

ALASKA LEGISLATURE SPECIAL COMMITTEE / SUBJECT FILE 8672
1827 SCOMM 74: SEN. SPEC. COMM. ON DOMESTIC & INTL. FISH., 1991-92.

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

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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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Senate Dom/Int
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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

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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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-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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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

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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.

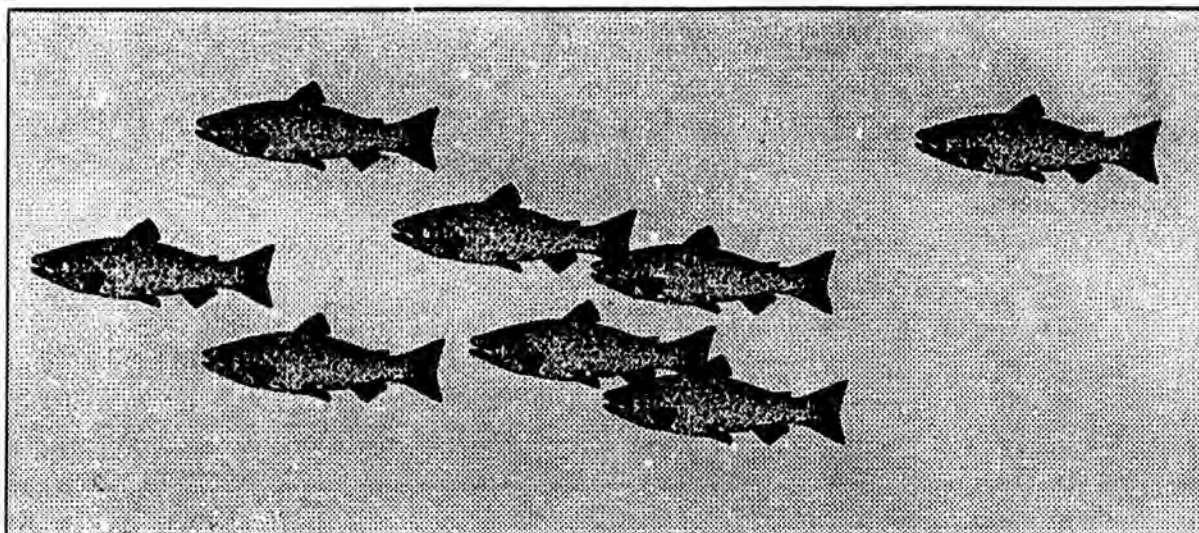
Number 281

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).

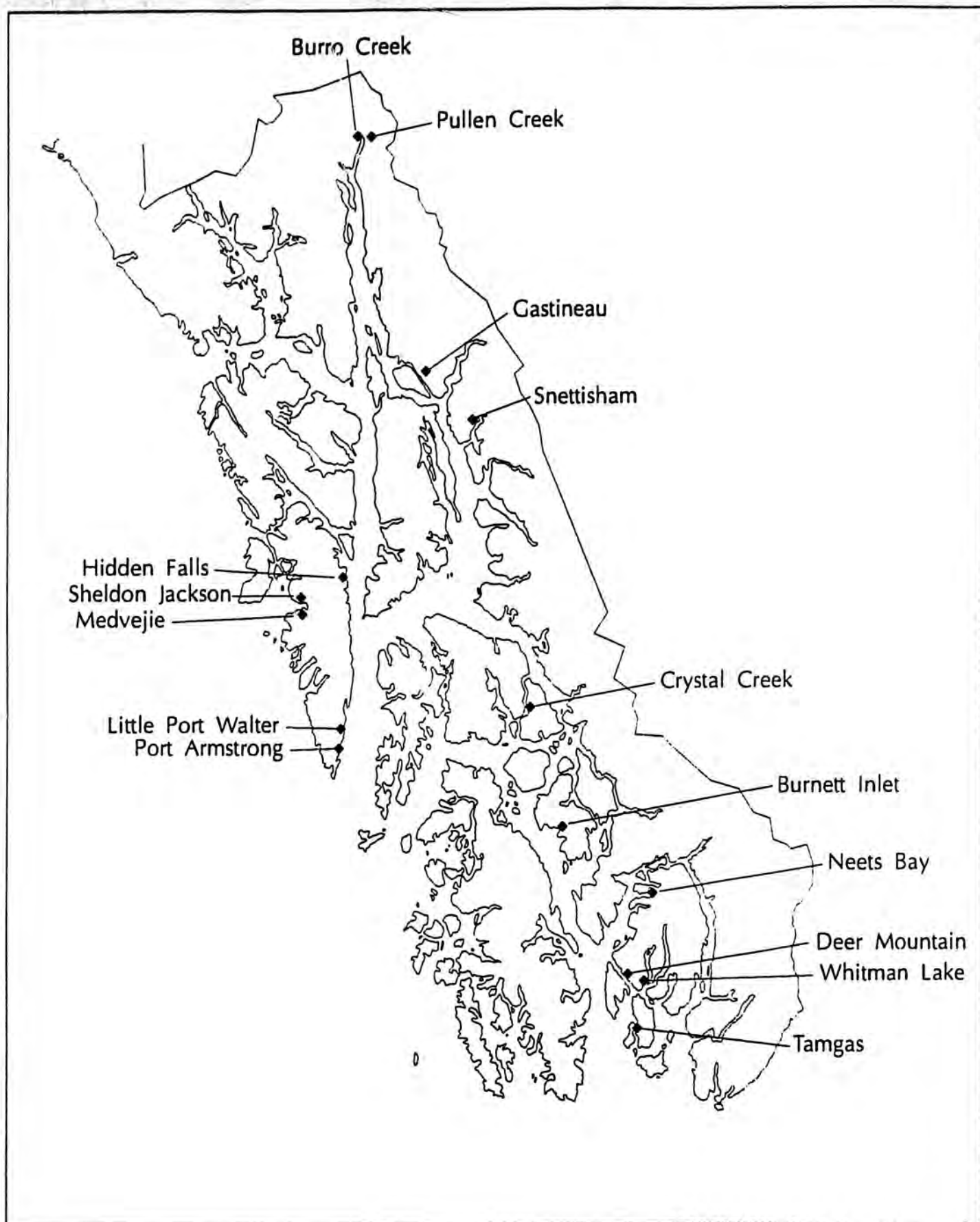


Figure 1. Chinook Salmon Hatcheries in Southeast Alaska

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.

