

ALASKA LEGISLATURE SPECIAL COMMITTEE/SUBJECT FILE 8672  
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hatchery can spawn and rear fish from wild broodstock without some genetic change occurring either immediately or in successive generations. Therefore, this limitation is intended to offer some protection should future analyses show that our guidelines for development of hatchery stocks that are genetically similar to specific wild populations do not work.

The concept behind the type of hatchery fish described under option (d) is that they spawn at different locations or times than do wild fish. The objective of this strategy is to reproductively isolate hatchery fish from wild fish. Given this reproductive isolation, it is acceptable if these fish are genetically different from the wild population. For example, if coho salmon released into a particular river all return to the hatchery site as adult spawners, then they will not be able to interbreed with wild fish. Isolation may also occur if the hatchery fish spawn at a much earlier time than do their wild counterparts. The critical issue under option (d) is to prevent hatchery x wild matings in the natural environment.

Finally, a further limitation with respect to hatchery fish is presented in paragraph (e). Particularly for anadromous species, hatchery fish often stray to river systems adjacent to those where they are planted. A high level of straying can seriously impact the genetics of wild populations. In addition, it is not realistic to assume that option (d) hatchery fish will be 100% isolated from wild spawners. Most likely, both option (d) hatchery fish and hatchery strays from adjacent rivers will differ genetically from the wild fish. Therefore, they are lumped together and given a maximum limit in paragraph (e) of 10%. This limit applies only to the time period when the wild fish are spawning. For example a wild population having 900 spawners existing in a watershed which also has 900 naturally spawning hatchery fish may be consistent with WFMP under certain conditions. One of these conditions would be if the hatchery fish spawned so early that only 100 were left during the period wild fish were spawning. This would result in relative numbers that would meet the 10% limit (900 wild fish and 100 hatchery fish) and therefore be acceptable.

During the course of developing the WFMP the 10% limit was a topic of considerable debate. However, based upon the comments received from several geneticists and the output from several different genetic modelling exercises, we feel that the 10% limit provides adequate genetic protection in most situations. The policy does allow for this limit to be reduced when hatchery fish differ substantially from the wild fish.

Operating principles 2, 3, and 4 relate to largely the same genetic concern. A population that has been reduced to a small number of breeding individuals tends to lose genetic variation through a random process geneticists call "genetic drift". Mortality, from any source that suddenly drives a population down to these levels is therefore genetically risky. For each of these three operating principles (each relating to different source of mortality) a boundary of 300 breeding individuals was set as the minimum stable population size that is acceptable under the WFMP standard. In addition, if the population is declining, this decline is only acceptable under the WFMP standard if a breeding population of 300 or fewer fish is not expected within the next 5 years.

The fifth operating principle is a description of special situation that requires an exception from the 300 fish criteria described for principles 2, 3, and 4. A small, trout population isolated by a barrier waterfall best exemplifies this special situation. In such a case there is simply not enough habitat to support a spawning population of more than say 150 adults. However, such a population differs from a population that has been suddenly reduced from 2,000 to 150 fish due to human activities. Because genetic differences between naturally small populations are often great, collectively they represent an important genetic resource. Principle 5 was written to make sure such populations are recognized and that the WFMP accepts them in their natural, below 300 condition.

The last operating principle, number 6, addresses management concerns specific to fisheries operating on aggregates of many different populations. It would be disruptive, for example, to place severe harvest restrictions on a coho salmon fishery in order to bring one or two small populations into compliance with the WFMP when they are aggregated with fish from 50 other populations that are healthy and can withstand harvest. This principle then, is a recognition of the fact that for populations which enter aggregate fisheries extra care must be exercised in bringing them into compliance with WFMP so as to minimize adverse social and economic impacts.

#### Are there exceptions ?

The WFMP has a provision whereby individual populations may be exempted from ever meeting the WFMP standard (OAR 635-07-528). Although it is hoped this option will be used infrequently under certain conditions the Oregon Fish and Wildlife Commission may take such action.

To exempt a population the Commission must find that social and economic considerations offset the biological

consequences of losing the genetic resources of the population involved. Before making such a decision however, the Department is required to prepare an analysis of the long-term biological implications should the population in question be granted an exemption. The critical issue will be whether such action might cause a serious depletion of the species within Oregon. This analysis will also be made available to the public for comment, 45 days prior to the meeting date the Commission considers the exemption.

#### How will the WFMP be implemented ?

The last section of the WFMP (OAR 635-07-529) describes the steps that will be taken to implement this policy. In developing this section one of the primary goals was to make it possible for the public to objectively measure if the Department was making progress towards achieving the overall policy goal of meeting the WFMP standard for all populations. In addition, it was intended that this section provide directions for a deliberate and accountable process in making key decisions, which implementation of this policy will require.

The first paragraph of this section directs the Department to develop a list of populations for all species of wild fish by January 1991. This is an extremely significant step, because the WFMP is designed to work on a population by population basis. These populations will become the units by which the policy is implemented and by which progress will be judged.

In many situations it will be difficult to identify individual populations, because we do not have enough information to discern clear population boundaries. In those cases when we are in doubt if a group of fish is isolated enough to be a population, we will err on the side of being too conservative and call them a population. Once developed, this list of populations will be examined one at a time against the WFMP standard.

In general, paragraphs 2, 3, and 4 of this section describe actions that the Department is directed to take during the interim period prior to achieving full compliance with the WFMP. They recognize that while existing basin and species management plans are being rewritten to be in compliance with the WFMP, the WFMP will take preference. For preparation of new basin plans, direction is given that they include for each species at least one strategy that is consistent with the WFMP standard. Finally, the Department is directed to not stock hatchery fish into wild fish populations not currently being stocked. The only exception being if such action is approved in a basin plan or if the wild population has been exempted from the WFMP.

Paragraph 5 of this last section describes the preparation of a status report which the Department is required to do every two years beginning with December, 1991. This report will have five components.

First, for each population a historical and current status summary will be prepared based upon best available information. Past records of hatchery fish introductions, changes in habitat, and harvest patterns will be the focus of the historical portion. The current status portion will require an estimate of the number of wild spawners for each population. In addition, if hatchery fish occur within the geographical boundaries of the wild population, estimates of the proportion of hatchery fish naturally spawning during the time the wild fish spawn and whether they are genetically similar to the wild fish will be necessary.

The second part of the report will describe the results of comparing each wild population, using the information described above, against the WFMP standard. Out of this comparison will come two lists. A "pass" list of populations which that consistent with the WFMP standard, and a "fail" list of populations which are either not consistent with the standard or for that there is insufficient information to make a reasonable determination of compliance. This process is to be repeated for each biennial report (every two years).

It is envisioned that the number of populations on the fail list will be used as a report card on the progress with which the WFMP is being implemented. The rate at which the size of this list decreases over the next 10 years will provide an accountable and objective basis for measuring our progress in achieving the intent and goal of the WFMP.

An identification and description of problems for each population on the fail list will be presented in the third portion of the report. Again, lack of data may make this assessment difficult, even for populations that are known not to meet the standard. For example, it may be hard to tell if over-harvest or loss of habitat is responsible for depressing a population below the 300 spawner level (recall that a minimum of 300 spawners is needed to pass the WFMP standard). Questions about the potential productive capacity of the existing habitat and spawner-recruit relationships would need to be at least crudely understood to identify the problem that caused the decline.

The next section in the report will describe possible solutions that the Department has developed for each population on the fail list. The intent of these solutions is, that if implemented, they would result in the population eventually being moved from the fail list to the pass list.

An approximate cost for each of these solutions will be included as part this presentation.

At least initially, the "solution" for many populations may be to obtain the data necessary to fill in crucial data gaps required to permit testing the population against the WFMP standard. For other populations, enough information will be available to propose immediate on-the-ground solutions to bring them in compliance with the WFMP standard. For populations that have failed because of having less than 300 spawners, possible solutions might include: 1) habitat restoration, 2) screening of water diversions, 3) improving passage at dams, 4) changing release locations and numbers of hatchery fish to reduce competition and predation, 5) closing of certain areas to fisheries to protect spawners, 6) reducing direct or incidental fishing mortality on juvenile or adult fish.

For other populations which have failed the WFMP standard because hatchery fish are exceeding the natural spawning limit, another range of possible solutions exist. These include: 1) decrease the number hatchery fish that reach the spawning grounds by reducing the number of fish planted or implementing strategies to target increased harvest on hatchery fish, 2) release hatchery fish that are sterile, 3) increase the number of wild spawners through strategies that increase natural production (i.e., habitat restoration) or regulations to reduce fishing mortality, 3) switch to a hatchery broodstock that is genetically similar to the wild population, 4) develop strategies to draw returning adult hatchery fish away from natural spawning areas (e.g., acclimation ponds, changes in time and place of releases, etc.).

Finally, at the end of this report, a list of those strategies that may have significant effect on future management direction, user groups, or funding requests. This list will include a summary of the decision needed in each case and a corresponding assessment of what each of the possible decision outcomes (i.e., accept, reject, or defer) might mean to the resource, the public, and the Department. Where appropriate the Oregon Fish and Wildlife Commission would be asked to take the action necessary to make specific decision.

The last portion of the WFMP concerns a short paragraph directing the Department to develop a gene conservation policy and associated program to monitor the genetic status of representative populations.

Mark W. Chilcote, ODFW Natural Production Program  
November 5, 1990

## **Wild Fish Management Policy**

### **Purpose of Wild Fish Management Rules**

635-07-525 These rules are established to guide the management and conservation of genetic resources of wild fish in Oregon. Although direction with respect to natural production is provided by OAR 635-07-521 through OAR 635-07-524, additional guidance is required to assure that genetic resources of wild fish are protected. f. 3 ef. 1-24-90

### **General Policies of Wild Fish Management**

635-07-526 (1) Protection of genetic resources shall be the priority in the management of wild fish to assure optimum economic, commercial, recreational, and aesthetic benefits for present and future residents of Oregon.

(2) It is the policy of the Department to implement the Wild Fish Management Rules for all populations of wild fish except those populations specifically exempted by the Commission in accordance with OAR 635-07-528.

(3) It is recognized that management of some populations may not currently be fully consistent with these rules. However, it is the Department's long-term goal to bring these populations into compliance, with the exception of populations specifically exempted by the Commission in accordance with OAR 635-07-528. f. & ef. 1-24-90

### **Operating Principles for Wild Fish Management**

635-07-527 The Department recognizes that the operating principles developed to implement this policy are associated with varying levels of uncertainty. These principles shall be continuously revised as better information becomes available. In addition to the operating principles of the Natural Production Rules (OAR 635-07-521 through 635-07-524), the following operating principles apply to the management of populations of wild fish.

(1) Interbreeding of hatchery and wild fish: The interbreeding of hatchery fish with wild fish poses risks to conserving and utilizing the genetic resources of wild populations. These risks shall be limited by implementing either strategy (a), (b), (c), or (d) listed below, consistent with the further limitation described in (a) below.

(a) Eliminate the release of hatchery fish.

(b) Release hatchery fish that are sterile and that do not attempt to spawn.

(c) Release hatchery fish that are maintained to be genetically similar to the wild population and limit the number of all naturally spawning hatchery fish to no more than 50% of the total number of naturally spawning hatchery and

hatchery fish that are genetically similar to the wild population are:

- (A) Use only hatchery fish that originated from the wild population;
  - (B) Incorporate naturally produced fish in the broodstock in every generation; and
  - (C) Avoid random and nonrandom genetic change due to failure to maintain a representative sampling of the genes within a population.
- (d) Release fish that are demonstrated to be reproductively isolated (spatially or temporally) from the wild population. The Department recognizes that absolute reproductive isolation may not be possible to achieve and therefore these fish shall be included in the limitation of 10% dissimilar fish stated in (e) below.

(e) Except for genetically similar hatchery fish described in (c), hatchery fish that spawn at the same time and place as the wild population, shall comprise no more than 10% of the total number of naturally spawning fish. A more restrictive level may be designated for those situations where the hatchery fish are known to differ substantially from the wild population in their genetic makeup.

(2) Habitat: Degradation of habitat that reduces the potential for fish production or adversely affects fish migration routes poses a risk to conserving and utilizing the genetic resources of wild populations. The Department shall oppose habitat degradation that causes a population to experience a decline in abundance that if continued for an additional 5 years would likely reduce the number of spawners to 300 fish. In addition, the Department shall advocate the restoration of degraded habitat that has depressed a population to a stable level of 300 or fewer spawners.

(3) Competition, predation, and disease: Introductions of fish of the same or different species as those already present may seriously reduce the survival of wild fish through competition for food and space or through predation. Introductions of disease may also deplete a wild population. An extreme level of mortality from these sources poses a risk to conserving and utilizing the genetic resources of wild populations. The Department shall oppose any actions that allow mortality from competition, predation or disease to cause a population to experience a decline in abundance that if continued for an additional 5 years would likely reduce the number of spawners to 300 fish. In addition, where a population has been depressed to a stable level of 300 or fewer spawners, the Department shall support and advocate actions to correct the cause of such population decrease.

(4) Harvest: providing the opportunity for optimum harvest benefits is consistent with wild fish management. However, an extreme level of harvest, or harvest that disproportionately reduces some segment of a population, poses a risk to conserving and utilizing the genetic resources of a wild population. The Department shall oppose harvest strategies that, by themselves, cause a population to experience a decline in abundance that if continued for an additional 5 years would reduce the number of spawners to 300 fish. In addition, the Department shall advocate the termination of harvest strategies that have depressed a population to a stable level of 300 or fewer spawners.

(5) Small populations: It is recognized that even in the absence of changes brought on by human activities, populations of 300 or fewer spawners may exist naturally. Such populations have survived even though random genetic processes, operating over long periods of time, have probably caused a reduction in genetic variation. Often in the process of losing this variation, rare genetic characteristics become established. From an evolutionary

perspective, protection of these small populations is highly desirable because of the unique features they contain. Therefore, these populations shall not be excluded from consideration for wild fish management.

(6) Aggregate stock fishery management: Some fisheries, such as ocean salmon fisheries, target on aggregations of fish belonging to many different populations. In implementing the Wild Fish Management Rules (OAR 535-07-529), the Department shall pursue the most cost effective, least disruptive (in terms of adverse social and economic impacts on those fisheries), and feasible strategy consistent with the policies and operating principles set forth in the rules. To bring individual populations into compliance with wild fish management, priority shall be given to correcting problems as they relate to use of hatchery fish, habitat, competition, predation, and disease before harvest restrictions on any aggregate stock fishery shall be considered. f. & ef. 1-24-90

#### Wild Fish Management Exemption Procedure

635-07-528 (1) The Commission may decide, at the request of any person, the Department, or on its own initiative, to determine whether a population shall be exempted from wild fish management.

(2) Such exemptions shall be scheduled for consideration through a rule making either at the next meeting at which the Commission adopts or reviews a basin plan for the area where the population is found, or at the next meeting at which the wild fish management progress report, described in OAR 635-07-529(6), shall be presented.

(3) Before scheduling a rule making on a proposed exemption, the Commission shall direct the Department to prepare a written analysis describing the biological significance and long-term implications of losing the genetic resources of the population proposed for exemption. The Department's report shall also assess whether the proposed exemption would cause a serious depletion of the species within Oregon. In addition, the Commission shall request that the proponent of the exemption prepare a written analysis of the social and economic justification for such action.

(4) The analyses described in (3) shall be made available for public review and comment at least 45 days in advance of the rule making on the proposed exemption.

(5) To exempt a population, the Commission shall find that social and economic considerations offset biological consequences, and that such exemption, when considered alone and in light of any other exemptions that have been granted, shall not cause a serious depletion of the species within Oregon. f. & ef. 1-24-90

#### Implementation of Wild Fish Management Rules

635-07-529 (1) Within one year of the effective date of these rules, the Department shall develop, for approval by the Commission, a provisional statewide list of populations of wild fish. This list shall be made available to the public for review prior to Commission consideration and approval.

(2) It is the intent of the Commission that, to the extent any basin and/or species plan currently adopted plan shall now be governed by these rules. As existing plans are reviewed and new plans are adopted, the Commission intends that they be explicitly brought into conformity with these rules.

(3) Basin plans presented to the Commission after the adoption of the Wild Fish Management Rules shall present at least one alternative strategy per

... population that is consistent with wild fish management. For those basins with existing hatchery programs, two alternatives consistent with wild fish management shall be presented; one without hatchery supplementation and one with hatchery supplementation.

(4) The Department shall not stock hatchery fish into wild fish populations not currently being stocked, without authorization in a basin plan approved by the Commission or an exemption of the wild population in accordance with OAR 635-07-528.

(5) Progress toward achieving consistency with these Wild Fish Management Rules shall be reported to the Commission during the first six months of each biennium, prior to preparation of the next biennial budget. Beginning in 1991, each biennial report shall include, by species, the following information:

(a) Documentation of the management history of each wild population based on best available information. This shall include the current status of the population and a history of habitat change, harvest, and hatchery introductions;

(b) A list of populations of wild fish not currently managed consistent with the Wild Fish Management Rules;

(c) Identification and description of the problems preventing the Department from achieving consistency with the Wild Fish Management Rules for each of these populations;

(d) A description of the short- and long-term strategies and associated funding necessary to solve these problems; and

(e) A list of Commission actions, as appropriate, necessary to implement strategies identified in (d).

(6) The Department shall develop a gene conservation policy and a program to monitor the genetic status of representative populations. f. & ef. 1-24-90

#### Definitions

635-07-501 As used in this Division and Division 40:

(16) "Hatchery fish" means a fish spawned and/or reared under artificial conditions regardless of the history of the parent stock.

(23) "Management Plan" means:

(a) A plan which provides the basic framework (goals, policies and objectives) for managing a resource, geographic area, watershed (waterbody) or species adopted by the Fish and Wildlife Commission in public hearing; and

(b) Which may include specific information or alternatives relative to how the goals and policies may be achieved, e.g., techniques and guidance for implementation of the basic plan normally found in operation plans.

(27) "Natural Production" means the maintenance of naturally spawned fishes and their capacity to reproduce and rear in habitats which allow those fishes to fulfill all their necessary life history functions.

(36) "Population" means a group of fish spawning in a particular area at a particular time which do not interbreed to any substantial degree with any other group spawning in a different area or in the same area at a different time.

(43) "Sensitive" means those fishes that have been designated for special consideration pursuant to OAR 635-100-040.

(44) "Stray" means a hatchery fish that spawns naturally in a location different from the location intended when the fish was stocked.

(52) "Wild fish" means any naturally spawned fish belonging to an indigenous population of the following species:

- (A) *Oncorhynchus clarki*, commonly known as cutthroat trout.
- (B) *Oncorhynchus keta*, commonly known as chum salmon.
- (C) *Oncorhynchus kisutch*, commonly known as coho salmon.
- (D) *Oncorhynchus mykiss*, commonly known as steelhead (anadromous form) or Rainbow trout (non-anadromous form).
- (E) *Oncorhynchus nerka*, commonly known as sockeye salmon (anadromous form) or kokanee (non-anadromous form).
- (F) *Oncorhynchus tshawytscha*, commonly known as chinook salmon.
- (G) *Salvelinus confluentus*, commonly known as bull trout.
- (H) *Prosopium williamsoni*, commonly known as mountain whitefish.
- (I) *Acipenser transmontanus*, commonly known as white sturgeon.
- (J) *Acipenser medirostris*, commonly known as green sturgeon.
- (K) All fishes that have been designated as sensitive, pursuant to OAR 635-100-040.

