of another agency/entity. An example is the need to fund tag/recovery efforts within the fishery and at a hatchery.

GOAL:

Projects will be evaluated on their contribution to achieving objectives of the comprehensive regional plan. Objectives are established to facilitate achieving regional goals. Regional goals support developing and maintaining a comprehensive salmon fishery that addresses fish production, allocation, management, and net benefit. The integration of these four fishery elements is intended to provide the tools and process necessary to plan and implement strategies to fulfill user needs and expectations as outlined in the regional plan and regional allocation policy for enhanced salmon.

AN ACCEPTABLE PROJECT GENERALLY:

1. Addresses the objectives outlined within the regional allocation policy. These objectives provide for:
 - * reduced congestion and or conflict in the fishery,
 - * minimized impact on wild stocks,
 - * promoting highest possible fish quality,
 - * maximizing production,
 - * minimizing impacts to historic and traditional fisheries,
 - * supporting subsistence, sport and personal use needs,
 - * encouraging and supporting research and,
 - * recognition of healthy competition in the fishery.

In addition, an acceptable project generally:

2. Brings non-producing and underutilized areas of PWS/CR Region into production.

3. Rehabilitates stocks which are depleted below the threshold of reproductive viability.

I. PROJECT DESCRIPTION

1. Project location _____
2. Release location _____
3. Harvest location _____
4. Project type
- A. Hatchery
- New _____
- Expansion _____
- Remote release _____
- B. Wild stock rehabilitation _____
- C. Habitat improvement _____
5. Describe any new facilities to be constructed, including water quantity requirements and minimum anticipated discharge from the water source. _____
- _____
- _____
- _____
- _____
6. Target species:
- pink _____ chum _____
- coho _____ sockeye _____
- chinook _____
7. Project purpose
- A. Perceived user need _____
- B. Addresses a particular management issue _____
- C. Efficient use of _____ hatchery _____
- D. Stock is at reduced production level _____
- E. Site specific habitat opportunity _____
- F. Other _____
8. Are evaluation mechanisms included in the proposal?
- A. Hydroacoustic surveys _____
- B. Smolt enumeration _____
- C. Mark and recapture; coded wire tagging _____
- D. Adult contribution, enumeration _____
- E. Other _____

II. PROJECT FEASIBILITY

1. Are enhancement methods proven or experimental? _____

Describe them: _____

2. What is the project's cost recovery requirement? _____

3. What is the project's brood stock requirement? _____

4. How will brood stock be acquired? _____

5. If it is necessary to culture new brood stock, how long will it take? _____

6. How will juveniles be imprinted at release site? _____

7. How will juveniles be transported if remote released? _____

8. Will the project require involvement or permits from agencies other than ADF&G? _____

What agency(s)? _____

9. If implemented, will the project result in a need to revise existing regulations? _____

Please explain: _____

III. LAND USE

1. Is project compatible with adjacent land use policies?

2. The landholder is? _____
3. Can the project be implemented without interfering with existing uses of the area? _____

4. Will the project fully utilize the site potential? _____

IV. MANAGEMENT

1. Can enhanced fish be harvested while protecting natural stocks? _____
How? _____

2. Will the project contribute to a fishery that is manageable in time and area for all users? _____
3. Can the project be managed for corporate brood and cost recovery escapement? _____
4. Can the harvest be managed to achieve high fish quality? _____
5. Where will cost recovery occur to support the project?

V. BIOLOGY

1. Will water utilized by the project reduce habitat for local fish stocks? _____

2. Does the project conform with state genetic policy?

3. Will the proposed project cause disease transmission to local fish stocks? _____

4. What are possible impacts of fry/smolt on marine and aquatic ecosystems? _____

5. How will returning adults impact marine, aquatic and terrestrial ecosystems? _____

6. What is the run timing of the broodstock? _____

7. How will run timing be maintained from one generation to another, i.e. egg take schedule? _____

VI. ALLOCATION

1. Is the project consistent with the allocation policy? _____

2. What user groups will benefit? _____

3. What is the magnitude of the benefit to each user group? _____

4. Is there a loss of harvest opportunity to existing users? _____

5. If so, what mitigation options are proposed? _____

6. Have the most probable harvest scenarios for fish produced by this project been considered? _____
Please describe them: _____

7. Is there publicly owned space to create or expand recreational harvest support facilities? _____
Please identify: _____

8. Can the project be implemented without conflicting with an existing commercial, recreational or subsistence fishery? _____

Please explain: _____

VII. COST

1. What is the cost of the project?
Start-up _____
Annual _____
2. How do you intend to fund implementation? _____

3. How do you intend to fund operational costs? _____

4. Will the project result in costs to other entities? _____
Who? _____

5. Is the project financially feasible? _____

VIII. COST/BENEFIT

1. Of the adult salmon returning to the project, what percentage will be contributed to the CPF (common property fishery)? _____
2. What ex-vessel price are you using to calculate your cost recovery? _____
3. How is the ex-vessel price expected to respond to the production? _____

4. What marketing strategies do you propose for the new production? _____

5. How is the quality of the proposed production expected to effect ex-vessel prices? _____

6. What are the fishery management costs associated with
conducting an orderly fishery? _____

7. What are the hatchery harvest costs? _____

8. What are the costs associated with marking and
evaluation studies? _____

9. What are the capital and operating costs of the
program? _____

10. Other economic information: _____

30 60 195 30 Mynt.

wldstk

* Section 1. AS 16.10 is amended by adding a new section to read:

ARTICLE 9A. MANAGEMENT OF FISHERIES.

Sec. 16.10.621. MANAGEMENT OF WILD AND HATCHERY STOCKS OF ANADROMOUS FISH. (a) The Board of Fisheries shall manage fisheries in the state to achieve sustained yield for wild anadromous fish stocks. []

(b) In managing hatchery produced anadromous fish stocks, the board shall consider the need of anadromous fish hatcheries to obtain brood stock. The board may manage fisheries in the state to achieve an adequate return of hatchery produced anadromous fish stocks to hatcheries for brood stock; however, management to achieve an adequate return to hatcheries for brood stock may not prevent achievement of sustained yield for wild anadromous fish stocks.

(c) The board may consider the need of hatcheries authorized under AS 16.10.400 to harvest and sell fish produced by the hatchery that are surplus to needs for brood stock to offset the cost of operating the hatchery. The board may exercise its authority under this title as it considers necessary to provide a reasonable return of surplus fish to a hatchery to offset the cost of operating the hatchery. The board may adopt criteria for determining the reasonable needs of hatcheries for surplus fish and may adopt a management plan to provide surplus fish to a hatchery.

3/17/92

HATCHERY REVIEW PROJECT
March 18, 1992

- Proposed legislation on wild stock priority

You might want to ask Fish and Game to address what this priority means in terms of weak stocks: i.e., do all stocks have equal priority in terms of meeting sustained yield?

- Is there a need to clarify whether or not the Board has the statutory authority to regulate hatchery production levels? Could this be used as the forum for statewide production review? In terms of allocation conflicts, should the Board have some kind of formal input in the process before a permit is given? The department only manages for conservation, until the Board decides allocation, then the department manages the allocation scheme.
- Tightening up requirements for enhancement loans. Will this take statutory change or can it be done by regulations?
- Biological concerns - when the report from the Cordova conference arrives, and I understand this will be soon, can we have a presentation to the legislature perhaps by Dr. Mathisen, the state geneticist Dr. Jim Seeb, and maybe one other of the scientists that participated in the Cordova conference, so that we can get some more information about the biological concerns and the need for research money?

hatchery stocks

com fish - when they look at management
only have to manage for "conservation",

- * but problems in managing for all trout
need broader public review -
add broad review of all N hatchery
productions before approving permits.

STATE OF ALASKA
THE LEGISLATURE
LEGISLATIVE AFFAIRS AGENCY
Division of Legal Services

P.O. Box Y, State Capitol
Juneau, Alaska 99811
485-2450

ROUTING SLIP

TO: Sen. Ellison ATTN: Mary McDowell

REMARKS: *Attached is the first attempt at a "wild stock
priority". Once everyone agrees on the substance of the priority,
I can draft the bill.*

FROM: George Utermohlen DATE: 3/9/92

* Sec. 1. AS 16.10 is amended by adding a new section to read:

ARTICLE 9A. MANAGEMENT OF FISHERIES.

Sec. 16.10.621. MANAGEMENT OF WILD AND HATCHERY STOCKS OF ANADROMOUS FISH. (a) The Board of Fisheries shall manage fisheries in the state to achieve ^{Sustained yield} ~~escapement~~ goals for each wild anadromous fish stocks. The board may exercise its authority under this title as it considers necessary to protect weaker stocks of wild anadromous fish and to maintain the biological and genetic integrity of wild anadromous fish stocks.

(b) ^{The (rm)} The board shall manage fisheries in the state to achieve an adequate return of hatchery produced anadromous fish stocks to hatcheries for brood stock; however, management to achieve an adequate return to hatcheries for brood stock may not prevent achievement of escapement goals for wild anadromous fish stocks.

(c) ^{rm} The board shall ~~consider the needs of hatcheries~~ authorized under AS 16.10.400 to harvest and sell fish produced by the hatchery that are surplus to needs for brood stock to offset the costs of operating the hatchery. The board may exercise its authority under this title as it considers necessary to provide a reasonable return of surplus fish to a hatchery to offset the costs of operating the hatchery. The board may adopt criteria for determining the reasonable needs of hatcheries for surplus fish and may adopt a management plan to provide surplus fish to a hatchery.

Molly

To Mary McDowell
From: Kate Troll
Re: Wild Stock Priority

Mary, I am not to trying to make more work for you. . .honestly.
Rather, I am trying to make your job easier. . . (I can hear you
say, "Oh, sure Kate")

So much for the BS eh?

What I have here for you is another way to look at wild stock
priority. This is what SEAS asked the Board of Fisheries to adopt
for Southeast in their 1990/91 cycle of meetings. This is the
proposal that started the whole discussion of statutory intent and
regulatory authority. . .maybe it can end the discussion too. . .who
knows. . .

POLICY ON THE MANAGEMENT OF ENHANCED FISH

When wild and hatchery stocks are mixed, the harvest shall be
managed on the strength of the wild stocks. Deviation from
current management of wild stocks to provide for greater or lessor
access to hatchery fish should not be allowed unless it can be
demonstrated that a change will not jeopardize conservation
concerns for wild stocks nor increase one user groups wild stock
opportunities at the expense of another user group.

* Section 1. AS 16.10 is amended by adding a new section to read:

ARTICLE 9A. MANAGEMENT OF FISHERIES.

Sec. 16.10.621. MANAGEMENT OF WILD AND HATCHERY STOCKS OF ANADROMOUS FISH. (a) The Board of Fisheries shall manage fisheries in the state to achieve sustained yield for wild anadromous fish stocks.

(b) In managing hatchery produced anadromous fish stocks, the board shall consider the need of anadromous fish hatcheries to obtain brood stock. The board may manage fisheries in the state to achieve an adequate return of hatchery produced anadromous fish stocks to hatcheries for brood stock; however, management to achieve an adequate return to hatcheries for brood stock may not prevent achievement of sustained yield for wild anadromous fish stocks.

(c) The board may consider the need of hatcheries authorized under AS 16.10.400 to harvest and sell fish produced by the hatchery that are surplus to needs for brood stock to offset the cost of operating the hatchery. The board may exercise its authority under this title as it considers necessary to provide a reasonable return of surplus fish to a hatchery to offset the cost of operating the hatchery. The board may adopt criteria for determining the reasonable needs of hatcheries for surplus fish and may adopt a management plan to provide surplus fish to a hatchery.

*similar language in
section C . 3/17/92*

*anadromous -
fresh water
to
ocean water*

HATCHERY REVIEW PROJECT

March 18, 1992

- Proposed legislation on wild stock priority

You might want to ask Fish and Game to address what this priority means in terms of weak stocks: i.e., do all stocks have equal priority in terms of meeting sustained yield?

- Is there a need to clarify whether or not the Board has the statutory authority to regulate hatchery production levels? Could this be used as the forum for statewide production review? In terms of allocation conflicts, should the Board have some kind of formal input in the process before a permit is given? The department only manages for conservation, until the Board decides allocation, then the department manages the allocation scheme.
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Fisheries
and Oceans

Pêches
et Océans

Alvin Permitt

Fisheries - Pacific Region
Suite 400 - 555 West Hastings St.
Vancouver, B.C.
V6B 5G3

Pêches - Région du Pacifique
Pièce 400 - 555 rue Hastings ouest
Vancouver (C.-B.)
V6B 5G3

Your file Votre référence

Our file Notre référence

5 March 1992

Ms. Molly McCammon, Legislative Assistant,
Office of Senator Hoffman,
Alaska State Legislature,
State Capital, Juneau, Alaska
#99801 - 1182

Dear Ms. McCammon:

Attached is a copy of the evaluation framework of the Pacific Salmonid Enhancement Program which I agreed to forward to you. This evaluation framework sets out the design and the information requirements of the evaluation study to be initiated later this year.

If you have any questions regarding the report, I would be happy to try to respond to them. I also apologize for the delay in forwarding you this report.

Yours Sincerely

Peter R. Toews (Tel. 604-666-6629)
Enhancement Strategy Evaluator

Canada

DRAFT FOR DISCUSSION ONLY
PROGRAM EVALUATION BRANCH

EVALUATION FRAMEWORK
OF THE
PACIFIC SALMONID
ENHANCEMENT PROGRAM

EXECUTIVE SUMMARY

PROGRAM EVALUATION BRANCH
MARCH, 1988

1. INTRODUCTION

The purpose of this report is to outline a comprehensive evaluation framework for the Pacific Salmonid Enhancement Program, covering the issues, methodology, data and research requirements, scope and timing of both the biological and economic aspects of the evaluation.

SEP consists of a variety of program components, including major facilities (i.e. hatcheries and spawning channels), engineered projects (i.e., fishways), lake enrichment, community economic development, public involvement, small projects and provincial projects. Since its inception in 1977 up to the end of fiscal year 1986/87, over \$300 million has been spent on the program. The principal objective of SEP is to increase salmonid production, with the ultimate economic and social goals of increasing income and benefits from the fisheries, increasing employment, stimulating regional economic development and providing training and employment opportunities for native Indians.

2. THE EVALUATION ISSUES

A future evaluation of SEP must answer two fundamental questions that should be addressed at the total program, program component and project levels. These questions are:

Issue #1

What has been the incremental contribution of SEP to salmonid escapement and catch, taking impacts on wild stocks as well as SEP production into account?

Issue #2

To what extent have the intended economic and social goals of SEP been realized - to what extent has SEP increased net benefits from the fisheries, increased employment, stimulated regional economic development and provided benefits for native Indians?

3. THE EVALUATION APPROACH

Issue #1

To evaluate the incremental contribution of SEP to salmonid escapement and catch, both the production from SEP facilities and the biological impacts that SEP has had on wild stocks must be assessed.

For the assessment of production, it is recommended that fish releases, adult production and long term trends should be documented. Fish releases should be compared with the number of brood stock used to obtain the production in order to assess SEP efficiency relative to wild production. Adult production is the ultimate test of SEP productivity and should not be estimated on the basis of expected survival rates, but rather on the basis of the most up-to-date actual observations, including mark recovery, stock reconstruction and tagging data. The estimation of actual production is so critical to the evaluation that the reliability of the methods and estimates should be investigated as part of the evaluation. Long term productivity trends should be identified as part of the assessment of production. It is important to understand the factors underlying such trends; however, given the timing and complexity of this task, it is not expected that this data will be available for an evaluation carried out in the short term.

For the assessment of SEP's impacts on wild stocks, the evaluation should consider mixed stock/manageability impacts; predation and competition among juveniles; genetic effects; and possible limited marine habitat carrying capacity effects. Data are not available to estimate the specific magnitude of each effect. However the importance of the effects should be examined and it is recommended that this be done by the following means. Expert opinion should be solicited, available research reviewed and a workshop held to identify reasonable ranges of each effect. The workshop could also be used to structure a simulation model which would describe the biological impacts mathematically. Simulation modelling would be particularly useful in helping to identify the types of investigations that future research should focus in on. Modelling would probably not quantify the extent of the biological impacts definitively.

Issue #2

To evaluate the economic and social performance of SEP, a multiple account benefit-cost framework is recommended, with the two basic accounts being economic efficiency and the distributional impacts of the program.

For the assessment of economic efficiency, the incremental benefits and costs of SEP should be identified. Those production and non-production (e.g., training) related benefits and costs which are measurable should be calculated and compared over the life of the facilities to determine overall measured net benefits and benefit-cost ratios. Measurable benefit and cost categories, evaluation methods and factors to consider are outlined in the main report. Those benefits and costs which are not measurable in value terms (e.g., public awareness, education) should be described, and their significance assessed in relation to the measured economic impacts of the program.

For the assessment of distributional impacts, the sub-regional economic impacts; the share of income and benefits accruing to different groups; and the distribution of benefits and costs between user groups and taxpayers should be identified. While economic efficiency should be evaluated at the project-specific as well as the component and total program level, it is recommended that the analysis of distributional impacts only be done at the component and total program levels.

4. PREPARING FOR THE PROGRAM EVALUATION

The evaluation will entail three phases of activity: data compilation and update; new research; and the evaluation analysis itself. With respect to the two "pre-evaluation" phases, involving data compilation and new research, the following should be noted:

The evaluation will require a documentation of SEP projects' background, related fisheries management, production and incremental catch contribution, total benefits and total costs. The evaluation will also require documentation of program components' backgrounds and their project and non-project specific effects. Data sources include the data files in the SEP Evaluation Model, and the EPIC, the fin-clip recovery, stock escapement, sales slip and north coast tagging study data bases.

Much of the data compilation is straight-forward and in many instances is already being done as part of the on-going activities of SEP research, planning and operations staff. For other parts of the data compilation, however, additional effort will be required, including documenting the project backgrounds, up-dating production and catch contribution impacts, documenting natural resource use conflict, fish, estimating employment benefits, identifying various non-measurable benefits and assessing government revenue impacts.

Specific research requirements related to the production and biological impacts of SEP include studies related to assessing and improving the production and catch estimates; studies related to productivity trends; and studies related to assessing the significance of the biological impacts of SEP. Not all of the studies can be completed prior to the evaluation, but they should now be initiated because of their importance for a longer term evaluation.

Specific research requirements related to the economic aspects of SEP include a review and update of harvesting and processing cost impacts of SEP; a review and update of recreational activity impacts and benefits; and estimation of training benefits. The harvesting and processing cost impact review is most critical to the overall evaluation and may require specific survey work.

5. EVALUATION SCOPE AND TIMING

It is recommended that an evaluation of SEP include all projects with sufficient production history upon which to base reasonable estimates of current and projected output. Such a comprehensive assessment of the overall program is necessary in order to fully understand the factors contributing to success or failure.

Following a preliminary evaluation of SEP in 1985 and subsequent Cabinet approval of a continuation of funding for the program, Treasury Board, in 1987, requested that SEP managers submit a 5 year plan identifying expected program expenditures and results to 1991/92. A program evaluation would therefore best be completed in 1991/92 to coincide with and contribute to important decisions on future plans and future funding which will need to be made that year.

6. RECOMMENDATIONS

In order to conduct an evaluation in 1991/92, it is important that the documentation tasks and research efforts described in this report commence very shortly. It is therefore recommended that program managers prepare an action plan describing how they intend to carry out the data compilation, data gathering and preparatory research tasks necessary to conduct the evaluation. The response should include consideration of the scope and costs of varying levels of data gathering and research effort and how this will impact on the accuracy of the data.

A particularly important aspect of the action plan will be one of responding to the need for investigations and research into the biological impacts that SEP production has had on wild stocks. It is therefore recommended that a group of scientific experts including researchers, management biologists and SEP program personnel be formed to plan the necessary data gathering, modelling and research efforts that will be required to address the biological impact issues. It should be noted that some of the research on biological impacts and long term production trends would, of necessity, need to extend into the longer term beyond 1991/92. Data from this research would thus be available for a more futuristic evaluation conducted closer to the end of the century.

Tables 1 and 2 summarize the data compilation and research tasks that the recommended action plan should respond to.

TABLE 1

Summary of Data Compilation Preparatory Tasks Required

	<u>Present Status</u>
Compilation of project backgrounds and related fisheries management information;	- needs to be done
Compilation of historic production and catch contribution by facility;	- needs to be done for smaller facilities
Development of future fisheries management scenarios and facility production forecasts;	- needs to be done
Compilation of information on significant natural resource conflicts or impacts;	- needs to be done
The compilation of project-specific cost data for PIP projects;	- is underway
Compilation of wholesale price forecasts for SEP projects' remaining economic lives;	- is underway
Compilation of the value of surplus fish and egg sales;	- continuing
Compilation of the value of native and non-native terminal fisheries;	- needs to be done
Compilation of information on other benefits, not amenable to quantitative economic efficiency analysis;	- needs to be done
Compilation of estimates of government revenue impacts of SEP.	- is underway

TABLE 2

Summary of Research and Assessment Tasks Required

	<u>Present Status</u>
Paper study compiling key findings, existing research on biological impacts (international symposium is a possible alternative)	- needs to be done
Workshop to scope out the structure of simulation models	- needs to be considered
Making rate experiment to test underlying assumptions of coded wire tag data	- needs to be done
Additional marking of production from spawning channels, selected lake enrichment projects and small hatcheries	- needs to be done
Baseline studies of production in areas whose new spawning channels are now being planned	- needs to be done
Sensitivity analyses of stock reconstruction methodology on selected stock assessments	- some are being done
Further marking studies of Canadian enhanced and wild production to permit catch survival comparisons	- needs to be done
Review and update of harvesting and processing cost impacts	- needs to be done
Review and update of recreational activity impacts and benefits	- is underway
Estimation of training benefits from the program	- needs to be done

DRAFT FOR DISCUSSION ONLY
PROGRAM EVALUATION BRANCH

EVALUATION FRAMEWORK
OF THE
PACIFIC SALMONID
ENHANCEMENT PROGRAM

PROGRAM EVALUATION BRANCH
MARCH, 1988

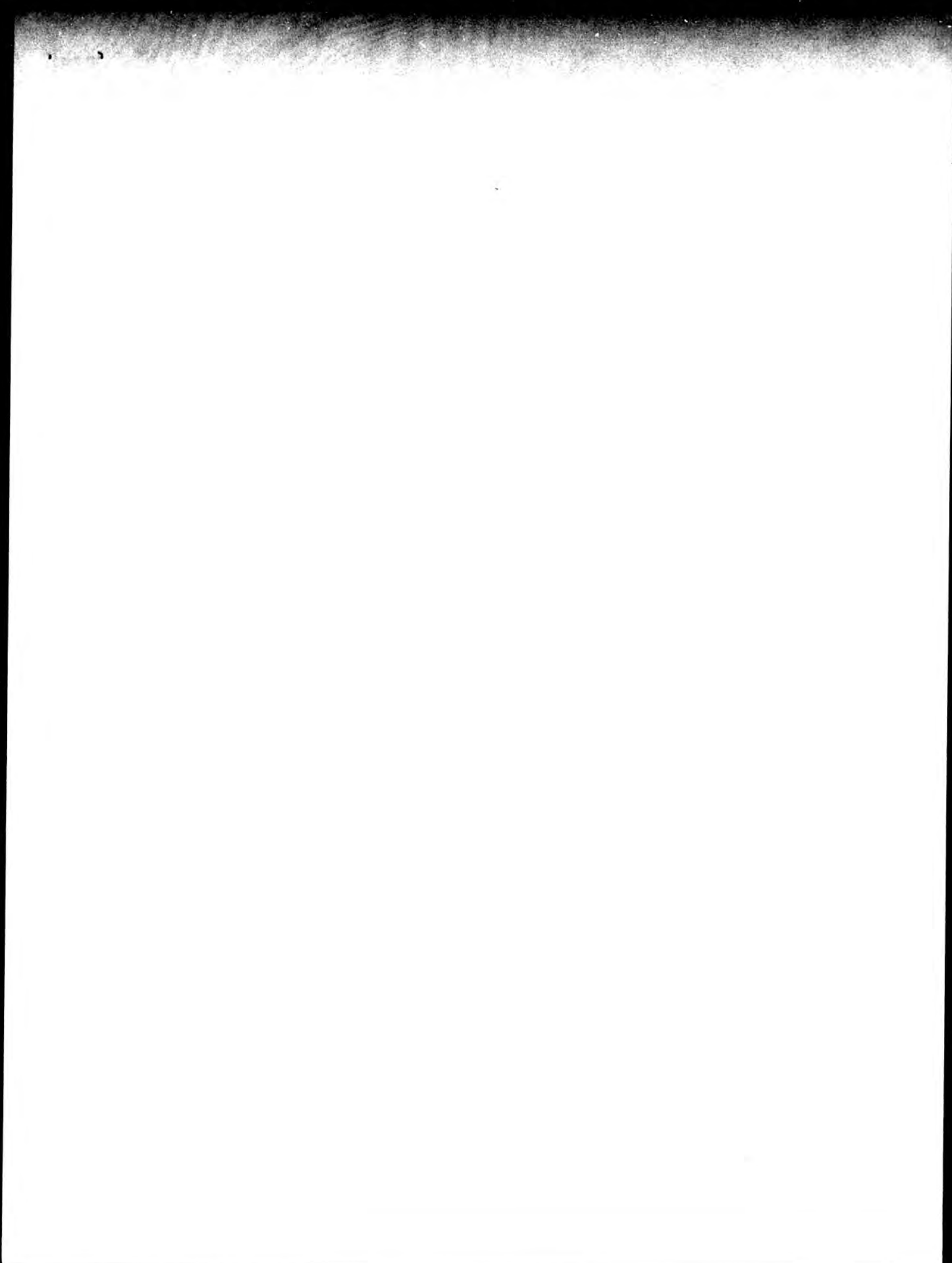


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1.0 INTRODUCTION

1.1 Purpose and Background

The purpose of this report is to outline a recommended framework for a comprehensive evaluation of the Pacific Salmonid Enhancement Program (SEP). Evaluation issues, methodology, data requirements, timing and costs are discussed.

This report builds on previous studies undertaken by the Program Evaluation Branch. In June 1985, a preliminary evaluation study of the first phase of SEP was released. The study concluded that certain components of SEP seemed to be achieving their objectives and that overall, SEP was making a significant contribution to salmon production. However, it was noted that SEP's success was uncertain because of incomplete data. Concerns about long term productivity and biological impacts on natural stocks were also noted.

A major recommendation of this preliminary evaluation study was that a formal evaluation framework be developed by the Program Evaluation Branch in conjunction with DFO program personnel. Consolidation of existing data and compilation of long term survival, harvesting investment and cost impact data were also recommended. Other recommendations included continued close integration of SEP with fisheries management; avoidance of new projects with risks to wild stocks; an emphasis on natural enhancement, habitat restoration and small projects; and explicit recognition of uncertainty in project selection.

As recommended in the preliminary evaluation, Program Evaluation Branch initiated the development of an evaluation framework to identify specific information needs and a future SEP evaluation schedule. A draft report was released in July 1986,

identifying four broad issues that any future evaluation would have to address: value for money (or quantifiable net benefits), other benefits, production efficiency, and biological and stock interaction effects. However, the framework was not completed; the work was halted pending a Cabinet review of future SEP funding.

The Cabinet review is now complete and the funding decision made. Consequently, the Program Evaluation Branch has commissioned a biological and an economic study to refine the evaluation issues and complete the framework. The purpose of this report is to present the consolidated conclusions of these biological and economic studies.

1.2 Advisory Committee

A committee of DFO officials was formed to advise and assist the study team in developing the framework. The committee was struck to try to ensure that the evaluation focussed on those aspects of SEP that not only measure past performance, but also give guidance as to the future directions that the program should take. The committee also provided the study team with appropriate advice regarding the availability and limitations of SEP project data.

1.3 Report Outline

This report is divided into seven sections. Following this first introductory section, section 2 provides a description of SEP and its program components. In section 3, the evaluation issues are outlined. Section 4 contains a discussion of methodology and indicators recommended to address these issues. In section 5, data requirements and their availability are discussed. Research requirements are outlined in section 6.

Section 7 and 8 conclude the report with recommendations on scope, timing as well as actions necessary to prepare for the evaluation.

2.0 PROGRAM DESCRIPTION

2.1 Program History

The Salmonid Enhancement Program (SEP) officially commenced in 1977, after several years of intensive planning. Efforts to build up and protect salmon stocks had begun earlier, particularly after World War II, when a number of major fishways, spawning channels and hatcheries were constructed. However, SEP constituted a formal commitment by the federal and provincial government to an extensive, systematic program of enhancement. SEP initially was intended to consist of two phases, with the second phase contingent on the success of the first. The program was aimed at doubling the stocks of salmon and anadromous trout to their former levels of abundance, implying an increase in annual production of almost 70 million kilograms. The methods by which this was to be accomplished included:

- the construction of fishways to assist migrating fish past barriers to upstream spawning areas;
- the construction of artificial spawning channels to provide optimum conditions for reproduction;
- the construction and operation of hatcheries and other incubation systems to increase the productivity of spawning fish;
- the restoration of freshwater habitat to improve egg deposition and all aspects of freshwater survival; and
- the fertilization of lakes to increase the rearing capacity of natural lakes.

A Federal-Provincial Agreement on SEP was signed by the Minister of Fisheries & Oceans for Canada and the Minister of Environment for British Columbia on March 1, 1979. The agreement stated that while the purpose of the program is to "preserve, rehabilitate and enhance natural salmonid stocks", this was

considered to be a means of achieving a number of clearly specified economic and social objectives, namely:

- (i) to increase national and provincial income;
- (ii) to create employment opportunities for Canadians;
- (iii) to improve economic opportunities for Native people;
- (iv) to foster development of economically disadvantaged communities and regions;
- (v) to increase and improve recreational opportunities.

The agreement called for a high degree of public involvement and a "vigorous program" to foster public awareness of the need to conserve salmonids and their habitats. The agreement also included provisions for the recovery of program expenditures through levies on resource users and for restraining further investment in the fisheries to prevent dissipation of the benefits of higher fish production.

The economic and social objectives for Phase I of SEP were translated into specific program targets:

- (i) to increase the average annual production of salmonids by 22.7 million kilograms, with the expected species composition of this increase as follows:

	<u>Production Target</u> (millions of kilograms)
Sockeye	4.1
Chum	13.1
Pink	1.7
Coho	1.1
Chinook	2.6
Steelhead & Cutthroat	0.1
Total	22.7

- (ii) to achieve an overall benefit-cost ratio of 1.5:1, with a net contribution to national income of \$325 million (\$1980);

- (iii) to provide benefits of \$200 million (\$1980) to areas in British Columbia outside of the lower mainland and southern Vancouver Island;
- (iv) to provide the equivalent of 64 person-years of continuing employment for Indians;
- (v) to generate 458 person-years of new employment in the construction and operation of enhancement facilities.

These targets were based on original plans that included a federal commitment to Phase I of \$150 million (\$1976) and a provincial commitment of \$7.5 million over a 5 year period from 1977 to 1982. Actual federal expenditures for SEP were reduced to \$150 million in current dollars over a 7 year period (1977 to 1984) due to government restraint programs. Inflation and the two-year extension of the program significantly eroded the real purchasing power of SEP funding, and therefore the scale of activities.

The reduced funding, plus other factors (assessment of enrichment potential, political priorities) resulted in some significant shifts in the allocation of Phase I expenditures. Design, construction and operations/maintenance of major fish production facilities (i.e. large, manned hatcheries and spawning channels) and engineered facilities (fishways)¹ comprised a significantly smaller proportion of total Phase I expenditures than originally planned. Of these expenditures, the operations component was much larger and the construction component much smaller than expected. Expenditures on lake enrichment or fertilization were much greater than originally anticipated. Expenditures on research, planning, minor projects, community development, public involvement and general overhead were also significantly greater than planned.

(¹) Program components are defined in more detail in section 2.2 below.

Partly as a result of these major shifts in allocations among SEP activities and enhancement techniques, the species composition of SEP production capacity also changed significantly from original plans. Production capacity for sockeye, chinook and sea-going trout was higher while capacity for pink and chum were lower than originally planned.

Upon completion of Phase I, SEP entered into a so-called "transition" phase in which the emphasis was placed on the operation and maintenance of existing facilities rather than expansion of production capacity. Any expansion which did occur was aimed primarily at rebuilding depressed chinook stocks. The transition phase ended as of June, 1987 with the announcement by the Minister of Fisheries & Oceans of an expansion of the program. The funding commitment of SEP was stabilized at \$42.5 million/year for 5 years. Phase II of the program is to be concerned primarily with the preservation and stabilization of existing stocks, rather than major production of new stocks by artificial means. It is intended that the program will place more emphasis on smaller projects, the rebuilding of depressed chinook stocks, and enhancement techniques such as spawning channels which require lower operating and maintenance costs. Enhancement opportunities for sockeye and pink salmon on the Fraser River will also receive more attention as a result of the U.S.-Canada Pacific Salmon Treaty.

2.2 Program Components

In terms of the different types of projects undertaken by SEP to achieve its fish production and socio-economic objectives, SEP has been categorized by Economics and Planning Branch staff into 7 basic program components: major facilities, engineered projects, lake enrichment, community development projects, small projects, public involvement projects and provincial projects. These components are generally distinguishable by the nature and

scale of the projects undertaken, and also they correspond roughly to SEP's organizational structure.² Major facilities, engineering facilities, lake enrichment and projects funded through provincial contributions to SEP were all designed to contribute to socio-economic goals primarily through fish production. The other program components were designed to increase fish production as well, but were also aimed more directly at increasing employment opportunities for remote communities and natives as well as public participation and awareness. A brief description of each of these components follows below.

2.2.1 Major Facilities

Major facilities, which constitute the largest single expenditure component of SEP, include a number of large, managed hatcheries and spawning channels designed primarily for artificial production. These facilities were constructed prior to the formal initiation of SEP as well as during the Phase I and Transition Phases. Also included under this category are several spawning channels constructed on the Fraser River by the then International Pacific Salmon Fisheries Commission and now operated by SEP. Currently there are 32 major facilities in operation.

(2) The construction, expansion and major maintenance of major facilities and engineered projects is the responsibility of the Engineering Division. The Operations Division is responsible for the day-to-day operations of major facilities. The Fisheries Research Branch is responsible for lake enrichment. Community development, small projects and public participation are each the responsibility of specific programs within the Special Projects Division. A number of experimental or pilot projects were also constructed, eventually taken over by the Operations Division or the Community Economic Development Program. Several pilot projects, found to be not viable, were discontinued.

2.2.2 Engineered Projects

Engineered projects include a number of fishways, obstruction removal projects and unmanned side channels which were constructed prior to and during SEP. Several of these types of projects which were constructed by the International Commission and taken over by SEP are also included in this category. The purpose of these facilities is to assist migrating fish past major barriers to upstream spawning areas and to improve spawning. There are currently six major projects in this category as well as numerous minor ones.

2.2.3 Lake Enrichment

Sockeye lake enrichment began with pre-SEP fertilization experiments undertaken by the Fisheries Research Branch on Great Central Lake on Vancouver Island. Strong returns to this lake in 1976 resulted in lake enrichment being incorporated into the SEP program. Early results were very promising and expenditures on lake enrichment were increased significantly during Phase I. To date, 17 lakes have been included in the program with 7 of these being major lakes, while ten are minor.

2.2.4 Community Economic Development Program (CEDP)

In order to further one of SEP's goals of providing more employment opportunities for Native people, a Native Project Pilot Program (NPPP) was initiated in the 1977/78 fiscal year to determine the potential for contracting out SEP enhancement projects to Indian bands and non-Native communities. This program was jointly funded by Fisheries & Oceans and CEIC.

The NPPP was to meet 6 specific objectives:

- (i) to provide satisfying employment for native people who would otherwise be unemployed or severely underemployed;
- ii) to provide experience that is valuable in terms of personal development and the acquisition of new skills;
- iii) to increase education and job aspirations;
- iv) to contribute to community development through increased community satisfaction, reduced need for out-migration of capable band members, and development of community leaders;
- v) to improve band-DFO relations; and
- vi) to contribute significantly to salmonid enhancement.

An evaluation in 1979³ identified some significant operational and administrative problems, none of which were considered serious enough to terminate the projects. NPPP was redesigned to eliminate these operational problems and re-named the Community Economic Development Program (CEDP) in 1978/79. CEDP was originally jointly funded by Fisheries & Oceans Canada and the Canada Employment and Immigration Commission (through the Economic Growth Fund and the Canada Manpower Industrial Training Program) but later SEP assumed primary responsibility for funding.

The specific objectives of CEDP are almost identical to those described above for its precursor. However, more emphasis was aimed at training and raising education and job aspirations in order to generate positive social benefits and help participants to become self-sufficient. The number and complexity of CEDP projects has grown significantly. Currently, 29 smaller hatcheries have been constructed and contracted out through the program.

(³) D. Rank, Assessment Report on the 1977/78 Native Project Pilot Program, 1979.

2.2.5 Public Involvement

The Public Involvement Program (PIP) was designed to encourage public support for the preservation and enhancement of salmonid stocks in British Columbia. The four formal goals of PIP are stated as:

- i) to promote public awareness of, concern for, and commitment to the protection of stream systems and estuaries as essential elements of a long-term program of salmonid enhancement;
- ii) to provide the concerned public with factual information on the goals, strategies, methods, implementation plans, costs, benefits, and administrative organization of SEP;
- iii) to develop a communication system to ensure that plans for salmonid enhancement reflect the reasonable views and desires of those citizens who will be affected by the program; and
- iv) to provide opportunities for the public to participate in salmonid enhancement.

Specific methods and strategies to achieve these objectives were not defined before the initiation of the program. However, a four-component approach, roughly corresponding to the above goals, evolved through time. These components are described briefly as follows:

- i) education - designed mainly to teach school children the basics of salmon biology, SEP methods and resource interactions by means of an educational package called Salmonids in the Classroom;
- ii) participation - to provide the general public (individuals or groups) with technical help and materials to undertake a variety of enhancement activities including small incubation projects, stream rehabilitation, fry salvage, stocking and feeding, data gathering, and construction of displays or signs; to date, well over 200 public participation projects have been undertaken through the program;

- iii) information - this component handles routine SEP information flow and direct PIP needs including the former Salmonid newsletter (now Pacific Tide), fact sheets and brochures, films and slide shows, displays and other promotional activities;
- iv) advisory - an extensive series of public hearings were held to obtain public feedback on how SEP should proceed; a regional advisory body called the Salmonid Enhancement Task Group (SETG) and comprised of a cross-section of representatives ranging from user groups to the general public was established to provide advice regarding such matters as SEP policies and project selection.

2.2.6 Small Projects

The Small Projects Program (SPP), carried out by the Special Projects Unit (SPU), was created in 1977/78 to provide technical services to CEDP and PIP and to undertake short term projects in stream clearance and fish habitat improvement, often in cooperation with the Field Services Branch of DFO and the Fish & Wildlife Branch of the B.C. Ministry of Environment. The Unit's objectives are:

- i) to enhance production of salmonids by application of appropriate technology;
- ii) to assist other units of SEP, other government agencies and the private sector with salmonid enhancement projects by providing engineering and biological expertise and guidance, as well as financial assistance in some cases;
- iii) to develop and refine salmonid enhancement techniques suited to the application by SPU and other programs and agencies which the Unit assists.

Enhancement projects implemented by SPU emphasize enhancement techniques such as small side channels and stream clearance which do not require a large, continuing operational commitment. In addition to assisting other government fisheries agencies, SPU has undertaken enhancement joint ventures with forestry companies and the B.C. Corrections Branch. SPU has also

initiated a number of pilot-scale salmon hatcheries, most of which were taken over by other divisions within Special Projects and also is responsible for the maintenance of existing DFO fishways. SPU expenditures increased significantly during SEP Phase I, mostly to provide technical support for CEDP and PIP activities. SPU is currently responsible for 22 side channels and 2 small hatcheries.

2.2.7 Provincial Projects

The provincial role in SEP in terms of fish production involves two species of anadromous trout, steelhead and cutthroat. There are currently 2 hatcheries producing these species being operated by the province. In addition cutthroat and particularly steelhead are produced at a number of federal facilities often as a form of mitigation or compensation for stock replacement effects of other SEP projects. The other major area of provincial involvement in SEP is to participate in manageability studies of enhancement activities.

2.2.8 Historical SEP Expenditures by Component

A breakdown of SEP expenditures for Phase I and the transition phase by activity is shown in Table 1 below. The expenditure data were developed for purposes other than evaluation of program components and, while related, do not precisely reflect the categorization of SEP components above. The construction, operation and maintenance costs of major facilities and larger engineering projects are shown as categories "a" and "b". Lake enrichment, CEDP and PIP are shown as categories "c", "d" and "e" respectively. Small projects and smaller engineering projects are shown as category "f". Provincial projects are reported in category "g". Pilot projects

are in category "h".⁴ Expenditures on scientific and economic research by the Fisheries Branch, Research Branch and Economics and Planning Branch are represented by categories "i". Overall program planning and other overheads are shown in category "j".

(⁴) These expenditures refer to projects operated only on an experimental or temporary basis. Pilot projects taken over by the Operations Division or CEDP are included in those latter categories.

TABLE 1
Salmonid Enhancement Program Regional Expenditures
(\$'000)

	1977/78	1978/79	1979/80	PHASE I			1983/84	TRANSITION PHASE		
				1980/81	1981/82	1982/83		1984/85	1985/86 ⁸	1986/87
a. Major and Engineered Facilities ¹	1,621	6,754	11,974	12,847	12,897	9,715	3,455	3,691	4,905	2,877
b. Major Facilities Operations & Maintenance ²	1,344	2,803	3,820	5,777	8,150	9,345	11,711	15,928 ⁷	16,345	17,165
c. Lake Enrichment	307	676	1,095	1,345	1,454	1,801	1,874	2,157	2,285	2,400
d. Community Development Projects	453	1,929	2,813	3,168	2,959	3,672	3,746	4,715	4,543	4,530
e. Public Involvement	505	829	830	874	1,051	1,278	1,234	1,481	1,454	1,520
f. Small Projects ³	252	726	1,098	1,461	1,212	1,211	1,188	1,921	2,465	2,404
g. Provincial Projects ⁴	628	1,154	1,931	1,994	1,625	1,710	1,667	2,241	2,167	1,967
h. Pilot Projects ⁵	283	284	135	244	181	383	211	1,232	1,335	820
i. Scientific and Economic Research ⁶	2,394	2,548	3,576	4,169	2,448	1,973	1,729	4,341	4,346	4,191
j. Program Planning & Direction	791	1,032	1,196	1,633	775	1,361	813	762	863	687
TOTAL	9,342	19,735	28,468	33,512	32,752	32,449	27,628	38,469 ⁷	40,908	40,309

Notes:

1. Design and construction of large hatcheries, spawning channels and fishways.
2. Includes operation of Salmon Commission Facilities beginning in 1985/86.
3. Includes smaller fishways and obstruction removal projects.
4. Includes provincial contribution plus federal funding to mitigate impact of enhancement on anadromous trout.
5. Experimental or temporary projects.
6. Includes expenditures in the following categories: reconnaissance/feasibility studies, manageability and environmental studies, evaluation/assessment studies, research studies.
7. Includes \$300,000 from DFO headquarters for Expo 86 expansions.
8. Does not reflect reductions resulting from freeze on expenditures in 1986.

3.0 EVALUATION ISSUES

3.1 Evaluation Logic Chart

An evaluation logic chart outlines the activities, outputs, intended effects and unintended effects that a program entails. It is useful in developing an evaluation framework because it helps focus the questions and issues that the evaluation must address.

In Figure 1, a logic chart for the salmonid-producing aspects of SEP is presented. This chart outlines the biological mechanisms by which the different types of projects as described in the previous section serve to affect salmonid production, escapement, and catch. Basically, SEP projects are aimed at increasing the deposition of eggs or increasing survival in some stage of the salmonid life cycle. The intended effect is to increase salmonid production, catch and escapement, though a variety of unintended effects on the enhanced and wild stocks can reduce the incremental catch attributable to SEP (the difference in total catch with and without the program).

While the primary focus of SEP is on salmonid production, it is important to recognize that the program is broader in scope, both in terms of its activities and goals. In Figure 2, a logic chart encompassing the full range of SEP activities and objectives is presented. This figure expands on the previous one providing an overview of the entire program.

As shown in Figure 2, in addition to the identification, assessment, selection and implementation of SEP projects there are non-project specific activities related to economics and planning, scientific research, data compilation and the development of SEP-related training, public involvement and education programs.

FIGURE 1

Logic Chart for Salmonid Production

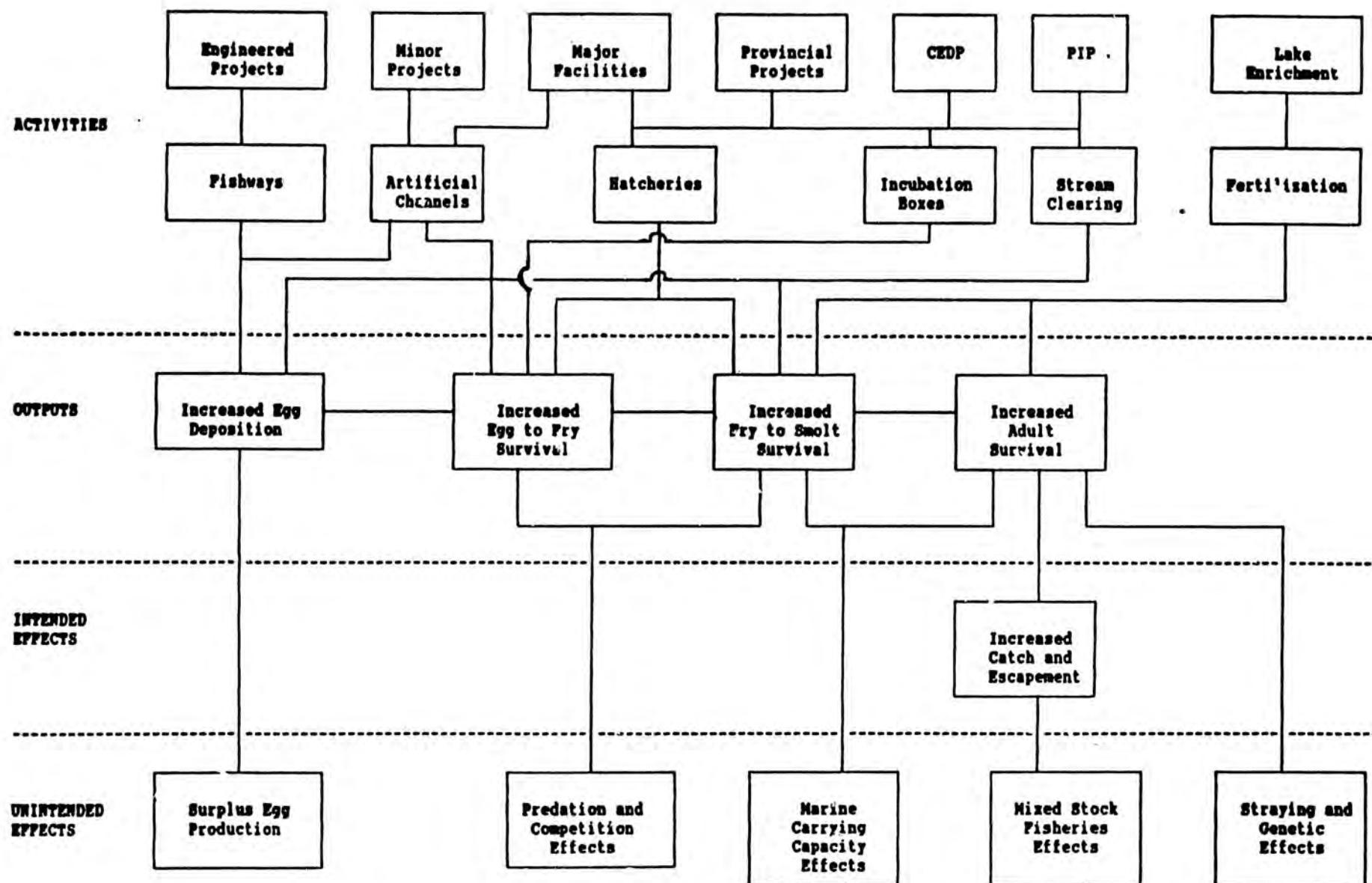
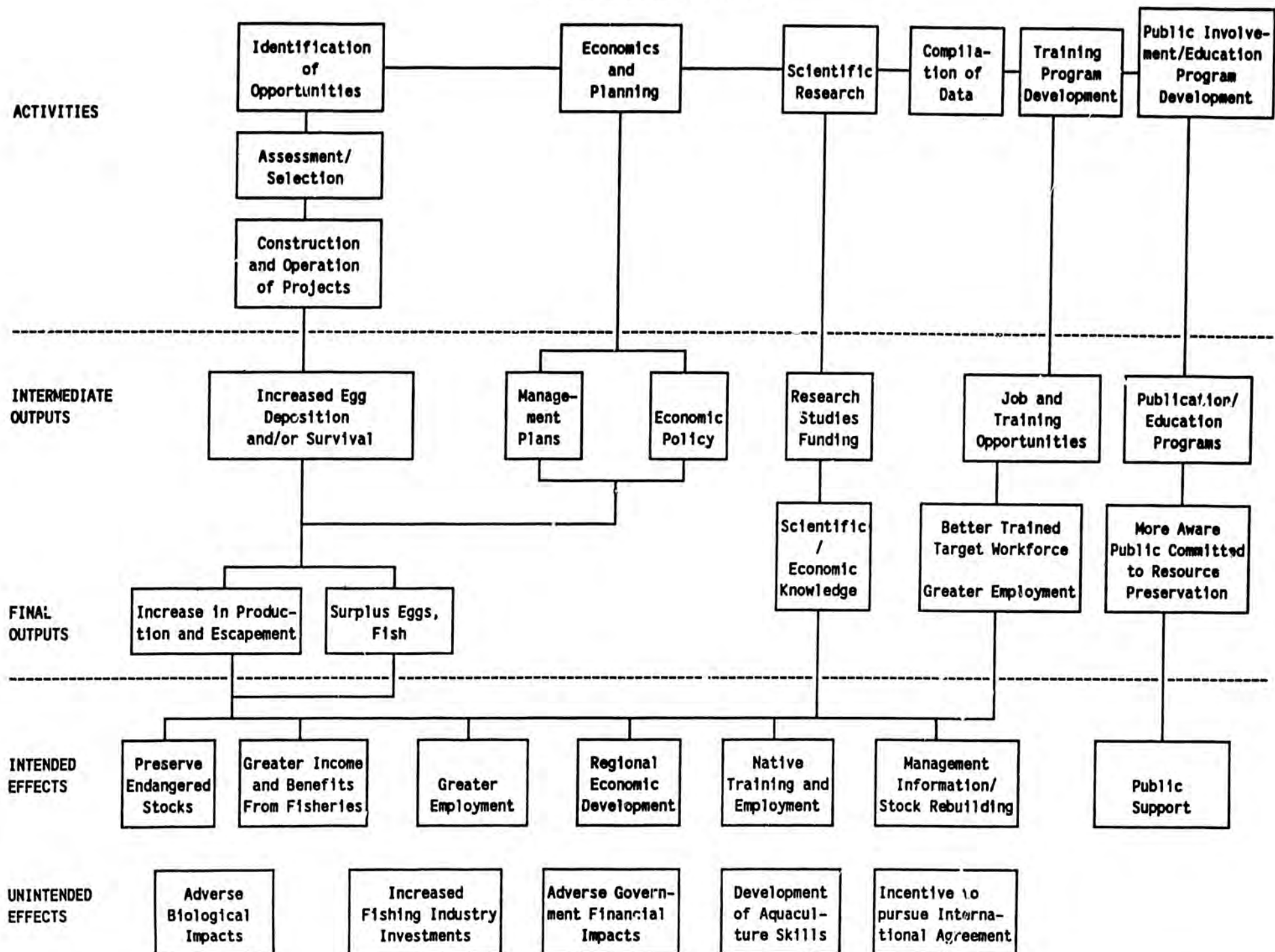


FIGURE 2
SEP EVALUATION LOGIC CHART



The outputs of non-project as well as project-related activities ultimately include greater salmonid production, catch and escapement; greater scientific knowledge and economic understanding of the fisheries; a better trained work force; and a more aware, educated public committed to resource preservation.

The intended effects, in addition to the direct biological and fisheries management goals, are to achieve the full range of social and economic objectives as specified in the initial SEP Agreement: to provide greater income and benefits from the fisheries, to increase employment, to generate economic activity in specific outlying regions, to generate benefits for native people and to develop more public awareness, knowledge and support. Unintended effects include negative impacts such as adverse biological effects on enhanced and wild stocks, over-investment in the fleet, and adverse financial impacts on government. Positive unintended effects include development of aquaculture skills aiding the development of a private aquaculture industry, greater incentive to pursue and conclude an international agreement and better information and planning for management and stock rebuilding efforts.

3.2 Issues

In the July 1986 evaluation framework report, four evaluation issues were identified: production, biological impacts, value for money and other benefits.

The production issue addresses the basic question: how successful have SEP facilities been in producing salmonids, in terms of both fish released and returning adults, and what long term trends in productivity have been observed or indicated. The biological impacts issue addresses questions related to the effects of SEP on wild fish populations, in terms of mixed stock fishery, predation and competition, genetic and marine carrying

capacity effects. The question of management impact or "manageability" of SEP is an integral part of the biological impacts issue.

Taken together, the production and biological/manageability impact issues raise the following fundamental question:

What has been the incremental contribution of SEP to salmonid escapement and catch, taking impacts on non-SEP stocks as well as SEP production into account?

This question is central to the evaluation of the program.

The value for money issue addresses the question of how large the fisheries-related benefits of SEP have been relative to its costs. The other benefits issue addresses the question of how large or significant the social and other "non-fisheries-specific" benefits of SEP have been.

In terms of the logic chart, whereas the production and biological/manageability impacts issues focus on the direct output of SEP, the value for money and other benefits issues focus on the intended economic and social effects of the program. More specifically, the fundamental evaluation question they raise is:

To what extent have the intended economic and social objectives of SEP been realized -- to what extent has SEP increased net benefits from the fisheries, provided employment, generated economic activity in outlying regions and generated economic opportunities and benefits for native people?

In sum, while there are many underlying issues, there are two basic questions that the evaluation of SEP must address. With respect to the direct output of SEP, the question is what has been SEP's incremental contribution to catch and escapement.

With respect to the intended effects of SEP, the question is to what extent have the economic and social objectives of the program been realized.

These two questions must be addressed at several levels. Firstly, they must be addressed for the program as a whole. SEP was developed as a package with different components employing different techniques and addressing different objectives. On an overall basis, however, the program was intended to achieve certain incremental production targets and serve all of its objectives. What must be addressed is, how well or to what extent has this been done.

Secondly, the evaluation questions must be addressed at the program component level. It is important to determine if different components have been more successful in terms of incremental production and the achievement of SEP objectives, and what factors underlie any differences in performance. This may be particularly important given the limited funding now available to SEP and given possible changes in priority among SEP objectives.

Finally, within each program component, the evaluation questions must be addressed at a project-specific level. It is important to identify which projects have been particularly successful and those which were not, and then to try to identify the factors contributing to success or failure. Different project rationale and backgrounds could be responsible for differing performance. Differing species mix, technologies, management regimes, or cost levels could also be responsible. What one can learn from past projects about these factors and their effect on performance could be very valuable in future program design.

4.0 METHODOLOGY AND INDICATORS

The basic evaluation task is to determine the performance of SEP in terms of the two basic issues discussed in the previous section: firstly, SEP's incremental contribution to salmonid production, and secondly, SEP's economic and social effects. The methodology and indicators recommended to evaluate these issues are described below.

4.1 Incremental Contribution to Catch and Escapement

The incremental contribution of SEP refers to the difference in total salmonid catch and escapement with and without the project. It depends upon the productivity of enhancement facilities or projects and on the impact of the production and catch of enhanced fish on wild stocks, i.e. the biological/ manageability effects.

4.1.1 Productivity of Enhancement Facilities or Projects

Productivity of enhancement facilities can be measured in terms of fish released, production of adults and production trends. In carrying out such measurements, it must be recognized that many fish released from hatcheries are experimental groups. These fish may not be representative of survival trends or future expected production. This must be recognized in the analysis.

