

ALASKA LEGISLATURE SPECIAL COMMITTEE / SUBJECT FILE 8672
1817 SCOMM 74: SEN. SPEC. COMM. ON DOMESTIC & INTL. FISH., 1991-92.

ALASKA STATE LEGISLATURE SENATE

SENATOR RICHARD I. ELIASON

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



P.O. BOX 143
SITKA, ALASKA 99835

P.O. BOX V
JUNEAU, ALASKA 99811
(907) 465-4918

FAX (907) 465-4928

Oct. 2, 1992

Mr. David Bright
Deer Mountain Hatchery
2030 Sea Level Drive, Suite 205
Ketchikan, Alaska 99901

Dear Mr. Bright:

I would like to thank you and your staff for the considerable time and effort you have devoted to completing the salmon enhancement production and costs surveys. These surveys were sent to you over the last few months as part of the legislative review of the Alaska salmon enhancement program. The economic benefit-cost analysis of the program is nearing completion as a result of your assistance and cooperation. The members of the Senate Special Committee on Domestic and International Commercial Fisheries are looking forward to reviewing these results and sharing them with you. The information from this economic review will help the legislature in the development of public policy considerations to ensure that the salmon enhancement program can continue to be a successful program.

Thank you again for your significant time and cooperation.

Sincerely,

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

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

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Oct. 2, 1992

Mr. Jim Billi
Crystal Lake Hatchery
P. O. Box 1088
Petersburg, Alaska 99833-1088

Dear Mr. Billi:

I would like to thank you and your staff for the considerable time and effort you have devoted to completing the salmon enhancement production and costs surveys. These surveys were sent to you over the last few months as part of the legislative review of the Alaska salmon enhancement program. The economic benefit-cost analysis of the program is nearing completion as a result of your assistance and cooperation. The members of the Senate Special Committee on Domestic and International Commercial Fisheries are looking forward to reviewing these results and sharing them with you. The information from this economic review will help the legislature in the development of public policy considerations to ensure that the salmon enhancement program can continue to be a successful program.

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Oct. 2, 1992

Mr. Tim Joyce
Kitoi Bay Hatchery
211 Mission Road
Kodiak, Alaska 99615-6399

Dear Mr. Joyce:

I would like to thank you and your staff for the considerable time and effort you have devoted to completing the salmon enhancement production and costs surveys. These surveys were sent to you over the last few months as part of the legislative review of the Alaska salmon enhancement program. The economic benefit-cost analysis of the program is nearing completion as a result of your assistance and cooperation. The members of the Senate Special Committee on Domestic and International Commercial Fisheries are looking forward to reviewing these results and sharing them with you. The information from this economic review will help the legislature in the development of public policy considerations to ensure that the salmon enhancement program can continue to be a successful program.

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Oct. 2, 1992

Mr. Steve Hansen
Klawock Hatchery
P. O. Box 101
Klawock, Alaska 99925-0101

Dear Mr. Hansen:

I would like to thank you and your staff for the considerable time and effort you have devoted to completing the salmon enhancement production and costs surveys. These surveys were sent to you over the last few months as part of the legislative review of the Alaska salmon enhancement program. The economic benefit-cost analysis of the program is nearing completion as a result of your assistance and cooperation. The members of the Senate Special Committee on Domestic and International Commercial Fisheries are looking forward to reviewing these results and sharing them with you. The information from this economic review will help the legislature in the development of public policy considerations to ensure that the salmon enhancement program can continue to be a successful program.

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Senator Dick Eliason, Chairman
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Oct. 2, 1992

Mr. Chris Clevenger
Pillar Creek Hatchery
211 Mission Road
Kodiak, Alaska 99615-6399

Dear Mr. Clevenger:

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Oct. 2, 1992

Mr. Peter Rob
Sikusuilag Springs Hatchery
P. O. Box 1030
Kotzebue, Alaska 99572-1030

Dear Mr. Rob:

I would like to thank you and your staff for the considerable time and effort you have devoted to completing the salmon enhancement production and costs surveys. These surveys were sent to you over the last few months as part of the legislative review of the Alaska salmon enhancement program. The economic benefit-cost analysis of the program is nearing completion as a result of your assistance and cooperation. The members of the Senate Special Committee on Domestic and International Commercial Fisheries are looking forward to reviewing these results and sharing them with you. The information from this economic review will help the legislature in the development of public policy considerations to ensure that the salmon enhancement program can continue to be a successful program.