Enhancement

Funding

Economics

## CHAPTER IX. ECONOMICS

### INTRODUCTION

*Note: This section summarizes the economic studies that are currently in progress under contract. The results of these studies are not yet available and, therefore, are not included in this draft. The full chapter on economic studies provides more detailed information on the contracts. The final report will include the results of the economic studies.*

The main focus of the review of the economic impact of salmon hatchery production on Alaska salmon prices is to determine:

- whether current levels of Alaska salmon harvest are over- or under-supplied from a world-market perspective, and
- whether increased hatchery production of salmon will lower prices, fishing and processing revenues, and the total net value of Alaska's salmon fisheries.

To answer these questions requires a benefit-cost analysis. This type of analysis measures the level and cost of enhanced salmon production, the cost of managing, harvesting, and processing enhanced salmon stocks, and the impact or "price responsiveness" of world salmon markets to various levels of Alaska enhanced salmon production. The costs are then subtracted from the benefits to estimate the net benefits of the salmon enhancement program and the incremental net benefits of different levels of enhanced salmon production to commercial fisheries. To analyze only the impact of different levels of salmon production on world salmon markets and prices paid to fishermen is insufficient for thorough policy analysis because it does not measure the net benefits (benefits minus costs) of the commercial salmon fisheries to fishermen or all Alaskans.

An example of some of the policy questions a benefit-cost analysis would help to address are as follows:

- Is increased Alaska salmon hatchery production the cause of this year's lower salmon prices? What is the significance of other factors, such as increased farmed-salmon production, exchange rates, economic recessions, and prices of food substitutes?
- What is the most profitable salmon species mix and level of production for the statewide enhancement program? Should the emphasis shift from pink salmon to king and coho salmon, for example, or even to other non-salmon species?
- If Alaska curtailed hatchery salmon production, would Alaska salmon (both wild and hatchery) prices increase or would the resulting market share be filled by farmed salmon from other countries? Ultimately, what would be the net effect or benefits to Alaskans from these changes?
- How are the estimated benefits and/or costs of the existing hatchery production distributed to fishermen and processors in each region of the state? If changes in production occurred, how would these benefits and/or costs be distributed?
- What would be the economic benefits of changes in policy or additional legislative oversight regarding the production capacity and releases of hatchery salmon?

## **NEED FOR ADDITIONAL RESEARCH**

Rather than initiating a new benefit-cost analysis, the Senate Special Fisheries Committee requested the Hatchery Research Group to first identify the specific issues that need additional economic research. In response, the economics group developed a study plan with the initial tasks of reviewing economic and marketing studies completed to date and assessing the need for additional research.

After reviewing current research, the group determined that insufficient economic information currently exists to accurately address salmon enhancement public policy questions. The research that has been completed is either out-of-date, or additional research needs to be done to improve the reliability of existing economic models. As a result of the significant investment by private parties and the state of Alaska in both enhancement projects and commercial fishing, a rigorous analysis using accepted bioeconomic techniques is warranted to fill these information gaps.

Based on our review, the economics group proposed a set of contracts for additional research. The group worked closely with staff from the Alaska Department of Fish and Game (ADF&G), FRED Division to develop the research plan because FRED Division staff have considerable experience in these areas of research and have contracted for previous studies. In addition, we solicited comments from the Divisions of Commercial Fisheries and Sport Fish to ensure that their concerns are addressed. As the committee requested, the studies build on previous research to close information gaps. Funding for the research contracts was approved at the November 1, 1991, Legislative Council meeting.

## **RESEARCH COMPONENTS**

The five principal research components are:

- 1) a hatchery production and cost model,
- 2) a fish biological population model linked to fishing effort and harvests,
- 3) a demand model for Alaska salmon in world markets,
- 4) a fishing cost model, and
- 5) a computer software system to combine the four models.

The five components are described below including estimated costs and a brief summary of the information gaps the research is intended to address. Based on prior research conducted for the FRED Division and expertise, the economics group contacted potential University of Alaska researchers to determine interest in the projects.

As a result of the short time period available to complete the research, it will be funded through RSAs. Therefore, interested parties did not formally bid on the projects, but instead provided information on proposed research methodology, pertinent research experience and qualifications, and the ability to complete the contract in the time available.

### ***Hatchery Production and Cost Model***

**Principal Investigators:** Economics Group, Legislative Research Agency, and the ADF&G, FRED Division staff

**Anticipated Cost:** \$0

This research component consists of a survey of hatchery and enhancement project operators to determine the cost of producing salmon. In economics jargon, survey information will be used to develop an enhancement project "production function" to estimate the incremental cost of changes in the number of salmon produced by these projects. The survey will be developed by the economics group and FRED division staff and administered by the Legislative Research Agency and FRED division. This portion of the research will also solicit information from the ADF&G, Division of Commercial Fisheries regarding the costs of fisheries management of enhancement project stocks. This portion of the research needs to be conducted because no data exist on the incremental costs of enhancement project fish production. When the Governor's fisheries mini-cabinet reviewed the Alaska salmon enhancement program in 1984, a similar survey was conducted. Those results, however, are out-dated and additional salmon enhancement projects have been developed since that time.

### ***Biological Population Model***

**Principal Investigators:** Dr. Jeremy Collie, Juneau Center for Fisheries and Ocean Sciences, University of Alaska Fairbanks

**Anticipated Cost:** \$10,000

The purpose of the biological population model is to estimate the number of adult fish produced by enhancement projects and available for harvesting. Salmon produced by hatcheries and other projects are exposed to similar biological and environmental conditions and fisheries as wild stocks--as compared to farmed salmon. As a result, this research would estimate the interdependence of wild and enhanced stocks. These estimates will taken into consideration varying management assumptions regarding stock separation and cost recovery. This research component is necessary because ADF&G has not comprehensively analyzed the interaction of wild and enhanced stocks and the impact of different levels of enhanced stock production on commercial fisheries harvests.

### ***Salmon Demand Model***

**Principal Investigator:** Dr. Mark Herrmann, Department of Economics, and Dr. Joshua Greenberg, School of Land Resources Management, University of Alaska Fairbanks

**Anticipated Cost:** \$18,000

This contract will extend and improve research on the salmon enhancement program completed to date by Dr. Boyce for the FRED division. To more fully understand world salmon markets, improvements to existing demand models are needed. Relatively little research has been conducted to date on the demand for Alaska salmon, and models that do exist are insufficient to reliably answer the Legislature's policy questions. The additional work has not been contracted by the FRED because of insufficient funding.

In 1990, Dr. John Boyce's research compared single-equation and system of equations demand models for Alaska salmon. The study compared two, single-equation models developed by Ben Muse of the Alaska Commercial Fisheries Entry Commission (CFEC) in 1984 and Nick Ronan, University of Alaska Anchorage, Institute for Social and Economic Research (ISER) in 1989, and an alternative model proposed by Hongru Zhang, University of Alaska Fairbanks graduate student, using a Two-Stage-Least-Squares (2SLS) approach. Boyce found that the 2SLS approach appears to have superior predictive capability within the sample.

Boyce (1990) estimates ex-vessel and wholesale prices for five species of Pacific salmon, which is required for evaluating enhancement project tradeoffs between different salmon species and markets that are relevant to the state of Alaska. However, Boyce's study did not (1) develop a satisfactory profit function at the wholesale level for all salmon species, (2) conduct a full testing of wild, enhanced, and farmed salmon substitutes, including the extent to which farmed-salmon production is a substitute for Alaska salmon harvests, (3) link ex-vessel markets or wholesale markets to retail consumer markets, and (4) produce demand models for pink and sockeye salmon with low estimation errors.

In addition to this recently completed research by Dr. Boyce, recent econometric analyses completed by Lin and Herrmann (1988) and Mittelhammer, Herrmann, and Lin (1989) provide considerable information on the import and export markets for salmon, and the relationship of farmed-salmon markets to capture-fishery markets.

The models of Mittelhammer, Herrmann, and Lin develop demand functions using import and export data closer to the final markets. They include more substitutes, and incorporate a supply and demand model for farmed salmon. However, the models are not sufficiently stratified by species at the ex-vessel level for evaluating tradeoffs in Alaska's statewide enhancement program.

Neither of the two modeling efforts (Boyce or Mittelhammer, Herrmann, and Lin) were designed to compute regional distribution of gross earnings within the major Alaska salmon fisheries, or the amount of price response imposed on a given region by another region's salmon production. The ability to discern regional impacts is a high priority in evaluating the benefits and costs of the salmon enhancement program.

In summary, two major salmon demand model improvements are needed. The first is in the ability to project future salmon prices and the impact of changes in enhanced salmon production and harvest levels on Alaska salmon prices. The second improvement is incorporating into salmon demand models the impact of changes in world salmon-farming production levels on Alaska salmon markets and prices.

### ***Fishing Cost Model***

**Principal Investigator:** Dr. John Boyce, Department of Economics, University of Alaska Fairbanks

**Anticipated Cost:** \$20,000

This portion of this study will estimate the cost to fishermen of harvesting salmon to determine the incremental cost of harvesting different levels of enhancement project produced fish. This information can address questions such as--if hatchery production results in a 10 percent increase in harvest levels and a 2 percent decrease in the price of pink

salmon, are the additional revenues minus the additional cost of harvesting the fish sufficient to increase fishermen's net revenues.

The objective of this study is to formulate and test empirical models that will project short- and long-run fishing costs for specific Alaska salmon fisheries. To conduct a benefit-cost analysis, fishing costs must be determined in the short and long run. In the short run, an enhancement project or a management action may encourage salmon fishermen to direct more fishing effort--which is a function of gear, boat size, horse power, and crew size, for example--into a specific statistical area and away from another statistical area (or alternative fishing opportunity). With the existing management constraints on salmon fishing in place, such as limited entry and fisheries openings and closures, the short-run increases in marginal costs may be smaller or larger than the potential short-run revenues from a given project. However, in the long run, fishermen can be expected to increase fishing effort in statistical areas where the marginal revenues are greater than marginal costs of fishing. Fishing effort would be increased even if new vessels are not allowed to enter the fishery. As a result of insufficient research, economists currently can only provide informed guesses of the magnitude of these short- and long-run fishing costs in Alaska's salmon fisheries. Because little extensive or reliable research has been completed on this topic which accounts for the relatively higher cost of this study component.

### *Combining of Models for Policy Analysis*

Principal Investigator: Drs. John Boyce and Mark Herrmann, Department of Economics, and Dr. Diane Bischak, School of Management, University of Alaska Fairbanks

Anticipated Cost: \$10,000

When completed, the four models will be combined into a single, complete software system for the analysis of specific policy questions. This contract will test specific future enhancement program options--such as maintaining, decreasing, or increasing current enhanced salmon production levels, changing the current species mix, and maintaining or changing the location of enhancement projects--on the net economic benefits to fishermen and Alaskans. To the extent possible the analysis will differentiate the distribution of enhancement program net benefits among regions of the state. The results of this analysis will be a written report for the committee that will facilitate the development of public policy decisions.

*Preliminary reports on the research being conducted under these contracts are to be submitted to the Legislature in April, 1992, and the final reports in June, 1992. The remainder of the Legislature's hatchery review project can move forward in the meantime. Information gathering and the formation of some conclusions, options and courses of action, regarding the other portion of the project can be accomplished independent of these economic studies.*

### **CONCLUSION**

In addition to providing information on Alaska's salmon enhancement programs, the models developed by the study could be used for evaluating other salmon management policy questions.

The total estimated cost of the research is \$58,000 which is approximately \$17,000 less than the UAA, Institute of Economic and Social Research proposal provided in May 1991. The reasons for

the estimated lower costs are that the hatchery cost model work would be done with current legislative and ADF&G staff.

The research does not include studies to develop new markets or products for Alaska salmon for a number of reasons. The time available is insufficient, the cost of reliable marketing studies is usually quite high, and the Alaska Department of Commerce and Economic Development (DCED), Division of Economic Development and the Alaska Seafood Marketing Institute (ASMI) are both initiating salmon marketing studies in response to this summer's lower salmon prices. Therefore, the legislative economics and marketing group plans to provide information to the legislature on the success of past state efforts to market Alaska salmon and coordinate with the DCED efforts to avoid research duplication and encourage the best possible information.

The research also does not include studies to estimate the net benefits of the salmon enhancement program to sport or subsistence users. Including these additional uses would significantly expand the scope and cost of the studies.

Marketing

we are still talking  
about it as a  
solution — \$ wise  
this is ~~what~~ it will  
cost this is what it  
will be spent on.

*"Master  
Copy" for  
re-write*

*Pls return to  
Molly's book  
for Jo Ann  
after  
adding  
from  
Kevin's  
notes*

## CHAPTER X.

## MARKETING

As a result of the precipitous decline in Alaska salmon prices in 1991, Governor Hickel formed the Salmon Strategy Task Force. The purpose of the group was to identify the problems facing Alaska's salmon fishing industry and recommend state actions to address these problems. A primary focus of the task force was salmon marketing. The task force recently finalized its recommendations. To avoid duplication with the task force's efforts, it was decided that the Legislative review of the Alaska salmon enhancement program would analyze the economic costs and benefits of the enhancement program and review past state salmon marketing efforts. In addition, as part of the legislative review, the Salmon Strategy Task Force's final recommendations are summarized (a copy of the Task Force's report is attached).

### INTRODUCTION

The Alaska Seafood Marketing Institute (ASMI) was established in 1981 as a quasi-state corporation in the Alaska Department of Commerce and Economic Development (DCED). The institute's statutory responsibilities include:

- To conduct educational, research, advertising, and sales promotional programs to increase awareness of all species of seafood and their by-products that are harvested in Alaska.
- To develop quality specifications to enhance the high quality image of Alaska seafood worldwide, and to adopt recommendations for the handling of seafood from the moment it is caught until it is shipped to the marketplace.
- To prepare market research and product development plans for all species of seafood and their by-products harvested in Alaska.

State statutes prohibit ASMI from favoring any region, product, or processor. For that reason, ASMI uses "generic" marketing campaigns aimed at enhancing the sales of particular "species" of fish or broad product categories (such as canned or frozen) rather than specific products. Also, because it is likely to favor individual processors, ASMI does not promote new products.

### ORGANIZATION

#### Board of Directors

To accomplish its statutory mission, the ASMI organization consists of a board of directors, numerous committees, and a relatively small number of staff. Policy and program direction is set by the 18-member board of directors. The board membership consists of 12 fish processors, 5 commercial fishermen, and 1 public citizen. Of the 12 processors, 8 are to be appointed from "large processors" (annual Alaska payroll of \$1 million or more) and 4 are to be appointed from "small processors" (annual Alaska payroll between \$50,000 and \$1 million). Although not required by statute, the board has three non-voting ex-officio members: the DCED commissioner, and a legislator appointed from each chamber.

## Committees

*The ASMI committee system is extensive with the largest portion being a system of marketing committees.* The primary marketing committee plans the generic Alaska seafood marketing program for the domestic market. Committee members include the chairs from the five individual species committees (halibut, shellfish, canned seafood, whitefish, and salmon), plus the chairs of the export and quality committees, and two board members. The philosophy of the primary marketing committee is to promote Alaska seafood through the development of long-term marketing goals and strategies.

Under the marketing committee are the five individual species committees. These committees generically address marketing concerns related to their particular species group. The philosophy of the individual marketing committees is to promote the species with short-term marketing goals and strategies that are consistent with the long-term goals and strategies of the marketing committee.

The quality and export committees develop industry guidelines for the care and handling of seafood and oversee the federal Targeted Export Assistance (TEA) program, respectively. The ~~TEA~~ <sup>MPP</sup> program was developed to increase U.S. exports. <sup>Market Promotions Program (mpp)</sup>

Most of the members of the marketing committees are marketing specialists employed by the fish processors represented on the ASMI board. Other committee members are representatives from fishery organizations that are knowledgeable about the fishing industry.

## Staff

The ASMI executive director is selected by the board of directors and permitted to hire additional staff upon approval of the board. The central staff members include: ~~communications manager~~, <sup>manager</sup> comptroller, quality coordinator, special projects coordinator, and office manager. In the past year, ASMI was authorized ~~to hire~~ four additional marketing specialists who had previously worked with ASMI as

## ASMI FUNDING SOURCES

A portion of ASMI's funding is derived from a self-imposed marketing assessment. All fish processors who purchase annually \$50,000 or more (ex-vessel value) of seafood pay an assessment of 0.03 percent of their total purchases. These assessments are collected in the state's general fund and are appropriated annually to ASMI. The balance of ASMI's funding is derived from state general fund and federal appropriations. Table 1 shows funding sources and levels since FY 82.

According to an ASMI briefing paper, ASMI has spent nearly \$35 million in the domestic market since 1981 in their "generic" seafood marketing program. Since FY 88, an additional \$24 million was spent in foreign markets, using federal funds and small state general fund matching appropriations. *Federal funding, which has increased as a result of the TEA program, is restricted to international marketing efforts.* In contrast, state general fund appropriations have declined in recent years. In addition, ~~because processor contributions are based on ex-vessel values, the industry assessment will decline approximately \$600,000 in FY 92.~~ Given the outlook for Alaska salmon

## ASMI FUNDING HISTORY

(in millions of \$)

| <u>FY</u>    | <u>GF</u>    | <u>IND.</u>  | <u>FED.</u>  | <u>TOTAL</u> | <u>DOMESTIC</u>  | <u>INTERNATIONAL</u> |
|--------------|--------------|--------------|--------------|--------------|------------------|----------------------|
| 1982         | 2.07         | --           | --           | 2.07         | 2.07 (-overhead) |                      |
| 1983         | 5.66         | 1.15         |              | 6.81         | 6.81 (-overhead) |                      |
| 1984         | 2.57         | 1.29         | .10          | 3.96         | 3.1              |                      |
| 1985         | 2.57         | 1.04         | .34          | 3.95         | 3.3              |                      |
| 1986         | 2.6          | 1.0          | --           | 3.6          | 3.15             |                      |
| 1987         | 1.93         | 1.49         | .25          | 3.68         | 2.7              |                      |
| 1988         | 1.63         | 2.65         | 2.2*         | 6.48         | 3.22             | 2.4                  |
| 1989         | 2.1^         | 3.3          | 5.2*         | 10.6         | 3.9              | 5.8                  |
| 1990         | 2.2^         | 2.7          | 8.0*         | 12.9         | 3.8              | 8.5                  |
| 1991         | 2.5^         | 3.1          | 8.0*         | 13.6         | 4.0              | 8.7                  |
| 1992         | 2.1^         | 3.2          | 8.8*         | 14.1         | 3.5              | 9.5                  |
| 1993         | 2.3^         | +/-3.1       | 8.5#         | 13.9         | 3.2              | 9.5                  |
| <i>total</i> | <i>30.23</i> | <i>24.02</i> | <i>41.39</i> | <i>95.65</i> | <i>42.75</i>     | <i>44.4</i>          |

\*The federal fiscal year is different from the state fiscal year. Figures for the federal funds are not available on the same cycle as the state dollars.

#In FY93 through an arrangement with federal program managers, the funding cycle for federal dollars was changed to coincide with the State fiscal year.

^This general fund total includes general fund matching dollars for the federal funds. The general fund match is used in foreign markets and is not available for domestic marketing. In FY89 and FY90 the match was \$495,000 each year. In FY91 and FY92 it was \$750,000. In FY93 it is \$1,020,600

The seafood industry voluntarily contributed .2 percent of the ex-vessel value of seafood landed in Alaska until 1987 when they voted to raise the assessment to .3 percent. The reduced figure for 1992 reflects the loss of \$240 million in ex-vessel value for salmon harvested between 1990 and 1991. The 1993 figure is an estimated based on harvest figures to date. Actual numbers will not be available prior to May 1993.