Fish Released:- While it is the adult production and production trends which are most directly relevant to the evaluation, the number and relative size of fish released should be measured as an indicator of the productivity of enhancement facilities. Factors contributing to greater or lower numbers of releases (e.g. time of release, quality of water supply, risk of flooding, ability to control disease, ability to control

predation) should be identified for purposes of inter-project or program component comparisons. Also, since either wild or enhanced brood stock must be sacrificed (not allowed to spawn in the natural system), the releases should be compared with the number of brood stock used to obtain the production (fish released per spawner sacrificed). This can be an important indicator of the production efficiency of SEP. It is possible, for example, that for some situations, brood stock may have been utilized more efficiently in the natural system than in the facility. The evaluation should identify to what extent and for what reasons this may have occurred.

Production of Adults:- The production of adults (catch plus escapement) is the ultimate test of productivity and as such is clearly an important indicator in the evaluation.

For planning purposes, the expected levels of adult production from enhancement programs have been estimated on the basis of "bio-standard" parameters which trace the lifecycle of the fish from egg deposition through catch. As shown in Figure 3, key biostandard parameters include juvenile survival, adult survival, age specific exploitation rates and catch distribution.⁵

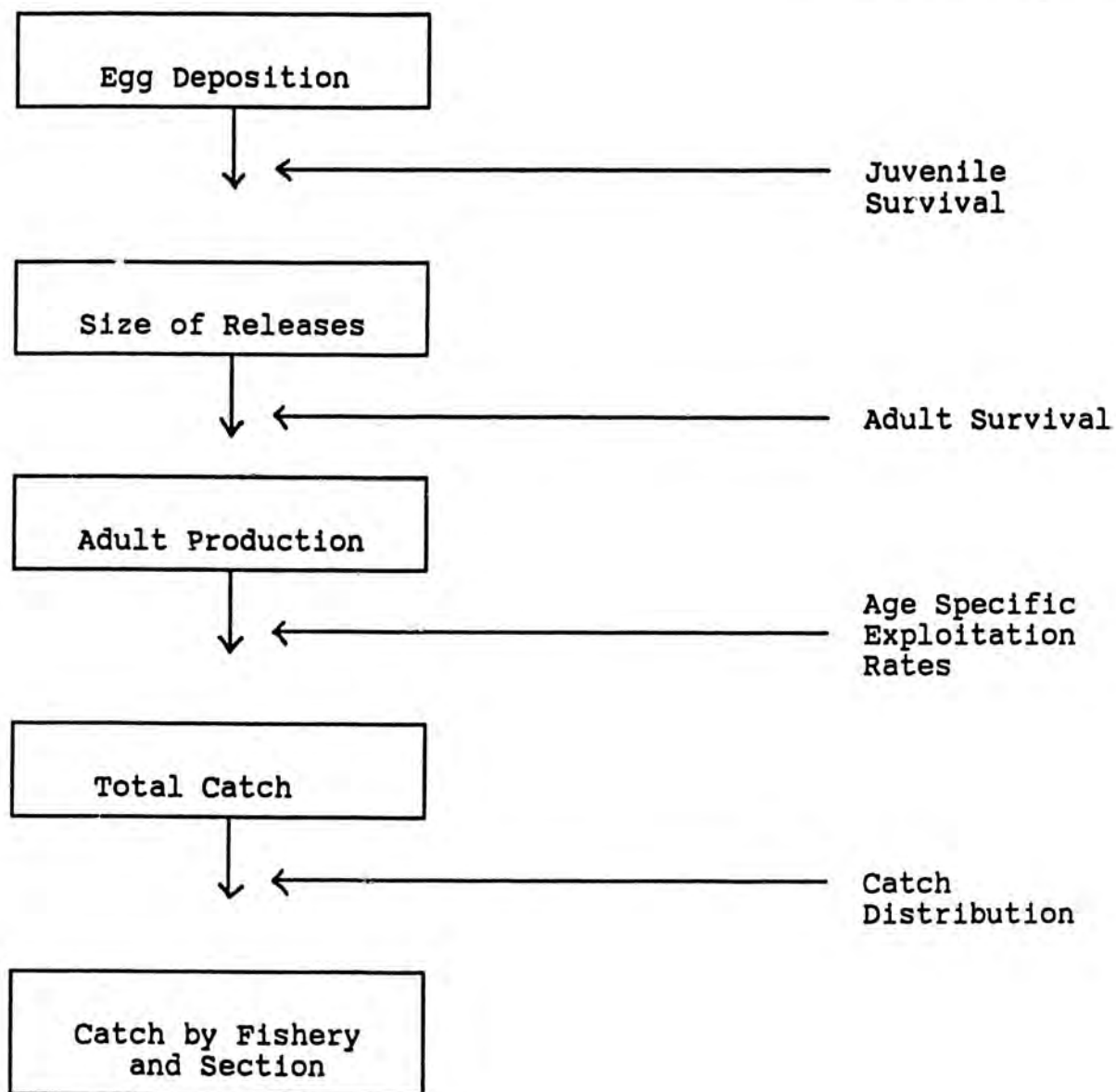
Biostandards can also be used to develop estimates of actual historic production from enhancement facilities. The number of fish released is usually known and the biostandard parameters, adjusted from synoptical and anecdotal data, could be applied to estimate production. A function of the Enhancement Planning

(5) Figure 3 shows the sequence of calculations, but a great deal more sophistication than shown can be introduced to any one step (e.g. many more life stages and risk analysis through the inclusion of stochastic functions as applied to the SEP risk analysis model, Anon. 1987a)

FIGURE 3

Sequence of Calculations to Obtain
Expected Catch Contribution

BIOSTANDARD
PARAMETERS:



Information Control (EPIC) data base is to make the "biostandard" parameters pertinent to the facility, geographical region and species accessible for amendment and use. However, as other studies have pointed out (e.g. Pearse 1982), the use of expected biostandard parameters to estimate the historical record is not an impartial evaluation procedure. Obviously, a better approach is to measure the catch contribution directly. Certainly, the reliability of the biostandard parameters has been brought into question. Further, it is overly simplistic to treat such dynamic quantities as age specific exploitation rates and catch distribution rates as fixed values.

To measure the catch contribution directly, three different methods can be used: mark for stock identification, stock reconstruction estimates, and stock interception estimates. It is recommended that these methods, which are described below, be used in the evaluation, where feasible and appropriate.

The mark for stock identification method relies on artificial or natural marks (e.g. scales, parasites) with which the proportion of total catches accounted for by specific enhancement facility production can be estimated. By far the most prevalent marks are the coded wire tags (CWT) implanted in the fishes' nose and fin-clips applied to chum and pink salmon before release from the facility. Chinook and coho salmon released from all major facilities and many small projects are marked with the CWT, with recovery and other related data held in the mark recovery program (MRP) database. The fin-clip information is held by the Biological Program Coordination Unit (BPCU).

The primary objectives for CWT tagging have been to estimate actual catch contribution, distribution and survival to catch rates for each tagged group using observed and estimated recoveries along with the number of tagged fish released. These terms are defined as follows:

Observed Recoveries = tags removed from heads of marked fish
and successfully decoded

Estimated Recoveries = $\frac{\text{Observed Recoveries} * \text{Total Catch}}{\text{Sampled Catch}}$

Survival to Catch = $\frac{\text{Estimated Recoveries}}{\text{Tagged Fish Released}}$

The above quantities are compiled by the Sports Creel Survey Program and the Head Recovery Program for sports catch and the Commercial Sampling Program for commercial catch.

Since the above statistics have not been expanded to represent unmarked fish, they are termed unexpanded estimates.

Expansion for unmarked fish in the population is obtained through the use of an expansion factor, i.e.:

Catch Contribution = Expansion Factor * Estimated Recoveries

where, the expansion factor, in turn is calculated through one of two models:

The Standard Model:

Expansion Factor = $\frac{\text{Total Fish Released}}{\text{Total Tags Released}}$

The Alternative Model:

Expansion Factor = $\frac{\text{Total Fish Returned}}{\text{Total Tag Returned}}$

The standard model is preferred and used except when tag loss rates are considered too high. Then the alternative model is used. Problems associated with unexpanded and expanded estimates are detailed in the September 1982 Pacific Marine Fisheries Commission Workshop (PMFC 1983) and the March/April 1982 PMFC workshop on coded wire tagging experimental design (PMFC 1982). The standard and alternative models are evaluated for selected hatcheries by English et. al.(1987a).

Estimation of the catch contribution with the use of fin-clipped chum and pink (primarily chum) salmon employs the same procedure as CWT. There are only four distinguishable marks in common usage. For chum salmon, the major fisheries are terminal and the methodology is appropriate. In some cases, such as the Johnson Strait and Fraser River fisheries, run reconstruction analysis is required to supplement the mark recovery analysis.

The utility of other marks, for example, the electrophoresis data (primarily for chum) and the scale discrimination data (primarily for Fraser River sockeye) for estimating SEP contribution to catch is presently unclear. It is possible that such data used in conjunction with stock reconstruction techniques will provide better estimates in mixed stock situations than with a single approach.

Stock reconstruction involves a backward tracking of different stocks from their final escapement back to the outer-most fishery along their migration routes. Estimates of migration routes, timing and diversion rates (proportions of a given stock following different migration routes) are required as well as weekly catch and escapement data. The actual reconstruction works backward through time. In each time period, the catch in each fishery is allocated to the different stocks present in the fishery in proportion to the amount of each stock known to have escaped the fishery at the end of the period. As

the process works backward through time (and backward through the migration routes of any given stock), the catch of a given stock in each previous fishery is estimated on this basis and added on to the estimated run. Eventually, the reconstruction works its way to the outer-most fisheries in which the stock is caught, at which point the total run entering the west coast fishery is determined.

The technique, which is described in Starr and Hilborn (1987), is applied mainly to the "net species" (sockeye, pink and chum salmon) when catch is taken in mixed stock fisheries. It is assumed that the simple migration route of fish through the fisheries and the passive net gear produces largely density independent harvest rates.

The precision and accuracy of the actual catch contribution estimates produced by the stock reconstruction method are uncertain. The reliability of some of the data is poor. On the other hand, stock reconstruction offers the only available method to estimate contribution, adult survival and catch distribution for unmarked stocks.

The North Coast Tagging Program was conducted from 1981 to 1985 to determine the stock interception rate on adult pink and sockeye salmon found in northern B.C. and southwest Alaska. All data are accessible through the North Coast Tag Data Base held on the VAX 11/780 computer at the Pacific Biological Resource Station (Nanaimo).

A general mark-recapture analytical model to estimate the relative population mixture (i.e., catch contribution) and precision in sequential fisheries has been developed (Gazey, et. al. 1987). Therefore, reliable catch contribution estimates are available over these years for northern pink and sockeye stocks (primarily Fulton and Pinkut Creek). These estimates can be

compared to estimates derived through stock reconstruction. An understanding of the difference between the estimates will permit a comparison of assumptions that have been in estimating the catch contributions but shouldn't be used to extrapolate these estimates to years when synoptic tagging data are not available. At the very least, the tagging data provides very good information about the migration route through the fisheries and migration timing.

Productivity Trends:- The purpose of the SEP evaluation is to determine how well the program has in fact performed. It is an "ex-post" perspective. However, most SEP projects have long expected life spans and an evaluation at any point in time must take into account not only historic performance to date but also the expected future performance over the remaining life of the facilities. Two factors must be considered in this respect.

Firstly, future performance will depend in part on the management regime and policies governing facility operations and related catch. It will likely be necessary in the evaluation to postulate alternative management scenarios to capture the range of performance that might reasonably be expected.

Secondly, estimates of future production should be based on actual historic performance, including consideration of long term trends in productivity. A long term reduction in the productivity of SEP facilities has been the focus of much speculative discussion. Certainly, the productivity (survival to catch) of most U.S. hatchery stocks has declined since 1978 (English 1985). The survival trend for B.C. hatchery stocks has been fairly stable or positive for some species and declining for others, especially chinook salmon. Data are available to analyze trends and this should be done as part of the evaluation.

In order to understand or identify the factors underlying SEP production trends, productivity trends of closely related wild stocks should be investigated. If hatchery productivity has been declining relative to wild productivity, one could infer that factors related to the facility or its operations (e.g. culture conditions, genetic conditions) are responsible. However, if hatchery and wild stock productivity have been changing at the same rate, then factors related to estuarine or ocean survival are more likely to be responsible, factors which in some cases may be unrelated to the program itself. Although some data is available, studies of this nature have not yet been initiated and even with a major program, meaningful results could not be expected in the near to mid term (e.g. within ten years). It is recommended that this analysis of the factors underlying long term productivity trends be undertaken. It should however be recognized that this question cannot be fully addressed as part of an evaluation in the short term. It must rather await another evaluation carried out in the longer term.

For purposes of this evaluation, it is recommended that the future projections be based on historic average productivity. To the extent historic trends are identified suggesting that the historic averages may not be maintained, it may be necessary to estimate ranges of future production corresponding to varying assumptions about the continuation or reversal of such trends. It should be noted, however, that until the factors underlying any observed trends are well understood, it will be very difficult to state definitively which future trend assumptions are most likely to prove correct.

4.1.2 Impact of SEP on Wild Stocks

The incremental contribution of SEP depends not only on SEP production, but also on SEP's impact on wild stocks, i.e., SEP's biological and manageability effects. The introduction of large

numbers of enhanced fish can have significant impacts upon wild populations. These impacts can occur because of mixed stock fisheries, predation and competition among juveniles, genetic effects, and possibly limited marine habitat carrying capacity.

Mixed stock fishery effects generally refer to the over-harvesting of wild stocks in fisheries dominated by enhanced production. Large volumes of enhanced fish plus lower percentage escapement requirements for enhanced as opposed to wild stocks (because of the greater spawning efficiency of enhanced fish) can result in optimal harvesting rates for enhanced fish being much greater than for wild. Unless harvesting rates in mixed stock fisheries are constrained to the level appropriate for the wild stocks, or harvesting patterns are altered to separate the harvesting of the enhanced and wild stocks, then wild stocks can be overharvested, resulting in insufficient escapement and a decline in wild production. Mixed stock effects need not always be negative. In some cases enhanced production has been used to replace the harvest of wild fish, thereby allowing wild stocks to rebuild without forcing reductions in total harvest levels.

Predation and competition effects may occur because of the broad overlap in the distribution of juvenile salmon of various stocks and species. The effects may take the form of one stock feeding upon another. This interaction was suspected for chinook salmon raised in warm groundwater in the Upper Fraser River area. Another form of adverse stock interaction may come from the introduction of too many fish into the habitat such that the competition for food reduces survival rates.

It should be noted that what the evaluation must assess is the incremental impact of these effects. For example, even if one determined that coho were important predators of juvenile pink salmon, the question would still remain whether the coho simply replaced other predators or increased the amount of

predation. It is wild survival with and without the enhancement, not just the direct impact of enhanced fish, which the evaluation must address.

Adverse genetic impacts can be caused by the mating of wild and enhanced fish. The gene pool may be reduced by this intermingling in the natural spawning grounds and in artificially produced spawning grounds of SEP. If the enhanced fish are already genetically deficient in some way, or if the gene pool is diminished, survival may be adversely affected.

Finally, adverse marine carrying capacity effects can occur because of the extensive overlap in the distribution of juvenile salmon in the marine environment. There is a limit, as yet unknown, to the marine carrying capacity. If that capacity is exceeded marine survival rates will be reduced for wild as well as enhanced fish.

It will be difficult in the evaluation to estimate the magnitude of these various effects. For example, there is little information on genetic effects. Baseline genetic profiles on wild stocks prior to enhancement with monitoring after enhancement have not been developed or undertaken. With respect to marine carrying capacity effects, variability in ocean survival is large and mostly unexplained. It is possible that the carrying capacity or marine survival effects of enhancement may never be known until there are so many releases that the carrying capacity is clearly exceeded.

Notwithstanding the difficulties, the impacts on wild stocks and the more general manageability aspects of SEP should be addressed for a proper evaluation. One approach that should be considered is to analyze these impacts with simulation models of the fisheries in which all interacting stocks (wild and enhanced) are represented. The models would simulate the catch of fish

from both wild and enhanced stocks in all interception and terminal fisheries. They would have to be age-structured and, for wild stocks, stock recruitment functions (recruits to the fishery as a function of parental stock size) would be assumed. Also, the models would need to have the ability to incorporate past and possible future management policies (e.g. catch/escapement targets, catch ceilings, etc.).⁶

Mixed stock effects can be analyzed with the models by simulating the escapement effects of the simultaneous harvest of enhanced and wild stock in an interception fishery. Predation, competition, genetic and marine habitat carrying capacity can be analyzed in terms of their effects on the survival rates in the wild stock recruitment equations and on adult survival rates of SEP stocks.

The models will allow one to focus on specific issues (e.g. what wild stock recruitment effects one could expect from predation) in order to assess their potential significance in terms of their impact on incremental salmonid production in a specific area or system. It is likely that "reasonable ranges" of the effects could be developed on the basis of best available information and expert opinion. It must however be emphasized that it is unlikely simulation modelling would provide us with definitive answers on the extent of the biological impacts of

(⁶) The construction of such models is similar to what has been done in other salmon fishery strategic planning efforts. Notable examples were models used to advance alternative policies to be considered by the Pearce Royal Commission on the status and potential of the Canadian Pacific Fisheries, the chinook model used as a base of current understanding and agreement in Canada/U.S. treaty negotiations and the South Coast Management Model currently under use to consider alternative policies for Fraser River stocks.

SEP. Rather, the modelling would more likely become a scoping exercise to assist in identifying future experiments and field studies that will provide us with these answers in the future.

4.2 Economic and Social Effects

The analysis of production and biological/manageability impacts of SEP, as discussed above, relates to the first major evaluation issue -- the incremental contribution of SEP to catch and escapement. The second major evaluation issue concerns SEP's economic and social effects. While obviously related to the first issue in that the economic effects depend critically on the production and biological performance of SEP, the economic and social issue must go a step further in addressing the benefits, costs and other socio-economic effects that the SEP production and biological performance give rise to.

More specifically, the evaluation of the economic and social effects of the program must address the extent to which SEP has realized the income and other socio-economic objectives it was intended to achieve. It is recommended that a multiple account benefit-cost analysis be used for this part of the evaluation of SEP.

Benefit-cost analysis is a method of systematically identifying and measuring the benefits and costs of any particular undertaking. Benefits are identified as any output of the undertaking that people value, and therefore in principle are willing to pay for. The total amount they would be willing to pay measures the magnitude of the benefits. Where competitive markets exist, the actual price of the output directly indicates willingness to pay. With SEP, for example, wholesale fish product prices directly measures the willingness to pay or value of commercial fish production. However, for some outputs there are no competitive market prices and indirect measures of

willingness-to-pay are required. For SEP this is the case in the provision of recreational opportunities, training and some other outputs of the program. Nevertheless, these outputs have value, they are benefits and are properly included in the benefit-cost framework.

Costs are identified as any input or adverse effect for which people must be compensated to be no worse off as a result of the undertaking. The total amount they must be compensated measures the magnitude of the cost. In the case of SEP, costs for the most part refer to expenditures on labour, materials and supplies required to construct and operate the facilities, manage the fisheries, undertake related programs, and harvest and process the fish. However, they also in principle include the costs imposed on other resource users, to the extent they are adversely affected by any project.

For costs, as well as benefits, it is only the incremental impacts that are relevant. In other words, it is the benefits and costs that would not otherwise have occurred that are measured. The difference between the incremental benefits and costs (measured over the life of the facilities) then indicate the overall net benefits of the undertaking. The ratio between incremental benefits and costs indicates the benefits per dollar of expenditures. Both net benefits and the benefit-cost ratio are important indicators of the overall advantage or economic efficiency of the undertaking.

If economic efficiency were the only objective of SEP then the calculation of benefits and costs from an overall national perspective would be the only criterion or account by which one would want to evaluate SEP. However, SEP has several objectives and therefore a multiple account framework is required.

The accounts that SEP economists have used in their project assessment work are as follows:

- economic efficiency, as indicated by net benefits and benefit-cost ratios;
- economic impact, as indicated by the number of jobs created and accruing to persons who would otherwise be unemployed;
- regional economic development, as indicated by the income and employment accruing to specific geographical areas within British Columbia; and
- native economic development, as indicated by the income and employment accruing to native people.

At one time there was a fifth account, relating to stock preservation and manageability, but this now is built-in as a precondition of project approval. It is an important element which should receive careful consideration in the evaluation.

In discussions with SEP economists it was agreed that the four accounts listed above can be grouped into two main categories: economic efficiency effects and distributional effects. Economic efficiency refers to the net benefits or benefit-cost ratio from the perspective of the country as a whole. The aspect of performance it attempts to capture is to what extent has the program increased income and benefits, or to say the same thing, the total value of the goods and services produced in the economy. Properly measured it incorporates the first two accounts listed above, since creating jobs for persons who would otherwise be unemployed does increase the total output of the economy and can be included in the measure of net benefits.

Distributional effects refer not to total net benefits, but rather to the net benefits accruing to specific groups within the economy. SEP planners used two distributional accounts, regional and native, but they both relate to a similar aspect of performance -- not how much, but for whom.

For purposes of the SEP evaluation, therefore, it is recommended that a two account framework be used. The two accounts would be economic efficiency and distributional effects, and the evaluation would address how well each of these broad objectives have been realized.

For both accounts, more than one indicator of performance is required. The recommended indicators and measurement procedures under each account are outlined below.

4.2.1 Economic Efficiency Account

The purpose of the economic efficiency account is to measure the extent to which SEP has increased the total value of goods and services produced in the country. Because of the nature of the outputs of SEP, the analysis must be divided into two parts: measured economic efficiency effects and non-measured economic efficiency effects.

Measured Economic Efficiency Effects:- The measured effects refer to those aspects of SEP that can reasonably be evaluated in terms of economic value or willingness to pay. In terms of benefits, basically this would include the value of incremental commercial, recreational and Indian catches due to SEP; the value of surplus fish and eggs; the value of training programs; and the value of hiring persons who would otherwise be unemployed. In terms of costs, the measured effects would include program expenditures, incremental government expenditures and incremental private sector (harvesting and processing) expenditures. One

could also include the opportunity costs⁷ associated with volunteer labour and supplies and the costs or losses associated with any natural resource conflicts or impacts (e.g. on forestry). However, with respect to volunteer services, it can be assumed that these costs are offset by the personal benefit people derive from such activity. With respect to resource conflicts, it is likely that data will not be available for quantified analysis and therefore these costs should probably be dealt with in the non-measured effects, as discussed below.

While the principles governing the measurement of benefits and costs are clear, namely, to identify the total willingness to pay for benefits and the compensation required for costs, the methods of doing this will in many cases pose a number of problems. These problems are identified in Tables 2 and 3 where measurement methods for each of the benefits and costs to be included in the measured economic efficiency calculation are briefly discussed.

To calculate the overall measured net benefits and benefit/cost ratio, all of the benefits and costs as discussed in Tables 2 and 3 must be estimated each year over the life of the projects included in the evaluation. In most cases this will not only involve documentation of historical effects, but also projections over the projects' expected remaining lifespan. The present value of the benefit and cost streams can then be calculated, which basically entails the summing of all annual effects, weighted in accordance with the timing of those effects. The later the benefit or cost, the less is its present significance or weight. A social discount rate reflecting the

(7) Opportunity cost refers to the value of a good or service in its next best use.

TABLE 2

Factors to Consider in Measuring SEP Benefits

Benefit Category	Valuation Method	Factors to Consider
1. Incremental Commercial Catch	- wholesale value of fish products	- values should be calculated f.o.b. processing plants - impacts of aquaculture on future values should be taken into account - assumptions about the product mix of the incremental salmon production will be required
2. Incremental Recreational Catch	- willingness to pay for increased success rates and for induced increased activity	- values should reflect the marginal, not average value of recreational activity - an analysis of effort response to increased salmon abundance is required
3. Incremental Indian Catch	- wholesale value of fish products	- this may understate the true value and some sensitivity analysis using retail or other (cultural) values may be worthwhile
4. Value of Surplus Fish	- wholesale value less transport and processing costs	- this may exceed actual disposition price for surplus fish sales
5. Value of Surplus Eggs	- alternative cost of acquiring eggs for aquaculture	- this may exceed actual disposition price
6. Value of Training Programs	- present value total increase in trainees' pre-tax earnings over what could be expected without the training	- this will require estimates of impacts on trainee post-project employability and earnings
7. Value of Hiring Persons Who Would Otherwise be Unemployed*	- the number of persons hired times (average pre-tax earnings minus the value of leisure) times the probability of hiring persons who would be otherwise employed	- the value of leisure is difficult to estimate, but probably quite small for persons seeking work - estimating the probability for hiring persons who would otherwise be unemployed should be done by region and skill category

*While expressed here as a benefit, this could equivalently be considered as a factor to consider when measuring costs. To the extent people are hired who would otherwise be unemployed, the costs of SEP are less from a social perspective than actual expenditures would indicate. Thus a negative cost adjustment is warranted. However, a negative cost adjustment is equivalent to saying there is an employment benefit, which is the way it is expressed here.

TABLE 3

Methods and Factors to Consider in Measuring SEP Costs

Cost Category	Valuation Method	Factors to Consider
1. Program expenditures	- actual expenditures	- those expenditures which would be incurred without SEP should be excluded
2. Non-program government expenditures	- incremental expenditures attributable to SEP	- this should include both DFO and other department expenditures - incremental provincial government expenditures should also be included
3. Private sector expenditures	- incremental fish harvesting and processing evaluations due to SEP	- both incremental operating and capital expenditures should be included, requiring an analysis of both effort and investment response to increased salmon abundance - impacts may vary depending on whether new fisheries are created or existing ones are simply increased

opportunity cost of capital (i.e. the time value of money) should be used for these calculations. Current federal government regulations recommend using a real discount rate of 10%, with sensitivities at 5% and 15%. Current studies and regulatory practice, however, suggest a rate of 8%,⁸ with sensitivities at 6% and 10%, and the latter is recommended for this evaluation.

Non-Measured Economic Efficiency Effects:- Not all of the outputs or effects of SEP can be measured in economic terms. For example, public participation and education, preservation of endangered stocks, scientific advance, the development of fisheries data and planning models, the development of aquaculture expertise, community benefits related for example to native economic development programs all are important aspects of SEP that have value. However, to measure their value in terms of society's willingness to pay for them is difficult if not impossible, and is not recommended for this evaluation.

Nevertheless, these benefits should not be ignored. They should be identified and described in quantitative and qualitative terms, and their significance assessed. While exact procedures will vary depending on the nature of the output, the basic approach that should be followed is as follows.

First, the different types of benefits and costs not included in the measured economic efficiency calculation should be identified. A preliminary list is provided above, but further research may yield others.

Second, the magnitude of the output should be described in whatever units or terms are most appropriate. For example, amount of activity, numbers of persons or communities affected, number of publications and readership may be appropriate. Other measures may also be found.

(⁸) For example, in recent NEB gas export and transport hearings, a rate of 8% has been recommended.

Third, the significance of the output should be assessed relative to the measured net benefits which have already been identified. This step is key in that it brings the description of all of the "non-measured" benefits and costs into a common focus. By comparing them relative to the measured net benefits, qualitative statements can systematically be made about the extent to which the "non-measured" benefits and costs further justify, solely justify or do not justify the costs that have been incurred. Put somewhat differently, this step allows one to determine what the value of the "non-measured" effects would have to be to change the conclusions from the measured net benefits analysis, and whether such values are reasonable.

4.2.2 Distributional Impact Account

The purpose of the distributional account is to indicate how different sectors or regions have been affected by SEP. As discussed above, the issue is not what the total magnitude of the benefits and costs have been, but rather to whom they have accrued.

In accordance with the original objectives of SEP, it is recommended that two of the indicators be: (i) the income and employment accruing to British Columbians living outside the Lower Mainland, and (ii) the income and employment accruing to native Indians. These two indicators fall within broader distributional categories, and it may be worthwhile to use a broader framework in the evaluation. Specifically, the regional indicator could be presented in terms of:

- the distribution of income and employment benefits among regions (Lower Mainland/Southern Vancouver Island, rest of B.C., rest of Canada).

The native Indian indicator could be presented in terms of:

- the distribution of income, employment and other benefits among user groups (non-native commercial, recreational, Indian).

By using these broader indicators, the relative as well as absolute level of benefits accruing to the target regions and groups can be identified.

In addition to these two distributional indicators, a third one examining the distribution of net benefits between taxpayers and fishing interests is recommended. The original Treasury Board approval of SEP was predicated on full cost recovery and it is important to determine in the evaluation to what extent this has been achieved. Net benefits from a taxpayer, as opposed to fishing interest perspective can answer this question. Taxpayer net benefits can be measured in terms of government revenues less government costs. In accordance with the original cost recovery objectives, government revenues should be limited to license fee, surplus sales and other direct revenues from SEP. Recognizing the broader tax implications for SEP, however, the evaluation should also measure taxpayer net benefits taking incremental income and sales tax revenue and avoided social transfer payments into account.

It is recommended that the distributional analysis only be done at a program component and overall SEP level. Project-specific analysis would be very difficult and not particularly informative for the evaluation, since distributional objectives clearly relate to program components and SEP as a whole, not individual projects.

5.0 DATA REQUIREMENTS AND AVAILABILITY

In order to evaluate the incremental contribution of SEP to catch and escapement, and SEP's economic and social effects, a systematic documentation of SEP activities, production and impacts is required at both a project specific and program level. The documentation requirements are outlined in section 5.1 below. In section 5.2, information sources and data gaps are discussed.

5.1 Data and Information Requirements

Documentation of SEP projects' background, related fisheries management, production and fisheries contribution impacts, costs, production benefits and other benefits is required to evaluate the projects' performance and factors underlying performance. The specific data and information required are:

1. Project Background

- . technical characteristics
- . rationale
- . history, including technical changes over time

2. Fisheries Management

- . management plan for enhanced and interrelated stocks
- . consistency or conflict with overall management objectives

3. Production Impacts

- . annual releases and number of wild fish removed for brood stock
- . estimated annual adult production by species
- . information, if any, on impacts on other stocks
- . estimated historic annual incremental catch by fishery
- . projected future annual incremental catch by fishery over project's remaining life

4. Costs

- . direct project capital and operating and maintenance costs
- . incremental DFO overhead attributable to the project
- . other government (non-DFO) costs attributable to the project
- . incremental private sector costs (e.g. harvesting and processing)
- . alternative resource use or environmental impacts attributable to the project

5. Production Benefits

- . value of incremental commercial, recreational and native catch
- . value of surplus (rack) sales
- . value of surplus egg sales

6. Other Benefits

- . employment and related income impacts and alternative employment opportunities of those affected
- . training activities accompanying the project and impact on trainees future employment prospects or earnings levels
- . public education or participation activities and significance
- . scientific value and significance
- . stock preservation or other benefits and significance

The evaluation of the benefits of SEP at a program component level involves aggregations and analyses of project-specific results as well as consideration of activities which cannot be attributed to particular projects, but rather a program component as a whole. Also distributional effects must be identified to address the issue of performance under the distributional account.

The program component level documentation that is required includes background and activities, total project performance within each program, and identification and assessment of non-project-specific activities.

More specifically, the data and information required are:

1. Component Background

- . projects and activities
- . rationale
- . history and modifications over time

2. Project-Specific Aspects of Component

- . total production, costs, and production and other benefits
(aggregation of project data)
- . distribution of benefits and costs among fisheries interests,
regions and between fisheries interests and taxpayers

3. Other Activities

- . non-project-specific aspects of component
- . costs
- . impacts and significance
- . distribution of benefits and costs among fisheries interests, regions and between fisheries interests and taxpayers

5.2 Existing Data Bases and Information Sources

Two basic sources of information on SEP activities and impacts are the Enhancement Planning Information Control (EPIC) data base and data files in the SEP Evaluation Model (SEPEM). EPIC is a computerized data-base containing information on SEP project construction, operating and overhead costs, employment, juvenile production and biostandards. SEPEM is a computerized version of SEP's multiple account benefit-cost model and incorporates various data and standards files (e.g. harvesting and processing cost tables, wholesale price tables, recreational participation and value tables) required for the assessment of SEP's economic and social (distributional) effects. SEPEM also provides an analytical tool consistent with the evaluation methodology outlined in section 4.2 above and can be used for the economic benefit-cost and distributional part of the evaluation at the project, component and total program level.

A major requirement for the evaluation will be the up-dating of SEP production estimates on a project-specific basis. Several data sources are available for this, the most important of which include the following:

- MRP data base;
- Fin-clipped pink and chum recovery data base;
- Stock escapement data base;
- Sales slip data base;
- North coast tagging study data base;
- Lake enrichment data base.

Numerous other information sources are available for the study, ranging from knowledge and experience of program personnel, fisheries managers, Treasury Board submissions, and departmental research studies. Specific sources that may be useful for each part of the documentation requirements listed in section 5.1 are discussed below, along with an indication of data gaps and reliability concerns.

Project Background and Fisheries Management: - Data with respect to the basic technical characteristics of specific projects (e.g. facility types, species, expenditures, timing and possibly other site specific data) can be obtained from the EPIC data base, the SEP Model, SEP planners and facility managers. Questions with respect to the reasons for project selection and any modifications over time which may have occurred will require interviews with program managers and reviews of available documentation. For example, Treasury Board submissions are available for larger projects. Formal documentation on the selection process for small projects will be more difficult to obtain and will have to rely more heavily on program managers and staff. This may create difficulties if these personnel have left SEP. Information on fisheries management plans accompanying the

projects and the manageability aspects of the project will require interviews with program planners and fisheries management personnel.

Production Impacts: - A large part of the data needed for the production aspects of SEP evaluation is held in five data bases: the MRP, chum and pink fin-clip recoveries, EPIC, Sales-Slip Catch and the North Coast Tagging Study. With the exception of the EPIC and the fin-clip recoveries, the data bases are located on the VAX 11/780 computer at the Pacific Biological Station.

The MRP data base consists of all information necessary to produce actual catch contribution using the CWT's. The CWT data represents the majority of the available information on the contribution of specific chinook and coho stocks to each salmon fishery. Coded wire tag data are essentially mark-recapture data; the marks are applied where the origin of the fish is known and recovered in the fisheries. The marking involves the removal of the adipose fin and the implantation of a small piece of binary or colour coded wire in the nose of the fish.

The Mark Recovery Program examines 20% of Canadian and USA commercial catches of chinook and coho for missing adipose fins. The heads of the marked fish are removed and sent to a laboratory where the coded wire tags are removed and decoded. In Canada, sports fisheries are not systematically surveyed for CWT's. Therefore, tag recoveries from sport fisheries are from CWT heads voluntarily returned by sports fishermen. However, the incidence of adipose clips in the sport catch from the southern region can be obtained from the Sport Creel Survey since 1980.

The pink and chum fin-clip data base is held by the BPCU on an Apple II computer. All associated data for a catch contribution estimate of fisheries with a single enhanced stock are held in the data base (catch, sample size, number of recoveries, total release, total clipped).

As noted earlier, the EPIC data base holds all the biostandard parameters along with information on construction, operating costs, overhead costs, planned and actual production of juveniles, and planned production of adults (actual production of adults is to be entered in 1988) on a project specific basis. It is planned to move the data base to the FM/VAX in Vancouver in the near future.

The Sales-Slip Catch data base consists of all reported commercial catch (weight and pieces) in B.C. by species, grade, statistical sub-area and week on a readily accessible basis.

The North Coast Tagging Study data base consists of all release and recapture information on the adult tagging of sockeye and pink salmon conducted in Northern B.C. and Southeastern Alaska waters during the years 1981-1985.

Other necessary data and sources for estimating production impacts include the following:

- . escapement data - available in a comprehensive data base (SEDS) on the Pacific Biological Station VAX, but should be supplemented with data from fishery managers located in the North Coast, South Coast and Fraser River district offices because of continuous updates and corrections;
- . migration route and timing of fish movement through the fisheries as required for stock reconstruction of the "net" species - this information can be obtained from fishery managers in each of the district offices; information is also available from numerous adult

tagging studies, for example the North Coast Tagging Study and from the recovery of fin-clips (particularly chum);

- . facility-based data including escapement to the facility, number of wild fish removed for brood stock and ad hoc assessment of release (synoptic total counts, book counts and Peterson mark-recapture estimates) and return (anecdotal) information - this information can be compiled in conjunction with the documentation of facility backgrounds;
- . U.S. catch and CWT mark recovery data - this data is currently being entered into the MRP data base.
- . Native catch data - a Fraser River Food Fishery (by far the largest fraction of native catch) data base is nearing completion; the ease of access to native catch data outside the Fraser system is presently unknown, but the majority of the data are probably unreliable and not useable. Regardless of the availability of native catch data, there remains no sampling of this catch. It cannot therefore be included in the evaluation.

The specific types of data that are required for each project will depend upon the methodology now being used to estimate production. In Appendix A, the methodology appropriate for each project are presented along with an indication of the quality of the data. Basically, for most hatcheries MRP data will be the principal source. For channels, small projects and lake enrichment, stock reconstruction and finclip estimates will be the principal source. For some projects no data are available and biostandard expectations in EPIC will be the only source of production data.

Not all SEP projects are listed in Appendix A. Specifically, PIP projects with estimated production of less than 2000 adults are omitted. The small PIP projects are too difficult to analyze individually and it is recommended they be analyzed as a group. It is also recommended that spawning channels and enriched lakes be analyzed as groups. Fishways will

need to be analyzed individually but production impacts will not be analyzed very vigorously. Finally, a methodology for measuring habitat improvement impacts is now the subject of a separate framework study being prepared for a National Habitat Program Evaluation. It is recommended that SEP habitat improvement projects would more suitably be considered using the methodologies being developed for the habitat evaluation.

In general, while there are some gaps,⁹ the data required for estimating production impacts are available. However, the quality of production-related data varies by facility. For the major facilities they are generally excellent or good. For the smaller facilities and lake enrichment the data in many instances are poor.

In addition to the estimation of historic production, the evaluation will require forecasts of future production from existing facilities. The impact of alternative management scenarios will also have to be considered, and this should be done based on discussions with fisheries management personnel.

Finally, the evaluation of the incremental contribution of SEP to salmonid production and catch will require consideration of biological impacts on wild stocks. As explained in section 4.1.2, simulation models are one approach to considering these impacts. Such models could be adapted from the Stock Management Plan research (particularly the South Coast Management Model, Gazey, et. al., 1986) for the net species. For chinook, the model developed for Canada/U.S. treaty negotiations (manuscript in preparation, Paul Starr, personal communication) would likely be the most appropriate. Currently there is no model suitable

(9) Data gaps include Native catch outside the Fraser system, native catch of chinook and coho on a stock basis within the Fraser system, sports catch outside the South Coast creel survey, and catch taken on the high seas.

for coho, but the chinook model could form an appropriate structure. Other models which could be of use in the assessment of mixed stock fishery effects over a single season are the Troll Management Model (English et. al. 1987b) and the Strait of Georgia Chinook and Coho Model (Argue, et. al. 1983).

With respect to the different biological impacts governing survival rates (predation, competition, generation, and marine carrying capacity), long term studies will be required before defensible quantitative estimates of specific effects can be made. As summarized in Appendix B, numerous studies have been undertaken, but they have not been coordinated nor necessarily focussed on those issues of greatest significance to the success of SEP. A coordinated research program addressing these effects should be developed, including, at a minimum, the development of baseline genetic profiles on wild and enhanced stocks and an examination of the family genetic specificity for hatchery success. Results from such a research program would be used for a future evaluation in the long term rather than the evaluation now being planned. For purposes of this evaluation, two information sources on biological impacts can be developed and used.

Firstly, a document summarizing key information and research results regarding biological impacts in Canada and other areas (e.g. U.S., Norway, Japan, USSR) can be prepared. Such a study would be quite expensive in both time and dollars. It might therefore be more cost effective to get the necessary information by organizing an international symposium on this subject to be held in Canada.

Secondly, a workshop could be held and expert opinion solicited in an attempt to bracket reasonable ranges of the effects. If simulation models are developed, these ranges can then be used in the models to test for their significance in terms of impacts on production in the short and long term.

Costs: - Data on direct project capital and operating costs are available from the EPIC data base. SEP overhead costs are also provided in EPIC, although not all overheads have been allocated to individual projects. In these instances an allocation rule will have to be developed by the evaluator. Other DFO and non-DFO government costs are not included in EPIC and will have to be compiled separately from such sources as SEP's Finance Division, DFO Headquarters and other government agencies.

The compilation of other DFO and government costs attributable to SEP should focus on significant, identifiable costs as opposed to minor expenses of a miscellaneous nature. For example, with respect to other DFO costs, incremental field management and expenditures and regional headquarter of contributions of government agencies for such departments as and DPW, and for the provincial Marine Resources Branch should be documented. Appropriate rules will have to be developed to allocate non-SEP costs to projects and programs. The method of allocating overhead costs will be particularly important for smaller projects such as those in PIP for which overheads could comprise a large proportion of total costs.

The issue of whether certain SEP costs or overheads should be partly allocated to other DFO activities will also have to be addressed. That is, there may be some SEP activities which are now recognized to be an essential part of DFO's management and

habitat protection functions and which would continue regardless of the existence of a formal SEP program. These costs should be netted out of the costs attributable to SEP.

Estimates of incremental private sector costs attributable to the project can be found in two of the SEP Model's standards files, namely the Harvesting Cost Table and the Processing Cost Table. These estimates attempt to reflect the variable costs associated with harvesting and processing greater volumes of fish. They are based on the assumption that additional capital investment in fishing vessels and related equipment or in processing capacity is not required to handle additional enhancement production. This assumption can be relaxed in the Model. An investment response or capitalization coefficient has been estimated to provide an indication of capital expenditures induced by higher fishermen's incomes. This estimate is based on a regression of real income and real capital additions for 100 salmon troll vessels over the 1973-82 period. Estimates for other gear types were derived by adjusting the troll results with the results of a less rigorous study of reinvestment for all gear types. In the opinion of SEP economists, a more rigorous specification and estimation of a reinvestment function in the harvesting sector is required for a proper and complete evaluation. This would likely require a more comprehensive survey of fishermen. The evidence for additional capitalization in the processing sector must also be examined and analyzed. A critical review of the SEP Model assumptions regarding the variable costs of harvesting and processing SEP production is also required.

The SEP Model does not incorporate the costs associated with natural resource conflicts or impacts. Identification of such costs will be difficult and it is suggested that only those of major significance be addressed and even those might best be dealt with in a qualitative manner. Information sources would

include Treasury Board submissions for larger projects, SEP program managers, B.C. Fish & Wildlife officials and other contacts or documentation arising out of discussions with these officials.

Production Benefits: - Benefits from SEP production include the value of the incremental commercial catch, the value of the incremental Indian catch, the value of incremental recreational catch, and the value of surplus fish and surplus eggs.

The gross value of incremental SEP production in each fishery can be found in various SEP Model standards tables. Gross benefits of the commercial fishery and native food fisheries, is measured by wholesale value, which is found in the Wholesale Price Table. This table, based on actual historical wholesale prices from Fisheries Production Statistics of British Columbia,¹⁰ contains wholesale prices by gear and species for a 15 year period.¹¹ These forecasts will likely have to be extended for SEP projects with longer economic lives and should take into account anticipated price impacts of future aquaculture production.

The value of surplus fish and eggs (i.e. surplus to broodstock requirements) at the hatchery gate, as well as the value of terminal fisheries directed at enhanced stocks are not incorporated in the SEP Model for all enhancement facilities at this time. Data on surplus fish and egg sale prices can be obtained from the Crown Assets Disposal Corporation but these may not reflect their full net market value. Additional information on hatchery gate harvesting costs, processing costs and the

(10)

Fisheries Branch, B.C. Ministry of Environment, Annual.

(11)

B.C. Salmon Landed to Wholesale Price Ratios, developed by DPA Consultants for Regional Planning and Economics, DFO, 1985.

wholesale value of surplus fish must be obtained from facility managers and fish buyers. The value of surplus eggs is assumed to be \$10 per thousand in the Model, based on the price currently paid by buyers. However, the true social value of surplus eggs as indicated by private sales to fish farmers is much higher and these values should be obtained and input into the SEP Model. The value of terminal fisheries is not fully reflected in the SEP Model at this time since the data base upon which catch is allocated to various fisheries and terminal areas (Production Distribution Table) is somewhat dated. There is also some concern about the accuracy of data on Native food catches.

Estimates of incremental angler days attributable to SEP and the marginal value per angler day are found in the Incremental Angler Days Table and the Sport Value Table. There is a concern that these estimates reflect the average not incremental value of sport fishing and therefore they require critical review and updating. Some more recent information on the incremental benefits of sport fishing is available from, in particular, studies by Cameron and James¹² and Shaffer.¹³ However there are still gaps in the empirical data, particularly with respect to effort response in recreational fisheries for various species.

(12)

Cameron, T.A. and James, M.D. "The Determinants of Value For a Recreational Fishing Day: Estimates from a Contingent Valuation Survey," 1986.

(13)

Marvin Shaffer & Associates Ltd., "An Analysis of the Economic Efficiency Implications of Alternative Chinook Allocations in the Gulf of Georgia", January, 1987.

Other Benefits: - Other (non-production) benefits from SEP include the hiring of persons who would otherwise be unemployed, the provision of training programs and a variety of other outputs related to education, research, community liaison, incentives for reaching an international agreement, and so on.

The direct, indirect and induced employment and income impacts generated as a result of SEP expenditures and incremental fish production and activity are estimated in the SEP Model's Regional Development and Employment Accounts, using standards files developed on the basis of data from:

- a number of consulting studies pertaining to the economic impacts of SEP-related activities, and the distribution of impacts among regions and sectors or target groups;
- internal SEP data bases on annual employment and expenditures;
- Statistics Canada data on wages, inflation indices and processing costs;
- costs and earning surveys for the harvesting sector and annual sport fishing expenditure surveys undertaken for DFO.

Data collected annually such as SEP expenditures and employment and Statistics Canada information can be easily used to update SEP Model files. However, depending upon the timing of future evaluations some of the economic impact analyses may require updating and refinement. Several of these studies were undertaken in 1982 and were based on even more dated information sources, including Statistics Canada's 1974 inter-regional model. An even more important data requirement is a more rigorous investigation of the effect of higher catches on commercial and sport fishing effort and expenditures levels. It is currently assumed in the model that higher catch translates directly and proportionately into higher expenditures. Once this

linkage has been more accurately defined, economic impacts can be estimated on the basis of existing or up-dated data on expenditure breakdowns and income and employment multipliers.

The assessment of the benefits associated with the hiring of persons or groups with few or no alternative employment opportunities requires an estimate of the probability of hiring from the pool of unemployed and an estimate of the social opportunity cost of this labour for various occupations, industrial or skill groupings. These estimates can then be used in the SEP Model to determine the benefit of SEP employment from a social perspective. Existing analyses of the labour market prospects of those employed as a result of SEP are somewhat dated.

The assessment of social benefits associated with CEDP training activities requires information on trainees' employment prospects and earnings levels before and after the training period. Objective information on the benefits of training does not appear to be readily available for CEDP. The only existing sources of such information include salary differentials within the program itself or anecdotal information based on interviews with project coordinators or contractors.

The assessment of the benefits from the other outputs of SEP, benefits as stated in section 3, should be included in the non-measured part of the economic efficiency analysis. This requires first the identification of all relevant benefits, then estimates of their magnitude and finally assessments of their significance. Such information is not currently available in any systematic way and will have to be compiled on the basis of interviews with program managers. There are, however, some previous program component evaluations that have been undertaken that could be utilized for this purpose.

Program Level Documentation: - The data requirements for evaluation at the program component level will be essentially the same as described above for the project-specific analysis, with three exceptions. First, the allocation of overhead costs will not be as difficult a problem, subject to ensuring that all SEP-related costs are accounted for. Second, there are some activities which are more appropriately evaluated at the program level which will require a separate information gathering exercise, for example the educational, participatory and advisory activities of the Public Involvement Program. The evaluation of these benefits will rely primarily on interviews with program managers and participants. Thirdly, the distributional effects of the programs will have to be identified. The distribution of income and employment benefits across regions and fishing interests can be derived from the SEP Model. The distribution between taxpayers and fishing interests, however, will require new documentation, particularly with respect to the income and sales tax revenue and avoided social program expenditures due to SEP.

6.0 PRE-EVALUATION WORK TASKS AND RESEARCH REQUIREMENTS

The evaluation of SEP will entail three basic phases of activity. Firstly, existing data will have to be compiled and, where required, updated or modified in light of new information. Secondly, specific research will have to be undertaken to deal with significant data gaps or reliability concerns. Finally, with the data and research findings in place, the evaluation issues can be analyzed at the project and program level and the evaluation report developed.

The data compilation and research phases are critical to the evaluation and most of these will have to be completed before the evaluation analysis can commence. If initiated now, some of the research activities will, of necessity, need to extend beyond the timeframe of a short term evaluation and will be more useful for an evaluation conducted in the late 1990's. "Pre-evaluation" activities are discussed below.

6.1 Compilation of Existing Data

The specific nature of the data that must be compiled were described in detail in section 5.

- compilation of project backgrounds and related fisheries management information;
- compilation (update) of historic production and catch contribution by facility;
- development of future fisheries management scenarios and facility production forecasts;
- compilation of data on DFO overheads as well as other government costs attributable to SEP;
- review and update of harvesting and processing cost impacts;

- the compilation of project-specific cost data for PIP projects;
- compilation of information on significant natural resource conflicts or impacts;
- compilation of wholesale price forecasts for SEP projects' remaining economic lives;
- compilation of the value of surplus fish and egg sales and the value of native and non-native terminal fisheries.
- compilation of information on other benefits, not amenable to quantitative economic efficiency analysis;
- compilation of estimates of government revenue impacts of SEP.

Some of this documentation task is relatively straightforward and can be undertaken within SEP's current O & M and PY allocations. In some instances, the documentation work is already being done as part of the on-going activities of SEP research and planning staff.

For other parts of the documentation task, more extensive background work is required and additional effort and resources may be required. Examples here include project backgrounds and much of the work related to production estimates, natural resource impacts, employment benefits and other non-measurable benefits. All of these require interview or data development work which goes beyond existing data collection and refinement activities.

Finally, there are parts of the documentation task where reliable data or information simply are not available and significant new research is required. These are described in section 7.2 below.

6.2 Research Requirements

6.2.1 Production and Biological Impact-Related Requirements

In order to evaluate the production and biological/ manageability performance of SEP, one needs reliable data or information on production, production trends and SEP's impacts on wild stocks. In this regard, some major data gaps or deficiencies were identified and should be addressed:

Production Data: - The major concerns identified in respect of the production data relate to data quality and reliability. For large projects, the data are generally of excellent quality. Unfortunately, the availability and quality of data is much less for many of the other project types. In these instances, reasonable estimates of production can only be calculated on an aggregated program level, rather than a project basis. An important aspect of the pre-evaluation activities should be to analyze, better define, and, if possible, to upgrade the quality of these data on production and catch impacts. In this regard, the following recommendations are made.

Firstly, the MRP catch contribution estimates are highly reliable if sample sizes are sufficiently large and the mark incidence in the population is accurately estimated. Unfortunately, the underlying assumptions associated with generating the mark rate have not been completely assessed. While English et. al. (1987a) have examined mark rates at release and return for some major facilities, experimental studies are still needed to validate the data. English et. al. recommended that marking of all production from a major facility with a non-visible and inert mark be undertaken for a definitive assessment of the CWT data and underlying assumptions of the

estimation models. Because the MRP data will be an important source of information for the evaluation, it is recommended that such a study accompany the evaluation.

Secondly, data for some spawning channels are quite good, for others quite poor. Facilities for which data are poor are presently estimated to account for about 30% to 35% of spawning channel production. Improved estimates will require marking of the fry production, particularly for the channels inherited from the International Pacific Salmon Fisheries Commission (IPSFC) on the Fraser River. It is recommended that the Fraser River channel production be marked to thoroughly assess the contribution particularly in light of the desire to escalate enhancement as a result of the Pacific Salmon Treaty.

Thirdly, data for small hatcheries is generally poor and an increase in the CWT marking of chinook and coho produced by these facilities is highly recommended.

Fourthly, data on lake enrichment production are also poor in many instances. While evaluation work is being done by the Enrichment Assessment Unit, it is recommended that the marking of lake enrichment-produced smolts on selected lakes be undertaken to improve the data on production effects.

Fifthly, stock reconstruction operates with data (escapement, migration route and timing) which are widely acknowledged to be unreliable. The sensitivity of the methodology to these data problems has not been explored. It is recommended that formal sensitivity analyses of selected assessments be undertaken such that a conceptual understanding of the method's robustness can be built. Some of these analyses are now underway. In addition, analyses with the actual data using

alternative migration routes, and faster and slower migration speeds should be conducted to appreciate the possible range of catch contribution.

Lastly, the fact that new unmanned spawning channels are in the planning stage, raises the need for studies on baseline production to now be carried out, prior to these projects being initiated.

Not all of this work can be completed in time for a SEP evaluation. However, the research should be initiated at this time because of its importance to a future evaluation.

Production Trends: - It is recommended that long term research studies into the reasons underlying production trends now be initiated. This research task goes well beyond the scope of this evaluation of SEP. As a first step, it is important to estimate the enhanced catch of Canadian fish in all fisheries wherever on the coast. Secondly, it is important to conduct marking studies of Canadian wild stocks to compare the rates of survival with the enhanced stocks. These catch survival trends would not be available for an evaluation conducted in three to four years.

Impacts on Wild Stocks: - With respect to biological impacts, a review of available studies and findings; the organization of a workshop and solicitation of expert opinion; and the possible use of simulation models has been suggested. Program Evaluation Branch recommends that a group of scientific experts and management biologists within the region should now be convened to consider and prepare a plan to respond to these suggestions. This group could be an existing regional committee such as PSARC or it could be a new group specifically established

for this purpose. The task of this group would be one of coming up with an action plan for investigations, information gathering and research with respect to the biological impacts of enhancement.

6.2.2 Economic and Social Impact-Related Requirements

For the economic part of the evaluation, three areas stand out as requiring specific research to overcome data gaps or concerns:

- . review and update of harvesting and processing cost impacts of SEP;
- . review and update of recreational activity impacts and benefits of SEP;
- . estimation of training benefits;

Harvesting and Processing Cost Impacts: - The review and update of harvesting and processing cost impacts of SEP are by far the highest priority research requirement for the economic component of the evaluation. Economic theory suggests that in a common property fishery, additional production and potential profit might simply induce greater effort, investment and expenditure, dissipating whatever net benefits might otherwise have been realized. A major question for the evaluation is whether or to what extent this has occurred.

DFO economists have undertaken some studies into this question, in particular, the issue of what harvesting investment has been induced by greater fish production. However, the one major survey they initiated was limited to troll vessels and did not yield conclusive results.

It is recommended that as part of the pre-evaluation activities a major review of DFO's current harvesting and processing cost impact assumptions be made, including provision

for a review of existing studies, and for the design and implementation of a survey of commercial fishermen. Such a survey should be used to develop a data base on commercial fishermen's investment behaviour in relation to their production and profit performance and expectation of future activities. Cross-sectional and time series analyses could then be conducted to test for the effect of increased catch or expectation of increased catch on new investment in the fleet.

Recreational Activity and Value Impacts: - The review and update of recreational activity impacts and benefits is the second highest research priority. It is not as central to the evaluation of SEP as a whole as the commercial cost analysis; however, it is critical to the evaluation of certain projects and program components aimed at the production of chinook, coho, and steelhead, all important recreational species.

Again a critical review of DFO's current assumptions are required, specifically in light of recent studies by Cameron and James and by Shaffer.¹⁴ Ideally new survey work should be conducted, specifically addressing the question of recreational effort response to salmon abundance. However, it is not recommended that such studies be undertaken as part of an evaluation exercise, primarily because of their very high cost. Moreover, it would be more efficient for such work to be undertaken along with other recreational activity surveys (e.g. surveys of resident and non-resident expenditures), which are undertaken on a periodic basis. In the meantime, some critical assessment of current assumptions are required and should be undertaken. Some of this work is now being undertaken.

(14)

Op. cit.

Training Benefits: - The estimation of training benefits is particularly problematic in that very little hard data are currently available. Again, while the training aspect of SEP is not very important to the evaluation of SEP as a whole, it is critically important to the evaluation of the CEDP component of the program.

A proper assessment of training benefits requires the development, through surveys, of a data base on the pre- and post-program employment and earnings of the trainees as well as a comparison control (non-participant) group. With such information one can test for the effects of the program on employability and earnings.