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Senator Dick Eliason, Chairman
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Oct. 2, 1992

Mr. John McNair
Snettisham Hatchery
P. O. Box 20
Douglas, Alaska 99824

Dear Mr. McNair:

I would like to thank you and your staff for the considerable time and effort you have devoted to completing the salmon enhancement production and costs surveys. These surveys were sent to you over the last few months as part of the legislative review of the Alaska salmon enhancement program. The economic benefit-cost analysis of the program is nearing completion as a result of your assistance and cooperation. The members of the Senate Special Committee on Domestic and International Commercial Fisheries are looking forward to reviewing these results and sharing them with you. The information from this economic review will help the legislature in the development of public policy considerations to ensure that the salmon enhancement program can continue to be a successful program.

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Special Committee on Domestic and
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Alaska State Legislature

SENATOR RICHARD I. ELIASON

President of the Senate

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

September 30, 1992

Representative David Finkelstein, Chair
Select Committee on Legislative Ethics
3111 "C" Street, Suite 465
Anchorage, AK 99503

Re: **DISCLOSURE STATEMENT**

Dear Representative Finkelstein:

Pursuant to AS 24.60.080(d), I am disclosing a gift of travel in excess of \$100 while attending the NCSL Leadership Staff Conference in Anchorage, September 13 - 16, 1992.

BP Exploration provided transportation from Anchorage to Deadhorse, Alaska, to view their facilities and the surrounding areas on September 13. The approximate value of this trip was \$250.

Sincerely,

A handwritten signature in cursive script that reads "Jo-Eve R. Benedict".

Jo-Eve R. Benedict
Legislative Assistant for
Senator Dick Eliason

ALASKA STATE LEGISLATURE SENATE

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September 16, 1992

Mr. Carl Rosier, Commissioner
Dept. of Fish and Game
P. O. Box 25526
Juneau, Alaska 99802-5526

Dear Commissioner Rosier:

As you know the trollers in Southeast are attempting to come up with a proposal for next year's chinook season. I would like to know the Dept. of Fish and Game's best estimate on how long the summer chinook troll season in Southeast would be if we did not have a winter fishery. For the purpose of this exercise, last year's catch statistics might be used.

It is of great concern to me that the individual(s) computing the length of this hypothetical extended summer season take into account not only the amount of fish available for harvest, but also the fact that **success in harvesting diminishes relative to the length of the season.** The differences in the catch per unit effort (CPUE) between winter and summer should be taken into account. If one does not take this into account, and merely divides the average daily catch by the number of fish available, the answer will not be accurate.

I would be most interested in receiving a letter from you with the answer to this question as soon as you can conveniently manage it, and I greatly appreciate your assistance. Any questions regarding this correspondence may be directed to Laura Fleming of my staff (465-4916 in Juneau.)

Sincerely,

A handwritten signature in dark ink, appearing to read "Dick Eliason".
Senator Dick Eliason

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MEMORANDUM

TO: Vanessa Fleming
Municipal Grants
Dept. of Administration

FROM: Senator Dick Eliason 

DATE: September 16, 1992

RE: FY 93 Municipal grant to City of Hydaburg for road
improvements

The expressed desire of the City of Hydaburg to use some of the FY 93 municipal grant funding designated for "Hydaburg Street Improvements" for equipment maintenance and repair is consistent with legislative intent in making this appropriation. If you would like any additional information, please contact my office.

cc: Rep. Jerry Mackie

ALASKA STATE LEGISLATURE SENATE

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December 23, 1991

Kenneth J. Kiffer
630 North Point Higgins Road
Ketchikan, AK 99901

Dear Mr. Kiffer:

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

I fully agree that the U.S./Canada Salmon Treaty is one of the most crucial elements in the determination of the future of the troll fishery. Trollers have good reason to be nervous about the Treaty and the ongoing negotiation process. Provisions in the Treaty, particularly the requirement for consensus agreement and the fact that it deals with a number of interception fisheries, make it very difficult to implement substantial changes. But we are all tired of the troll fishery making all the required sacrifices in the name of rebuilding the stocks, and then continuously losing ground with quota and fishing time.

I do recognize the growing charter boat problem, and the unfairness of quota share being lost to that burgeoning industry. The availability of chinook is up because of the dedication and sacrifice of trollers, and the benefits are being syphoned off by this sport charter growth. There needs to be a firm allocation for both charter and commercial use. I am hopeful that the Board of Fish will find a way to get a handle on this. We might also consider some legislative/statutory measures aimed at slowing down the volume of the fish taken by charter operations.

While allocation and other management decisions can help resolve some problems, a better shake for Alaskans in the Treaty itself is really the crucial bottom line. Clearly, Alaska needs to take a more aggressive stance in the negotiations. I believe that our negotiators need better legal and other support, and that they need to get strong direction from the Administration to stiffen their stand.

