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May 15, 1991

**INTRODUCTORY REMARKS -- SENATE FISHERIES COMMITTEE MEETING ON
HATCHERY ISSUES**

Purpose of meeting to lay groundwork for beginning legislative look at Alaska's hatchery programs --

Where did we start?
Where have we been?
And where are we headed in the future?

Want to stress that this is **POSITIVE** action, not **NEGATIVE**.

No secret agenda, no pre-conceived ideas of any changes that need to be made.

Alaska has built up one of the most successful hatchery programs in the world.

The Legislature has been involved with the establishment, oversight, and funding throughout the life of these programs

We are proud of the accomplishments of both the FRED Division and the PNP programs in the state.

But the Legislature statutorily created these programs nearly 20 years ago, and other than appropriating LOTS of money to them, has basically stood back let and them take off.

We recognize:

- * the great successes of the hatchery system,
- * the increasing numbers of concerns and controversies surrounding some aspects of it,
- * and we recognize the major changes is the whole state and world fisheries picture within which our hatchery system must operate.

So it is **TIME** for the Legislature to take a look at the whole fisheries enhancement picture, and

It is **TIME** to sit down in a cooperative effort with everyone involved and affected

To re-evaluate the goals, and means, and

To CHART A COURSE for the future of these programs.

With all that in mind:

AGENDA for this meeting is divided into THREE PARTS:

1. Discussion of **WHY** we need to conduct this

review --- What kinds of questions have
come to our attention?

2. Formulation of a list of topics that the
committee would like to have researched as a
STARTING POINT for its review.
3. Development of a game plan for getting this
research started.

Have Committee lay
the "meeting Agenda"
next to other pile
and follow in order
they are stacked.

Prepared for Sen. Elsdon
(for chairing meeting)
by Mary McDowell

SENATE SPECIAL COMMITTEE ON FISHERIES
MEETING: MAY 15, 1991

INITIAL DISCUSSION OF STATEWIDE HATCHERY ISSUES

AGENDA

1. Discuss problems and need for legislative review of hatchery issues.

Briefly review documents in folder:

List with heading, "Why is it time to Review..."
(prepared by staff)

Paper titled, "FRED Division -- Alaskan Fisheries Enhancement in the 1990's"

Letter from Alaska Board of Fisheries to the Legislature dated May 6, 1991 (pink cover)

Collection of differing legal opinions regarding hatchery stock management (Attorney General's Office, Legislative Legal Services, and a private attorney) (yellow cover)

Also in folders for reference:

Misc. Letters (blue cover)

S.E. Alaska Seiners Association suggesting possible topics for study

Prince William Sound Aquaculture Corp.

Alec Brindle letter with attached paper by Ray Hilborn

Copy of Current laws and regulations for Private Nonprofit Hatcheries (peach cover)

2. Develop list of topics that the Legislature needs to have researched in order to begin evaluating the present status and future directions of fisheries rehabilitation, enhancement, and development programs in Alaska.

Review:

Document titled, "Hatchery Issues: Draft Questions and Topics for Legislative Review and Research"
(attached to meeting agenda)

Make amendments, additions and subtractions to list to make it state the committee's desired scope of study.

3. Develop work plan for legislative research and review.

Review:

Page headed, "How to Approach the Topics of Concern" (attached to meeting agenda)

Page titled, " Proposal for Interim Staff Work on Hatchery Issues" (attached to meeting agenda)

Rep. Ulmer's proposal for ISER study (green cover)

Packet of misc. studies (few examples of studies currently available (hot pink cover)

Discuss:

Committee's goals

Options for achieving goals

Decide course of action

HATCHERY ISSUES:
DRAFT QUESTIONS AND TOPICS FOR LEGISLATIVE REVIEW AND RESEARCH

I. What are the goals and purposes of hatcheries in Alaska?

What were they intended to be when the programs were established in early 1970's?

FRED hatcheries

Private nonprofit hatcheries (PNP's)

What should they be now and in the future?

If circumstances have changed enough to warrant adjustments in goals and purposes, does this require changes in statutes or policies?

Is adequate information collected and available regarding the biological affects of our high-production hatcheries on wild stocks? Do we know whether continued growth in hatchery production will ultimately harm or even replace wild stocks? Is this information being considered when planning for future direction of Alaska's hatchery programs?

Are current requirements for planning and oversight adequate to ensure that goals and purposes are met?

Are Regional Planning Teams enough?

Should there be a mandated "statewide" plan and/or planning team?

Current hatchery statutes are aimed primarily at production of salmon. But now some hatcheries are coming on line for non-salmon species, and planning and research regarding hatcheries for additional species of fish and shellfish is increasing. Should provisions be made to cover possible future hatcheries for non-salmon species?

Should such socio-economic factors as rural economic development be factored into fisheries enhancement and development goals, purposes, and planning?

II. What should the State's role be in hatcheries from now on?

State-owned and operated hatcheries

State role in PNP's

Permitting

Planning
Providing technical expertise
Financing

Grants, capital funding, loans, turning over of
formerly state-run hatcheries to PNP's
How have other states been dealing with their hatchery
programs as they have evolved in recent years?

III. Fisheries management questions

Should statutes provide clear policy and direction to Board and Department regarding management and allocation priorities when dealing with wild stocks and hatchery stocks? (Concern has been expressed by Board of Fish about lack of clear statutory direction -- See letter from Board of Fish to the Legislature dated May 6, 1991).

Recent legal opinions show lack of clarity in current law (See opinions of Asst. AG Steve White, Legislative Legal Services Attorney George Uttermohle, and private Attorney Michael Stanley).

What is obligation to provide for PNP broodstock?
Cost recovery fish?

What if ensuring those recoveries for a PNP affects the biology or management of a wild stock or existing fishery?

Should tagging of PNP hatchery fish be required in order to track contribution to stocks and assist in management decisions? If so, who should pay for it?

IV. PNP Operations Questions

Should there be statutory provision for CLOSING a particular hatchery if it is no longer viable (biologically or financially), or no longer meets the goals of the hatchery program or the needs of those it is meant to serve?

How would loan obligations be dealt with?