The development of such a data base, however, is very difficult and costly. It can be difficult to locate trainees and get accurate records of their work history. It can be even more difficult to develop a comparison sample, similar in all respect to the trainees except for their participation in the program. Problems of program selection bias,¹⁵ which are reportedly prevalent with CEDP, greatly complicate this task.

Because of these problems it is recommended that CEIC studies on training impacts be reviewed to develop estimates of training benefits in native communities. CEIC is funding such studies over the next year. Some research will be required to review CEIC work and properly apply it to SEP.

(15)

The trainees were not randomly selected from the community, but rather were selected on the basis of their interest or capability. Their post-program performance cannot therefore be simply compared with the "typical" resident in the same community.

7.0 EVALUATION SCOPE AND TIMING

7.1 Evaluation Scope

It is recommended that an evaluation of SEP include all projects with sufficient production history upon which to base reasonable estimates of current and projected output. Although the evaluation should include facilities constructed prior to the initiation of SEP in 1977, these pre-SEP projects should only be considered from the point when they became part of SEP in that year. Furthermore, projects constructed by the International Pacific Salmon Fisheries Commission should only be considered from the point that they become part of SEP in 1986. The evaluation will include steelhead and cutthroat trout production at federal facilities but will not include such production at provincial projects.

The evaluation should be this comprehensive for several reasons. Project-specific documentation and histories should be compiled and organized before turnover in key personnel severely restricts availability of this information. It is necessary to assess all of these projects in order to develop a comprehensive assessment of the overall program and program components. It is also important to include as many different projects as possible in order to better understand factors contributing to success or failure.

One could consider, as an alternative, the evaluation of a sample of projects. However, it would be difficult, if not impossible, to select a sample on a scientific basis and thus, such an approach would likely preclude extrapolating the results to a component or total program level. This in turn might preclude the evaluation issues that can only be properly addressed at the more aggregated level (for example, issues

related to certain biological impacts or related to the distributional aspects of the economic impacts of SEP). At the same time it is not clear to what extent there would be cost savings from such an approach. Data do exist on all of the projects and with respect to the major data gaps, for the most part they would have to be pursued in the same fashion for a sample-based or comprehensive evaluation. In short, the sample approach is not recommended.¹⁶

There are ways in which such a comprehensive evaluation can be made more efficient and less costly. With respect to the Public Involvement Program (PIP), it is recommended that project-by-project analysis be undertaken only for the largest production oriented projects, of which there are roughly twenty. Smaller PIP projects could be evaluated as aggregations, perhaps by technology type or sponsor. Spawning channels would also best be examined in clusters or groups. With respect to lake enrichment an evaluation should be conducted for groups of lakes which have an identifiable delivery system and cost structure, not on a lake by lake basis. This is also the most appropriate approach from a methodological perspective because of the nature of the delivery system which services specific regions or groups of lakes, thus making lake-by-lake allocations of costs impossible. The data base and results of previous evaluations should also be used wherever possible.

Also, as noted earlier, it is recommended that only the economic efficiency account be analyzed on a project-by-project basis. The distributional account should be undertaken only at an overall program and program component level. Aside from

(¹⁶) Another alternative would be to evaluate only certain program components. This, however, would provide no information on the excluded components and thereby preclude inter-component comparisons. This approach is also not recommended.

economizing on the level of effort, the distributional account is more appropriately discussed at the program and program component level.

7.2 Evaluation Timing

Following a preliminary evaluation of SEP in 1985 and subsequent Cabinet approval of a continuation of funding for the program, Treasury Board, in 1987, requested that SEP managers submit a 5 year plan identifying expected program expenditures and results to 1991/92. A program evaluation would therefore best be completed in 1991/92 to coincide with and contribute to important decisions on future plans and future funding which will need to be made that year.

8.0 RECOMMENDATIONS

In order to conduct an evaluation in 1991/92, it is important that the documentation tasks and research effort described in this report commence very shortly. It is therefore recommended that program managers now prepare an action plan describing how they intend to carry out the preparatory compilation, data gathering and research tasks necessary to conduct the evaluation. The response should include consideration of the scope and costs of varying levels of data gathering and research effort and how this will impact on the accuracy of the data.

A particularly important aspect of the action plan will be one of responding to the need for investigations and research into the biological impacts that SEP production has had on wild stocks. It is therefore recommended that a group of scientific experts including researchers, management biologists and SEP program personnel be formed to plan the necessary data gathering, modelling and research efforts that will be required to address the biological impact issues. It should be noted that some of the research on biological impacts and long term production trends would, of necessity, need to extend into the longer term beyond 1991/92. Data from this research would thus be available for a more futuristic evaluation conducted closer to the end of the century.

Tables 4 & 5 summarize the data compilation and research tasks that the recommended action plan should respond to.

TABLE 4

Summary of Data Compilation Preparatory Tasks

	<u>Present Status</u>
Compilation of project backgrounds and related fisheries management information;	- needs to be done
Compilation of historic production and catch contribution by facility;	- needs to be done for smaller facilities
Development of future fisheries management scenarios and facility production forecasts;	- needs to be done
Compilation of information on significant natural resource conflicts or impacts;	- needs to be done
The compilation of project-specific cost data for PIP projects;	- is underway
Compilation of wholesale price forecasts for SEP projects' remaining economic lives;	- is underway
Compilation of the value of surplus fish and egg sales	- continuing
Compilation of the value of native and non-native terminal fisheries;	- needs to be done
Compilation of information on other benefits, not amenable to quantitative economic efficiency analysis;	- needs to be done
Compilation of estimates of government revenue impacts of SEP.	- is underway

TABLE 5

Summary of Research and Preparatory Assessment Tasks

	<u>Present Status</u>
Paper study compiling key findings and existing research on biological impacts (international symposium is a possible alternative for gathering information)	- needs to be done
Workshop to scope out the structure of simulation models	- needs to be considered
Making rate experiment to test underlying assumptions of coded wire tag data	- needs to be done
Additional marking of production from spawning channels, selected lake enrichment projects and small hatcheries	- needs to be done
Baseline studies of production in areas whose new spawning channels are now being planned	- needs to be done
Sensitivity analyses of stock reconstruction methodology on selected stock assessments	- some are being done
Further marking studies of Canadian enhanced and wild production to permit catch survival comparisons	- needs to be done
Review and update of harvesting and processing cost impacts	- needs to be done
Review and update of recreational activity impacts and benefits	- is underway
Estimation of training benefits from the program	- needs to be done

APPENDIX A

Facilities for Which Catch Contributions

Should Be Estimated

Project	Location Area	Year Started	Methodology for Assessment	Quality of Data	Expected Catch
HATCHERIES					
<u>Major Facilities</u>					
Big Qualicum	GSVI	1963	MRP, recon	excellent	380000
Birkenhead	UPFR	1977	MRP	good	500
Capilano	GSM	1971	MRP	excellent	75000
Chehalis	LWFR	1982	MRP	good	201000
Chemainus	GSVI	1979	MRP	good	4000
Chilliwack	LWFR	1980	MRP, recon	poor-good	171000
Clearwater	UPFR	1984	MRP	good	5300
Conuma	NWVI	1978	Recon, MRP	good	230000
Eagle	UPFR	1983	MRP	excellent	27000
Inch	LWFR	1976	MRP, recon	poor-good	81000
Kitimat	KK	1977	MRP, recon	poor-good	96000
Nitinat	SWVI	1980	MRP, recon	good	186000
Pallant	QC	1978	MRP, recon	excellent	109000
Puntledge	GSVI	1971	Recon, MRP	good	211000
Quesnel	UPFR	1981	MRP	poor-good	4000
Quinsam	GSVI	1974	MRP, recon	excellent	213000
Robertson Cr	SWVI	1972	MRP	poor-good	107000
Shuswap	UPFR	1984	MRP	good	500
Snoutli	CC	1978	Recon, MRP	good	68000
Spilus	UPFR	1984	MRP	good	2400
Tenderfoot	GSM	1981	MRP	good	25000
Whitehorse	NY	1984	-	-	-
TOTAL					2196700

Community Development

Barriere	UPFR	1982	MRP, recon	good	2200
Bella Bella*	CC	1980	Recon, MRP	poor	13300
Cowichan	GSVI	1977	Recon, MRP	good	1700
Fort Babine	SK	1983	MRP	good	1600
Fort St. James	UPFR	1982	MRP	poor	400
Hartley Bay	KK	1982	MRP	good	500
Kennedy		1984	-	-	1400
Kincolith	NAS	1979	-	-	3500
Kispiox	SK	1980	MRP	poor	3700
Kitsumkalum	SK	1984	MRP	poor	50

Project	Location Area	Year Started	Methodology for Assessment	Quality of Data	Expected Catch
Klemtu *	CC	1982	-	-	3500
Kyoquot	NWVI	1984	-	-	100
Masset	QC	1979	MRP	poor	500
Nanaimo	GSM	1979	MRP, recon	good	9000
Nimkish	JS	1978	Recon, MRP	poor	23000
Oweekeno	RS	1983	MRP, recon	poor	1000
Penny *	UPFR	1980	MRP	poor	50
Port Hardy *	NWVI/JS	1983	MRP, recon	poor	
Powell River	GSM	1983	recon, MRP	poor	1500
San Juan	SWVI	1977	MRP	poor	2000
Sechelt	GSM	1979	MRP	good	2000
Seymore	GSM	1977	MRP	good	1000
Skidegate	QC	1982	Recon	poor	300
Sliammon	GSM	1977	Recon, MRP	good	6000
Terrace	UPFR	1980	MRP	good	2000
Thornton	SWVI	1981	MRP	poor	5000
Toboggan	SK	1985	-	-	500
TOTAL					85800

* Major improvement of escapement enumeration is possible

Public Involvement

Bella Coola	CC	1983	MRP	poor	1000
Brunette	LWFR	1979	MRP	poor	2500
Coquitlam	LWFR	1983	-	-	200
Diana	SK	1980	-	-	500
Eby	QC	1981	-	-	500
Gold	NWVI	1980	MRP	poor	1300
Hyacinthe	JS	1981	-	-	1000
Kanaka *	LWFR	1982	MRP	good	4000
Kingfisher	THOM	1981	-	-	200
Little	GSM	1985	MRP	poor	300
L. Campbell*	GSM	1983	MRP, recon	good	2000
Louis	THOM	1982	MRP	good	500
Marble	NWVI	1981	MRP	poor	2500
Memekay	JS	1980	-	-	500
Monkey	NWVI	1983	-	-	500
Sachs	QC	1980	MRP	poor	300
Scott Cove	JS	1982	MRP	poor	500
Silvermere	LWFR	1982	-	-	500
Sockeye	SK	1983	-	-	100
Sooke	SWVI	1977	MRP	poor	3000
Tahsis	NWVI	1984	-	-	200
TOTAL					22100

* System is fenced

Project	Location Area	Year Started	Methodology for Assessment	Quality of Data	Expected Catch
<u>Small Projects Unit</u>					
Alouette	LWFR	1979	MRP	poor	10000
Vancouver Bay	GS	1979	MRP, recon	poor	10000
TOTAL					20000

CHANNELS

Major Facilities

Atnarko	CC	1986	Recon, MRP	-	
Fulton	SK	1965	Recon, int	good	730000
Gates Creek	UPFR	1968	Recon	poor	17000
Jones	LWFR	1955	Recon	poor	4500
L. Qualicum	GSVI	1979	MRP, recon	good	65000
Nadina	UPFR	1973	Recon	poor	25000
Pinkut	SK	1968	Recon, int	good	252000
Seton Creek	UPFR	1967	Recon	poor	185000
Upper Pitt	LWFR	1963	Recon	poor	5000
Weaver Creek	LWFR	1967	Recon	poor	99000
TOTAL					1382500

Small Projects Unit

BC Rail	GSM	1985	Recon	poor	6000
Billy Harris*	LWFR	1979	Recon	good	9000
Chilqua	LWFR	1984	Recon	poor	3000
Deadman	UPFR	1985	-	-	500
Ed Leon *	LWFR	1981	Recon	good	10000
Hick's	LWFR	1985	-	-	1000
Hopedale	LWFR	1978	Recon	poor	1000
Judd Sl	GSM	1979	Recon	poor	16000
Kitsum Kalum	SK	1984	Recon	poor	1000
Kitwancool	SK	1985	Recon	poor	4000
Mamquam *	GSM	1983	Recon	good	13000
McNab	GSM	1986	Recon	poor	2500
Moodies Ch	GSM	1986	Recon	poor	10000
L. Paradise	GSM	1979	Recon	poor	2000
U. Paradise *	GSM	1982	Recon	good	8000
Peach	GSM	1982	Recon	poor	9000
Railroad Cr	LWFR	1979	Recon	poor	2000
Seabird	LWFR	1984	-	-	100
Westholme	GSVI	1978	Recon	poor	9500
Worth Cr	LWFR	1979	Recon	poor	2000
TOTAL					109600

* Indicator system

Project	Location Area	Year Started	Methodology for Assessment	Quality of Data	Expected Catch
INCUBATION BOXES					
<u>Community Development</u>					
Chehalis	LWFR	1977	-	-	5000
TOTAL					5000
SEA PENS					
Public Involvement					
Sewell Inlet	GSM	1983	MRP	poor	200
TOTAL					200
LAKE ENRICHMENT					
Northern Transboundary Tahltan	NY	1985	Recon	poor	
Q.C.I. Lakes					270000
Awun	QC	1979	Recon	poor	
Eden	QC	1979	Recon	poor	
Ian	QC	1979	Recon	poor	
Skeena Morice	SK	1985	Recon	poor	
North & Central Coast					
Bonilla	NC	1980	Recon	poor	12000
Curtis	NC	1980	Recon	poor	16000
Devon	NC	1980	Recon	poor	10000
Kitlope	CC	1979	Recon	poor	65000
Lowe	NC	1980	Recon	poor	20000
Johnstone St / Rivers & Smith Inlets					
Nimkish					
-Woss	JS	1982	Recon	poor	272000
Long	RS	1979	Recon	good	159000

Project	Location Area	Year Started	Methodology for Assessment	Quality of Data	Expected Catch
Big Qualicum	GSVI	1963	MRP, recon	excellent	380000
North Vancouver Island					
Hobiton	SWVI	1977	Recon	good	30000
Kennedy	SWVI	1978	Recon	poor	412000
Muriel	SWVI	1984	Recon	good	
South Vancouver Island					
Great Central		1972	Recon	good	420000
Henderson		1976	Recon	good	124000
Sproat		1985	Recon	good	
TOTAL					1810000

Location Code

Description

CC	Central Coast
GSM	Georgia Strait, Mainland
GSVI	Georgia Strait, Vancouver Island
JS	Johnstone Strait
KK	Kitimat/Kemano
LWFR	Lower Fraser River
NWVI	North West Vancouver Island
NY	Northern Transboundary & Yukon
QC	Queen Charlotte Islands
RS	Rivers and Smith Inlets
SK	Skeena River
SWVI	South West Vancouver Island
THOM	Thompson River
UPFR	Upper Fraser River
MRP	CWT estimate using the MRP database
Recon	Stock Reconstruction estimate. Category also includes estimates to be derived by finclips within a fishery containing a single enhanced stock (pink and chum).
Int	Tag Interception estimate

APPENDIX B

RESEARCH AND APPLIED STUDIES

The purpose of this appendix is to briefly outline current research and applied studies relevant to the evaluation of SEP and their likely scope in the near future.

Two agencies are responsible for SEP research and applied studies. The Fishery Research Branch (FRB) has a broad research mandate while the Biological Program Coordination Unit (BPCU) in the Enhancement Operations Division has a rather narrow mandate for a service function to improve SEP production and operations (i.e., applied studies). It is important to note that both groups conduct SEP related studies which are not mentioned here because they are not directly related to SEP evaluation (e.g., fish culture, time and size at release studies).

B.1 Research

Relevant research activities by the FRB upon SEP evaluation are broken into two disparate segments: the Lake Enrichment Program (LEP) conducted by the Enhancement Assessment Unit (EAU) whose charge is to learn from and assess the lake fertilization initiative, and other research efforts launched by interested scientists rather than through an overall evaluation plan.

B.1.1 Lake Enrichment Program

The EAU has grappled with the following three questions or issues since 1977 which must be answered as a pre-requisite to the cost effectiveness of lake-treatment as a tool for the enhancement of sockeye salmon stocks:

1. Does lake fertilization generally influence the size attained by juvenile sockeye such that smolts routinely leave at a larger size from treated as opposed to untreated coastal lakes?
2. Will larger sockeye smolts experience higher survivals or exhibit changes in age-at-return such that the harvestable biomass of adult sockeye available to the fishery is increased enough to more than compensate for the costs associated with this form of enhancement?
3. Does lake fertilization influence the within lake survival of juvenile sockeye such that more smolts are produced per spawner in treated years as opposed to untreated years?

The primary responsibility of the EAU has been to answer these three questions. Considerable advancement has been made by the EAU. The first two questions have been answered in the affirmative for the lakes studied, size ranges and densities of fish observed; however, there still remains considerable uncertainty as to the magnitude of long term production increases. The third question has remained somewhat intractable to date due to the logistic difficulty of manipulating large commercially important stocks for experimental purposes. Further, low precision estimates of pre-smolt abundance and natural variability of egg survival has resulted in the ability to detect only large changes (e.g. 100%) of within lake survival. The marking of smolts, as recommended by the EAU, with

CWT would certainly aid this endeavour a great deal. Regardless, some encouraging results are available from research currently conducted on Lake Hobiton. A second comparison of within-lake survival of juvenile sockeye under treated and untreated conditions should be completed by the winter of 1988 at Sproat Lake.

B.1.2 Other Relevant Research

As mentioned previously, research activities by the FRB, other than those conducted by the EAU, are not coordinated by an overall evaluation plan of biological impacts. Relevant research and activities are as follows:

1. Development of information systems. Three valuable data bases have been constructed which are under continuous revision and expansion:
 - (a) the MRP which consists of all information associated with the CWT's;
 - (b) historical catch from sales-slips (various summaries are available, e.g., catch by statistical reporting area and week); and
 - (c) the Stock Escapement Data Base (SEDS) which consists of all information relevant to historical escapement by stock (although considerable effort is still needed to amalgamate Fishery Officer and Hatchery escapement estimates).
2. Analysis of data. Various analyses have been conducted with the MRP to obtain catch contributions, harvest rates and to assist the modification of biostandards as more information becomes available.

3. Comparative studies of wild and enhanced coho. The exploitation, productivity and behaviour of wild and enhanced coho salmon in some small East Coast Vancouver Island streams are currently under examination by a Ph.D student at UBC (funded by the FRB).
4. Marine Survival of Salmon (MASS). A large integrated study (oceanographics and biological processes) began in 1987 to examine the survival, rate of movement and predation of juvenile salmon (marine stage).
5. Carrying capacity of Fraser River lakes and present utilization. The limnological study is aimed at the collection of baseline data of carrying capacity and present utilization of Fraser River lakes prior to the initiation of any fertilization to augment sockeye production.
6. Coho colonization. The project has the objective of developing and evaluating coho production enhancement by semi-natural rearing of juveniles in non-anadromous habitats. Field work is planned to continue through the fall of 1991.
7. Campbell River estuary studies. The density and survival of salmonids in the estuary is monitored to determine movement, smoltification and predation.
8. Fish health. The studies focus upon the treatment and transmission of disease and the potential effect of the rearing environment.

B.1.3 Future Directions

A major challenge facing the SEP program is to assess the future enhancement of interior (e.g., Fraser River) sockeye lakes. Experience to date has been with coastal lakes where nutrients are flushed out quickly. This is not the case for interior lakes and concern has been expressed that "mistakes" will take much longer to be corrected by natural forces. Nevertheless, the experience and assessment techniques established with the coastal lakes will be indispensable for the creation of sound experimental design. Another problem (not the responsibility of the EAU) will be the establishment of fishing strategies to capture the increased production while minimizing the negative mixed stock and species effects. The EAU monitoring program will also continue on coastal lakes with, hopefully, the marking of sockeye smolts.

Other proposed studies by the FRB can be partitioned into four categories:

1. Data acquisition and quality verification. These studies are aimed at the monitoring and testing of the data held in the information systems mentioned above. They include verification and integration (from fishery officers and hatcheries) of escapement data, verification of historical catch, integration of U.S. CWT and related data into the MRP, and the evaluation of basic assumptions required to produce information (e.g., adult survival, catch contribution) from the MRP through complete marking of production experiments with a non-visible and completely inert mark.
2. Genetics. In-hatchery studies will be aimed at the determination of the mechanisms for inbreeding and the causes of phenotypic variation (genetic or environmental). Other studies will attempt to maintain the separation of

wild and enhanced stocks in a system such that their genetic characteristics and reproductive success can be examined. Conversely, the mating of wild and hatchery fish will be induced to examine the gene flow and reproductive success of the hybrids.

3. Early Marine Survival. The estuary (freshwater) and MASS studies listed above are multi-year studies which will continue over the next few years.
4. Coho colonization. Similarly, the colonization study listed above is a multi-year endeavour which is planned to continue until the fall of 1991.

B.2 Applied Studies

As stated previously, the BPCU conducts applied studies for improved operations, improved production and methodologies for the avoidance of negative biological effects (primarily competition and predation). While none of these studies provide direct quantification for any of the biological effects, they can contribute an increased understanding of the processes involved. Some effort is also devoted to information systems and the development of assessment methodologies.

B.2.1 Relevant Studies

Current studies relevant to SEP evaluation are numerous and are small in scope. Therefore, they are organized by geographical area for presentation below. But first, activities more general in nature are described.

Information Systems and Assessment Activities and studies for information systems and assessment are as follows:

1. Pink and chum salmon recovery database. All information to produce catch contribution and survival estimates in terminal fishing areas (a single enhanced stock) for fin-clipped pink and chum salmon are maintained on Apple II computers by the unit.
2. EPIC database. The unit provides information for the EPIC data base which includes juvenile production, production plans (expected and actual to date), cost information (O&M, Capital, P.Y. utilizations, etc.) and biostandards. Current plans call for the transfer of the data base to the FM/VAX from a computer in Toronto.
3. Upgrade in escapement data. Escapement to the individual projects is under review. The plan is to incorporate the data into the MRP data base classified as hard (e.g., enumerated returns of chinook and coho to major hatcheries) and soft (e.g., returns to unmanned channels) data.
4. Comparison of mark rates at release and at return. A study was recently commissioned (English et al. 1987a) to determine the best mark rate (CWT) estimate to use for contribution and survival estimates on chinook and coho salmon at selected major hatcheries.
5. Evaluation of juvenile marking programs. A program was initiated spring of 1987 to evaluate the marking mortality of fin-clips on chinook, coho and chum salmon. CWT are applied as a control.
6. Key Stream Project. The unit participates in a large project to monitor identified streams (called key) for the escapement of chinook salmon. They intent is to determine the rebuilding progress under the Canada/U.S. salmon treaty.

7. Fraser River chinook review. A compilation, integration and review of the studies directed at chinook listed below under the Fraser and Thompson rivers is in progress.

Upper Fraser River

Wild chinook juveniles and large enhanced juveniles raised in warmer water were observed for the occurrence of predation. None was observed.

Thompson River

The following related studies were conducted on the Thompson River:

1. Chinook and coho monitoring. A study was commissioned to monitor chinook movement in order to determine the overwintering and rearing areas so that likely areas of interaction with wild fish are resolved. For coho, the density of smolts in small streams was monitored before and after the release of enhanced smolts in order to obtain information on the carrying capacity of these streams.
2. Chinook mainstream overwintering. The mainstream chinook over wintering areas are to be monitored for displacement of other fish by the enhanced fall chinook.

Lower Fraser River

The following studies have been conducted on the Lower Fraser River:

1. Chinook monitoring. The fall chinook are to be monitored by beach seining for the timing and duration of the fish leaving the system. The study is to be coordinated with the chinook monitoring study on the Thompson River listed above.

2. Chum migration. The heritability of chum for migration timing is under study.
3. Chinook and coho homing. Chinook and coho are undergoing study for homing ability under various imprinting mechanisms and marking methods.
4. Chum and chinook loading targets. The escapement targets (available rearing area) were first established for some chinook and coho creeks. The creeks were then loaded with hatchery fish to "top up" the carrying capacity based on assumptions of reproductive success.

Georgia Strait and Capilano River

The following studies have been conducted on fish whose origin were freshwater systems entering Georgia Strait and the Capilano River:

1. Capilano coho. The heritability of coho salmon for migration timing is under study.
2. EXPO coho. Most of the large releases of coho for EXPO-86 were marked (fin-clipped). Therefore rates of straying can be examined. Further, catch contribution estimates were compiled and compared with estimates derived with CWT.
3. Puntledge chinook. Transplants to the hatchery were made using milt from the Puntledge chinook. The hybrids are under examination for survival, ocean distribution, morphology (e.g., size) and migration timing. In addition, release strategies are under review to minimize environmental impacts from a local leachate.

4. Quinsam coho. Both wild and hatchery smolts have been marked to determine if the fish exhibit similar behaviour (e.g., survival, ocean distribution and migration timing) and to look for possible interactions between the wild and enhanced fish.
5. Quinsam chinook. The estuary is monitored for density effects (movement, competition, smoltification, etc.).
6. Quinsam pinks. A massive outplanting program is in progress with the aim to restock depleted wild streams. The program is an attempt to respond to the effects of mixed stock fishing problems.
7. Squamish pinks. A transplant operation is trying to establish a run of pink salmon in Indian Arm which was previously barren.
8. Qualicum and Courtney coho. A hybrid population from local near depleted streams has been assembled. The smolts are outplanted to the streams from which the brood stock was obtained.

Barkley Sound

Robertson Creek coho are under examination for the variability in adult migration timing in an attempt to find fishing opportunities which would not conflict with the return of chinook and steelhead.

B.2.2 Future Directions

The likely scope of work in which the BPCU will participate in the near future can be listed under the following five categories:

1. Production trends. The production trends (survival) of fish released from major Canadian facilities as well as foreign experience will be examined. The data will be reviewed for correlations between survival and production level and environmental variables. In addition, synoptic trends of individual hatcheries will be inspected.
2. Alternative marking techniques. The CWT mark is very expensive to apply and recover. A search for less expensive and more effective marking techniques will be initiated.
3. Unmanned channel assessment. Unmanned channels will likely be a preferred enhancement technique in the near future. Studies will be initiated to determine the best method to monitor and assess these facilities.
4. Native food fish catch. The catch contribution to Native food fisheries is presently very poorly assessed. Efforts will be made to acquire the heads of adipose clipped fish (CWT marker) and the enumerate fin-clipped fish as well the associated sample sizes.
5. IPFSC channels. The recently acquired spawning channels from the IPFSC can only be assessed by stock reconstruction. Since these channel produced fish mingle with a much larger population the accuracy of any stock reconstructions is questionable. Therefore, it is proposed to mark the fish.

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SENATOR FRED F. ZHAROFF
ALASKA STATE LEGISLATURE

P. O. BOX 405, KODIAK, ALASKA 99815 (907) 486-5259

DURING SESSION:

P. O. BOX V, JUNEAU, ALASKA 99811 • (907) 485-3473 • 485-3474

DISTRICT N

ALASKA PENINSULA • ALEUTIAN CHAIN • BRISTOL BAY • KODIAK ISLAND • LAKE CLARK/LAKE ILIAMNA • PRIBILOF ISLANDS • SHUMAGIN ISLANDS

MEMORANDUM

TO: Senator Pat Pourchot
Co-Chair
Senator Jay Kerttula
Co-Chair
Senate Finance Committee

FROM: Senator Fred F. Zharoff

DATE: April 25, 1992

RE: CS For Senate Bill No. 416 - "An Act authorizing the commissioner of commerce and economic development to defer certain principal and interest payments on loans made under the fishery enhancement loan program to accommodate transfer of operational responsibility for state-owned hatcheries."

BILL SUMMARY: SB 416 would allow the commissioner of commerce to defer repayment of principal and interest on fisheries enhancement loans in order to allow regional aquaculture associations enough time to establish cost recovery programs at former state-operated hatcheries. The deferral period may not exceed five years.

Four conditions must be met for the commissioner to authorize a deferral. First, the regional aquaculture association must have entered into an agreement, or be prepared to enter into an agreement, to take over the operations of a state-owned hatchery. Second, the hatchery involved must have had insufficient salmon returns to support a cost-recovery program while it was operated by the state. Third, the state did not transfer management of the hatchery before June 30, 1991. And fourth, the commissioner must determine that the deferral would materially assist the association in paying the operational costs of the hatchery.

FISCAL IMPACT: The Department of Commerce and Economic Development's fiscal note is \$480,000 for FY 94, \$480,000 for FY 95, \$567,200 for FY 96, \$529,200 for FY 97, and zero for FY 98. The Alaska Industrial and Development Authority's fiscal note is \$312,500 for FY 93. The Department of Fish and Game's fiscal note is zero.

PREVIOUS ACTION: The Senate Labor and Commerce Committee moved the bill on April 14 (1 DP, 4 NR).

BACKGROUND: The state's policy in recent years has been to encourage and facilitate the transfer of state-owned fish hatcheries to qualified regional aquaculture associations. While state hatcheries are entirely dependant on general fund appropriations for operating costs, regional aquaculture associations are allowed to conduct cost-recovery operations, where surplus fish returning to the hatcheries are harvested and sold to cover hatchery operating costs.

Due to natural salmon cycles, varying periods of time are required before the transferred hatcheries can establish viable cost-recovery programs. CSSB 415 would provide the associations with necessary operating capital and a limited period of financial relief -- through deferral of principal and interest on fisheries enhancement loans -- in order to make the transferred hatcheries financially self-sufficient.

The proposed CS was drafted in order to reduce the financial cost to the state's fisheries enhancement loan program by being more specific about the purpose of the deferral and by limiting its applicability to state hatcheries transferred after June 30, 1991.

ATTACHED BACKUP INFORMATION:

1. Fiscal note from the Alaska Industrial Development and Export Authority.
2. Fiscal note from the Department of Commerce and Economic Development.
3. Department of Commerce and Economic Development position paper on the original bill.
4. Fiscal note from the Department of Fish and Game.
5. Letter from Mr. Carl Rosier, Fish and Game commissioner, describing the current status of the state's hatcheries as of April 2, 1992.

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

WALTER J. HICKEL, GOVERNOR

P.O. BOX 3-2000
JUNEAU, ALASKA 99903-2000
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SB 416

April 2, 1992

The Honorable Drue Pearce
Alaska State Legislature
P.O. Box V
Juneau, AK 99811

FAX TRANSMITTAL MEMO
TO: Ray Gillespie
DEPT: _____ FAX #: _____
FROM: Johnny Holland PHONE: _____
CO: _____ FAX #: _____
Post-it brand fax transmittal memo 7671

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Finally!

Dear Senator Pearce:

During the March 18 Senate Subcommittee on Commerce and Labor hearing, Dr. J. S. Holland, Assistant Director of the department's Fisheries Rehabilitation, Enhancement and Development (FRED) Division, responded to questions posed by committee members. The committee requested clarification of the funding status of the state's hatcheries. Also, at one point, Dr. Holland mentioned the FRED Division's public hatchery strategic plan, three copies of which are enclosed.

Of the 20 state-owned hatcheries, nine are currently operated and/or funded by the private sector. Of those contracted hatcheries, Beaver Falls has no long-term contract commitment by the private sector and faces closure in FY 93. Negotiations are ongoing for the Southern Southeast Regional Aquaculture Association (SSRAA) to operate Beaver Falls. A long-term contractual commitment by SSRAA to operate Beaver Falls is dependent on both a hatchery upgrade CIP request (currently on the Governor's CIP list) and on deferment of fishery enhancement loans.

Three of the remaining 11 hatcheries (Clear, Elmendorf, and Ft. Richardson) are sport fish production facilities and, as such, are primarily funded by Sport Fish Restoration Act federal aid funds with matching funds provided from the fish and game fund or general fund. Following development of the enclosed public hatchery strategic plan, the FRED Division learned that Anadromous Fish Conservation Act federal aid funds will no longer be available. This leaves the Deer Mountain Hatchery with only half of the necessary funds needed to operate it in FY 93. The division is seeking additional funding sources for Deer Mountain, but if this funding does not come through, the facility will face closure in FY 93.

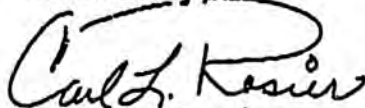
Of the remaining seven state hatcheries, three (Big Lake, Klawock, and Russell Creek) have been slated for closure in FY 93 given the magnitude of the department's proposed FY 93 budget reduction. At

April 2, 1992

this time, there are no private sector salmon producers that have expressed an interest in contracting the operations of any of these facilities, as cost-recovery options are severely limited. The four remaining hatcheries (Crystal Lake, Snettisham, Crooked Creek, and Sikusuilaq Springs) each have unique properties; i.e., major impact on international fisheries treaties, research status, major impact on sport fish production, etc., that require they remain open.

I hope this information is useful when considering Senate Bill 416.

Sincerely,



Carl L. Rosier
Commissioner

Enclosures

cc: Geron Bruce
J. S. Holland
Jeff Koenings

Alaska Department of Fish and Game-FRED Division
Public Hatchery Strategic Plan

Hatchery	Location	Species	Program * Intent	Comments	FY92		Oper. Plan FY	Agenc	Percent ** Subsistence	Percent Sport	Percent Commercial
					Operating Costs	Funding Source					
Beaver Falls	Ketchikan	Sockeye	CF	Contracted to SSRAA with GF for FY92 operation.	\$294.8		92	SSRAA	***	0%	100%
Big Lake	Big Lake	Sockeye Coho	CF, PU	Major production of enhancement fi for Anchorage area. Sockeye shortfunded in FY93.	\$60.0	CIP	92	FRED	14%	1%	85%
			SF, CF, PU		\$312.4	GF			5%	65%	30%
Cannery Creek	Whittier	Pink	CF	Operated by PWSAC			89	PWSAC			100%
Clear	Clear	Arctic char	SF	Major sport fish production facility Vital to US/Can chum and chinook programs	\$22.9	GF	92	FRED		100%	
		Arctic grayling	SF		\$313.6	DJ/WB				100%	
		Lake trout	SF		\$92.5	F&G				100%	
Crooked Creek	Soldotna	Sockeye	CF, PU	Sockeye contracted to CIAA. Contributes substantially to sport fish program through eggtrak for other facilities.	\$46.0	CIAA	92	FRED CIAA	3%	2%	95%
		Coho	SF, PU		\$340.3	GF			5%	95%	
		Steelhead	SF		\$3.8	PGR				100%	
		Chinook	SF							100%	
Crystal Lake	Petersburg	Chinook CL rel.	US/C, SF, CF	Large US/Can capital investment including Harding River, Deep Cove, and Farragut River. Provides 5-7 million chinook eggs in addition to its own needs primary stream rehab work from unique isolation modules.	\$602.6	GF	92	FRED		44%	56%
		Chinook remote	US/C, CF		\$15.0	PGR				1%	99%
		Coho	SF, PU, CF		\$12.8	DJ/WB			***	17%	83%
		Steelhead	SF							100%	
Deer Mountain	Ketchikan	Chinook	RES, SF, CF	Fisheries technology development results supplied to other state and private programs. Prim tourist facility, over 250,000 annually. Major role in public education. Urban (SF) fisheries program being developed with Rainbow trout.	\$149.7	GF	92	FRED	***	40%	60%
		Coho	SF, PU, CF		\$141.5	ANAD			***	17%	83%
		Steelhead	SF		\$13.0	DJ/WB				100%	
		Rainbow	SF							100%	

hatchery	Location	Species	Program Intent	Comments	Operating Costs	Funding Source	Operational FY	Planned Ages	Percent ** Subsistence	Percent Sport	Percent Commercial
Imendorf	Anchorage	Chinook Coho	SF SF	Major sport fish production facility High visibility tourist attraction	\$112.8 \$385.2 \$67.7	F&G DJ/WB GF	92	FRED	1% 3%	90% 87%	9% 10%
Fl Richardson	Anchorage	Chinook Coho Rainbow	SF SF SF, RES	Major sport fish production facility	\$143.9 \$596.0 \$181.6	GF DJ/WB F&G	92	FRED		88% 90% 100%	13% 10%
Gulkana	Glennallen	Sockeye Chinook	CF, SUB CF, SF, SUB	The most cost effective sockeye facility in the world. 35 million sockeye salmon egg lake annually. FY92 contract for one year, potential long term contract.	\$41.2	GF	92	FRED/ PWSAC	8% 20%	2% 30%	90% 50%
Hidden Falls	Sitka	Chinook Chum	CF CF	\$2.5 million chinook expansion with US/Can funds. Operated by NSRAA.			89	NSRAA			100% 100%
Kitai Bay	Kodiak	Pink Chum Coho Sockeye	CF CF SF, CF CF	Operated by state with funds provided by KRAA.			92	FRED/KRAA		50%	100% 100% 50% 100%
3 Klawock	Klawock	Sockeye Coho Steelhead	SUB CF, SUB SF	BIA funds to address local projects. GF used in projects to rehabilitate POW in post-logging years.	\$424.3 \$10.0 \$18.0	GF PGR(non-existent) DJ/WB	92	FRED	100% ***	7% 100%	93%
4 Main Bay	Whittier	Sockeye	CF	Operated by PWSAC			92	PWSAC		1%	99%
15 Pillar Creek	Kodiak	Sockeye	CF	Primarily operated with funds provi KRAA. Some GF involved.	\$37.9	GF	92	FRED/KRA	***		100%
16 Russell Creek	Cold Bay	Chum Pink Coho	CF CF SF, CF	FY92 PGR from Aleutian's East Borough. Fisheries developmental facility to be contracted in FY99	\$420.0 \$52.8	GF PGR	99	Reg. Assoc.		1% 50%	99% 50%

Hatchery	Location	Species	Program Intent	Comments	Operating Costs	Funding Source	Operational Pla FY Aqen	Percent ** Subsistence	Percent Sport	Percent Commercial
Sikusuilaq	Kolzebue	Chum	CF, SUB	Developmental facility for fisheries technology. Potential for subsistence harvest. To be contracted in 1999.	\$390.8	GF	99 Reg. Asso	20%		80%
Snellisham	Juneau	Sockeye CIF	US/C, CF, RE	Tremendous involvement in US/Can projects, transboundary river sock enhancement plus SE Baranof chiono Applied technology development for sockeye smolt. Major sport fish production in Juneau recreation project.	\$612.8	GF	92 FRED	***		100%
		Sockeye (smolt)	US/C, CF		\$108.0	US/CAN		***		100%
		Chinook (Deep	US/C, CF		\$94.1	W/B			6%	94%
		Chinook (juvenile SF							34%	66%
Trail Lakes	Moose Pass	Coho Sockeye	SF, CF CF	Operated by CIAA			89 CIAA	***	75%	25% 100%
Tutka	Homer	Pink	CF	Contracted to CIAA		CIP	92 CIAA	***	2%	98%
		Chum	CF					***		100%
		Sockeye	CF					***		100%

* - Legend- subsistence (SUB), sport fish(SF), commercial fish(CF), research (RES), US/Canada (US/C)

** - Includes personal use

*** - Thought to contribute to subsistence but as yet unquantified

**** - SSRAA -Southern Southeast Regional Aquaculture Association

PWSAC- Prince William Sound Aquaculture Corporation

CIAA - Cook Inlet Aquaculture Association

NSRAA - Northern Southeast Regional Aquaculture Association

REG. ASSOC.- as yet unknown aquaculture association.

Pg.R. - program receipts

(3)

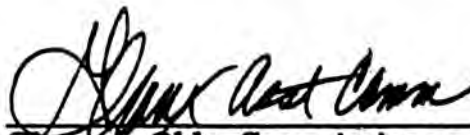
SB 416: "Defer Fisheries Enhancement Loan Repayments"

SB 416 makes changes to the fisheries enhancement loan program to provide financial assistance to regional aquaculture associations and their nonprofit corporations that are taking over hatcheries previously operated by the state. This financial assistance will be accomplished without direct appropriations to the Department of Fish and Game or the regional aquaculture associations by reducing the amount of interest charged to these associations on loans received under the fisheries enhancement loan program. SB 416 allows the department to approve a noninterest accrual and nonpayment period to defray the costs of operation of a state-owned hatchery that has been transferred to a qualified regional aquaculture association. This time period which would be determined by the commissioner could not exceed five years from the date that the association assumes operating responsibility for the hatchery and can only be approved if certain conditions are met.

Those conditions are:

1. the association or corporation holding the loan has entered into or is prepared to enter into an agreement with the state to take over the operation of a state-owned facility; and
2. deferral of repayment of the loan would materially assist the association or corporation to pay the operational costs of the hatchery.

The department is neutral on this legislation. While the passage of SB 416 will result in fewer dollars returning to the loan fund over the next few years and may increase the department's general fund request for this program, there will be savings over the long term due to a reduction in the amount of general fund monies spent by the Department of Fish and Game to operate the facilities being transferred.


Glenn A. Olds, Commissioner

Date: 3.17.92

CHAPTER 80. COMMERCIAL FISHING LOANS

3 AAC 80.055 is amended by adding new subsections to read:

(k) The department will, in its discretion, quarterly set the interest rate for loans. The interest rate established for a quarter remains in effect until the department changes the rate. The interest rate set by the department is based on the bank prime rate listed in the Wall Street Journal during the previous quarter plus two percentage points, not to exceed the maximum interest allowed under AS 16.10.320(2). The interest rate will be established at the nearest 1/2 point.

(l) The interest rate for a loan is the quarterly interest rate in effect at the time the loan commitment is made. The interest rate for a loan will be at a fixed rate for the term of the loan. (Eff. 9/11/85, Register 95; am 5/23/88, Register 106; am / / , Register)

Authority: AS 16.10.310

AS 16.10.320

CHAPTER 81. FISHERIES ENHANCEMENT LOANS AND GRANTS

3 AAC 81.055 is amended by adding new subsections to read:

(e) The department will, in its discretion, quarterly set the interest rate for loans. The interest rate established for a quarter remains in effect until the department changes the rate. The interest rate set by the department is based on the bank prime

Register , 1992

COMMERCE AND ECONOMIC
DEVELOPMENT

rate listed in the Wall Street Journal during the previous quarter plus one percentage point, not to exceed the maximum interest allowed under AS 16.10.510(6). The interest rate will be established at the nearest 1/2 point.

(f) The interest rate for a loan is the quarterly interest rate in effect at the time the loan commitment is made. The interest rate for a loan will be at a fixed rate for the term of the loan. (Eff. 9/11/85, Register 95, am 7/4/91/ Register 119; am / / , Register)

Authority: AS 16.10.510

3 AAC 81 is amended by adding a new section to read:

3 AAC 81.060 INITIAL LOAN PERIOD. (a) At the time a loan is made the department will, in its discretion, consider the following factors in setting the initial loan period:

- Life Cycles*
1. The time needed to build broodstock to a production level;
 2. the financial need of the permit holder; and
 3. other factors the department considers appropriate to preserve the security of the state and its investment.

(b) The term of the initial loan period may be extended at any time during the first 10 years of the loan only if an extension of the initial loan period is in the best interest of the state. The term of the initial period, as extended, may not exceed 10 years. (Eff. / / , Register)

Authority: AS 16.10.510

Register , 1992

COMMERCE AND ECONOMIC
DEVELOPMENT

3 AAC 81.900 is amended by addition a new definition to read:

(5) "Production level" means a level of broodstock development that will sustain broodstock and cost recovery needs without using more than 50 percent of the forecasted resource. (Eff. 9/11/85, Register 95; am / / , Register)

Authority: AS 16.10.510

STATE OF ALASKA

DEPARTMENT OF COMMERCE & ECONOMIC DEVELOPMENT

OFFICE OF THE COMMISSIONER

WALTER J. HICKEL, GOVERNOR

P.O. BOX D
JUNEAU, ALASKA 99811-0800
PHONE: (907) 465-2500

May 7, 1992

The Honorable Lloyd Jones
P.O. Box V
Juneau, AK 99811

Dear Senator Jones,

In my conversations with you, I set forth this Department's plan regarding the Fisheries Enhancement Revolving Loan Fund (FERLF) and, more specifically, the concerns of Southern Southeast Regional Aquaculture Association (SSRAA). I outlined this plan in a letter dated March 25, 1992 to Don Amend, General Manager of SSRAA, and committed to several steps regarding the FERLF and SSRAA.

The first of these steps was an agreement not to capitalize over \$747.6 in interest payments on SSRAA's loans. The documents to modify these loans have been executed and the agreement is now in effect.

The second step was to present a proposal by early May designed to develop a floating rate for the FERLF which would reflect the current market conditions. The proposal is contained in this letter.

The third step was to review the "initial period" and develop regulations defining the conditions which would qualify deferral beyond the six-year limit. We hope to have the public comment portion on both the initial period and the proposed interest rate structure completed around July 1, 1992.

The Division of Investments has reviewed the impact of floating interest rates on FERLF loans and has made a recommendation, the highlights of which are as follows:

- o floating fixed rate of Prime +1% adjusted quarterly
- o continued access to capital below the market rate
- o minimal impact on the FERLF cash flow

This floating fixed-rate would be based on the Wall Street Journal's published bank prime rate. This new rate would have a cap of 9.5% as required under AS 16.10.510. It would not affect existing loans. With the prime rate currently at 6.5%, new loans today would be charged 7.5%. When the six-year initial period of these loans is taken into consideration, the effective rate of the loans would be 5.74%.

Senator Jones

Page Two.

May 7, 1992

This plan would not only provide capital loans below the market rate, it would also reflect the market at the time the loan is made in the same way that the private sector's fixed loan rates do.

This change in the rate structure of new loans will not impair the loan fund as existing loans would continue at 9.5%, providing the cash flow needed to fund future loans. The impact on cash flow was a major consideration in the analysis of interest rate changes, because a reduction in the cash flow increases the need for general fund appropriations. For example, if the interest rate on all existing loans were reduced by 1% for one year, this would reduce the cash flow by \$636.0. As oil revenues fall, a reduced cash flow could severely impact funds available for future loans.

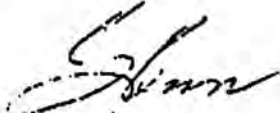
Current borrowers may be dissatisfied that the proposed change would not apply to existing loans. They should be reminded, however, that existing loans were arms-length transactions, made under terms not available through the private sector. These terms included: a six-year initial period during which there was no interest accrual nor payments due; a lower origination fee; and an acceptance of collateral with a lower value than would be accepted by a private financial institution. The benefit of the six-year initial period on a 25-year loan at 9.5% is an effective interest rate of 7.26%. The effective interest rate of a 8.5% loan (prime + 2%) at the same terms is 6.5%, which equates to a prime rate loan. As mentioned previously, the effective interest rate on a 7.5% loan is 5.74%.

Consideration was given to the conversion of the existing fixed rate loans and new loans to a variable rate system. In addition to the immediate negative impact on the cash flow as mentioned previously, such a change would result in a significant increase in the cost of administering the loans to incorporate the new interest rate for each loan. This would also require adjustments on an ongoing basis.

In responding to your concerns and those of your constituents and to reflect the flexibility of the market and current low interest rates, we are proposing this floating fixed rate plan. During the planned public hearings, we will be gathering input from all interested parties on both the interest rate plan, as well as regulations to extend the initial period. We look forward to receiving your input, as well as that of other legislators, during these hearings which are targeted for June.

I hope these will all be helpful. We appreciate your assistance in interpreting them to your constituencies.

Cordially,



Glenn A. Olds
Commissioner

Copy

Southern Southeast Regional Aquaculture Association, Inc.

2721 Tongass Avenue
Keichikan, Alaska 99901
Phone: (907) 225-9605
Fax: (907) 225-1348

June 18, 1992

Division of Investments
Post Office Box 34159
Juneau, Alaska 99803-4159



Re: Proposed Regulations for
Fisheries Enhancement Loans

Ladies and Gentlemen:

I offer the following points and observations for your consideration. Bracketed material is a proposed deletion and underlined material is a proposed addition.

3AAC81.055

- (e) The department shall [will, in its discretion] quarterly set the interest rate for loans. The interest rate established for a quarter remains in effect until the department changes the rate. The interest rate set by the department is based on the average bank prime rate listed in the Wall Street Journal during the previous quarter [plus one percentage point], not to exceed the maximum interest allowed under AS 16.10.510(6). Loans secured by a Salmon Enhancement Tax will be set at the average prime rate and loans not secured by the Salmon Enhancement Tax will be set at the average prime rate plus two percentage points. The interest rate will be established at the nearest 1/2 point.

Rationale for proposed changes:

shall [will, in its discretion] - The department should not have discretion as to whether to set or not to set interest rates. Regulations should be mandatory in requiring the department to set interest rates in conformity with the enabling statutes.

average - Bank prime rate listed in the Wall Street Journal may vary during a given quarter. The department's prime rate should be based on the "average."

Loans secured by a Salmon Enhancement Tax will be set at the average prime rate and loans not secured by the Salmon Enhancement Tax will be set at the average prime

Division of Investments
June 18, 1992
Page 2

rate plus two percentage points. - A loan rate of two and one-fourth percentage points below existing prime is in conformity with legislative history and intent. See SSRAA's REQUEST FOR RECONSIDERATION and PETITION TO ADOPT REGULATIONS dated March 3, 1992 and exhibits referenced therein. Loans secured by the Salmon Enhancement Tax are guaranteed and as they are more than adequately secured they should receive the best interest term consistent with legislative history. Loans not secured by the Salmon Enhancement Tax are of a much higher risk and, as a public policy and sound financial practice, interest rates should be set at a higher rate.

...

- (f) The interest rate for a loan is the quarterly interest rate in effect at the time the loan commitment is made and all outstanding loans shall be annually adjusted as of January 15th based on the quarterly interest rate then in effect. [The interest rate for a loan will be at a fixed rate for the term of the loan].

Rationale for proposed change:

A floating interest applied to all new and existing loans allows for borrowers to apply the maximum use of funds for production. Lower interest rates will lower the demand on the loan fund and, therefore, will not impact cash flow or increase the need for state general fund dollars. This limits the increase in debt, reduces the risk of borrowers, and allows maximum use of funds to produce fish for the common property fishery.

The regulation as proposed by the department does not apply to existing loans. Such a result is inequitable as a floating interest rate should have been established by the department more than 15 years ago when the FELP was first established. Most capital construction loans were obtained during the period when the department refused to exercise the statutory discretion granted to it and instead imposed the maximum allowable interest rate permitted by statute instead of complying with legislative history and intent. See March 3, 1992 SSRAA REQUEST FOR RECONSIDERATION and PETITION TO ADOPT REGULATIONS.

In his letter of May 7, 1992 to Senator Lloyd Jones, Commissioner Olds stated that "This plan would not only provide capital loans below the market rate, it would also reflect the market at the time the loan is made in the same way that the private sector's fixed loan rates do." That is true as far as it goes, but in not

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Page 3

lending. In the private sector fixed rate loans may be refinanced. Refinancing of long term debt under regulations adopted by the Division of Investments is prohibited. See 3AAC81.055(d). Thus, the proposed regulations, instead of bringing the program into line with the private sector as they purport to do, institutionalize and compound prior exorbitant loan terms created by its refusal to adopt regulations and exercise discretion over the past 14 years. The proposed regulations discriminate against those entities that have obtained loans for capital construction, and encourage new borrowing demand on the revolving fund which is currently, and for the foreseeable future, overwhelmingly for operating purposes rather than new capital construction and enhancement. The results of the proposed regulations will be the precise opposite of the stated legislative intent and declaration of policy. See AS 16.10.500.

In his May 7, 1992 letter Commissioner Olds stated that "... a variable rate system ... would result in a significant increase in the cost of administering the loans to incorporate the new interest rate for each loan. This would also require adjustment on an ongoing basis." Adjustable rate loans are a fact of life in the private sector and annual adjustments on a stated date are standard operating practices in the private sector with no additional loan fee or charge because of some arguable increase in cost of administration. Given existing computer programs it is difficult to understand why the Division of Investments would incur "a significant increase in the cost of administration" that apparently is not incurred by the private sector in its daily operations.

...

3AAC81.060 Initial Loan Period

- (a) At the time a loan is made the department shall [will, in its discretion] consider the following factors in setting the initial loan period:
1. The time needed to build broodstock and cost recovery returns to a production level; and
 - [2. the financial need of the permit holder; and]
 - [3. other factors the department considers appropriate to preserve the security of the state and its investment.]

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Division of Investments
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following primary species/two life cycle returns shall be used to determine the initial loan period:

Pink salmon - 6 years
Coho salmon - 8 years
Chum salmon - 8 years
Sockeye salmon - 10 years
Chinook salmon - 10 years

Rationale for proposed change:

shall [will, in its discretion,] - Same change and rationale as in 3AAC81.055(e) above.

and cost recovery returns - A program is not complete with just broodstock. Sufficient fish must return for cost recovery to assure meeting all financial obligations.

The remainder of the changes proposed above are because the deferment period must recognize the differences among species and the time needed to develop broodstock and production level returns. This is needed to secure success of the enhancement program without prematurely putting additional financial burdens on the borrower. It also encourages operators to develop the more valuable species. This was precisely the legislative intent in its development of the FELP and the reason for its grant of discretion to the Commissioner for variable initial loan periods between 6 and 10 years. See SSRAA's REQUEST FOR RECONSIDERATION, PETITION FOR ADOPTION OF REGULATIONS, and the Affidavit of Terry L. Gardiner marked as Exhibit E and attached hereto. Subparagraphs 2 and 3 of the division's proposal are deleted because they are non-specific and are meaningless statements.

...

- (b) The term of the initial loan period will be a minimum of 6 years and may be extended at any time [during the first 10 years of the loan only] to a maximum of 10 years if an extension of the initial loan period is in the best interest of the state Salmon Enhancement Program. The term of the initial period, as extended, may not exceed 10 years.

Rationale for proposed changes:

The restatement of the minimum of 6 years and maximum of 10 years is to reaffirm and reassert the statutory

Division of Investments
June 18, 1992
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[during the first 10 years of the loan only] - The Division of Investments has a recent Attorney General's opinion stating that pursuant to AS 16.10.525, the "initial period of the loan" may be extended at any time during the loan, not just during the first 10 years of the loan. It is incomprehensible that the division is proposing by regulation a restriction that is specifically contrary to the authority granted by the statute. The proposed restriction serves no purpose other than to limit a remedy that the legislature had left available. It allows flexibility should an operator need additional help after the initial loan period has expired.

Salmon Enhancement Program - The FELP is a revolving fund with the stated purpose of enhancing the fisheries. The added language is for the purpose of reaffirming and reasserting that the division's actions and decisions should be focused on "state salmon enhancement" rather than the general and vague "interest of the state."

...

3AAC81.900

- (5) "Production level" means a level of broodstock development that will sustain broodstock and cost recovery needs without using more than 33 [50] percent of the forecasted resource.

Rationale for proposed change:

33 [50] - Broodstock alone does not make a viable program. Sufficient fish must return for cost recovery to meet all financial obligations. However, the primary intent of the enhancement program is to "contribute, by artificial means, to the rehabilitation of the state's depleted and depressed salmon fishery." (Section 1, Chapter III, SLA 1974). It is not intended to simply benefit aquaculture corporations. At least 2/3 of the production must be contributed to the common property fishery. If a program cannot support itself on 1/3 of the program, it should not be eligible for state enhancement loans.

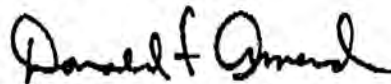
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Division of Investments
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Page 6

The draft regulations have been proposed and submitted for public comment as a result of SSRAA's PETITION TO ADOPT REGULATIONS. The petition was submitted because the division has failed to previously adopt regulations on these issues as required by statute, and because the division has historically imposed the maximum rate of interest allowable under the statute and imposed the minimum initial loan period despite legislative history and intent to the contrary. Instead of fairly responding to the petition, the proposed regulations appear on their face to have been drafted without regard to the best interests of salmon enhancement, legislative intent or declaration of policy. Rather they appear to have been drafted to specifically frustrate SSRAA's efforts to have its loan terms brought into conformity with legislative intent. This is devoid of any concept of a professional approach to addressing the best interest of the state Salmon Enhancement Program.

The department is legally mandated to adopt regulations to guide its administration of the FELP. It is urged that the department adopt regulations which reflect the legislative history, intent and declaration of policy and which are designed to enhance the program rather than regulations designed to provide bureaucratic comfort and retribution to SSRAA for having raised the issue in its PETITION.