I have formally requested that the Attorney General either provide one of his assistant attorneys, or contract with a private attorney to ensure that Alaska's negotiating team has legal support at the negotiating table with them. We should not risk being outmaneuvered by the other treaty parties who have always had lawyers, and more lawyers, at the talks. I am encouraged that the Attorney General seems very receptive to the idea and hopefully will provide for adequate legal counsel at the upcoming negotiations in January and February.

In addition, I have met several times with Governor Hickel to try to educate him about the importance and seriousness of the Treaty. While he does agree that Alaskan fishermen should have a larger share of the quota, he has not yet taken as strong a stand on this as we'd like. I'm continuing to work on him.

Like you, I am distressed about the current status of the troll fishery and the challenges it is facing. There are no simple answers or quick-fixes, but my office is working hard to try to find some solutions and to gain support for trollers and all commercial fisheries. Please feel free to keep in touch with my staff and with me to share your ideas and concerns. Hopefully if we all work together we can find a way to brighten up future prospects for our fishery.

Sincerely,

A handwritten signature in dark ink, appearing to read "Dick Eliason", written in a cursive style.

Senator Dick Eliason



Alaska State Legislature

SENATOR RICHARD I. ELIASON

President of the Senate

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

December 9, 1991

Dr. Keith Criddle, Chair
Department of Economics
University of Alaska, Fairbanks
Fairbanks, AK 99775-0580

Dear Dr. Criddle:

Thank you for submitting a proposal for an economic analysis of the Alaska Salmon Enhancement Program. As you know, the Senate Special Committee on Domestic and International Commercial Fisheries received proposals from the University of Alaska - Anchorage (UAA), Institute of Social and Economic Research, and the University of Alaska - Fairbanks (UAF), Department of Economics. A team of economists including: Kurt Schelle and Dr. Ben Muse with the Alaska Commercial Fisheries Entry Commission; Jeff Hartman with the Alaska Department of Fish and Game - F.R.E.D. Division; Dr. Gardner Brown with the University of Washington; Dr. James Hastie with National Marine Fisheries Service (NMFS); and Ginny Fay a Legislative Analyst for the Senate Fisheries Committee, reviewed and ranked the proposals.

While both of the sets of proposals were strong, the decision was made to award the contracts to the University of Alaska, Fairbanks (UAF). Two major factors contributed to this decision. The first is Dr. Mark Herrmann's more extensive experience and expertise in salmon demand modeling. The second is the UAF, School of Management's waiver of the administrative overhead; this waiver will allow almost three additional months of research time devoted to the project.

Both fishing cost model proposals received relatively "low marks" by most of the reviewers. This is largely attributable to the higher level of risk to obtaining reliable results from relatively "novel" empirical approaches to estimating marginal fishing costs. As a result, as terms of this contract, we would like additional information on your default research approach and your researcher to keep committee staff fully apprised on research progress.

Dr. Keith Criddle
December 9, 1991
Page Two

Thank you again for submitting a proposal and we look forward to working with you as the research progresses.

Sincerely,

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

Senator Dick Ellason



Alaska State Legislature

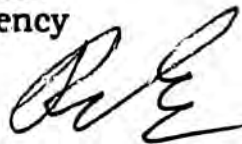
SENATOR RICHARD I. ELIASON

President of the Senate

P.O. Box V
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(907) 465-3755

MEMORANDUM

TO: Gordon Harrison, Director
Legislative Research Agency

FROM: Senator Dick Eliason
President of the Senate 

DATE: December 9, 1991

SUBJECT: Legislative Review of the Alaska Salmon Enhancement Program

Thank you for your agency's work on the Legislative Review of the Alaska Salmon Enhancement Program. As you probably know, the Legislative Council approved funding for the review's economic studies. The economic portion of the research is being conducted by the University of Alaska Fairbanks (UAF), Department of Economics. Part of this research includes a survey of hatchery operation.

My staff contacted you earlier this year regarding the hatchery survey with which we would like your assistance. We hope to have the survey to you for mailing early the week of December 9.

In addition, Linda Snow of your staff provided us with information regarding sources of economic data for the salmon demand analysis. Dr. Mark Herrmann of UAF has asked us if he could contact Ms. Snow with additional follow-up questions. We have referred him to your agency for assistance.

Thank you again for your continued cooperation.