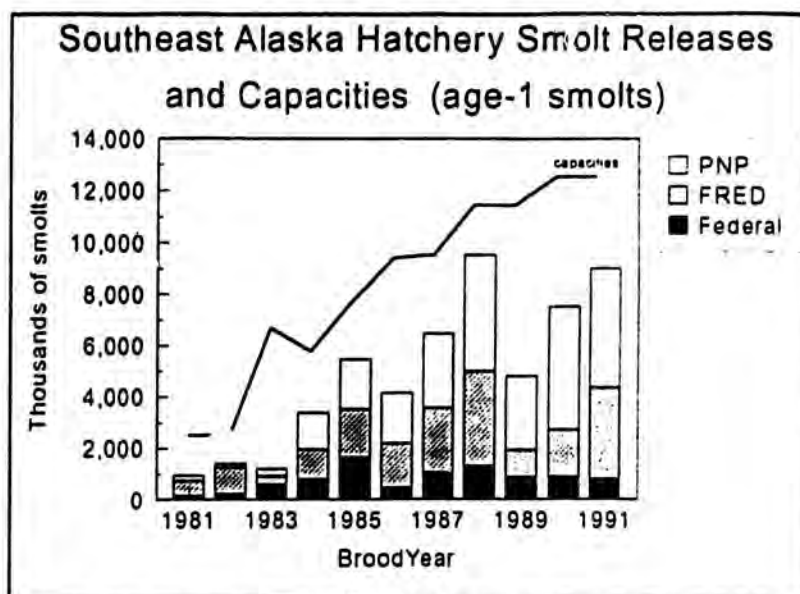


Figure 2. Southeast Alaska hatchery smolt releases and capacities (age-1 smolts).

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.

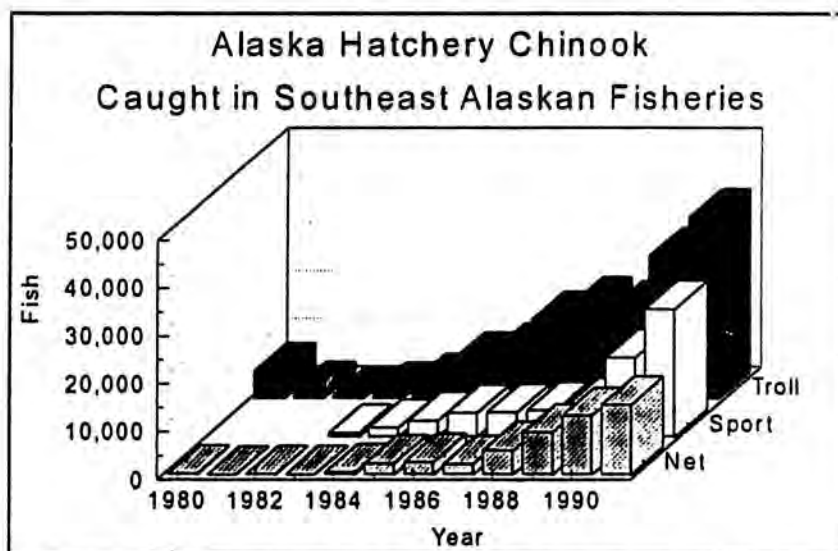


Figure 4. Alaskan hatchery chinook caught in Southeast Alaskan fisheries.

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.

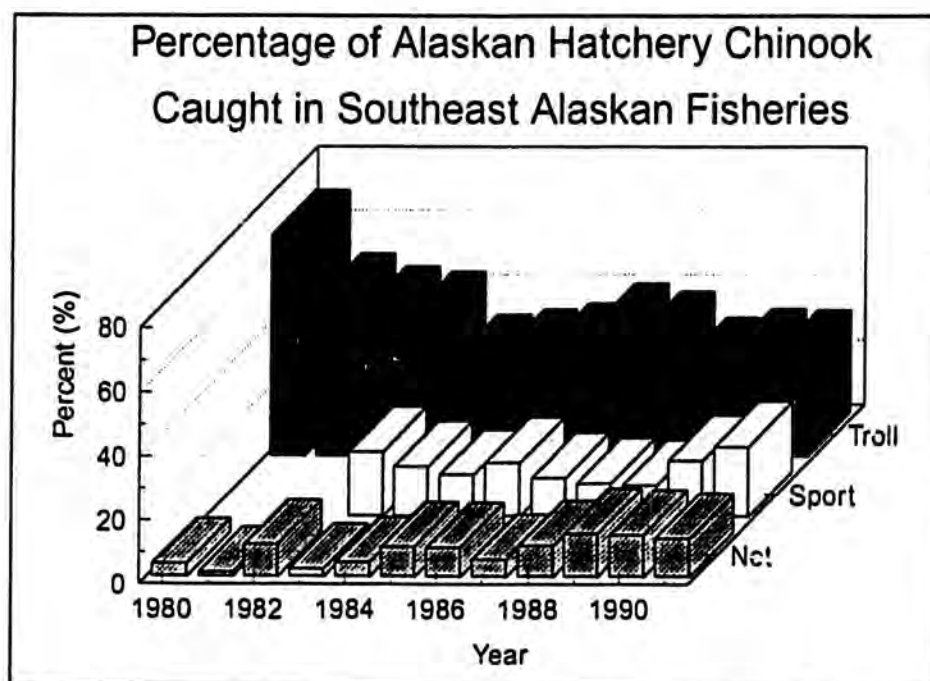


Figure 5. Percentage of Alaskan hatchery chinook caught in Southeast Alaskan fisheries.