Are PNP's held accountable to the state and fishermen (as they provide funding for PNPs through loans and assessments)?

Is there adequate monitoring to ensure that maximum benefit is being delivered for minimum cost? Is cost effectiveness REQUIRED?

Commerce Dept. now holds ex officio seat

on RPT's. Should they have full membership or at least an oversight function to ensure that financial aspects of plan are adequately covered?; i.e. whether they meet nonprofit standards, does plan for raising of particular species and amounts make financial sense, etc.

V. Market / Economics Questions

Where do hatcheries fit into the market picture of Alaskan salmon?

Is there adequate information available regarding competition for market share by cost recovery fish, and regarding how success of hatchery production affects overall market conditions?

Effects on processing capabilities

Recent request to allow foreign processors into Prince William Sound

Would more accurate fish run projections and development of better markets help to offset the concerns about hatchery "over-production?"

What role could FRED Division, Aquaculture Associations, and other PNP's play in market development?

HOW TO APPROACH THE TOPICS OF CONCERN?

I. Which questions are under the jurisdiction of the Legislature and should be addressed directly by the Legislature?

II. Who should be responsible for researching and acting on others?

Options:

Board of Fish

ADF&G

FRED Division

What is the "Hatchery Forum" and what is it doing?

PNP's themselves

Regional Planning Teams

III. What research needs to be done to prepare the Legislature to address those topics for which it is responsible and how should we go about getting it done?

Options:

Existing Fisheries Committee?

Need legislative interim or special committee specifically on hatchery issues?

Assign certain topics to:

Legislative Research Agency?

Legislative Legal Services?

Interested legislators' offices and staff?

*** SEE ATTACHED PROPOSAL FOR STAFF WORK***

ISER Study - see Rep. Ulmer's letter and proposal

Review previously done economic studies to avoid overlap of subject matter:

"Alaska Seafood Industry Study," by McDowell Group, March 1989

"A Comparison of Demand Models for Alaska Salmon," by Dr. Boyce, August 1990

Others?

Is it time for an ISER study? If so, what exactly should it address?

If other interim research is assigned to legislative staff, should scope of any ISER or other hired research be defined after staff has developed a work plan?

DRAFT

PROPOSAL FOR INTERIM STAFF WORK ON HATCHERY ISSUES

Establish informal ad hoc group of House and Senate staff (under auspices of Senate Special Committee on Fisheries) to work with list of topics developed at May 15 meeting of Senate Special Committee on Fisheries.

Interested existing interim staff, with permission and direction from their respective legislators, will form this working group.

The goals of the staff working group will be :

- * Meet to go over and refine list of concerns and questions.
- * Divide work load among participating offices.
- * Develop work plan and schedule for interim research they will conduct themselves.
- * Develop request for work to be done by other entities such as Legislative Research Agency and Legislative Legal Services Division.
- * Ensure that work includes input from Board of Fisheries, ADF&G, PNP's, Aquaculture Associations, fishing organizations, and other interested parties.
- * Work with Legislators in developing list of specific questions if it is determined that the project requires professional research by an entity such as ISER.
- * Coordinate efforts between participating offices throughout interim.
- * Compile data and develop possible options for legislative action to be considered during 1992 session.
- * Present work product to Legislature in January 1992.

Staffers interested in working on the project will be asked to contact Sen. Eliason's office.

Legislative staff members who have expressed interest so far in participating in such work:

NAME	OFFICE
Mary McDowell	Sen. Eliason
Molly McCammon	Sen. Hoffman
Paula Terrel	Sen. Jones
Jay Nelson	Rep. Davidson
Kate Tesar	Rep. Grussendorf
Barnaby Dow	Rep. Ulmer
Tom VanBrocklin	Rep. Kubina

Coordination of the overall project of legislative review of hatchery issues will be through the Senate Fisheries Committee (Sen. Eliason's office), although coordination of the proposed

staff work project may be delegated to staff from another office or offices during at least part of the interim.

At least one meeting (probably by teleconference) of the Senate Fisheries Committee, other interested legislators, and staff involved in the research, would be held in the fall to assess progress and discuss ongoing work.

This work plan should provide the Fisheries Committee (and all legislators) with a good amount of information by the beginning of the next session upon which to base analysis of statewide hatchery issues, and to begin formulating some recommendations for legislative action.

ALASKA STATE LEGISLATURE SENATE

SENATOR RICHARD I. ELIASON

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

Teleconference Work Session on Hatchery Review Project
December 6, 1991

AGENDA

1. Report on Status of **LEGISLATIVE REVIEW OF ALASKA'S FISHERIES ENHANCEMENT PROGRAM.**
 - Work done to date
 - Work in progress
 - Direction to staff on further work to be done
2. Discussion of conclusions and recommendations to be included in project report.
3. Decision on public involvement process. Discuss possible options:
 - a. Draft report to be reviewed and approved by staff and/or by committee
 - b. Draft report distributed to mailing list before hearings. Redraft following receipt of comments?
 - c. Hearings to be held before session starts, after session starts, in Juneau and/or outside of Juneau?
 - d. Other

LEGISLATIVE REVIEW OF ALASKA'S FISHERIES ENHANCEMENT PROGRAM

Summary of Project Progress as of Dec. 5, 1991

Executive Summary

In draft available for review.

I. Introduction - Why a Need for this Review

Completed.

II. History & Development of Hatcheries in Alaska

Completed report done by Legislative Research Agency.

III. Production Policies and Trends in Alaska and Worldwide

Completed report done by Legislative Research Agency.

IV. Planning and Permitting Process

Draft still undergoing agency review and further revision. This chapter is one of the most key sections of the report since many of the problems and conflicts that the hatchery program is currently experiencing could have been minimized or avoided with proper planning. This section is being written by Molly McCammon and is focusing on how to expand and improve the current planning and permitting process.

V. Enhancement Funding

Draft is still being reviewed and revised by Ginny Fay.

VI. Biological/genetic issues

A summary report of the major issues has been completed by the Legislative Research Agency. We are still expecting a summary report and recommendations from Dr. Ole Mathisen following a University of Alaska/Prince William Sound Science Center workshop

held in Cordova in November, 1991 which focused on the interaction between wild and hatchery salmon stocks. That report will contain recommendations on state policies.