*Prepared by the Alaska Seafood Marketing Institute, no date.*

## ASMI FUNDING HISTORY

(in millions of \$)

| <u>FY</u> | <u>GF</u> | <u>IND.</u> | <u>FED.</u> | <u>TOTAL</u> | <u>DOMESTIC</u>  | <u>INTERNATIONAL</u> |
|-----------|-----------|-------------|-------------|--------------|------------------|----------------------|
| 1982      | 2.07      | --          | --          | 2.07         | 2.07 (-overhead) |                      |
| 1983      | 5.66      | 1.15        |             | 6.81         | 6.81 (-overhead) |                      |
| 1984      | 2.57      | 1.29        | .10         | 3.96         | 3.1              |                      |
| 1985      | 2.57      | 1.04        | .34         | 3.95         | 3.3              |                      |
| 1986      | 2.6       | 1.0         | --          | 3.6          | 3.15             |                      |
| 1987      | 1.93      | 1.49        | .25         | 3.68         | 2.7              |                      |
| 1988      | 1.63      | 2.65        | 2.2*        | 6.48         | 3.22             | 2.4                  |
| 1989      | 2.1^      | 3.3         | 5.2*        | 10.6         | 3.9              | 5.8                  |
| 1990      | 2.2^      | 2.7         | 8.0*        | 12.9         | 3.8              | 8.5                  |
| 1991      | 2.5^      | 3.1         | 8.0*        | 13.6         | 4.0              | 8.7                  |
| 1992      | 2.1^      | 3.2         | 8.8*        | 14.1         | 3.5              | 9.5                  |
| 1993      | 2.3^      | +/-3.1      | 8.5#        | 13.9         | 3.2              | 9.5                  |

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insert  
See new table

## ASMI FUNDING HISTORY

(in millions of \$)

| FY   | GF    | Ind.  | Fed.  | Total | Domestic         | International |
|------|-------|-------|-------|-------|------------------|---------------|
| 1982 | 2.07  | --    | --    | 2.07  | 2.07 (-overhead) |               |
| 1983 | 5.66  | 1.15  | --    | 6.81  | 6.81 (-overhead) |               |
| 1984 | 2.57  | 1.29  | .10   | 3.96  | 3.1              |               |
| 1985 | 2.57  | 1.04  | .34   | 3.95  | 3.3              |               |
| 1986 | 2.6   | 1.0   | --    | 3.6   | 3.15             |               |
| 1987 | 1.93  | 1.49  | .25   | 3.68  | 2.7              |               |
| 1988 | 1.63  | 2.65  | 2.2*  | 6.48  | 3.22             | 2.4           |
| 1989 | 2.1*  | 3.3   | 5.2*  | 10.6  | 3.9              | 5.8           |
| 1990 | 2.2*  | 3.2   | 4.5*  | 9.9   | 3.8              | 5.1           |
| 1991 | 2.45* | 2.7   | 8.78* | 13.93 | 3.6              | 9.5           |
| 1992 | 2.1*  | 2.6+- | ?*    | ??    | 3.0+-            | ??            |

TOTAL 27.88 20.42 21.37 64.98 38.65 22.8  
 \* This general fund total includes general fund matching dollars for the federal funds. The general fund match is used in foreign markets and is not available for domestic marketing. In FY89 and FY 90 the match was \$495,000 each year, in FY91 it was \$750,000 and in FY92 it is \$750,000.

\* The federal fiscal year is different from the state fiscal year so the figures for the federal funds are not available on the same cycle as the state dollars.

Prepared by the Alaska Seafood Marketing Institute, no date.

prices, industry contributions can be expected to remain below historic levels. *State general fund appropriations and industry contributions are used primarily to fund domestic marketing efforts. As a result, ASMI will have fewer resources for domestic marketing at a time when the domestic market has been identified by analysts as having the greatest potential for increasing sales of Alaska salmon.*

### **EFFECTIVENESS OF ASMI'S MARKETING PROGRAM**

When ASMI was established, the Alaska salmon industry provided most of the U.S. production and about half of the world production from wild and ocean-ranched salmon stocks. As a major supplier, the generic marketing of Alaska salmon was relatively effective. A recent Legislative Audit report evaluated whether there has been an increase in awareness of Alaska seafood since ASMI's inception. The audit report analyzed ASMI effectiveness based on the following criteria:

- \*Perception that Alaska is the best region for seafood.
- \*Awareness of Alaska as a seafood-producing region.
- \*Positive beliefs/attitudes toward Alaska seafood.
- \*Awareness of Alaska seafood advertising.
- \*Association of seafood species with Alaska.
- \*Awareness of seafood species.

*The Legislative Audit review of market research provided by ASMI, concluded that increases had occurred in consumers' perception of Alaska seafood. In addition, consumers are more aware of Alaska as a seafood-producing region.*

*Despite these overall improvements in consumer perceptions and increased consumption of seafood, Alaska has lost a significant share of both the domestic and international salmon markets as a result of the tremendous growth in world farmed-salmon production. The dramatic rise in production and growing acceptance of farmed salmon as a source of fresh salmon represents the single greatest threat to the Alaska salmon market. The consistent year-round availability and quality of fresh, farmed salmon has made wild (and ocean ranched) Alaska salmon, with its short fresh season and quality and supply inconsistencies, a secondary choice for a large number of buyers. United States and foreign markets generally prefer fresh over frozen salmon.*

According to ASMI board chair, Bob Waldrop, the large farmed-salmon producer nation of Norway spends about five cents per pound marketing salmon, while only one cent per pound is spent marketing Alaska salmon. *The new producers of salmon are out-competing Alaska producers in product preference, quality, availability, and marketing.*

*Another problem is the fact that canned salmon production represents 59 percent of all retail salmon volume. U.S. per capita consumption of canned salmon declined 60 percent from 1980 to 1989, at the same time that harvests of pink salmon--the majority of which is canned--increased approximately 50 percent. Canned salmon suffers from an "old-fashioned" image with most younger consumers. The bones and skin also result in the perception that it is*

inconvenient and unappealing. In foreign markets, canned salmon markets have <sup>fluctuate</sup> declined primarily due to price effects. <sup>around pricing and supply conditions.</sup>

Analysts who are critical of ASMI's marketing programs maintain that the "generic" approach promotes all salmon, regardless of origin, because Alaska products are not clearly identified in the market. They argue that without brand identification and a quality assurance program to <sup>assure</sup> ~~guarantee~~ that Alaska salmon is superior, generic marketing may actually be helping Alaska's competitors.

## **LABELING OF ALASKA SALMON**

<sup>1992</sup> A recent *Consumer Reports* article attacking the <sup>wholesomeness and safety</sup> quality of seafood sold in the United States has caused considerable concern within the Alaska fishing industry. The industry already faces difficult marketing challenges in a changing competitive environment. Despite its flawed methodology and lack of specificity, the report's potential impact on Alaska must be taken seriously. <sup>long-term</sup>

*The Consumer Reports* article also illustrates the problem of insufficient labeling of seafood products when sold in retail markets. The salmon samples tested in the report could not be identified by species, origin, or whether it was wild or pen reared. The Alaska Seafood Marketing Institute has recently developed a new U.S. promotion of Alaska salmon in order to meet increasing market challenges. This promotion is to emphasize the freshness and purity of Alaska's wild salmon. However, without specific labeling of salmon products as to species, state of origin, and identification as to whether wild or pen reared, the effectiveness of such marketing will be reduced.

To address the labeling problem, <sup>as to their source, type, and whether the product is wild or farmed.</sup> the Alaska State Legislature sent a letter to the Alaska Congressional delegation requesting that they introduce federal legislation requiring the labeling of seafood products. Proper labeling will ensure that consumers can identify and select Alaska salmon, and provide better information and clearer choices in the market place. It would also reward those states that maintain strict quality control programs, such as Alaska, and ensure that the benefits of promotional efforts accrue to Alaska.

It should be noted that Alaska does have a statute that requires that any farmed salmon sold in the state must be labeled that it is farmed and is from outside Alaska.

## **THE SALMON STRATEGY TASK FORCE RECOMMENDATIONS**

The Salmon Strategy Task Force finalized its recommendations on January 24, 1992. The Task Force's provided immediate, mid-range, and long-range recommendations which are summarized below.

**Recommendations for Immediate Action.** 1) ASMI should develop a budget and strategy for selling the existing inventory surplus of Alaska salmon; 2) processors and fishermen should initiate price negotiations early; 3) The University of Alaska, DCED, and ADF&G should provide the best possible information to fishermen regarding world salmon markets; 4) DCED should review Prince William Sound processing capacity; 5) DCED and the Alaska Commercial Fishing and Agriculture Bank (CFAB) should provide loan extensions as needed.

**Mid-Range Recommendations.** The mid-range recommendations include actions for product and market development, salmon quality, and marketing and a review of ASMI's role. ✓

**Long-Term Recommendations.** The long-term recommendations included the development of a strategic plan to help strengthen the fishing industry and its support sector. This included an integrated marketing and production strategy, a review of loan and limited entry permit policies, a review of ASMI, a review of fish tax policy, and the reduction of regulatory burdens to lower costs. ASMI's Salmon Recovery proposal <sup>was</sup> included in the Task Force's long-range recommendations as well as its recommendations for immediate action. This proposal is discussed in the following section. ✓

*which did not receive support from the Hickel administration,*  
**The ASMI Salmon Recovery Proposal**

One of the recommendations of the Salmon Strategy Task Force <sup>was</sup> ASMI's Salmon Recovery Proposal. According to an ASMI briefing paper, the **goal** of the Salmon Recovery Proposal <sup>was</sup> to increase annual per capita U.S. salmon consumption from 1 to 1.5 pounds. This increase would absorb an additional 119 million pounds of salmon each year or about 15 percent of Alaska's annual production. Of the expansion, 60 percent would be frozen and 40 percent would be canned salmon.

The **strategy** of the program would be a combination of consumer and trade education and advertising, direct trade contacts, and other promotional methods used by ASMI over the last decade. Instead of patchwork, crisis-response marketing, this would be an integrative approach tying all marketing elements together. The basis for the marketing effort comes from a number of core issues identified by ASMI. These include:

- \*trade and consumer preference for fresh salmon,
- \*decreased consumer consumption of canned salmon,
- \*low consumer knowledge and awareness of Alaska salmon products,
- \*negative consumer perception of quality of frozen and canned salmon,
- \*limited regional and seasonal purchases of Alaska salmon,
- \*limited food-service use of Alaska salmon, especially canned,
- \*fluctuating supply and prices of Alaska salmon, and
- \*increased competition.

It is unclear from ASMI's information how consumer and trade preference <sup>would</sup> for fresh over frozen and canned salmon ~~is~~ expected to be changed. It appears that efforts ~~will~~ be made to increase overall salmon consumption while convincing purchasers that Alaska frozen and canned salmon are also high quality products. To avoid merely expanding the farmed-salmon market, central to ASMI's recovery program is an Alaska salmon product identification promotion using a logo or seal of origin. This is similar to the "Alaska Made" program.

ASMI does have a record of success. As a result of direct marketing, Alaska canned salmon exports to the United Kingdom increased from 370,000 cases to 946,500 cases between 1989 and 1991. However, ~~unless this product identification campaign is very successful and/or ASMI's generic marketing approach is modified, there is significant risk that the Salmon Recovery Program could benefit international farmed-salmon producers as much as it would the Alaska industry.~~

The <sup>was estimated</sup> cost of the proposal is \$10 million annually for five years, totalling \$50 million. A lower annual amount would be needed after the first five years to sustain the marketing effort. ASMI has identified some potential sources of funds as follows:

- 1) state general fund appropriations,
- 2) a raw fish tax credit,
- 3) an endowment from the Exxon Valdez settlement as part of the restoration agreement,
- 4) a redirection of salmon enhancement taxes paid by fishermen to regional aquaculture associations, and
- 5) a combination of the above sources.

In reality, a raw fish tax credit amounts to an indirect state appropriation because a small amount (0.03 percent) of the foregone general fund fish tax revenues would then be paid in the form of industry processor contributions. Unless the legislature deems that a well specified and directed raw fish tax credit is desirable public policy in and of itself, a direct state general fund appropriation to ASMI is a superior method for funding the proposal.

Regarding a redirection of the enhancement tax, ASMI states that Alaska does not have a salmon production problem but a salmon marketing problem. While this may be true, the pass-through salmon enhancement taxes pay for the operation and/or repayment of state loans for salmon enhancement projects. As a result, this funding source is also an indirect state appropriation---the funding the aquaculture associations would forego would reduce payments on state loans and/or require additional operating loans. In general, if the legislature supports the salmon recovery proposal, a direct appropriation would be the best fiscal approach for funding the program.

Senator Jones has introduced legislation to appropriate \$10 million to ASMI for domestic salmon marketing efforts during Fiscal Years 92 and 93.

## **ALTERNATIVE PROPOSALS TO INCREASE MARKETING EFFORTS**

### **Proposed Changes to Alaska Statutes:**

A number of pieces of legislation have been introduced <sup>recently</sup> to address the salmon marketing problem. The general intent of the ~~legislation~~ <sup>proposals</sup> is to provide funding for the immediate increased promotion of Alaska salmon and to increase the voice of fishermen in those marketing efforts either through changes to ASMI or creation of a new salmon marketing association. ~~Funding for increased marketing efforts would be provided through temporary marketing assessments.~~

*No action was taken on any of these proposals.*

*Creation of*  
• Representative Gene Kubina has proposed legislation to ~~create~~ *create* six regional salmon marketing committees and the Alaska State Salmon Marketing Association. Two fishermen from each committee would sit on the association. Funding for marketing efforts would be provided through a 1 percent marketing tax on value of salmon landed.

*Expansion of*  
• Representative Dave Choquette introduced legislation that would expand ASMI's statutes to allow for targeted development of Alaska salmon markets and product development.

*Improvement of*  
• Representative Bill Hudson introduced legislation that would ~~impose~~ *impose* a temporary one percent (1%) marketing tax on the value of salmon landed and increase the ASMI Board of Directors by two positions that must be filled by commercial fishermen.

*Establishment of*  
• Senator Dick Eliason introduced a bill that would establish a temporary one percent (1%) salmon marketing tax and a committee within ASMI to provide fishermen with control over how the funds would be expended.

*Endowing*  
• Representative Cliff Davidson and Senator Fred Zharoff have introduced legislation that would ~~endow~~ *endow* the Alaska Fisheries Development Foundation to fund fisheries development research projects.

### Development of a Salmon Marketing Council

Under the federal Seafood Promotion Act of 1986, after rigorous fisherman and processor review and approval, a salmon marketing council could be developed to increase the U.S. marketing efforts of salmon. If properly organized and chartered, a "National Salmon Council" would have the power to assess industry participants for funds to be used for salmon promotion and marketing, product research, and consumer education. The council would also be able to develop and offer salmon quality standards for U.S. Department of Commerce approval.

### ~~Marketing Efforts by Groups Such as PWSAC~~

Recognizing the need to develop markets for their very successful salmon hatchery production, PWSAC has established a product development strategy.

*As part of this development strategy, in the short-run PWSAC would like to: (1) pre-sell all 1992 cost-recovery fish, (2) ensure the utilization of all cost-recovery fish, and (3) negotiate one-to-three year contracts for the sale of fish. PWSAC does not intend to tie price contracts to anticipated ex-vessel prices and would like any contractual agreements to require primary processing in Alaska. In the long term, PWSAC would like to facilitate pink salmon product development to provide price and supply stability and continuity, and to facilitate state research on new product forms. PWSAC would use cost-recovery fish to achieve these objectives.*

*The primary marketing obstacle identified by PWSAC is processing capacity—getting the fish out of the water as whole frozen fish. While there is sufficient canning processing capacity in the Sound, the decline in canned salmon markets results in*

little demand for the abundant pink production by canning processors. PWSAC has identified potential buyers of frozen pink salmon, but there is insufficient freezer processor capacity to ensure product delivery. PWSAC had hoped to utilize floating processors via the coordination of the groundfish trawl season regulated by the North Pacific Fisheries Council. While this will not occur during the 1992 season, it is an option PWSAC will continue to pursue for future seasons.

**OPTIONS FOR POSSIBLE CONSIDERATION:**

- Review of the state's role in the marketing of Alaska seafood, and salmon in particular, including a review of the ASMI program.
- Given that ASMI's generic approach to marketing was statutorily established prior to the significant increase in world farmed-salmon production, expansion of ASMI's statutes to reflect changes in world salmon markets. In particular, ASMI's marketing efforts could be expanded to include new product and market development, including targeting and distribution of salmon products at the wholesale and retail levels.
- Providing funding for ASMI's Salmon Recovery Proposal.
- Supporting the Salmon Strategy Task Force's recommendation that ADF&G review the impact of fisheries management practices on fish quality, especially related to the quality of cost-recovery fish harvested in terminal areas.
- Conducting a comprehensive analysis of ASMI privatization including whether 1) privatization would provide greater flexibility and possibly more effective marketing and 2) privatization would result in the loss of control over marketing activities to the detriment of Alaska and Alaska fishermen.
- Encouragement of the development of a national salmon marketing council.

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# **Salmon Strategy Task Force Recommendations**



**Walter J. Hickel, Governor  
Commissioner Glenn A. Olds, Chair**

**State of Alaska  
Department of Commerce and  
Economic Development  
Division of Economic Development**

**JANUARY 24, 1992**

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## **INTRODUCTION**

Governor Hickel appointed the Salmon Strategy Task Force on August 15, to investigate the reasons for the 1991 salmon crisis and to review options for industry stabilization and recovery.

Alaskans should be proud of the courage of the people and companies that started this industry years ago. The people and lifestyle of the salmon industry are a fundamental part of Alaska's history, culture and way of life.

Alaska has been the world's leading supplier of salmon. The state's salmon industry now faces strong competition from many other sources and its dominant role is threatened. Traditional markets are no longer dependent on Alaska for their needs.

The entire world is producing salmon at a record rate. For many years, Alaska's salmon industry enjoyed a market strategy based on allocating scarce resources among competing customers. In less than a decade the entire system has changed. Now the competition in both traditional and developing markets is intense, and it's likely to stay that way.

In order to compete, and indeed survive in this new environment, it is essential that all participants in the industry recognize and accept the reality of these competitive changes. The industry is facing a crisis of considerable magnitude, requiring decisive short term action and long term action to prevent the crisis from recurring.

The 1991 salmon season has forced us to recognize that the Alaska salmon industry is at a crossroads. As with many other industries in America, we must recognize that traditional business practices are no longer adequate in the face of global competition. Reevaluation and action are required.

The Salmon Strategy Task Force has made several immediate and long-term recommendations which should alleviate the immediate crisis, help stabilize the industry, and plot a course to regain our leadership role in the marketplace.

The effects of the decrease in salmon prices are profound, putting at risk state loan programs, community stability, and tax revenues to all levels of government. The seafood industry is the state's largest private sector employer, with the largest resident private sector payroll. The failure of the state and the industry to take decisive action will result in continued weakness in this economic sector and put increased demands and safety net programs.

These will not necessarily be easy changes to make. It will take a substantial commitment of time, hard work, and money. We ask that the Administration, the entire salmon industry and the Legislature work together to support the implementation of these recommendations.

## **Charge to the Task Force**

Governor Hickel's charge was to develop a strategy to generate maximum economic return to Alaska fishermen, processors, and the state as a whole, consistent with wise use and conservation of the resource. The Task Force is to make specific recommendations to the seafood industry, the Administration and the Legislature.