Sincerely,



Donald F. Amend
General Manager, SSRAA

fdb/COR23

cc: Senator Robin Taylor
Representative Carroll Fader
Representative Cheri Davis



ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
RESEARCH AGENCY

P.O. Box Y, State Capitol
Juneau, Alaska 99811-3100
Mail Stop 3100
(907) 465-3991

December 7, 1987

MEMORANDUM

TO:

ATTN:

FROM: Brad Pierce 
Legislative Analyst

RE: Private Nonprofit Hatchery Funding
Research Request 88.030

You requested this agency to provide a five-year analysis (FY 83 - FY 87) of the costs incurred by each State agency associated with the private non-profit (PNP) hatchery program. You asked that we provide any other related financial information that would help determine the total amount of State money involved in the existing PNP hatchery program.

We estimate that various departments in State government have expended \$37.6 million during the past five fiscal years supporting and administering the PNP hatchery system. This memorandum presents a fairly complete picture of each State agency's contributions to the PNP hatchery system. The narrative and tabular information is supported by a series of attachments. Attachment A contains Department of Commerce and Economic Development (DCED)-Division of Investments information on capital improvement and operating loans made via the Fisheries Enhancement Loan Fund to hatchery operators and the FY 89 budget request for the loan fund submitted to the Governor's Office of Management and Budget (OMB). Attachment B contains Department of Environmental Conservation (DEC) data on the number of staff days spent on inspections and permits for PNP hatchery operations.

Attachment C contains an estimated breakdown of the Department of Fish and Game (ADF&G) expenditures to support and administer the PNP system, and a spreadsheet analysis of the amount of anticipated State loan subsidies over the useful life of current PNP projects.

The information contained in the appendices listed above is summarized below. We briefly explain the nature of the support provided by each of the various State agencies to the PNP system and quantify the amount of public funds each has expended during the past five years.

Department of Commerce and Economic Development (DCED)

The DCED-Division of Investments administers the Fisheries Enhancement Loan Fund, which issues capital construction and operating loans to PNP hatchery operators. The five-year totals of these categories of State loans are summarized in Table 1.

An examination of the spreadsheet analysis of the Enhancement Loan Fund provided by Jeff Hartman, ADF&G-FRED Division Economist, (contained in Attachment C) reveals that the State has a total outstanding loan portfolio worth \$59.7 million (present value).¹ Over the payback period of these outstanding loans, the State is expected to subsidize the capital and operating expenses of the PNP hatchery system by approximately \$31.8 million. The reasons for the magnitude of the subsidy are the six- to ten-year deferred payment schedule for enhancement loans (during which time the State does not charge interest on the outstanding loan balance) and below market interest rate:²

¹Note that the present value of the loan portfolio includes anticipated interest earnings. The total portfolio also contains a substantial number of loans that are over five years old.

²The Enhancement Loan Fund interest rates have ranged between 8 and 10.5 percent, while market rates in this analysis are assumed to vary between 10 and 12.5 percent, depending on the date of the loan.

Table 1

DEPARTMENT OF COMMERCE & ECONOMIC DEVELOPMENT-DIVISION OF INVESTMENTS
ENHANCEMENT LOAN FUND DATA FY 83 - FY 87

	Capital Loans	Operating Loans
Regional Aquaculture Associations		
Cook Inlet (CIRAA)	\$1,348,881	\$113,310
Southern Southeast (SSRAA)	1,900,000	1,406,342
Northern Southeast (NSRAA)	1,770,196	773,704
Prince William Sound (PWSAC)	12,383,039	585,500
Subtotal	17,402,116	2,878,856
Nonassociation Hatchery Operations		
Alaska Aquaculture, Inc.	748,755	1,029,450
Myers Chuck, Inc.	10,000	
Armstrong-Keta, Inc.	678,100	1,190,500
Burro Creek Farms, Inc.		
Douglas Island Pink and Chum	492,000	1,242,500
Kake Nonprofit Fisheries Development Corp.	384,187	719,026
Sheldon Jackson College	185,000	
Tlingit-Haida Fisheries Development Corp.		
Valdez Fisheries Development Corp.	2,561,300	2,363,543
Subtotal	5,059,342	
STATEWIDE TOTAL	\$22,461,458	\$9,423,875

Prepared by the House Research Agency December 1987 (88.030A; 080387-03).

In its FY 89 program funding request to the Governor (see Attachment A), the DCED-Division of Investments is proposing a \$16.8 million appropriation to the Enhancement Loan Fund. If this entire amount is included in the FY 89 Governor's proposed budget (due to be presented publicly on December 15, 1987), it would represent a substantial increase over the \$2.2 million the loan fund received in appropriations in FY 88. The request includes \$9.8 million (\$7.6 million capital and \$2.2 million operating loans) for existing hatchery projects and \$6.7 million (\$4.3 million capital and \$2.4 million operating loans) for new projects. Included in the new project category request is \$2.4 million requested by regional associations to take over operations of four FRED Division hatcheries. The FRED Division is contracting for operation of these facilities in response to legislative intent language in the FY 88 budget directing the division to explore means of reducing its General Fund dependency.³

Department of Environmental Conservation (DEC)

The DEC conducts design, construction and operations reviews of hatchery projects. They also provide reasonable assurance (of water quality) certification of U.S. Army Corps of Engineers permits for hatcheries and conduct on-site discharge inspections. From the information on the number of staff days spent on permits and inspections and the salary ranges of the personnel involved, we have estimated the following DEC expenditures on the PNP hatchery system for the FY 83 - FY 87 period:

<u>Region</u>	<u>Permits</u>		<u>Inspections</u>	
	<u>Staff days</u>	<u>Cost</u>	<u>Staff days</u>	<u>Cost</u>
Southeast	10	\$ 7,223	10	\$ 7,223
Southcentral	<u>50</u>	<u>36,115</u>	<u>30</u>	<u>21,669</u>
Total	60	\$43,338	40	\$28,892

³The \$2.4 million that the FRED Division is saving by contracting with the regional associations for operation of these hatcheries is budgeted to be spent on other enhancement activities in FY 89. Thus no net General Fund savings by the FRED Division are anticipated.

December 7, 1987

Page 5

Department of Natural Resources (DNR)

The DNR staff process land use permits, water right of way permits, right-of-way permits and tideland leases, and conduct cadastral surveys for PNP hatchery operations. For the FY 83 - FY 87 period, we have estimated the value of DNR staff time devoted to the following operations in support of the PNP system:

Process 28 Land Use Permits	\$ 8,145
Process 10 Water Right of way Permits	16,290
Process 5 Right of way Permits/Tideland Leases	9,774
Cadastral Surveys of 11 Leases	<u>7,308</u>
Total	\$41,517

Department of Fish and Game-Fisheries Rehabilitation Enhancement and Development Division (ADF&G/FRED)

The FRED Division administers the PNP hatchery program and provides support services including planning, laboratory and engineering assistance to both regional association and nonassociation hatchery operators. The Commissioner's Office makes Reimbursable Service Agreements (RSAs) with PNP hatchery operators for travel and planning activities and negotiates contracts with regional associations for various enhancement activities.

Fish and Game expenditures for the PNP hatchery system during the FY 83 - FY 87 period can be broken down and summarized as follows:

Line Items in the FRED Division Budget (General Administration)

Personal Services	\$ 898,700
Travel	120,100
Contractual	17,900
Supplies	700
Equipment	5,100
Reimbursable Service Agreements	242,900
Laboratories	
Pathology	1,086,500
Limnology	575,000
Tag Lab	447,400

December 7, 1987
Page 6

Grants/Contracts

SSRAA	626,119
NSRAA	220,892
PWSAC	694,500
CIRAA	615,421
KRAA ⁴	<u>38,520</u>

Total \$5,589,752

* * * *

I hope we have provided enough information for your purposes. In this memorandum, we have concentrated exclusively in costs. We also have detailed Benefit/Cost analysis data on the PNP system and information on the projected harvest value and resulting economic impact of PNP broodstock by hatchery. We will be happy to provide this information upon request. Please call if you have questions.

Attachments

⁴Kodiak Regional Aquaculture Association.

ATTACHMENT A
DCED-Division of Investments FY 83 - FY 87
Enhancement Loan Fund Expenditures, Enhancement
Tax and Cost Recovery Receipts and FY 89
Enhancement Loan Fund Budget Request

MEMORANDUM

State of Alaska

TO: Brad Pierce, Legislative Analyst
House Research Agency

DATE October 30, 1987

FILE NO:

TELEPHONE NO:

THRU:

SUBJECT: Information on PNP
Hatchery Expenses

FROM: David Massey, Loan Examiner 
Division of Investments
Department of Commerce & Economic
Development

The following chart shows the money borrowed from DCED for capital improvements and operational expenses, the amount each corporation cost recovered from the sale of surplus fish, and the amount of the enhancement contracts with the regional associations. These figures are supplied for each fiscal year from 1983 to 1987.

I would also like to point out that other revenue that we do not have specifics on may have been available for annual expenses. Examples of these other revenue sources would be: interest earned; grants from local, state or federal sources; local, state or federal contracts; voluntary assessments and private contributions.

Cook Inlet Aquaculture Association

	Capital Loans	Operations Loans	Enhancement Tax	Cost Recovery
FY 83	\$1,348,881.00	\$113,310.00	\$704,186.29	\$-0-
FY 84	-0-	-0-	765,524.00	-0-
FY 85	-0-	-0-	367,300.00	74.00
FY 86	-0-	-0-	521,923.00	-0-
FY 87	-0-	-0-	801,480.20	15,423.00

Southern Southeast Regional Aquaculture Association

	Capital Loans	Operations Loans	Enhancement Tax	Cost Recovery
FY 83	\$1,100,000.00	\$517,000.00	\$1,077,222.01	\$80,500.00
FY 84	900,000.00	889,342.00	1,105,142.00	56,000.00
FY 85	-0-	-0-	1,080,000.00	854,687.00
FY 86	-0-	-0-	1,317,097.00	547,034.00
FY 87	-0-	-0-	1,831,126.70	704,396.00

Alaska Aquaculture, Inc.

	Capital Loans	Operations Loans	Cost Recovery
FY 83	\$-0-	\$248,900.00	\$-0-
FY 84	390,000.00	127,270.00	-0-
FY 85	275,270.00	127,630.00	923.00
FY 86	49,735.00	235,650.00	3,369.34
FY 87	33,750.00	290,000.00	-0-

Myers Chuck, Inc.

	Capital Loans	Operations Loans	Cost Recovery
FY 83	\$-0-	\$-0-	\$-0-
FY 84	10,000.00	-0-	-0-
FY 85	-0-	-0-	-0-
FY 86	-0-	-0-	-0-
FY 87	-0-	-0-	-0-

Northern Southeast Regional Association

	Capital Loans	Operations Loans	Enhancement Tax	Cost Recovery
FY 83	\$-0-	\$260,000.00	\$902,272.52	\$-0-
FY 84	270,196.00	-0-	471,363.00	250.00
FY 85	1,500,000.00	224,715.00	650,000.00	72,090.00
FY 86	-0-	288,989.00	897,536.47	17,304.44
FY 87	-0-	-0-	1,188,150.93	122,384.30

Armstrong-Keta, Inc.

	Capital Loans	Operations Loans	Cost Recovery
FY 83	\$-0-	\$200,000.00	-0-
FY 84	-0-	30,000.00	-0-
FY 85	603,100.00	393,000.00	-0-
FY 86	75,000.00	252,500.00	15,000.00
FY 87	-0-	315,000.00	5,364.00

Burro Creek Farms, Inc.

	Capital Loans	Operations Loans	Cost Recovery
FY 83	\$-0-	\$-0-	\$-0-
FY 84	-0-	-0-	-0-
FY 85	-0-	-0-	4,332.00
FY 86	-0-	-0-	1,745.00
FY 87	-0-	-0-	880.00

Douglas Island Pink and Chum

	Capital Loans	Operations Loans	Cost Recovery
FY 83	\$125,000.00	\$239,500.00	\$5,126.62
FY 84	92,000.00	235,000.00	12,300.00
FY 85	-0-	66,500.00	200,000.00
FY 86	275,000.00	338,000.00	152,830.00
FY 87	-0-	363,500.00	6,724.57

Kake Nonprofit Fisheries Development Corporation

	Capital Loans	Operations Loans	Cost Recovery
FY 83	\$-0-	\$184,000.00	\$-0-
FY 84	-0-	-0-	-0-
FY 85	-0-	66,780.00	-0-
FY 86	196,187.00	195,383.00	-0-
FY 87	188,000.00	272,863.00	-0-

Sheldon Jackson College

	Capital Loans	Operations Loans	Cost Recovery
FY 83	\$-0-	\$-0-	\$40,000.00
FY 84	-0-	-0-	54,500.00
FY 85	-0-	-0-	120,077.00
FY 86	185,000.00	-0-	98,582.84
FY 87	-0-	-0-	18,800.15

Tlingit-Haida Fisheries Development Corporation

	Capital Loans	Operations Loans	Cost Recovery
FY 83	\$-0-	\$-0-	\$-0-
FY 84	-0-	-0-	-0-
FY 85	-0-	-0-	-0-
FY 86	-0-	-0-	-0-
FY 87	-0-	-0-	-0-

Prince William Sound Aquaculture Corporation

	Capital Loans	Operations Loans	Enhancement Tax	Cost Recovery
FY 83	\$-0-	\$-0-	\$-0-	\$1,084,806.59
FY 84	1,217,039.00	-0-	-0-	477,668.00
FY 85	9,080,000.00	585,500.00	-0-	416,604.00
FY 86	1,786,000.00	-0-	450,000.00	911,673.05
FY 87	300,000.00	-0-	853,542.17	938,370.43

Valdez Fisheries Development Corporation

	Capital Loans	Operations Loans	Cost Recovery
FY 83	1,950,000.00	\$371,000.00	\$-0-
FY 84	-0-	432,000.00	85,000.00
FY 85	506,300.00	511,879.00	9,613.00
FY 86	-0-	380,000.00	157,717.31
FY 87	105,000.00	668,664.00	54,712.00

GW/cw6557c
103087a

TITLE: Fisheries Enhancement Loan Program		LOCATION: Statewide		AGENCY PRIORITY: 1 of 3	NAME AND PHONE OF AGENCY CONTACT: Connie S. Green - 465-2510	
PROGRAM FUNDING	FY 87	FY 88	FY 89	GOVERNOR	OTHER FINANCIAL INFORMATION (INCLUDING FY 88)	TOTAL
TOTAL ANNUAL LOAN DEMAND	2,907.0	5,213.4	17,542.0		TOTAL APPROPRIATIONS /reapprop.	50,477.6
TOTAL APPROPRIATIONS AND REQUEST	[141.4]	1,952.9	16,591.9		TOTAL INTEREST RETAINED	
1002 FEDERAL RECEIPTS					TOTAL OTHER RETAINED EARNINGS	[4,695.9]*
1004 GENERAL FUNDS	-0-	2,200.0	16,839.0		TOTAL BONDS ISSUED	N/A
1066 GENERAL OBLIGATION BONDS					BONDS AUTHORIZED BUT NOT ISSUED	N/A
OTHERxx Operating	[141.4]	[247.1]	[247.1]		TOTAL PROGRAM FUNDING	45,781.7
TOTAL OTHER PROGRAM FUNDING	5,244.5	3,260.5	950.1		WHAT ARE THE TOTAL ADMINISTRATIVE COSTS FOR OPERATING THE LOAN PROGRAM FOR FY 88? \$247.1	
ESTIMATED CARRY FORWARD BALANCE	4,678.5	2,196.1	-0-		WHAT AMOUNT OF TOTAL ADMINISTRATIVE COSTS ARE OBTAINED FROM LOAN INTEREST, PRINCIPAL OR FEES? \$247.1	
INTEREST RETAINED	3.3	779.8	696.1			
OTHER RETAINED EARNINGS	17.5	24.6	22.0			
PRINCIPAL REPAY	545.2	260.0	232.0			

DESCRIBE THE PROGRAM AND EXPLAIN IMPACTS ON THE PROGRAM OF RECEIVING IN FY 89 75% OF FY 89 REQUESTED GENERAL FUNDS AND 50% OF FY 89 REQUESTED GENERAL FUNDS:
 AS 16.10.500-620 authorizes loans for hatchery planning, construction and operation and for enhancement and rehabilitation activities. The maximum loan is \$10,000.0 per loan for a qualified regional aquaculture association and \$1,000.0 per loan for a local nonprofit corporation as approved by the regional aquaculture association. The maximum loan maturity is 30 years, and the interest rate is 9-1/2%. Interest does not accrue during the initial period of the loan, which is a period of time of not less than six years nor more than ten years from the date the loan is made. In addition, repayment of principal and interest does not begin until after this initial period. Payments are generally made on an annual basis. The average term is 25 years.

The division evaluates and processes applications for new loans and provides accounting and collection services. Services include payment collection, credit reporting, loan accounting, delinquent loan collection, examination and processing of applications for payment extensions, foreclosure and bankruptcy management, repossessed property management and resale and remittance to investors.

*Negative number due to reappropriations.

L1	LOAN PROGRAM DESCRIPTION
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AGENCY Division of Investments
Commerce and Economic Development

TITLE Fisheries Enhancement Loan Program

FY 89

Page <u>1</u> of <u>3</u>
Revised Date: _____

Loan Demand

In addition to the projects listed, the division recommends a \$1 million contingency fund. It is anticipated that some hatcheries may experience shortfalls in funds due to inadequate fish returns, natural disasters, hatchery or fisheries management problems, or other contingencies. This request is consistent with past requests based upon actual experience. A contingency fund assures the viability of the existing hatchery operations.

SUMMARY OF PROJECTS TO BE FUNDED:

	<u>Existing Projects</u>	<u>New Projects</u>	<u>Total</u>
Capital Improvement Loans	\$7,642.0	\$ 4,300.0	
Operating Loans	2,180.0	2,420.0	
	<u>\$9,822.0</u>	<u>\$ 6,720.0</u>	\$16,542.0
Other (Contingency) Loan Demand			1,000.0
			<u>\$17,542.0</u>

25% Reduction: A 25% reduction in FY 89 requested funds will result in a \$4.4 million reduction in funding for "new project" hatchery loans.

50% Reduction: A 50% reduction in FY 89 requested funds will result in a \$8.8 million reduction in funding for "new project" hatchery loans.

NOTE: The loan demand for FY 89 was determined by soliciting the anticipated needs from the 15 private nonprofit permit holders and the seven regional associations. These needs have not been evaluated by this division as appropriate loan request documents are not filed until the loan is actually requested.

Sec. 26, Ch. 95, SLA 1987 appropriated \$247.0 to the operating budget for administration of the program.

Sec. 15, Ch. 95, SLA 1987 appropriated \$1.2 million from the general fund to the Fisheries Enhancement Revolving Loan Program.

Sec. 157, Ch. 3, FSSLA 1987 appropriated \$1.0 million from the general fund to the Fisheries Enhancement Revolving Loan Fund for the Gastineau Hatchery.

L1

**ADDITIONAL
EXPLANATION
FORM**

AGENCY Commerce and Economic Development
BRU Investments
COMPONENT Fisheries Enhancement Loan Program

FY 89

Page 2 of 3
Revised Date: _____

FY 89 PROJECTED LOAN DEMAND

	<u>Existing Projects</u>		<u>New Projects</u>		<u>Total</u>
	<u>Capital</u>	<u>Operating</u>	<u>Capital</u>	<u>Operating</u>	
1. Alaska Aquaculture Foundation, Inc.	\$ 216.0	\$ 450.0	\$ 800.0	\$ 250.0	\$ 1,716.0
2. Armstrong-Keta, Inc.	0	285.0	200.0	0	485.0
3. Burro Creek Farms	0	0	0	0	0
4. Cook Inlet Aquaculture Assn.	500.0	0	0	400.0*	900.0
5. Douglas Island Pink and Chum	4,500.0	0	0	0	4,500.0
6. Kake Nonprofit Fisheries Development Corp.	326.0	445.0	0	0	771.0
7. Northern S.E. Regional Aquaculture Assn.	100.0	400.0	0	650.0*	1,150.0
8. Prince William Sound Aquaculture Assn.	500.0	0	500.0*	600.0*	1,600.0
9. Sheldon Jackson College Aquaculture Program	1,000.0	0	0	0	1,000.0
10. Southern S.E. Regional Aquaculture Assn.	0	600.0	500.0	0	1,100.0
11. Tlingit and Haida Fisheries Development Corp.	0	0	0	0	0
12. Valdez Fisheries Development Association	500.0	0	0	0	500.0
13. Kodiak Regional Aquaculture Association	0	0	175.0*	50.0*	225.0
14. Meyers Chuck Aquaculture Association, Inc.	0	0	75.0	75.0	150.0
15. Angoon Aquaculture Association, Inc.	0	0	1,500.0	0	1,500.0
16. Aquaculture, Inc.	0	0	450.0	95.0	545.0
17. Grofish, Inc.	0	0	100.0	50.0	150.0
18. Imarpik	0	0	0	250.0	250.0
19. Lower Yukon/Kuskokwim Regional Aquaculture Assn.	0	0	0	0	0
20. Nerka, Inc.	0	0	0	0	0
	<u>\$7,642.0</u>	<u>\$2,180.0</u>	<u>\$4,300.0</u>	<u>\$2,420.0</u>	<u>\$16,542.0</u>
Contingency					1,000.0
TOTAL					\$17,542.0

* These amounts are for proposed transfer of FRED hatcheries to these respective organizations.

L1

**ADDITIONAL
EXPLANATION
FORM**

AGENCY Commerce and Economic Development

BRU Investments

COMPONENT Fisheries Enhancement Loan Program

FY 89

Page 3 of 3

Revised Date: _____

ATTACHMENT B
FY 83 - FY 87 Estimated DEC Staff Days
Spent on Permits and Inspections of
PNP Hatcheries

MEMORANDUM

State of Alaska

TO: Brad Pierce
Legislative Analyst
House Research Agency

DATE: October 5, 1987

FILE NO:

TELEPHONE NO: 465-2653

THRU:

SUBJECT: DEC Expenditures for
PNP Hatcheries

FROM:

Larry Dietrick
Director
Environmental Quality

The information you requested on the time spent by Department of Environmental Conservation staff in support of Private Nonprofit (PNP) hatcheries over the past five years (FY 83-87) is summarized below. Estimates are provided for permitting and inspections over this period for both our Southeastern and Southcentral Regional offices.

<u>Region/Permit #</u>	<u># PNP's addressed in area</u>	<u>Days Spent on Permits</u>	<u>Days Spent on Inspections</u>
Southeast	11	10	10
George Inlet 23 (SSRAA)			
Gastineau Channel 327 (Douglas Island/Macaulay)			
Ernest Sound 17 (Meyer)			
Sumner Strait 84 (ADF&G)			
Port Snettisham 2 (ADF&G)			
Tamgas Harbor 5 (BIA)			
Gastineau Channel 397 Douglas Island/Macaulay)			
Indian River 5 (Sheldon Jackson)			
Indian River 3 (Sheldon Jackson)			
T & H (Baranof) No record found			
NSRAA (Twin Lakes) No record found			
Southcentral		50	30
Cook Inlet	1		
Prince William Sound	3		

I hope this provides you with sufficient information. Please feel free to contact Mr. Stokes or Ms. Howe directly if we can be of further assistance.

cc: Dick Stokes
Julie Howe

ATTACHMENT C
FY 83 - FY 87 ADF&G-FRED Division Expenditures
on the PNP Hatchery System and Subsidy Report
on the Enhancement Loan Fund

MEMORANDUM

State of Alaska

TO: Brad Pierce
Legislative Analyst
House Research Agency
THRU: Jerry L. Madden
Salmon Rehabilitation and
Enhancement Coordinator
FROM: Kevin C. Duffy
Planner - PNP Program
FRED Division

DATE: November 30, 1987

FILE NO:

TELEPHONE NO: 465-4160

SUBJECT: Expenditures Related to
the Private Nonprofit
Hatchery Program

This memo is in response to your request to Jerry Madden regarding Alaska Department of Fish and Game (ADF&G) expenditures related to the Private Nonprofit (PNP) Hatchery operators in the State of Alaska for fiscal years 1983-1987. The information is provided in the following manner:

- A. PNP Program budgets within the FRED Division, FY 83-FY 87;
- B. Reimbursable Services Agreements to the PNP Program for Regional Planning Team activities, FY 83 - FY 87;
- C. Pathology, Limnology, and Tag Lab expenditures, FY 83-FY 87, based on estimates of time spent on activities directly related to PNP sector programs; and
- D. Grants/contracts from ADF&G to Regional Aquaculture Associations, FY 80 - FY 87.

If you have additional questions, contact us at your convenience.

Enclosure

cc: B. Burkett

D. Grants/Contracts from ADF&G to Regional Aquaculture Associations, 1980 - 1987. Information is provided by: association; contract subject; fiscal year; and amount.

1. Southern Southeast Regional Aquaculture Association

<u>Project</u>	<u>FY</u>	<u>\$ Amount</u>
Regional Comprehensive Salmon Planning	80	100,000.00
Lake Fertilization	80	49,000.00
Regional Comprehensive Salmon Planning	81	50,000.00
Regional Comprehensive Salmon Planning	82	50,000.00
Cooperative agreement on salmon egg take	82	22,000.00
Chinook Rehabilitation Research	82	70,000.00
Lake Fertilization	82	229,000.00
Regional Comprehensive Salmon Planning	83	50,000.00
Lake Fertilization	84	224,000.00
Regional Comprehensive Salmon Planning	84	25,000.00
Regional Comprehensive Salmon Planning	85	24,119.00
Lake Fertilization	85	200,000.00
Hatchery Siting	85	17,000.00
Chinook Salmon Enhancement	86	66,000.00
Regional Comprehensive Salmon Planning	86	<u>20,000.00</u>
TOTAL		1,196,119.00

2. Northern Southeast Regional Aquaculture Association

<u>Project</u>	<u>FY</u>	<u>\$ Amount</u>
Regional Comprehensive Salmon Planning	80	100,000.00
Regional Comprehensive Salmon Planning	81	50,000.00
Regional Comprehensive Salmon Planning	82	50,000.00
Chinook/Coho Salmon Lake Rearing	82	216,000.00
Remote Chum Broodstock	82	58,000.00
Regional Comprehensive Salmon Planning	83	49,920.00
Regional Comprehensive Salmon Planning	84	25,000.00
Chinook/Coho Lake Stocking	84	27,972.00
Regional Comprehensive Salmon Planning	85	25,000.00
Chinook Salmon Lake Stocking	85	50,000.00
Regional Comprehensive Salmon Planning	86	20,000.00
Chinook Salmon Lake Stocking	86	<u>23,000.00</u>
TOTAL		694,892.00

MEMORANDUM

State of Alaska

TO: Brad Pierce
Legislative Analyst
House Research Agency
THRU: Jerry L. Madden
Salmon Rehabilitation and
Enhancement Coordinator
FROM: Kevin C. Duffy
Planner - PNP Program
FRED Division

DATE: November 30, 1987

FILE NO:

TELEPHONE NO: 465-4160

SUBJECT: Expenditures Related to
the Private Nonprofit
Hatchery Program

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- C. Pathology, Limnology, and Tag Lab expenditures, FY 83-FY 87, based on estimates of time spent on activities directly related to PNP sector programs; and
- D. Grants/contracts from ADF&G to Regional Aquaculture Associations, FY 80 - FY 87.

If you have additional questions, contact us at your convenience.

Enclosure

cc: B. Burkett

**Private Nonprofit Hatchery Program Budgets
FRED Division FY 83 - FY 87**

A.

<u>Line Item</u>	<u>FY83 Actual</u>	<u>FY84 Actual</u>	<u>FY85 Actual</u>
Personnel Service	143.5	154.9	207.6
Travel	39.3	23.2	21.8
Contractual	2.1	3.0	4.7
Supplies	0	.1	.2
Equipment	1.2	.5	1.7
Total	186.1	181.7	236.0

<u>Line Item</u>	<u>FY86 Actual</u>	<u>FY87 Actual*</u>
Personnel Service	207.5	185.2
Travel	21.8	14.0
Contractual	4.7	3.4
Supplies	.2	.2
Equipment	1.7	0
Total	235.9	202.8

* An additional \$11.7 was charged to the supplies line item in FY 87 for egg sales. However, when ADF&G was reimbursed, the net effect was zero.

B. Reimbursable Services Agreements from Commissioner's Office for Regional Planning Team (RPT) travel, RPT planning activities.

<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>	<u>FY 87</u>
90.0	42.4	55.0	55.5	0

C. Pathology, Limnology, Tag Lab Expenditures related to PNP operators - FY 83-FY 87.

	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>	<u>FY 87</u>
Pathology	183.0	192.3	240.8	234.1	236.3
Limnology	150.0	150.0	150.0	125.0	0
Tag Lab	36.9	52.9	77.5	145.9	134.2

D. Grants/Contracts from ADF&G to Regional Aquaculture Associations, 1980 - 1987. Information is provided by: association; contract subject; fiscal year; and amount.

1. Southern Southeast Regional Aquaculture Association

<u>Project</u>	<u>FY</u>	<u>\$ Amount</u>
Regional Comprehensive Salmon Planning	80	100,000.00
Lake Fertilization	80	49,000.00
Regional Comprehensive Salmon Planning	81	50,000.00
Regional Comprehensive Salmon Planning	82	50,000.00
Cooperative agreement on salmon egg take	82	22,000.00
Chinook Rehabilitation Research	82	70,000.00
Lake Fertilization	82	229,000.00
Regional Comprehensive Salmon Planning	83	50,000.00
Lake Fertilization	84	224,000.00
Regional Comprehensive Salmon Planning	84	25,000.00
Regional Comprehensive Salmon Planning	85	24,119.00
Lake Fertilization	85	200,000.00
Hatchery Siting	85	17,000.00
Chinook Salmon Enhancement	86	66,000.00
Regional Comprehensive Salmon Planning	86	20,000.00
TOTAL		1,196,119.00

2. Northern Southeast Regional Aquaculture Association

<u>Project</u>	<u>FY</u>	<u>\$ Amount</u>
Regional Comprehensive Salmon Planning	80	100,000.00
Regional Comprehensive Salmon Planning	81	50,000.00
Regional Comprehensive Salmon Planning	82	50,000.00
Chinook/Coho Salmon Lake Rearing	82	216,000.00
Remote Chum Broodstock	82	58,000.00
Regional Comprehensive Salmon Planning	83	49,920.00
Regional Comprehensive Salmon Planning	84	25,000.00
Chinook/Coho Lake Stocking	84	27,972.00
Regional Comprehensive Salmon Planning	85	25,000.00
Chinook Salmon Lake Stocking	85	50,000.00
Regional Comprehensive Salmon Planning	86	20,000.00
Chinook Salmon Lake Stocking	86	23,000.00
TOTAL		694,892.00

3. Prince William Sound Aquaculture Corporation

<u>Project</u>	<u>FY</u>	<u>\$ Amount</u>
Fin Clipping project	80	7,000.00
Regional Comprehensive Salmon Planning	80	100,000.00
Lake Fertilization	81	62,000.00
Comprehensive Salmon Plan, Phase I & II	81	50,000.00
Comprehensive Salmon Plan, Phase I & II	82	50,000.00
Lake Enrichment	82	125,000.00
Lake Fertilization	83	137,000.00
Regional Comprehensive Salmon Planning	83	50,000.00
Regional Comprehensive Salmon Planning	84	35,000.00
Lake Fertilization	84	155,000.00
Lake Fertilization	85	140,500.00
Lake Fertilization	86	155,000.00
Regional Comprehensive Salmon Planning	86	<u>22,000.00</u>
TOTAL		1,088,500.00

4. Cook Inlet Aquaculture Association

<u>Project</u>	<u>FY</u>	<u>\$ Amount</u>
Regional Comprehensive Salmon Planning	80	100,000.00
Engineering Study	80	50,000.00
Regional Comprehensive Salmon Planning	81	50,000.00
Regional Comprehensive Salmon Planning	82	50,000.00
Regional Comprehensive Salmon Planning	83	54,745.47
Regional Comprehensive Salmon Planning	84	47,000.00
Smolt Enumeration & Fry Outmigration Study	84	57,219.00
Lake Fertilization	85	88,500.00
Regional Comprehensive Salmon Planning/ Recreational Planning	85	59,774.00
Regional Comprehensive Salmon Planning Recreational Planning	86	48,000.00
Lake Fertilization	86	151,383.00
Lake Fertilization	87	<u>108,800.00</u>
TOTAL		865,421.47

5. Lower Yukon/Kuskokwim Regional Aquaculture Association

<u>Project</u>	<u>FY</u>	<u>\$ Amount</u>
Hatchery Facility Development	80	67,500.00
Grant for Regional Comprehensive Salmon Planning	80	105,000.00
Regional Comprehensive Salmon Planning	81	40,000.00
Regional Comprehensive Salmon Planning	82	50,000.00
Hatchery Siting	82	<u>45,600.00</u>
TOTAL		308,100.00

6. Imarpik Regional Aquaculture Association

<u>Project</u>	<u>FY</u>	<u>\$ Amount</u>
Regional Comprehensive Salmon Planning	82	100,000.00

7. Kodiak Regional Aquaculture Association

<u>Project</u>	<u>FY</u>	<u>\$ Amount</u>
Phase I Plan Development/Establish Assoc.*	82	100,000.00
Phase II Regional Comprehensive Salmon Plan*	84	18,520.00
Regional Comprehensive Salmon Planning	86	<u>20,000.00</u>
TOTAL		138,520.00

* Under an RFP process, ADF&G awarded two contracts to a consultant to help establish the association, write the Phase II Plan, and to establish a Phase II Plan detailed outline.

SUBSIDY REPORT

NAME	LOAN #	ORGPRINC	MARKINRT	INT RATE	PVSUB	LOANVAL	PERSUB
Alaska Aqua. Foundation	07-02	\$145,700.00	10	8.0	\$100,895.49	\$201,869.23	49.98
	07-08	\$102,600.00	11.5	9.5	\$70,312.44	\$142,153.62	49.46
	07-104	\$180,000.00	11.5	9.5	\$86,850.71	\$186,274.51	46.63
	07-113	\$55,650.00	12.5	10.5	\$29,091.95	\$56,643.75	51.36
	07-114	\$39,735.00	12.5	10.5	\$22,231.22	\$40,444.55	54.97
	07-118	\$10,000.00	11.5	9.5	\$5,309.23	\$10,178.57	52.16
	07-15	\$31,130.00	11.5	9.5	\$21,243.04	\$39,501.56	53.78
	07-20	\$113,125.00	11.5	9.5	\$77,731.04	\$143,546.86	54.15
	07-36	\$25,100.00	11.5	9.5	\$14,802.20	\$29,572.14	50.05
	07-46	\$63,700.00	11.5	9.5	\$37,770.46	\$70,999.22	53.20
	07-55	\$47,500.00	11.5	9.5	\$26,774.90	\$52,942.90	50.57
	07-61	\$117,700.00	11.5	9.5	\$72,097.30	\$131,186.94	54.96
	07-64	\$83,700.00	11.5	9.5	\$49,572.00	\$92,638.83	53.51
	07-71	\$127,270.00	11.5	9.5	\$75,034.55	\$140,861.94	53.27
	07-83	\$390,000.00	11.5	9.5	\$215,325.65	\$415,203.59	51.86
	07-93	\$121,630.00	11.5	9.5	\$70,394.46	\$129,490.29	54.36
	07-95	\$275,270.00	11.5	9.5	\$153,300.50	\$284,865.47	53.82
				SUBTOTAL	\$1,128,737.14	\$2,168,373.97	
Alaska Aqua. Fo							
Alaska Aqua., Inc.	07-121	\$290,000.00	11.5	9.5	\$138,844.28	\$295,178.57	47.84
	07-124	\$33,750.00	11.5	9.5	\$14,482.92	\$33,750.00	42.91
	07-135	\$65,933.00	11.5	9.5	\$34,079.23	\$65,933.00	51.69
	07-140	\$335,000.00	11.5	9.5	\$172,136.89	\$335,000.00	51.38
				SUBTOTAL	\$359,543.33	\$729,861.57	
Alaska Aqua., I							
Armstrong-Keta, Inc.	07-111	\$252,500.00	11.5	9.5	\$127,000.50	\$257,008.93	49.41
	07-112	\$75,000.00	11.5	9.5	\$40,860.52	\$76,339.29	53.52
	07-130	\$42,000.00	11.5	9.5	\$20,893.16	\$42,000.00	49.75
	07-131	\$273,000.00	11.5	9.5	\$144,101.58	\$273,000.00	52.78
	07-28	\$474,045.00	11.5	9.5	\$289,643.14	\$558,506.32	51.36
	07-67	\$200,000.00	11.5	9.5	\$119,745.52	\$221,359.22	54.12
	07-77	\$30,000.00	11.5	9.5	\$17,341.02	\$31,938.74	54.29
	07-87	\$421,000.00	11.5	9.5	\$231,732.29	\$448,206.95	51.70
	07-88	\$200,000.00	11.5	9.5	\$110,006.60	\$212,924.92	51.70
	07-98	\$193,000.00	11.5	9.5	\$105,368.91	\$199,727.67	52.76
	07-99	\$82,100.00	11.5	9.5	\$44,304.68	\$84,961.87	52.15
				SUBTOTAL	\$1,251,077.92	\$2,405,974.51	
Armstrong-Keta,							
Burro Creek Farms, Inc.	07-12	\$58,700.00	11.5	9.5	\$38,692.61	\$74,485.75	51.55
	07-14	\$68,975.00	11.5	9.5	\$42,670.88	\$87,523.93	48.75
	07-35	\$52,000.00	11.5	9.5	\$55,711.96	\$100,391.90	51.40
	07-39	\$36,200.00	11.5	9.5	\$21,859.54	\$42,649.86	51.25
				SUBTOTAL	\$158,934.99	\$313,051.44	
Burro Creek Far							
Inlet Assn.	07-58	\$113,310.00	11.5	9.5	\$62,617.14	\$126,293.90	49.58
	07-60	\$1,348,081.00	11.5	9.5	\$820,315.84	\$1,503,445.78	54.56

NAME	LOAN #	ORGRINC	MARKINT	INT RATE	PVSUB	LOANVAL	PERSUB
Cook Inlet Assn				SUBTOTAL	\$882,932.98	\$1,629,739.68	
Douglas Is. Pink & Chum Corp	07-09	\$67,500.00	11.5	9.5	\$43,162.77	\$85,652.27	50.39
	07-10	\$163,000.00	11.5	9.5	\$106,505.55	\$206,834.37	51.49
	07-101	\$15,500.00	11.5	9.5	\$7,653.69	\$16,040.31	47.73
	07-102	\$51,000.00	11.5	9.5	\$25,189.69	\$52,777.78	47.73
	07-103	\$75,000.00	11.5	9.5	\$36,483.25	\$77,614.38	47.81
	07-105	\$263,000.00	11.5	9.5	\$127,934.59	\$272,167.76	47.81
	07-110	\$67,700.00	11.5	9.5	\$37,168.68	\$68,908.93	53.94
	07-115	\$55,000.00	11.5	9.5	\$23,994.66	\$55,982.14	42.86
	07-116	\$95,000.00	11.5	9.5	\$50,753.86	\$96,696.43	52.49
	07-117	\$57,300.00	11.5	9.5	\$30,331.17	\$58,323.21	52.81
	07-122	\$196,000.00	11.5	9.5	\$93,382.53	\$199,500.00	46.77
	07-123	\$50,000.00	11.5	9.5	\$23,801.67	\$50,892.86	46.77
	07-132	\$23,500.00	11.5	9.5	\$12,377.84	\$23,500.00	52.67
	07-133	\$94,000.00	11.5	9.5	\$49,511.38	\$94,000.00	52.67
	07-137	\$30,000.00	11.5	9.5	\$15,454.34	\$30,000.00	51.51
	07-138	\$130,000.00	11.5	9.5	\$66,968.80	\$130,000.00	51.51
	07-17	\$40,000.00	11.5	9.5	\$24,662.87	\$50,756.50	48.59
	07-27	\$150,000.00	11.5	9.5	\$93,834.60	\$176,725.32	52.64
	07-31	\$30,000.00	11.5	9.5	\$18,481.66	\$35,345.18	52.29
	07-48	\$162,000.00	11.5	9.5	\$97,492.85	\$180,563.15	53.99
	07-53	\$118,000.00	11.5	9.5	\$68,226.17	\$131,521.31	51.87
	07-65	\$195,500.00	11.5	9.5	\$117,540.95	\$216,378.64	54.32
	07-68	\$44,000.00	11.5	9.5	\$26,407.74	\$48,699.23	54.23
	07-72	\$198,000.00	11.5	9.5	\$119,342.12	\$219,145.63	54.46
	07-79	\$37,000.00	11.5	9.5	\$20,692.28	\$39,391.11	52.53
	07-80	\$50,000.00	11.5	9.5	\$27,894.62	\$53,231.23	52.40
	07-81	\$42,000.00	11.5	9.5	\$23,437.83	\$44,714.23	52.42
Douglas Is. Pin				SUBTOTAL	\$1,387,809.35	\$2,715,362.78	
Kake Nonprofit Fishery Corp.	07-106	\$196,187.00	11.5	9.5	\$103,436.81	\$203,825.76	50.95
	07-107	\$195,383.00	11.5	9.5	\$94,176.47	\$202,193.74	46.58
	07-127	\$272,863.00	11.5	9.5	\$128,028.39	\$277,735.55	46.10
	07-128	\$188,000.00	11.5	9.5	\$96,279.68	\$191,357.14	50.31
	07-136	\$304,276.00	11.5	9.5	\$157,579.74	\$304,276.00	51.79
	07-139	\$262,154.00	11.5	9.5	\$135,009.30	\$262,154.00	51.50
	07-32	\$346,900.00	11.5	9.5	\$209,417.73	\$408,708.14	51.24
	07-50	\$104,500.00	11.5	9.5	\$61,266.75	\$116,474.38	52.50
	07-63	\$184,000.00	11.5	9.5	\$110,599.83	\$203,652.49	54.31
	07-91	\$66,788.00	11.5	9.5	\$33,656.16	\$69,107.34	48.70
Kake Nonprofit				SUBTOTAL	\$1,129,449.25	\$2,232,683.25	
Meyers Chuck Aqua.	07-84	\$10,000.00	11.5	9.5	\$4,599.29	\$10,546.25	43.20
Meyers Chuck Aq				SUBTOTAL	\$4,599.29	\$10,546.25	
No. Southeastern Reg. Aqua.	07-108	\$288,989.00	11.5	9.5	\$135,340.18	\$299,862.69	45.25
	07-34	\$450,125.00	11.5	9.5	\$238,131.85	\$538,325.83	44.90
	07-41	\$15,000.00	11.5	9.5	\$7,777.88	\$16,718.81	46.52

NAME	LOAN #	ORSPRINC	MARKINT	INT RATE	PVSUB	LOANVAL	PERSUB
No. Southeastern Reg. Aqua.	07-51	\$261,500.00	11.5	9.5	\$126,639.97	\$291,464.61	46.89
	07-56	\$260,000.00	11.5	9.5	\$140,192.64	\$289,792.73	50.45
	07-73	\$270,196.00	11.5	9.5	\$153,533.61	\$287,657.30	54.08
	07-82	\$1,500,000.00	11.5	9.5	\$833,885.99	\$1,596,936.87	52.22
	07-89	\$224,715.00	11.5	9.5	\$122,059.55	\$239,237.11	51.02

No. Southeaster

SUBTOTAL \$1,775,600.88 \$3,551,195.15

Prince William Sound Aqua.	07-01	\$1,400,000.00	10	8.0	\$1,207,138.10	\$2,280,000.00	52.94
	07-03	\$500,000.00	10	8.0	\$375,177.84	\$692,756.44	54.16
	07-06	\$650,000.00	11.5	9.5	\$498,792.54	\$900,583.37	55
	07-119	\$1,785,000.00	11.5	9.5	\$947,968.22	\$1,817,892.86	52
	07-134	\$300,000.00	11.5	9.5	\$156,053.77	\$300,000.00	52.
	07-21	\$1,000,000.00	11.5	9.5	\$828,614.60	\$1,170,172.80	70.33
	07-22	\$329,000.00	11.5	9.5	\$210,334.71	\$387,618.85	54.26
	07-25	\$265,000.00	11.5	9.5	\$166,597.74	\$312,215.79	53.36
	07-26	\$62,000.00	11.5	9.5	\$49,828.42	\$73,046.71	68.21
	07-40	\$1,345,500.00	11.5	9.5	\$1,073,329.39	\$1,585,231.50	67.71
	07-42	\$204,000.00	11.5	9.5	\$182,696.29	\$258,860.20	70.58
	07-74	\$1,217,039.20	11.5	9.5	\$703,288.68	\$1,295,689.63	54.28
	07-90	\$1,388,000.00	11.5	9.5	\$735,566.21	\$1,477,698.92	49.78
	07-92	\$585,500.00	11.5	9.5	\$328,811.13	\$605,909.59	54.27
	07-97	\$7,692,000.00	11.5	9.5	\$4,228,517.23	\$7,960,130.72	53.12

Prince William

SUBTOTAL \$11,692,706.07 \$21,125,807.38

Sheldon Jackson College	07-120	\$105,000.00	11.5	9.5	\$80,138.16	\$180,383.57	42.55
	07-13	\$177,254.00	11.5	9.5	\$101,549.56	\$200,835.84	48.62
	07-16	\$61,370.00	11.5	9.5	\$35,241.61	\$77,873.78	45.25

Sheldon Jackson

SUBTOTAL \$216,921.33 \$475,013.19

So. Southeastern Reg. Aqua.	07-04	\$2,700,000.00	10	8.0	\$1,955,588.11	\$3,740,804.78	52.28
	07-05	\$300,000.00	11.5	9.5	\$212,007.22	\$415,653.86	51.01
	07-18	\$410,000.00	11.5	9.5	\$285,572.17	\$520,258.24	54.89
	07-19	\$525,000.00	11.5	9.5	\$367,369.68	\$666,184.33	55.15
	07-23	\$211,600.00	11.5	9.5	\$132,257.48	\$249,381.36	53.05
	07-43	\$200,000.00	11.5	9.5	\$118,067.63	\$235,634.56	50.11
	07-45	\$406,000.00	11.5	9.5	\$253,992.05	\$478,338.16	53.52
	07-59	\$1,100,000.00	11.5	9.5	\$668,012.00	\$1,226,046.15	54.49
	07-69	\$517,000.00	11.5	9.5	\$301,152.10	\$572,213.59	52.63
	07-70	\$3,783,000.00	11.5	9.5	\$2,284,134.43	\$4,187,009.71	54.55
	07-78	\$900,000.00	11.5	9.5	\$521,274.16	\$958,162.12	54.48
	07-85	\$351,000.00	11.5	9.5	\$194,061.13	\$373,683.23	51.93
	07-86	\$538,342.00	11.5	9.5	\$297,638.91	\$573,132.13	51.93

So. Southeaste

SUBTOTAL \$7,593,127.08 \$14,196,502.22

Tlingit & Haida Fisheries De	07-37	\$89,860.00	11.5	9.5	\$54,165.33	\$105,870.61	51.16
	07-38	\$1,464,000.00	11.5	9.5	\$868,095.13	\$1,631,755.96	52.71

NAME	LOAN #	ORSPRINC	MARKINRT	INT RATE	PVSUB	LOANVAL	PERSUB
Tlingit & Haida							
				SUBTOTAL	\$914,260.46	\$1,737,626.57	
Valdez Fisheries Development	07-100	\$266,300.00	11.5	9.5	\$144,725.50	\$275,582.79	52.52
	07-109	\$380,000.00	11.5	9.5	\$192,987.81	\$386,785.71	49.90
	07-125	\$130,000.00	11.5	9.5	\$61,652.88	\$132,321.43	46.59
	07-126	\$105,000.00	11.5	9.5	\$53,899.77	\$106,875.00	50.43
	07-129	\$528,664.00	11.5	9.5	\$244,132.35	\$538,184.43	45.37
	07-29	\$188,000.00	11.5	9.5	\$114,645.82	\$221,496.49	51.76
	07-44	\$147,000.00	11.5	9.5	\$86,885.48	\$173,191.40	50.12
	07-47	\$36,000.00	11.5	9.5	\$21,080.86	\$40,125.15	52.54
	07-49	\$240,000.00	11.5	9.5	\$141,161.28	\$267,500.98	52.77
	07-52	\$406,530.00	11.5	9.5	\$235,180.76	\$453,113.22	51.90
	07-54	\$1,950,000.00	11.5	9.5	\$1,143,163.34	\$2,173,445.44	52.60
	07-62	\$371,000.00	11.5	9.5	\$222,440.93	\$410,621.36	54.17
	07-75	\$25,000.00	11.5	9.5	\$14,408.79	\$26,615.61	54.14
	07-76	\$407,000.00	11.5	9.5	\$235,318.88	\$433,382.20	54.31
	07-94	\$511,879.00	11.5	9.5	\$287,538.53	\$529,722.28	54.28
	07-96	\$240,000.00	11.5	9.5	\$132,523.82	\$248,366.01	53.36
Valdez Fisherie				SUBTOTAL	\$3,331,666.80	\$6,417,169.50	
Valdez Fisherie				TOTAL	\$31,827,366.87	\$59,715,007.25	

Alaska State Legislature

Legislative Research Agency



P.O. Box Y
Juneau, AK 99811-3100
Phone: (907) 163-3991
Fax: (907) 163-3351

March 2, 1990

MEMORANDUM

TO:

Attn:

FROM: Sheila F. Helgath *SH*
Legislative Analyst

RE: Establishment of Regional Associations for Salmon Enhancement
Research Request 90.255

You requested the Legislative Research Agency to describe the procedure by which a regional aquaculture association could be subdivided into smaller or different associations, for example, along subregional lines or by gear type.

There is no historical precedent for subdividing a regional association. Nor do the statutes directly address the question of forming new associations within the area of an existing association.

According to Lari Spengler, assistant attorney general, the first step to accomplish a subdivision based upon geographic regions would be to petition the commissioner of Fish and Game for a change in regional boundaries. The statutes direct the commissioner of Fish and Game to establish regions (AS 16.10.375) for which a salmon enhancement plan is written. The commissioner is then directed to assist and encourage the formation of regional associations (AS 16.10.380) which are representative of all the commercial fishing interests and other interested parties in the region.

Two sections in AS 16.10 may have some bearing on this question. Alaska Statute 16.10.430 states that the commissioner may alter his findings about hatchery permits if it is not in the public interest. Alaska Statute 16.10.507 states that local nonprofit associations have to obtain the approval of the regional association before the local association can get a loan from the Fisheries Enhancement Revolving Loan Fund. There is nothing in the statute that discusses subdividing regional associations but the idea that a local nonprofit association can exist is implied by AS 16.10.507.

Whether a subdivision of an existing association could take place on the basis of gear type is not addressed in statute or regulation. The statutes make no allowance for the subdivision of regional associations based upon gear type. In fact the statute directs the commissioner to insure that all commercial fishermen groups are represented in a regional association. Assistant Attorney General Spengler thought that a procedure might be determined if more specific

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details were available about the gear type or functional reasons for a subdivision.

Attached are copies of the statutes and regulations consulted. If we can be of further help please call.

Attachments

Cross references. — For legislative findings and purpose of AS 16.10.375 — 16.10.620, see 1. ch. 59 S.L.A. 1979, in the 1979 Temporary and Special Acts and Resolves

Sec. 16.10.375. Regional salmon plan. The commissioner shall designate regions of the state for the purpose of salmon production and have developed and amend as necessary a comprehensive salmon plan for each region, including provisions for both public and private nonprofit hatchery systems. Subject to plan approval by the commissioner, comprehensive salmon plans shall be developed by regional planning teams consisting of department personnel and representatives of the appropriate qualified regional associations formed under AS 16.10.380. (§ 2 ch 161 SLA 1976; am § 2 ch 154 SLA 1977)

Sec. 16.10.380. Regional associations. (a) The commissioner shall assist in and encourage the formation of qualified regional associations for the purpose of enhancing salmon production. A regional association is qualified if the commissioner determines that

(1) it is comprised of associations representative of commercial fishermen in the region;

(2) it includes representatives of other user groups interested in fisheries within the region who wish to belong; and

(3) it possesses a board of directors which includes no less than one representative of each user group that belongs to the association.

(b) In this section "user group" includes, but is not limited to, sport fishermen, processors, commercial fishermen, subsistence fishermen, and representatives of local communities.

(c) A qualified regional association, when it becomes a nonprofit corporation under AS 10.20, is established as a service area in the unorganized borough under AS 29.03.020 for the purpose of providing salmon enhancement services. (§ 2 ch 161 SLA 1976; am § 2 ch 59 SLA 1979)

NOTES TO DECISIONS

Cited in State, N.S.E. Regional Aquaculture Ass'n v. Alex. Sup. Ct. Op. No. 2488 (File Nos. 5065, 5086, 5142), 646 P.2d 203 (1982).

Sec. 16.10.400. Permits for salmon hatcheries. (a) The commissioner or a designee may issue a permit, subject to the restrictions imposed by statute or regulation under AS 16.10.400 — 16.10.470, to a nonprofit corporation organized under AS 10.20, after the permit application has been reviewed by the regional planning team, for the construction and operation of a salmon hatchery.

(b) The application for a permit under this section shall be on a form prescribed by the department and be accompanied by an application fee of \$100.

(c) A hatchery permit is nontransferable. If a permit holder sells or leases a hatchery for which a permit is issued under this section, the new operator shall apply for a new permit under this section.

(d) *[Repealed, § 19 ch 154 SLA 1977.]*

(e) A qualified regional association formed under AS 16.10.380, if it has become a nonprofit corporation under AS 10.20, has a preference right to a permit if its proposed hatchery is provided for in the comprehensive plan for that region developed under AS 16.10.375 and the fresh water source exceeds one cubic foot per second minimum flow. Any other local nonprofit hatchery corporation approved by a qualified regional association has an identical preference right.

(f) Except for permits issued before June 16, 1976, a permit may not be issued for construction or operation of a hatchery on an anadromous fish stream unless the stream has been classified as suitable for enhancement purposes by the commissioner. The commissioner shall undertake to make such classifications in conjunction with the development of the comprehensive plan under AS 16.10.375.

(g) During the development of a comprehensive plan for a region no permit may be issued for a hatchery unless the commissioner determines that such an action would result in substantial public benefits and would not jeopardize natural stocks. (§ 2 ch 111 SLA 1974; am § 3 ch 161 SLA 1976; am §§ 3, 19 ch 154 SLA 1977)

Cross references. — For legislative intent in connection with the enactment of AS 16.10.400 — 16.10.470, see § 1, ch. 111, SLA 1974, in the Temporary and Special Acts.

Sec. 16.10.410. Hearings before permit issuance. (a) At least 30 days before the issuance of a permit under AS 16.10.400, a public hearing shall be held in a central location in the vicinity of the proposed hatchery facility.

(b) Notice of the hearing shall be published in a newspaper of general circulation once a week for three consecutive weeks, with completion of the notice at least 10 days before the hearing.

(c) The hearing shall be conducted by the department, with a presentation by the permit applicant of a plan for the proposed hatchery, describing its capacity and any other relevant facts which may be of interest to the department or the public. Interested members of the public shall be afforded an opportunity to be heard.

(d) The department shall record and consider objections and recommendations offered by the public at the hearing conducted under this section. It shall respond in writing, within 10 days after the hearing is held, to any specific objections offered by a member of the public at the hearing. (§ 2 ch 111 SLA 1974)

section shall be on a permit issued by an applica-

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d in a newspaper of generative weeks, with complete the hearing.