VII. Major Fisheries Management Issues

- A. Wild Stock Priority Policy
- B. Providing for PNP Broodstock
- C. Providing for Cost Recovery

The legal issues raised by the Board of Fisheries concerning the above three topics have been reviewed by Doug Rickey, staff to Representative Ben Grussendorf. That review is completed.

- D. Allocation Conflicts

Minimizing or reducing allocation conflicts can and should be done through the planning and permitting process. The Board of Fisheries has twice now (in Prince William Sound and in Southeast) directed the regional aquaculture associations to develop their own allocation plan for hatchery-produced fish. The Prince William Sound plan has been incorporated into the Comprehensive Regional Salmon Plan. Molly McCammon is still working on this section.

- E. Challenges of In-Season Management

More information about run timing and quality, as well as how to fund marking and tag recovery programs are the key here. Molly McCammon is still working on this section.

- F. Tagging Needs and Requirements

Dale Staley in Senator Duncan's office is writing this section and it is not yet completed.

VIII. Other issues

- A. Use of Hatcheries as Environmental Mitigation
- B. Role of Hatcheries in International Treaties
- C. Conflicts and Coordination with Federal Policies
- D. Use of Hatcheries as Tool for Economic Development
- E. Environmental Regulations

This section deals with less pressing issues. A draft is not yet completed.

IX. Economics

This section was written by Ginny Fay and describes the various cost/benefit, economic studies that the Senate is funding. We are expecting a preliminary report from the University of Alaska - Fairbanks researchers on those studies in April, 1992, with a final report expected in June, 1992.

X. Marketing

After Governor Hickel announced formation of his Salmon Marketing Strategy Task Force, the review group basically decided to leave this topic to this group since it was felt that they would be giving it more attention. This section, written by Ginny Fay, describes what the Alaska Seafood Marketing Institute (ASMI) does, its funding and constraints, the recommendations of the Governor's Task Force, and alternatives to the ASMI marketing approach that are being discussed within the seafood industry.

XI. Conclusions and Recommendations

Portions of this section are being drafted from the information in each of the above chapters. Actual recommendations will require close review of the committee members.

Other factors for consideration:

- Norway, a large farmed-salmon producer, spends about five cents per pound for marketing whereas only one cent per pound is spent marketing Alaska salmon.

- Canned salmon consumption in the U.S. declined 60 percent from 1980 to 1989 at the same time that harvests of pink salmon, which is usually canned, increased approximately 50 percent.

- Some analysts see problems with ASMI's "generic" approach which promotes all salmon and does not specifically identify Alaskan products.

Alternative Marketing Strategies and Options

- Legislation to expand ASMI's marketing efforts to include new product development.

- Legislation, such as that proposed by Representative Kubina, to create an Alaska State Salmon Marketing Association wherein product development would not be restricted and the association could focus on specific geographic areas.

- Legislation to expand ASMI statutes to allow for targeting development of Alaska salmon markets and product development (proposed by Representative Dave Choquette).

- Development of a national Salmon Marketing Council.

- Privatization of ASMI.

- ASMI Salmon Recovery Proposal. The goal would be to increase the annual per capita U.S. salmon consumption from 1 to 1.5 pounds which would absorb annually an additional 119 million pounds of salmon. Cost of this proposal is \$50 million over 5 years. Several sources of funding have been identified, including state general fund appropriations.

Policy and program direction is set by an 18 member board of directors. Membership consists of 12 fish processors, 5 commercial fishermen, and 1 public citizen. There are also three non-voting ex-officio members: the DCED Commissioner, and a legislator appointed from each chamber.

In addition to the board of directors, there is an extensive committee system, consisting of marketing committees, individual species committees, and quality and export committees.

Funding for ASMI is provided by three separate mechanisms. The first is a self-imposed seafood marketing assessment. All fish processors, who annually purchase \$50,000 or more ex-vessel value of seafood pay an assessment of 0.03 percent of their total purchases. The assessments are deposited in the general fund and appropriated annually to ASMI. The balance of ASMI's funding is derived from state general fund and federal appropriations.

Federal funding is restricted to international marketing efforts and has increased in recent years. State general fund appropriations and industry contributions are used primarily to fund domestic marketing efforts. State funding has decreased in recent years. In addition, the industry assessment will decline approximately \$600,000 in FY 92 as a result of lower salmon prices. **As a result, ASMI will have fewer resources for domestic marketing at a time when the domestic market has been identified as having the greatest potential for increasing sales of Alaska salmon.**

ASMI's Effectiveness

A recent legislative audit concludes that ASMI has increased consumer perception of Alaska seafood. **However, Alaska has lost a significant share of both the domestic and international salmon markets due to the tremendous growth in world farmed-salmon production.**

look at the overall economic picture of Alaska salmon and salmon enhancement.

X. MARKETING

Governor Hickel's Salmon Marketing Strategy Task Force

In this section we will describe the recommendations of the Governor's Task Force, which are in the final phase of development.

As a result of the precipitous decline in Alaska salmon prices in 1991, Governor Walter J. Hickel formed the Salmon Strategy Task Force. The purpose of the group is 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 is salmon marketing. The task force is currently finalizing its recommendations. To avoid duplication with this on-going effort, 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 will also be reviewed.

The Alaska Seafood Marketing Institute

Structure and statutory responsibilities

The Alaska Seafood Marketing Institute (ASMI) was established in 1981 as a quasi-state corporation within the Alaska Department of Commerce and Economic Development. By statute, ASMI is mandated to conduct educational, marketing and research programs relating to Alaska seafood and its by-products. ASMI also develops quality specifications and recommendations for the handling of seafood.

State statute prohibits ASMI from favoring any region, product, or processor. Therefore, ASMI uses "generic" marketing campaigns aimed at enhancing the sales of particular "species" of fish or broad product categories (e.g. canned or frozen), rather than specific products. As a result, ASMI does not promote new products.