Alaska State Legislature

SENATOR RICHARD I. ELIASON

President of the Senate

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

December 9, 1991

Dr. Lee Gorsuch
University of Alaska, Anchorage
Institute of Social and Economic Research
3211 Providence Drive
Anchorage, AK 99508

Dear Dr. Gorsuch:

Thank you for submitting a proposal for an economic analysis of the Alaska Salmon Enhancement Program. As you know, the Senate Special Committee on Domestic and International Commercial Fisheries received proposals from the University of Alaska - Anchorage (UAA), Institute of Social and Economic Research, and the University of Alaska - Fairbanks (UAF), Department of Economics. A team of economists including: Kurt Schelle and Dr. Ben Muse with the Alaska Commercial Fisheries Entry Commission; Jeff Hartman with the Alaska Department of Fish and Game - F.R.E.D. Division; Dr. Gardner Brown with the University of Washington; Dr. James Hastie with National Marine Fisheries Service (NMFS); and Ginny Fay a Legislative Analyst for the Senate Fisheries Committee, reviewed and ranked the proposals.

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Thank you again for your interest in the Committee's research and submitting a proposal. A special thanks to Dr. Terry Smith for his assistance coordinating the proposal submission.

Sincerely,

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

Senator Dick Eliason



Alaska State Legislature

SENATE

Official Business

P.O. Box V
State Capitol
Juneau, Alaska 99811

December 9, 1991

To: Tamara Cook, Director
Division of Legal Services

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

RE.: Reimbursable Services Agreements with the Alaska Commercial Fisheries Entry Commission and the University of Alaska Fairbanks

Per your conversation with committee staff on December 6, I am providing more detailed information regarding the contractual language required for the data transfer between the Commercial Fisheries Entry Commission (CFEC) and the University of Alaska Fairbanks, Department of Economics (UAF). The Senate Special Committee on Domestic and International Fisheries is contracting for economic analyses of the Alaska salmon enhancement program. The research to be conducted requires access to CFEC data files.

State CFEC confidentiality statutes (AS 16.05.815) specify that access to confidential data files is restricted to employees of the Alaska Department of Fish and Game (ADF&G) and CFEC, or contractors of ADF&G or CFEC. In addition, a portion of the economic research to be done by UAF requires some preliminary computer analysis by CFEC staff. Therefore, the Senate Committee, through the Legislative Affairs Agency (LAA), is entering into an RSA with the CFEC for the data analysis and a subcontract for the economic studies (attachments).

As terms of this agreement with CFEC, we have agree to provide contractual language specifying confidentiality requirements. The points to include in this agreement are:

- researchers must abide by confidentiality requirements as specified in AS 16.05.815;
- confidentiality compliance must be to the standards set by the Commercial Fisheries Entry Commission;
- reports to the legislature, as well as any other publications including professional journals, must comply with confidentiality statutes and standards; and
- all CFEC data must be returned to CFEC when the project is completed.

Thank you for your assistance.

Attachments



Alaska State Legislature

SENATE

Official Business

P.O. Box V
State Capitol
Juneau, Alaska 99811

December 10, 1991

To: Jeff Koenings, Director
FRED Division
Alaska Department of Fish and Game

From: Ginny Fay *Ginny Fay*
Legislative Analyst
Senate Special Committee on Domestic and International Commercial Fisheries

RE.: Survey of Private Nonprofit Hatchery Operators

This memorandum is to confirm our conversation of December 6 regarding the mailing of the enhancement project survey to PNP operators under your and Senator Eliason's signatures. In addition, Jeff Hartman, Steve McGee and I have agreed that the most expedient method for reviewing survey results is to have the surveys returned to Steve McGee at the FRED Division. Based on Steve's professional knowledge of the enhancement program, he will review the survey responses. Steve will also provide a copy of survey responses when they arrive to the Division of Commercial Fisheries for their review. Given time constraints, this review process will need to be as quick as possible. The reviewed surveys should then be provided to Jeremy Collie. He can be reached at 789-6319.

Per our agreement, the FRED Division will also distribute and collect the surveys of state enhancement projects and coordinate the review of the results. These survey forms have been provided to Jeff Hartman and Steve McGee.

If either the FRED or Commercial Fisheries Divisions disagree with the operators responses, an alternative number or response, and an explanation for the change will need to be provided. Any changes should be agreed upon by both the FRED and Commercial Fisheries Divisions and Jeremy Collie.

I hope this methodology is agreeable to you. Thank you for your continued assistance with this project.

C.C.
Senator Eliason
Molly McCammon
Denby Lloyd
Bob Clasby
Jeff Hartman
Steve McGee

suggested people to describe section.