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der objections and recommending conducted under this) days after the hearing is member of the public at the

Sec. 16.10.420. Conditions of a permit. The department shall require, in a permit issued to a hatchery operator, that

(1) salmon eggs procured by the hatchery must be from the department or a source approved by the department;

(2) no salmon eggs or resulting fry be placed in waters of the state other than those specifically designated in the permit;

(3) no salmon eggs or resulting fry, sold to a permit holder by the state or by another party approved by the department, may be resold or otherwise transferred to another person;

(4) no salmon be released by the hatchery before department approval, and, for purposes of pathological examination and approval, the department shall be notified of the proposed release of salmon at least 15 days before the date of their proposed release by the hatchery;

(5) diseased salmon be destroyed in a specific manner and place designated by the department;

(6) adult salmon be harvested by hatchery operators only at specific locations as designated by the department;

(7) surplus eggs from salmon returning to the hatchery be made available for sale first to the department and then, after inspection and approval by the department, to operators of other hatcheries authorized by permit to operate under AS 16.10.400 — 16.10.470;

(8) if surplus salmon eggs are sold by a permit holder to another permit holder, a copy of the sales transaction be provided to the department;

(9) *[Repealed, § 5 ch 110 SLA 1980.]*

(10) a hatchery be located in an area where a reasonable segregation from natural stocks occurs, but, when feasible, in an area where returning hatchery fish will pass through traditional salmon fisheries. (§ 2 ch 111 SLA 1974; am § 5 ch 110 SLA 1980)

Sec. 16.10.430. Alteration, suspension or revocation of permit. (a) If a permit holder fails to comply with the conditions and terms of the permit issued under AS 16.10.400 — 16.10.470 within a reasonable period after notification of noncompliance by the department, the permit may be suspended or revoked, in the discretion of the commissioner after the regional planning team for the area in which the hatchery is located is notified and granted an opportunity to comment upon the proposed suspension or revocation.

(b) If the commissioner finds that the operation of the hatchery is not in the best interests of the public, the commissioner may alter the conditions of the permit to mitigate the adverse effects of the operation, or, if the adverse effects are irreversible and cannot be mitigated sufficiently, initiate a termination of the operation under the permit over a reasonable period of time under the circumstances, not to exceed four years. During the period of time that the operation is being terminated, the permit holder may harvest salmon under the terms of

the permit but may not release additional fish. (§ 2 ch 111 SLA 1974; am § 4 ch 154 SLA 1977)

Sec. 16.10.440. Regulation. (a) Fish released into the natural waters of the state by a hatchery operated under AS 16.10.400 — 16.10.470 are available to the people for common use and are subject to regulation under applicable law in the same way as fish occurring in their natural state until they return to the specific location designated by the department for harvest by the hatchery operator.

(b) The Board of Fisheries may, after the issuance of a permit by the commissioner, amend by regulation adopted in accordance with the Administrative Procedure Act (AS 44.62), the terms of the permit relating to the source and number of salmon eggs, the harvest of fish by hatchery operators, and the specific locations designated by the department for harvest. The Board of Fisheries may not adopt any regulations or take any action regarding the issuance or denial of any permits required in AS 16.10.400 — 16.10.470. (§ 2 ch 111 SLA 1974; am § 24 ch 206 SLA 1975; am § 3 ch 59 SLA 1979)

Sec. 16.10.443. Department assistance and cooperation.

(a) Before and after permit issuance under AS 16.10.440 — 16.10.470, the department shall make every effort, within the limits of time and resources, to advise and assist applicants or permit holders, as appropriate, in the planning, construction, or operation of salmon hatcheries.

(b) Nothing in this section exempts an applicant or permit holder from compliance with AS 16.10.400 — 16.10.470 or from compliance with the regulations or restrictions adopted under AS 16.10.400 — 16.10.470. (§ 1 ch 97 SLA 1975)

Sec. 16.10.445. Egg sources. (a) The department shall approve the source and number of salmon eggs taken under AS 16.10.400 — 16.10.470.

(b) Where feasible, salmon eggs utilized by a hatchery operator shall first be taken from stocks native to the area in which the hatchery is located, and then, upon department approval, from other areas, as necessary. (§ 2 ch 111 SLA 1974)

Sec. 16.10.450. Sale of salmon and salmon eggs by hatchery. A hatchery operator who sells salmon returning from the natural waters of the state, or sells salmon eggs to another hatchery operating under AS 16.10.400 — 16.10.470, after utilizing the funds for reasonable operating costs, including debt retirement, expanding its facilities, salmon rehabilitation projects, fisheries research, or for costs of operating the qualified regional association for the area in which the hatchery is located, shall expend the remaining funds on other fisher-

(4) establish amortization plans for repayment of loans, which may include extensions for poor fishing seasons or for adverse market conditions for Alaskan products;

(5) enter into agreements with private lending institutions, other state agencies, or agencies of the federal government, to carry out the purposes of AS 16.10.300 — 16.10.370;

(6) enter into agreements with other agencies or organizations to create an outreach program to make loans under AS 16.10.300 — 16.10.370 in rural areas of the state;

(7) allow an assumption of a loan if

(A) the applicant has been a state resident for a continuous period of two years immediately preceding the date of the request for an assumption; and

(B) approval of the assumption would be consistent with the purposes of AS 16.10.300; an applicant for a loan assumption may not be disqualified because the applicant does not meet the loan eligibility requirements of (1) of this subsection;

(8) prequalify loan applicants for a limited entry permit loan and charge a fee not to exceed \$200 for prequalification.

(b) *[Repealed, § 34 ch 79 SLA 1985.]*

(c) In determining whether an individual commercial fisherman is reasonably likely to be able to repay a loan made under AS 16.10.300 — 16.10.370, the commissioner shall consider the individual commercial fisherman's income from commercial fishing and from all other sources. (§ 1 ch 134 SLA 1972; am § 3 ch 54 SLA 1973; am § 3 ch 128 SLA 1975; am § 1 ch 154 SLA 1977; am § 3 ch 83 SLA 1978; am §§ 2 — 7 ch 72 SLA 1979; am § 7 ch 113 SLA 1982; am § 1 ch 7 SLA 1983; am §§ 1, 2, 34 ch 79 SLA 1985)

Editor's notes. — This section is set out above to correct a typographical error in the main pamphlet.

Article 8. Salmon Hatcheries.

Section

400. Permits for salmon hatcheries

410. Hearings before permit issuance

450. Sale of salmon and salmon eggs by hatchery

Section

480. Contracts for the operation of state hatcheries

Sec. 16.10.400. Permits for salmon hatcheries. (a) The commissioner or a designee may issue a permit, subject to the restrictions imposed by statute or regulation under AS 16.10.400 — 16.10.470, to a nonprofit corporation organized under AS 10.20, after the permit application has been reviewed by the regional planning team, for

(1) the construction and operation of a salmon hatchery;

(2) the operation of a hatchery under AS 16.10.480.

§ 16.10.400

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FISH AND GAME

§ 16.10.410

(b) The application for a permit under this section shall be on a form prescribed by the department and be accompanied by an application fee of \$100. The commissioner may waive the submission of an application for a permit to operate a hatchery under AS 16.10.480.

(c) A hatchery permit is nontransferable. If a permit holder sells or leases a hatchery for which a permit is issued under this section, the new operator shall apply for a new permit under this section.

(d) *[Repealed, § 19 ch 154 SLA 1977.]*

(e) A qualified regional association formed under AS 16.10.380, if it has become a nonprofit corporation under AS 10.20, has a preference right to a permit under (a)(1) of this section if its proposed hatchery is provided for in the comprehensive plan for that region developed under AS 16.10.375 and the fresh water source exceeds one cubic foot per second minimum flow. Another local nonprofit hatchery corporation approved by a qualified regional association has an identical preference right.

(f) Except for permits issued before June 16, 1976, a permit may not be issued for construction or operation of a hatchery on an anadromous fish stream unless the stream has been classified as suitable for enhancement purposes by the commissioner. The commissioner shall undertake to make such classifications in conjunction with the development of the comprehensive plan under AS 16.10.375.

(g) During the development of a comprehensive plan for a region no permit may be issued for a hatchery unless the commissioner determines that such an action would result in substantial public benefits and would not jeopardize natural stocks. (§ 2 ch 111 SLA 1974; am § 3 ch 161 SLA 1976; am §§ 3, 19 ch 154 SLA 1977; am §§ 2 — 4 ch 14 SLA 1988)

Effect of amendments. — The 1988 amendment, effective March 31, 1988, in subsection (a), divided the formerly undivided language into an introductory paragraph and paragraph (1), and added paragraph (2); added the second sentence in subsection (b); and, in subsection (e), inserted "under (a)(1) of this section" in the first sentence and substituted "Another" for "Any other" in the second sentence.

Opinions of attorney general. — Since the conditions for issuance of a

hatchery permit do not appear to be inconsistent with the operation of a fish processing and marketing facility in conjunction with the hatchery, a nonprofit hatchery can also process and market fisheries' products, but any profit would have to be used for expansion or improvement of facilities, hatcheries research or other authorized purposes of the regional association within which the corporation is located. June 11, 1984, Op. Att'y Gen.

Sec. 16.10.410. Hearings before permit issuance. (a) At least 30 days before the issuance of a permit under AS 16.10.400, a public hearing shall be held in a central location in the vicinity of the proposed hatchery facility.

(b) Notice of the hearing shall be published in a newspaper of general circulation once a week for three consecutive weeks, with completion of the notice at least 10 days before the hearing.

(4) The proposed hatchery must have available donor sources that are approvable under 5 AAC 41. Proposed donor sources for hatchery brood stock must be able to meet necessary first-cycle egg take levels under department removal schedules.

(5) The proposed hatchery must have a secured water source and delivery system that is adequate for the proposed levels of incubation and rearing. The security of the water source must be demonstrated through the appropriate water use permits, annual hydrographs, chemical analysis of the water source, and any provisions necessary for recycling and depuration.

(6) The proposed hatchery facility and water intake structures may not be located in streams or reaches of streams that have dynamic flooding characteristics or that have significant and rapid bedload transport that may endanger water intake galleries, weirs, the facility, or the reliability of the water source for the proposed hatchery.

(7) The proposed hatchery must allow for the maintenance of adequate instream flows below the hatchery or any hatchery-related facilities, such as water intake structures, to support natural stocks.

(8) The proposed hatchery plans and staffing plans must demonstrate a reasonable level of operational feasibility and an acceptable degree of potential success.

(c) If the application is approved, the commissioner will, as a condition of the permit, require the permit holder to provide for suitable fish-passage facilities in order to accommodate acceptable upstream and downstream passage of fish, if passage facilities are determined by the department to be necessary. (Eff. 3/31/85, Register 93)

Authority: AS 16.05.020
AS 16.05.092

AS 16.10.375
AS 16.10.400

5 AAC 40.230. RECONSIDERATION. An application for a private nonprofit salmon hatchery permit which has been denied by the commissioner will, in the commissioner's discretion, be reconsidered if the applicant provides new or additional information that may have altered the original decision. (Eff. 3/31/85, Register 93)

Authority: AS 16.05.020
AS 16.05.092
AS 16.10.400

Article 5. Regional Comprehensive Planning

Section

300. Regional planning teams in general

310. Regional planning team composition

320. Chairman of regional planning team

Section

330. Quorum and voting

340. Regional planning team responsibility

Section

350. Public notice

360. Public involvement

370. Plan approval

5 AAC 40.300. REGIONAL PLANNING TEAMS IN GENERAL. The commissioner will establish regions and regional planning teams for the primary purpose of developing comprehensive salmon plans for various regions of the state. The provisions of 5 AAC 40.300 — 5 AAC 40.370 govern the structure and functions of each regional planning team and the development of a comprehensive salmon plan for each region. (Eff. 3/31/85, Register 93)

Authority: AS 16.05.020
AS 16.05.092
AS 16.10.375

5 AAC 40.310. REGIONAL PLANNING TEAM COMPOSITION. (a) Each regional planning team consists of six members. Three are department personnel appointed by the commissioner, and three are appointed by the board of directors of the appropriate regional aquaculture association, qualified under AS 16.10.380.

(b) The commissioner will, in his or her discretion, request the involvement of representatives of federal and state agencies to assist a regional planning team if their contribution will aid in the development of the regional comprehensive plan. (Eff. 3/31/85, Register 93)

Authority: AS 16.05.020 AS 16.10.375
AS 16.05.092 AS 16.10.380

5 AAC 40.320. CHAIRMAN OF REGIONAL PLANNING TEAM. (a) Each regional planning team shall elect a chairman to serve at the pleasure of the team.

(b) The chairman or his delegate shall

(1) conduct regional planning team meetings, including recording of proceedings, and employing agreed-upon rules of order;

(2) set the agenda and meeting time and place for regional planning team meetings; and

(3) coordinate regional planning team staff in the accomplishment of tasks assigned to the chairman by the team, including

(A) providing the commissioner with team communications requiring commissioner review or approval;

(B) contacting members to determine who will be attending the next scheduled meeting; and

(C) preparing minutes of the previous meeting. (Eff. 3.31.85, Register 93)

Authority: AS 16.05.020
AS 16.05.092
AS 16.10.375

5 AAC 40.330. QUORUM AND VOTING. A regional planning team may not transact business without a simple majority of four members. Voting procedures may be established at the discretion of the membership. (Eff. 3/31/85, Register 93)

Authority: AS 16.05.020
AS 16.05.092
AS 16.10.375

5 AAC 40.340. REGIONAL PLANNING TEAM RESPONSIBILITY. Each regional planning team shall prepare a regional comprehensive salmon plan, for the appropriate region, to rehabilitate natural stocks and supplement natural production, with provisions for both public and private nonprofit hatcheries. Each region planning team shall consider the needs of all user groups and ensure that the public has opportunity to participate in the development of the comprehensive salmon plan. Each regional comprehensive plan must define regional production goals by species, area, and time. (Eff. 3/31/85, Register 93)

Authority: AS 16.05.020
AS 16.05.092
AS 16.10.375

5 AAC 40.350. PUBLIC NOTICE. The chairman of the regional planning team, or his designee, shall give two weeks' notice, in a newspaper of general circulation in the appropriate region, of a planning team meeting. The chairman shall also give notice to radio and television stations in the appropriate region, for broadcast as no-cost public service messages. (Eff. 3/31/85, Register 93)

Authority: AS 16.05.020
AS 16.05.092
AS 16.10.375

5 AAC 40.360. PUBLIC INVOLVEMENT. Each regional planning team shall encourage public participation during all stages of the development and review of regional comprehensive salmon plans. (Eff. 3/31/85, Register 93)

Authority: AS 16.05.020
AS 16.05.092
AS 16.10.375

5 AAC 40.370. PLAN APPROVAL. (a) A draft regional comprehensive salmon plan must be submitted to the PNP coordinator for department review and comment.

(b) The draft regional comprehensive salmon plan must be distributed for public review.

Sec. 16.10.342. Special account established. (a) There is established as a special account within the commercial fishing revolving loan fund the foreclosure expense account.

(b) *[Repealed, § 72 ch 113 SLA 1982.]*

(c) The commissioner may expend money credited to the foreclosure expense account when necessary to protect the state's security interest in collateral on loans granted under AS 16.10.300 — 16.10.370 or to defray expenses incurred during foreclosure proceedings after a default by an obligor. (§ 4 ch 83 SLA 1978; am § 72 ch 113 SLA 1982)

Sec. 16.10.350. Administration of fund. The commissioner shall administer the loan fund. (§ 1 ch 134 SLA 1972)

Sec. 16.10.355. Disposal of property acquired by default or foreclosure. The department shall dispose of property acquired through default or foreclosure of a loan made under AS 16.10.300 — 16.10.370 or former AS 16.10.650 — 16.10.720. Disposal shall be made in a manner that serves the best interests of the state, and may include the amortization of payments over a period of years, but may not be by lease. (§ 11 ch 79 SLA 1985)

Sec. 16.10.360. Definitions. In AS 16.10.300 — 16.10.370

(1) "commission" means the Alaska Commercial Fisheries Entry Commission;

(2) "commissioner" means the commissioner of commerce and economic development;

(3) "debtor" means an individual commercial fisherman who either initially contracts for a loan under AS 16.10.333 — 16.10.337 or assumes a loan as provided in those sections;

(4) "department" means the Department of Commerce and Economic Development. (§ 1 ch 134 SLA 1972; am § 5 ch 83 SLA 1978)

Revisor's notes. — Reorganized in 1983 to alphabetize the defined terms.

Cross references. — For further definitions, see AS 16.05.940.

Sec. 16.10.370. Short title. AS 16.10.300 — 16.10.370 may be cited as the Commercial Fishing Loan Act. (§ 1 ch 134 SLA 1972)

Article 8. Salmon Hatcheries.

Section

- 375. Regional salmon plan
- 380. Regional associations
- 400. Permits for salmon hatcheries
- 410. Hearings before permit issuance
- 420. Conditions of a permit
- 430. Alteration, suspension or revocation of permit
- 440. Regulation

Section

- 443. Department assistance and cooperation
- 445. Egg sources
- 450. Sale of salmon and salmon eggs by hatchery
- 460. Inspection of hatchery
- 470. Annual report



ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
RESEARCH AGENCY

P.O. Box Y, State Capitol
Juneau, Alaska 99811-3100
Mail Stop 3100
(907) 465-3991

November 2, 1987

MEMORANDUM

TO: Representative C.E. Swackhammer

ATTN: Tom Wright

FROM: Brad Pierce *BP*
Legislative Analyst

RE: The Enhancement Authority: A Long-Term Funding Mechanism for
Alaska's Ocean-Ranching Program
Research Request 88.036

You requested this agency to discuss how a salmon enhancement authority, authorized by Alaska Statute 16.10.600-620, could be adapted to meet the long-term funding needs of the Alaska Department of Fish and Game, Fisheries Rehabilitation, Enhancement and Development Division (ADF&G, FRED). Additionally, you asked that we participate in an effort to conceptualize ways to reduce State General Fund support of hatchery production while minimizing negative impacts on the long-term growth of Alaska's salmon ocean-ranching program. This effort is in response to legislative intent language in the FY 88 FRED Division budget directing that..."the Department, the Governor's Office, the Aquaculture Associations, the Public and Fishermen's Groups meet to develop innovative policies for the generation of revenues to offset the decreasing availability of General Funds."¹

I have been attending meetings of the Enhancement Funding Working Group (composed of representatives of the interest groups cited above) to observe how the various players in the process view the options for cutting costs and generating increased revenues from public hatchery production. The FRED Division staff have prepared an analysis of revenue-generating options that have been considered by the group (Attachment A). Attachment B is an earlier House Research memorandum to you providing background material on

¹The Department of Fish and Game is required to report its recommendations to the legislature by the tenth day of the 1988 session. Chapter 95, SLA 1987, CCSHB 75, pp. 66, 67.

the legislative intent of the enhancement authority statutes and their relation to the present financial status of the public hatchery system. Attachment C includes a priority list of projects used to prepare the FY 89 FRED Division budget and a 1984 Benefit/Cost ranking of State hatchery facilities. Information contained in this memorandum will be incorporated into the ADF&G report to the 1988 Legislature. The report will provide recommendations on short- and long-term funding options for Alaska's public salmon hatcheries.

SUMMARY

A regional enhancement authority concept authorized by the legislature in 1977 was directed at obtaining federal funds to construct hatcheries. These statutes have never been used because State funds were available. Most of the federal funding programs that were originally targeted by the enhancement authority statutes no longer exist.

If the flow of General Funds to the public hatchery system is reduced in compliance with legislative intent language in the FRED Division budget, user groups must choose between having hatchery facilities closed (or costs reduced) and generating revenues to keep them operational.

A statewide enhancement authority could combine the resources of the private nonprofit (PNP) hatchery system and the FRED Division, thereby separating long-term investment decisions from the uncertainty of the State's cash flow position. While not a solution to the basic funding problem, a statewide enhancement authority could offer a means to distribute the costs of public hatchery production among user groups in proportion to the benefits each receives.

The FRED Division has begun an educational process aimed at informing the users of public hatchery production (commercial, sport, subsistence and personal use fishermen) of the benefits and costs of fisheries enhancement so the user groups can make informed decisions about the level of support they are willing to provide. It is likely to take a period of several years before the "user pays" concept becomes as politically acceptable in Alaska as it has elsewhere in the country.

In the short-term, operating contracts with regional aquaculture associations to run several public hatchery facilities can offer General Fund savings in the form of offset operating costs and cost recovery revenues. It will be up to the legislature to determine the sustainable level of General Fund contributions to the FRED Division. If it is decided that operating contracts with the associations provide sufficient savings, then the enhancement authority concept is likely to be unnecessary.

BACKGROUND

In the early 1970s, Alaska's salmon runs were severely depleted. This had dire economic consequences for coastal communities and the state's fishing industry. The FRED Division was established by the legislature in 1971 to encourage the use of hatcheries and other enhancement techniques to return the state's salmon runs to abundance. Limited entry was imposed on the state's salmon fisheries in 1974 as a means to increase fishermen's incomes and as a management tool to better control fishing effort. The private nonprofit hatchery system statutes (AS 16.10.375-620, enacted in 1974) authorized the FRED Division to issue hatchery permits to qualified PNP corporations. This legislation was designed to apply private sector initiative to the production of salmon.

In 1976, the legislature authorized the formation of regional aquaculture associations.² In the same year, the legislature authorized the first of two General Obligation bond issues (totaling \$56.17 million) for the construction and operation of public hatcheries.

Alaska's ocean-ranching program has developed around FRED Division hatchery production, which is primarily financed with State funds, and PNP hatchery production. The PNP system has two elements:

- regional aquaculture associations, which are primarily capitalized via State loans and grants and which receive operating revenues through cost recovery operations and an assessment tax on the commercial salmon catch within their region; and
- nonassociation hatchery operations, which are capitalized with State loans and grants and dependent upon sales of surplus fish and spawned-out carcasses to commercial buyers (cost recovery operations). Surplus eggs can also be sold to other hatchery operators through the FRED Division (which supervises all egg transfers).

Presently, there are 20 operational FRED Division hatcheries and 29 permitted private nonprofit hatchery facilities (17 operational). Of the permitted PNP facilities, 11 are regional aquaculture association hatcheries

²Regional associations were given the task... "of contributing, by artificial means, to the rehabilitation of the state's depleted and depressed salmon fishery." The board of directors of qualified regional associations is supposed to include at least one representative from all user groups interested in fisheries. Today there are seven regional aquaculture associations: Cook Inlet (CIRAA), Lower Yukon/ Kuskokwim (LYKRAA), Northern Southeast (NSRAA), Prince William Sound (PWSAC), Southern Southeast (SSRAA), Imparik (IRAC) and Kodiak (KRAA).

(eight operational) and 18 are nonassociation hatcheries (nine operational). Since 1971, the State has invested well over \$100 million in PNP and FRED Division hatchery and enhancement facilities.³ Table 1 provides a listing of the 20 FRED hatcheries currently in operation by orientation (commercial, sportfish, or combination), location, estimated gross commercial harvest value of returning adults (from 1987 broodstock), and FY 88 budgeted operating costs.

Enhancement authorities were authorized by HB 264 (SLA 1977), an omnibus bill that cleaned up several sections of Title 16 relating to commercial fishing and enhancement loans and also clarified the assessment powers and procedures of regional aquaculture associations. Enhancement authorities were originally conceived as quasi-public pass-through vehicles that could qualify for federal economic development grants to finance hatchery construction projects. They were to be created on a regional basis, if and

³Fisheries Mini-Cabinet, July 31, 1985 memorandum to the Honorable Bill Sheffield regarding Fisheries Enhancement Revolving Loan Fund Policy.

TABLE 1
ALASKA DEPARTMENT OF FISH & GAME, FRED DIVISION HATCHERIES
COMMERCIAL FACILITIES

Hatchery	Location	Estimated Gross Commercial Harvest Value of 1987 Broodstock* (In Thousands)	FY 88 Budgeted Operating Costs** (In Thousands)
Main Bay	Prince William Sound	\$1,185.6	\$393.9
Hidden Falls	Baranof Island	3,030.5	678.7
Crooked Creek	Kasilof	1,259.7	390.6
Kitoi Bay	Afognak Island	1,499.7	298.6
Cannery Creek	Prince William Sound	1,611.1	204.1
Tutka Bay	Homer	649.7	348.7
Klawock	Prince of Wales Island	596.4	441.2
Karluk Lake***	Kodiak Island	279.9	193.6
Russell Creek	Cold Bay	268.3	222.8
Beaver Falls	Ketchikan	96.0	272.4
Siksuilaq	Noatak River	45.3	335.2
Gulkana River	Paxson	940.1	248.5
Total		\$11,462.3	\$4,028.3
SPORTFISH FACILITIES			
Elmendorf	Anchorage	\$538.0	\$460.4
Clear	Anderson	52.4	366.0
Fort Richardson	Anchorage	726.4	984.0
Crystal Lake	Petersburg	1,352.6	535.2
Total		\$2,669.4	\$2,345.6
COMBINATION SPORTFISH/ COMMERCIAL FACILITIES			
Snettisham	Juneau	\$3,951.4	\$914.5
Deer Mountain	Ketchikan	253.6	176.8
Big Lake	Wasilla	1,051.4	364.8
Trail Lakes	Moose Pass	375.4	322.2
Total		\$5,631.7	\$1,778.3
STATEWIDE TOTAL		\$19,763.4	\$8,152.2
REGIONAL TOTALS			
Southeast		\$9,280.3	\$3,018.8
Prince William Sound		2,796.8	598.0
Cook Inlet		4,600.6	2,870.7
Kodiak/Alaska Penn.		2,047.9	715.0
Interior AYK****		1,037.8	949.7

* Note these figures are only for the commercial catch of returning adults to these facilities and do not include the value of the sport or subsistence catch.

** Budgeted costs include General Funds plus Other revenue sources. Several hatcheries have special projects budgeted separately. These include (in thousands) Deer Mountain-\$40 in Dingall Johnson funds and \$36 in program receipts from hatchery tours, Snettisham-\$314 in Dingall Johnson funds for recreational fishery projects, and Fort Richardson-\$198.6 for a rainbow trout broodstock program.

*** The Karluk incubation facility was removed in FY 88 and replaced with a lake fertilization project.

**** Arctic/Yukon/Kuskokwim.

Sources: Tom Kron, Assistant Director and Jeff Hartman, Economist, FRED Division.

Prepared by the House Research Agency, October 1987, (88.036; 080387-03).

when the governing bodies of the respective regional aquaculture associations wished.⁴ The regional enhancement authority concept has never been used. With the increasing availability of State revenues in the late 1970s and early 1980s, the enhancement authority statutes were redundant. The federal funding programs that were originally targeted by the enhancement authority statutes have nearly disappeared.⁵

The legislature has reduced the General Fund contribution to the FRED Division budget and indicated that further reductions are likely. Budget reductions have forced the FRED Division to attempt to transfer (to the regional associations) some of its operating expenses. A statewide enhancement authority (described in the following section) has the potential to facilitate the transfer of public expenditures on fisheries enhancement to those who benefit directly from those expenditures.

A STATEWIDE ENHANCEMENT AUTHORITY

An enhancement authority could restructure the institutional relationship between the state's public and private hatchery systems. The most workable option appears to be to combine the resources of the public and private nonprofit hatchery systems under a single public corporation endowed with taxing and bonding powers.

A single statewide entity (hereafter referred to as the authority) could assume many of the responsibilities (and staff) of the FRED Division as well as disburse the regional aquaculture assessment revenues and administer the Fisheries Revolving Enhancement Loan Program.⁶ The authority

⁴The number of persons to serve on an enhancement authority's board of commissioners, their terms of office and the procedure for filling vacancies on the board were to be specified by resolution of the governing body of the association. Tax exempt status for 20 years on property owned by the authority (used in salmon enhancement) is also conferred in statute. Authorities were empowered to use their assets as collateral; make contracts with individuals, corporations or governments; receive and administer grants, gifts and donations; invest funds not required for immediate disbursement; and acquire, hold, use, lease, sell or dispose of property. There was some discussion in legislative committees about giving these authorities taxing and bonding powers, in effect creating a third salmon production unit separate from the FRED Division and PNP hatchery systems. In its final form, however, the legislation did not provide those powers.

⁵Carl Rosier, Chief of Industry Services-National Marine Fisheries Service (NMFS), personal communication, October 1987.

⁶Servicing of loan accounts could be contracted to the DCED-Division of Investments (similar to methods employed by the Alaska Power Authority and the Alaska Industrial Development and Export Authority) to achieve maximum administrative efficiency.

could be a public corporation of the State, situated for administrative purposes within the Department of Fish and Game, and roughly modeled after the Alaska Power Authority (APA) and the Alaska Industrial Development and Export Authority (AIDEA). The authority would be responsible for the continued development of the state's ocean-ranching program and the equitable distribution of the costs of fisheries enhancement activities (among user groups).

Members of a board of directors could serve staggered terms to maintain continuity. The legislature may want to specify the composition of the board in enabling legislation to assure that all user groups are adequately represented. For example, the legislature might require that the presidents of the regional aquaculture associations have seats on the board.⁷ Likewise, representatives of nonassociation PNPs, the Governor's Office and the public might be specified.

An authority cannot work without a revenue stream in addition to the current assessment receipts, which are exclusively reserved for the regional associations. Some combination of the revenue-generating options outlined by FRED Division staff in Attachment A would be necessary. A reasonable combination of revenue-generating activities might involve operating contracts with regional associations, an assessment or royalty tax on the commercial harvest, an increase in recreational fishing license fees, and cost recovery operations at public hatchery sites. Revenues collected from these sources could be deposited in the General Fund, budgeted as program receipts, and routinely appropriated to the authority by the legislature. The legislature may want to reserve final approval of any new revenue-generating activities authorized by the authority's board of directors.

The authority could be authorized to issue revenue bonds to finance capital construction projects and loan programs. This would reduce uncertainty about obtaining financing for growth in the PNP system by separating the authority's financial resources from competing priorities in the annual State budget cycle. A recent poll of the 15 existing PNP permit holders revealed that there will be several requests for capital construction funds

⁷Under AS 16.10.380, regional associations are required to... "possess a board of directors which includes no less than one representative of each user group that belongs to the association." User group... "includes, but is not limited to, sport fishermen, commercial fishermen, subsistence fishermen, and representatives of local communities."

in FY 89.⁸ However, there is no money currently available in the Fisheries Revolving Enhancement Loan fund to finance these projects. Thus, an appropriation to the Enhancement Loan Fund will have to be considered by the legislature. This means that funding these long-term projects will be subject to the short-term uncertainty of the State's cash flow position.⁹

An authority would likely be able to sell revenue bonds at competitive rates if it could claim: 1) a \$50 million enhancement loan portfolio as security; 2) a proven annual assessment revenue stream (\$4.26 million in FY 86); and 3) a forecast of revenues from a selection of the revenue-generating options cited previously. The legislature may want to reserve final approval of projects over a certain size and/or require authority staff to perform Benefit/Cost analyses of all new construction projects to ensure they produce net benefits.

To gain the highest possible credit rating, the legislature might want to authorize the authority to issue moral obligation bonds as it has for the Alaska Housing Finance Corporation (AHFC), Municipal Bond Bank, AIDEA and APA.¹⁰ This type of debt consists of bonds secured, in part, by a capital reserve fund to which a discretionary replenishment provision is attached. A capital reserve fund is generally equal in size to the maximum amount of debt service required in any year. Alaska's discretionary replenishment provision means that if the reserve fund should fall below its required level, the legislature may, but is not legally bound to, appropriate funds sufficient to restore reserves to the desired level.¹¹

⁸Dave Massey, Loan Officer, Department of Commerce and Economic Development (DCED)-Division of Investments, personal communication, October 1987.

⁹Construction and operation of hatchery facilities requires a very long planning horizon. Generally it takes two cycles of releases and returns (up to 12 years for certain species before cost recovery operations at the hatchery site can generate sufficient revenues to begin repaying construction costs. If a hatchery does not reach its design capacity of production due to insufficient funding, it will not generate maximum economic benefits to the common property fishery.

¹⁰Alaska Public Debt 1986, Department of Revenue, April 1987, p. 23.

¹¹The most likely reason for a reserve fund to fall short of the desired level is that agency revenues are insufficient to meet a given debt service payment and the reserve fund is used to make up the shortage.

The legislature could provide a one-time appropriation to the authority for a capital reserve fund large enough to secure anticipated annual debt service payments for planned public and private enhancement construction projects. The authority could bond for the projects and pledge a portion of its revenue stream (program receipts) to meet debt service payments. Thus, the legislature could use its initial capital reserve fund appropriation for financial leverage and be relieved henceforth of General Fund appropriations to the Enhancement Loan Fund for PNP construction projects or capital improvement requests from the FRED Division.

PREREQUISITES OF A STATEWIDE ENHANCEMENT AUTHORITY

An enhancement authority cannot be successful until there is general agreement on the following basic assumptions:

- 1) Public hatcheries benefit the Alaska economy. The ADF&G has research that roughly quantifies the net benefits of each hatchery's production during the lifetime of the facility.¹² Commercial fishermen's groups in regions with public hatcheries generally recognize the importance of hatchery production to their livelihoods, but sportfishing and subsistence users may not be aware of the benefits they receive. All users need to be convinced of the importance of hatchery production if they are to be asked to bear a portion of the costs of production.
- 2) The status quo is not sustainable. The legislature has clearly stated that it wants the public hatchery system to reduce its dependence on General Fund appropriations. User groups that benefit from hatchery production need to be convinced that lobbying efforts will not result in full State funding before they agree to pick up a larger share of the costs themselves. It may be necessary to close some marginal facilities (in terms of Benefit/Cost ratios, see Attachment C) before affected user groups will seriously consider an enhancement authority as a necessary or desirable means to equitably distribute enhancement costs and sustain the state's ocean-ranching program.

¹²Jeff Hartman, "An Analysis of the Net Benefits of Existing and Proposed Enhancement Projects for the State of Alaska," ADF&G, April 1986.

- 3) Beneficiaries of public hatchery production should bear costs in direct proportion to the benefits they receive. Transfer of operations (to the regional associations) of commercially oriented hatcheries is only one means to distribute costs to beneficiaries. To date, all of the revenue-generating options put forth by FRED Division staff--increased taxes and license fees, charges for FRED Division services or State cost recovery operations--have been rejected by the nongovernment members of the Working Group.

It is likely to take a good deal of education and perhaps several years before the "user pays" concept becomes politically acceptable in Alaska as it is elsewhere in the country. The enhancement authority concept has little probability of implementation until all user groups are convinced that alternatives (e.g., closing public hatcheries) are less attractive than bearing their share of the costs.

OTHER CONSIDERATIONS

Reducing State Operation Costs

Cooperative agreements between the FRED Division and the respective regional aquaculture associations have allowed the Kitoi and Cannery Creek hatcheries to remain open in FY 88.¹³ In addition, a contract with two Southeast Alaska seiners' organizations will generate \$95,000 - \$97,000 in net cost recovery program receipts from the Hidden Falls hatchery.

These short-term agreements are an important first step in the reduction of General Fund expenditures for public hatchery production. The legislature recognized this and inserted language into the FY 88 FRED Division budget requesting the division to evaluate these agreements as prototypes for future contracts to run other public hatchery facilities.

¹³The Kitoi hatchery is in the Kodiak Region and the Cannery Creek Facility is in the Prince William Sound Region. The cooperative operating agreements are expected to offset approximately \$214,500 in operating expenses (the associations will provide most of the labor to operate the hatcheries) and provide \$76,000-\$86,000 in program receipts from cost recovery operations (the State will receive a portion of the receipts from the sale of fish and carcasses harvested by the associations).

The next step in the process of reducing General Fund support of public hatcheries will likely involve formal contracts for the transfer of operations of several state hatchery facilities to regional aquaculture associations.¹⁴ Hatcheries which produce commercial species and have terminal harvest areas that lend themselves to cost recovery operations are candidates for contractual arrangements. The FY 89 FRED Division budget priority list is built on the assumption that agreements will transfer operations to regional associations (see Attachment C).

Without details of the individual contracts (which have not been negotiated), it is impossible to give accurate estimates of the savings that could be realized through this method. Potentially, however, contract arrangements for operation of the Tutka, Cannery Creek, Kitoi and Hidden Falls facilities could produce net annual savings on the order of \$2.4 million.¹⁵ As can be seen from Table 1, the commercial harvest value of 1987 broodstock in these four facilities is estimated at \$6.8 million. Eventually, several more of the 12 public hatcheries that produce primarily commercial species could be operated under contract by regional associations or other private nonprofit entities. However, the gross harvest revenues projected from some of the more marginal public facilities may not be sufficient for the private sector to be interested in picking up their cost of operations.

The legislature, in consultation with the FRED Division Director, may want to set goals for General Fund support reductions in future years to guide the implementation of contract agreements and other revenue-generating/cost reduction measures. If the legislature determines that the transfer of operations of a given number of public facilities to the regional associations--and closure of those facilities for which agreements cannot be reached--sufficiently reduces General Fund outlays, an enhancement authority may be unnecessary.

¹⁴Although there has been some discussion in the legislature and among representatives of the regional associations of transferring ownership of public hatcheries to the regional associations, contracting for their operation may be more politically acceptable than selling or giving away public property.

¹⁵This estimate assumes: all budgeted General Fund expenses for the hatcheries are borne by the contracting association, FRED Division receives \$125,000 in program receipts from cost recovery revenues at Hidden Falls, and contract administration costs total \$120,000.

The Role of the FRED Division

Although the discussions of the Enhancement Funding Working Group have focused on practical matters such as reducing operating costs and generating new revenues, we have also spoken of the need to change the role of the FRED Division to reflect current and future financial reality. There appears to be general agreement that the focus of the FRED Division needs to change from public hatchery production to one emphasizing research and development support and technology transfer to the private sector.

Most successful aquaculture programs in other states and countries have a strong research and development support base that is financed with public funds. Thus, the administration, planning, research, laboratory, engineering support services of the FRED Division could be considered legitimate State government functions which should continue to be supported with General Funds. Some experimental hatchery operations may be too risky for PNP operators but could eventually pay off if supported with State funds. Likewise, the legislature might determine that public hatcheries which are primarily oriented toward subsistence or sportfish production should be operated with public funds.

Further distribution of the costs of public hatchery production will depend, in part, on the ability of the FRED Division (or enhancement authority) staff to accurately estimate the benefits of enhanced production that can be assigned to individual user groups. The analytical tools that the FRED Division staff have developed to quantify the benefits of hatchery production received by various user groups can be applied to commercial production with a fair degree of confidence. Benefits of sportfish and subsistence production are more difficult to quantify and require a more sophisticated methodology. Within the next three years, FRED Division staff should be able to determine the economic importance of sportfish and subsistence hatchery production with much greater accuracy.¹⁶

It will be up to the legislature to determine how far the privatization process will proceed. If the legislature wishes to maintain a viable and growing ocean-ranching program while minimizing General Fund outlays, an enhancement authority may offer a means of distributing costs and generating revenues. An authority board of directors could assist the legislature in determining the minimum level of General Fund support necessary for future development of the State's ocean-ranching program and articulate the respective roles of the private and public sectors.

¹⁶The data from two recent studies of sportfish valuation, conducted by a contractor to the Sportfish Division in the Southcentral and Juneau areas, should be available before the end of 1987. Another sportfish study of Southeast is budgeted for FY 89. These studies should fill in many of the gaps in existing data and allow more meaningful simulations of the impacts of sportfish production to the economies of these regions.

CONCLUSION

I have attempted to place the financial status of Alaska's ocean-ranching system in perspective by describing the short- and long-term aspects of the present FRED Division funding situation. The issues involved in assessing costs and distributing benefits of a common property resource are complex and highly controversial; policymakers should have realistic expectations of how rapidly change can proceed. Several intermediate steps are likely to be required before the statewide enhancement authority concept becomes a viable option. A transition period of several years is likely to be necessary before an authority could assume much of the financial burden of the FRED budget from the State General Fund.

A statewide enhancement authority seems to offer a means to integrate the goals of the public and private hatchery systems. From the legislature's perspective, it offers the advantages of maximum financial accountability and administrative simplicity. It is also likely to minimize State expenditures on enhancement efforts.

There are tradeoffs involved. The regional associations and nonassociation hatchery operators may feel they would lose some of their independence under the authority umbrella. User groups will undoubtedly object to paying for more of the costs of enhanced production. In return, the private nonprofit hatchery system will gain a large measure of security and a greater voice in the future development of the state's ocean-ranching system. User groups will receive benefits from enhancement of salmon fisheries in direct proportion to the amount of financial support they are willing to provide.

* * *

I hope the information in this memorandum is useful. I am sending a copy of this memorandum to Brian Allee, Director, FRED Division as a draft chapter for inclusion in the Fish and Game Department report to the 1988 legislature. We will also send copies to staff in several other State agencies for review. Please call me if you have any questions or would like further information.

Attachments

ATTACHMENT A
**A Review of Funding Alternatives for the Fishery
Enhancement Program**

DRAFT
A REVIEW OF FUNDING ALTERNATIVES FOR THE
FISHERY ENHANCEMENT PROGRAM

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September 1987

DRAFT
A REVIEW OF FUNDING ALTERNATIVES
FOR THE FISHERY ENHANCEMENT PROGRAM

This draft is a summary of the alternatives that have been raised on the funding mechanisms for the enhancement program. While there are still many questions left unanswered, it is the intent of this outline to serve as a starting point for compiling the information available on the alternatives. As it is an initial step, a broad range of alternatives are included. In the interest of not leaving anything out, some of the options on the fringe are included. Most of the elimination process is to occur from the interaction of user group meetings and public meetings.

The list of funding mechanisms have been analyzed with a set of criteria that include the economic, legal, fishery, public/political acceptance, and land status implications. A description of the criteria and why they are used in the analysis are included in Appendix A.

Two previous working group meetings have occurred for the review of the issues related to fishery enhancement funding. The following participants were in attendance in the last meeting of August 27: Bob Cole, Harold Heinkel, Kate Graham, Brian Allee, Ben Muse, Kurt Schelle, Brad Pierce, Dave Daisy, Jerry Madden, and Steve McGee.

The legislative intent in the FY 88 budget for the Fisheries Rehabilitation, Enhancement and Development (FRED) Division was the starting point for this review of funding alternatives. Four intent sections were determined to be relevant to development of new financing mechanisms.

Intent No. 2: It is the intent of the Legislature that the department, the Governor's Office, and fishermen's groups meet to develop innovative policies for the generation of revenues to offset the decreasing availability of general funds. The department shall report its recommendations to the Legislature by the tenth (10) day of the 1988 session.

Intent No. 5: It is the intent of the Legislature that the program receipts required of the department shall include but not be limited to funds derived from the following sources: egg sales, hatchery tours, rent receipts and rainbow trout fingerling sales. The department shall work to develop and expand these revenue-producing activities.

Intent No. 6: It is the intent of the Legislature that the division enter into agreements with Cook Inlet Aquaculture Association, the Prince William Sound Aquaculture Corporation, and the Kodiak Regional Aquaculture Association to provide assistance in the operation of Tutka, Cannery Creek, and Kitoi Hatcheries, respectively, on a cooperative basis. A report of this effort will be provided to the Legislature by the tenth day of the 1988 session.

Intent No. 7: It is the intent of the Legislature that the revenue-producing activities ongoing at Tutka, Kitoi, and Cannery Creek will be evaluated as models for additional revenue-generating activities with the intent of maintaining the state's continuing ownership, management, and operation of FRED Division hatcheries. A report will be submitted to the Legislature by the tenth day of the 1988 session.

After a review of the legislative intent and the funding alternatives raised thus far, four recommendations were raised by the working group during the meeting of August 27.

1. Consider funding schemes that use a balance of the revenue-generation options stated to achieve a reasonable level of funding support for fisheries enhancement.
2. Develop a survey, to be sent to a random sample of Alaskan residents, to determine attitudes toward fishery enhancement funding and ownership issues.
3. Develop a trial contract that transfers operations of the hatcheries to the private sector for a period of approximately five years.
4. Develop long-term alternatives for enhancement program funding, such as an enhancement authority, or taxes and license fees.

BACKGROUND INFORMATION

As one might expect, Alaska is not the only major fishery enhancement program in the Pacific Northwest to have financing problems. The final draft of this analysis is to have a complete summary of how the major western states and Canada are funding their substantial fisheries enhancement activities. The Government of Canada has recently implemented an aggressive set of license fees to fund a large portion of the Salmonid Enhancement Program (Harold Swan, Director SEP, 9-3-87). An annual commercial fishing license fee for gill net fishermen and troll fishermen (\$400 for boats under 30 feet, and \$800 for boats over 30 feet) will take effect next year. A \$1,600 license fee for seine fishermen has also recently taken effect. A marine recreational fishing license increase of \$5-\$10 for Canadian citizens is now law, as is an increase of \$20-\$35 for non-citizens. Approximately fifty percent of the rent from the recreational license fee is to go to SEP. The Minister of Fisheries is considering further taxes, including the implementation of a royalty tax on landings.

The eighteen funding alternatives in the present analysis have been grouped according to five major categories. The categories include altered or new taxes, altered or new license fees, new ownership/leasing/contracts, agency service charges, authorities, and agency service charges/other. The alternatives can also be

stratified by whether they are a more appropriate short-term solution or long-term solution. Participants in previous meetings on the funding mechanisms have concurred that the options of specialized contracts and professional service agreements (under the ownership/leasing/contracts heading) and select service charges provide more probable short-term solutions to immediate funding shortfalls. The more likely longer-term solutions appear to be the Enhancement Authority and altered taxes or license fees. The full list follows.

New Ownership/Leasing/Contracts:

- Transfer and Leasing of Hatchery Ownership
- Cooperative Agreements
- Contracting Harvest and Operations

Taxes:

- Raw Fish Tax
- Vessel Fuel Tax
- Landings Tax
- Enhancement Tax

License Fees:

- Entry Permit Renewal Fee
- Terminal Area License Fee
- Recreational Fishing License Fee
- Subsistence/Personal Use License Fee

Authorities:

- Enhancement/Aquaculture Authority

Agency Service Charges & Other:

- FRED Division harvests terminal fish and sells
- FRED Division sells live and dead eggs and fish
- Charge for consulting fees of FRED
- Visitor Fees
- Public Donations
- Rescheduling of debt on public hatcheries/use for operating costs.

I. Transfer and/or Lease Hatcheries to Private Nonprofit Ownership

General: This mechanism may reduce drain on state treasury, but is not intended to generate new revenue. Nevertheless, hatchery transfer and hatchery leasing are to be evaluated in this analysis. The most obvious method of transferring hatchery ownership is an outright sale of the facility. PNP facilities have been granted the rights to produce, harvest, and sell salmon under specific conditions. Those specific conditions allow for somewhat of a stable financing of some of the PNP operations.

A. Economic

1. Distributional Effects

The distributional effects also are dependent on how the new caretakers would operate. In some cases, the fish production may be shifted to a new fish species that would create a larger terminal fishery for "cost recovery." There also may be distributional effects on different gear groups.

2. Efficiency Effects of the Mechanism

This option, as explained in some of the other taxing and licensing options, would improve the efficiency of resource harvest. It is also possible that operating costs of facilities would be reduced, which would also result in an efficiency gain.

3. Administrative Simplicity and Cost

Once the legal mechanism for hatchery leasing and/or transfer have been worked out, the administration of the program through FRED Division would not change significantly. The long-term administrative costs for FRED should involve less than one man year of labor annually for administering a few additional PNP hatcheries. It should be noted that some of the regional associations have indicated that large-scale hatchery transfer or leasing may have to be seeded with additional loan funds. Naturally, the cost of financing further development of the PNP Program through loans would need to be computed to account for the total costs of administering this option.

4. Revenue Generated by the Mechanism

Generating new revenue for the state treasury is not the intent of this mechanism. Transfer options that do not require sustained loan funds are likely to reduce treasury costs. The reduction in the general operating budget from this approach can best be determined by implementing this option.

B. Public/Political Acceptance

This has been one of the more widely debated approaches to financing fisheries enhancement in Alaska. Support for the approach seems to be mixed in the Legislature and among fishermen. On the one hand, people passed bond issues to fund hatcheries and it has been argued that voters should decide whether to give them away. On the other hand, if private owners can run and harvest the fish more efficiently, the residents of Alaska may be better off.

C. Legal Feasibility

The ADF&G presently does not have the statutory authority to administer a lease or to sell state-owned hatchery facilities. This option requires legislative action that would provide ADF&G with the proper authority. An analysis of the statutory changes required to pursue this option is being undertaken by the PNP Program of the FRED Division.

D. Short-Term Solution or Long-Term Solution

Since this mechanism requires legislation, it is likely to be only a long-term solution (more than one year).

E. Land Status

Only 2 or 3 state-owned facilities are on state land. Other landowners include the U.S. Forest Service, cities, boroughs, native lands, and private ownership. Any implementation of this option would require a new agreement with the landowner.

II. Contracting Out Hatchery Operations and Harvest

General: The most obvious method for contracting out hatchery activities is through a "Professional Services Contract" (PSA). The PSA could be applied to either the operation of a state-owned hatchery, the harvest of fish from a state-owned hatchery, or both. The current thinking is that most PSA's would be applied to both hatchery operation and harvesting. The PSA would involve a small fee or no fee, since the contractor would have a vested interest in the continued operation of the facility.

A. Economic

1. Distributional Effects

The distributional effects should be approximately the same as a sale or lease.

2. Efficiency Effects of the Mechanism

Generally contracted operations that reduce the cost of fish harvest or hatchery operation will improve efficiency.

3. Administrative Simplicity and Cost

Same as sale or lease.

4. Revenue Generated by the Mechanism

Same as sale or lease.

B. Public/Political Acceptance Will be Determined in Hearings

C. Legal Feasibility

The PNP Program is investigating this with the Attorney General's Office.

D. Short-Term Solution or Long-Term Solution

If the statutory authority exists now to implement the contracting of operations, then this would be a good, immediate solution. It may also become a good long-term solution.

E. Land Status

Same as sale or lease.

III. Cooperative Agreements

General: In FY 88, the FRED Division used a temporary financing mechanism called a "cooperative agreement" for operating some state-owned hatcheries. The mechanism also involves a contract between the regional association and a limited entry permit holder. The intent of this approach was to capture some of the revenues from the salmon harvest and channel them into the program receipts to help offset operating costs of the facility.

A. Economic

1. Distributional Effects

Similar distributional effects to hatchery transfer.

2. Efficiency Effects of the Mechanism

While some fish are diverted away from the common property fishery, with this approach the remaining fish are harvested at almost no cost; therefore, the mechanism is an efficient use of resources.

3. Administrative Simplicity and Cost

While this is considered a temporary measure, the costs of administering the approach are approximately 2 man months per year.

4. Revenue Generated by the Mechanism

From 30% to 50% of the operating costs of the facilities.

B. Public/Political Acceptance

Major objections have been voiced by the fishing community regarding the state's involvement in cost-recovery harvest.

C. Legal Feasibility

We are uncertain whether the approach can be applied further without legislative action.

D. Short-Term Solution or Long-Term Solution

The solution was intended to be a temporary measure only, and there are no plans to conduct a further review of statutory requirements for continuation.

E. Land Status

N/A

IV. Increasing the Existing Raw Fish Tax

General: The Raw Fish Tax is levied on processors and based on the information provided in fish tickets administered by ADF&G. The tax is based on the price paid for fish in the round. The funds are distributed into the General Fund and appropriated by a specific formula into communities and the ADF&G budget. A 1987 letter from Commissioner Don W. Collinsworth to Senator Richard Eliason suggests that the raw fish tax should be reviewed to determine if the funds are being allocated in the appropriate manner.

A. Economic

1. Distributional Effects

This tax is levied on processors, so from the accounting standpoint, the processor pays for this tax. From the economic standpoint, some of the costs could be born by the consumer (in the form of higher prices), by the processor (from higher costs), or by the fishermen (who would be offered lower prices for fish). The analysis of a similar salmon tax in Canada (DeVoretz, and Schwindt, 1982), experience with this type of tax suggests that most of the tax will be passed on to the fishermen. This is because fishermen have very little price bargaining power, and basically have to take the price offered. Processors have a hard time passing much of the tax on to consumers because a small price change will likely yield a large change in the quantity purchased in the marketplace. Assuming the increased tax would be levied on all fisheries, there would be some fisheries that would bear the costs of the program that would not directly benefit from enhancement.

The Bristol Bay salmon fleet would be a good example of this.

2. Efficiency Effects of the Mechanism

Major changes in the efficiency of resource use are not expected with this tax. Since a small portion of fishermen's gross receipts would not be spent on more powerful fishing gear, some dissipation of fishing profits may be prevented. On the other hand, this tax is complex. The base tax fraction is different for shore-based and floating operations. A uniform increase in the tax fraction (of 1%) may effect some processors more than others.

3. Administrative Simplicity and Cost

Once legislation is passed, the marginal costs of the mechanism are probably no different than now.

4. Revenue Generated by the Mechanism

In 1986, this tax yielded approximately \$21.1 million. Currently, 50% to 70% of the receipts go to the General Fund, while the remainder goes to cities and boroughs. For the developed fisheries, the tax fractions range from 3% to 5%. For the developing fisheries, the tax ranges from 1% to 3%. Depending on the size of the annual catch, there is a potential for \$3 million to \$5 million to be raised by an increase of 1% in the tax fraction. There is a potential for significant amounts of revenue to be generated from a small increase in the tax. Three to five million dollars annually is not out of reason.

B. Public/Political Acceptance

Because of the distributional problems, it would be difficult to introduce this approach to the Alaska fishing industry. Also, communities may object to tampering with the appropriation formula.

C. Legal Feasibility

It is almost certain that new legislation would be required to implement any variation of the raw fish tax. The language in the statutory changes is uncertain without further research. It would be advisable to seek Attorney General Office opinion. Some of the statutes that are potentially impacted by a change in the raw fish tax are: 43.75.034 to 43.75.130, 43.75.015, 43.75.017, 43.75.030, 43.75.032, and 43.75.130.

D. Short-Term Solution or Long-Term Solution

The lead time required to investigate and legislate this option is considerable. Fishermen, processors, communities, and boroughs would have to be involved in the review process. Clearly, this is a long-term option only.

E. Land Status Not Applicable

V. Increase the Amount of the Vessel Fuel Tax

General: An increase in the vessel fuel tax would be applied to all fishing and non-fishing fuel purchases in the state. The fuel tax is an example of a tax on one of the inputs or resources used in the process of fishing.

A. Economic

1. Distributional Effects

Many groups who do not benefit from fishery enhancement programs or who do not participate in fishing would bear some of the cost of the tax.

2. Efficiency Effects of the Mechanism

It is difficult to determine if this tax would result in a significant reduction in the efficiency of resource use, but there is no reason to assume that it would allow resources to be harvested at lower costs. In some fisheries, fuel costs (at current prices) are probably not a major variable in the fishermen's decision-making process. They would be fishing flat out even with small increases in fuel costs. It has been suggested that a significant increase in fuel costs might cause processors to sell fishermen subsidized fuel.

3. Administrative Simplicity and Cost

Administrative costs would probably be high.

4. Revenue Generated by the Mechanism

In 1986, the \$.05/gal tax yielded approximately \$5.3 million. The vast majority of these taxes are paid by the fishing fleet. All of the receipts from this tax currently go into the General Fund. A significant change in the tax would be required to generate revenues of a couple million dollars or more.

B. Public/Political Acceptance

Due to the distributional effects, it is likely that non-salmon users and non-fishing users of fuel would object.

C. Legal Feasibility

Uncertain, without Attorney General decision.

D. Short-Term Solution or Long-Term Solution

Considerable public debate and some new legislation would probably be required. This implies that this is a long-term solution.

E. Land Status

N/A

VI. Create a Landings Tax

General: A landings tax for salmon would be similar to the Raw Fish Tax. Its main difference is that it would be levied directly on the fishermen instead of being paid by processors. The tax would be based on an assessment per pound of fish, or per fish. The tax per piece or per pound might be structured to vary by species harvested, so that enhancement-produced species were more heavily targeted. Since it would be a new tax, it would not be subject to the reallocation formula used for the Raw Fish Tax.

A. Economic

1. Distributional Effects

There is a good chance that this tax could be imposed on predominantly enhancement-produced fish. A fixed poundage tax would bear harder on fishermen with dry holds landing fish for canning than on fishermen with RSW holds landing fish for frozen or fresh markets. This may actually be a positive feature, if one's goal is to encourage higher-quality production.

2. Efficiency Effects of the Mechanism

The efficiency effects would be similar to the Raw Fish Tax in that it would encourage efficient resource use.

3. Administrative Simplicity and Cost

The administration of the tax would be at least as costly as the Raw Fish Tax, and quite complex. It might be hard to make projections of the revenues from the tax, as the revenues would vary with

uncertain run sizes. The tax relation to gross and net revenues could vary the fish prices dramatically. One cent per pound on \$0.40-per-pound pink salmon in 1981 is a much lighter tax than one cent per pound on \$0.20-per-pound pink salmon in 1982.

4. Revenue Generated by the Mechanism

As in the Raw Fish Tax, considerable revenue could be generated by the tax. If the landed value tax was highly concentrated on areas with a high portion of enhancement-produced fish, then \$1 to \$2 million a year of revenue is not unreasonable.

B. Public/Political Acceptance

Probably this approach would have a low level of fishermen acceptance.