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:

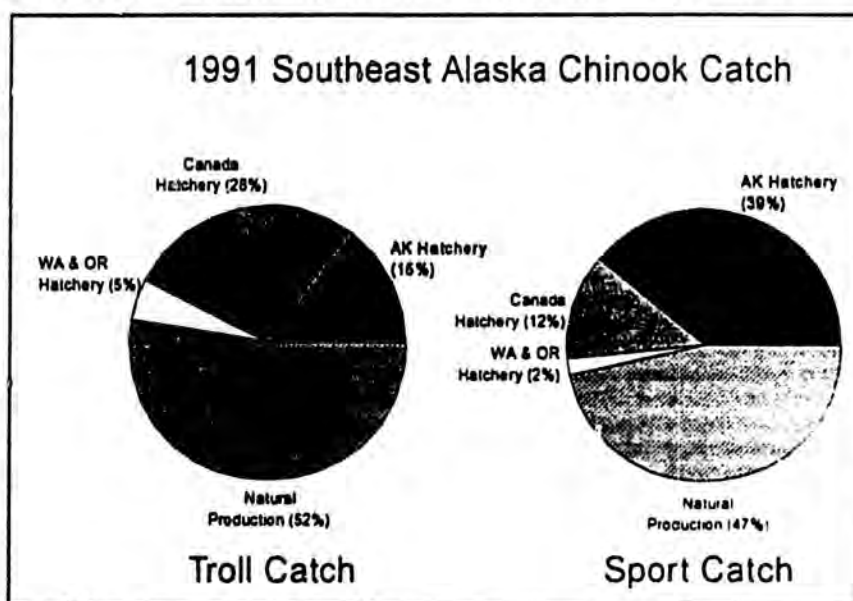


Figure 6. 1991 Southeast Alaskan chinook catch, troll and sport fisheries.

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					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%	46.4%	
# 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

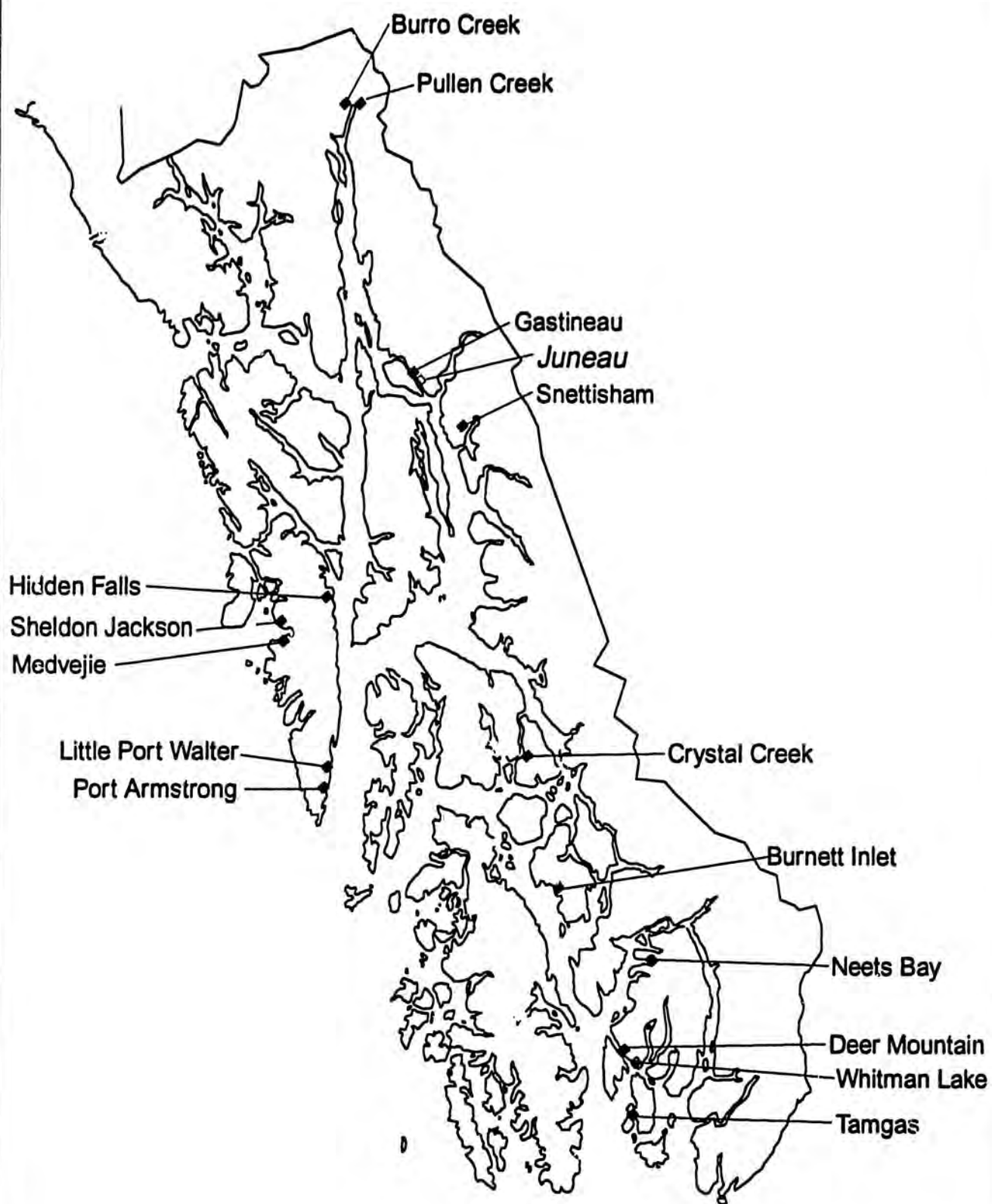
**Alaska Department of Fish and Game
Fisheries Rehabilitation, Enhancement, and Development Division**