The group was to focus on methods to maintain existing markets, develop alternative markets and product forms, promote secondary processing, develop necessary infrastructure, coordinate production and marketing strategies, improve salmon quality control, optimize fish tax policies and improve fish harvesting and processing efficiency. The Task Force also delineated existing salmon markets and collected and distributed information to assist fishermen and processing companies in reaching agreement.

### **Conditions requiring study**

The major factors distressing the industry are greatly increased competition, high inventory levels, low prices, and projections of continuing high production levels. The runup in prices 1986-1988 followed by declining prices since have left many fishermen with debt loads they cannot support. The declining markets have hurt processors, exporters, and end users holding product in a declining market as well. These factors led to serious price disputes and charges of price fixing in some quarters as the 1991 season developed.

The market outlook for the 1992 season may improve somewhat for sockeye, but extremely high inventory levels remain for pinks. These species represent the vast majority of Alaska production value and volume. The early, very tentative prognosis from Fish and Game is for another big production year.

### **Inventory of issues**

An initial questionnaire went out to 350 recipients of the Alaska Fish and Game weekly catch reports in mid July. This was followed by a second mailing of 125 in late July that added all Alaskan salmon fishing organizations, processors and legislators. The mailing solicited opinion on the issues the Task Force should address. Some 70 responses (a 15% response rate) were received. Staff collated the responses and summarized them. These responses were then categorized under nine headings for presentation to the Task Force.

### **Selection of Task Force**

The Governor announced the membership of the Task Force on August 15. It includes broad representation from the salmon industry, appropriate state agencies, and the general public. The group provides a good cross section of the industry and policy makers in state government, while main-

taining reasonable geographic balance and a practical size. The members are:

Honorable Richard Eliason of Sitka,  
President of the Alaska Senate,  
and a Southeast Alaska fisher;  
Honorable Fred Zharoff of Kodiak,  
Chairman of the Alaska Senate Rules  
Committee and a Bristol Bay fisher;  
Honorable Eugene Kubina\* of Valdez,  
Chairman of the House State Affairs  
Committee;  
Commissioner Glenn Olds,  
Alaska Department of Commerce and  
Economic Development;  
Commissioner Carl Rosier\*,  
Alaska Department of Fish and Game;  
Mr. Ed Crane\*,  
President of the Alaska Commercial  
Fishing and Agriculture Bank;  
Dr. Jerome Komisar,  
President, University of Alaska;  
Mr. Richard Lauber,  
Vice President, Pacific Seafood  
Processors Association;  
Ms. Hazel Nelson\*,  
President, Becharof Corporation,  
and Bristol Bay fisher;  
Mr. Greg Seider\*,  
Executive Director, United Fishermen of  
Alaska;  
Ms. Sandra Tavanis\*,  
Co-owner, Sea Hawk Seafoods, Valdez;  
Mr. Bob Van Brocklin,  
Prince William Sound Aquaculture  
Corporation; and  
Mr. Robert Waldrop,  
President of the Board, Alaska Seafood  
Marketing Institute, and Vice President,  
Silver Lining Seafoods, Ketchikan.

\* Editorial Committee

### **Calendar of work**

The Task Force met four times, August 29, October 7, November 1, and November 22. Agendas and summaries of the meeting minutes are contained in appendices to the full report.

At the first meeting, the Task Force selected which of the issues raised in the extensive mail-out solicitation to pursue. Five of the original nine survived; product and market development, reducing costs of production, getting reliable information, improving quality, and marketing salmon and ASMI's role. It also became clear there were several myths at work clouding the issues. Staff reworked the five issues passed by the Task Force in the first meeting into problem statements before the second meeting.

The second meeting started with presentations on various myths, including "everyone's making money but me," "it's all just a Japanese conspiracy," and "we should stick to business as usual, the customer just thinks they want something different." The Japanese market, salmon prices, margins and costs at various points in the industry, and ASMI's mission were discussed. The Task Force made changes to the problem statements and staff followed up the second meeting with extensive interviews of Task Force members and other experts to lay out the facts and options available to address the problems. A sixth problem was isolated and addressed in this process, the need for strategic planning. The persons interviewed, the questions asked and the options identified are in the full report appendix.

The third meeting started with presentations of the interview results and options gathered. The interview results form the main body of the full report. The Task Force then ranked the options available at that time. Some options were dropped. Staff reworked the options into general, specific, and detailed lists, and prepared a draft outline for the report.

The fourth meeting consisted of preparing some new recommendations for immediate action, and reworking the options that passed muster at the third meeting into the recommendations that follow. Some items were dropped. An editorial committee was appointed to oversee production of the report (see footnote above), and a schedule established for completion of the report.

### **Recommendations**

The Task Force recommendations take into account budget cycles and priorities. In many cases requiring state agency action, existing budgets are not adequate to perform the recommendations. Additional funding will be required, not reprogramming of existing budgets. The Task Force expects the relevant agencies to prepare the necessary budget information, and respectfully requests full and favorable consideration by the Administration and Legislature.

## RECOMMENDATIONS FOR DEALING WITH THE IMMEDIATE CRISIS

1. The Alaska Seafood Marketing Institute (ASMI) should develop a budget for immediate funding to deal with the existing inventory surplus before the 1992 season and projected 1992 production. This must be implemented as soon as possible<sup>1</sup>.
2. Processors and fishermen should initiate market discussions early. The Task Force recognizes that the market situation will be uncertain at that time, and that the risk involved will lead to low price suggestions from processors, but recommends early discussions to provide maximum information sharing and opportunity to reach agreement. The Department of Labor (DOL) should be prepared to bring in knowledgeable mediators if necessary.
3. The University of Alaska (U of A), Commerce and Economic Development (DCED), and Fish and Game (ADF&G), should initiate and/or support efforts to expose the broadest possible range of Alaska fishermen to credible and detailed information about recent and ongoing changes, including problems and opportunities, in the world markets for salmon.<sup>3</sup>
4. The DCED Division of Economic Development should review the processing capacity situation in Prince William Sound, taking into account the outcome of the 1991 season, and make preliminary findings available to the Governor (and the industry) as early as is practicable. The Task Force recognizes that the capacity problems that developed in Prince William Sound were the result of the fishery being late and very concentrated, and the fish being relatively dark and small.<sup>4</sup>
5. The DCED Division of Investments and Alaska Commercial Fishing and Agriculture Bank (CFAB) recognize the crisis caused by low prices and the effect this has on loan payments. The Task Force encourages them to actively seek out fishermen having problems and work with them on loan extensions and other measures to minimize foreclosures.<sup>5</sup>

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1. The immediate ASMI program should be geared to long-term domestic market growth. The Governor could include this amount in his budget request, including a request for exemption from procurement codes for this emergency funding. The Legislature could pass this supplemental funding out as soon as possible in the session. ASMI could reprogram funds to initiate the campaign as soon as possible, prior to release of the funds, consistent with prudent financial management.
  3. Provide reasonably detailed but clearly written information on prices and markets for salmon for widespread distribution in the spring of 1992 and thereafter. The information could be updated in season. A goal should be to establish a clearer understanding of the effects of market conditions and dynamics on prices.
  4. DCED could prepare a supplemental budget to cover the costs of doing the necessary surveys for the PWS capacity determination.
  5. Reinstatement of state funding for the ABDC (Alaska Business Development Centers) program of outreach and business assistance in rural areas has been identified as an important component in dealing with financial hardship. This organization provides one-on-one assistance with loan workouts and dealing with the IRS that is not available elsewhere.

## MID-RANGE RECOMMENDATIONS

### General

1. The DCED, ADF&G, and Department of Labor (DOL) should consider promoting a closer and more trusting relationship among the interests involved in the issues concerning Alaska's salmon industry. This effort should be closely coordinated with other ongoing educational and consensus building efforts.<sup>1</sup>

### Product and Market Development

2. The Alaska Science and Technology Foundation (in fisheries area), and the U of A's Fisheries Industrial Technology Center, and Marine Advisory Program should be encouraged to expand their efforts in salmon product and market development and to coordinate their efforts in providing technical assistance and research and development in salmon products through the Alaska Fisheries Development Foundation (AFDF).<sup>2</sup>
3. The DCED's ability to provide international marketing information and sales assistance should be expanded. The Department's Division of Economic Development and Office of International Trade should work closely with ASMI and the Alaska Center for International Business (ACIB) to reduce risk and costs to the private sector.<sup>3</sup>
4. The DCED, ASMI and the Marine Advisory Program's ability to assist domestic marketing should be expanded. The Department's Division of Economic Development work closely with ASMI to reduce risk and costs to the private sector.<sup>4</sup>

- 
1. In the consensus building efforts, the agencies could organize forums and/or participate in existing trade shows and conferences. The issues examined by the Salmon Strategy Task Force could be presented and discussed with the objective of developing a consensus about the direction the state should take in the future regarding the harvesting, management, promotion and marketing of Alaska's salmon.
  2. AFDF has in place a proven industry board and ability to perform, but will require administrative funding to continue operations. Salmon industry representation on their board should be expanded.
  3. Specific projects could include:
    - Work to reduce tariff barriers for Alaska seafood products overseas.
    - Encouragement to foreign processors to purchase or joint venture value-added production in Alaska.
    - Continuing investigation of new markets for salmon overseas where disposable income is high enough, and seafood is commonly eaten.
  4. These entities could reduce risk and costs to the private sector of expanding domestic markets through:
    - Working with food service entities in Alaska and other states to promote sales and distribution of Alaska salmon products.
    - Providing start-up technical assistance to new ventures.

## Quality

5. The Department of Fish and Game should reexamine management practices with the goal of obtaining the highest quality pack possible without harming the stocks.<sup>5</sup>
6. The Department of Fish and Game should conduct a comprehensive study in Southeast Alaska and Prince William Sound, with the cooperation of fishermen and processors, to determine the degree of risk managers should take in managing for economic efficiency and fish quality. The goal would be to identify the optimum locations for harvest.<sup>6</sup>
7. Industry and the Department of Fish and Game should cooperate on a program to educate fisheries managers, fishermen and industry operators on the physiological changes that occur in salmon (and hence its marketability) to encourage management that provides for the optimum use of the resource.<sup>7</sup>
8. Hatcheries should conduct research to determine the cause for variations in sexual maturity and other quality factors for stocks returning to hatcheries. Based on the research, hatcheries should modify their stocks and practices to optimize quality.

## Marketing and ASMI's Role

9. ASMI, the FITC and the Marine Advisory Program (U of A) should expand educational programs on fish handling, cleaning, chilling, and processing for virtually all parts of the industry. Such efforts should focus on providing hands-on training from the fishing boat to the market, and on meeting the needs of the consumer for quality seafood. The effects of quality handling on the ability to market the end product should be emphasized.

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5. The reexamination of management practices could include changes in the length of openings and the timing of fisheries to optimize salmon quality. The Task Force recognizes that Fish and Game may need statutory and regulatory changes to incorporate such considerations in management decisions.
  6. A controlled set of experiments to determine the optimum points of harvest for top quality could include:
    - a. testing the condition of fish to determine rates of deterioration in terminal harvest and outer areas, throughout the duration of the run; and
    - b. identifying the optimum location which will provide the highest quality of salmon with an acceptable risk to the wild stocks.
  7. A study to examine the effects of sexual maturity on finished product quality could include the following:
    - a. samples in each of the categories in ASMI's Color Guide and hatchery broodstock would be collected;
    - b. portions of each category would be processed at least as headed and gutted, filleted and canned products; and
    - c. the end products would then be used in a workshop setting to educate managers on the various aspects of salmon quality.

The Task Force recognizes that a similar program budgeted at \$25,000 was considered and set aside by the ASMI board, and that it may be possible to achieve the same ends using commercially-processed products. ADF&G should prepare a budget item if necessary.

10. The Department of Commerce and Economic Development should initiate and/or encourage efforts to expose all salmon fishermen to organized, accurate and credible data concerning the salmon industry and markets in sufficient form and detail to permit fishermen's consideration of a national salmon marketing council chartered by the U. S. Secretary of Commerce under the Federal Fish and Seafood Promotion Act of 1986.<sup>10</sup>

## **LONG-TERM RECOMMENDATIONS**

### **GENERAL GOAL**

The state needs to develop a strategic plan for long term development of the salmon (seafood) resource, using recommendations of this task force as a starting point. This should focus on strengthening the support structure and sustainability of the industry. The goal would be a more rational and efficient system which is less vulnerable to market, production, and financial fluctuations. This would ensure an integrated and uniform state approach to the fishing industry.

### **OBJECTIVES:**

- review and evaluate the institutions and relationships developed in the industry with an eye toward improving competitiveness and economic return to Alaska residents.
- bring together agencies and functions to affect a rational, consistent and sustainable program linking production, harvesting, processing, marketing and financing.
- determine the proper roles for the public and private components of the industry, integrating regulatory and developmental activities.

### **ACTION ITEMS**

#### **General**

1. The Department of Commerce and Economic Development, in cooperation with other state agencies and the salmon industry, should organize a group with broad experience and understanding, in aggregate, of food and commodities industries, to:

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10. The Federal Fish and Seafood Promotion Act of 1986 provides that species-specific councils (roughly parallel to the National Beef Council, etc.) may be formed only after a rigorous referendum process which must include all salmon harvesters and all primary processors or harvest purchasers and may include other industry participants. If properly organized and chartered, a "National Salmon Council" would have the power to assess the industry participants for funds to be used for salmon promotion and marketing, product research, consumer education, etc. It would also have the power to develop and offer, for Department of Commerce and Economic Development approval, salmon quality standards.

- a. review the functional and procedural workings of the Alaska seafood industry;
- b. identify areas of inefficiency, counter-productivity and resource waste.
- c. review and evaluate research and development capabilities.
- d. recommend what state resources, including statutes, regulations, prestige, etc., can and should be applied to address those areas.

### **Fish Production**

- 2. DCED, ADF&G, and ASMI should develop an integrated production and marketing strategy, which would:
  - a. recognize marketability of the fish as an important management goal.
  - b. recognize that price will be set by overall supply and demand, including the production of farmed salmon.
  - c. coordinate production with wider economic goals, including processing, product development, and markets, based on dependable information and planning.
  - d. better coordinate wild and hatchery production, regionally and by species and market.

### **Harvesting/Processing**

- 3. The Commercial Fisheries Entry Commission, DCED, and DF&G, should develop fishery management and regulatory measures aimed at reducing operating costs, more efficiently utilizing present investments, and promoting a rational sustainable industry. Investigate ways to retain permits in Alaska and rural areas in particular, provide greater stability and enhanced revenues to resident fishermen, and increased shoreside investment consistent with sound financial standards, through:
  - a. reexamination of loan policies and permit use limitations.
  - b. reexamination of Alaska's limited entry system.
- 4. To widen options for Alaskan fishermen, DCED, in cooperation with other state agencies and the industry should consider promoting Alaskan controlled joint venture processing developments linking present investors and industry participants with new technologies and capital, and Pacific Rim and lower 48 markets. Give special attention to rural communities dependent on the salmon resource, smaller plants, local consumption and market needs, infrastructure needs, and current economic development plans.

## **Marketing**

5. DCED should contract a major marketing research firm with proven credentials in food marketing to develop and analyze the "facts" related to salmon market trends, opportunities and weaknesses in major and potential markets. The group should also evaluate the state and industry's marketing efforts, including consideration of changes in the ASMI statute or operations, to permit, if possible, a more effective approach to marketing Alaska seafood.<sup>3</sup>
6. The Governor and Legislature should consider funding ASMI's \$10 million per year proposal for an intensive 5 year domestic marketing campaign. The goal is to raise domestic consumption of salmon from 1 to 1.5 pounds per person annually.
7. DCED, in cooperation with ASMI and DEC, should conduct a study to find the most cost effective ways to improve consumer confidence in Alaska seafood products. The Task Force recognizes that the entire seafood industry must improve the inherent quality of the salmon it processes, the freshness and workmanship of the product, and the consistency of grading to remain competitive, particularly when competing with farmed salmon.<sup>7</sup>

## **Finance/Other**

8. DCED, in cooperation with other agencies and the industry, should readdress the issue of infrastructure including but not limited to improving quality, providing cold storage capacity, and promoting value added production.
9. OMB, in cooperation with state agencies and the industry, should reexamine the policy and implementation of fisheries taxes, including the corporate income and marine fuels taxes. The State must first decide what it wishes to accomplish by taxation. While this is nominally raising revenues, any tax distorts the market in some way, and a review of the current tax structure and various proposed alternatives is in order. Of particular interest is whether targeted tax credits for research and development expenditures is feasible.

## **Reducing Costs and Regulatory Burdens**

1. The Departments of Fish and Game and Revenue should consider combining the appropriate processor annual report forms to simplify reporting requirements for the industry. This should be done at an agency level with the agencies sharing information from each form or integrating them, and may require statutory changes.
- 
5. The efforts should take into account what's already been done (Salmon 2000) and focus on those areas outside ASMI's assigned and traditional role, including new product and market development. The results must be produced in a form which will permit evaluation and initiation of strategies to further enhance and stabilize markets.
  7. A great deal of the input the Task Force received identified the lack of consistency in Alaska salmon products as a major marketing problem. Some Alaska product has been described as "low quality" compared to the competition. As Alaska's products become better identified in the marketplace, the Task Force recognizes that "Alaska brand" seafood must be of "good" quality, and meet the customers' expectations if customer satisfaction is to be achieved and advertising dollars well spent. Exactly how to determine those inherent quality standards, and how to ensure that the customer consistently gets the product they have purchased and expect could not be reconciled. The industry is divided on how large a role the state should play in determining quality, ranging from mandatory grading standards to no standards beyond wholesomeness.

2. The Department of Commerce and Economic Development, in cooperation with other affected agencies and the industry, should investigate ways to assist small operators in meeting the myriad regulatory requirements of various agencies. This might range from exempting processors under a specified size from filing certain forms to providing a central clearinghouse for permitting and filing information, technical advisory services and special loans for equipment such as computers and computer software.
3. The relevant state agencies should, in consultation with the Limited Entry Commission, collect child support payments from permit holders at the time of yearly permit renewal. Permit holders will be motivated to pay this fee and it will not unfairly burden processors.
4. The Departments of Revenue and Labor respectively, should relieve the burden of prepayment of the Fishery Business Tax and provision of Labor bond for companies with proven payment records and sufficient assets.

NOT A CONCERN NOW.  
1ST IN THE U.K. ANYONE  
INVOLVED IN AN ASPALT  
M.P. PROMOTION MUST  
PURCHASE PRODUCT STAMPED  
ON LID WITH THE WORDS:  
"PRODUCT OF U.S.A."  
ASPHALT EXPORT COMMITTEE IS  
NOW LOOKING AT WAYS TO  
INCLUDE "PROD. OF ALASKA"  
ON THE LID OF CAN - - -

DEC. 7.  
MOLLY -  
HOPE THESE COMMENTS  
ARE HELPFUL. ANY  
QUESTIONS, PLEASE  
CALL. HAPPY HOLIDAYS,  
KEVIN

Need to go thru  
Marketing chapter to  
add these changes  
to "Master copy" of Chapt. X  
(attached)

## CHAPTER X. MARKETING

As a result of the precipitous decline in Alaska salmon prices in 1991, Governor Hickel formed the Salmon Strategy Task Force. The purpose of the group was to identify the problems facing Alaska's salmon fishing industry and recommend state actions to address these problems. A primary focus of the task force was salmon marketing. The task force recently finalized its recommendations. To avoid duplication with the task force's efforts, it was decided that the Legislative review of the Alaska salmon enhancement program would analyze the economic costs and benefits of the enhancement program and review past state salmon marketing efforts. In addition, as part of the legislative review, the Salmon Strategy Task Force's final recommendations are summarized (a copy of the Task Force's report is attached).