Research Components

The five principal research components are:

- Hatchery Production and Cost Model
Principal Investigators: Economics Group, Legislative Research Agency, and the ADF&G FRED Division staff
Anticipated Cost: \$0
- Biological Population Model
Principal Investigators: Dr. Jeremy Collie, Juneau Center for Fisheries and Ocean Sciences, Univ. of Alaska, Fairbanks
Anticipated cost: \$10,000
- Salmon Demand Model
Principal Investigators: Dr. Mark Herrmann, Dept. of Economics, Dr. Joshua Greenberg, School of Land Resources Management, Univ. of Alaska Fairbanks
Anticipated cost: \$18,000
- Fishing Cost Model
Principal Investigator: Dr. John Boyce, Dept. of Economics, Univ. of Alaska Fairbanks
Anticipated cost: \$20,000
- Combining of Models for Policy Analysis
Principal Investigators: Drs. John Boyce and Mark Herrmann, Dept. of Economics, and Dr. Diance Bischak, School of Management, University of Alaska Fairbanks
Anticipated cost: \$10,000

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. ThisThe rest 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.

It is hoped that research currently being conducted by the Alaska Department of Commerce and Economic Development and the Alaska Seafood Marketing Institute on developing new markets and products for Alaska salmon will also be available and useful to the Legislature in its

VIII. OTHER ISSUES

This section deals with more minor "side" issues such as the use of hatcheries as a form of environmental mitigation, the role of hatcheries in international treaties, environmental regulations, conflicts and coordination with federal policies, and the use of hatcheries as a tool for economic development. This section still remains to be drafted.

IX. ECONOMICS

The main focus of the review of the economic impacts of salmon hatchery production was to study

- 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.

Such a study requires a complete benefit-cost analysis. To begin, the study group reviewed current research and then identified specific issues that need additional economic research. Review of available data revealed that there are considerable gaps and insufficiencies in information compiled to date. A proposal was then developed to let contracts for additional research by professional researchers. The proposal was designed with assistance from the Alaska Department of Fish and Game. Funding for the research contracts was approved by the Legislative Council on November 1, 1991.

Due to time constraints, rather than using a competitive bid process, the research contracts were awarded on a "request for proposal" basis, and funded through reimburseable service agreements (RSAs) between the Legislature and the University of Alaska.

The research is divided into five principal components, and is aimed at providing information on Alaska's salmon enhancement programs, and developing models that can be used for evaluating salmon management policy questions.

Wild Stock Priority Policy

Concern has been expressed by ADF&G managers and by the Board of Fisheries that the state does not have a strong enough wild stock priority policy in statute. In addition, Fisheries Board members have asked for further legal direction on their responsibilities to provide for hatchery broodstock and for cost recovery fisheries, especially when they appear to compete or reduce fishing opportunities in traditional fisheries. Staff is nearly finished with the legal analysis of this issue. *The Legislature will definitely want to consider whether or not to put a stronger wild stock priority into law.*

Allocation Conflicts

Minimizing or reducing allocation conflicts can and should be done through the planning and permitting process. However, this is not a perfect process, and it is inevitable that conflicts develop over who gets which fish. The Board of Fisheries has twice now (in Prince William Sound and in Southeast) directed the regional aquaculture associations to develop their own allocation plan for hatchery-produced fish. The Prince William Sound plan was approved by the Board of Fisheries in January, 1991, and has now been incorporated into the area's Comprehensive Regional Salmon Plan. Development of a Southeast allocation plan is currently underway, with a final product due in _____.

Challenges of In-Season Management

More information about run timing and quality, as well as how to fund marking and tag recovery programs are the key here. ADF&G Commercial Fisheries Division has suggested a research project be funded for this year to analyze salmon quality at various distances from their terminal streams in an effort to determine how best to manage fishing effort to produce top-quality and marketable product.

because of the stress of hatchery conditions and large concentrations of eggs and fry.

State Genetics Policy

Describe here the current state policy and the process of reviewing Fish Transport Permits.

VII. MAJOR FISHERIES MANAGEMENT ISSUES

Over-harvest of Wild Stocks

The fundamental issue facing fisheries managers is how to control fishing efforts on stocks in mixed-stock fisheries when you don't know which stocks are being fished. The fear is that the weakest stocks will get fished out of extinction. Since hatchery productivity is much greater than natural stock productivity, wild stocks face the greater risk in being eliminated. Smaller stocks are always in danger of depletion in mixed-stock fisheries because there is a tendency to optimally harvest the larger stocks before quality declines in terminal fisheries.

The problems posed by mixed-stock fisheries are not new. Almost all Alaska salmon fisheries had some degree of mixed stocks prior to the development of current hatcheries. However, hatchery-produced fish further complicate management. An adequate program of tagging, recovery and analysis is essential for most mixed-stock fisheries comprised of large numbers of hatchery fish.

Tagging Needs and Requirements

This section will describe current tagging technology, its usefulness, cost, and the question of who should pay.

Straying and intermingling of stocks is a major concern to scientists. The extent of straying, the mechanism causing imprinting, and the success of crossbreeding are largely unknown. Large-scale ocean ranching appears to set the stage for straying of wild stocks in the harvest areas of enhanced stocks and also for hatchery fish to stray into the natural streams. What impact this has on the genetic diversity of salmon stocks in a given region is a question that remains to be answered.

It is known that the greater the distance between the donor stream or hatchery and the release site, the greater the amount of straying. **Many scientists are concerned about the extensive releases at remote sites practiced by many hatchery operations today,** with many more planned for the future. They fear that such straying could potentially, in time, destroy genetic diversity - resulting in a permanent, irreversible loss. Some scientists believe remote releases should be banned altogether. Others believe they should be permitted with stringent controls and careful monitoring.

Ocean Carrying Capacity

Some scientists suspect that the carrying capacity of freshwater rearing areas, nearshore waters, and on the high seas for salmon may be exceeded by the large-scale releases of hatchery salmon. A reduction in the average size of salmon has been reported throughout the Pacific in 1991, but various factors may be responsible. Some researchers believe ocean conditions affect the size of salmon more than competition. Much evidence, however, supports the theory of density-dependent growth for some salmon species, although there is considerable debate regarding its occurrence.