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

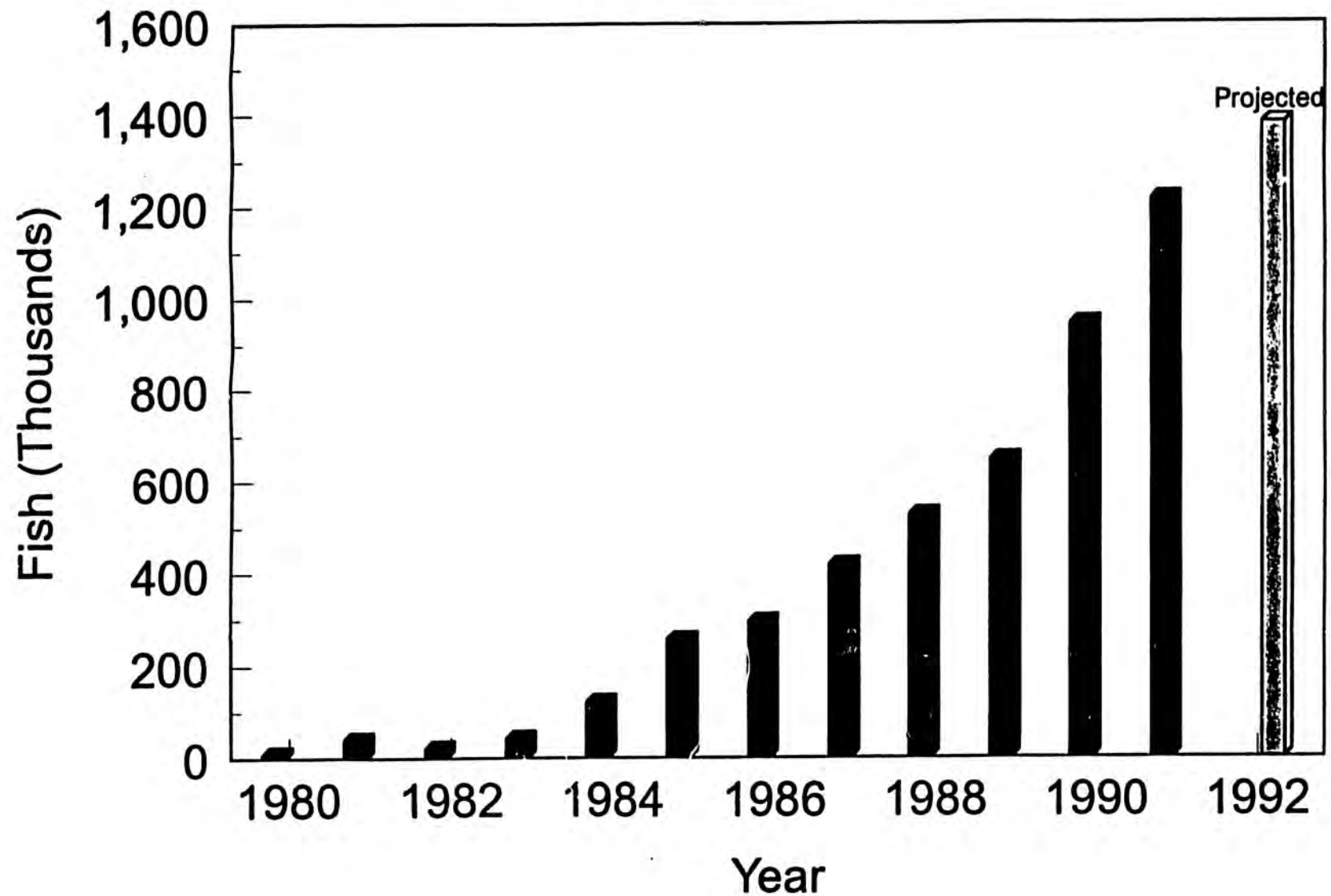
- Generally used to provide facilities for the production of fish
- Intended for mitigation of both troll and net fisheries
- Chinook goal for funds: facilities to produce an additional 100,000 chinook
- Current objective of enhancement program is 100,000 Alaskan hatchery chinook in the hold of trollers