*was there any follow up to the report? NO*

### INTRODUCTION

The Alaska Seafood Marketing Institute (ASMI) was established in 1981 as a quasi-state corporation in the Alaska Department of Commerce and Economic Development (DCED). The institute's statutory responsibilities include:

- To conduct educational, research, advertising, and sales promotional programs to increase awareness of all species of seafood and their by-products that are harvested in Alaska.
- To develop quality specifications to enhance the high quality image of Alaska seafood worldwide, and to adopt recommendations for the handling of seafood from the moment it is caught until it is shipped to the marketplace.
- To prepare market research and product development plans for all species of seafood and their by-products harvested in Alaska.

State statutes prohibit ASMI from favoring any region, product, or processor. For that reason, ASMI uses "generic" marketing campaigns aimed at enhancing the sales of particular "species" of fish or broad product categories (such as canned or frozen) rather than specific products. Also, because it is likely to favor individual processors, ASMI does not promote new products.

### ORGANIZATION

#### Board of Directors

To accomplish its statutory mission, the ASMI organization consists of a board of directors, numerous committees, and a relatively small number of staff. Policy and program direction is set by the 18-member board of directors. The board membership consists of 12 fish processors, 5 commercial fishermen, and 1 public citizen. Of the 12 processors, 8 are to be appointed from "large processors" (annual Alaska payroll of \$1 million or more) and 4 are to be appointed from "small processors" (annual Alaska payroll between \$50,000 and \$1 million). Although not required by statute, the board has three non-voting ex-officio members: the DCED commissioner, and a legislator appointed from each chamber.

*is this being changed?  
maybe this session  
move to*

*tax fishermen being considered. If it happens they would gain seats on the Board.*

## Committees

*The ASMI committee system is extensive with the largest portion being a system of marketing committees.* The primary marketing committee plans the generic Alaska seafood marketing program for the domestic market. Committee members include the chairs from the five individual species committees (halibut, shellfish, canned seafood, whitefish, and salmon), plus the chairs of the export and quality committees, and two board members. The philosophy of the primary marketing committee is to promote Alaska seafood through the development of long-term marketing goals and strategies.

Under the marketing committee are the five individual species committees. These committees generically address marketing concerns related to their particular species group. The philosophy of the individual marketing committees is to promote the species with short-term marketing goals and strategies that are consistent with the long-term goals and strategies of the marketing committee.

The quality and export committees develop industry guidelines for the care and handling of seafood and oversee the federal ~~Targeted Export Assistance (TEA)~~ program, respectively. The ~~TEA~~ program was developed to increase U.S. exports. *MARKET Promotions Program (MPP)*

Most of the members of the marketing committees are marketing specialists employed by the fish processors represented on the ASMI board. Other committee members are representatives from fishery organizations that are knowledgeable about the fishing industry.

## Staff

The ASMI executive director is selected by the board of directors and permitted to hire additional staff upon approval of the board. The central staff members include: ~~communications manager~~, comptroller, quality coordinator, special projects coordinator, and office manager. In the past year, ASMI was authorized to hire four additional marketing specialists who had previously worked with ASMI as contractors. *2-4*

## ASMI FUNDING SOURCES

*what is current funding outlook?*  
A portion of ASMI's funding is derived from a self-imposed seafood marketing assessment. All fish processors who purchase annually \$50,000 or more (ex-vessel value) of seafood pay an assessment of 0.03 percent of their total purchases. These assessments are collected in the state's general fund and are appropriated annually to ASMI. The balance of ASMI's funding is derived from state general fund and federal appropriations. Table 1 shows funding sources and levels since FY 82.

According to an ASMI briefing paper, ASMI has spent nearly \$35 million in the domestic market since 1981 in their "generic" seafood marketing program. Since FY 88, an additional \$24 million was spent in foreign markets, using federal funds and small state general fund matching appropriations. *Federal funding, which has increased as a result of the TEA program, is restricted to international marketing efforts.* In contrast, state general fund appropriations have declined in recent years. ~~In addition, because processor contributions are based on ex-vessel values, the industry assessment will decline approximately \$600,000 in FY 92.~~ Given the outlook for Alaska salmon

see attached —

## ASMI FUNDING HISTORY

(in millions of \$)

| FY   | GF    | Ind.  | Fed.  | Total | Domestic         | International |
|------|-------|-------|-------|-------|------------------|---------------|
| 1982 | 2.07  | —     | —     | 2.07  | 2.07 (-overhead) |               |
| 1983 | 5.66  | 1.15  | —     | 6.81  | 6.81 (-overhead) |               |
| 1984 | 2.57  | 1.29  | .10   | 3.96  | 3.1              |               |
| 1985 | 2.57  | 1.04  | .34   | 3.95  | 3.3              |               |
| 1986 | 2.6   | 1.0   | —     | 3.6   | 3.15             |               |
| 1987 | 1.93  | 1.49  | .25   | 3.68  | 2.7              |               |
| 1988 | 1.63  | 2.65  | 2.2*  | 6.48  | 3.22             | 2.4           |
| 1989 | 2.1^  | 3.3   | 5.2*  | 10.6  | 3.9              | 5.8           |
| 1990 | 2.2^  | 3.2   | 4.5*  | 9.9   | 3.8              | 5.1           |
| 1991 | 2.45^ | 2.7   | 8.78* | 13.93 | 3.6              | 9.5           |
| 1992 | 2.1^  | 2.6+- | ?*    | ??    | 3.0+-            | ??            |

TOTAL

27.88 20.42 21.37 64.98 38.65 22.8

\* This general fund total includes general fund matching dollars for the federal funds. The general fund match is used in foreign markets and is not available for domestic marketing. In FY89 and FY 90 the match was \$495,000 each year, in FY91 it was \$750,000 and in FY92 it is \$750,000.

\* The federal fiscal year is different from the state fiscal year so the figures for the federal funds are not available on the same cycle as the state dollars.

Prepared by the Alaska Seafood Marketing Institute, no date.

prices, industry contributions can be expected to remain below historic levels. *State general fund appropriations and industry contributions are used primarily to fund domestic marketing efforts. As a result, ASMI will have fewer resources for domestic marketing at a time when the domestic market has been identified by analysis as having the greatest potential for increasing sales of Alaska salmon.*

### **EFFECTIVENESS OF ASMI'S MARKETING PROGRAM**

When ASMI was established, the Alaska salmon industry provided most of the U.S. production and about half of the world production from wild and ocean-ranched salmon stocks. As a major supplier, the generic marketing of Alaska salmon was relatively effective. A recent Legislative Audit report evaluated whether there has been an increase in awareness of Alaska seafood since ASMI's inception. The audit report analyzed ASMI effectiveness based on the following criteria:

- \*Perception that Alaska is the best region for seafood.
- \*Awareness of Alaska as a seafood-producing region.
- \*Positive beliefs/attitudes toward Alaska seafood.
- \*Awareness of Alaska seafood advertising.
- \*Association of seafood species with Alaska.
- \*Awareness of seafood species.

*The Legislative Audit review of market research provided by ASMI, concluded that increases had occurred in consumers' perception of Alaska seafood. In addition, consumers are more aware of Alaska as a seafood-producing region.*

*Despite these overall improvements in consumer perceptions and increased consumption of seafood, Alaska has lost a significant share of both the domestic and international salmon markets as a result of the tremendous growth in world farmed-salmon production. The dramatic rise in production and growing acceptance of farmed salmon as a source of fresh salmon represents the single greatest threat to the Alaska salmon market. The consistent year-round availability and quality of fresh, farmed salmon has made wild (and ocean ranched) Alaska salmon, with its short fresh season and quality and supply inconsistencies, a secondary choice for a large number of buyers. United States and foreign markets generally prefer fresh over frozen salmon.*

*According to ASMI board chair, Bob Waldrop, the large farmed-salmon producer nation of Norway spends about five cents per pound marketing salmon, while only one cent per pound is spent marketing Alaska salmon. The new producers of salmon are out-competing Alaska producers in product preference, quality, availability, and marketing.*

*Another problem is the fact that canned salmon production represents 59 percent of all retail salmon volume. U.S. per capita consumption of canned salmon declined 60 percent from 1980 to 1989, at the same time that harvests of pink salmon--the majority of which is canned--increased approximately 50 percent. Canned salmon suffers from an "old-fashioned" image with most younger consumers. The bones and skin also result in the perception that it is*

inconvenient and unappealing. In foreign markets, canned salmon markets have declined primarily due to price effects. <sup>FLUCTUATE</sup> ~~AROUND PRICING AND SUPPLY CONDITIONS.~~

Analysts who are critical of ASMI's marketing programs maintain that the "generic" approach promotes all salmon, regardless of origin, because Alaska products are not clearly identified in the market. They argue that without brand identification and a quality assurance program to guarantee that Alaska salmon is superior, generic marketing may actually be helping Alaska's competitors.

## LABELING OF ALASKA SALMON

A recent Consumer Reports article <sup>1992</sup> attacking the quality of seafood sold in the United States <sup>UNRELIABLENESS AND SAFETY</sup> has caused considerable concern within the Alaska fishing industry. The industry already faces difficult marketing challenges in a changing competitive environment. Despite its flawed methodology and lack of specificity, the report's potential impact on Alaska must be taken seriously. <sup>LONG TERM</sup>

The Consumer Reports article also illustrates the problem of insufficient labeling of seafood products when sold in retail markets. The salmon samples tested in the report could not be identified by species, origin, or whether it was wild or pen reared. The Alaska Seafood Marketing Institute has recently developed a new U.S. promotion of Alaska salmon in order to meet increasing market challenges. This promotion is to emphasize the freshness and purity of Alaska's wild salmon. However, without specific labeling of salmon products as to species, state of origin, and identification as to whether wild or pen reared, the effectiveness of such marketing will be reduced. <sup>AS TO THEIR SOURCE, TYPE AND WHETHER PRODUCT IS WILD OR FARMED.</sup>

To address the labeling problem, the Alaska State Legislature sent a letter to the Alaska Congressional delegation requesting that they introduce federal legislation requiring the labeling of seafood products. Proper labeling will ensure that consumers can identify and select Alaska salmon, and provide better information and clearer choices in the market place. It would also reward those states that maintain strict quality control programs, such as Alaska, and ensure that the benefits of promotional efforts accrue to Alaska. <sup>did they respond? (NO) BUT DID NOT</sup>

It should be noted that Alaska does have a statute that requires that any farmed salmon sold in the state must be labeled that it is farmed and is from outside Alaska.

## THE SALMON STRATEGY TASK FORCE RECOMMENDATIONS

The Salmon Strategy Task Force finalized its recommendations on January 24, 1992. The Task Force's provided immediate, mid-range, and long-range recommendations which are summarized below.

**Recommendations for Immediate Action.** 1) ASMI should develop a budget and strategy for selling the existing inventory surplus of Alaska salmon; 2) processors and fishermen should initiate price negotiations early; 3) The University of Alaska, DCED, and ADF&G should provide the best possible information to fishermen regarding world salmon markets; 4) DCED should review Prince William Sound processing capacity; 5) DCED and the Alaska Commercial Fishing and Agriculture Bank (CFAB) should provide loan extensions as needed.

11- I WOULD MENTION THE TASK FORCE INFO (PAST TENSE) AND STATE THAT THE PLAN PUT FORTH BY ASMI TO IMPLEMENT THE TASK FORCE RECOMMENDATIONS DID NOT RECEIVE ANY SUPPORT FROM THE ADMINISTRATION. ~~THE LEGISLATURE~~

**Mid-Range Recommendations.** The mid-range recommendations include actions for product and market development, salmon quality, and marketing and a review of ASMI's role.

**Long-Term Recommendations.** The long-term recommendations include the development of a strategic plan to help strengthen the fishing industry and its support sector. This includes an integrated marketing and production strategy, a review of loan and limited entry permit policies, a review of ASMI, a review of fish tax policy, and the reduction of regulatory burdens to lower costs. ASMI's Salmon Recovery proposal is included in the Task Force's long-range recommendations as well as its recommendations for immediate action. This proposal is discussed in the following section.

### ***The ASMI Salmon Recovery Proposal***

One of the recommendations of the Salmon Strategy Task Force is ASMI's Salmon Recovery Proposal. According to an ASMI briefing paper, the *goal* of the Salmon Recovery Proposal is to increase annual per capita U.S. salmon consumption from 1 to 1.5 pounds. This increase would absorb an additional 119 million pounds of salmon each year or about 15 percent of Alaska's annual production. Of the expansion, 60 percent would be frozen and 40 percent would be canned salmon.

The *strategy* of the program would be a combination of consumer and trade education and advertising, direct trade contacts, and other promotional methods used by ASMI over the last decade. Instead of patchwork, crisis-response marketing, this would be an integrative approach tying all marketing elements together. The basis for the marketing effort comes from a number of core issues identified by ASMI. These include:

- \*trade and consumer preference for fresh salmon,
- \*decreased consumer consumption of canned salmon,
- \*low consumer knowledge and awareness of Alaska salmon products,
- \*negative consumer perception of quality of frozen and canned salmon,
- \*limited regional and seasonal purchases of Alaska salmon,
- \*limited food-service use of Alaska salmon, especially canned,
- \*fluctuating supply and prices of Alaska salmon, and
- \*increased competition.

It is unclear from ASMI's information how consumer and trade preference for fresh over frozen and canned salmon is expected to be changed. It appears that efforts will be made to increase overall salmon consumption while convincing purchasers that Alaska frozen and canned salmon are also high quality products. To avoid merely expanding the farmed-salmon market, central to ASMI's recovery program is an Alaska salmon product identification promotion using a logo or seal of origin. This is similar to the "Alaska Made" program.

little demand for the abundant pink production by canning processors. PWSAC has identified potential buyers of frozen pink salmon, but there is insufficient freezer processor capacity to ensure product delivery. PWSAC had hoped to utilize floating processors via the coordination of the groundfish trawl season regulated by the North Pacific Fisheries Council. While this will not occur during the 1992 season, it is an option PWSAC will continue to pursue for future seasons.

**OPTIONS FOR POSSIBLE CONSIDERATION:**

- Review of the state's role in the marketing of Alaska seafood, and salmon in particular, including a review of the ASMI program.
- Given that ASMI's generic approach to marketing was statutorily established prior to the significant increase in world farmed-salmon production, expansion of ASMI's statutes to reflect changes in world salmon markets. In particular, ASMI's marketing efforts could be expanded to include new product and market development, including targeting and distribution of salmon products at the wholesale and retail levels.
- Providing funding for ASMI's Salmon Recovery Proposal.
- Supporting the Salmon Strategy Task Force's recommendation that ADF&G review the impact of fisheries management practices on fish quality, especially related to the quality of cost-recovery fish harvested in terminal areas.
- Conducting a comprehensive analysis of ASMI privatization including whether 1) privatization would provide greater flexibility and possibly more effective marketing and 2) privatization would result in the loss of control over marketing activities to the detriment of Alaska and Alaska fishermen.
- Encouragement of the development of a national salmon marketing council.

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Other

Issues

## **CHAPTER XI. OTHER ISSUES**

### **A. USE OF HATCHERIES AS ENVIRONMENTAL MITIGATION**

*Hatcheries are sometimes built with the goal of mitigating environmental damage caused by such things as construction of dams and other projects, and water pollution. The goal of environmental mitigation has been a driving force in salmon hatchery development in the Pacific Northwest, particularly in association with dams on the Columbia River.*

In contrast, Alaska's hatchery system has been developed for fisheries enhancement, mitigation of the effects of over-fishing, and the offsetting of reductions in fishing quotas for Alaskan fishermen negotiated as part of the U.S./Canada Salmon Treaty. However, Alaska law does contain several provisions regarding use of fisheries enhancement projects as a means of mitigating environmental damage. The primary one is the "Fishways Act."

Alaska Statutes 16.05.840 through 860, referred to as the "*Fishways Act*," gives the Commissioner of Fish and Game the authority to require the builder of a dam or other obstruction across a stream containing fish to provide and maintain a fishway or other device for fish passage. Where a fishway is not practical because of cost, the builder of the obstruction can choose among several other mitigation options with the approval of the commissioner. The options include:

1. Paying a lump sum to the state Fish and Game Fund;
2. Conveying land and funding the building, maintenance and operation of a fish hatchery, rearing ponds, buildings and other facilities; or
3. Agreeing to provide money (both initially and in annual payments) to expand, maintain, and operate additional facilities at existing hatcheries within a reasonable distance of the dam or obstruction.

The Fishways Act was passed in 1959. Since that time, other environmental protection laws and regulations have been enacted setting water quality standards and regulating the types, locations, designs, and allowability of development projects. The *Anadromous Fish Act* (AS 16.05.870) is especially important as it spells out requirements for pre-approval of any projects which could potentially impact fish or fish habitat. This Act and other environmental protection requirements work in conjunction with the mitigation requirements in the Fishways Act.

According to the Department of Fish and Game, the requirement to provide a fishway, either as a permanent structure or as a temporary one during construction, logging, or other work, is used frequently. The State often requires construction of spawning channels in streams that are being disturbed by such things as highway projects. *Although the other provisions of the Fishways Act which require construction of hatcheries or monetary compensation are rarely imposed, state officials believe their existence in statute encourages modifications in project plans that will avoid the actual stream obstruction and serious risk to fish that would activate these very expensive mitigation measures.*

Obviously, preventing damage to fish and fish habitat in the first place is the simplest and most practical means of ensuring the health and ongoing availability of fish. State and Federal officials are charged with making every effort to ensure that the siting, planning and construction of any development project is done in a way that avoids or minimizes potential damage. *Realistically, however, development will occur which will damage fish and fish habitat. In*

*those cases where environmental protection methods, even fishways, cannot prevent that damage, mitigation of some sort is usually required by law. In other states and countries, hatchery production has indeed provided enough fish to keep some commercial and sport fisheries alive, at least for a time, that would otherwise have been curtailed due to a lack of fish. This is particularly true in areas where major dam projects or pollution have completely changed or destroyed salmon habitat and spawning patterns. To fishermen in an affected area, hatcheries seem better, at least initially, than no mitigation at all.*

*While salmon and steelhead hatcheries do produce fish to offset declines in natural runs, there is increasing concern among some scientists in the Pacific Northwest that under some circumstances hatcheries may actually cause the further depletion of already suffering natural stocks, even to the point of extinction. These concerns are further addressed in Chapter VII of this report, regarding biological and genetic issues.*

*It is important to note how the federal Endangered Species Act (ESA) relates to the matter of using hatcheries as a means of mitigating environmental damage. In the state of Washington, where hatcheries have been used extensively with mitigation as a goal, scientists and fishermen are concerned that regardless of how productive hatcheries might be, they cannot prevent the federal government from invoking the provisions of the ESA if particular stocks are declared endangered. Indeed, the National Marine Fisheries Service (NMFS), which has jurisdiction over endangered species, proposed in 1991 that one stock of Snake River sockeye be listed as endangered under the ESA, and that two stocks of Snake River chinooks be listed as threatened. Decisions on two more salmon stocks (in the Snake and Columbia Rivers) are expected soon.*

The Washington Legislature is considering legislation to address issues which have arisen from the application of the ESA to Washington's salmon. These issues include salmon habitat, wild stock protection, tagging of hatchery stocks, and how to define "species" or "stocks" of fish. (See Attached information).