Draft

LEGISLATIVE REVIEW OF ALASKA'S FISHERIES ENHANCEMENT PROGRAM

- I Executive Summary - Molly
- II Introduction - Why a Need for this Review
- III History & Development of Hatcheries in Alaska - Mary
- IV Production Policies and Trends in Alaska and Worldwide - Mary
- V Planning and Permitting Process - Molly
- VI Enhancement Funding - Ginny
- VII Biological/Genetic Issues - Molly
- VIII Major Fisheries Management Issues - Molly
 - A. Wild Stock Priority Policy
 - B. Providing for PNP Broodstock
 - C. Providing for Cost Recovery
 - D. Allocation Conflicts
 - E. Challenges of In-Season Management
 - F. Tagging Needs and Requirements
- IX Other Issues — blank
 - 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
- X Economics - Ginny
- XI Marketing - Ginny
- XII Conclusion and recommendations.

ALASKA STATE LEGISLATURE SENATE

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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 key sections of the report since many of the problems are that the hatchery program is experiencing can be minimized or avoided with planning. This chapter was written by Molly McCamr focusing on how to and improve the current planning 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.

Dec. 5, 1991

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**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.

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

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.

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

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

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

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.

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

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.

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.

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.

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

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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. This The 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 portions 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

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.

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.**

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 v 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.

Efforts of Other Organizations

Recognizing the need to develop markets for their highly successful salmon hatchery production, the Prince William Sound Aquaculture Corporation (PWSAC) has initiated its own Product Development Strategy. In the short-run, PWSAC would like to pre-sell all 1992 cost-recovery fish by January 1992, ensure the utilization of all cost-recovery fish, and negotiate on to three year contracts for the sale of fish. 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. The primary marketing obstacle identified by PWSAC is finding sufficient freezer processing capacity.

XI. CONCLUSIONS AND RECOMMENDATIONS

Planning and Permitting

Funding Concerns

- A more thorough cost-benefit analysis should be required of hatcheries and projects seeking state funding.

Biological Concerns

- A study should be conducted to evaluate how well the current hatchery program protects wild salmon from possible negative effects of hatchery salmon. Such a review would help policy makers determine the risk of various alternatives for the future of Alaska's hatchery program.
- Hatchery operators should be required to provide more adequate genetic monitoring on an on-going basis and ADF&G should be continuously reviewing and analyzing that data statewide.
- A major challenge will be to obtain a consensus about research priorities concerning the interaction of hatchery and wild fish in Alaska, coordinate future studies, and decide how and when to apply the results of those studies to current management practices.

Management Concerns

Other

ALASKA STATE LEGISLATURE SENATE

SENATOR RICHARD I. ELIASON

PRESIDENT OF THE SENATE
LABOR & COMMERCE COMMITTEE
RESOURCES COMMITTEE
RULES COMMITTEE
CHAIRMAN, SPECIAL COMMITTEE ON
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December 23, 1991

Don Kenoyer
6167 South Tongass Hwy.
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Dear Mr. Kenoyer:

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

I fully agree that the U.S./Canada Salmon Treaty is one of the most crucial elements in the determination of the future of the troll fishery. Trollers have good reason to be nervous about the Treaty and the ongoing negotiation process. Provisions in the Treaty, particularly the requirement for consensus agreement and the fact that it deals with a number of interception fisheries, make it very difficult to implement substantial changes. But we are all tired of the troll fishery making all the required sacrifices in the name of rebuilding the stocks, and then continuously losing ground with quota and fishing time.

I do recognize the growing charter boat problem, and the unfairness of quota share being lost to that burgeoning industry. The availability of chinook is up because of the dedication and sacrifice of trollers, and the benefits are being syphoned off by this sport charter growth. There needs to be a firm allocation for both charter and commercial use. I am hopeful that the Board of Fish will find a way to get a handle on this. We might also consider some legislative/statutory measures aimed at slowing down the volume of the fish taken by charter operations.

While allocation and other management decisions can help resolve some problems, a better shake for Alaskans in the Treaty itself is really the crucial bottom line. Clearly, Alaska needs to take a more aggressive stance in the negotiations. I believe that our negotiators need better legal and other support, and that they need to get strong direction from the Administration to stiffen their stand.

I have formally requested that the Attorney General either provide one of his assistant attorneys, or contract with a private attorney to ensure that Alaska's negotiating team has legal support at the negotiating table with them. We should not risk being out-manuevered by the other treaty parties who have always had lawyers, and more lawyers, at the talks. I am encouraged that the Attorney General seems very receptive to the idea and hopefully will provide for adequate legal counsel at the upcoming negotiations in January and February.

In addition, I have met several times with Governor Hickel to try to educate him about the importance and seriousness of the Treaty. While he does agree that Alaskan fishermen should have a larger share of the quota, he has not yet taken as strong a stand on this as we'd like. I'm continuing to work on him.