Expenditure of Mitigation Funds

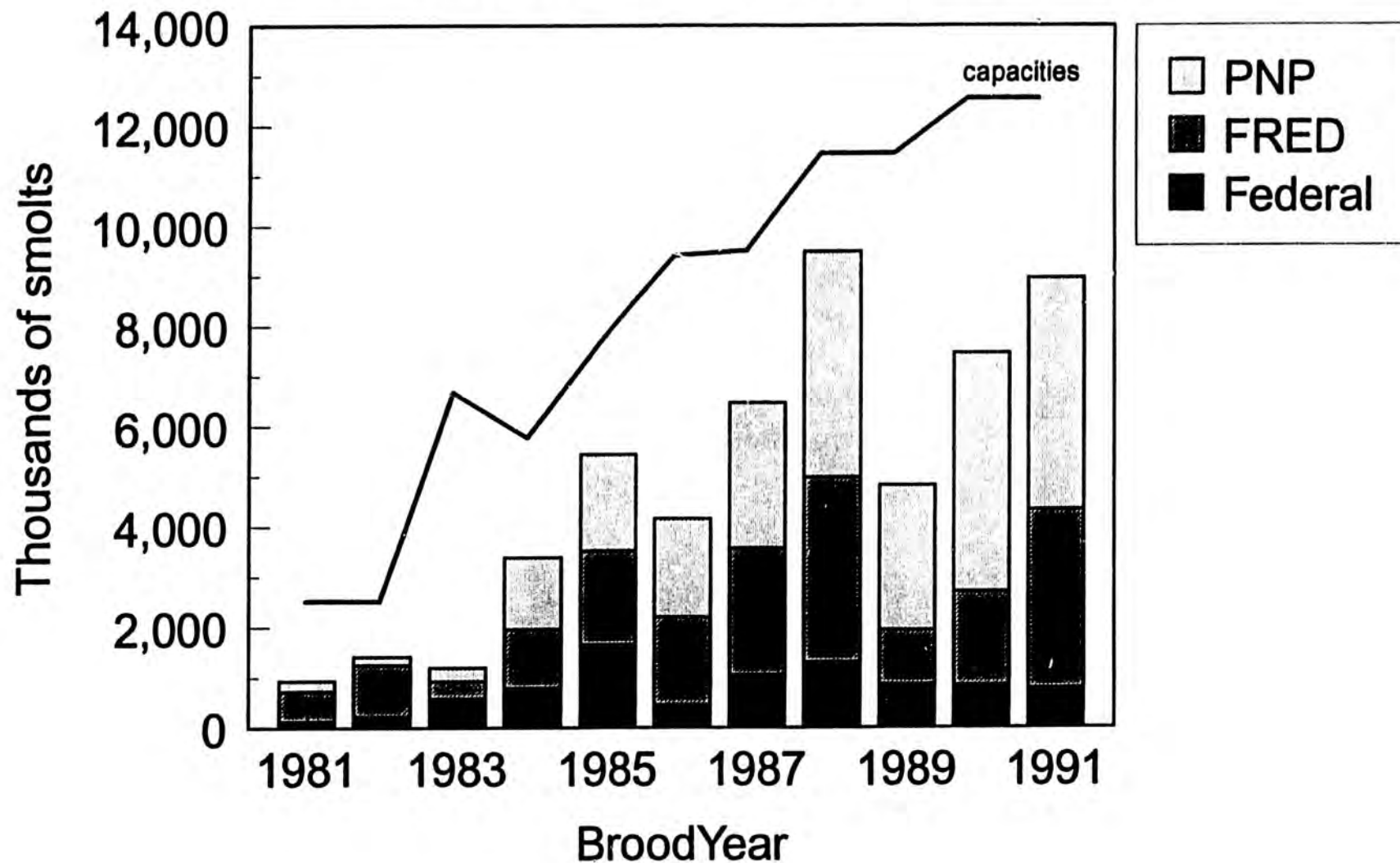
- \$10 million for chinook salmon production
 - \$7.2 million to Aquaculture Associations
 - \$2.8 million to FRED Division
- \$8 million for sockeye and chum salmon production
- \$2 million remaining