*Declaration of a salmon stock as "endangered" can have enormous impacts on fisheries and local and state economies. Since salmon are migratory, any restrictions placed on fisheries to protect a particular stock could affect fishing hundreds or even thousands of miles from the spawning area of that stock.*

The Endangered Species Act in effect sets the parameters within which hatcheries can be used to mitigate environmental damage. The Act does not recognize the creation of strong runs of one stock of salmon, through hatcheries or other enhancement efforts, as adequate compensation for the destruction of another stock. If a natural stock is at risk of becoming "endangered," the ESA will not allow for hatcheries to serve as a substitute for damaged habitat. The end result is that efforts to mitigate damage through hatcheries can backfire, closing down fisheries rather than enhancing them, if the hatcheries contribute to the further depletion of a stock. *Thus, to avoid the impacts of the strict protective measures which can be imposed under the ESA, primary concern must be focused on preservation of wild stocks.*

It should be noted however, that in some instances, such as where dams have irreparably destroyed the ancestral habitat of a particular salmon stock, a carefully designed hatchery or other enhancement project may represent the only hope for survival of that stock. For the purposes of ESA, federal law defines "conservation" as including "propagation" if it is necessary to help an endangered or threatened species recover. *Thus, while the ESA serves as a warning against hatchery development that could deplete natural stocks, it also recognizes the potential usefulness of hatcheries in the ultimate survival of an endangered stock.*

Judgement about how effective hatcheries can be for "mitigating environmental damage" must be made on a case by case basis and with a recognition that mitigation is just that, a means of minimizing or offsetting some of the change or damage. Hatcheries can produce new harvestable salmon, but they do not generally repair or duplicate a damaged resource. Hatchery production of fish is an expensive ongoing commitment. The use of hatcheries to mitigate damage must be employed with the understanding that salmon which have been provided "free" and perpetually by nature, are being replaced by salmon that will initially and continuously cost money to produce. This cost, along with the possibility that hatcheries may harm remaining natural stocks, must be realistically considered and weighed in each case, against what is to be gained through the project that will cause the damage and set the mitigation effort into motion.

### **OPTIONS FOR POSSIBLE CONSIDERATION:**

- Re-evaluation of the state Fishways Act and Anadromous Fish Act in light of the provisions of the federal Endangered Species Act.
- Evaluation of whether specific consideration of potential consequences of the ESA should be required before the commissioner can pre-approve a project (under the Anadromous Fish Act) or approve of mitigation measures (under the Fishways Act).
- Tracking the current and upcoming debate and actions occurring in other areas, particularly the state of Washington, regarding environmental mitigation of damage to fish habitat. Determine the relevance of findings to Alaska.

## **B. ROLE OF HATCHERIES IN INTERNATIONAL TREATIES**

### **U.S./Canada Pacific Salmon Treaty**

After many years of negotiation, the United States and Canada signed a treaty in 1985 regarding the interception of Pacific Salmon. *The primary goals of the treaty were to protect and rebuild depleted salmon stocks, assure the long-term viability of salmon stocks within the jurisdiction of the treaty, and bring equity by providing that each country receive benefits from the fisheries which are roughly commensurate with their respective production of salmon in the treaty area.* Fisheries management guidelines for the region covered by the treaty (Oregon, Idaho, Washington, Southeast Alaska and British Columbia, Canada) are provided in a series of annexes to the treaty which are renegotiated on a regular basis. The annexes establish baseline-harvest numbers for many areas but the authority over allocation of fish between user groups within specific areas is maintained by the respective states, provinces, and tribes.

In 1983, a tentative treaty agreement was reached, but Alaska fishing groups found the provisions to be unacceptable and the treaty was not signed. Concerns centered on the concessions to be made by Alaska in the treaty. The reduction in the level of chinook salmon that Alaska trollers would be allowed to harvest was especially controversial. Key to the eventual acceptance of the treaty by Alaska was an offer by the U. S. federal government to give Alaska approximately \$20 million for salmon enhancement to help offset impacts of the treaty. *This mitigation money was not part of the negotiated multi-party treaty. It was a separate agreement between Alaska and the U.S. federal government, offered fundamentally as an incentive to Alaska to agree to the treaty.*

Under the terms of the treaty, Alaska hatchery fish caught after 1985 were not to be counted as part of the negotiated quota of allowable catch, and could be taken in addition to that quota. *While everyone involved seemed to understand that the federal mitigation money was intended to replace what the Southeast Alaska fisheries groups had lost in the treaty settlement, the specific purpose of the money was not clearly spelled out at the time of the agreement. This lack of clarity and documentation has caused considerable confusion and controversy over the years.* Initially many fishermen and the Alaska Department of Fish and Game believed that the money was to go towards an annual production goal of 100,000 chinook for the trollers, 1,000,000 chum for the seiners, and 20,000 to 40,000 sockeye for the gillnetters. Although the state appears to have honored the general purpose of salmon enhancement with the mitigation funds, it has not spent the funds in accordance with the most widely-held understanding of the intent for those funds.

The governments of Washington and Oregon have not allocated any funds specifically for enhancement projects related to this treaty. British Columbia instigated a treaty-related enhancement project on the Fraser River, but has since run out of funds to continue it.

A computer model was developed to calculate the allowable catch of each of the parties to the treaty, and to update that quota annually. Information about hatchery-bred fish indicates the health and numbers of the natural stocks for the computer model.

*Alaska fishermen agreed to the Pacific Salmon Treaty, despite the sacrifices it required in their allowable catch levels, because of guarantees that increased hatchery efforts and production would result in increases in these allowable catches.* For reasons which may have included misunderstandings of original intentions, a lack of clear binding language in the treaty, or ineffectual negotiating at annual sessions to update agreements and re-negotiate treaty annexes, many fishermen are dissatisfied with what the treaty has accomplished. Hatchery efforts funded with mitigation funds have indeed produced salmon, but fishermen, particularly trollers, do not believe they have received the benefits they were promised from that production.

While fishermen may not have seen the specific benefits they had hoped for in the form of increased allowable catches, the state hatchery program has received more funding than it would have had without mitigation funds, and the Alaska Department of Fish and Game has been able to use mitigation money to supplement their budget for projects and personnel which are related directly or indirectly to the goals of the treaty.

### Yukon River Treaty

Salmon restoration and enhancement have been discussed as part of the United States/Canada Yukon River salmon negotiations since 1985. The goal of the United States in these talks has been to ensure the long-term health of salmon stocks and assure consistency in harvest for both countries of the Yukon River system.

The U.S. proposal, agreed to by the Alaska Department of Fish and Game, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the Yukon River Drainage Fisheries Association, includes:

- Restoration projects to increase production of transboundary stocks that do not respond to harvest management.
- Fisheries enhancement projects where appropriate, consistent with state genetics and disease policies.

- Planning strategies to allocate and manage restored stocks before the program starts.
- Operational plans for enhancement projects, with protection of wild stock genetic diversity as the paramount concern.

The FRED Division has developed a Yukon Fisheries Enhancement Initiative with its key components being overall design and planning work, expansion of the Clear Hatchery near Nenana, Alaska, and rehabilitation of natural salmon production. The cost of this initiative is estimated to be more than \$13 million.

*delete section*

*Fishermen along the Yukon are primarily interested in bringing natural stocks back to historic levels. Rehabilitation projects and protection of wild stocks are their top priorities.*

Some biologists believe that supplemental hatchery production on the Yukon River will only further complicate mixed stock fisheries management, and risk the reduction or elimination of small wild stocks. They are also concerned about the risks of genetic dilution of natural stocks, reduced stock fitness, and disease. ~~The Alaska Chapter of the American Fisheries Society is currently considering a resolution to support setting aside the Yukon River drainage as a Wild Stock Management Zone (hatchery-free).~~ *Valley - passed it.*

*delete?*

#### **OPTIONS FOR POSSIBLE CONSIDERATION:**

- Evaluation of the effectiveness of enhancement as an international treaty component.
- Requirement of a comprehensive feasibility and benefit-cost analysis of enhancement in treaty proposals prior to treaty agreements. Because state agency budgets tend to "benefit" from enhancement agreements, consider contracting these reviews to disinterested third parties.
- Development of an auditing mechanism to determine if enhancement benefits are realized by fishermen impacted by treaty agreements.

#### **C. ENVIRONMENTAL REGULATIONS RELATED TO HATCHERIES**

There are a number of environmental considerations involved in the siting, construction, and operation of hatcheries. In addition to the biological and genetics matters associated with the fish and eggs themselves, other environmental protection issues include the siting of hatcheries, their water usage requirements, the effluent they produce, and the disposal of fish carcasses (of broodstock or fish which are excess or diseased).

*While Alaska law does not contain many environmental statutes and regulations which are specific to hatcheries, it does have a number of general provisions regarding protection of the environment which come into play during the planning, development, and operation of hatcheries. These include the Anadromous Fish Act which controls and requires approval for any construction projects or other action which might affect "rivers, lakes or streams or parts of them that are important for the spawning, rearing or migration of anadromous fish"; the Fishways Act which requires the construction of a fishway or hatchery construction if a dam or other obstruction will impact the passage of fish (see section on environmental mitigation); plus many laws and regulations about water quality and pollution,*

protection of genetic purity of fish stocks (see chapter on biology and genetics), fish health inspections (AS 16.05.868), and siting of hatcheries.

***A significant environmental protection issue associated with hatcheries is the discharge of waste into public waters.*** The procedures and permits required of hatchery operators in this regard have been confusing and in a state of flux for several years, but now seem to be headed for some resolution and streamlining. Part of the confusion stems from the fact that both the Federal Environmental Protection Agency (EPA) and the Alaska Department of Environmental Conservation (DEC) have some jurisdiction in this matter.

It appears that both EPA and DEC have been fairly lenient about requiring the various waste disposal permits that have technically been required. Even so, there have been very few complaints or problems regarding hatchery impacts on water. Hatcheries do discharge effluent which may contain organic fish waste, as well as some disinfectants or other chemicals used to prevent or control disease, but generally they discharge only very small amounts of pollutants. ***However, recent developments necessitating the disposal of large numbers of fish carcasses have raised the subject of waste disposal monitoring.*** These developments include 1) a joint decision by the Federal Food and Drug Administration and the Alaska DEC in 1990 that the carcasses of hatchery broodstock (mature fish used for the taking of eggs and milt) should no longer be sold for canning for human consumption, and 2) the recent huge returns of fish, particularly in Prince William Sound, which have resulted in the inability of hatcheries to sell large numbers of their "cost-recovery fish." Both of these developments demonstrated the need to establish procedures for hatcheries to dispose of large numbers of fish carcasses.

The federal Clean Water Act prohibits the point source discharge of pollutants by any person into the waters of the United States, except in compliance with the terms and conditions of a National Pollutant Discharge Elimination System (NPDES) permit issued by EPA. ***Under federal regulations, discharges of concentrated aquatic animal production facilities require NPDES permits.*** The regulations identify the annual level of production and feeding of a facility to require an NPDES permit, but also leaves to the EPA the discretion to require the permit of any facility it deems to be a significant contributor of pollutants.

In a January 1991 letter to all hatchery operators in Alaska, the EPA explained these requirements and noted that even if the regular operations of a hatchery did not fall under the NPDES permit guidelines, a permit would be required if the operator planned to dispose of fish carcasses in the water. It further explained that fish processors who dispose of greater than 1000 pounds of waste per day may be covered by the "Authorization to Discharge Under the National Pollutant Discharge Elimination System for Alaska Seafood Processors" general permit (the GP), and that for the purposes of carcass disposal, the EPA was willing to cover hatcheries under the same GP. The letter explained that this "greatly simplifies the administrative process and reduces the time frame in which a NPDES permit is obtained." The letter ended by asking that hatchery operators notify the EPA of their plans for fish waste disposal prior to the 1991 season.

In April 1991, the Anchorage EPA office sent another letter to all hatchery operators stating that many of the responses they had received to the January letter had raised a number of issues to be considered. Since resolving these issues is likely to take some time, the EPA established an interim policy to allow the hatcheries to operate and to provide for environmental protection in the interim period. The letter goes on to lay out three conditions under which the disposal of whole fish carcasses would be permissible. The criteria include 1) the depth of water where discharge may occur, 2) a requirement of pre-approval of the discharge site by EPA, and 3) a requirement that the skipper of the discharge vessel maintain records of each discharge occurrence, its location, and the date.

Alaska is currently operating under the interim criteria spelled out in the EPA's April 1991 letter. Many hatcheries, particularly state-run hatcheries, have submitted their applications for the NPDES permits to EPA. However, the EPA considers these state hatcheries to be minor dischargers and has agreed to turn over to the state the authority for permitting and monitoring of their waste discharge. EPA has forwarded copies to DEC of all the NPDES permit applications they have received from hatchery operators, and has asked that the state implement a hatchery waste permitting process.

*Under current state law, hatchery effluent is covered under the DEC waste disposal permit statute (AS 46.03.100).* DEC reports that few hatcheries apply for this permit but DEC has been comfortable with the situation, and has made permitting hatcheries a low priority, since hatcheries generally handle effluent in a manner that maintains acceptable water quality standards.

DEC has drafted a "General Waste Disposal Permit for Fish Hatchery Discharges," to be issued to hatcheries to fulfill the state waste permit requirement. Once the state has officially adopted this permit, hatchery operators will obtain waste permits only from DEC under the operating agreement between DEC and EPA. This state permit would in effect fulfill both state and federal waste permit requirements. This centralization and consolidation should simplify the permitting and reporting processes for hatchery operators, ensure more compliance, and improve uniformity in the monitoring and information available.

The state's draft permit contains a provision stating that the permit is effective until a specified date, "unless superseded before that time by a state certified EPA permit." This statement is included in order to provide for any potential situation in which EPA might require an NPDES permit, which would then supersede the state permit. The draft permit contains specific language regarding discharges, carcass disposal, drugs, chemicals and medications, operational, monitoring and reporting requirements, and so on. It lacks specific language to address disposal of diseased fish or eggs but other general provisions in the permit, or language in the hatchery operational permits from ADF&G may sufficiently provide for that circumstance.

*Despite the lack of clear regulations and enforcement, and the confusion over federal and state requirements, there have been very few problems reported regarding such things as hatchery waste disposal in Alaska.* Even during the situation in Prince William Sound during the 1991 season when processors would not buy many of the hatchery fish that later had to be dumped, both DEC and EPA report that their agencies worked very closely with the hatcheries to devise and carry out plans for large-scale carcass disposals, and things went quite smoothly. The Alaska Departments of Fish and Game and Environmental Conservation, and the federal Environmental Protection Agency, generally believe that for this aspect of environmental protection, current laws are adequate.

Other environmental issues related to hatcheries are covered in this report in the chapters on Biology and Genetics, Planning and Permitting, and Environmental Mitigation. The topics covered in those chapters appear to raise more serious and complex environmental concerns and questions, and need more extensive review, than the more direct environmental protection regulations discussed here.

#### **OPTIONS FOR POSSIBLE CONSIDERATION:**

- Encouraging DEC and EPA to coordinate waste disposal permitting requirements to the extent possible.

- Ensuring that adequate direction is provided in regulation regarding the disposal of any diseased hatchery fish.

#### **D. USE OF ENHANCEMENT AS TOOL FOR ECONOMIC DEVELOPMENT**

The state's financial support of hatchery production and other enhancement efforts has focussed primarily on Southeast Alaska, Prince William Sound, Cook Inlet, and Kodiak. However, fisheries enhancement is increasingly being viewed in other rural areas of the state as a tool for local economic development. Potential benefits from enhancement activities include the increased number of jobs, the potential for attracting processors or other value-added businesses to the region, as well as increased harvest for fishermen.

In some cases, the regions interested in enhancement for economic development have small, localized commercial fisheries based on local stocks of fish which in many cases are depleted, and which local residents would like to see replenished. In other areas of the state, residents are interested in the potential of creating entirely new fisheries. For many rural areas of the state, fisheries development represents the most viable - and in many cases, perhaps the only - opportunity for economic development.

Some of the projects being discussed and planned include:

- **Sikusuilaq Springs Hatchery.** Residents of Kotzebue Sound are meeting with a planning core group that includes ADF&G, the National Park Service, and the Northwest Arctic Borough to develop increased production proposals as part of a basic management plan for this small state hatchery located on the Noatak River. A regional aquaculture association will probably be established in 1992, and a comprehensive salmon plan for the region should be completed in 1993.
- **Yukon Enhancement Initiative.** Residents of the Yukon River area are organizing an aquaculture association and seeking legislative funding so that regional enhancement planning can be reactivated and expanded. A draft comprehensive salmon plan could be completed by the fall of 1992. Enhancement efforts are also being considered as part of the U.S./Canada Yukon River treaty negotiations.
- **Western Alaska.** Feasibility studies are underway for potential fisheries enhancement projects in the Nelson Island/Chevak area. Local villages and the Bering Sea Fishermen's Association are contributing to the effort, with additional funding requested from the Bureau of Indian Affairs and the National Coastal Resources Research and Development Institute. Although there are no natural runs currently, fishermen in this region are interested in developing salmon returns in streams that are ice-free year round.
- **Norton Sound Economic Development Initiative.** Under this proposal, developed in February 1991, FRED Division is providing technical support in developing a fisheries enhancement program at Elim, including stream rehabilitation and a possible hatchery.
- **Port Graham Salmon Development Project.** The goal of this pink salmon development project is to create a local village economy based on high quality value-added salmon products. The goal of the hatchery is to produce fish for the processing plant.

**•Kake Nonprofit Fisheries Corporation.** This southeast Alaska community proposes to expand its Gunnuk Creek Hatchery with the express goal of contributing to the economic development of the village. Kake has historically been a fishing village, but in recent years saw logging replace fishing as the major form of employment in the community. Logging is now on the decline, and the village wishes to expand its fishing industry.

It should be noted that these enhancement proposals are subject to the same concerns and conflicts generated by enhancement projects elsewhere in the state. The continued interest in enhancement and in hatcheries however, should be a prime reason for addressing the issues highlighted in other chapters.

### **OPTIONS FOR POSSIBLE CONSIDERATION:**

•Evaluation of how much weight to give the need for local economic development when considering a new hatchery permit application.

### **E. IMPORTANCE OF HATCHERIES TO SPORT FISH**

While the Senate Special Committee on Domestic and International Commercial Fisheries initiated the Legislative Review of Alaska's Fisheries Enhancement Program to evaluate the contribution of the program to commercial salmon fisheries, the role of the program in sport fisheries warrants attention. This section summarizes information provided by a FRED Division report attached to this chapter.

Many projects in the statewide enhancement program produce fish, primarily chinook, coho, pink, sockeye, and chum salmon, steelhead, rainbow trout, grayling, and Arctic char, that are highly valued by sports fishermen. Fish targeted for sport fisheries are released in over 350 locations around the state. Many of the projects operated by the FRED Division are entirely dedicated to improving recreational fishing opportunities.

Sport fishing has been growing in Alaska as evidenced by the increase in the number of licensed anglers from 1977 (200,000 total license sales) to 1990 (425,000 total license sales). This dramatic increase in sport fishing participation can be attributed to many factors, including changes in population, real per capita income of residents and non-resident visitors, and the opportunities for quality sport fishing experiences. A major component of a high quality fishing experience, especially for resident anglers, is the probability of catching a fish during the fishing experience (called the harvest per angler day). According to ADF&G, the economic value of fishing experiences are directly related to higher harvests per angler day. The statewide enhancement program has been a key factor in maintaining and augmenting these harvests despite increasing fishing effort.

*The statewide salmon enhancement program has grown to the point of supporting a significant portion of total sport and commercial fishing harvests.* For example, total 1990 recreational harvests of salmon, trout, grayling, Arctic char, and steelhead was approximately 1.3 million fish. The enhancement program is estimated to have contributed 28 percent of the harvest. State facilities provided 73 percent of the enhanced harvest while PNPs provided 27 percent.