Disease

Few studies document the transmittal of diseases between hatchery and wild salmon and there is no documentation of such transmittal in Alaska. Where transmittal of a disease by hatchery salmon has been documented, it occurred after fish were transplanted long distances. Hatchery fish appear to be more vulnerable to disease than wild fish

Populations in Alaska." This workshop followed a series of international symposiums on this topic during the past two years in Norway, Canada, Idaho, Washington, and Japan. Top fisheries biologists, ecologists and geneticists from the United States, Norway, Sweden, the Soviet Union and Japan were present at this workshop. As a follow-up to the workshop, the group intends to produce a summary report and list of recommended policies and procedures to be considered by the state of Alaska in managing its wild and enhanced salmon stocks.

The cumulative effect of hydroelectric dams, habitat destruction, over-fishing and large-scale hatcheries has lead to the decimation of many wild salmon stocks in Pacific Northwest states. Biologists in states with a long history of hatchery programs are generally less enthusiastic about these programs than biologists in areas such as Alaska and British Columbia with comparatively more recent programs. Although poor hatchery practices can clearly endanger wild salmon populations, scientists do not agree on the extent to which hatcheries with sound practices can co-exist with sustained healthy runs of wild salmon.

The lack of consensus among scientists results from insufficient data and research. Even where information exists, however, it is often subject to conflicting interpretations. To complicate matters, results of specific studies may not be transferable to other areas or salmon species, and year-to-year environmental changes may affect the results of studies.

The Genetic Effects of Hatcheries

Most scientists agree that it is essential to have healthy wild stocks in order to maintain the health and genetic diversity of both wild and hatchery stocks. Genetic diversity must be preserved. Scientific knowledge about the genetic impact on wild stocks of hatchery fish, however, is still incomplete. Reduction in the fitness of salmon stocks, to the extent it has been documented, may involve numerous factors. Most scientists agree that hatcheries can complicate mixed-stock fisheries and affect the genetic composition of wild fish stocks. Scientists do not agree on the degree to which genetic changes affect the short- or long-run fitness of wild stocks.

Division of Investments if the project is financially feasible. Financial feasibility, however, is based upon whether the biological production characteristics are sufficient to provide adequate annual income for repayment of state loans. It does not necessarily mean that the project makes economic sense (benefits are greater than costs).

The **Salmon Enhancement Tax** (AS 43.76.010-.015) is charged to limited entry permit holders who are members of qualified regional aquaculture associations. state law allows the associations to set enhancement tax rates from 1 to 3 percent of the ex-vessel value of the salmon catch, subject to the vote of the membership.

Through November, 1991, \$71.0 million has been borrowed by PNP corporations. Approximately \$67.7 million (95 percent) of the \$71.0 million principal balance is currently outstanding. Including state appropriations (\$12.3 million), approximately \$83.3 million has been provided in state loans and grants to PNPs. Another \$46.2 million has been generated through enhancement tax assessments. To date, PNP operators have sold approximately \$70.9 million worth of cost recovery fish to help pay for hatchery operations. The amount and percentage of funding by category is shown below.

\$71.0 million	35 percent State Loans
\$12.3 million	7 percent General Fund Grants
\$46.2 million	23 percent Enhancement Tax Assessments
\$70.9 million	35 percent Cost Recovery Sales of Fish
\$200.4 million	Total

As can be seen, the private sector has provided over 58 percent of the direct funding for PNP operation and construction through self-imposed taxes and cost recovery sales of fish.

VI. BIOLOGICAL/GENETIC ISSUES

In November, 1991, in Cordova, Alaska, the Prince William Sound Science Center (PWSSC) and the School of Fisheries and Ocean Sciences, University of Alaska Fairbanks, convened a group of world-renowned experts to examine "The Biological Basis for Maintaining Strong Co-existing Stocks of Natural and Enhanced Salmon

primarily through state bonds and general fund appropriations to ADF&G, FRED Division. From FY 73 - 92, funding for the FRED Division totalled \$_____ million, the majority of which is for salmon enhancement. Bond issues totalling \$56.17 million were authorized by the 1976 and 1978 Legislatures, and overwhelmingly endorsed by voters, to fund the construction and operation of hatchery production and other enhancement projects in each region of the state. Of the \$56.17 million in bond issues for FRED enhancement projects, \$50.3 million was spent on hatcheries, while the remainder was used for other enhancement projects. State funding for FRED Division, the construction and operation of state facilities and indirect support of the PNP hatchery program totals \$_____ million through FY 92.

Funding for Private Non-Profit Hatcheries

Funding for PNP hatcheries is primarily through state loans, the salmon enhancement tax, and cost recovery sales of fish. To a lesser extent, the state has provided grants to some facilities and fishing organizations; these have totalled approximately \$12.3 million.

Since 1977, a significant portion of the funding necessary for the implementation of salmon rehabilitation and enhancement activities by PNP corporations has been provided through the Fisheries Enhancement Revolving Loan Fund administered by the Alaska Department of Commerce and Economic Development (DCED), Division of Investments (AS 16.10.500-620). The loan program has gone through several modifications by the legislature, the most recent occurring in 1987. The maximum loan amount available for an individual project is \$10 million at approximately 9.5 percent interest, with a payback period of up to 30 years. According to state statute (AS 16.10.525), payments and accrual of interest on these loans must be deferred for six to ten years. Loans for non-regional aquaculture association projects have these same terms with the exception that the loan maximum is limited to \$1 million. Loans are available for the purpose of planning, construction, and operation of salmon rehabilitation and enhancement projects, primarily salmon hatcheries.

To obtain an enhancement loan, a corporation must first receive a permit from FRED Division based on biological considerations. After a permit is obtained, a loan can be applied for and approved by the

A management feasibility analysis is required of a proposed hatchery or project. *This process is described and analyzed here.*

- **Uniform review.** State run hatcheries and enhancement projects are not required to go through many of the regulations and public review required of the private non-profits. Many fishermen and hatchery operators have complained about this lack of uniform treatment and would like to ensure that state projects receive the maximum public scrutiny possible.