C. Legal Feasibility

Clearly, there is little information on the legal feasibility of the landed value tax. It will be necessary to contact the Attorney General's Office on this issue if this option is to be considered further. Considerable legislative work would be required.

D. Short-Term Solution or Long-Term Solution

Considerable work with user groups and legislation would be required to implement any variation of the Landed Tax Assessment.

E. Land Status

N/A

VII. Increase the Aquaculture Assessment (Enhancement Tax) and Have the New Receipts Directed into the FRED Division

General: An aquacultural assessment is collected from the payment to fishermen for raw fish, which is automatically withheld by the processor. The tax then goes into the General Fund, which is later appropriated to the Department of Commerce and Economic Development (DCED). DCED then distributes the receipts back to the association. One modification of the tax might be to distribute the tax to hatcheries by vote of the appropriate regional association. Some of the tax receipts could also be contributed to an enhancement authority for distribution.

A. Economic

1. Distributional Effects

This would also be identical to the landed value tax.

2. Efficiency Effects of the Mechanism

The efficiency of the assessment increase would be identical to the Raw Fish Tax in that it would increase the efficiency of resource use.

3. Administrative Simplicity and Cost

Uncertain without further review.

4. Revenue Generated by the Mechanism

The estimated revenue for FY 87 is approximately \$2.8 million. A doubling of the existing assessment would yield \$5.6 million.

B. Public/Political Acceptance

Uncertain without further review.

C. Legal Feasibility

Uncertain without further review.

D. Short-Term Solution or Long-Term Solution

Uncertain without further review.

E. Land Status

N/A

VIII. Increase the Commercial Fishing License Fee (such as through the Entry Permit Renewal Fee mechanism) and Distribute a Portion of the Program Receipts to FRED Operations

General: The Commercial Fisheries Entry Commission (CFEC) has investigated the feasibility of using the entry permit renewal fee as a mechanism to fund the Permit Buy Back Program. Proposed legislation has been written by the commission that could apply to the financing of any management or enhancement activity. This approach has also been implemented recently by the Canadian Department of Fisheries and Oceans for the Pacific salmon fleet.

A. Economic

1. Distributional Effects

Distributionally, the fee could be adjusted to each fishery so that it is proportioned to the hatchery activity affecting that fishery. There are certain drawbacks, however. Each fisherman

would bear the burden of the program equally. This would be regressive in the case of the fishermen in poverty. In addition, lowliners who might not be benefiting from the hatchery as much as highliners would nevertheless have to pay the same fee.

2. Efficiency Effects of the Mechanism

This approach should enhance the efficiency of resource utilization and preserve some of the rents from the activity.

3. Administrative Simplicity and Cost

- A. Revenue Generated by the Mechanism
- B. Public/Political Acceptance
- C. Legal Feasibility
- D. Short-Term Solution or Long-Term Solution
- E. Land Status

IX. Create a Terminal Area License Fee

General: A Terminal Area License Fee gives fishermen the alternative to fish in a controlled area of the fishery for a fee. The system would be different from other forms of cost recovery since the fisherman exercises his freedom of choice in making an economic decision of whether to enter the fishery or not. The system would be applied to areas that have a high portion of enhancement-produced fish and would only be open to users with valid entry permits. Another variation on the license fee would be for fishermen to bid for the rights to enter the fishery.

A. Economic

1. Distributional Effects

The cost of the projects would be directly borne by the fishermen who perceived that they would benefit most from entry to the terminal area. Some distributional effects would occur, since some traditional fishermen who were not willing to pay to gain access to the fish would go elsewhere.

2. Efficiency Effects of the Mechanism

The mechanism would probably be as efficient as the Raw Fish Tax. Fishermen would not voluntarily pay for the rights to harvest salmon in an exclusive area unless they determined that gross receipts would exceed all costs.

3. Administrative Simplicity and Cost

This method would probably be costly to administer relative to the amount of revenue generated.

4. Revenue Generated by the Mechanism

Since the approach would be suited to sites with terminal fishing areas or a high fraction of hatchery-produced fish, the amount of revenue that could be generated is small (relative to total program costs). To generate significant amounts, revenue license fees would have to be substantial. At \$1,000 each for 200 seiners at Hidden Falls, the program receipts would be on the order of \$200,000.

B. Public/Political Acceptance

While this concept has not been introduced to Alaska's fishing industry, it may have low user acceptance.

C. Legal Feasibility

The legal implications of using program receipts collected from a terminal area license fee in the FRED Division is uncertain. A bill passed the Senate last year, formerly called HB 263 (still in the Natural Resources Committee in the House), that broadens the definition of program receipts and might allow for much more active financing of FRED projects. This alternative would have to be reviewed by the Attorney General's Office.

D. Short-Term Solution or Long-Term Solution

Since the legal and public acceptance questions on this financing mechanism remain unanswered, it is doubtful that any form of the terminal area license fee could be implemented quickly.

E. Land Status

N/A

X. Increase the Recreational Fishing License Fee, or Have a Supplemental Fee for Hatchery Fish and Earmark a Portion of the Program Receipts to FRED

General: Existing work on willingness to pay for non-resident sport fishermen in the Pacific Northwest would indicate that these users are willing to pay far more for the rights to harvest Alaskan salmon. Increasing non-resident fees may be an effective way of exporting some of the costs of fishery enhancement. Another alternative is

to increase both non-resident and resident license fees. Currently, all license program receipts are channeled into the Division of Sport Fish.

A. Economic

1. Distributional Effects

In the case of the non-resident fishermen, an increase in the fishing fees would redistribute a portion of the net benefits of the harvest into the state treasury. With any increase in the license fee, the burden of the enhancement projects would be shared evenly by most fishermen, but the benefits of the projects would be borne unevenly.

2. Efficiency Effects of the Mechanism

From an Alaskan accounting perspective, increasing non-resident fees would probably be an efficient method of collecting some of the rent from the fishing experience that is created by FRED's enhancement activities. Further study is required to ensure that the bulk of the tax/license burden is passed to the license holder and not to Alaskan businesses that depend on the recreational fishing industry.

3. Administrative Simplicity and Cost

4. Revenue Generated by the Mechanism

Substantial revenue could be generated by a small increase in recreational fishing fees. In 1986, 308,472 sport licenses were sold. If we assume that 250,000 salmon fishermen would buy a \$5.00 salmon stamp, this would generate \$1.25 million in revenue.

B. Public/Political Acceptance

A bill for increasing general recreational user fees was submitted but not passed in the FY 88 Legislative Session.

C. Legal Feasibility

Some legal constraints exist to passing on some of the costs of fishing enhancement to non-residents. They include federal guidelines on taxing authority that do not allow more than a 3:1 ratio of non-resident to resident license fees. Also, most of the funds from license fees for recreational fishing are now appropriated for Sport Fish Division.

- D. Short-Term Solution or Long-Term Solution
- E. Land Status
- XI. Create a Subsistence or More Aggressive Personal-Use License Fee

General: Further study on this option is required.

- A. Economic
 - 1. Efficiency Effects of the Mechanism
 - 2. Distributional Effects
 - 3. Administrative Simplicity and Cost
 - 4. Revenue Generated by the Mechanism
 - B. Public/Political Acceptance
 - C. Legal Feasibility
 - D. Short-Term Solution or Long-Term Solution
 - E. Land Status
- XII. Creation of an Enhancement Authority

General: A summary of the legislative work on a proposed enhancement authority has been compiled by Brad Pierce of the House Research Agency. Pierce has also been requested by Director Allee to assist in detailing "Enhancement authorities were originally conceived as pass-through vehicles, the basic idea being to create a quasi-public entity that could qualify to restore Alaska's then depleted salmon runs." There was some discussion about giving these authorities taxing and bonding powers, in effect creating a third salmon production unit separate from the ADF&G, FRED, Division and the PNP hatchery systems, but in its final form, the legislation did not provide these powers.

- A. Economic
 - 1. Distributional Effects

Uncertain without further definition of program.
 - 2. Efficiency Effects of the Mechanism

The economic efficiency of the administrative mechanism of an enhancement authority is impossible to evaluate without detailed study of how it would function. Since it is doubtful that any agency could exist solely on the basis of voter-approved bonds, some type of financing

mechanism(s) would be required to fund its activities. Presumably, some of the same options evaluated in this exercise would be considered.

3. Administrative Simplicity and Cost

Uncertain without further definition of program.

4. Revenue Generated by the Mechanism

Uncertain without further definition of program.

B. Public/Political Acceptance

Uncertain without further definition of program.

C. Legal Feasibility

D. Short-Term Solution or Long-Term Solution

E. Land Status

XIII. Harvest of Fish by FRED and Direct Sale by Government

General: Even the most careful directing of commercial fishery gear and sport fishing effort to salmon fisheries may result in sustained underharvests of some fish stocks. Stocks that are produced from state-owned hatcheries generally are fully exploited. A few hatchery stocks do consistently have surpluses at the hatchery terminal harvest area or in the freshwater locations. It is technically feasible for FRED Division to collect the fish in terminal harvest areas. Collection would probably be similar to methods used for cooperative agreements at a few state facilities.

A. Economic

1. Efficiency Effects of the Mechanism

2. Distributional Effects

3. Administrative Simplicity and Cost

4. Revenue Generated by the Mechanism

B. Public/Political Acceptance

Major objections have been voiced by the fishing community to state harvest and selling of adult fish.

C. Legal Feasibility

D. Short-Term Solution or Long-Term Solution

E. Land Status

IXV. Selling Immature Fish and Fish Products (e.g., live fish and eggs to fish farmers, unripe eggs, carcasses)

General: Excess carcasses from facilities have economic value and a range of contracts exist for competitive bidding on spawned fish. The state also sells green and eyed eggs to PNP operators for broodstock development purposes. If fish farming legislation is passed, the sale of juvenile fish could become a revenue-producing activity. This would be conducted like any other service, where a fair price is established for the value of the juvenile fish. The recipients would be billed according to the number requested and available.

A. Economic

1. Distributional Effects
2. Efficiency Effects of the Mechanism
3. Administrative Simplicity and Cost

The existing sales probably require less than 6 man months of labor in FRED per year. The development of a salmon farming program would result in small administrative increments to handle sales. The hatchery program could see increases in operating costs if egg takes were dramatically increased.

4. Revenue Generated by the Mechanism

Determine present revenue from egg and carcass sales.

B. Public/Political Acceptance

C. Legal Feasibility

Adequate statutory authority and legislative intent exists for all of these activities, except the sale of fish to fish farmers. Fish farming is presently not authorized by statute.

D. Short-Term Solution or Long-Term Solution

This option may be both a short- and long-term option.

E. Land Status

XV. Charge for Consultant Fees for Specialized Services of FRED Division (fish culture expertise, bioengineering, pathology, etc.)

A. Economic

1. Efficiency Effects of the Mechanism
 2. Distributional Effects
 3. Administrative Simplicity and Cost
 4. Revenue Generated by the Mechanism
 - B. Public/Political Acceptance
 - C. Legal Feasibility
 - D. Short-Term Solution or Long-Term Solution
 - E. Land Status
- XVI. Visitor Fees for Hatcheries (e.g., charge for tour companies, gate fee, hatchery literature, fish food for hand feeding low-risk lots of fish)
- A. Economic
 1. Distributional Effects
 2. Efficiency Effects of the Mechanism
 3. Administrative Simplicity and Cost
 4. Revenue Generated by the Mechanism
 - B. Public/Political Acceptance
 - C. Legal Feasibility
 - D. Short-Term Solution or Long-Term Solution
 - E. Land Status
- XVII. Create Mechanism to Accept Grants from Local Support Groups and Individual Donations
- A. Economic
 1. Efficiency Effects of the Mechanism
 2. Distributional Effects
 3. Administrative Simplicity and Cost
 4. Revenue Generated by the Mechanism
 - B. Public/Political Acceptance
 - C. Legal Feasibility

The authority of ADF&G to receive these type of funds should be addressed by the Attorney General's Office.

D. Short-Term Solution or Long-Term Solution

both

E. Land Status

N/A

XVIII. State-Operated "Catch Out" Operation for Trout

A. Economic

1. Efficiency Effects of the Mechanism

2. Distributional Effects

3. Administrative Simplicity and Cost

4. Revenue Generated by the Mechanism

B. Public/Political Acceptance

C. Legal Feasibility

D. Short-Term Solution or Long-Term Solution

E. Land Status

IXX. Reschedule Debt on Public Hatcheries/Use for Operating Costs

General: Each year the State of Alaska pays interest and principal on over \$50 million in bonds sold to build public hatcheries. It might be possible to refinance the bond debt and use the savings of the treasury to finance continuing operating costs. This option is being investigated further, but the legality of the refinancing is not known at this time. An issue to resolve in the feasibility of refinancing would be the overall effect on the state's bond rating. Also, most bonds were sold at extremely low interest rates. It might be difficult to refinance at comparable interest rates.

A. Economic

1. Distributional Effects

2. Efficiency Effects of the Mechanism

3. Administrative Simplicity and Cost

4. Revenue Generated by the Mechanism

- B. Public/Political Acceptance
- C. Legal Feasibility
- D. Short-Term Solution or Long-Term Solution
- E. Land Status

APPENDIX A

Tools for Measuring the Social and Economic Consequences of
Cost Recovery Options

In issues involving taxing mechanisms, user fees, or altered forms of ownership, there are some economic criteria available for measuring the social and economic consequences of recovering costs. It is suggested that all cost-recovery options be evaluated with these criteria that include the efficiency of the mechanism; the distributional effects, the administrative simplicity and cost, and the revenue generated. Other social and political criteria include the public and political acceptance, the legal feasibility, the time required to implement, and the land status implications. This procedure of applying meaningful criteria to a series of options is an aid to informing the public of how the options affect their welfare.

1. The Efficiency of the Mechanism

There are many approaches that have been applied by other states and governments for recovering costs of fishery enhancement. Each of the approaches may have a different effect on the efficiency of resource use. There are three obvious areas of efficiency that could be affected by financing mechanisms: the revenues of fisheries, the costs of fish harvesting, and the public costs of fisheries enhancement. A new or altered tax, for example, may change the net market value of a fishery resource. The costs of fish harvesting may be reduced by more efficient means than the common-property fishery. Finally the operating costs of hatcheries might be reduced due to privatization of hatchery operation. Sometimes the application of informed reasoning can reveal the efficiency consequences of an alternative. More rigorous methods of estimating changes in welfare of the harvesting sector, such as benefit/cost analysis, can also be applied to answer efficiency-related questions.

2. The Distributional Effects of the Mechanism

The incidence of taxes are important because a new or altered tax may impose costs on those never intended to pay for the use of a resource. A tax can be borne mostly by the first-level producer (the fishermen) or higher levels of producers/consumers (processors through the final consumer). The distribution of both personal income and employment of those involved in the fishing industry can be changed according to the structure of the mechanism.

3. Revenue Generated from the Mechanism

The structure of the financing mechanism itself is critical because it determines if the tax, user fee, or altered form of ownership is feasible from a purely cost-accounting standpoint. This step evaluates whether the revenue generated not only exceeds the cost of administering the mechanism, but whether the program receipts will significantly offset the FRED program costs.

4. Administrative Simplicity and Cost

Some of the government costs that must be considered in the analysis are the cost of enforcing and auditing the mechanism. Too often the step of insuring adequate tax revenue generation is the only consideration government may address in the imposition of a new tax.

5. Political/Public Acceptance

The ease with which new legislation might be introduced to and sold to fishermen and other fishing industry groups will influence the feasibility of the option.

6. Legal Implications

Legal questions such as the ability of the State of Alaska to dedicate funds from recovered costs or to define recovered costs as program receipts are critical to the decision-making process.

7. Land Status

Some of the ownership issues of the options involve land status implications. Of 20 state-owned hatcheries, only 2 are on state land.

ATTACHMENT B
House Research Memorandum 87.193



ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
RESEARCH AGENCY

P.O. Box Y, State Capitol
Juneau, Alaska 99811-3100
Mail Stop 3100
(907) 465-3991

March 20, 1987

MEMORANDUM

TO: Representative C.E. Swackhammer

ATTN: Tom Wright

FROM: Brad Pierce *BP*
Legislative Analyst

RE: Fisheries Enhancement Authorities
Research Request 87.193

You requested this agency to supply some general information on fisheries enhancement authorities (AS 16.10.600-620). Specifically, you wanted to know the legislative intent behind House Bill 264 (Chapter 154, SLA 1977) which established the mechanism for creating enhancement authorities, how authorities are organized, whether they have taxing and/or bonding authority, who could serve on the board of commissioners, what kind of legislative review of activities would be required, who is accountable for the authority and what problems might be encountered in setting up enhancement authorities. You also asked that we discuss the pros and cons of setting up authorities in relation to the current system of public and private non-profit hatcheries in the state. In further discussion with your office, I learned that you are interested in how the establishment of enhancement authorities could prevent the closure of publicly operated salmon hatcheries as proposed in Governor Cowper's FY 88 budget.

A copy of the relevant statutes is included in Attachment A. We sorted through committee files in the Legislative Library and listened to tapes of the committee hearings in which HB 264 was discussed to gain an understanding of the history and intent of the legislation. Additionally, we spoke with several individuals who were involved in the issues which HB 264 was designed to address to utilize their institutional memory and gain some perspective on where enhancement authorities might fit into the overall scheme of Alaska's salmon enhancement program.

House Bill 264

The original enhancement authority legislation (Senate Bill 39) was sponsored by Senator Kerttula in the 1977 legislative session. The enhancement authority idea was subsequently incorporated into HB 264, sponsored by

Representative Gardiner, which went on to pass (SB 39 expired in the Senate Finance Committee). The main thrust of HB 264 was to clean up several sections of Title 16 relating to commercial fishing and enhancement loans and to clarify the assessment powers and procedures of regional aquaculture associations.

In the mid-1970s when this legislation was passed, Alaska's salmon runs were severely depressed and something of a crisis situation existed. The commercial fishing industry, the Governor's Office and the legislature were searching desperately for methods to finance enhancement projects. After the legislature authorized the formation of private nonprofit (PNP) regional aquaculture associations in 1976, the focus turned to getting the PNP system up and running. It appears that the enhancement authority concept was viewed as an idea that could be developed through further legislation if and when it became necessary, in much the same manner that several provisions in HB 264 corrected flaws in the enabling legislation that set up the financing mechanisms (enhancement loans, aquaculture assessments) for Alaska's PNP hatchery system.

Enhancement authorities were originally conceived as pass-through vehicles, the basic idea being to create a quasi-public entity that could qualify to receive federal economic development grants to build hatcheries to help restore Alaska's then depleted salmon runs. There was some discussion about giving these authorities taxing and bonding powers, in effect creating a third salmon production unit separate from the Alaska Department of Fish and Game, Fisheries Rehabilitation and Enhancement Division (FRED) and the PNP hatchery systems, but in its final form, the legislation did not provide these powers. The regional aquaculture associations were left with exclusive assessment powers and the legislature authorized the issuance of bonds (which voters overwhelmingly approved) in 1976 and 1978 to pay for the operation and construction of FRED hatcheries and other enhancement projects. Both FRED and the PNP regional aquaculture associations have since received federal funds at various times for hatchery construction and operation.

Thus, the enhancement authority statutes have never been utilized. In our research of the conception of enhancement authorities, it appears that the idea was never fully developed. In the committee hearings on HB 264, none of the testimony articulated how enhancement authorities would mesh with public or private hatchery development or provided details of how they would operate. The resulting State statutes leave the choices of who is to serve on the regional enhancement authority board of commissioners, their term of office and filling of replacements to the discretion of the regional aquaculture associations. Therefore, aside from providing the above summary of the testimony surrounding HB 264 and a copy of the statutes, we are unable to answer your questions about the workings of enhancement authorities in any detail.

Enhancement Authorities in Relation to the Present System

There are short and long-term aspects to the relationship of enhancement authorities to the present system of public and private nonprofit hatcheries in Alaska. Governor Cowper's FY 88 proposed budget would force the closure of four FRED hatcheries and eliminate 15 full-time and 27 part-time positions. The short-term problem is how to keep at least two of these facilities in operation. The long-term issue involves the institutional relationship between FRED and the PNPs and how to maintain a high level of hatchery production and an economically viable aquaculture industry in the face of declining State revenues. We discuss each of these aspects in this section.

The hatcheries slated for closure in the Governor's proposed budget, their locations and the amount the State would save by closing them are listed below:

<u>Hatchery</u>	<u>Location</u>	<u>Net Savings¹</u>
Russell Creek	Cold Bay	\$ 304,600
Sikusuilag	Noatak	360,600
Cannery Creek	Prince William Sound	200,000
Tutka	Kachemak Bay	262,100
Total		\$ 1,127,300

* * * *

The Russel Creek facility has had severe design problems and has not been in production for the past two years, which makes it a logical candidate for closure.² The Sikusuilaq hatchery was designed as an experimental facility to test the feasibility of raising chum salmon in the area. It has reached the end of the experimental phase of operation and would require a large capital expenditure to increase production from its present two million egg capacity to a cost-effective 40 million egg capacity. Another experimental operation--the Karluk streamside incubation facility on Kodiak Island--is not listed in the table above but is scheduled to be shut down in FY 88. If this project is not moved to a new site and continued, the State will save \$206,600. These three projects are obvious candidates for closure in the current budget crisis.

¹There is some money included in the FY 88 proposed FRED budget for closing these facilities. The savings listed are net of these closure costs.

²FRED won a \$2.5 million lawsuit against the design contractor for this facility, which has been used to fund work on the hatchery for the past two years.

Closure of the Cannery Creek and Tutka hatcheries is more problematic, as they are important to the fisheries of their respective regions. These are primarily pink salmon facilities and this species is being deemphasized as a matter of FRED policy. It is doubtful that either the Cook Inlet Regional Aquaculture Association (Tutka) or the Prince William Sound Regional Aquaculture Association (Cannery Creek) would want to take over operation of these facilities. Aside from the assessment tax on the commercial catch of fish returning to these facilities (and which the associations currently receive without incurring operating costs), there is no way to generate sufficient cost recovery at these hatchery sites to cover operations. Returns to the Cannery Creek hatchery are so intensively intercepted (nearly 90 percent in recent years) that FRED has trouble recovering enough eggs to stock it. Tutka does have a terminal harvest area but returns are not nearly large enough to cover operating costs.

Given the underlying economic problems cited above and the current State budget crisis, it is doubtful whether the statutes authorizing the creation of enhancement authorities can be used to keep these hatcheries open. The enhancement authority concept is simply not well enough developed to be of much immediate use. According to Brian Allee, FRED Director, an intermediate solution involving the cooperative operation of the Cannery Creek and Tutka hatcheries by FRED and the regional associations may keep these facilities open in FY 88.

We have attached (Attachment B) a copy of a recent position paper on the possible transfer of FRED hatcheries to regional aquaculture associations. The paper was developed jointly by the four active regional aquaculture associations. This paper gives general guidelines on the conditions under which the regional associations would be willing to take over the operation of FRED hatcheries. One of the chief conditions is that the associations must be able to choose which hatcheries they wish to operate so as not to be saddled with unproductive facilities. Under this condition, it is doubtful that either Cannery Creek or Tutka would be a candidate for transfer.

There appears to be something of a consensus (among those with whom we spoke) that we are at an institutional impasse in Alaska's public and private hatchery programs. The situation begs for a larger solution than the piecemeal closure of hatcheries or transferring selected public hatcheries to the private sector. As part of a more general, long-term solution to the institutional and financial problems of Alaska's hatchery systems, the creation of enhancement authorities may be a workable idea insofar as it does not simply add another layer of bureaucracy.

In the long-term, there is a question of whether State government should be in the hatchery business at all. Alaska's unique system of private nonprofit hatcheries was designed to apply private sector initiative to the production of salmon on the assumption that the private sector can produce

fish more efficiently than State government. Autonomous enhancement authorities would require taxing and/or bonding powers and would probably have boards of directors that represent all of the various user groups in a particular region. If authorities had administrative control over operations of all (currently) public and private hatcheries, they might be able to allocate the costs and benefits of salmon production from hatcheries (such as Tutka and Cannery Creek) more equitably than occurs under the current system.

The institutional and financial problems facing Alaska's hatchery systems deserve careful study. The budget problems cited above are only the tip of the iceberg and will get much worse in the future as State revenues decline and the Fisheries Enhancement Revolving Loan Fund continues to be drawn down. Unless a more general solution to these problems is found, several more public hatcheries will be closed in coming years and private nonprofit hatcheries will face financial problems as well.

We suggest that the institutional and financial crisis facing Alaska's hatcheries and options for dealing with it might be an appropriate topic for an interim report by this agency or a cooperative effort with FRED and the regional aquaculture associations. I do not think that we can do justice to the subject in a short memorandum. I regret that we have not been able to answer your questions in full. Please call if you have questions.

Attachments

ATTACHMENT C
Priority List of Projects and
a 1984 Benefit/Cost ranking list

PRIORITIZED PROJECT LIST
 ABOVE \$24,000
 24-Sep-87
 18:25 AM

Holland - official copy

PROJECT	CODE	PROJECT OBJECTIVES	GENERAL (G.F. 1 D-J U.S. / USFS)	INADRO (PROGRAM)	INTER (PROJECT)	TOTALS	INCREMENT COMPONENTS
PROJECT	CODE	OBJECTIVES	FUNDS	FUNDS	FUNDS	FUNDS	INCREMENT COMPONENTS
1 SNETTISHAM	8401	INCREMENT TO EXPAND CHUM SALMON PRODUCTION AT SNETTISHAM FROM 80 TO 115 MILLION CHUM SALMON EGGS.	271.2			271.2	TO INCREASE CHUM SALMON PRODUCTION BY 175 MILLION EGGS
2 TRAIL LAKES	2901	112 M. SOCKEYE EGGS TO PRODUCE 75,000 ADULTS. 780 K. COHO EGGS FOR LAKE AND STREAM STOCKING. 280 K. CHINOOK FINGERLING FOR LAKE STOCKING. EVALUATE SOCKEYE PLANTING AT HIDDEN LAKE	325.7			325.7	TRAIL LAKES HATCHERY AT \$295.6
3 STATEWIDE SOCKEYE	5501	120 M. SOCKEYE EGGS INC. IN CIF AT SNETT, FRY PLANTED IN ASE LAKES. SC. SET UP PILAR CRY FACILITY, EXPAND GULKANA SOCKEYE BY 5 M. SOCKEYE EGGS, ADD NEW GULKANA SITE FOR 2.5 M. SOCKEYE (300M. CHINOOK. PRESTOCKING INVESTIGATIONS ON SPIRIDON LAKE. VIRGINIA LAKE SOCKEYE TO TAKE 3 M. EGGS, INCUBATE AT BFH AND RETURN FRY. PRESTOCKING INVESTIGATIONS ON MCNEIL LAKE.	396.1			396.1	150000 CIF SNETTISHAM \$201.4, 400000 SOCKEYE \$11.0, SPIRIDON LAKE \$28.7, GULKANA \$82.9, VIRGINIA LAKE \$33.5, MCNEIL LAKE \$30.0
4 TECHNICAL SERVICES	5201	TECHNICAL SUPPORT FOR T&L, SE, PATHLAB AND SNETTISHAM ESTUARINE SURVEY. USER ACCESS TO DISEASE HISTORY DATABASE.	52.0			52.0	1045.0 TAG LAB \$11.2, EDITOR \$10.0, ENTRY CLERK FOR SE \$1.0, PATHLAB \$15.0, SNETTISHAM ESTUARINE SURVEY \$15.0
5 RBT TROUT PRODUCTION	2511	SUPPORT RAINBOW TROUT INVESTIGATIONS IN PRODUCING ALL FEMALE BROOD AND IN INDUCING TRIPLOIDY, WILL PRODUCE 50K CATCHABLE RAINBOW TROUT AND 300 K RAINBOW FINGERLING FOR PLANTING (SC)	88.5			88.5	1125.5 ALL FEMALE PROOD \$15.0, MORE RBT \$23.8, TRIPLOID \$10.0, 150 K RBT CATCHABLES & 300 K RBT FINGERLING \$31.1,
6 CI CHINOOK AND COHO	2712	WILL PRODUCE 200 K CHINOOK SMOLT FROM ELMENDORF, 90 K COHO SMOLT FROM FT RICH, NINILCHIK CHINOOK EGGS TAKE OF 300 K EGGS, BIG LAKE COHO 2.5 M. COHO TO PRESOLT RELEASE.	144.0			144.0	1269.5 1200 K CHINOOK SMOLT FROM ELMENDORF \$31.7, 70 K COHO SMOLT FROM FT RICH, \$25.0, NINILCHIK CHINOOK EGGS TAKE \$10.3, BIG LAKE COHO \$25.0
7 FISH CULTURE PROD. TECH.	5512	IFRED DIVISION IS STRIVING TO MAXIMIZE FISH PRODUCTION AND MINIMIZE COSTS. OPPORTUNITIES EXIST TO INCREASE THE EFFICIENCY OF FACILITIES THROUGH TECHNOLOGICAL DEVELOPMENT IN SPECIFIC AREAS. THIS PROJECT PROVIDES FOR ADVANCING FISH CULTURAL TECHNOLOGY IN BOTH REGIONS.	146.3			146.3	1415.0 REGION II CHILLED WATER \$30.0, REGION II WATER DEPURATION STUDY \$10.0, REGION I DEVELOPMENT \$34.0, IFT, RICH O2 CONTACTOR \$10.6, REARING MODELS \$0.5, BROOD DIET \$10.9,
8 SE PATHOLOGY LAB	5212	SUPPORT FOR INCREASING WORKLOAD AT SE PATHOLOGY LAB, WORKLOAD INCREASE RELATED TO CHINOOK HATCHERY ADD-ON.	57.4			57.4	1472.2 MICRO II \$42.0 AND 60M DATA ENTRY CLERK \$15.0
9 WILD STOCK ENHANCEMENT	5522	ASSESS AND CMT COHO IN TAIYA RIVER, SHAGWAY. CONNECT COHO PONDS TO CHILKAT RIVER, CONTINUATION OF A SUCCESSFUL PROGRAM. STUDY ASSESS. & LIFE HISTORY AT KALWOCK. CHILKAT RIVER KING CMT STUDY ASSESS MIGRATION PATH & TIMING.	100.0			100.0	1581.2 ASSESS AND CMT COHO IN TAIYA RIVER, SHAGWAY \$0.9, CORREC. COHO PONDS CHILKAT RIVER \$10.0, STUDY ASSESS. & LIFE HISTORY, KALWOCK \$33.0, CHILKAT RIVER KING CMT STUDY, \$10.0
10 KODIAK MARICULTURE	5152	SHELLFISH MARICULTURE SUPPORT FOR KODIAK AREA	69.5			69.5	1650.7 SALARY AND EXPENSES FOR PROJECT PERSONNEL IN THE KODIAK AREA.
11 BRISTOL BAY REHABILITATION	5492	INCREASE SPAWNING AREA AVAILABLE TO SOCKEYE SALMON THROUGH BEAVER DAM REMOVAL. WORK WOULD BE CONTRACTED TO LOCAL COMMUNITIES WITH EMPHASIS IN THE ILIADNA AREA.	30.0			30.0	1680.7 EXPENSES INVOLVED IN REMOVING ALREADY IDENTIFIED PROBLEMATIC BEAVER DAMS
12 SUMMER STEELHEAD TRANSPLANT	5402	TRANSPLANT OF SUMMER STEELHEAD STOCK FOR SITUK RIVER	30.0			30.0	1710.7 TRANSPLANT OF SUMMER STEELHEAD STOCK FOR SITUK RIVER PROJECT COSTS
13 TULKISAK ENHANCEMENT	5472	CHINOOK SALMON ENHANCEMENT THROUGH INSTREAM INCUBATION OF 100K EGGS.	30.0			30.0	1740.7 PROJECT COSTS
14 LPW FISH FARMING	502	EXPERIMENTAL WORK ON PEN REARING OF CHINOOK SALMON	60.0			60.0	1800.7 PROJECT COSTS
15 HIDDEN FALLS	1302	172.5 M. CHUM EGGS TO PRODUCE 1.9 M. ADULTS; 3.1 M. CHINOOK EGGS TO PRODUCE 50K ADULTS; PROVIDE UP TO 45 M. CHUM EGGS TO PRIVATE PRODUCERS.	906.3			125.0	1111.3 12912.0 HATCHERY EXPENSES \$1073.0
16 KITOI	3902	190 M. PINK EGGS TO PRODUCE 1.4 M. PINKS; 11 M. CHUM EGGS TO PRODUCE 170 K. CHUM; 1M COHO EGGS TO PRODUCE 9 K. COHO.	514.7				514.7 13426.7 HATCHERY EXPENSES \$23.4, 40M FBIV \$0.0, 40M CT \$0.0
17 CANNERY CREEK	3502	1100 M. PINK EGGS TO PRODUCE 1.7 M. PINKS	455.5				455.5 13882.2 HATCHERY EXPENSES \$31.6, 40M FBIV \$0.0, 40M CT \$0.0

Table 3. The following three sets of project rankings are modified from a previous benefit/cost analysis of FRED Division. The b/c analysis was aimed at a global look at the statewide enhancement program.

Rankings for State owned facilities that Predominantly Produce Fish for the Commercial Fishery

Hatchery	net benefits	Cost	Benefits (Gross)	B/C ratio
Main Bay	28957	8416.9	37373.6	4.44
Hidden Falls	12952	9020.2	21971.9	2.44
Kasilof	6572	8949.7	15521.6	1.73
Kitoi Bay	4806	6591	11396.6	1.73
Cannery Creek	3911	7196.9	11108.1	1.54
Tutka	1184	6398.7	7582.2	1.18
Klawock	1179	6889	8067.9	1.17
Karluk	619	3743.8	4362.3	1.17
Russell Cr	-2708	8406	5698.1	0.68
Beaver Falls	-3276	3700	424.1	0.11
Sikusuilaq	-5163	5180.9	18.3	0.00
Gulkana	NA	NA	NA	NA

Rankings for Predominantly Sport Fishery Facilities

Hatchery	net benefits	Cost	Benefits (Gross)	B/C ratio
Elmendorf	45466	7292.8	52759	7.23
Clear AFB	40280	5981.2	46262	7.73
Ft. Rich	37006	12289.4	49295	4.01
Crystal Lake	28021	8659.6	36681	4.24

Rankings for facilities With mixed commercial and sport production

Hatchery	net benefits	Cost	Benefits (Gross)	B/C ratio
Snettisham	63770	9375.7	73145.7	7.80
Deer Mountain	23042	3685.5	26727.5	7.25
Big Lake	22641	6051.1	28692.1	4.74
Trail Lake	11950	11791.5	23741.5	2.01

Funding

Jim Biggin - leg audit

4 components:

early Nov.

1) tax equity -

who pays & who benefits

table or listing by gear group by assoc. -

value = # of fish -

2) how much contribution to common property fishing
table -

can't know how reliable?

3) degree in which set taxes -

how much fish are non-assoc. members

putting out that assoc. gets tax for.

reliability?

4) schedule of loans

how many pre-structured
operating loans -

way loans are prioritized -

minutes.

Exec Summary - need to revise based on chapters.

Introduction - revise.

hatching

History chapter - OK. - get disk from Leg Res.?

Production - being updated by leg res.
Maine Glad. - call Monday.

Mgmt - ^{\$500,000 funding last year. Purchasing bldgs in}
^{Amherst - CIPD health & CWT tag lab. \$1.1m - #50 on dept. list.}
update w/ GS1 funding & wild stock priority.
anything new on tagging * muscivore, ^{scholar} under

Legal - clarify wild stock priority
written intro - that as is left as written
change option

Plan & permit - based on new studies - support
statewide planning.

for research permits - has proposed policy
been adopted? close to being adopted. - further modifications.
Canadian evaluation.

Biological - include Ohio's report + response
from ADF & G. - has ^{state} genetics policy finished
being revised? next year - Jim Sub.

Funding - include leg res. info

Econ - new chapter

Marketing - check w/ Kim. - Dec. 28. other issues -

50 mu/mo
↑ in utilities
+ taxes.

No tabs -
paginate
all the
way
through
table of contents.
take draft
off.

Kevin
O'Sullivan

in red

3 books

1- spec summary

2- ^{complete} report

3- appendices ~~public comments~~

4- econ. studies.

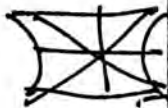
public comments - all in library -

additional

~~list of~~ attachments - 4
in back.

attachment - in body

appendix - separate



com.

* separate mailing *

finance com.

on 17

51.5

20

71.5

house - stay w/ Bob.
option on it next year.
Lillian - not down as much.
Dongles - stay in Bethel.
\$40,000 in sales.

new organ. - D's again - Ben together

Richard + Eileen - w/ Navarre.

Ramona.

* either co-chair of finance sales.

Eileen.

Richard + Eileen
Lillian

The Moe

Row + Richard.

Chignik - 1,470,276²3

NSRAA - 920,453.

PWSAC 478,089

SSRAA 1,225,246

2,794,551

Cook Inlet - none -

1,470,276²3

920,453

478,089

1,225,246

2,794,551

2.8m

FAX 

Public Comments.

PWSAC

ADF&G Com Fish

CIAA

Petersburg Vessel Owners Assn

Ted Cooney - UAF

Madden Assn.

SE AK Seiners Assn.

SE AK Reg Aquac Assn.

AK Aquaculture, Inc - Todd Jones

Valdez Fish Develop Assn

NW Seiner Assn

No SE Reg Aquac Assn.

31st Rm 204.

258-3050
Boris - for message *

Hatchery Follow-up

To Eve -

Put into final format -

ask Mary at if they
liking it - research
want it - or leg. research
state library.

Gordon

1) ask leg research to update production policies
+ trends in AK Marine Alaskawski

incorporate minutes from
teleconference.

2) written comments -

a) acknowledge

make corrections & changes.

b) summarise of comments.

Include
copies of bills.

3) leg audit of hatchery funding
loan program.
defunct question.

Sheila is interested
in this.

Economic Studies -

final - does it need explanation (intro.
remarks.

written comments + teleconf. minutes into appendix

ask f/g for official response to Ole Mathisen
paper. biological issues

Planning & permitting *

planning + plotting

what kind of follow-up to draft report.

met W/ Jeff Koenigs -
SSE.



Juneau Center for Fisheries and Ocean Sciences

School of Fisheries and Ocean Sciences
University of Alaska Fairbanks
11120 Glacier Highway
Juneau, Alaska 99801

(907) 789-4441 Office
(907) 789-4447 FAX

Burling

April 3, 1992

The Honorable Senator Hoffman
Alaska State Legislature
State Capitol
Juneau, Alaska 99801-1182

Dear Senator Hoffman:

It is my pleasure to submit a copy of the Group Report containing the deliberations of the Cordova Workshop on "Biological Interactions of Natural and Enhanced Stocks of Salmon in Alaska". It is called an Interim Report since there is no final answer to the problems raised at the Workshop. Hopefully we are making progress, at each meeting or study, in gaining a deeper understanding of the wonderful heritage represented by the Pacific Salmon in Alaska. As our knowledge expands, so should our wise use of these resources improve.

Sincerely yours,

ole A. Mathisen
ole A. Mathisen
Professor of Fisheries



Alaska State Senate
Office of the President
Senator Richard I. Ellason, President

More fish-related issues
to pursue

- Marine Surveyors should be required to have some certification/license/qualifications/standards
- Hatchery-related:
 - How enhancement taxation formula works - how distribution meshes with where collected
 - Loan program
 - Capital vs. operating loans prioritization
 - 6-10 yr. deferments - should say "up to 10 yr." (able to do even shorter than 6 yrs)
 - & structure to encourage non-pink production

**SENATE SPECIAL COMMITTEE ON DOMESTIC AND
INTERNATIONAL COMMERCIAL FISHERIES**

February 24, 1992

1:38 P.M.

MEMBERS PRESENT

Senator Dick Eliason, Chairman
Senator Sam Cotten
Senator Lyman Hoffman
Senator Lloyd Jones
Senator Fred Zharoff

OTHER MEMBERS PRESENT

Representative Loren Lehman

COMMITTEE CALENDAR

Hatchery Review Project Draft Report and Options for
Legislative Action

WITNESS REGISTER

John McMullen
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Cordova, Alaska 99579

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2721 N. Tongass
Ketchikan, Alaska 99901

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Juneau, Alaska 99802

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Robert Gigler
7447 O'Brien
Anchorage, Alaska 99507

Nancy Hillstrand
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Homer, Alaska 99603

Senate Dom/Int
Commercial Fisheries

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Petersburg Vessel Owners Association
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Paul McCollum, Executive Director
Valdez Fisheries Development Association

Senate Dom/Int
Commercial Fisheries

P.O. Box 125
Valdez, Alaska 99686

John Carter, President
DiPac
Juneau, Alaska 99801

Jerry McCutcheon
Anchorage, Alaska

ACTION NARRATIVE

TAPE 92-2, SIDE A
Number 001

SENATOR ELIASON called the Senate Special Committee on Domestic and International Commercial Fisheries meeting to order at 1:38 p.m. and announced they would consider the Hatchery Review Project Draft Report which he wanted people to look at as a beginning.

JOHN MCMULLEN, President, Prince William Sound Aquaculture Corporation, said they agree with the goal of the state hatchery program which is to produce additional salmon to supplement the existing wild salmon stocks. They realize the question still being asked is what the salmon enhancement program was expected to be - replacement, supplemental, or developmental. They see it as economic development within the guidelines of optimum sustained yield of wild and hatchery stock as described in the State Constitution.

Regarding Chapter 3 on Trends he commented they believe new markets for domestic production can be developed based on competitive pricing and new products. He said they are hearing with increasing frequency that fresh frozen salmon is superior to all but the freshest of salmon.

On Chapter 4 regarding management of mixed stock fisheries, he said there are examples statewide of fisheries that harvest large numbers of salmon without regard for individual stocks.

PWSAC has the most extensive tagging program in the state with the cooperation of ADF&G. The user pay concept is one they urge should be decided.

Number 173

On legal issues they believe the legislature never meant to allow the Board of Fish power to limit hatchery production.

They believe the goals of the Regional Salmon Enhancement

Senate Dom/Int
Commercial Fisheries

Program should be optimum sustained yield of a combination of wild and enhanced stocks with the foremost regard for the maintenance of the wild stocks, Mr. McMullen said.

Composition of the Regional Planning teams should not be changed. He thought the ADF&G should coordinate the statewide planning process. The value of that is the good ideas and procedures arising from individual teams can be shared with other planners.

They disagree with moratoriums on hatchery production which disregard the optimum sustained yield concept.

The carrying capacity of the ocean changes on a continuing basis, Mr. McMullen said. More information is needed for assessment of inshore and offshore growth and survival of salmon.

On funding of private non-profit hatcheries, PWSAC dedicates 70% of returning hatchery fish to the common property fisheries. The remaining 30% is used for brood stocks and cost recovery. Deferment of payment on state loans is necessary to provide for hatchery stock development.

They are concerned that some people seem to believe that hatchery production, not total Alaskan or world production of salmon, is the cause of price declines.

They support the efforts of groups throughout Alaska who use the resources at hand to better their lives and think of enhancement as a tool for economic development.

Mr. McMullen also pointed out enhancement has contributed significantly to king and coho non-commercial fishing.

Number 290

SENATOR COTTEN asked how the Prince William Sound Aquaculture Corporation was doing after a terrible year. MR. MCMULLEN said the Board of Directors authorized him to negotiate contracts for preseason sales of all their fish instead of selling only in season as a way to mitigate bad prices if they happened again in the future.

Number 341

SENATOR JONES asked if he planned on keeping the ratio of pinks to coho, chum, and sockeye the same. MR. MCMULLEN answered the coho and sockeye require a lot more water to rear than pink salmon which are pretty easy. He said their program is at a stable plateau right now.

SENATOR JONES asked how long they figured cost recovery would take. MR. MCMULLEN said it depends on how long it takes to build brood stock which is six years for pink salmon.

Number 400

REPRESENTATIVE LEHMAN asked him to comment on the claim that hatcheries impact the price of other markets. MR. MCMULLEN answered the markets can be developed for use of hatchery fish so their production would be market driven. They are devoting their time and funds to doing this right now.

SENATOR COTTEN brought up "ocean carrying capacity." MR. MCMULLEN said studies show that salmon have not come near to using up their food supply in the Sound. If there are good food supplies young fish can grow faster and thus move through the size at which they are more susceptible to predation quicker.

SENATOR ELIASON asked if they market the fish before they arrive, did that mean they would have a better quality product. MR. MCMULLEN answered yes. He said they have plans to start thermal marking.

Number 504

SENATOR JONES asked if they would expand traditional processing capacity.

DON AMEND, General Manager, Southern Southeast Regional Aquaculture Association, commented that the loans (enhancement loan program of the Department of Commerce & Economic Development) were deferred for too short a period and for too high an interest rate. Holding to the six year deferment period has created the problem of the hatcheries incurring more debt by having to borrow more money to keep going if it takes their brood stock more time to develop.

92-2, SIDE B
Number 001

BART WATSON, Executive Director of Armstrong-Keta, Inc., (a private non-profit hatchery corporation) pointed out they depend on the revolving loan fund for some of their operational funds. This is not an indication of less efficiency. It's just they haven't had the time to build up reserves, particularly now that there are low prices. He said they don't get any of the 3% enhancement money like the associations do or any of the U.S./Canada Mitigation Treaty money, either.

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Commercial Fisheries

-5-

February 24, 1992

MR. WATSON did not think payments should be forgiven. He thought if interest rates were lowered, they should be lowered for all hatcheries. He agreed with Don Amend saying they should be lowered, as long as the loan fund stays solvent.

He thought there was tremendous potential for new market development. Hatcheries can encourage this by entering into long term contracts with processors who will do value added kinds of processing. He encouraged funding of the Alaska Fisheries Development Foundation.

Tagging pink salmon was important, MR. WATSON said, along with someone to look at the tags. He believes in the concept of the user pay program and it should be a state program.

SENATOR ELIASON asked what percentage of his return he dedicated to the common fishery. Because they don't have tagging on their pink salmon, they have no way of determining what their common property contribution is, MR. WATSON said. They release around 50 million pinks. Their chinook and coho programs are in the development stage.

SENATOR JONES asked how many years he allowed for cost recovery. MR. WATSON said the pink salmon were the quickest cash flow generator. Coho is a three year return and they also spend two years at the hatchery. Chinook comes back at different ages.

Number 460

HENRY MITCHELL, Bearing Sea Fishermen's Assn., Anchorage, said they would like to see increased funding to the FRED Division to develop small scale technological improvements in enhancement which would be beneficial to small communities.

ROBERT GIGLER, Anchorage, said we should utilize fish to the best of our ability.

NANCY HILLSTRAND, Homer, said we need to protect the wild stocks and do more research to find out what is really going on out in the ocean before hatcheries are allowed to expand. Biological and genetic issues need to be studied. She thought small habitat and stream systems should be enhanced rather than hatcheries. The acronym "FRED" does not include a P for production, she commented.

Number 490

JIM BACON, Southeast Seiners Association, commented from his perspective managing a mixed stock fishery was very

complicated. In Southeast the major component of the fisheries is wild stocks. It needs to be the primary focus of our management. He said he would hate to see a situation occur where he would be unable to access a strong run of wild stock fish because of economic concern over a hatchery. He didn't think the actual cost of running the facilities was envisioned either.

TAPE 92-3, SIDE A
Number 001

MR. BACON questioned the meaning of "...non-profit hatchery needs to make a significant contribution to the common property fishery."

SENATOR COTTEN asked if he thought the authority should exist to manage mixed stock fisheries if they could have it both ways. MR. BACON answered he was skeptical there was an ability to do that.

CHRIS CHAVASSE, Homer, recommended giving the Board of Fish clear statutory authority to protect wild stocks until the full impacts of hatcheries is reviewed by the public. He thought wild stock breeding grounds should be candidates for habitat preservation. He was concerned we have already unalterably affected the genetic viability of certain bird species within the Prince William Sound due to direct acts on the forage base by reducing organic outflows associated with the enhancement of runs through optimum escapement goals.

MR. CHAVASSE recommended restricting hatchery rearing and releases to afford all indigenous species ample forage, to provide statutory protections of wild stock, identify depressed stocks, identify genetic adaptability as it relates to climate change, identify depressed wild salmon stocks and identify those stocks impacted by the hatchery program, and the impact of allocation management in the intercept fisheries. Providing statutory authority for emergency actions regarding hatcheries in general, identify areas for possible sterilization should disease become a problem and identify the methods of control, and identify all sources of pollution were other recommendations.

Number 216

FRED FILE, Petersburg, agreed with Mr. McMullen's testimony regarding the salmon planning being done region by region, rather because the regions are so different. He thought more had to be done to rehabilitate the natural stocks.

Number 250

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Commercial Fisheries

DAVE MCFADDEN, Petersburg troller, said the mitigation funds are of concern to trollers. He noted ADF&G was going to shut down Crystal Lake Hatchery which has been a very successful enhancement project. He thought the funds might not be being used for the specific purposes intended. Because the hatcheries are not producing the salmon the trollers were told to expect to compensate for their conservation efforts, there seems to be a trend towards supporting stream enhancement projects with the idea of rehabilitating the wild stocks.

SENATOR ELIASON said the Legislative Research Agency is still involved in tracing the expenditures of the treaty funds.

Number 319

KRIS NOROSZ, Director, Petersburg Vessel Owners Association, thanked everyone for making this project possible. They would like to see a clear wild stock priority put in state statute and a clarification as to whether or not the Board of Fish is required to provide for hatchery brood stocks or for cost recovery fish. She concurred with Jim Bacon's comments.

MS. NOROSZ said increased hatchery production should be restricted until the legislative cost benefit studies are complete. New criteria is needed to show a public benefit exists before granting permits and loans. A workable mechanism should be in place for closing hatcheries which aren't making a significant contribution to common property fisheries.

Purse seiners in Southeast Alaska are paying a disproportionate amount of money for the benefits they receive. They want an analysis of the enhancement program to determine whether costs are distributed in proportion to benefit. They also want to know the impacts of a mechanism allowing specific gear groups to opt out of the program or pay in proportion to the enhancement benefits they receive.

SENATOR ELIASON commented that answers to some of those questions are coming in June or July when the University finishes their studies regarding the economics of hatcheries. These will be included in the final report of the review project.

Number 351

DEBORAH LYONS, Petersburg, who is a member of the Alaska Board of Fisheries, stated that the Board of Fisheries is asking for advice from the legislature and urged the committee to take

advantage of this and give them clear direction. She thanked them for the work they are doing.

FRED ESQUIRO, Northern Southeast Regional Aquaculture Association, Sitka, thought it important to have a consistent tag recovery program. Marking should be required when a mixed stock occurs. He said there was a general understanding that brood stock would have a priority, but had never heard anything about cost recovery being guaranteed. He thought regionalized planning and permitting was the way to go. FRED should follow the permitting procedures all regional and PNP operators are required to do. Regional planning is important enough to receive some level of state funding. He believed the enhancement taxes should be audited regularly. He was against raising the 3% tax to the fishermen.

Number 432

LARRY MALLOY, Kodiak Regional Aquaculture Association, thought the points needing emphasis are a priority for protection of the wild stocks, traditional fishing patterns be recognized and prioritized as an integral part of determining an area's salmon production, where rehabilitation efforts are taking place a primary consideration should be given to a regulatory harvest strategy which clearly says how the rehabilitated stock will be maintained at a natural production level, and a thorough evaluation of the impacts of associated hatchery production on adjacent wild stocks should be made.

Number 483

OLIVER HOLMS, Kodiak Regional Aquaculture Association, said they wanted a wild stock priority. When permitting a PNP, areas being managed for cost recovery and brood stocks should be specified in the plan.

BRUCE EAGLE, Wrangell, attempted to testify, but the reception was bad.

Number 555

TOM MEARS, Cook Inlet Aquaculture Association, Soldotna, thought many of the options listed at the end of the chapters appeared to be reasonable, but were based on incorrect or unsubstantiated assumptions. They believe wild stocks should be protected and therefore enhancement projects are supplemental.

92-3, SIDE B

Number 001

MR. MEARS also thought the term "significant" should be

Senate Dom/Int
Commercial Fisheries

defined by the legislature as it pertains to contribution to common property fisheries of PNPs. He thought regional planning was preferable to state wide planning.

BRUCE EAGLE, Wrangell, thought it important to protect the wild stocks and also to make sure the hatcheries have brood stock. Planning is extremely important and he thought the regional planning teams should be changed to include gear user groups and the federal government. The planning teams should have the authority to recommend allocations to the Board of Fisheries.

Number 50

PAUL MCCOLLUM, Executive Director, Valdez Fisheries Development Association, supported testimony from the Prince William Sound Aquaculture Corporation. He thought they needed to come up with a program to harvest the hatchery fish aggressively to avoid build up of the fish in the terminal area.

MR. MCCOLLUM said many PNPs can't tag since they don't get economic escapement. He favored amending the PNP policy to make economic escapement absolute upon the granting of a PNP permit. He thought it unproductive to grant the permits if the permittee can't be assured of a chance of survival. He thought there could be a simplified cost benefit model to help determine the real contribution of their time for each project.

They support Representative Kubina's legislation allowing for regional marketing committees although they think it should be on a voluntary assessed tax rather than a direct tax.

Number 120

JOHN CARTER, President, DIPAC Hatchery, Juneau, thought many problems resulted from simple lack of information. He thought they should truly work at getting information on run strength and hatchery contribution. He encouraged funding thermal marking programs. Funding would be needed also to do recovery of the data.

MR. CARTER encouraged work in the area of product development to increase the value of salmon. He didn't object to a moratorium on hatchery production, but didn't want a moratorium on funding of existing programs.

He thought there should be more fishermen on ASMI's Board since what they do affects their product.

Number 192

JERRY MCCUTCHEON, Anchorage, commented too many fish was just a temporary maladjustment between supply and demand. He thought the Japanese would undercut the American price eventually.

He commented that research should be done on rehabilitating crab in Kachemak Bay.

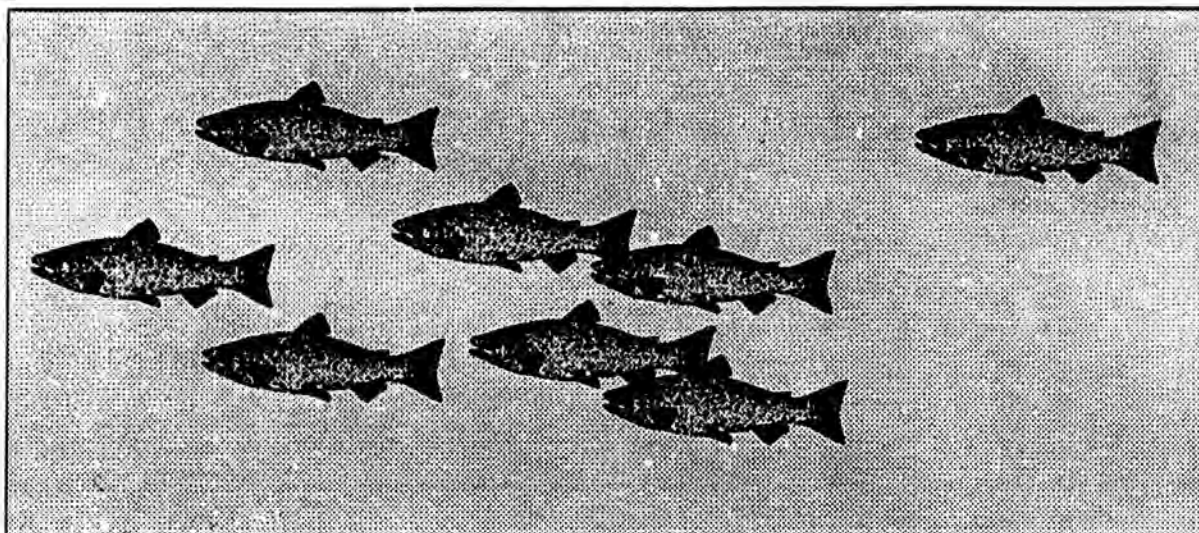
Number 281

SENATOR ELIASON thanked everyone for their testimony and adjourned the meeting at 4:25 p.m.