According to recent studies completed by the ADF&G, sport fishing provides significant economic benefits in Alaska.

### **OPTIONS FOR POSSIBLE CONSIDERATION:**

- If the Legislature initiates an on-going enhancement program review similar to Canada's, include sport as well as commercial fishing aspects of the program in order to achieve a more comprehensive performance report.

x •Increasing the sport fish license fees <sup>or changing priorities of sport fish funds</sup> to pay for a larger portion of the enhancement projects that benefit recreational fisheries.

- Encouraging Congress to increase Dingle-Johnson funds provided to Alaska to support increasing sport fishery enhancement and rehabilitation efforts.

### **F. CONTRIBUTION TO SUBSISTENCE FISH**

In addition to commercial and sport fisheries, there is increasing demand for the state's enhancement program to provide fish for subsistence and personal use fisheries.

Sikusuilag Hatchery on the Noatak River provides a substantial number of chum salmon for subsistence gillnets in Kotzebue Sound and on the Noatak. Subsistence users in southern Southeast harvested 5,000 sockeye salmon produced from the McDonald Lake fertilization project. Production from the Klawock Hatchery, located on Prince of Wales Island, is extensively used by subsistence fishermen.

### **OPTIONS FOR POSSIBLE CONSIDERATION:**

- If the Legislature initiates an on-going enhancement program review similar to Canada's, include subsistence and personal use as well as commercial and sport fishing aspects of the program in order to achieve a more comprehensive performance report.

### **G. ENHANCEMENT OF OTHER SPECIES**

In addition to its work on such sport fish species as grayling, rainbow trout, and arctic char, FRED Division is also exploring king crab rehabilitation in a cooperative effort with Kodiak fishermen and the Kodiak Island Borough. Additional funding is being requested from the Alaska Science and Technology Foundation in order to examine shellfish rehabilitation projects in other countries and states.

Currently, research and production of non-salmon species is done almost entirely by the FRED Division. If private entities became interested in taking on such efforts, statutory changes would be required since the entire PNP program is based on salmon production.

### **OPTIONS FOR POSSIBLE CONSIDERATION:**

- Amending statutes to allow the private sector to enhance non-salmon species.

- Taking action to encourage the production of non-salmon species.

These suggestions  
have been incorporated  
in new version already.  
(See cross-referencing  
notations)



March 27, 1992

*add bulk  
mmt to introduction*

Senator Dick Eliason  
Senate President  
Alaska State Legislature  
State Capitol  
Juneau, AK. 99801-1182

Dear Senator Eliason,

We appreciate the opportunity to comment on the draft report of the legislative review of the Alaska Salmon Enhancement Program. It is obvious that a great deal of work went into developing the report and you and your staff are to be commended for your efforts. We would like to offer the following comments for your consideration.

- 1) We believe it would be helpful to the reader to offer a little more perspective on the status and impacts of the hatchery program. It would provide a basis for the reader to evaluate the many concerns expressed in the report. Aside from a short reference in Chapter 1 to the "highly successful" hatchery program and a reference in Chapter II to 24% of Alaska's harvest coming from hatcheries, the reader is left wondering how well things have worked out. It might be informative to move the sport fish contribution figures on p. 36 forward to the introduction to provide a more complete picture of the benefits to all user groups. The introduction could address the growth of hatchery production, regional differences in the proportion of fish harvested that are of hatchery origin and to what extent the various species of salmon have been produced through enhancement. No doubt some of the information in the economic report would be helpful here. We have included a presentation by Bruce Bachen to the American Fisheries Society meeting last November that includes information on regional differences. Since aquaculture development has taken very different paths in the state, acknowledging this in the introduction will help the reader understand that some concerns are regional while others are more generally applicable.

We believe it would be helpful to describe the ongoing trends in aquaculture development. From our perspective we see very limited growth ahead for hatchery programs in southeast

Alaska. Perhaps documenting hatchery releases or permits outstanding would be useful to show that the rapid expansion in the late 70's through the 80's is probably over. Pointing out that interest in enhancement is growing in Western Alaska as evidenced by the formation of new regional associations would add additional perspective to the reader and help them to understand where various concerns might apply.

2) Chapter IV, p.6

Tagging requirement We support coded-wire tagging requirements wherever feasible. Every coho and chinook release that we have ever made has included tagged individuals so we could evaluate survival and fishery contribution. With pink and chum salmon, tagging is much more difficult and costly. Our experience with chum tagging is that the results are often unreliable; tag expansions may only account for half of the terminal area catch indicating a problem with survival of the tagged fish or some other problem. In addition, some projects, such as small-scale egg incubation box projects, would not be cost effective or feasible if tagging and recovery were a strict requirement. We would be concerned about a tagging policy that does not allow some flexibility in determining whether a tagging requirement is feasible for a given project and/or if it is needed. There are some projects that produce readily identifiable returns because of the species or timing involved.

Requirement to pay for tag analysis NSRAA has not been notified by ADFG that new production will require payment of tag analysis costs. Since recovery and analysis operations are conducted by the State and we have no say as to their operation or efficiency, we would have concerns about paying for these costs. Fisheries managers can derive a great deal of information from tagged hatchery stocks that allows them to understand what is going on with both hatchery and wild stocks in various fisheries, particularly mixed stock fisheries. There is no feasible way of tagging the same number of wild stocks as hatchery studies and so hatchery stocks are used as indicators. The cost of producing and tagging the enhanced fish is born by the enhancement agency and it seems fair for the state to pay the recovery and analysis costs.

Chapter VI, p.13 and 14

The Northern southeast RPT has six voting members with equal participation by ADFG and commercial fishermen. To our knowledge all RPTs in the state have the same structure. Where additional members have been added they are ex-officio seats. We have seen no evidence of pressuring ADFG to make decisions that violate sound management or biological principles. Divisions within ADFG have the opportunity to make their own recommendation, independent of the RPT, to the commissioner. The comment suggesting that non-Fish and Game

members of the RPT may not be able to grasp complex issues underestimates the ability of RPT members that we have observed, and demonstrates a lack of understanding of the roles that fishermen have on the RPT. This is the only regular forum where user desires and concerns related to enhancement are directly addressed through give-and-take discussions with ADFG staff. This is where the biological concerns need to be reconciled with user group expectations and where ADFG biologists are called on to explain their positions. The RPT meetings are educational for both fishermen and ADFG members and we believe that they have been successful in fulfilling their purpose. The primary change we would like to see is that meetings occur more than 2 times per year, as is now the case. The schedule slows processing of PAR's and when it is necessary for proposals to be modified, delays of one year or more are possible.

If more requirements are placed on RPT's the state needs to plan to re-establish funding for supporting the costs of the meetings.

Item 6. Management Issues p.14

The comprehensive plan goals were established about 10 years ago before there was a great deal of experience dealing with management of hatchery returns. It would be useful to review the overall species and area goals to see if the goals are still valid.

page 16 - options

We strongly recommend that state-sponsored enhancement projects undergo the same permitting and review process as within the Department and RPT as occurs with PNP projects.

Chapter VII Biological/Genetic Issues

With the diversity of opinion on the significance of genetic concerns and the difficulty in proving impacts of hatcheries on wild stocks, this chapter must have been difficult to write.

p.19 para.3

While we know of no loss of production due to genetic damage by the enhancement program, continued caution is a prudent approach. The genetics policy is flexible because of the broad diversity within the State, not because the policies are based on work with other species. With regard to fish transport, the policy bans out of state and out of region transports, but provides for flexibility within region as long as the justification is there. Arbitrary limits were not set in the policy to allow case-by-case decisions to be made.

addressed  
in biology  
p. 3

One item contained in the 1985 policy revision that has never been acted on by ADFG is the creation of genetic sanctuaries. The policy committee felt that identification of areas that are "enhancement-free" would provide better assurance that certain wild stocks will remain unaffected by enhancement activity. We need sanctuaries because we don't know what impacts enhancement work will really have and they provide an insurance policy against unforeseen consequences. Establishment of sanctuaries does not reduce the importance of good policies for the remaining areas, but recognizes that some impact, however small it might be, will occur with almost any activity. Since we don't know a lot about straying and the effects of interbreeding between hatchery and wild stocks, sanctuaries provide greater security for wild stocks than otherwise would be there. We would like ADFG to follow its own policy direction and begin to establish sanctuaries.

We would hope that genetic monitoring of hatcheries would be done on a select few at first. Research needs to determine the value of such work and to evaluate different species and hatchery methodologies. Since hatchery practices can be somewhat standardized, information about genetic effects can be shared among similar facilities without going to great lengths to sample all facilities.

p.20

The permitting process allows management to express their concerns to the Commissioner. These concerns are receiving enough attention in our experience.

Treating all remote release sites as de facto hatcheries would be very disruptive to several programs including ours. The guidelines for the use of a broodstock for hatcheries is fairly restrictive and if this were applied to release sites too, several projects would be terminated. To our knowledge, there is not any data to show negative impacts from current practices and thus, we don't see the need for change.

p.31 Yukon River Treaty

Including a reference to the fact that the American Fisheries Society may consider voting on a resolution concerning enhancement on the Yukon gives the reader the impression that AFS will probably adopt the resolution. Until the resolution is voted on and passed, it has no standing and referring to its consideration is misleading. We suggest that you strike the reference.

other  
since  
chap.  
p. 5

E. Importance of hatcheries to Sport Fish p.36 Options

We suggest that you add that a review of spending priorities within Sport Division be conducted to examine the proportion of the budget being spent to support enhancement programs that

addressed  
in other  
since  
p. 10

benefit Sport Anglers. The Division receives considerable funding from license and equipment sales which in southeast is predominantly spent to access salmon. Yet, a relatively small amount of the sport fish budget is spent on enhancement projects.

Finally, we believe that the state should take a good hard look at the Enhancement Loan Program. It is our understanding that there are some programs that are still highly dependent upon the Loan Fund for operational money. Though it may be difficult there must be a method to terminate permits held by operators of facilities which continue to struggle with little chance for success. There is something wrong with a system that makes it a priority to give loans to facilities which would otherwise fail if the operator's loan were not granted. This is especially true when an operator has been on the loan fund in excess of 6 years.

We would also agree that it needs to be decided whether or not economic development and tourism were intended to be valid uses of the enhancement loan fund. There also needs to be a mechanism for reviewing hatchery performance and in validating permits when it is evident that success would be difficult or impossible to achieve, or that harm to the wild resource may result.

We hope that the comments that we have provided will help. Thank you for the opportunity to comment. If you have further questions, please feel free to call us at (907) 747-6850.

Sincerely,



Pete Esquivel  
General Manager



Bruce Bachen  
Operations Manager

# Petersburg Vessel Owners Association

P.O. Box 232

Petersburg, Alaska 99833

Phone (907) 772-9323 Voice and Fax

March 23. 1992

Senator Dick Eliason, Chairman  
Senate Special Committee on Domestic &  
International Fisheries  
P.O. Box V  
Juneau, Alaska 99811

Dear Dick,

Now that the King and Tanner crab season has closed, PVOA members have had an opportunity to review the legislative Hatchery Report. Our sincere thanks to you, your staff, and others who worked hard to make this report possible.

Without a doubt, PVOA's primary concern with regards to the State's hatchery program is the health and viability of our natural wild salmon stocks. Here in Southeast, fishermen have long recognized the importance of our wild salmon runs. It is extremely important to PVOA members that these stocks be given a priority. We suggest that statutory language be adopted which would give wild stocks preferential management treatment relative to hatchery raised fish.

We do not believe the State should have an obligation to guarantee either a return of broodstock nor stocks for cost recovery needs. However, we would recommend that the Department of Fish & Game continue to regulate commercial and sport fisheries to obtain escapement goals of wild stocks to natal streams. These same management techniques would also serve to protect a return of broodstock to hatchery sites. What is good for the wild stocks in their natal streams should also benefit the hatchery stocks at hatchery sites. Efforts should be made to protect broodstock but in no way to guarantee it.

Adopting a clear wild stock priority in State statute which clarifies the Board of Fisheries requirement for hatchery broodstock and cost recovery stocks is action that could easily be undertaken and quickly. The concept of statutory clarification of a wild stock priority which specifically indicates that the State has no obligation to guarantee a return of cost recovery stocks to hatcheries is supported not only by PVOA, but the United Fishermen of Alaska Board of Directors and Southeast Alaska Seiners as well.

Chapter VI of the review deals with the current planning and permitting process. PVOA would support the idea of the development of a statewide planning and production process

provided there is regional input. It is important to develop statewide goals and objectives. Each region is ultimately part of the whole picture, the direction a region takes directly and indirectly affects all other regions. State facilities, as well as PNPs, need to comply with a planning and permitting process, with the same requirements for monitoring and review.

Due to our concern for the negative impacts of hatchery production on wild stocks, we support many of the options listed in Chapter VII of the review. PVOA members specifically cited the following options:

- \*Evaluation of how well the current hatchery program protects wild salmon from the negative effects of hatchery salmon.
- \*Obtaining consensus about research priorities concerning the interaction of hatchery and wild fish, coordinating future studies, and deciding how and when to apply the results of these studies to current management practices.
- \*Placing greater emphasis on management concerns in the permitting process in order to protect wild stocks.
- \*Re-examination of escapement goals in order to maximize wild productivity.
- \*Increased use of marking and tagging programs to monitor interactions between hatchery and wild populations.
- \*Policy development to minimize inbreeding and straying, including an evaluation of remote releases.
- \*Monitoring hatchery stocks to determine extent of straying and intermingling.

We are anxious to examine the recommended management actions resulting from the Cordova workshop. Please send us a copy of the proceedings when they become available.

PVOA members believe it is important for the State to initiate research to learn more about the dynamics of wild salmon stocks. We are troubled to learn about problems developing in Oregon and Washington concerning impacts of hatchery production on wild stocks. We are concerned about the State's lack of knowledge about wild salmon stocks. If sometime in the future, wild stocks are found to be in peril here in Alaska, the value of hatcheries may be very significant if they could be made into central incubation facilities.

We have several concerns with regards to Chapter VIII which deals with funding. PVOA believes it may be appropriate to consider restricting further hatchery development or increased production until the Legislative economic cost-benefit studies are complete and a full assessment of the hatchery program can be made. Members are particularly concerned that any major additional production should be discouraged unless new markets are established to handle the increase.

In addition, criteria is needed to show that a public benefit exists before granting permits and loans. A detailed cost/benefit analysis would be in order and a specific

indication of the "significant contribution" to the common property fisheries. For existing hatcheries which are not making a "significant contribution" to the common property fisheries, a mechanism must be developed to close such facilities. Fishermen cannot be expected to continue to fund those facilities if no one but the hatchery operators are receiving benefits.

In addition, we believe the following options have merit:

- \*An analysis of the enhancement tax program is needed to determine 1) whether costs are distributed in proportion to benefits and 2) the impact of a mechanism to allow specific gear groups to opt out of the program or pay in proportion to the enhancement benefits they receive.
- \*Development of an auditing mechanism to ensure that annual PNP operating costs, paid by loans, enhancement tax receipts, and cost recovery, are "reasonable".

Basically the Review contains a lot of good suggestions for improving our State hatchery program. Of course one of the tantamount problems is that of funding, for research, planning and the RPT process, hatchery operations, tagging and marking studies, etc.

Many of our members have commented that when the idea of a State hatchery program was first introduced they saw it as an opportunity to provide minimal steady production of salmon. A program that could help take the extreme highs and lows out of the annual salmon runs. Instead, we have a situation in which hatchery production has been a financial drain on fishermen in Southeast, we have a new group competing for markets, there are poor quality cost recovery fish being placed on the markets, efforts have been made to restrict traditional fishing opportunities in order to protect hatchery stocks, etc. And then on top of all this, no one foresaw farmed salmon being a factor to reckon with.

PVOA members are disenchanted with the direction of the State's hatchery program. We hope that you will take our suggestions under serious consideration. We are sincerely interested in continuing this important review process and are willing to assist you and your staff in any way possible.

Sincerely,



Kris Norasz  
Director

PVOA TESTIMONY BEFORE THE SENATE SPECIAL COMMITTEE ON DOMESTIC  
& INTERNATIONAL FISHERIES REGARDING DRAFT LEGISLATIVE HATCHERY  
REVIEW--February 24, 1992

My name is Kris Norasz. I am Director of the Petersburg Vessel Owners Association. We would like to thank everyone who made this project possible. It was a major undertaking that fell on the shoulders of a few staff people and we appreciate their perseverance.

I would like to just touch upon a few points at this time. We would like to see an obvious wild stock priority in State statute. We would also like to see a clarification in statute as to whether or not the Board of Fisheries is required to provide for hatchery broodstock or for cost recovery fish. I appreciated Jim Bacon's comments and we heartily concur. In the past few years we have seen numerous proposals submitted by various hatcheries that would seek to guarantee fish returns for broodstock and hatchery cost recovery purposes. They are seeking essentially to extend their cost recovery jurisdiction beyond their terminal harvest area. If passed, these proposals would severely limit fishing opportunities for commercial fishermen which have historically existed for years in areas which are many, many miles from the hatchery sites. We would find such a situation unacceptable.

It may be appropriate to consider restricting further hatchery development or increased production until the Legislative economic cost-benefit studies are complete and a full assessment of the hatchery program can be made.

We need new criteria to show that a public benefit exists before granting permits and loans. A detailed cost/benefit analysis would be in order and a specific indication of the "significant contribution" to be made to the common property fishery.

We need a workable mechanism in place for closing hatcheries which are not making a "significant contribution" to the common property fisheries.

Currently, purse seiners in Southeast are paying a disproportionate amount of money for the benefits we receive. We believe any analysis of the enhancement tax program to determine first, whether costs are distributed in proportion to benefits, and secondly, the impact of a mechanism to allow specific gear groups to opt out of the program or pay in proportion to the enhancement benefits they receive.

Thank you for this opportunity to comment. PVOA would like to submit additional comments at a later date. Most of our members are currently participating in the King and Tanner crab fishery and have not had time to review the report.



## Northwest Setnetters Association

Box 870, Kodiak, Alaska 99615

February 27, 1992

Mr. Carl Rosier  
Commissioner of Fish and Game  
P.O.Box 3-2000  
Juneau, Alaska 99802-2000

Re: Regulation Creating Moratorium on Salmon Fry and Smolt  
Release in Alaska Waters

Dear Commissioner Rosier,

During the past few years, Kodiak's Northwest Setnetters Association has become increasingly concerned about two issues. First, it seems that Alaskan Hatcheries have no controls imposed upon their production. And Second, it appears that the rearing or "carrying" capacity of the North Pacific is not unlimited.

The results of the lack of regulation is already apparent. As you are aware, the average weight of the 1991 returning natural salmon in many areas were at an all time low. In particular, returning 1991 Prince William Sound hatchery fish, primarily because of their size, were unwanted by local processors. In addition, there now exists extreme competition between the natural stock and the hatchery stock which threaten the existence of the wild stocks.

Because of the existing adverse effect of the hatchery fish on the wild stocks and our awareness that the ocean carrying capacity of the North Pacific is not known, it seems only prudent to adopt an emergency regulation to stop any increase in hatchery production and release of salmon fry and smolt.

It seems only prudent for the Board of Fisheries to adopt comprehensive state wide regulations to control the release of salmon fry and smolts.