Like you, I am distressed about the current status of the troll fishery and the challenges it is facing. There are no simple answers or quick-fixes, but my office is working hard to try to find some solutions and to gain support for trollers and all commercial fisheries. Please feel free to keep in touch with my staff and with me to share your ideas and concerns. Hopefully if we all work together we can find a way to brighten up future prospects for our fishery.

Sincerely,

A handwritten signature in dark ink, appearing to read "Dick Eliason", with a stylized flourish at the end.

Senator Dick Eliason

LAW OFFICES OF
FAULKNER, BANFIELD, DOOGAN & HOLMES
A PROFESSIONAL CORPORATION

302 GOLD STREET
JUNEAU, ALASKA 99801

(907) 586-2210

TELECOPIER: (907) 586-8090

PLEASE REPLY TO JUNEAU OFFICE



SEATTLE OFFICE

FIFTH AVENUE PLAZA
800 FIFTH AVENUE, SUITE 3740
SEATTLE, WASHINGTON 98104
(206) 292-8008
TELECOPIER: (206) 340-0289

ANCHORAGE OFFICE
550 WEST SEVENTH AVENUE, SUITE 1000
ANCHORAGE, ALASKA 99503
(907) 274-0666
TELECOPIER: (907) 277-4657

BRUCE B. WEYHRAUCH

January 7, 1991

Senator John Binkley
Box 80447
Fairbanks, Alaska 99708

RE: Potential regulation of hatchery
brood stock
Our File No. 1559-6802

Dear Senator Binkley:

I appreciated talking with you on the telephone last week about our concerns regarding potential regulation of hatchery brood stock by the Alaska Department of Environmental Conservation (ADEC) and the federal Food & Drug Administration (FDA). As you requested, I am sending you a copy of a letter we sent to Mr. Doug Donegan, director of the Division of Environmental Health at ADEC. This letter sets forth Valdez Fisheries Development Association's (VFDA) concerns regarding potential regulation of hatchery brood stock by ADEC and the FDA.

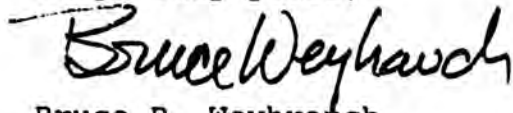
VFDA, a private non-profit (PNP) salmon hatchery in Prince William Sound, is very concerned, along with several other PNP hatcheries in the state, that the state or federal government will regulate brood stock or prevent its sale because they deem brood stock "unwholesome" and not fit for "processing". Yet neither of these terms are adequately defined.

For example, as we discussed on the telephone, upriver salmon fisheries in the Alaska interior could be negatively affected by this regulation because brood stock, like upriver salmon, have ripened roe and a darker color than ocean-caught fish. FDA and ADEC do not seem to realize that roe from brood stock is of suitable quality for human consumption regardless of whether the flesh of the salmon is appropriate for canning. In addition, there are other product forms of salmon which brood stock can be used for without marketing the fish as a fresh, bright, ocean-caught fish. Other salmon products include paté, roe, fishmeal, and fish oil, not to mention sale as an adequately and truthfully advertised brood stock product.

Senator Johne Binkley
January 7, 1991
PAGE 2

As you suggested, I am sending copies of this letter to those individuals listed below, along with a copy of our letter to Mr. Donegan. If you have any questions on this matter or if I can assist you in any way, please do not hesitate to contact me in Juneau at 586-2210 or Mr. Jason Wells, the executive director of VFDA in Valdez at 835-4874.

Very truly yours,



Bruce B. Weyhrauch

BBW\lsk
encls.

cc/Senator-elect Lyman Hoffman (w/encls.)
Representative-elect Georgianne Lincoln (w/encls.)
Ms. Molly McCammon (w/encls.)
Mr. Harry Wilde (w/encls.)
Mr. Virgil Upnauer (w/encls.)
Ms. Sandra Borbridge (w/encls.)

Binkley.ltr

LAW OFFICES OF
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SEATTLE OFFICE
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(206) 292-8008
TELECOPIER: (206) 340-0289

BRUCE B. WEYHRAUCH

December 21, 1990

Mr. Doug Donegan
Director
Division of Environmental Health
Alaska Department of
Environmental Conservation
P. O. Box 0
Juneau, Alaska 99811-1800

RE: Hatchery brood stock fish
Our File No. 1559-5799

Dear Doug:

Thank you for your letter of December 7, 1990 in which you discuss brood stock fisheries and the Alaska Department of Environmental Conservation's (ADEC) and the Food & Drug Administration's (FDA) determinations of the wholesomeness of brood stock fish. We represent Valdez Fisheries Development Association (VFDA) which is concerned about ADEC's statements regarding "brood stock".