- **Canadian planning model.** Canada requires a broad review of the biological and economic aspects of its entire enhancement program on a five-year basis. *This model is still being researched for its possible applicability in Alaska.*

- **Permitting requirements.** *Reviewing such items as criteria to show public benefit, proof of marketability, cost/benefit analysis, ongoing genetic monitoring.*

- **Performance reviews.** Present regulations allow the regional planning teams to review a hatchery's compliance with statutes and regulations, and to recommend the suspension, alteration or revocation of a permit if certain performance standards are not met. However, revocation of a permit must go through the Administrative Procedures Act, a very lengthy and time-consuming process. Some fisheries managers and RPT members advocate for a more timely process and stricter performance standards.

V. ENHANCEMENT FUNDING

Sources of funds for the Alaska salmon enhancement program and projects include bond issuances, state general fund appropriations, salmon enhancement tax assessments paid by fishermen, state enhancement loans, and cost recovery sales of fish.

State Project Funding

Funding for the operation of the state salmon enhancement program and state project construction, operation, and maintenance has been

states and countries to have a "model" process. However, it doesn't appear to be working in many respects.

- **Lack of statewide goals and objectives.** The original goal of the enhancement program was to produce more salmon. In the beginning, no one really knew if it could be achieved. We now know our hatcheries can be successful, perhaps even too successful when combined with the vast increase in Alaska's wild stocks. The old goal no longer seems to fit, yet it has not been replaced by any other statewide goals and objectives that more accurately reflect the current desires and needs of the seafood industry.

- **Regional versus statewide planning.** All salmon management and production planning is done on a regional basis. Regions operate with little contact with other areas of the state. Today however, hatchery produced fish are having an increasing impact on fisheries management and on overall market conditions. Many fisheries managers argue in favor of a statewide planning process to take into account the potential impacts of one region on another. Others involved in the industry argue that regional differences are so unique and often contentious, that such a statewide process would be futile.

- **Funding and support for planning.** State support for planning has been declining since the early 1980s. Members of the Regional Planning Teams complain that they aren't able to adequately review all the permit applications and hatchery production plans in order to resolve the issues and potential conflicts they may generate. FRED Division has less than two full-time staff devoted to assisting current enhancement efforts and planning others.

- **Fisheries management and allocation issues.** These issues have not been allowed as part of the planning process because ADF&G personnel are a major part of that process, and they are supposed to remain aloof from allocation decisions. By not allowing these issues to be considered in the permit review process, the state may be approving - at least on paper - a project that can create allocation conflicts in the future. By the time the Board of Fisheries begins to consider these issues, millions of dollars have been invested, and many of them through state loans and grants which give the state a vested interest.

III. PRODUCTION POLICIES AND TRENDS IN ALASKA AND WORLDWIDE

In 1980, Alaska salmon harvests accounted for 41 percent of world salmon supply. By the end of 1990, wild and enhanced Alaska salmon accounted for just 31 percent of the world supply. This occurred despite the 50 percent increase in Alaska's production during the same period, as a result of the dramatic increase in farmed-salmon production. Farmed-salmon production nearly doubled between 1988 and 1990, increasing from about 310 million pounds to over 600 million pounds. In 1990, farmed salmon composed about 30 percent of world salmon production, up from a mere one percent in 1980. The increased supply of salmon on the world market lowered prices. Lower salmon prices and rising operating costs have brought economic hardship to salmon-farming operations worldwide, although many farms remain competitive. Recent trends indicate a slight reduction in farmed salmon production. Lower prices have also adversely impacted commercial salmon-fishing operations worldwide.

One interesting development in the salmon-farming industry is that the glut of salmon on the world market has forced many salmon farmers to freeze their product for later resale. This trend could increase the competitiveness of Alaska fish since it eliminates the "fresh versus frozen" advantage of farmed fish.

The countries and regions which commercially harvest the largest quantities of **wild and hatchery** salmon are the United States (Oregon, Washington and Alaska), Canada (British Columbia), Japan and the U.S.S.R. Other areas have experimented with salmon ranching, but as yet produce few fish. Major salmon-farming industries are located in Norway, Scotland, Chile, U.S. and Japan. Iceland, the Faroe Islands, Ireland, Australia, New Zealand and France also farm salmon but are not considered major producers.

IV. PLANNING AND PERMITTING PROCESS

The planning and permitting process holds the key to reducing many of the conflicts and problems that have developed with the state's hatchery program over the years. Alaska is considered by other

Dec. 5, 1991

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

**LEGISLATIVE REVIEW
OF STATEWIDE FISHERIES ENHANCEMENT PROGRAM
EXECUTIVE SUMMARY**

I. INTRODUCTION

In the late spring of 1991, the Alaska Senate's Special Committee on Domestic and International Commercial Fisheries initiated a review of fisheries enhancement in Alaska. The committee recognized that while hatchery and other enhancement programs in Alaska have been highly successful, the statutes that regulate them and the role that they play in the overall fisheries picture in the state have not been seriously reviewed since the program's inception nearly 20 years ago. Since the program was initiated by the Alaska Legislature, it is only appropriate that the Legislature be the entity to conduct this review.

The committee did not begin its work with any pre-conceived notion of what its eventual findings and conclusions might be. Rather, legislative staff were directed first to compile all the known information, question all the various interest groups, and then develop a series of recommendations or options for action that might be taken to improve the state's entire fisheries program. It is our hope that this review will serve as a starting point for a process of scrutiny and fine-tuning that will become an established part of the enhancement program itself.

II. HISTORY AND DEVELOPMENT OF HATCHERIES IN ALASKA

The development of Alaska's hatchery program has been an evolutionary process. Beginning as early as the late 1800s, attempts at hatchery production of salmon were undertaken by the federal government and private industry. As harvests of salmon declined, interest in efforts to mitigate the economic impacts through enhancement and hatchery production increased. However,

enhancement efforts were relatively low until a dramatic drop in salmon harvests in the 1960s and 1970s prompted state action.