Pursuant to Alaska Statutes 16.05.251 the Board of Fisheries has authority to adopt regulations to control competition among fish in Alaska. In particular, pursuant to Alaska Statutes 16.05.251(a)(7), (8), and (9), the Board of Fisheries has authority to regulate;

(7) watershed and habitat improvement, and  
management, conservation, protection, use,  
disposal, propagation and stocking of fish;



## Northwest Setnetters Association

Box 870, Kodiak, Alaska 99615

page two

(8) investigating and determining the extent and effect of disease, predation, and competition among fish in the state, exercising control measures considered necessary to the resources of the state;

(9) prohibiting and regulating the live capture, possession, transport, or release of native or exotic fish or their eggs.

Further the Board of Fisheries is granted authority to regulate the terms of hatchery permit " relating to the source and number of salmon eggs, the harvest of fish by hatchery operators, and the specific locations designated by the department for harvest." See. AS 16.10.440(b).

Failure to act may decimate the natural runs and, at the same time make hatchery fish unmarketable. We believe that hatchery production regulation is the single most important salmon issue in our state at this time.

We request the Commissioner through the Board of Fisheries adopt an emergency regulation placing a moratorium on any increase in the production and release of salmon fry and salmon smolt in the State of Alaska.

In addition, we request that the Moratorium be in place until such time as the Board of Fisheries adopts comprehensive state wide regulations to control the propagation and release of salmon fry and smolt in the State of Alaska.

While the emergency moratorium is in place, ADF&G, Alaska Board of Fisheries, Aquaculture Associations, ASMI, and fishing industry representatives should work together to develop these comprehensive state wide regulations for hatchery production.

Obviously, the process will not be easy and we recognize conflicting economic and political considerations. Nevertheless, the alternative of failing to act will result in an alteration and/or termination of Alaska salmon as we have known it.

Sincerely,

  
R. Danforth Ogg  
President

CC: Mike Martin, Chairman of Alaska Board of Fisheries  
Senator Dick Eliason  
Senator Fred Zharoff

# VALDEZ FISHERIES DEVELOPMENT ASSOCIATION, INC.

P.O. BOX 125  
VALDEZ, ALASKA 99686

Admin. 835-4874  
Fax 835-4831  
Hatchery 835-5947  
Fax 835-5951



February 27, 1992

Senator Eliason  
Chairmen  
Senate Special Committee of  
Domestic and International Fisheries  
Box V  
Juneau, Ak 99811

Dear Senator:

Thank you for the opportunity to testify at the teleconference. I am happy to see what appears to be a kinder, gentler direction of the overall hatchery program review. I would like to throw our support behind the Prince William Sound Aquaculture Corporations comments as presented by John McMullen. The following comments will be relative to your committees executive summary of the review.

## Chapter V. Fisheries Management

Mixed stock fisheries - We need to keep the Regional Control that is essential to deal with the unique differences of these areas. The user pays concept must be defined and controlled. We need assurances that our fishermen are not paying for normal Fish and Game programs. If this goes too far, fishermen will be justified in managing the fishery themselves as is the case in Japan.

### Quality-

PWS has suffered from a bad reputation. Part of this is from two outlier years 1989 & 1991. Both of these years were disasters. The 1991 quality problem was mostly due to the unprecedented return timing of the PWSAC run being late and coming in over only half the time, virtually doubling the processing requirements. This is not likely to happen again nor with any luck is another Exxon Valdez Spill.

We have proposed a concept to the Salmon Harvest Task Force to harvest all our returning fish through the cost recovery process and paying the participating fleet a catcher fee. This concept will be explored the next two weeks but regardless of the outcome we have to come up with a program that harvests the hatchery fish aggressively to avoid build ups of fish in the terminal areas. This must be done in such a way as to insure the hatchery budgets are met with minimal impact on wild stocks and the maximum contribution to the Common Property Fishery. It should be noted

DEDICATED TO THE UTILIZATION, CONSERVATION,  
AND REHABILITATION OF ALASKA'S FISHERY RESOURCE  
WITHIN THE 200 MILE LIMIT

that most of the quality differences between South East Pinks and PWS Pinks are probably due to the difference between the cape fishery in SE and the terminal type fisheries in PWS. Some canneries in PWS high grade the best fish to fresh markets.

### Tagging

I believe that this has become a vicious circle for the PNP's. Many cannot tag since they do not get economic escapement. Fishermen are not likely to sign off on the program until they can see the proof of the contribution. In most cases this will come only through CWT or future mass marking programs.

PNP policy should be amended to make economic escapement absolute upon the granting of a PNP permit. Five year review periods could be structured to assess the programs status as compared to their original plans. The permitting process could be made more stringent. The bottom line here is that the state should not give a PNP the go ahead until they are assured the PNP will have a good chance of survival and making their budgets.

We strongly urge that the mass marking technique is put into production ASAP. Please note the enclosed resolution we passed at this years Alaska Hatchery Managers Meeting. The meeting agenda is also enclosed

### Chapter VIII Funding Loans-

We are all struggling for survival and desperately need the legislature to allow for flexibility whether through loan deferment and or emergency loans. It is imperative that we all look past this current market crises and acknowledge the continued need for hatcheries and long term solutions. If a hatchery program fails due to lack of flexibility it this market crises the state will loose much more than its future loan payments.

### Marketing.

We support Representative Kubina's legislation allowing for regional marketing committees with a voluntarily assessed 1% tax and restructuring the ASMI board to have more fishermen represented. We are working very aggressively to develop new markets and product forms that are essential to the long term health of Alaskas salmon fisheries.

In summary, hatcheries should not be punished for doing what they were designed to do. We all need to work together to answer many important questions. Historical wild stock performance will fluctuate as always. Politics and economics will impact Fish and Game's ability to adequately manage runs. In years of excessive wild stock runs, it will help us all to remember the low run years. It is also important to view that the 1991 market would have very likely been just as bad statewide without hatchery returns.

A simple cost benefit model should be put together for each permitted program used for determining real contributions. This model must be very straight forward and simple. If a super complex matrix is used that no one can understand no one will benefit. We need an Association model, a non association model and a state model. These should include by species the accumulated number of fry/smolt released and adults back. Costs and benefit should be tracked to each stage for operational costs only and total costs inclusive of capital projects etc. I have attached an old cost/benefit model I put together that I am in the process of updating and will send you the updated version when it is done.

Please let me know if we can be of any further assistance to this process.

Sincerely,

A handwritten signature in dark ink, appearing to read "Paul H. McCollum". The signature is fluid and cursive, with a long horizontal stroke at the end.

Paul McCollum  
Executive Director

6TH ANNUAL ALASKA HATCHERY MANAGERS MEETING

A RESOLUTION BY HATCHERY MANAGERS AND THEIR REPRESENTATIVES INVOLVED IN SALMON ENHANCEMENT IN THE STATE OF ALASKA, SUPPORTING THE IDEA OF THERMAL MARKING AS A MEANS OF MASS IDENTIFICATION OF HATCHERY STOCKS WITHIN THE WATER OF THE STATE:

WHEREAS producing thermal marks laid down on the otoliths of salmon in the embryonic stage has been tested on a mass scale at some Alaskan hatcheries, and

WHEREAS Alaska is a leader in salmon hatchery production and technology and to remain a leader must continue to implement innovative ideas, and

WHEREAS significant hatchery returns to some areas of the state make the recovery of the fish marked by other means labor intensive and expensive, and

WHEREAS mass marking may reduce recovery costs and improve the ability to optimize the harvest of a mixed-stock fishery, and

THEREFORE, BE IT RESOLVED THAT WE AS HATCHERY MANAGERS REQUEST THE STATE OF ALASKA TO DEVELOP THE MEANS TO RECOVER AND IDENTIFY MASS-MARKED FISH FROM UNMARKED FISH FOR BOTH IN-SEASON MANAGEMENT AND CONTRIBUTION ESTIMATES; AND ALSO TO BEGIN EXPERIMENTAL WORK IN PROVIDING THE TECHNOLOGY FOR A DISTINCT MARK FOR EACH HATCHERY.

SIGNED



Paul McCollum - Chairman 1992 Meeting

To '92 Hatchery Managers Meeting Attendees

From: Paul McCollum

Subject: Agenda

This is the agenda that we will go to the meeting with. If there are any changes please let me know. If you have something you would like to speak on and are not on the agenda, be sure to call me and I'll put you down.

We also have the option of getting together Sunday evening for a few hours if a lot of last minute speakers come forward. So far we have about 30 confirmed attendees and only 2 confirmed exhibitors. Please let me know if you have any ideas or contacts for exhibitors. We need at least a few more.

I took the liberty of inviting representatives from Russia, Japan and Canada. Chikara Iio will be coming from Japan and giving a presentation on age versus size and a manager from Canada will be attending. Dr. Klyashtorin from the Research Institute of Marine Fisheries and Oceanography in Moscow could not make it but presented a paper "New Strategy of Sockeye Salmon Ranching" that we can review during the round table discussion on rearing strategies.

Ted Cooney of the University of Alaska will give a presentation and update on the Cooperative Fisheries and Oceanographic Studies. The panel discussion on hatcheries ("Where do we go from here?") should be interesting. We will try to get a representative from each association as well as Fish and Game (Comm. Fish and FRED) and the Dept. of Commerce (Division of Investments).

The meeting looks like it will be a good one. I hope the Superbowl doesn't complicate things. I did not have a clue at first that it was on the 26th. When Eric pointed it out, we thought about taping the game and watching it that evening but the risk was too great that no one would show up until Monday. So we decided it would make for a great social event and I am counting on hearing some great fish culture philosophy debated during commercials and half time.

We will be glad to pick you up at the airport and bring you into town. Anyone that wants to save a few bucks and sleep in sleeping bags, let me know, we could probably accommodate anyone interested.

Dave Cobb our Projects And Purchasing Manager is helping me set things up and is starting to get some nice door prizes. We might even have a real grand prize. Please call Dave if you need any help with reservations or accommodations.

Well I'll look forward to seeing you at the Superbowl Game on Sunday. They will be serving food all day so don't worry about lunch. See you here!!!!

# *Sixth Annual Alaska Hatchery Managers Meeting*

## *AGENDA*

### *Sunday January 26, 1992*

10:00 am - 11:30 am

11:30 am - 6:00 pm

Tour of Solomon Gulch Hatchery  
Group Super Bowl Party at the Valdez Elks Lodge. Free food and snacks. Your favorite beverage can be purchased there. Wide screen TV and good atmosphere. Meeting arrangements and details will be taken care of. Tours of Hatchery available throughout the day.

6:00 pm - ???

On your own - A movie will be showing at the Civic Center "Necessary Roughness".

### *Monday January 27, 1992*

7:00 am - 8:00 am

A continental breakfast will be served at the meeting site in the Civic Center.

8:00 - 8:15

Welcoming remarks and agenda review

8:15 - 8:30 Irv Brock

New ADF&G fish culture manual

8:30 - 9:00 Gary Wall

ADF&G - Oxygen Contactors

9:00 - 9:30 Mike Blake

Aquionics - UV Disinfection

9:30 - 10:00 Discussion

Fungal Treatment Alternatives

10:00 - 10:15 Break

10:15 - 10:45 Chris Clevenger ADF&G - Pillar Creek Hatchery

10:45 - 11:15 Chris Monk ADF&G - Thermal Induced Mass Marking

11:15 - 11:45 Round Table Discussion - Coded Wire Tagging & \$\$\$???

11:45 - 12:00 Morning Session Discussion

12:00 - 1:30 Group Lunch Civic Center

1:30 - 2:00 L.G. Fowler Rangen Inc. - Cold Water Feeding

2:00 - 2:30 Terry Ellison ADF&G - Waste disposal permits and carcass dumping

2:30 - 3:00 Darrel Keifer ADF&G - Age 0 coho returns

3:00 - 3:15 Break

3:15 - 4:15 Round Table Discussion - 1992 Fish Sales/Marketing

4:15 - 4:45 Afternoon Session Discussion

4:45 - 5:00 Door Prizes

5:00 - 6:00 On you own - Tour of Solomon Gulch Hatchery

6:00 - 10:00 Dinner and Mixer

**Tuesday January 28, 1992**

7:00 - 8:00 Continental Breakfast at Civic Center  
8:00 - 8:30 Gary Wall ADF&G - Fish Transport  
8:30 - 9:00 Eric Prestigard PWSAC - Remote Releases  
9:00 - 9:30 Rene Pellissier VFDA - Remote Release Program  
9:30 - 10:00 Chikara Iioaka Japan - Fish Size and Age  
10:00 - 10:15 Break  
10:15 - 12:00 Round Table Discussion - Rearing and Release  
Strategies - (Dr. Klyashtorin's paper from Russia  
will be presented.  
12:00 - 1:15 Group lunch VFDA/PWSAC at Civic Center  
1:15 - 2:00 Ted Cooney U.of A. C.F.O.S. Update  
2:00 - 3:30 Panel Discussion PNP's Where do we go from here?  
3:30 - 4:30 Open Discussion Any Topic  
4:30 - 5:00 Closing Remarks, Next meeting and Prize Drawings.

Flight Schedules Coming In (Call us if you want to come in from  
Cordova, Ketchum has a 10 seat Otter at \$100 per seat).

From Anchorage Sat. or Sunday

|                            | <u>Leave Anch.</u> | <u>Arrive Valdez</u> |
|----------------------------|--------------------|----------------------|
| ERA Aviation (Ak Airlines) | 7:30am             | 8:15am               |
|                            | 5:30pm             | 6:15pm               |
| Mark Air                   | Sat. 7:30am        | 8:30am               |
|                            | 11:45am            | 12:45pm              |
|                            | 3:00pm             | 4:00pm               |
|                            | Sun. 11:45am       | 12:45pm              |
|                            | 3:00pm             | 4:00pm               |
|                            | 4:30pm             | 5:30pm               |

Flight Schedules Leaving Tuesday January 28th

To Anchorage:

|                            | <u>Leave Valdez</u> | <u>Arrive Anch.</u> |
|----------------------------|---------------------|---------------------|
| ERA Aviation (Ak Airlines) | 1:30pm              | 2:15pm              |
|                            | 6:30pm              | 7:15pm              |
| Mark Air                   | 1:00pm              | 2:00pm              |
|                            | 4:15pm              | 5:15pm              |
|                            | 6:00pm              | 7:00pm              |

To Cordova:

Ketchum Air Amphib. Otter 10 seats \$100. each. Let us know.

## 1992 Managwa Meeting

### Confirmed attendees

- |                     |                             |
|---------------------|-----------------------------|
| 1. Chris Cleverger  | Mgr. Pillar Creek           |
| 2. Terry Elson      | Regional Fish Culturist     |
| 3. Bruce Bakken     | NSRRA                       |
| 4. Tim Joyce        | Kodiak Regional Aquaculture |
| 5. Rob Brower       | Fisheries & Oceans Canada   |
| 6. Darnell Keifer   | Elmendorf Hatching ADFG     |
| 7. Gary Nell        | Ft. Rich ADFG               |
| 8. IRV BROCK        | Ft. Rich ADFG               |
| 9. CHRIS MONK       | ADFG                        |
| 10. ERIC PRESTIGARD | PWSAC                       |
| 11. RENE' PELLISSE  | VFOA                        |
| 12. PAUL McCollum   | VFOA                        |
| 13. DAVE COLOB      | VFOA                        |
| 14. KEN MORGAN      | VFOA                        |
| 15. MARTY PEGG      | VFOA                        |
| 16. ROY MARTIN      | NMFS                        |
| 17. RODGER VALLION  | NMFS                        |
| 18. JIM SEELAND     | NSRAA                       |
| 19. ROD NETERER     | SSRAA                       |
| 20. JEFF MILTON     | PWSAC                       |
| 21. TOD JONES       | WRANGELL                    |
| 22. CHIKARA IIOKA   | JAPAN                       |
| 23. TOM HENDERSON   | PWSAC                       |

|     |                |                        |           |
|-----|----------------|------------------------|-----------|
| 24. | MIKE MELIELO   | COLD BAY               | ADFG      |
| 25. | LAURIE FOWLER  | RANGEN FISH FOOD CO.   |           |
| 26. | MIKE BLAKE     | AQUIONICS              |           |
| 27. | DALE HURLLOW   | BIO-PRODUCTS           |           |
| 28. | RUSS FARMER    | BIO-PRODUCTS           |           |
| 29. | SCOTT MCKINNEY | MOORE-CLARK            |           |
| 30. | CINDY LASSITER | DEER MOUNTAIN HATCHERY | ADFG      |
| 31  | DAN MOORE      | BIG LAKE HATCHERY      | ADFG      |
| 32  | BILL HALLORAN  | SSRAA                  |           |
| 33  | MARK TOLLFELDT | SSRAA                  |           |
| 34  | SAM RAYBUNG    | SSRAA                  |           |
| 35  | Ted Cooney     | U of ALASKA            | FAIRBANKS |
| 36  | Earl           |                        |           |
| 37  | Don            |                        |           |
| 38  | Ted Westall    | Don                    |           |
| 39  | John Miller    | Southdown Hatchery     | ADFG      |
| 40. | Karen Robinson | Chin Bay Hatchery      |           |

# COST/BENEFIT ANALYSIS OF SALMON PRODUCTION AT THE SOLOMON GULCH HATCHERY

The following analysis will utilize three scenarios concerning the degree of financial commitment to each species' specific program.

## SCENARIO #1

In this scenario we will deal with the total financial picture (TFI), including capital and operations costs for the entire facility, split by a percentage factor per species, derived by the following formula:

$$TFI \times \frac{ST}{T} = Stfi$$

where TFI = Total Financial Incumbrance for a given brood year.

ST = Species Time in man hours for same brood year.

T = Total time in man hours for all species for that brood year.

Stfi = Species Total Financial Incumbrance for a given species and brood year.

To determine a cost value (C), we then would divide the Total Financial Incumbrance for a given species and brood year (Stfi) by the number of fish released (r), whether it be actual or expected:

$$\frac{Stfi}{r} = C$$

For the benefit value (B), we can use the value (V) in dollars of the expected or realized returning adults, either to the fishery (B1), or to the hatchery (B2).

$$\frac{V}{r} = B$$

Our total cost benefit ratio under this scenario would be expressed as:

$$\frac{\frac{TFI \times \frac{ST}{T}}{r}}{\frac{V}{r}} = \frac{C}{B}$$

## SCENARIO #2

In this scenario, we will not incorporate any capital costs into account, and therefore, will use only operational financial incumbrance (OFI) instead of TFI:

$$\frac{\frac{\text{OFI} \times \frac{\text{ST}}{\text{T}}}{r}}{\frac{V}{r}} = \frac{C}{B}$$

## SCENARIO #3

This scenario will only use the actual direct operations costs incurred with a given species and brood year, i.e. those specific costs associated with egg take, incubation, rearing, harvest and tagging. This will be termed Actual Financial Incumbrance (AFI):

$$\frac{\frac{\text{AFI}}{r}}{\frac{V}{r}} = \frac{C}{B}$$

## ACTUAL COST BENEFIT COMPUTATIONS

### SCENARIO #1

'84 pink:

TFI = \$2,607,530 capital cost as of '84 ÷ 20 yrs = \$130,377 + \$459,500<sup>1)</sup>

$$\text{TFI} = \underline{\$589,877}$$

ST = Egg Take (3,470 man hours) + Incubation (1,650 man hrs) + Rearing (378 man hrs) + Harvest (est. 160 man hrs) + Mark Recovery (est. 100 man hrs.) + Staff Time (3,536 man hrs.)

S = 9,294 man hours      TT = 10,934 man hours      r = 51,260,000 fed fry released

C = \$ .00978 = Cost factor '84 brood pinks per fish released.

- 1) For '84 brood year pinks, since we were on calendar years and '84 and '85 operations were involved, I used the average of the two years to attempt an estimated FY'84 operations budget.