Production of Southeast Alaska Hatchery Chinook

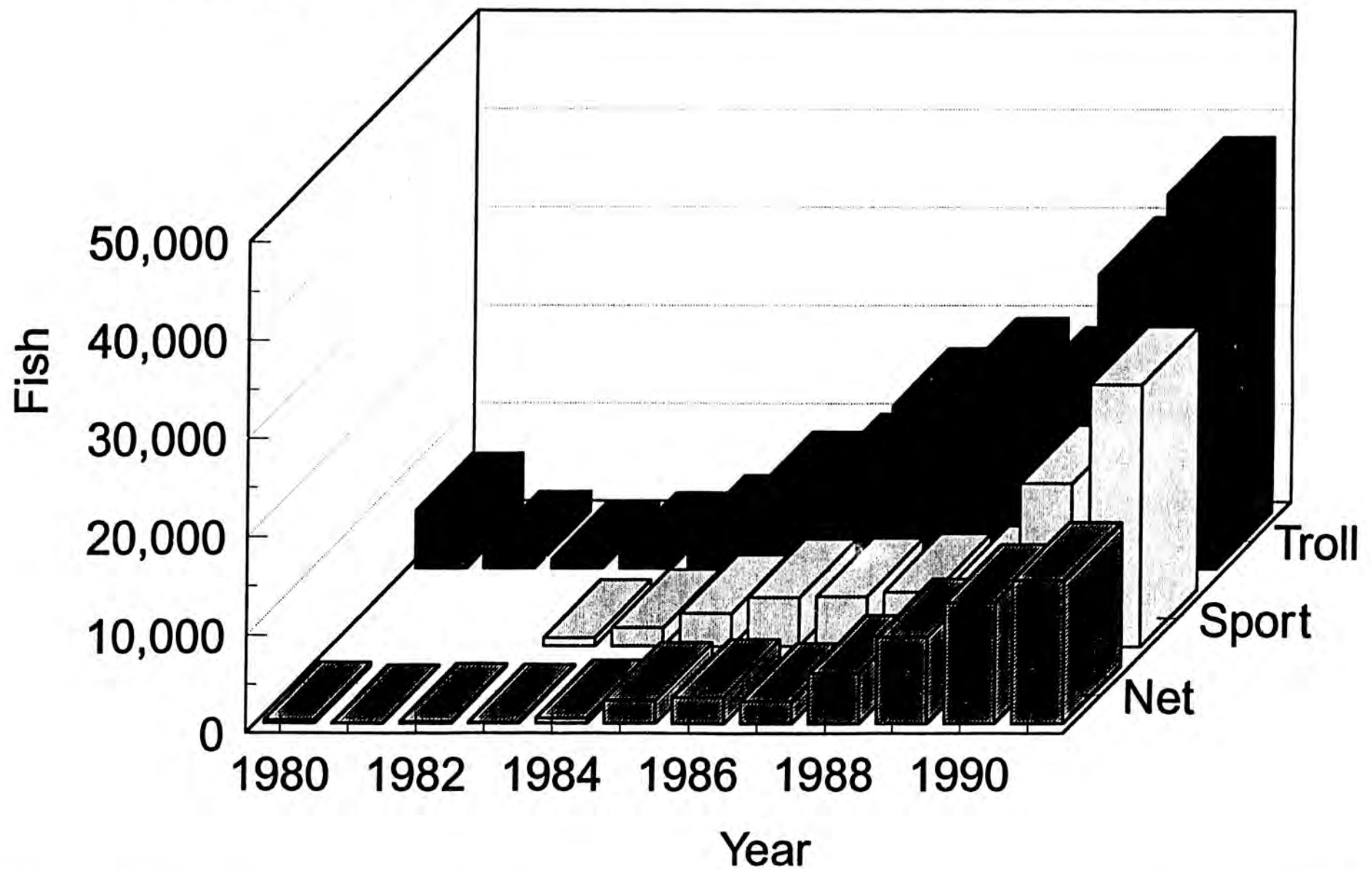
Summary of Total Returns



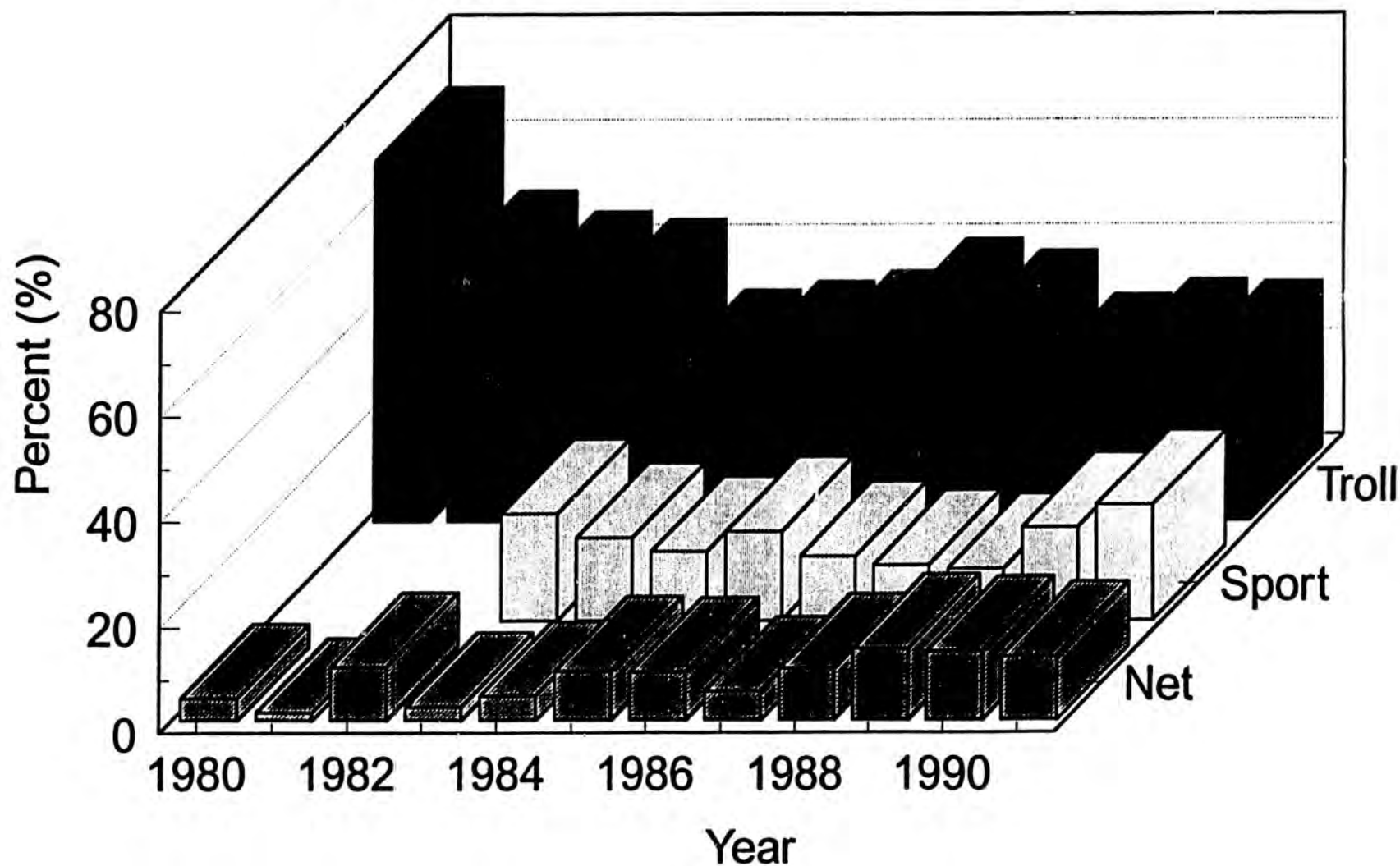
Southeast Alaska Hatchery Smolt Releases and Capacities (age-1 smolts)