The expressed goal of the state hatchery program was to produce more fish to supplement the existing wild salmon stocks. The Legislature acknowledged concern about the potential for detrimental biological affects of large-scale hatchery development on wild stocks, particularly from the interaction between wild and hatchery fish. However, program development was primarily driven by concern about the economic decline of the fishing industry.

In 1969 the state began receiving large sums of revenue from oil and gas leases on the North Slope. The Legislature decided to channel some of the future public income from such nonrenewable resources into development of renewable resources for long-term economic stability. The salmon resource was an obvious candidate for this sort of investment.

Throughout the 1970s, laws were enacted to facilitate development of a major fisheries enhancement program in Alaska. Program components included:

- creation of the Division of Fisheries Rehabilitation, Enhancement and Development (FRED) within the Alaska Department of Fish and Game,
- passage of a number of bond issues authorizing tens of millions of dollars for capital improvements for state hatchery facilities,
- authorization of private nonprofit (PNP) corporation hatcheries, and
- creation of regional aquaculture associations responsible for the regional planning and coordination of salmon enhancement activities.

After the initial start, it became increasingly apparent that a successful hatchery program was going to be more expensive than originally anticipated. New methods of financing were sought. The Legislature made funds available to PNP hatcheries through the Renewable Resources Development Fund, and by expanding the commercial fisheries loan program to include hatcheries. A separate fisheries enhancement loan program was later established. Statutes were also amended to allow proceeds from PNP sales of salmon or eggs to be applied to debt retirement, as well as operating costs.

Authority was granted to regional aquaculture associations to assess a fisheries enhancement tax to limited entry permit holders who are members of the association. Tax rates can be set for one, two or three percent of the ex-vessel value of a salmon catch, subject to the vote of the membership. Law provided for the establishment and funding of PNP operations, sometimes called "Mom and Pop" hatcheries, run by private nonprofit corporations independent of regional associations.

Legislation was passed creating a Fisheries Enhancement Revolving Loan Fund within the Department of Commerce and Economic Development. Over the years a variety of other provisions were passed to assist in the construction and operation of hatcheries including such things as property tax exemptions, a matching grant program, the granting of special harvest area entry permits to PNP hatchery operators for harvesting of their own brood stock and cost recovery fish, allowing the state to contract the operation of state hatcheries to regional associations, an exemption for broodstock and cost recovery fish from salmon enhancement taxes, and an allowance for an additional one percent salmon enhancement tax to be levied under certain circumstances.

Currently the state operates 16 hatcheries throughout the state, and PNPs operate 21 hatcheries. Hatchery fish represented 24 percent of Alaska's commercial fish harvest in 1990. The FRED Division also maintains two pathology labs, one genetics lab, one limnology lab, and a coded-wire tag processing lab. The Division also provides technical and management assistance to the PNP hatcheries. While PNPs tend to focus narrowly on production for the commercial fishery, FRED hatcheries tend to emphasize research, some production of sport fish species, and experimental farming of shellfish and aquatic plants.

A review of legislative history reveals that many facets of the hatchery program which have evolved over the past two decades, such as financing, related fisheries management issues, and biological concerns, were not foreseen or were only briefly acknowledged or discussed by the Legislature during the initial stages of development of the program. The record does reveal legislative intent in some broad areas, but it appears that many current questions and concerns regarding the role and future of hatcheries will have to be addressed without benefit of clear statutory or historical direction.

MARCH 18, 1992 --- MEETING OF
SENATE SPECIAL COMMITTEE ON DOMESTIC AND
INTERNATIONAL COMMERCIAL FISHERIES

THE PURPOSE OF TODAY'S MEETING IS TO DISCUSS THE HATCHERY REVIEW PROJECT BEING CONDUCTED BY THE FISHERIES COMMITTEE.

ON FEBRUARY 10 WE RELEASED THE DRAFT REPORT OF "THE LEGISLATIVE REVIEW OF ALASKA'S SALMON ENHANCEMENT PROGRAM."

ON FEBRUARY 24, WE HELD A STATEWIDE TELECONFERENCE TO TAKE SEVERAL HOURS OF PUBLIC COMMENTS ABOUT THE DRAFT REPORT.

SINCE THAT TELECONFERENCE, FURTHER PUBLIC COMMENT HAS BEEN SUBMITTED IN WRITING AND MY OFFICE HAS PROVIDED COPIES OF THOSE COMMENTS TO MEMBERS OF THE COMMITTEE.

MANY INDIVIDUALS AND ORGANIZATIONS HAVE PUT A LOT OF TIME, EFFORT, AND THOUGHT INTO STUDYING THE DRAFT REPORT AND FORMULATING THEIR RESPONSES. I HOPE THAT THE LEGISLATURE WILL TAKE ADVANTAGE OF ALL THE VALUABLE INPUT THE PUBLIC HAS OFFERED AS WE SORT OUT THE ISSUES SURROUNDING THE HATCHERY PROGRAM IN ALASKA.

WITH THE DRAFT REPORT, WE ARE JUST BEGINNING TO ANALYZE AND

CONSIDER ADJUSTMENTS TO THE PROGRAM, A PROCESS THAT WE HOPE WILL BE ON-GOING. IT IS ENCOURAGING TO SEE SUCH A WILLINGNESS BY THE PUBLIC TO BE INVOLVED IN THIS PROCESS AND TO WORK CONSTRUCTIVELY WITH THE LEGISLATURE TOWARDS THE GOAL OF IMPROVING THE STATE'S ENHANCEMENT PROGRAM.

WHAT I WOULD LIKE TO DO TODAY IS TO HAVE THE COMMITTEE DISCUSS ANY ISSUES THAT HAVE BEEN RAISED THAT ARE OF PARTICULAR INTEREST OR CONCERN, ESPECIALLY ANY THAT NEED TO BE ADDRESSED BY THE LEGISLATURE YET THIS SESSION. THE FULL REPORT OF THE REVIEW PROJECT WILL NOT BE COMPLETE UNTIL THE ECONOMIC STUDIES ARE DONE, BUT THERE MAY BE SOME THINGS THAT WE CAN AND SHOULD LOOK AT RIGHT AWAY.