We are concerned that ADEC's statements regarding brood stock lack definition, and reflect an unclear understanding of what brood stock are. From your statements, we believe that your actions relating to brood stock will affect other upriver salmon fisheries, not just hatcheries, and that you are singling out hatchery brood stock for discriminatory regulation. Further, we are very concerned that ADEC's statements about brood stock will not only have a negative impact on the operations of PNP hatcheries, but will severely affect PNP hatcheries' ability to compete with other farmed salmon products in the Lower 48 and Canada, and will hurt Alaska's ability to market and export fisheries to third world countries. ADEC's misguided regulation of brood stock will have other negative consequences on regional and local economies of the state which depend almost entirely on fisheries for their economic health and welfare.

We offer several specific observations and concerns. First, in your letter of December 7th (copy enclosed), you indicate that "hatchery brood stock, as defined in the Canned Salmon Control Plan . . . are not wholesome"

Mr. Doug Donegan
December 21, 1990
PAGE 2

We note that the Canned Salmon Control Plan is prepared with input from the canned salmon industry. There are other product forms of salmon, such as paté, which are not canned, and where salmon muscle structure is purposefully broken down. If salmon canners do not want to process hatchery brood stock, they have the freedom to make that business decision. However, canners of salmon should not, independently or in conjunction with and approval from government regulatory agencies, prevent others from purchasing a product if another processor has a viable market.

It should be noted that canners have made a practice of integrating brood stock into the Prince William Sound canned salmon pack since the hatchery program started, and as recently as 1989. Further, the canners have made no such determination as to fishermen-caught dark fish.

The portion of the "Canned Salmon Control Plan" attached to your letter states: "Hatchery brood stock, which either has been stripped for roe or milt, or has reached maturity and has been held to be used for roe or milt, shall not be processed." Is it ADEC's position that this sentence defines brood stock as not wholesome? We do not see in the portion of the Plan provided to us a definition of wholesome or unwholesome, or a definition of hatchery brood stock. Nor do we read the Canned Salmon Control Plan as defining hatchery brood stock as "not wholesome". Moreover, neither of the terms "wholesome" or "unwholesome" are defined in Alaska's statutes or regulations. What, for instance, separates a mature fish caught by a commercial fisherman from a creek mouth from a mature fish taken from a hatchery?

In addition, the "Canned Salmon Control Plan" does not define "process". Therefore, since the Canned Salmon Control Plan presumably only addresses the canning of salmon, sale or consumption of frozen hatchery brood stocks should fall outside the purview of the salmon canning industry's plan.

We are also concerned that ADEC participated in meetings that were not announced or open to the public and that policy decisions were made in these meetings. You state that ADEC and FDA met and agreed in principle on three things affecting hatcheries' brood stock. Were the public or hatcheries informed of the time, place, and substance of all the meetings? If not, why not? We are aware of only one such meeting held in Anchorage. At this meeting, ADEC and FDA had already made up their minds about brood stock. This meeting emphasized the canning of salmon, not other product forms.

Mr. Doug Donegan
December 21, 1990
PAGE 3

ADEC and FDA have already concluded that hatchery "brood stock" are not "wholesome", without adequately defining these terms and without any public participation or notice to salmon hatcheries that ADEC deems brood stock "unwholesome". In your December 7th letter you state on page 1 that hatchery brood stock are not wholesome. Yet you also state on the same page that "if the Center for Food Safety concludes that these [hatchery brood stock] fish are unwholesome, then FDA and DEC will . . . [prohibit] these fish from entering commerce as human food." In the same letter, you take the position that hatchery brood stock are not wholesome and that hatchery brood stock are not yet deemed to be unwholesome. Which is it?

This uncertainty within ADEC creates a chilling effect on Alaska's commercial fisheries. It also creates the appearance that you have already reached a conclusion on the wholesomeness of brood stock and are now searching for data to support that conclusion. In other words, your agency has already arrived at a conclusion to ban hatchery brood stock sales before knowing anything about the subject.

ADEC's statements on brood stock indicate that ADEC is headed down a road which would entirely prohibit brood stock from entering commerce as human food. We understand ADEC's concern in keeping fisheries products safe for consumers. Indeed we understand that the law requires you to do this. However, you throw the baby out with the bathwater by entirely prohibiting brood stock from entering commerce as human food. If brood stock can be handled and sold in a form acceptable for human consumption, why prohibit persons who know what they are buying from buying it? You also put Alaska at a competitive disadvantage in relation to our closest competitors. We understand Washington processors are already processing hatchery brood stock from both Canadian and Washington hatcheries.