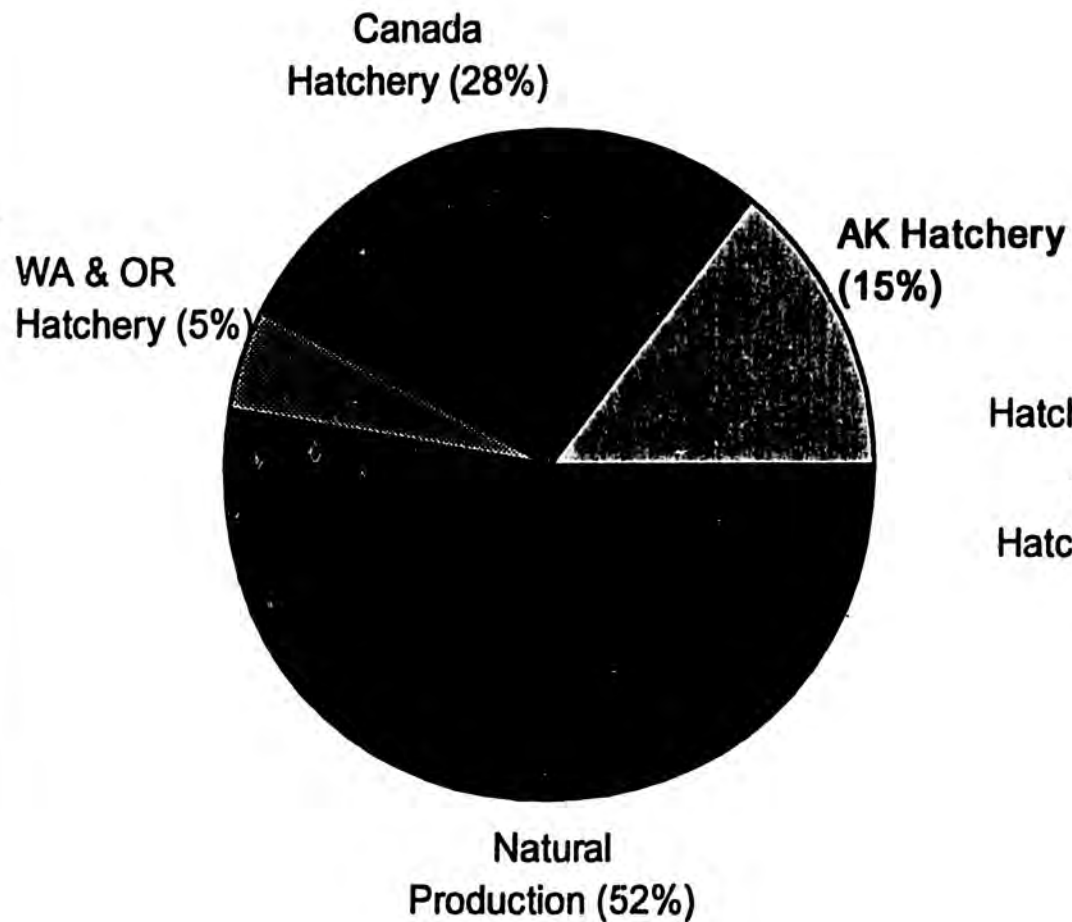
Alaska Hatchery Chinook Caught in Southeast Alaskan Fisheries



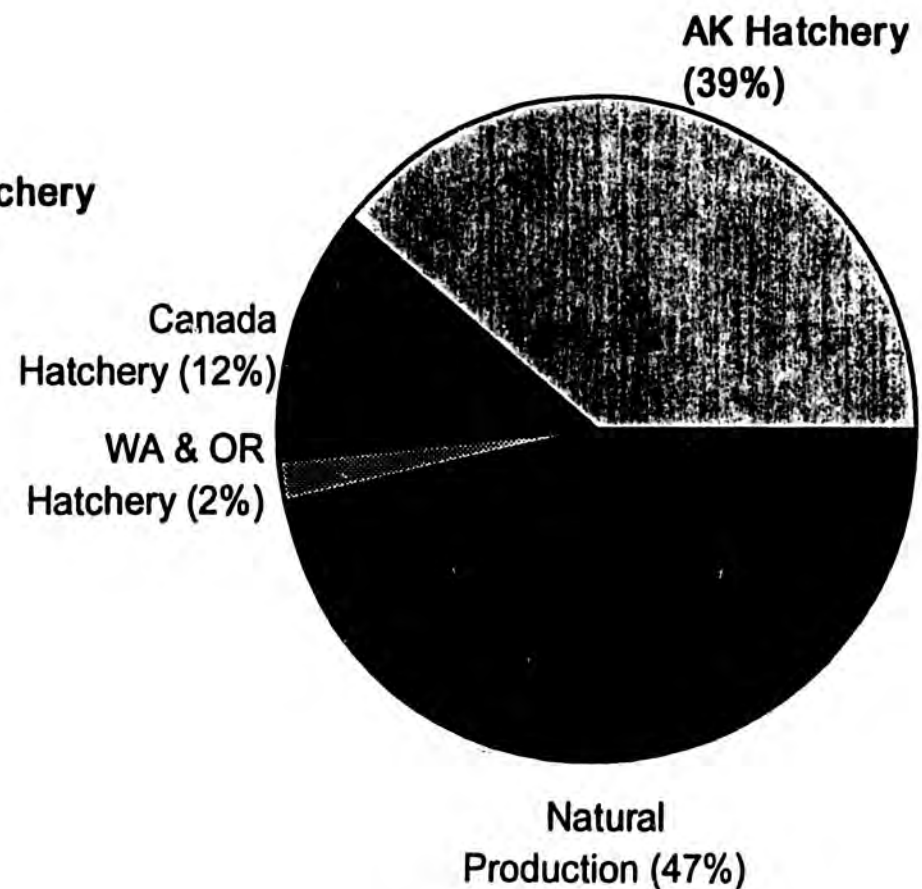
Percentage of Alaskan Hatchery Chinook Caught in Alaskan Fisheries