MUCH OF THE TESTIMONY WE HAVE HEARD SPEAKS DIRECTLY TO VARIOUS OPTIONS LISTED IN THE DRAFT REPORT, AND I'M SURE THAT LEGISLATORS HAVE THEIR OWN OPINIONS ABOUT WHICH ISSUES NEED ATTENTION.

WITH ONLY TWO MONTHS LEFT OF THIS SESSION, AND STATE FINANCES IN BAD SHAPE, THE AMOUNT THAT CAN BE ACCOMPLISHED BEFORE ADJOURNMENT THIS YEAR IS LIMITED. BUT INTRODUCTION AND PASSAGE OF SOME LEGISLATION WOULD NOT BE IMPOSSIBLE AT THIS POINT, AND THERE MAY BE SOME ACTIONS THAT WE CAN TAKE THROUGH INTENT LANGUAGE IN THE BUDGET, OR SUGGESTIONS TO STATE AGENCIES, OR THROUGH FURTHER RESEARCH.

ONE AREA THAT HAS DRAWN A LOT OF COMMENT, IS THE IDEA OF ADDING A CLEAR STATUTORY PRIORITY FOR WILD FISH STOCKS, AND TO CLARIFY WHAT THE STATE'S RESPONSIBILITY IS IN MANAGING FISHERIES TO PROVIDE FOR HATCHERY BROODSTOCK AND COST RECOVERY FISH. SINCE THIS WAS REQUESTED BY MANY OF THOSE WHO TESTIFIED, THE STAFF HAS WORKED UP SOME ROUGH DRAFT LANGUAGE FOR THE COMMITTEE TO LOOK AT. WE NEED TO DECIDE WHETHER THE COMMITTEE WANTS TO INTRODUCE LEGISLATION THIS SESSION ON THIS TOPIC, AND IF SO, JUST WHAT IT SHOULD SAY. THE DRAFT LANGUAGE CAN SERVE AS A STARTING POINT TO WORK FROM.

ARE THERE OTHER OPTIONS IN THE DRAFT REPORT OR IDEAS SUBMITTED BY THE PUBLIC THAT YOU WANT TO PURSUE?

Feb. 24, 1992

INTRODUCTORY REMARKS FOR TELECONFERENCE ON HATCHERY REVIEW PROJECT

Call to order this meeting of the Senate Special Committee on Domestic and International Commercial Fisheries.

I want to welcome those attending both in Juneau and throughout the state. Many of you participated in the teleconference last May when the committee decided to embark on a fairly comprehensive review of Alaska's salmon enhancement program.

Since that time, a number of our staff members have worked to gather information on a wide variety of aspects of the enhancement program and to compile it in report form.

The draft report was released for public review on Feb. 10 and copies of the executive summary and the report have been circulated statewide. Hopefully everyone who has expressed interest has now had a chance to look over the draft report.

The economic studies being conducted by the University will not be complete until late May, so that portion of the review project remains incomplete until that time.

Because that piece of the puzzle is still missing, we can not

presume to be looking at the "whole picture" yet.

But the draft before us contains plenty of information to allow us to begin looking closely at some aspects of the enhancement program, which is what today's teleconference is intended to do.

As you've seen, the draft report contains lists of options at the end of each chapter of things the legislature might want to consider. These are not meant to be recommendations. They are meant to be a STARTING POINT for thought and discussion.

What the Committee needs from you, the public, now is your comment and reaction to both the information and the options in the report.

We would appreciate your being as specific as you can be. If you feel that we have missed options that should be added for consideration, please suggest them for inclusion.

WE, AS COMMITTEE MEMBERS, will be listening and thinking about what ideas and concerns seem fairly universal, which are especially pressing, which ones need further research and debate.

After today's meeting, the Committee will get together to discuss what we've heard, and chart a course for the upcoming months.

ONE THING THAT I WOULD ESPECIALLY LIKE TO EMPHASIZE BEFORE WE GET STARTED:

We would like everyone to consider this entire enhancement review project as a beginning, and the draft report as a WORKING DOCUMENT.

The enhancement program is a huge one, it has grown into a major component of our state economy and government.

It was statutorily begun over 20 years ago, and has not undergone any significant review since its creation.

While this review may result in some legislative action yet this session, this is BY NO MEANS THE END OF THE PROCESS initiated by this review.

It is our hope that by considering this report as a WORKING DOCUMENT, the legislature, the administration, and the public will continue over the next few years to consider and refine the options presented, and take actions to improve the enhancement program in Alaska.

A number of agencies are represented in the audience who will be listening and might be able to answer questions or provide information if needed:

Fish and Game - FRED Div. (Director Jeff Koenings)

and Commercial Fisheries Division

Commerce Dept. - Div. of Investments (Dir. Martin Richards)

Alaska Seafood Marketing Institute

Legislative Research Division (Linda Snow and Glenn Gray)

University of Alaska School of Fisheries (Ole Mathiesen)

Board of Fisheries (Debra Lyon in Petersburg)

Dept. of Law (Steve White to attend after 2:30)

START TESTIMONY

NOTE:

Good person to call on early - Jerry McCune of Cordova

(chairman of UFA aquaculture committee)

Jim Bacon of SE Seiners Assoc. needs to speak between 2:15 and 3:15

Sites to be on:

Juneau	Cordova
Anchorage	Bethel
Kodiak	Fairbanks
Ketchikan	Valdez
Soldatna (Kenai)	Glenallen
Homer	
Dillingham	
Petersburg	

Notified of Meeting:

All Legislators

United Fishermen of AK

AK Trollers Assoc.

S.E. Seiners Assoc.

ADF & G

Bd. of Fish

Gillnetters Assoc.

PNP lobbyists & attorneys

Aqua. Association lobbyists

DIPAC

ASMI

Commerce Dept.

Legislative Research Agency

Hatchery Issues mtg.

Teleconference (ref # 9105052)

Sites hooked up:

Anch.

Ketchikan - Kate Troll of S.E. Seiners Assoc.

Sitka - Pete Esquino of NSRAA

Valdez

Glenn Allen

Soldotna

Kotzebue

Kodiak