Alaska Department of Fish and Game
Fisheries Rehabilitation, Enhancement, and Development Division
(FRED Division)

**Overview of Southeast Alaska
Hatchery Chinook Salmon Program**

Report to the Board of Fisheries
(Juneau, March 7, 1992)



Jeffrey P. Koenings
Director

Fisheries Rehabilitation, Enhancement and Development (FRED) Division
Staff Report to the Alaska Board of Fisheries
(Juneau, March 7, 1992)

**Overview of the Southeast Alaska Hatchery
Chinook Salmon Program**

Jeff Koenings, Director
FRED Division

History

Chinook salmon have been cultured in southeast Alaska for nearly 70 years. As early as 1923, the Ketchikan Territorial Hatchery (the site of the present Deer Mountain Hatchery) produced chinook salmon smolts for release.

The modern day enhancement program was initiated with legislative creation of the Fisheries Rehabilitation, Enhancement and Development (FRED) Division in 1971 in response to declining salmon abundance statewide. Subsequent bond issues in 1976 and 1978 provided capital to construct State facilities for salmon production. In 1974, the Legislature authorized the Commissioner of Fish and Game to issue hatchery permits to private nonprofit (PNP) corporations. The PNP hatchery program includes Regional Aquaculture Associations, comprised of representatives of commercial fishermen and other groups, as well as non-association, nonprofit hatcheries. PNP hatchery construction was initially funded with state loans from a revolving loan fund created by the Legislature in 1976.

The fisheries enhancement program in southeast Alaska is guided by the Comprehensive Salmon Plan for Southeast Alaska. The plan was written in 1980 by a team of department biologists, the aquaculture associations, and fishermen. The second phase of the Plan was completed in 1982-1983. It is updated annually for separate regions of southern and northern southeast Alaska.

To further guide enhancement of chinook salmon, in 1983 the Alaska Department of Fish and Game (ADF&G), in cooperation with the aquaculture associations, the United States Forest Service (USFS) and the National Marine Fisheries Service (NMFS), developed a Chinook Salmon Plan for southeast Alaska. The objective of this plan is to define some of the biological practices applicable to both chinook salmon management and enhancement, to review the current status of natural and enhanced production of chinook salmon in Southeast Alaska, and to describe and recommend activities needed to restore harvest to historical levels through increased production. Annual annexes to the Chinook Salmon Plan provide a perspective on the development of the enhancement program and wild stock trends, as well as an historic review of hatchery production of chinook salmon (the 1991 Annex to the Chinook Salmon Plan is provided under separate cover).

Current Program

Chinook salmon are produced in most of the southeast hatcheries. In 1991, chinook salmon were released from 9 PNP, 3 FRED, 1 school, and 2 federally funded hatcheries (Figure 1).

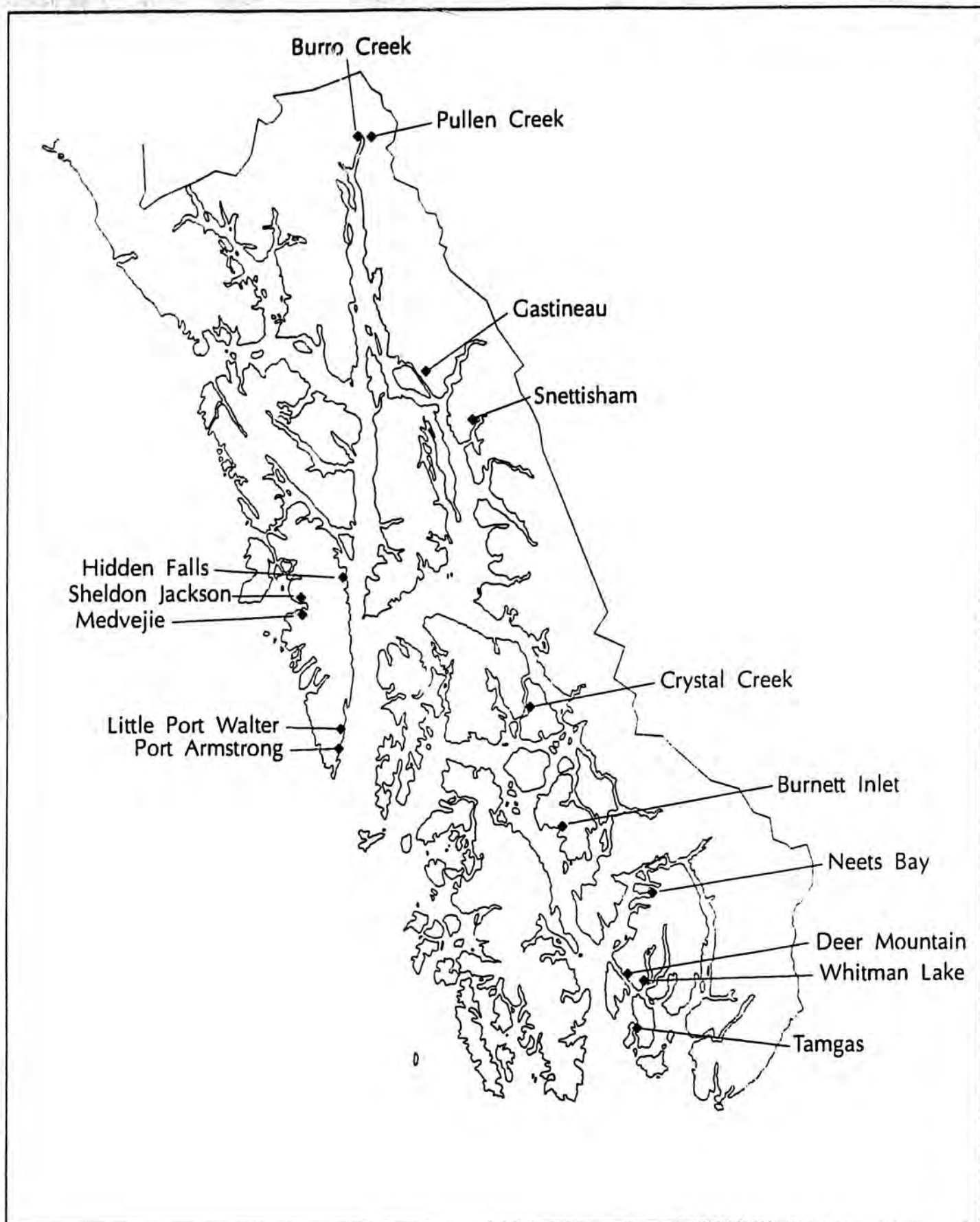


Figure 1. Chinook Salmon Hatcheries in Southeast Alaska

In contrast to other species of salmon, development of hatchery chinook salmon production has been slowed by the availability of eggs from natural stocks and the long life cycle (5 years) of this species. In the early 1980's, almost all hatcheries had more capacity for chinook salmon than they were able to utilize with available brood stock. Consequently while hatchery production capacities have increased 5-fold from 1981, smolt releases have increased by a factor of eight during that time period (Figure 2). Hatchery production of chinook salmon will begin to approach facility capacities by the mid-1990's.

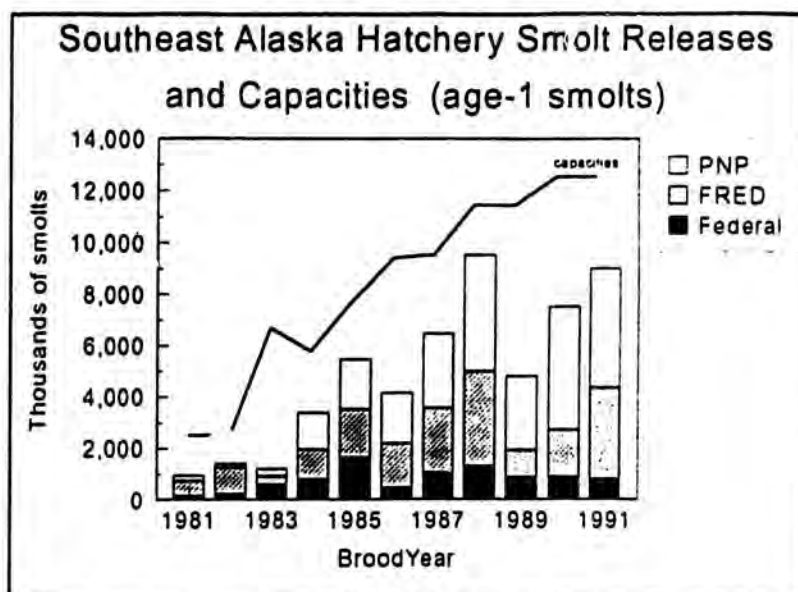


Figure 2. Southeast Alaska hatchery smolt releases and capacities (age-1 smolts).

The Pacific Salmon Treaty: Chinook Ceiling and Hatchery Add-on

The Pacific Salmon Treaty between the United States and Canada was signed in 1985. One purpose of the U.S./Canada Treaty was to resolve differences in management of salmon stocks along the Pacific coast from Washington and Oregon on northward through British Columbia (Canada) to southeast Alaska. The U.S./Canada Treaty provides for cooperation in management, research, and enhancement of pacific salmon. For chinook salmon, rebuilding of natural stocks on a coastwide basis is a key component of the process. There are many other components and complexities regarding various species and fisheries in the treaty; this report deals only with chinook salmon in southeast Alaska.

In 1985, the U.S./Canada Treaty imposed a harvest ceiling of 263,000 chinook salmon in southeast Alaska. This limitation was substantially below average harvests in years prior to 1980 and before the treaty process. However, in recognition of the ongoing Alaskan enhancement program, the Treaty allowed the fishermen in southeast Alaska to harvest Alaskan hatchery production above the Treaty imposed ceiling. This is in contrast to the other chinook ceilinged fisheries under the Treaty which have no special allowance for harvest of domestic hatchery production. Chinook salmon of Alaskan hatchery origin are referred to as the "hatchery add-on" because they are added to the chinook catch ceiling imposed by the Treaty. At the time of the Treaty, Alaskan hatcheries were already contributing some chinook salmon to the annual harvest. To account for this production, the Treaty requires that 5,000 of the Alaskan hatchery chinook catch be considered part of the base catch. Therefore, the hatchery add-on is actually for harvest of Alaskan hatchery production above 5,000 chinook annually.

To compensate Alaskan fishermen for losses to, and disruptions of their fisheries because of the U.S./Canada Treaty, the federal government agreed to contribute approximately \$20 million dollars to the Southeast Alaska salmon enhancement program. This mitigation funding was in-

tended to provide for increases in the region's hatchery production of chinook salmon. The money was also for increased production of chum and sockeye salmon to compensate the net fisheries for losses due to the Treaty. These monies are different in both origin and intent from management and research funds allocated to the Commercial Fisheries Division.

The commissioner of ADF&G established the Southeast Alaska Chinook Technical Planning Team in 1985 to design a program for new hatchery production of chinook salmon that would be developed with the mitigation funding from the federal government (while similar in name, this team was not associated with the U.S./Canada Treaty process). The team included staff from the State's FRED, Commercial Fisheries, and Sport Fish Divisions, both of the southeast Alaska aquaculture associations, the NMFS and the USFS. At the time, the existing harvest quota was approximately 100,000 fish below the average historic catch in southeast Alaska. The goal of the team was to evaluate proposals for the production of a new increment of 100,000 adult chinook salmon for harvest, primarily by the troll fleet, as prior to imposition of quotas in 1980, the troll fleet harvested from 88% to 90% of the total chinook harvest.

The mitigation funds were intended to provide for chinook production above the hatchery capacity already in place at the time the U.S./Canada Treaty was put in place. In 1985, FRED projected that the existing capacity of Southeast Alaskan hatcheries was such that over 200,000 adult chinook would be produced by 1995. The federal mitigation funds were intended for production of 100,000 fish over that capacity.

Fisheries enhancement organizations have the general orientation to produce juvenile fish which are released from their facilities and later harvested as adults. The original goal for new chinook production was simply to make more adult fish, most of which would be available for harvest. This general goal evolved into the number of fish actually harvested in the fisheries; specifically to add 100,000 chinook annually to the troll catch. This is not to imply that increasing harvest in recreational and net fisheries is not important to the chinook salmon enhancement program. Both FRED and PNP hatcheries have chinook enhancement projects that are intended for recreational anglers.

Project Funding

As each new increment of mitigation funds becomes available, the FRED Division, both regional aquaculture associations, and various private hatcheries submit project proposals for the production of new increments of salmon. The Commissioner of ADF&G determines which proposals to accept, based on recommendations of representatives of the commercial gear groups, the regional aquaculture associations, and ADF&G staff.

Since 1985, approximately half (\$10 million) of the \$20 million has been allocated to chinook salmon enhancement projects, \$8 million has been expended for production of other species, with about \$2 million remaining to be spent. Most of the chinook projects have been capital projects developed by the two aquaculture associations. Several projects have been completed, but most are still ongoing. None of the chinook mitigation projects are yet at full production. Table 1 lists the approved mitigation projects, what they are to do, and what agency received the funds.

FACILITY OR PROJECT	ADULT PRODUCTION GOAL	STATUS	COST (In Thousands)
1. SSRSA, WHITMAN LAKE HATCHERY EXPANSION	33,000	FFY86 - COMPLETED	1,291.7
2. NSRAA, MEDVEJIE HATCHERY EXPANSION	17,300	FFY 86/87 - COMPLETED	2,095.1
3. NSRAA, HIDDEN FALLS HATCHERY EXPANSION	52,000	FFY 87-ENGINEERING/DESIGN SITE PREPARATION/CONSTRUCTION FFY 88-CONSTRUCTION (578.8) PLUS (691.2) FROM BWS TOTAL	250.0 1,799.0 1,270.0 3,299.0
4. FRED, CRYSTAL LAKE HATCHERY RENOVATION	10,000	FFY 88-RENOVATION (ONGOING)	420.0
5. FRED/COMM FISH, CARROLL INLET PREDATION STUDY	N/A	FFY 88 - COMPLETED	30.2
6. FRED, BARANOF HATCHERY SITE INVESTIGATION	N/A	FFY 88 - DISCONTINUED	46.6
7. FRED, FARRAGUT RIVER FRY PLANTS, 5 YEARS	4,000	FFY 89/90 - PROJECT WILL BEGIN SUMMER 1991	77.0
8. FRED, HARDING RIVER FRY PLANTS, 5 YEARS	800	FFY 89/90 - PROJECT WILL BEGIN SUMMER 1991	162.6
9. FRED, CRYSTAL LAKE HATCHERY WATER MAIN REPLACEMENT	N/A	FFY 89/90-INITIATED 1991	725.0
10. NSRAA, MEDVEJIE ADDITIONAL REARING SPACE	N/A	FFY 89/90-INITIATED 1991	60.0
11. SSRAA, WHITMAN LAKE MODIFICATIONS	17,500	FFY 89/90-INITIATED 1991	380.0
12. FRED, DEEP COVE CHINOOK RELEASE, CAPITAL AND 5 YEAR OPERATIONAL	60,000	FFY 89/90-INITIATED 1991	1,315.0
13. NSRAA, HIDDEN FALLS NET PENS	(Included in #3)	FFY 89/90-INITIATED	-
ADULT PRODUCTION POTENTIAL	194,600	TOTAL EXPENDITURES W/ COMPLETION OF ALL PROJE	2.2

Table 1. Summary of US/Canada chinook salmon enhancement projects.

Production Trends

Alaska origin chinook production in southeast has increased steadily over the last ten years. In 1991, FRED Division estimated that over 120,000 chinook salmon were produced from hatcheries in southeast Alaska. The projection for 1992 is a total return of approximately 138,000 adult chinook salmon. Estimates of total return include all hatchery chinook harvested in the fisheries, those harvested for cost recovery, and those used for escapement and brood stock (Figure 3).

The 1991 return was primarily the result of smolt releases of about 4,500,000 from brood years 1985 and 1986. Smolt releases since that time have increased significantly, and now total over 8,000,000 annually. In addition, hatchery operators are continually improving fish culture techniques, and survival rates from smolt to adult should improve with time. This will also result in increased production of adults. Unknown and uncontrollable ocean conditions will effect survival rates but the overall trend of increasing adult production is expected to continue. Hatchery capacities for smolt production have not yet been fully utilized; however, capacities should be reached within the next few years.

Production of chinook takes place at a number of hatcheries operated by different agencies. Figure 2 shows the smolt production by agency. The PNP operators have produced the majority of smolts since brood year 1987, however FRED Division production has been nearly equal to PNP production, and the Little Port Walter and Tamgas hatcheries, listed as Federal have made significant contributions. A break down of the 1991 brood year, projected smolt release is as follows: PNP, 4,600,000 (52%); FRED, 3,500,000 (40%) and Little Port Walter and Tamgas, 790,000 (8%).

Harvest Trends

The number of Alaskan hatchery chinook salmon harvested in the fisheries has likewise increased steadily since the early 1980's. The 1991 estimated troll and recreational catches were 38,041 and 26,700 chinook salmon, respectively. The recreational catch has had the largest percentage increase, but troll catches have also increased significantly (Figure 4, Table 2).



Figure 3. Production of Southeast Alaska hatchery chinook, summary of total returns.

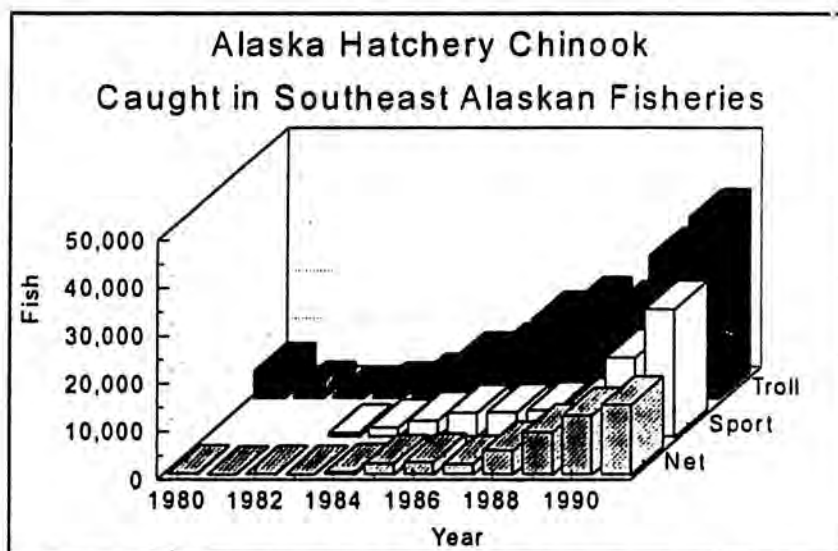


Figure 4. Alaskan hatchery chinook caught in Southeast Alaskan fisheries.

Year	Gear Type					Total Return
	Troll	Net	Sport	Cost Recovery	Brood + Escapement*	
1980	5,877	363	NA	0	NA	8,571
1981	1,949	59	NA	0	NA	3,985
1982	943	212	NA	0	NA	2,105
1983	1,857	113	872	0	1,451	4,293
1984	3,626	563	1,904	0	6,029	12,122
1985	8,100	2,400	3,372	2,011	9,819	25,702
1986	9,900	2,700	5,010	1,900	10,063	29,573
1987	16,600	2,300	5,108	2,466	15,426	41,900
1988	19,716	5,154	5,545	8,670	13,732	52,817
1989	18,804	8,831	6,351	17,748	13,071	64,805
1990	30,040	12,341	16,612	20,824	14,696	94,513
1991	38,234	14,612	26,700	24,854	16,243	121,643

Table 2. Estimated harvest of Alaskan hatchery chinook salmon by gear type, 1980-1991.

In comparing harvest rates in the various fisheries, we see that the troll harvest rate has declined from about 50% of the production in the early 1980's to about 30% in the last three years (Figure 5, Table 3). Undoubtedly, the shorter summer troll season, coupled with other changes in the conduct of the troll fishery, is responsible for most of the reduction. The recreational harvest rates have remained relatively constant, except for the last two years where some increase in recreational harvests have occurred. Most Alaskan hatchery produced chinook are caught in inside waters and because of the nature of the recreational fishery, it benefits from these fish to a greater degree than does the troll fishery.

To a large extent, harvest rates on hatchery-produced fish are outside the influence of hatchery operators. However, several hatchery practices can effect harvest patterns. The most important factor is the release location.

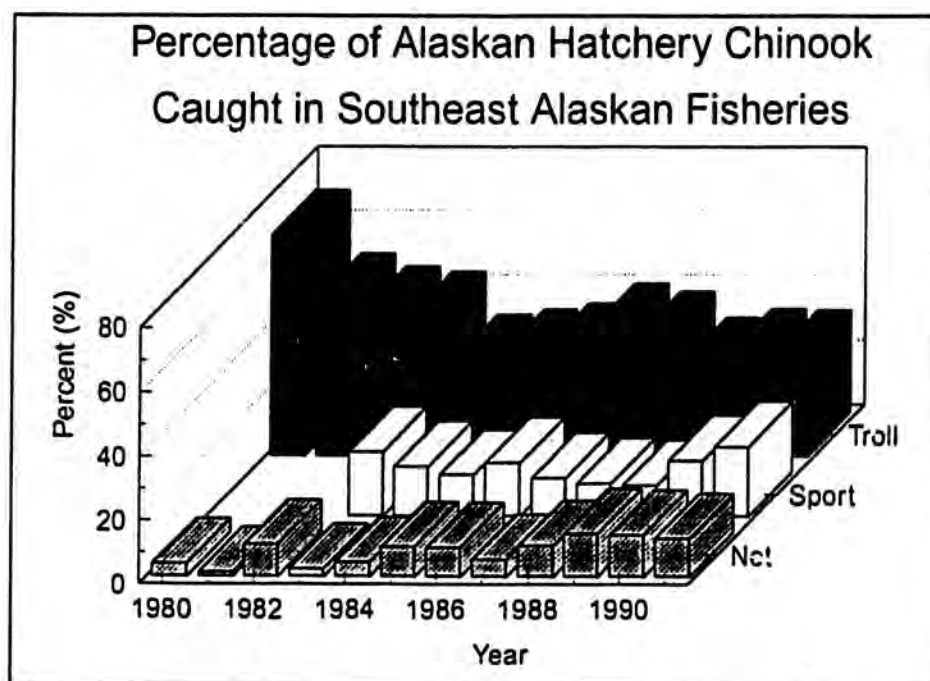


Figure 5. Percentage of Alaskan hatchery chinook caught in Southeast Alaskan fisheries.

In the early stages of the hatchery program, releases were made directly from the hatchery. In the last ten years, advances have been made in transport technology and in our understanding of imprinting, or why fish return to a particular site. We now transport fish over 100 miles from hatcheries to release them in areas that will provide better survival and/or result in better access for fishermen. The best example of this is the remote release site

Year	Gear Type				
	Troll	Net	Sport	Cost Recovery	Brood + Escapement
1980	68.6	4.2			
1981	48.9	1.5			
1982	44.8	10.1			
1983	43.3	2.6	20.3		33.8
1984	29.9	4.6	15.7		49.7
1985	31.5	9.3	13.1	7.8	38.2
1986	33.5	9.1	16.9	6.4	34.0
1987	39.6	5.5	12.2	5.9	36.8
1988	37.3	9.8	10.5	16.4	26.0
1989	29.0	13.6	9.8	10.5	16.4
1990	31.8	13.1	17.6	22.0	15.5
1991	31.4	12.0	21.9	21.3	13.4

Table 3. Percentage harvest of Alaskan hatchery chinook salmon by gear type, 1980-1991.

in Carroll Inlet, where SSRAA releases chinook salmon to provide a terminal troll fishery. A similar program is conducted in Juneau for recreational fishermen. FRED Division transports smolts from Snettisham Hatchery to Juneau for release in an area where recreational anglers can better access the returns.

Another practice that can effect harvest rates appears to be selection of brood stock. Different stocks of chinook have different rearing patterns in the marine environment. If stocks are identified that rear in high use troll or recreational areas, we can expect higher contribution rates to those fisheries. Growth rates may also be stock specific. The sooner a fish reaches the current 28 inch minimum size the sooner it can be retained in the troll or recreational fishery.

Non-Alaskan Hatchery Production

Much of the chinook catch in Alaska is from hatcheries outside of Alaska. In the 1991 troll catch of 263,000, approximately 33% of the catch was from non-Alaskan hatcheries. When this is combined with the Alaskan hatchery contribution, 46% of the troll catch was from hatchery production. The recreational fishery does not catch as many non-Alaskan hatchery fish as are caught in the troll fishery. Only about 14% of the recreational catch is of non-Alaskan origin, but the Alaskan Hatchery contribution of nearly 40% brings the total hatchery contribution to the recreational catch to 53%. (Figure 6.)

A brief summary of non-Alaskan hatchery contributions to the 1991 troll catch follows:

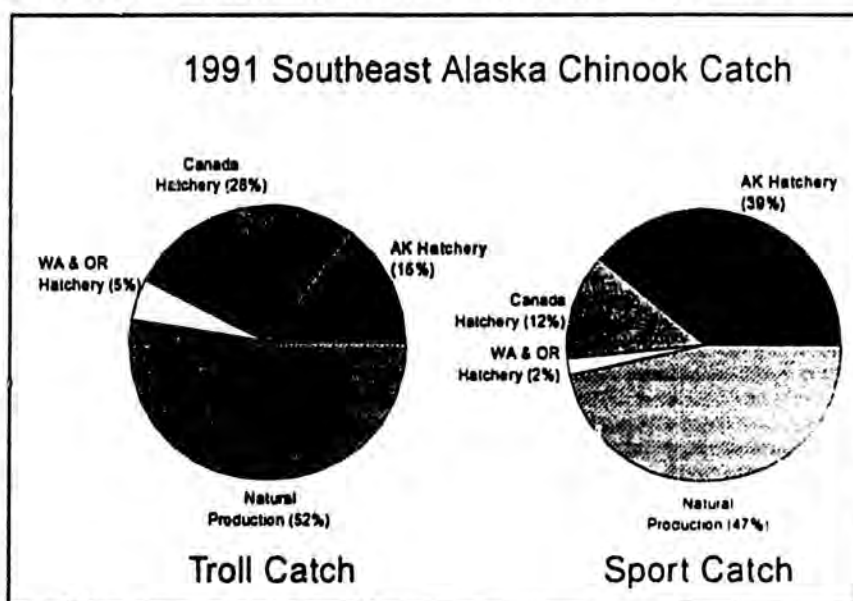


Figure 6. 1991 Southeast Alaskan chinook catch, troll and sport fisheries.

Canadian - In 1991, 33 Canadian hatcheries contributed 73,722 chinook salmon to the troll catch, 28% of the total. Of the 73,722 chinook, Robertson Creek Hatchery on Vancouver Island contributed 49,084 (66% of the Canadian total and 18.6% of the Alaskan catch). Several other hatcheries contributed significant numbers: Nitinat River (8,105); Conuma (5,305); Shuswap River (3,704); and Kitimat River (2,217).

Oregon and Washington - In 1991, Oregon and Washington hatcheries contributed 12,910 chinook salmon to the troll catch, 5% of the total. Oregon's major contributor was Bonneville Hatchery (2,143) and Washington's was Willapa Hatchery (2,420).

Evaluation

An understanding of stock contributions to the chinook fisheries of southeast Alaska is critical to proper fisheries management. It is also important to have an understanding of how hatchery production is changing in order to develop the best approaches for enhancement. The best tool we have for this evaluation is coded-wire tag technology. Coded-wire tags are 1mm long pieces of wire imprinted with a binary code. The code is unique for each group of fish tagged. A portion of all hatchery-produced chinook, as well as some wild chinook, are tagged each year. When a tagged fish is recovered from a fishery, we can then remove and decode the tag to determine the fish's origin. This information is combined with data about the fishery, such as: type, date and location. All of these details are stored in a data base at the FRED Division's CWT lab in Juneau.

The Tag Lab data base is used by managers and researchers to answer numerous kinds of questions about the fisheries and hatchery contributions. The Tag Lab generates hundreds of special purpose reports to answer these questions. Almost all information presented on hatchery chinook catches in Alaska is provided by the Tag Lab. Two examples of Tag Lab reports are shown in tables 4 and 5.

Future Direction

We see the following four ways to increase the hatchery add-on portion of the harvest :

- 1) Continued Production - A simple approach, but they have to be produced before they can be caught.
- 2) Improved Hatchery Techniques - Different strategies can be used to increase survivals. Different brood stocks can be examined to determine how performance differs in terms of where the fish rear. The release of smolts in different areas can be used to focus fisheries on returns.
- 3) Management - The time and areas where fisheries operate can greatly effect harvest rates. As we become more knowledgeable about stocks of hatchery chinook, it should be possible to tailor the fishery to harvest greater numbers of fish.
- 4) Fishing Techniques - The techniques used to successfully harvest chinook are different in terminal area fisheries. Fishermen are good at their profession and we expect that they will learn how to target mature fish in the terminal areas.

Table 5.

HATCHERY CONTRIBUTION TO COMMERCIAL TROLL FISHERIES Chinook Salmon

October 1, 1989 - September 30, 1990 (89-90)
and
October 1, 1990 - July 8, 1991 (90-91)

STATE or PROVINCE	10/1 - 12/31/89	1/1 - 4/15/90	6/1 - 8/30/90	7/1 - 7/22/90	8/23 - 8/24/90	89-90 TOTAL	Exp. Area					Term. Area		Hatchery Access		Annette Is. Reserve		90-91 TOTAL
							10/1 - 12/31/90	1/1 - 4/15/91	6/2 - 6/22/91	8/1 - 8/30/91	9/5-7 & 8/20-21/91	7/1 - 7/8/91	10/1-12/31/90	1/1-9/30/91				
Alaska	3,188	1,267	11,254	13,034	1,250	29,993	7,208	3,077	6,559	3,112	9,218	6,603	0	0			35,779	
British Columbia	2,359	6,871	10,938	51,839	1,723	73,530	2,820	9,457	1,898	46	15,558	44,199	0	148			73,722	
California	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	
Idaho	0	0	0	0	22	22	0	0	0	0	0	0	0	0			0	
Oregon	185	155	909	5,937	521	7,707	455	178	88	0	987	3,031	0	30			4,765	
Washington	189	86	633	10,408	484	12,020	208	306	119	0	609	6,901	0	2			8,145	
HATCHERY																		
Contribution Total:	5,921	8,379	23,954	81,018	4,000	123,272	10,489	13,018	8,462	3,158	26,368	60,740	0	178			122,411	
As a % of Catch:	33.6%	53.2%	58.7%	40.4%	33.7%	42.6%	52.7%	57.3%	60.6%	52.7%	56.8%	39.4%	-	18.7%			48.4%	
# Chinook caught:	17,614	15,763	42,217	200,462	11,855	287,931	19,920	22,719	13,915	5,996	46,418	154,020	0	953			283,941	
# Chinook sampled:	10,179	8,049	20,886	56,873	3,858	97,645	11,284	10,305	7,582	1,808	22,039	55,330	0	117			108,485	
% of catch sampled:	57.8%	38.4%	49.0%	28.4%	32.5%	33.9%	56.6%	45.4%	54.5%	30.2%	47.5%	35.9%	-	12.3%			41.1%	

Preliminary data updated from catch, samples and recoveries entered as of 2/27/92. Catch provided by Commercial Fisheries Division, Computer Services Section, HQ. 90-91 catch updated in January 1992.
All contribution estimates were calculated using standard stratification. Stratification used is species, gear, quadrant and fishing period.

Table 4.

ALASKAN HATCHERY CONTRIBUTION TO COMMERCIAL TROLL FISHERIES

Chinook Salmon

October 1, 1989 - September 30, 1990 (89-90)
and
October 1, 1990 - September 30, 1991 (90-91)

ALASKAN HATCHERIES	10/1-12/31/89	1/1-4/15/90	6/1-8/30/90	7/1-7/22/90	8/23-8/24/90	89-90 TOTAL	10/1-12/31/90	1/1-4/15/91	Exp. Area 6/2-6/22/91	Term. Area 5/28-6/30/91	Hatchery Access 6/5-7 & 6/20-21/91	7/1-7/8/91	Annette Is. Reserve 10/1-12/31/90 1/1-9/30/91	90-91 TOTAL
Burnett Inlet	0	0	0	0	0	0	0	0	20	0	10	51	0	81
Carroll Inlet	253	222	3,421	5,488	255	9,839	891	479	1,884	1,911	2,309	1,855	0	9,229
Crystal Lake	1,802	599	2,400	1,723	339	6,863	3,113	1,484	1,487	883	2,886	1,798	0	11,451
Deer Mountain	68	28	178	180	14	448	22	8	75	2	132	18	0	255
Fort Richardson	0	0	0	0	0	0	0	0	0	0	0	20	0	20
Hidden Falls	88	0	52	191	49	380	202	55	52	0	318	165	0	790
Jerry Meyers	8	0	2	15	12	37	0	0	0	0	13	2	0	15
Little Port Walter	290	87	1,340	1,773	303	3,793	1,150	584	524	6	1,018	738	0	4,520
Medveja Cif	11	0	508	110	29	658	43	42	878	0	428	338	0	1,525
Neets Bay	382	132	984	879	64	2,441	190	59	724	93	852	780	0	2,698
Port Armstrong	84	31	210	114	0	439	18	14	56	0	48	80	0	214
Sheldon Jackson	0	0	59	30	0	89	5	0	78	0	22	2	0	107
Snettlesham	193	13	170	309	71	756	287	125	29	0	262	186	0	889
Tamgas Creek	0	31	784	547	18	1,358	278	92	848	138	753	624	0	2,529
Whitman Lake	209	124	1,188	1,895	98	3,294	509	135	208	79	369	158	0	1,458
HATCHERY														
Contribution Total:	3,188	1,267	11,254	13,034	1,250	29,993	7,208	3,077	6,559	3,112	9,216	6,609	0	35,779
As a % of Catch:	18.1%	8.0%	28.7%	6.5%	10.5%	10.4%	36.2%	13.5%	47.1%	51.9%	19.9%	4.3%	-	13.6%
# Chinook caught:	17,814	15,783	42,217	200,482	11,855	287,931	19,920	22,719	13,915	5,996	48,418	154,020	0	263,941
# Chinook sampled:	10,179	6,049	20,686	56,873	3,858	97,645	11,284	10,305	7,582	1,808	22,039	55,330	0	108,465
% of catch sampled:	57.8%	38.4%	49.0%	28.4%	32.5%	33.9%	56.6%	45.4%	54.5%	30.2%	47.5%	35.9%	-	41.1%

Preliminary data updated from catch, samples and recoveries entered as of 2/27/92. Catch provided by Commercial Fisheries Division, Computer Services Section, HQ. 90-91 catch updated in January 1992.
All contribution estimates were calculated using standard stratification. Stratification used is species, gear, quadrant and fishing period.

Summary

Hatchery production of chinook salmon is extremely important to southeast Alaskan fisheries. Almost half of the chinook caught in the 1991 recreational and troll fisheries came from hatcheries, both inside and outside of Alaska. The major advantage of the Alaskan hatchery fish is that they do not count against the U.S./Canada Treaty imposed ceiling. Hatchery production has already increased the total catch of chinook salmon in southeast Alaska.

Alaskan hatchery production of adult chinook now totals over 120,000 fish annually. The adult return in 1991 was largely from smolt releases of the 1985 and 1986 brood years. Approximately 4.5 million smolts were released from each of those years. More recent releases of chinook smolts have approached or exceeded 8 million fish, and the hatchery capacity in southeast Alaska is now nearly 12 million chinook smolts. We expect the hatchery production of chinook to continue to increase as returns from larger releases occur. For example, the projection for 1992 is a total return of 138,000 chinook salmon to southeast Alaskan hatcheries.

The goal of putting 100,000 fish in the "holds of trollers" is the current emphasis of chinook enhancement funded with mitigation monies from the federal government. However, this goal may not be attainable from just increased fish production. The troll harvest rate has declined to approximately 30% of the total annual production from southeast Alaskan hatcheries. Increasing that harvest rate will take the concerted efforts of both hatchery operators and fishery managers.

Recreational anglers have benefited from the emphasis on chinook salmon production. Nearly 40% of the recent recreational fishery harvest of chinook is made up of Alaskan hatchery fish. While most of the chinook production has been targeted toward troll harvest, both FRED and PNP hatcheries do produce chinook intended for the recreational angler.

FRED Division Contributors:	Ron Josephson, Northern Southeast Area Biologist
	Steve McGee, PNP Program Biologist
	Marianne McKean, Data Management Coordinator

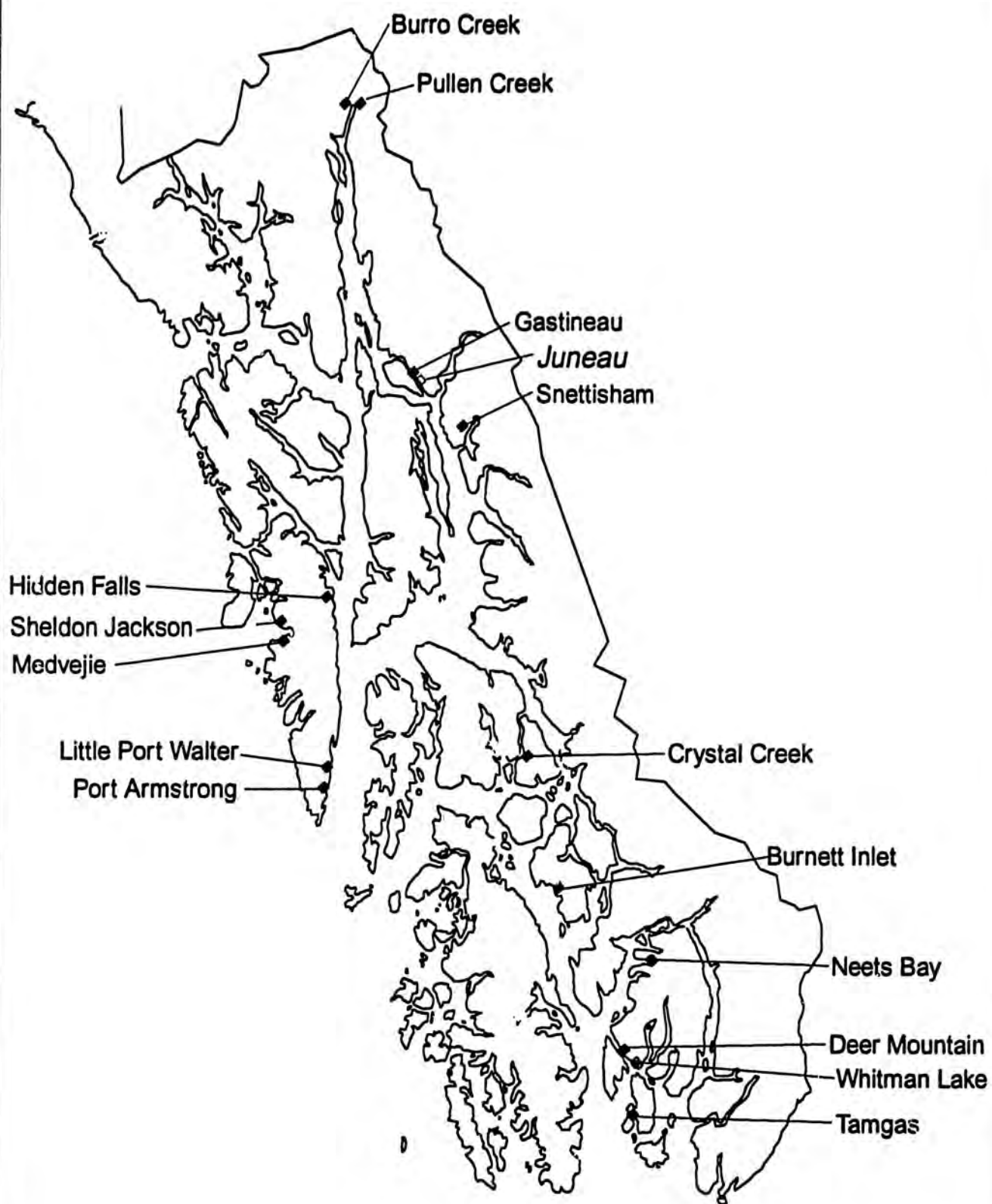
**Alaska Department of Fish and Game
Fisheries Rehabilitation, Enhancement, and Development Division**

Overview of Southeast Alaska Hatchery Chinook Salmon Program

**Report to the Board of Fisheries
(Juneau, March 7, 1992)**

History of Chinook Enhancement in Southeast Alaska

- Started in 1923 in Ketchikan
- Creation of FRED in 1971
- PNP program in 1974
- Chinook Salmon Plan in 1983
 - Guide for enhancement



Chinook Salmon Hatcheries in Southeast Alaska

Pacific Salmon Treaty

- Recognized ongoing enhancement program
- Provided for harvest of Alaskan hatchery chinook above ceilings
- Federal government provided \$20 million for enhancement to mitigate impacts of treaty

Mitigation Funds

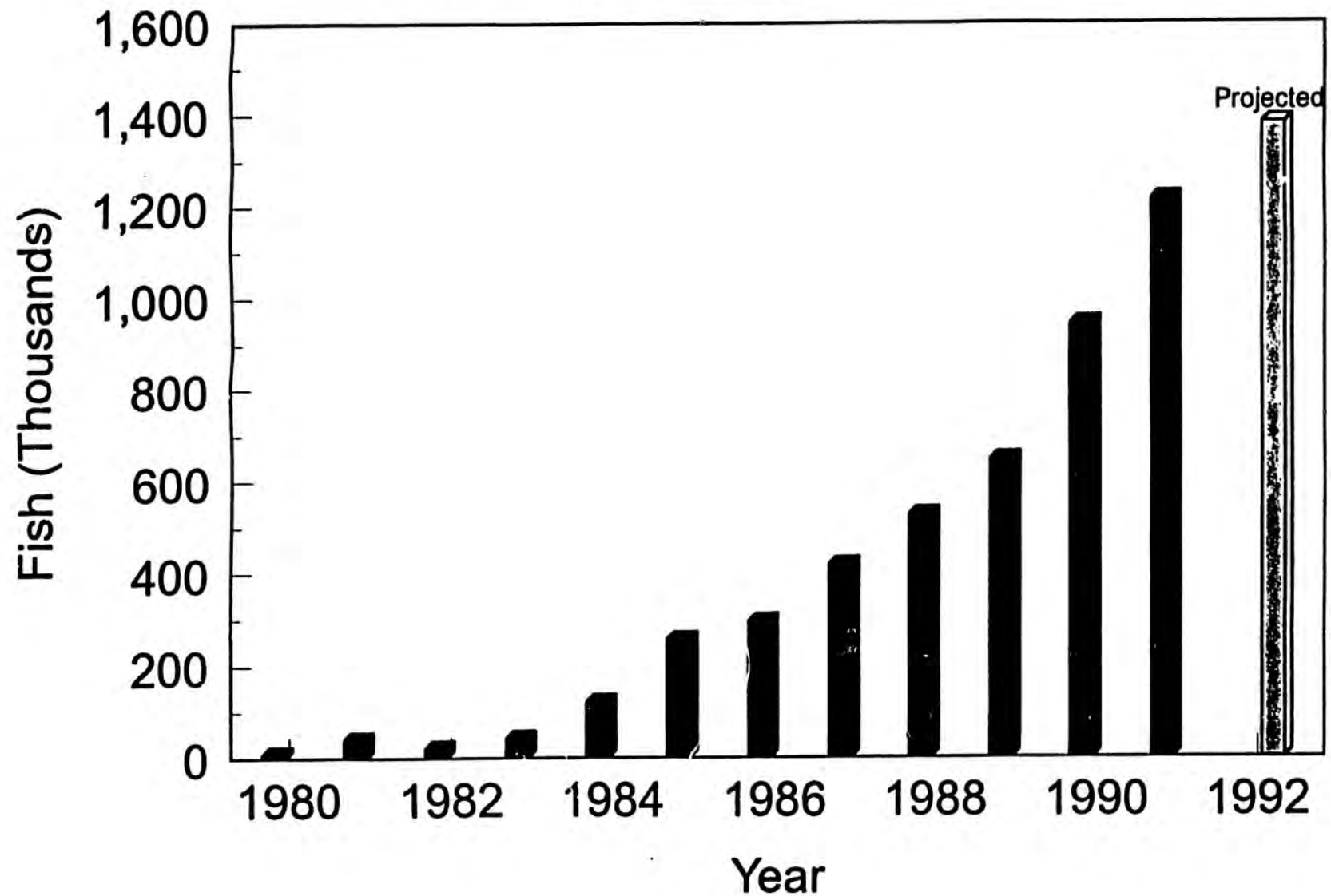
- Generally used to provide facilities for the production of fish
- Intended for mitigation of both troll and net fisheries
- Chinook goal for funds: facilities to produce an additional 100,000 chinook
- Current objective of enhancement program is 100,000 Alaskan hatchery chinook in the hold of trollers

Expenditure of Mitigation Funds

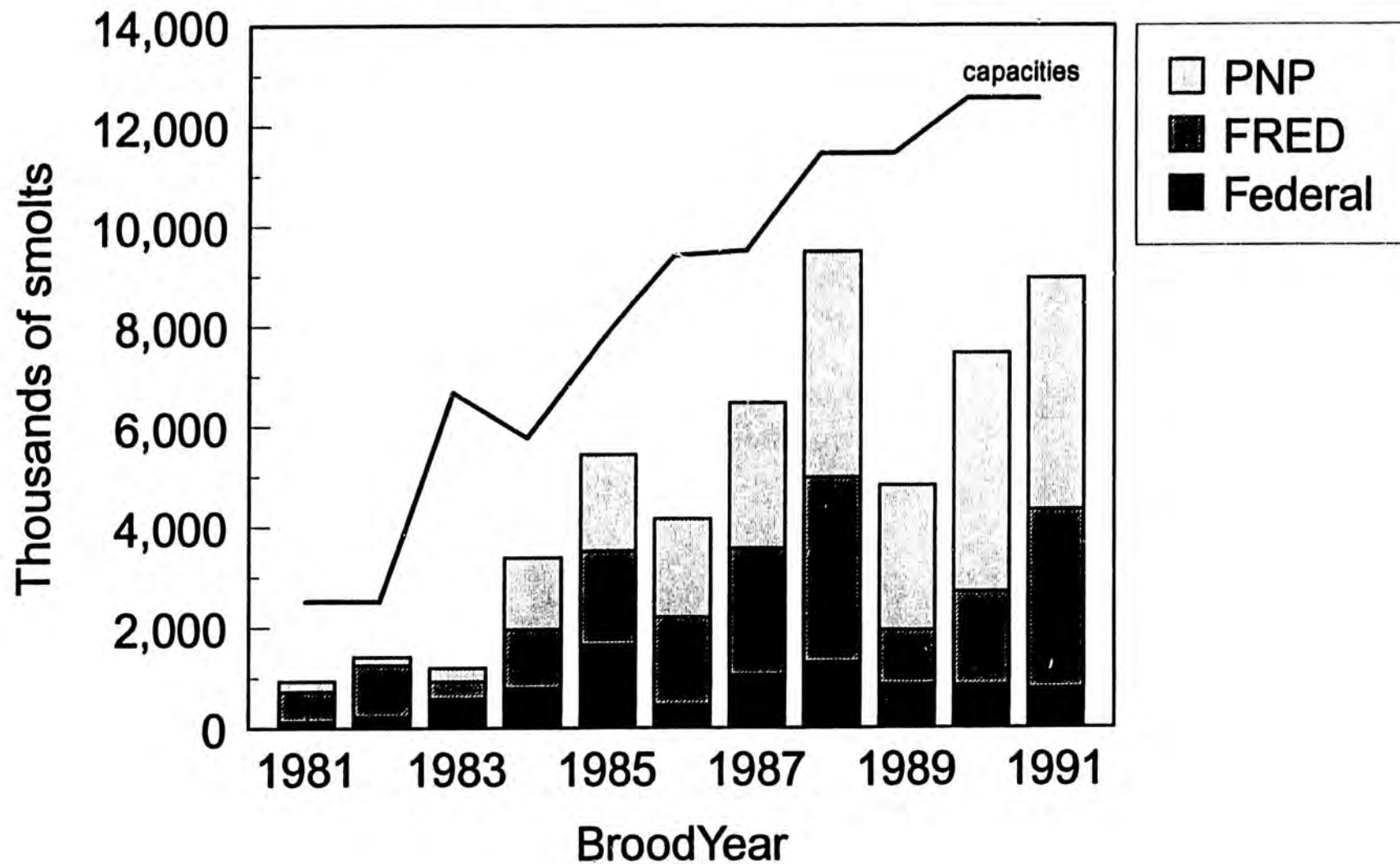
- \$10 million for chinook salmon production
 - \$7.2 million to Aquaculture Associations
 - \$2.8 million to FRED Division
- \$8 million for sockeye and chum salmon production
- \$2 million remaining

Production of Southeast Alaska Hatchery Chinook

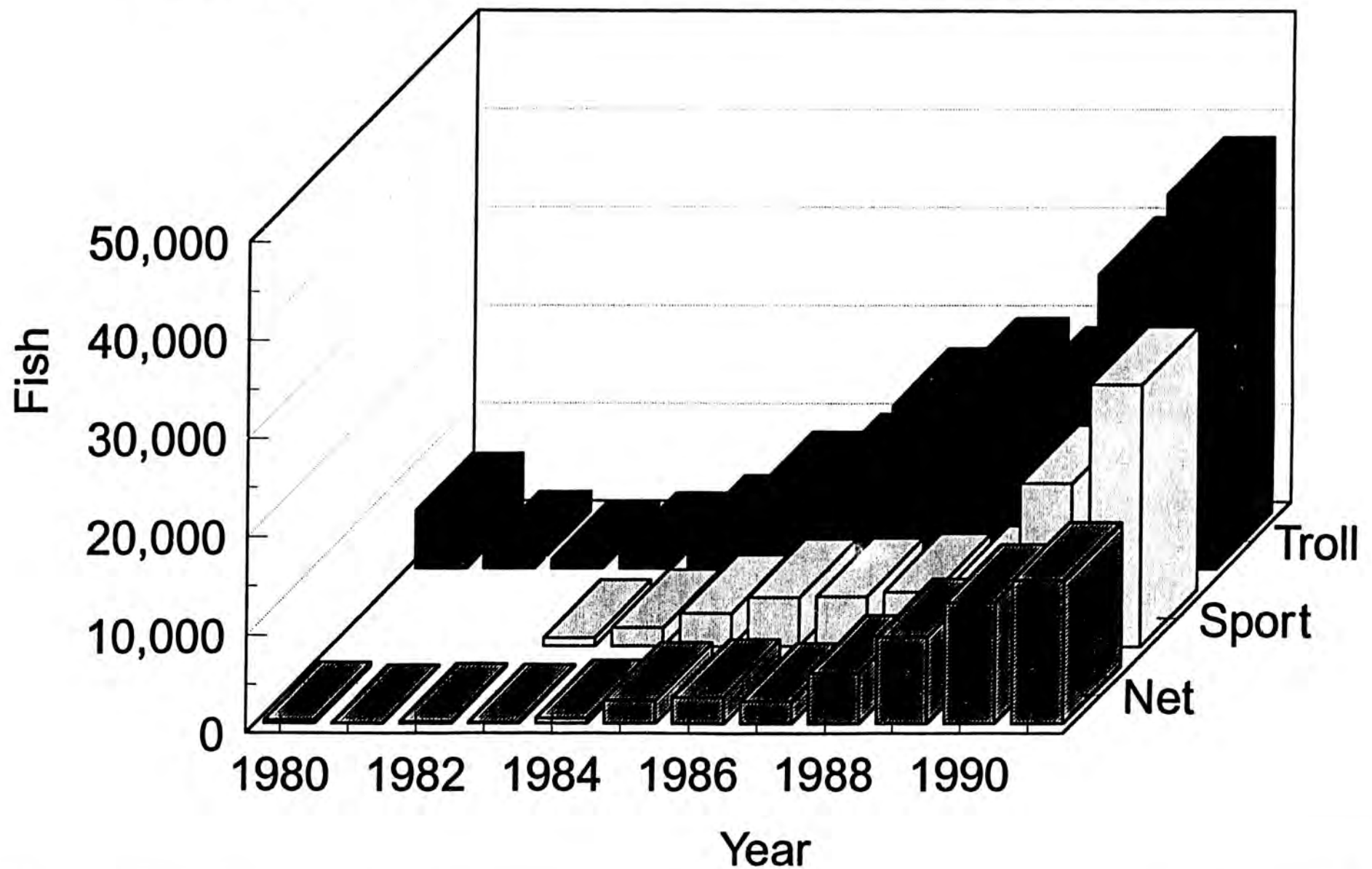
Summary of Total Returns



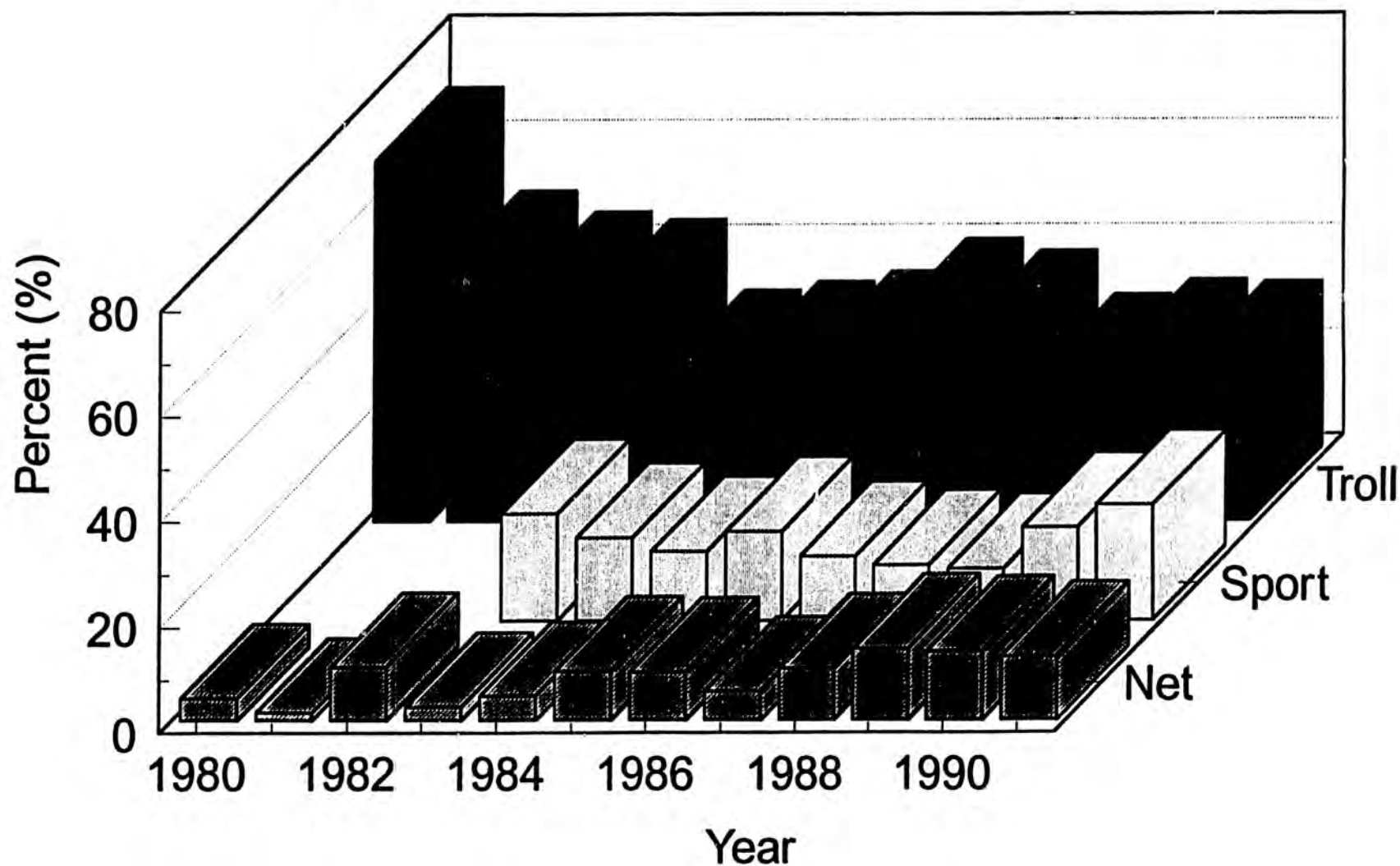
Southeast Alaska Hatchery Smolt Releases and Capacities (age-1 smolts)



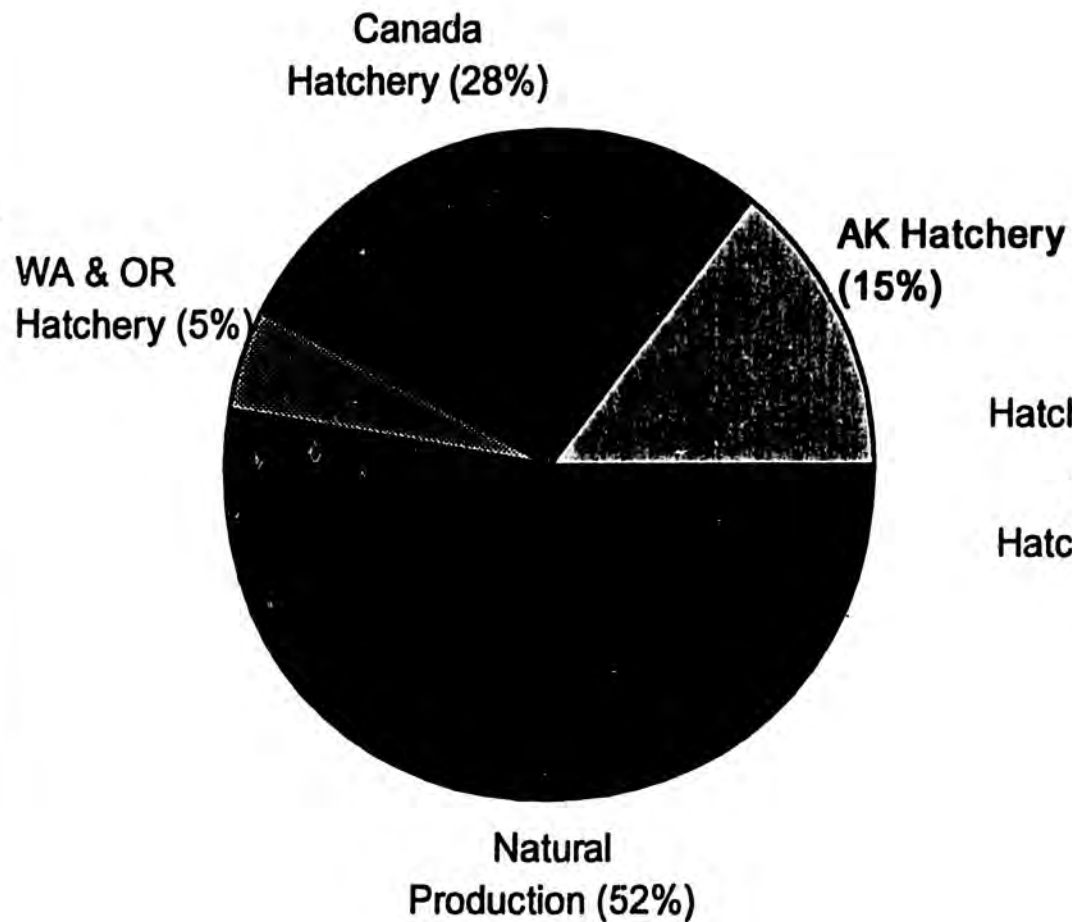
Alaska Hatchery Chinook Caught in Southeast Alaskan Fisheries



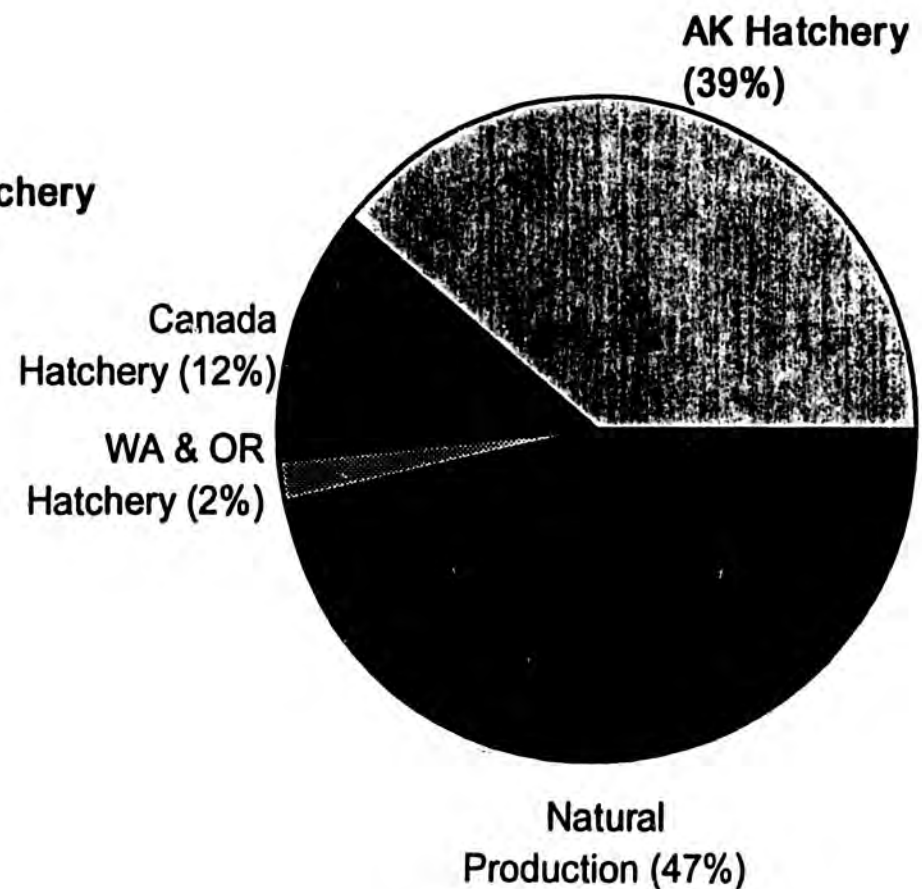
Percentage of Alaskan Hatchery Chinook Caught in Alaskan Fisheries



1991 Southeast Alaska Chinook Catch



Trawl Catch



Sport Catch

Evaluation

- Needed for determining best hatchery techniques
- Coded Wire Tag technology
- FRED Tag Lab
 - Decode tags
 - Maintain database for managers and researchers

Future Direction

- **Production**
 - Numbers of smolts produced
 - Methods of production
- **Harvest Management**
 - Conduct of fisheries
 - Fishing techniques

Summary

- Hatchery produced chinook accounted for roughly half of the 1991 harvest in SE Alaska
- Alaskan hatchery production of chinook is now over 120,000 annually
- Production will continue to increase as adults return from bigger smolt releases
- Goal of 100,000 in the troll hold will need an approach which combines management and hatchery production strategies.
- Sport fisheries will continue to benefit from Alaska hatchery chinook production

Enhancement a comfy deal for Capture Fishery

Let's level the playing field

by Brad Hicks

LATE IN THE 1800s Canadian governments began to experiment with the artificial rearing of salmon eggs and fry. The fish were raised and subsequently released to augment wild stocks and provide a plentiful harvest for sport and commercial fishermen.