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

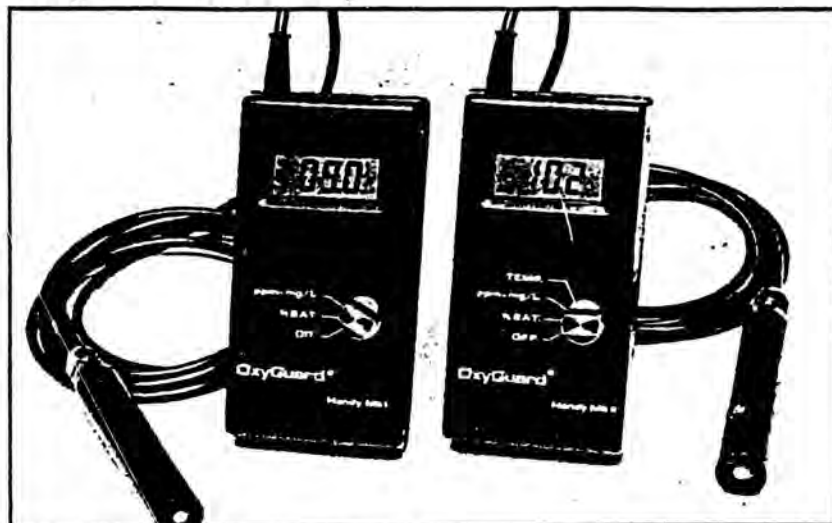
under a *Vancouver Sun* headline which read "Study Pegs Hatchery Salmon at \$435 each." Needless to say this caused more than a little controversy, including a response from a federal fisheries spokesman who said that he could not comment on Winton's calculations because the federal enhancement program 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





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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.

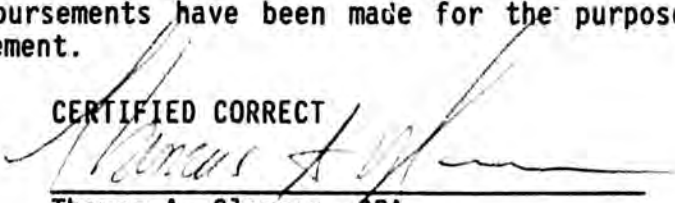
FINAL FINANCIAL REPORT

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

04/06/92

Legislative Affairs Agency
Accounting
PO Box Y
Juneau AK 99811

RECEIVED

APR 15 1992

L.A.A.

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.

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

University of Alaska - Fairbanks
Grant & Contract Services
225 Sigmund Hall
Fairbanks, Alaska 99775-0840

RECEIVED

MAY 22 1992

L.A.A. RECEIVED

MAY 22 1992

L.A.A.
FISCAL

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:	3,119.54	5,759.15
ST. BENEFITS:	967.06	1,785.35
OVERHEAD:	2,043.20	3,772.18
TOTAL EXPENSE:	6,129.80	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: 100472 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: 05/02/92

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:

- This agreement is documented in FY 92 Capital/Operating budget. ☒ No ☐ Yes, page _____.
- Financial coding to be charged 31922019 Continuing funds ☒ No ☐ Yes Authority _____
Continuing funds ☐ No ☐ Yes Authority _____
- Encumbrance document number RS 3127105
- Date funds lapse 6/30/92
- Federal Funds ☒ No ☐ Yes, Amount \$ _____
Federal Agency / Program / CFDA No. / Grant or Contract No. _____

SERVICING AGENCY:

- 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

<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 to be obtained from Five Mi Creek for egg take purpose Eggs are incubated at t school hatchery 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 unharmed.
	Sci/Ed Permit F-91-017	Herman Creek, Haines	1,200,000 chum salmon fry are to be trapped, enumerated, and released unharmed.
	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

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<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>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

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<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
Office (907) 789-4442
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As of 12-17-92

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MR. GORDON ITO

KOTZEBUE FISHERMEN'S
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BOX 307

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GRO-FISH, INC.
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MR. BRAD BAILEY
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ALASKA SETNETTERS ASSN.
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FOREST SERVICE BIOLOGIST
GRAND MESA GUNN NATL FOREST
2250 HIGHWAY 50
DELTA, CO 81416

CORDOVA AQUATIC
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WOMEN'S FISHERIES NETWORK
% MS. LORETTA LURE
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1800 EMERSON, SUITE 101
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MARINE ADVISORY PRGM
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BLDG C-3, ROOM 232
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BETHEL, AK 99559

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FISH INDUSTRIAL TECHNICAL
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POUCH K
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ATTN: MEMBERS

ATTN: MEMBERS

UNITED SOUTHEAST
ALASKA GILLNETTERS
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MARKETING ASSN.
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BRISTOL BAY DRIFTNETTERS
3605 ARCTIC #742
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ATTN: MEMBERS

MARINE ADVISORY PRGM
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FISHERMENS' TERMINAL
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SEACOPS
700 WATER STREET UPPER
KETCHIKAN, AK 99901

ATTN: MEMBERS

ATTN: MEMBERS

MR. FRED CHASE, V. CHAIRMAN
WILDLIFE SAFEGUARD
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NORTH POLE, AK 99705

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