Over the next 100 years this system grew in size and value until now a substantial portion of the fishery resource is produced at public expense. Indeed, by the 1990s, the amount of public money spent on enhancement by all levels of government has been estimated at in excess of \$100,000,000 annually.

When the government began to invest even more heavily in fisheries enhancement during the 1960s, '70s and '80s there were also other changes taking place which effectively restricted access to the public fisheries resource. Issuance of new commercial salmon fishing licenses was first limited, and then cut entirely, meaning that the only way new blood could move into the industry was through the purchase of an existing boat with licence attached. Often this meant that the licence was worth more than the boat, in excess of \$100,000 in the case of a seine licence.

The end result was a system where the taxpayer paid a heavy price to produce and manage a resource for a select group within the society. Like other resources?

And while the system is somewhat similar to that for other publicly managed resources such as mining and forestry, there is one major difference - in mining and forestry the taxpayer collects a resource user fee

in the form of royalties and stumpage. This is not the case in the capture fishery where there is not even a serious attempt to recapture the public cost of producing and managing the resource. For instance, an annual fishing licence for a commercial seiner is approximately \$1500 and he does not pay a royalty

**"Perhaps it's time that
the capture fishery
contribute more toward
the cost of production
for its product."**

on the fish he catches even though he may take hundreds of thousands of fish in the course of a season - many of them produced in publicly funded hatcheries.

This, in my estimation, is equivalent to the government purchasing a mountain of coal and placing it on the ground for the mining companies to "extract" at no charge. Sounds a little bizarre doesn't it. Yet this is exactly what appears to be happening with the salmon resource in Canada.

Interestingly, over the past couple of months there has been some public airing of this matter in the British Columbia daily press. The most fascinating piece of information came out of a Master's Degree by John Winton of the University of Washington. He claimed that it can cost as much as \$435.00 to produce an adult chinook salmon at the Quesnel River Hatchery in central B.C. This information was reported

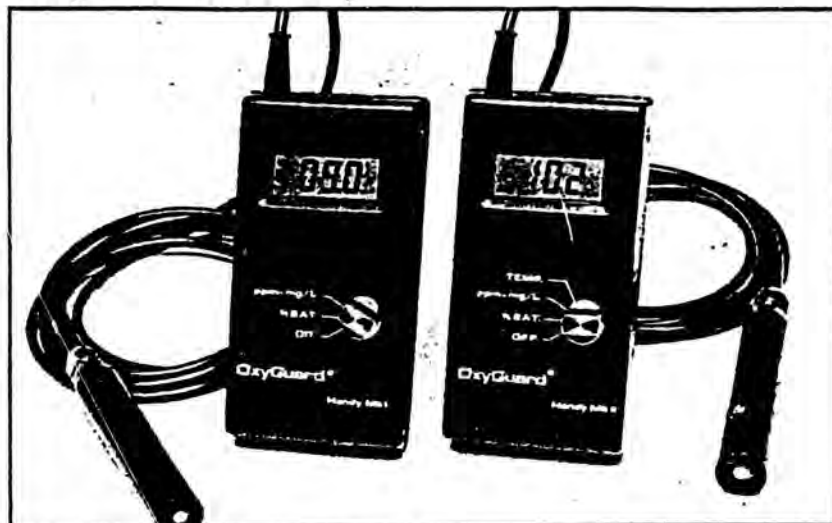
under a *Vancouver Sun* headline which read "Study Pegs Hatchery Salmon at \$435 each." Needless to say this caused more than a little controversy, including a response from a federal fisheries spokesman who said that he could not comment on Winton's calculations because the federal enhancement program uses several other methods to judge its success and the costs were a matter of interpretation.

And, indeed, the Quesnel example may be extreme owing to a number of factors such as species (they grow expensive chinook salmon), location (in the outback) and other costs not born by most B.C. hatcheries. Figures from the federal Salmon Enhancement Program (SEP) estimate a more realistic figure for the cost of each adult, hatchery-reared fish (all species) harvested at about \$10.00.

This means that on the surface there appears to be the potential for some gain if a fish produced for \$10 can be sold for between \$20 and \$30. However, few of the fish captured are the highly valued chinook and, indeed, according to Canadian fisheries statistics for 1990 the average price paid for all wild-caught Pacific salmon was 38¢/lb or about \$2 per piece, based on the total value of the 39 million pieces harvested in 1990. Thus, it would appear that on average the taxpayer is subsidizing the West Coast capture fishery to the tune of about \$8 for each hatchery fish caught.

The figures are even more troubling if we separate chinook salmon from other species. In a letter to the *Vancouver Sun* dated January 24th,

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1992, David Griggs, Director of the Salmonid Enhancement Program for DFO, wrote that it cost approximately \$16 to produce an adult chinook salmon. Furthermore, if we consider that only about half of the number produced are actually harvested, then each hatchery chinook harvested cost the taxpayer about \$32 to produce. Imagine how wealthy the salmon farming industry would be if the federal government contributed \$32 per fish harvested towards our cost of production.

Realistically, however, there are other factors to consider, including the high per fish value of the sportfishery to the economy and the valuable infrastructure built up around the commercial fishery. All the same, perhaps it's time that the capture fishery contribute substantially more toward the cost of production for its product. The alternative is to allow the private sector greater access to the resource base through the development of private salmon ranching. It's worked well in Alaska and Japan and there's no reason to doubt that other parts of the country could benefit from such an arrangement.

Until this issue is resolved, there will be a growing backlash about a situation where a small, comfortable sector of society receives privileged treatment at the taxpayers expense. Some observers have gone so far as to say that it amounts to an unfair industry subsidy that would be penalized heavily in any other sector. It's time for a change. Ω





UNIVERSITY OF ALASKA, FAIRBANKS
Fairbanks, Alaska 99701

Grant and Contract Services
225 Signers' Hall
Fairbanks, Alaska 99775-0840
474-6075

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L.A.A.

May 26, 1992

State of Alaska
Legislative Affairs Agency
PO Box Y
Juneau, Alaska 99811

Project Title: "Salmon Production and Exploitation"

Final financial report of expenditures for RSA EN3127010 in the amount of \$10,000.00. From inception to June 30, 1992.

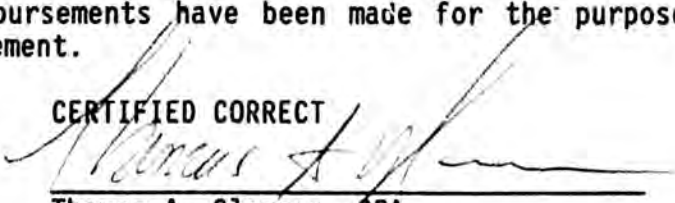
FINAL FINANCIAL REPORT

Cumulative
Charges to Date

Salaries and Wages	\$ 5,759.15
Staff Benefits	1,785.35
Indirect Cost	<u>3,772.18</u>
Total Expense	11,316.68
Less Expenses in Excess of Award	<u>1,316.68</u>
Total Charges Subject To Reimbursement	10,000.00
Total Payment Received	<u>471.52</u>
Net Amount Due University of Alaska Fairbanks	<u>\$ 9,528.48</u>

I certify to the best of my knowledge and belief that this report is true in all respects and that all disbursements have been made for the purpose and conditions of the grant or agreement.

CERTIFIED CORRECT


Thomas A. Gleason, CPA
Accountant, Grant and Contract Services

/gl

cc: 250472

Laura Fenton, School of Fisheries and Ocean Sciences, UAF

Grant & Contract Services
225 Signers' Hall
Fairbanks, Alaska 99775-0840

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APR 15 1992

L.A.A.

04/06/92

Legislative Affairs Agency
Accounting
PO Box Y
Juneau AK 99811

Project Title: Salmon Production & Exploitation

Analysis of costs rendered under Contract RSA EN3127010
in the amount of \$ 10,000.00 from inception to March 31, 1992
voucher number 2.

	Current Charges	Cumulative Charges to Date
SAL & WAGES:	2,399.64	2,639.61
ST. BENEFITS:	743.90	818.29
OVERHEAD:	1,571.74	1,728.90
TOTAL EXPENSE:	4,715.28	5,186.80
Total charges subject to reimbursement	\$4,715.28	\$5,186.80
Total outstanding vouchers		471.52
Net amount this claim		\$4,715.28

OK
William
6/2/92

I certify that to the best of my knowledge and belief all
expenditures reported are for appropriate purposes and in
accordance with the agreement set forth in the application
and award document.

CERTIFIED CORRECT

Thomas A. Gleason
Thomas A. Gleason, CPA
Accountant, Grant & Contract Services

CC: 250472 Please reference this account number in your remittance
School of Fisheries and Ocean

Hatchery RSA's

#31271010 4,813.20

billed new
is bal. of RSA

#31271107 48,000 orig.
pd. 25,000.00
bal. \$22,350.

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05/04/92

Legislative Affairs Agency
Accounting
PO Box 1
Juneau AK 99801

Project Title: Salmon Production - Exploitation

Analysis of costs rendered under Contract RSA EN3107010
in the amount of \$10,000.00 from inception to April 30, 1992
voucher number 3.

	Current Charges	Cumulative Charges to Date
SAL & WAGES:	5,119.54	5,759.15
ST. BENEFITS:	967.06	1,785.35
OVERHEAD:	2,043.20	3,772.18
TOTAL EXPENSE:	8,129.80	11,316.68
Less expenses in excess of award	1,316.68	1,316.68
Total charges subject to reimbursement	34,813.20	\$10,000.00
Total payments received		471.52
Total outstanding vouchers		4,715.28
Net amount this claim		34,813.20

OK
[Signature]
1/8/93

I certify that to the best of my knowledge and belief all expenditures reported are for appropriate purposes and in accordance with the agreement set forth in the application and award document.

CERTIFIED CORRECT

[Signature]
Thomas L. Glassco, CPA
Accountant, Grant & Contract Services

CC: 107472 Please reference this account number in your remittance
School of Fisheries and Ocean

FDE 145-90: EXECUTE RSA

B 0618437 S 0011

RSA NUMBER 3127107
DOCUMENT NUMBER A06184370011
SOURCE RD CODE 31070
EXECUTE AMOUNT 25650.00
DESCRIPTION LONG 25650.00 3-4/92 LEGISLATIVE ANALYSIS OF
THE STATEWIDE SALMON ENHANCEMENT PROGRAM
AR 42845

TRANS CODE MINOR 90

ADDITIONAL AUTH RD 11963

FISCAL PERIOD CODE C
FEDERAL FISCAL YEAR DENOMINATOR

FIN LINE	AMOUNT	NMR
1		
2		
3		
4		

PF1=QUIT 3=SUBMIT 4=BATCH ERRS 5=BASE 6=FINS

OK 6/15/92

McGowan

ASAB1000-01 RRN: 0033672
RSH: 02398 CPD: 05/01/92

DISTRB RD: 11963 D01

STATE OF ALASKA
STATEWIDE ACCOUNTING SYSTEM
1992 RECENT ACTIVITY AUDIT TRAIL REPORT

PAGE: 2
DATE: 05/02/9

DOCUMENT	VND/EMP/DSTRB	DESC	TRANS	WRNT	NUM	SY	CC	PGM	LC	ACCT	DATE	ACTUALS	ENCUMBRANCES	BUDGETS
A06049460009	UAF84080	UNIVERSITY OF	310-10	23023313	92	11001014			11001014	73270	04/13	22350.00	22350.00-	0.0
**** TOTALS FOR AT EX												22350.00	22350.00-	0.0
*** TOTALS FOR CC 11001014												22350.00	22350.00-	0.0
** TOTALS FOR LC 11001014												22350.00	22350.00-	0.0
* TOTALS FOR AR 42845-92												22350.00	22350.00-	0.0

ASAB1000-91 RRH: 0033672
RSH: 02373 CPD: 04/02/92

DISTRB RD: 11963 D01

STATE OF ALASKA
STATEWIDE ACCOUNTING SYSTEM
1992 RECENT ACTIVITY AUDIT TRAIL REPORT

PAGE: 3
DATE: 04/02/9

DOCUMENT	VND/EMP/DSTRB DESC	TRANS	WRNT NUM	SY	CC	PGM	LC	ACCT	DATE	ACTUALS	ENCUMBRANCES	BUDGETS
A05994860001	BILL FOR COMPLETED PER 430-10			92	11001014	41900	11001014	71970	03/11	3300.00	0.00	0.0
XXXX TOTALS FOR AT EX										3300.00	0.00	0.0
XXX TOTALS FOR CC 11001014										3300.00	0.00	0.0
XX TOTALS FOR LC 11001014										3300.00	0.00	0.0
X TOTALS FOR AR 42845-92										3300.00	0.00	0.0

Psychologist studies why hatchery, wild salmon are different

By NICHOLAS K. GERANIOS

THE ASSOCIATED PRESS

ELLENSBURG, Wash. — The patients of psychologist Terry DeVietti don't lie on couches.

They swim naked in a tank of water.

DeVietti is studying the behavior of fish to learn why wild and hatchery salmon have trouble living in the same stream. His findings could help prevent the extinction of wild salmon runs in the Pacific Northwest.

"We find a big difference in the behavior of hatchery fish and wild fish," the Central Washington University professor said.

Hatchery fish are, well, dumber. Less stream-wise. They're also Darwinian wimps, with only a tiny fraction the survival rate of wild fish.

Perhaps as a result of these shortcomings, wild fish often will have nothing to do with the spawn of hatcheries. They often disappear when hatchery fish are added to a stream.

"We don't know exactly why, but we know it happens," DeVietti said.

Central Washington University scientists have erected an 8-foot-long aquarium in the Psychology Building, where they have simulated a natural stream. Into the water go wild and hatchery trout. The differences, captured on videotape, are obvious.

The wild trout spend most of their time under ledges or other cover. They retreat back to the cover after they snatch food. They swim near the bottom of the tank, and conserve energy by resting where the current is weakest. They travel alone.

The hatchery trout ignore cover. They swim near the surface, where they would be easy prey for birds. Sometimes they stick their fins out of the water, like wannabe sharks. They waste energy by fighting currents. They swim in packs.

"A fish that acts that way in the wild is going to be a dead fish," DeVietti said.

Scientists hope to find ways to train hatchery fish to survive in the wild.

The university scientists also took part in a 1991 project by the Washington Department of Wildlife in which a video camera was placed underwater in a natural pool on the Teanaway River. The pool was about a mile above a release point where hatchery fish were planted in the river.

Before hatchery fish were released, the camera showed a healthy ecosystem with stress-free natural fish.

"About a week after hatchery fish were released, all we could find in the pool were hatchery fish," DeVietti said. "The wild fish were gone. We don't know where they went, or why."

There's little mystery about the whereabouts of most hatchery fish. They are dead.

Statistically, only 23 out of every 10,000 hatchery chinook salmon planted, 0.23 percent, reach adulthood, DeVietti said.

That compares with 3 percent to 6 percent of wild fish, he said.

But he does not blame the hatcheries. They do an excellent job of their mission, which is to produce baby fish, DeVietti said.

The problem is those smolts are dumped into a wild environment where they have little chance of surviving. "You could hardly expect a lion or tiger raised in captivity to defend itself or to hunt for food if suddenly turned loose," DeVietti said.

While some scientists think genetics is the answer, DeVietti leans toward conditioning. His theory is that from their earliest development wild fish are taught to use cover.

Hatchery fish are born in concrete raceways with constant water flow and no cover.

"It may be something as simple as adding gravel or other kinds of cover to hatchery rearing tanks," DeVietti said.

ASSOCIATED PRESS

river at Oregon City, Ore., in an area where runs are disappearing.

Salmon fishing became a leading industry in the region.

Now, that's in danger, say business people who fear that when the fish don't show up this year, neither will the tourists who charter boats, rent equipment and stay in hotels.

"Right now, we're looking at a disaster," said Loran Wiese of the Coos County, Ore., Economic Development Department.

No matter how much the salmon season is cut back, there will be no shortage at restaurants and markets. Salmon raised in pens in Norway and Chile have dominated the market for several years.

"There's been such a limitation on catching salmon that most of your restaurants, most of your stores are already used to buying ranch fish," said Scott Adams, manager of Hallmark Fisheries in Charleston, Ore.

ve sturgeon

there is less demand for power, the Bonneville Power Administration would lose money, not only at Libby but at dams downstream on the Columbia River

Alaska Natives sue over Norton Sound chum salmon

THE ASSOCIATED PRESS

STATE OF ALASKA
REIMBURSABLE SERVICES AGREEMENT

AMENDMENT NUMBER

REQUESTING DEPARTMENT LEGISLATIVE AFFAIRS AGENCY	DIVISION LEGISLATIVE OPERATING	SECTION SENATE OPER. BUDGET	LOG NUMBER (ADN) 3127105
SERVICING DEPARTMENT UNIVERSITY OF ALASKA	DIVISION SCHOOL OF FISHERIES &	SECTION OCEAN SCIENCES	LOG NUMBER (ADN)

I. The servicing agency agrees to provide the requesting agency with the following service(s):

PROJECT OR PROGRAM TITLE:

BIOLOGICAL INTERACTIONS OF NATURAL AND ENHANCED FISH STOCKS IN ALASKA WORKSHOP

DESCRIPTION OF SERVICE(S) TO BE PROVIDED. IF THIS IS AN RSA AMENDMENT, ALSO DESCRIBE SPECIFIC PURPOSE OF AMENDMENT.

TO CONDUCT A WORKSHOP TO EXAMINE AND EVALUATE THE GENETIC & BEHAVIORIAL CHARACTERISTICS OF NATURAL AND ENHANCED STOCKS OF SALMONID FISHES AS THEY RELATE TO HATCHERY ISSUES IN ALASKA. THE WORKSHOP WILL INCLUDE A FINAL REPORT ON THE WORKSHOPS SESSION, WHICH WILL BE USEFUL TO THE LEGISLATIVE HATCHERY RESEARCH PROJECT, SENATE SPECIAL COMM. ON DOMESTIC & INTERNATIONAL FISHERIES AND TO INDIVIDUAL MEMBERS OF THE LEGISLATURE.

II. Terms and mechanics of reimbursement:

Billing Address:

- ☒ Payment upon receipt of interagency billing
☐ Payment upon completion of service(s).
☐ Other (Specify):

LEGISLATIVE AFFAIRS AGENCY
ACCOUNTING
P.O. BOX Y
JUNEAU, AK 99811

DATE WORK TO COMMENCE:

OCTOBER 7, 1991

COMPLETION DATE:

JUNE 30, 1992

BILLING RD CODE: 31070

PHONE: 465-3852

III. Schedule of maximum costs to be incurred by the Servicing Agency:

	ORIGINAL AGREEMENT	PREVIOUS AMENDMENTS	THIS AMENDMENT	TOTAL
Personal Services	\$	\$	\$	\$
Travel	\$ 2487.50	\$	\$	\$ 2487.50
Contractual	\$ 2487.50	\$	\$	\$ 2487.50
Supplies	\$	\$	\$	\$
Equipment	\$	\$	\$	\$
Land & Buildings	\$	\$	\$	\$
Grants	\$	\$	\$	\$
Other (itemize):	\$	\$	\$	\$
TOTAL	\$ 4975.00	\$	\$	\$ 4975.00

IV. Budgeting and accounting information:

REQUESTING AGENCY:

1. This agreement is documented in FY 92 Capital/Operating budget. ☒ No ☐ Yes, page _____.
2. Financial coding to be charged 31922019 Continuing funds ☒ No ☐ Yes Authority _____
Continuing funds ☐ No ☐ Yes Authority _____
3. Encumbrance document number RS 3127105
4. Date funds lapse 6/30/92
5. Federal Funds ☒ No ☐ Yes, Amount \$ _____
Federal Agency / Program / CFDA No. / Grant or Contract No. _____

SERVICING AGENCY:

1. This agreement is documented ☐ No ☐ Yes. If yes, in FY _____ Capital/operating budget page _____.

V. Approvals & Certification: The requesting agency and servicing agency agree to the terms and conditions above. In addition, the requesting agency certifies: That sufficient funds are encumbered to pay this obligation or that there is a sufficient unencumbered balance in the appropriation cited to cover this obligation. I am aware that to knowingly make or allow false entries or alterations on a public record, or knowingly destroy, mutilate, suppress, conceal, remove or otherwise impair the verity, legibility or availability of a public record constitutes tampering with public records punishable under AS 11.56.815-820. Other disciplinary action may be taken up to and including dismissal.

REQUESTING AGENCY AUTHORIZED SIGNATURE 	NAME, PRINTED: WARREN W. ENDICOTT, EXEC. DIRECTOR	DATE: 10/14/91
SERVICING AGENCY AUTHORIZED SIGNATURE	NAME, PRINTED: CARY LOU, DIRECTOR GRANTS & CONTRACTS	DATE:
OMB AUTHORIZED SIGNATURE	NAME, PRINTED:	DATE:

PRIVATE NONPROFIT HATCHERY PROGRAM

STATUS SHEET

Attached is a listing of Private Nonprofit (PNP) salmon hatchery permits issued and the Scientific or Educational (Sci/Ed) permits for PNP research projects, school district aquaculture programs, and other research projects (under the auspices of ADF&G) that have been issued in 1991 by Fisheries Rehabilitation and Enhancement Development (FRED) Division. This list is organized according to region and contains information regarding location, production status, and numbers of eggs or fish permitted.

To date, 30 PNP salmon hatchery permits have been issued and three permits have been given up. Four permits were issued in 1988 to regional aquaculture associations for operation of state-owned hatcheries. Twenty-one of the permitted hatcheries are currently in operation. Twenty of the permitted hatcheries had adult returns in 1990.

April 1991

PRIVATE NONPROFIT HATCHERY PROGRAM

<u>REGION</u>	<u>STATUS</u>	<u>LOCATION</u>	<u># OF EGGS OR FISH PERMITTED</u>
<u>Southern Southeast</u>			
1. Southern Southeast Regional Aquaculture Association (SSRAA) 1621 Tongass Avenue, #103 Ketchikan, AK 99901 Office (907)225-9605 Whitman Lake Hatchery 225-2635 Neets Bay Hatchery 247-8790 Attn: Don Amend, Gen Mgr Bill Halloran, Production Mgr Mike Blanchard, Special Proj. Mgr Rod Neterer, Neets Bay Hatchery Manager Jay Creasy, Whitman Lake Hatchery Manager	Regional Association PNP Permit #8, Operational Issued 3/9/78 PNP Permit #19, Operational Issued 6/17/83 PNP Permit #24, Operational Issued 7/1/86	Ketchikan Whitman Lake, Ketchikan Neets Bay, Revillagigedo Island Beaver Falls, Ketchikan	45.8 million chum 3.4 million coho 1.5 million chinook 2.5 million sockeye 60 million chum 5 million coho 4 million chinook 1.5 million sockeye .04 million chinook
2. Alaska Aquaculture, Inc. P. O. Box 1288 Wrangell, AK 99929 Office (907)874-2250 Attn: Tod A. Jones 874-2013	PNP Permit #5, Operational Issued 4/28/76	Burnett Inlet, Etolin Is Wrangell	40 million pink 20 million chum .25 million coho .75 million chinook
3. Meyers Chuck Aquaculture Assn 5001 Nottingham Way Anchorage, AK 99501 Attn: Robert M. Meyer 261-4625	PNP Permit #10, Not Operational Issued 7/22/79	Meyers Creek, Meyers Chuck	5 million pink 1 million coho 5 million chum
4. Bell Island American Aquaculture Corp. P.O. Box 6338 Ketchikan, AK 99901 Attn: Robert Campbell 225-8751	PNP Permit #30, Not Operational Issued 4/06/90	Bell Island Creek Bell Island Behm Canal	65,000 chinook 16,800 coho 8,000 steelhead trout
5. Aquaculture, Inc. P. O. Box 1499 Wrangell, AK 99929 Attn: Robin Larsson 874-3458	PNP Permit #22, Not Operational Issued 4/17/83	Crittenden Creek, Wrangell	12 million chum 3 million pink

PRIVATE NONPROFIT HATCHERY PROGRAM

<u>REGION</u>	<u>STATUS</u>	<u>LOCATION</u>	<u># OF EGGS OR FISH PERMITTED</u>
<u>Southern Southeast</u>			
6. Gro-Fish, Inc. 1435 "N" Street Anchorage, AK 99501 Attn: Michael A. Brogan	PNP Permit #21, Not Operational Issued 2/2/84	Santa Anna Creek, Ernest Sound	3 million pink 10 million chum
<u>Northern Southeast</u>			
1. Northern Southeast Regional Aquaculture Association (NSRAA) 1308 Sawmill Creek Road Sitka, AK 99835 Office (907)747-6850 FAX 747-1470 Medvejie Creek Hatchery 747-5863 Hidden Falls Hatchery 788-3215 Attn: Peter Esquiro, General Mgr	Regional Association PNP Permit #16, Operational Issued 8/17/81	Sitka Medvejie Creek, Sitka	38 million chum 3.3 million coho 2.0 million chinook .3 million pink
Bruce Bachen, Operations Mgr Steve Reifentstahl, Field Projects Manager	PNP Permit #23, Operational Issued 12/19/85	Port Camden, Kuiu Island	10 million chum
Dail Hurdlow, Mgr Medvejie Tim Linley, Mgr Hidden Falls	PNP Permit #28, Operational Issued 6/22/88	Hidden Falls, Baranof Island	88 million chum 3.5 million chinook .25 million coho
2. Sheldon Jackson College Aquaculture Program P. O. Box 479 Sitka, AK 99835 Office 747-5254 Hatchery 747-5209 Attn: Mel Seifert Bill Coltharp, Manager Message 747-5222	PNP Permit #3, Operational Issued 4/29/75	Indian River, Sitka	20 million pink and chum .15 million coho .1 million chinook .02 million steelhead trout
3. Douglas Island Pink and Chum, Inc. (DIPAC) 2697 Channel Drive Juneau, AK 99801 Office: (907)463-5114 FAX: (907)463-3213 Attn: Ladd Macanley	PNP Permit #6, Operational Issued 7/30/76 PNP Permit #11, Operational Issued 9/19/79	Kowee Creek, Juneau Sheep Creek, Juneau	70,000 steelhead trout 40 million pink and chum .05 million coho

PRIVATE NONPROFIT HATCHERY PROGRAM

<u>REGION</u>	<u>STATUS</u>	<u>LOCATION</u>	<u># OF EGGS OR FISH PERMITTED</u>
<u>Northern Southeast</u>			
DIPAC Cont. Attn: Ladd Macaulay Kowee Creek Hatchery 586-4041 Sheep Creek Hatchery 586-3663 John Ennor, Hatchery Manager Gastineau Hatchery 463-5114 Rich Mattson, Pink and Chum Manager Rick Focht, Chinook and Coho Manager	PNP Permit #25, Operational Issued 6/3/87	Gastineau Channel, Juneau	50 million pink 111 million chum 1 million coho
			.2 million chinook
4. Kake Nonprofit Fisheries Corporation P.O. Box 523 Kake, AK 99830 Gunnuk Creek Hatchery 785-6460 Attn: Brock Meredith Steve Andison 789-2914	PNP Permit #7, Operational Issued 4/1/77	Gunnuk Creek, Kake	26 million pink and chum
5. Burro Creek Farms P. O. Box 455 Skagway, AK 99840 Hatchery 983-2355 Attn: Eugene W. Richards	PNP Permit #12, Operational Issued 5/23/80	Burro Creek, Skagway	10 million pink and chum 50,000 coho 50,000 chinook
6. Armstrong-Keta, Inc. P. O. Box 21990 Juneau, AK 99802 Office 586-3443 Port Armstrong Hatchery 568-2228 Port Armstrong via Port Alexander 99836 Attn: Bart Watson - 586-4139 Bob Lium - 586-1164 Wm. Ritchie Phillips, Hatchery Mgr.	PNP Permit #13, Operational Issued 2/23/81	Port Armstrong, Baranof Island	110 million pink 10 million chum .25 million chinook .5 million coho
7. Angoon Aquaculture Assoc, Inc. P. O. Box 138 Angoon, AK 99820 Office 788-3411 Attn: Martha Jack	PNP Permit #18, Not Operational Issued 8/5/82	Favorite Bay, Angoon	7.5 million pink 20 million chum 1.5 million coho

PRIVATE NONPROFIT HATCHERY PROGRAM

<u>REGION</u>	<u>STATUS</u>	<u>LOCATION</u>	<u># OF EGGS OR FISH PERMITTED</u>
<u>Prince William Sound</u>			
1. Prince William Sound Aquaculture Corporation (PWSAC) P. O. Box 1110 Cordova, AK 99574 Office 424-7511 or 424-7512 FAX (907) 424-7514 AFK Hatchery 573-5136 Attn: Bruce Suzumoto, President Jeff Olsen, Operations Manager John McMullen, Special Projects Manager Dan Warren, Capital Projects Manager (274-6066) Eric Prestigard, Assistant Operations Mgr. Howard Ferren, Planner	Regional Association PNP Permit #2, Operational Issued 9/29/75 PNP Permit #20, Operational Issued 6/17/83 PNP Permit #26, Operational Issued 6/22/88	Cordova Port San Juan, Evans Island Esther Lake Cannery Creek	150 million pink 13 million chum 211 million pink 111 million chum 4 million chinook 4 million coho 31 million sockeye 147 million pink 5 million chum
2. NERKA, Inc. P. O. Box 80165 Fairbanks, AK 99708 Attn: Dr. Jack M. Van Hyning	PNP Permit #1, Not Operational Issued 9/19/75 479-2476	Perry Island	10 million pink 10 million chum
3. Valdez Fisheries Development Association P.O. Box 125 Valdez, AK 99686 Office 835-4874 Hatchery 835-5947 Attn: Jason Wells, Project Director Paul McCollum, Manager	PNP Permit #15, Operational Issued 6/26/81	Solomon Gulch, Valdez	156 million pink 18 million chum 2 million coho .3 million chinook

REGION	STATUS	LOCATION	# OF EGGS OR FISH PERMITTED
<u>Cook Inlet</u>			
1. Cook Inlet Aquaculture Assn HC 2, Box 849 Soldotna, AK 99669-9707 Office (907)283-5761 FAX 283-9433 Eklutna Hatchery 745-5692 Trail Lakes Hatchery 288-3688 Attn: Tom Mears	Regional Association PNP Permit #17, Operational Issued 2/8/82 PNP Permit #27, Operational Issued 6/22/88	Soldotna Eklutna hydroelectric project, Matanuska Valley Trail Lakes, Kenai Peninsula	20 million pink and chum 1.1 million .1 million 30 million sockeye 6 million coho 4 million chinook
<u>Bristol Bay</u>			
1. Bristol Bay Regional Aquaculture Association P.O. Box 82 Dillingham, AK 99576 Attn: Jim Bingman, President	Regional Association	Dillingham	No hatcheries
<u>Alaska Peninsula</u>			
1. Chignik Regional Aquaculture Association P.O. Box 1397 Seward, AK 99664 Attn: Charles McCallum, President Lois Munson, Registered Agent	Regional Association		No hatcheries
<u>Arctic/Yukon/Kuskokwim</u>			
1. Lower Yukon/Kuskokwim Regional Aquaculture Association General Delivery Russian Mission, AK 99657 Attn: John Massey	Inactive Regional Association	Bethel	No hatcheries

REGION	STATUS	LOCATION	# OF EGGS OR FISH PERMITTED
<u>Kodiak</u>			
1. Kodiak Regional Aquaculture Association (KRAA) P.O. Box 3407 Kodiak, AK 99615 Office (907)486-6555 Attn: Oliver Holm, President Larry Malloy, Executive Director Norma Holt, Admin. Assistant	Regional Association PNP Permit #29, Operational Issued 7/5/88	Kodiak Kitoi Bay, Afognak Island	Permitted for cost recovery only.

SCIENTIFIC OR EDUCATIONAL PERMITSSouthern Southeast

1. Southern Southeast Regional Aquaculture Association 1621 Tongass Avenue, #103 Ketchikan, AK 99901 Attn: William Halloran	Sci/Ed Permit F-91-001	Ketchikan	950 sockeye smolt will be marine net pen reared to age one year. Growth and survival monitored to assess this technique.
20	Sci/Ed Permit F-91-030	Beaver Falls Hatchery	30,000 chinook smolt to experiment producing zero age chinook salmon smolt using heat exchanger technology, to determine if an economic method of accelerated growth can be developed with a positive benefit-cost ratio.
	Sci/Ed Permit F-91-031	Unnamed lake, Neets Bay	Collect up to a total of 120 aggregate of cutthroat, Brook, Dolly Varden, rainbow trout, and/or coho salmon for pathology screening to assess the feasibility of using the lake for a coho or chinook salmon lake stocking project.

REGION	STATUS	LOCATION	# OF EGGS OR FISH PERMITTED
<u>SCIENTIFIC OR EDUCATIONAL PERMITS</u>			
<u>Southern Southeast</u>			
2. Craig Elementary School P.O. Box 800 Craig, AK 99921 Attn: Nola Kathleen	Sci/Ed Permit F-91-006	Craig	500 coho salmon eggs to obtained from Klawock Hatchery and reared in in a classroom incubati project. Resultant f are to be released Klawock River under ADF supervision.
3. Scott Walker, Biologist Commercial Fisheries Division Alaska Department of Fish and Game 2030 Sea Level Drive #205 Ketchikan, AK 99901	Sci/Ed Permit F-91-008	Ketchikan	50 chinook salmon eggs be obtained from Deer Mountain Hatchery and rear in a home/classroom incubation project. Resultant fry are to released at Ketchik Creek under ADF supervision.
4. Petersburg High School P.O. Box 289 Petersburg, AK 99833 Attn: Jack Eddy, Jr.	Sci/Ed Permit F-91-029	Petersburg	50 adult pink salmon t be obtained from Five Mi Creek for egg take purpose Eggs are incubated at t school hatcher Resultant fry a released into Sandy Bee and City Creeks aft authorized by ADF Pathology Lab staff a under supervision ADF&G.
5. USFS, Misty Fjords and ADF&G FRED Division 3031 Tongass/ 2030 Sea Level Drive Ketchikan, AK 99901 Attn: Scott Russell Carol Denton	Sci/Ed Permit F-91-042	Bryce Creek tributary to Salmon River, Hyder.	1,000 coho salmon fry be obtained from Fish Cre and transferred to Bry Creek.

<u>REGION</u>	<u>STATUS</u>	<u>LOCATION</u>	<u># OF EGGS OR FISH PERMITTED</u>
<u>SCIENTIFIC OR EDUCATIONAL PERMITS</u>			
<u>Northern Southeast</u>			
1. Northern Southeast Regional Aquaculture Association 1308 Sawmill Creek Road Sitka, AK 99835 Attn: Richard Crone Lon Garrison Steve Reifenstuhl	Sci/Ed Permit F-91-012	Deer Lake and others	All salmon species, various amounts allowed to be capture and collected.
	Sci/Ed Permit F-91-016	24 Mile, Haines	500,000 chum salmon fry are to be trapped, enumerated, and released unharmd.
	Sci/Ed Permit F-91-017	Herman Creek, Haines	1,200,000 chum salmon fry are to be trapped, enumerated, and released unharmd.
	Sci/Ed Permit F-91-036	Green Lake, Silver Bay	60 Brook trout for pathology sampling.
2. USDA Forest Service 8465 Old Dairy Road Juneau, AK 99801 Attn: Don Martin	Sci/Ed Permit F-91-019	Davidson Creek	200 adult coho salmon to be taken from Fish Creek. Eggs will be incubated at Snettisham Hatchery. Resultant fry will be released into Davidson Creek. Out-migration studies are planned.
3. USDA Forest Service P.O. Box 135 Hoonah, AK 99829 Attn: John McDonell	Sci/Ed Permit F-91-044	Suntaheen Creek	5,500 coho salmon fry to be obtain from lower Suntaheen Creek and released in upper Suntaheen Creek above a barrier. CWT is being done.
4. USDA Forest Service P.O. Box 135 Hoonah, AK 99829 Attn: John McDonell	Sci/Ed Permit F-91-045	Game Creek	10,000 coho salmon fry to be obtained from lower Game Creek and released into upper Game Creek above a waterfall into newly available habitat.

PRIVATE NONPROFIT HATCHERY PROGRAM

<u>REGION</u>	<u>STATUS</u>	<u>LOCATION</u>	<u># OF EGGS OR FISH PERMITTED</u>
<u>SCIENTIFIC OR EDUCATIONAL PERMITS</u>			
<u>Northern Southeast</u>			
5. USDA Forest Service P.O. Box 135 Hoonah, AK 99829 Attn: John McDonell	Sci/Ed Permit F-91-046	Game Creek and Suntaheen Creek	60 adult coho salmon to be obtained from lower Game Creek for an egg take. Eggs will be incubated at Medvejie Hatchery. Resultant fry will be released into upper Suntaheen Creek. CWT is being done.
<u>Prince William Sound</u>			
1. University of Alaska Seward Marine Center P.O. Box 730 Seward, AK 99664 Attn: Dr. Sven Ebbesson	Sci/Ed Permit F-91-028	Seward	2000 coho presmolt to be obtained from Crooked Creek or Trail Lakes Hatcheries. Coho will be sacrificed for experimental purposes.
<u>Cook Inlet</u>			
1. Houston Junior/Senior High School Mat-Su School Dist. 125 W. Evergreen Palmer, AK 99645 Attn: Gary Moore	Sci/Ed Permit F-91-004	Palmer	250 coho salmon eggs are be obtained from Big Lake Hatchery and reared in a classroom incubation project. Resultant fry will be released into Rocky Lake w/supervision.
2. Palmer High School 1170 Arctic Avenue Palmer, AK 99645 Attn: Nancy Sallee Patricia Chesbro	Sci/Ed Permit F-91-005	Palmer	250 coho salmon eggs are to be obtained from Big Lake Hatchery and reared in a classroom incubation project. Resultant fry will be released into Rocky Lake under supervision of ADF&G.

PRIVATE NONPROFIT HATCHERY PROGRAM

<u>REGION</u>	<u>STATUS</u>	<u>LOCATION</u>	<u># OF EGGS OR FISH PERMITTED</u>
<u>SCIENTIFIC OR EDUCATIONAL PERMITS</u>			
<u>Cook Inlet</u>			
3. Susitna Elementary School Anchorage School District 7500 Tyone Court Anchorage, AK 99504 Attn: David A. Gillam	Sci/Ed Permit F-91-007	Anchorage	250 coho salmon eggs are to be obtained from Big Lake Hatchery and reared in a classroom incubation project. Resultant fry will be released into Waldon Pond under supervision of ADF&G.
4. East High School Anchorage School District 4025 East Northern Lights Blvd Anchorage, AK 99508 Attn: Jan Heinrich	Sci/Ed Permit F-91-010	Anchorage	500 coho salmon fingerling are to be obtained from Fort Richardson Hatchery to be classroom experiments. The fish will be destroyed.
5. Colony Middle School Mat-Su School District 125 W. Evergreen Palmer, AK 99645 Attn: John Brown	Sci/Ed Permit F-91-011	Palmer	250 coho salmon eggs are to be obtained from Big Lake Hatchery and reared in a classroom incubation project. Resultant fry will be released into Rocky Lake under supervision of ADF&G.
6. Girdwood Junior High School Anchorage School District P.O. Box 187 Girdwood, AK 99587 Attn: Mary Klopfer	Sci/Ed Permit F-91-013	Girdwood	1,000 eyed coho eggs to be obtained from Elmendorf Hatchery and reared in a classroom incubation project. Resultant fry will be released into Portage Valley Lake under supervision of ADF&G.
7. Wasilla High School 701 Bogard Road Wasilla, AK 99687 Attn: Matt Weaver	Sci/Ed Permit F-91-014	Wasilla	250 coho salmon eggs are to be obtained from Big Lake Hatchery and reared in a classroom incubation project. Resultant fry will be released into Rocky Lake under supervision of ADF&G.

PRIVATE NONPROFIT HATCHERY PROGRAM

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<u>SCIENTIFIC OR EDUCATIONAL PERMITS</u>			
<u>Cook Inlet</u>			
8. Homer Intermediate School 360 W. Pioneer Ave Homer, AK 99603 Attn: Mike Cline Bill Morisette	Sci/Ed Permit F-91-015	Homer	250 pink salmon eggs are to be obtained from Tutka Hatchery and reared in a classroom incubation project. Resultant fry will be released at Homer Spit under supervision of ADF&G.
9. Chugiak High School P.O. Box 770218 Eagle River, AK 99577 Attn: Andrew Sullivan	Sci/Ed Permit F-91-018	Eagle River	250 coho salmon eggs are to be obtained from Big Lake Hatchery and reared in a classroom incubation project. Resultant fry will be released at Waldon Pond under supervision of ADF&G.
10. Homer High School Kenai Peninsula Borough School District 600 E Fairview Homer, AK 99603 Attn: Al Poindexter	Sci/Ed Permit F-91-023	Homer	1,000 pink salmon eggs are to be obtained from Tutka Hatchery and reared in a classroom incubation project. Resultant fry will be released at Homer Spit under supervision of ADF&G.
11. Port Graham Village Council Port Graham, AK 99603 Attn: Elenore McMullen, Chief	Sci/Ed Permit F-91-026	Port Graham	250,000 eyed pink salmon eggs obtained from the Tutka Hatchery and reared at Port Graham. To determine the potential of a production pink salmon hatchery in Port Graham. Resultant fry will be released in Port Graham Bay.

PRIVATE NONPROFIT HATCHERY PROGRAM

<u>REGION</u>	<u>STATUS</u>	<u>LOCATION</u>	<u># OF EGGS OR FISH PERMITTED</u>
<u>SCIENTIFIC OR EDUCATIONAL PERMITS</u>			
<u>Cook Inlet</u>			
12 Big Lake Elementary Mat-Su School District P.O. Box 520049 Big Lake, AK 99687 Attn: Theresa Slaven	Sci/Ed Permit F-91-027	Big Lake	250 coho salmon eggs to be obtained from Big Lake Hatchery and reared in a classroom incubation project. Resultant fry will be released at Rocky Lake under supervision of ADF&G.
13 Inlet View Elementary School 1219 "N" Anchorage, AK 99501 Attn: John Butler Ed Brewer	Sci/Ed Permit F-91-033	Anchorage	50 coho salmon eggs to be obtained from Elmendorf Hatchery and reared in a classroom incubation project. Resultant fry will be destroyed.
14 Gruening Middle School Anchorage School District Lee Street Eagle River, AK 99577 Attn: Clifford Johnson	Sci/Ed Permit F-91-040	Eagle River, AK	250 coho salmon eggs to be obtained from Big Lake Hatchery and reared in a classroom incubation project. Resultant fry will be released into Waldon Pond under supervision of ADF&G.
<u>Interior</u>			
1. Delta/Greely School District Delta Junction, AK 99137 Attn: Rick Johnson	Sci/Ed Permit F-91-024	Delta Clearwater River	8 adult coho salmon are to taken for egg take at Delta Delta Clearwater River. Eggs will be incubated in classroom incubation project. Resultant fry will be released back into Delta Clearwater River under supervision of ADF&G.

PRIVATE NONPROFIT HATCHERY PROGRAM

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<u>SCIENTIFIC OR EDUCATIONAL PERMITS</u>			
<u>Interior</u>			
2. North Pole Middle School Fairbanks North Star Borough School District 1300 Minnie Street Fairbanks, AK 99701 Attn: Jeffrey James Jacobson	Sci/Ed Permit F-91-025	Delta River	10 adult chum salmon are to be taken for egg take at Delta River. Eggs will be incubated at the school hatchery. Resultant fry will be released into the Delta River under supervision of ADF&G.
3. Cominco Alaska, Inc. Red Dog Mine P.O. Box 1230 Kotzebue, AK 99752 Attn: Lisa Parker	Sci/Ed Permit F-91-032	Red Dog Creek	1000 Arctic char and 100 Rainbow trout to be obtained from Fort Richardson and Clear Hatcheries. Fish are used in continuous flow-through biomonitoring facility as required by NPDES permit AD-003865-2.
4. Russian Mission School Lower Yukon School District P.O. Box 90 Russian Mission, AK 99657 Attn: Steve Hackett	Sci/Ed Permit F-91-041	Russian Mission, AK	60 coho fry to be obtained from Fort Richardson Hatchery and reared in a classroom incubation project. The fry will be destroyed.
<u>Alaska Peninsula</u>			
1. Aleutian East Borough School District P.O. Box 429 Sand Point, AK 99661 Attn: Ray Verg-in	Sci/Ed Permit F-91-002	Humbolt Creek, Sand Point	10 adult coho salmon taken for eggs to be incubated in an instream incubator. This is a district high school program. Some eggs will be kept in a classroom aquarium to monitor development and record data. The later resultant fry will be destroyed.

PRIVATE NONPROFIT HATCHERY PROGRAM

<u>REGION</u>	<u>STATUS</u>	<u>LOCATION</u>	<u># OF EGGS OR FISH PERMITTED</u>
<u>SCIENTIFIC OR EDUCATIONAL PERMITS</u>			
<u>Alaska Peninsula</u>			
2. Sand Point Schools P.O. Box 269 Sand Point, AK 99661 Attn: Patricia Jenkins	Sci/Ed Permit F-91-003	Humbolt Creek, Sand Point	40 pink salmon and 35 coho salmon adults for eggs to be incubated in school hatchery. Resultant fry will be released back into Humbolt Creek.
3. Unalaska City School District P.O. Box 260 Unalaska, AK 99685 Attn: Debra S. Alden	Sci/Ed Permit F-91-035	Unalaska Stream	30 pink salmon and 20 coho salmon adults for egg to be incubated in school hatchery. Resultant fry will be released back into Unalaska Stream.
<u>Arctic/Yukon/Kuskokwim</u>			
1. Nome-Beltz School Nome School District P.O. Box 131 Nome, AK 99762 Attn: Steve Garrison	Sci/Ed Permit F-91-009	Snake River, Nome Shovel Creek, Nome	50 adult coho salmon taken from Snake River. Eggs will be reared in school hatchery project. Resultant fry may be released after pre-inspection by ADF&G Pathology Section.

Economic Study to:
Peter Hagan
P.O. Box 240020
Douglas, AK 99824-0020

(runs thermal marking lab)
465-3054 lab
465-4222 - regional office

Send copies of
everything that goes
out to:

Commerce Dept.

F & G Dept.
(Commissioners Office)
(FRED DIV.)
& Comm. Fish)

Ole A. Mathisen
Professor of Fisheries
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TACOMA, WA 98406

MR. JEFF KOENIGS, DIR.
F.R.E.D. DIVISION
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COOK INLET FISHERMAN FUND
FOREST SERVICE BIOLOGIST
GRAND MESA GUNN NATL FOREST
2250 HIGHWAY 50
DELTA, CO 81416

CORDOVA AQUATIC
MARKETING ASSN.
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WOMEN'S FISHERIES NETWORK
% MS. LORETTA LURE
P. O. BOX 103920
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MARINE ADVISORY PRGM
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ATTN: MEMBERS

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OWNERS
1800 EMERSON, SUITE 101
FISHERMEN'S TERMINAL
SEATTLE, WA 98119

MARINE ADVISORY PRGM
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DILLINGHAM, AK 99576

ATTN: MEMBERS

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BLDG C-3, ROOM 232
FISHERMEN'S TERMINAL
SEATTLE, WA 98119

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KUSKOKWIM FISH CO-OP, INC.
P. O. BOX 245
BETHEL, AK 99559

KODIAK REGIONAL
AQUACULTURE ASSN.
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ATTN: MEMBERS

CORDOVA DISTRICT
FISHERMEN UNIT
P. O. BOX 939
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CENTER
POUCH K
KODIAK, AK 99615

BRISTOL BAY HERRING
MARKETING COMPANY
P. O. BOX 1710
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MARINE ADVISORY PRGM
3 BUNNELL, 303 TANANA DR
FAIRBANKS, AK 99701

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HOMER, AK 99603

ALASKA MARICULTURE ASSN
130 SEWARD ST, SUITE 504
JUNEAU, AK 99801

ATTN: MEMBERS

ATTN: MEMBERS

UNITED SOUTHEAST
ALASKA GILLNETTERS
P. O. BOX 021186
JUNEAU, AK 99802

ALASKA INDEPENDENT FISH
MARKETING ASSN.
700 - 14TH STREET
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PETERSBURG, AK 99833

BRISTOL BAY DRIFTNETTERS
3605 ARCTIC #742
ANCHORAGE, AK 99503

ATTN: MEMBERS

ATTN: MEMBERS

MARINE ADVISORY PRGM
1297 SEWARD AVE, RM 207
SITKA, AK 99835

NANA SEAFOODS
(NANA TAGUIGMITAT)
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ATTN: MEMBERS

DEEP SEA FISHERMENS'
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WESTERN ALASKA CO-OP
MARKETING ASSN.
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FISHING VESSEL OWNERS
ROOM 232, BLDG C-3
FISHERMENS' TERMINAL
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SETNETTERS ASSN OF
BRISTOL BAY
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HOMER, AK 99603

MS. LINDA KOZAK
KODIAK LONGLINE VESSEL
OWNERS
P. O. BOX 135
KODIAK, AK 99615

C. AND E. D.
P. O. BOX D
JUNEAU, AK 99811

ATTN: MEMBERS

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KODIAK, AK 99615

ALASKA LONGLINE FISH ASSN
P. O. BOX 1229
SITKA, AK 99835

ATTN: MEMBERS

PENINSULA MARKETING ASSN
P. O. BOX 248
SAND POINT, AK 99661

SEACOPS
700 WATER STREET UPPER
KETCHIKAN, AK 99901

ATTN: MEMBERS

ATTN: MEMBERS

MR. FRED CHASE, V. CHAIRMAN
WILDLIFE SAFEGUARD
1257 NEW RICHARDSON HWY
NORTH POLE, AK 99705

ALASKA SHELLFISH GROWERS
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ATTN: MEMBERS

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MS. DONNA PARKER

1319 MOUNTAIN VIEW DR. ✓

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AK DEPT OF FISH & GAME
SPORT FISH DIVISION
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