We plan to work vigorously with other groups in the State of Alaska and in the courts if necessary to oppose regulation of brood stock by ADEC until we are satisfied that the following have taken place:

1. That ADEC is adequately apprised of the concerns about brood stock from private and public hatcheries in the state and incorporates those concerns into any discussion, policy, regulation, or meeting on brood stock;

Mr. Doug Donegan
December 21, 1990
PAGE 4

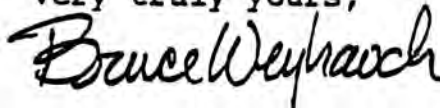
2. That ADEC's intentions to regulate brood stock be publicly announced now so that others in the state's salmon industry have a chance to respond and give input to ADEC;
3. That "brood stock" be adequately defined;
4. That "processing" be adequately defined;
5. That ADEC adequately balance the needs of PNP hatcheries to sell brood stock fisheries against ADEC's need to regulate fisheries in the state for consumer purposes, and that both of these needs be observed in light of the growing world demand for fish protein.
6. That "wholesome" be adequately and technically defined;
7. That we have an opportunity to participate in all studies regarding brood stock;
8. That we and the public receive adequate notice of meetings between FDA and ADEC in which brood stock or hatchery fish are discussed, and that these meetings be open to us;
9. That we be provided with the minutes and notes of all meetings in which ADEC participated in which regulation or uses of hatchery brood stock were discussed, including past discussions with the board for the canned salmon controller;
10. That we be given information on what studies are now being conducted concerning brood stock and be allowed to participate in the selection of contractors; and
11. That a process or criterion for making determinations of fisheries wholesomeness or unwholesomeness be set forth in specific detail after we have an opportunity to review and comment on those details.

Mr. Doug Donegan
December 21, 1990
PAGE 5

The bottom line is that VFDA offered our brood carcasses to the canned industry in 1990. They chose not to purchase those fish. We have now established markets outside the canning industry and we expect to sell those carcasses in 1991.

We plan to pursue our concerns along every avenue available to us. We look forward to working with you in the future on resolving these very important issues. Thank you again for your consideration. If you have any questions or require additional information, please give me a call.

Very truly yours,



Bruce B. Weyhrauch

BBW\lsk
encls.

cc/Jason Wells (w/encls.)

- Ladd Macaulay, DIPAC (w/encls.)
- Bruce Suzumoto, PWSAC (w/encls.)
- Peter Esquiro, NSEFAA (w/encls.)
- Commissioner John Sandor (w/encls.)
- Representative Gene Kubina (w/encls.)
- Senator Jay Kertula (w/encls.)
- Representative Fran Ulmer (w/encls.)
- Representative Bill Hudson (w/encls.)
- Senator Jim Duncan (w/encls.)
- Senator Richard Eliason (w/encls.)
- Representative Ben Grussendorf (w/encls.)
- Senator Ted Stevens (w/encls.)
- Senator Frank Murkowski (w/encls.)
- Representative Donald Young (w/encls.)

Donegan.ltr

STATE OF ALASKA

STEVE COWPER, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL HEALTH
P. O. BOX 0, JUNEAU, ALASKA 99801

TELEPHONE:
(907) 465-2609

RECEIVED
JUNEAU OFFICE
DEC 10 AM 8 36

December 7, 1990

Mr. Bruce B. Weyhrauch
FAULKNER, SANFIELD, DOOGAN & HOLMES
302 Gold Street
Juneau, Alaska 99801

Dear Mr. Weyhrauch:

Thank you for your letter of November 15, regarding brood stock fisheries wholesomeness as a human food.

Last week, the Food and Drug Administration (FDA) and the Department of Environmental Conservation (DEC) met to further discuss the uses of hatchery brood stock fish.

The agencies agreed in principle on the following:

- 1) That hatchery brood stock, as defined in the Canned Salmon Control Plan (attached) are not wholesome:
- 2) That the two agencies would assemble pertinent studies, documentation, and samples for review and examination by the FDA's Center for Food Safety; and
- 3) That if the Center for Food Safety concludes that these fish are unwholesome, then FDA and DEC will most likely enter into a Memorandum of Agreement (MOA) that will explain each agency's role in prohibiting these fish from entering commerce as human food.

We anticipate that it will probably be a year before this process is completed. When the package of material is prepared for the FDA Center for Food Safety, we will provide you with a copy.

In regards to your question about the DEC and FDA meeting with hatchery operators earlier this year, Manny Soares has told me that the meeting was definitely not focused solely on canned fish. At the time of the meeting, the processors and FDA had already prohibited the use of these fish in canned products.

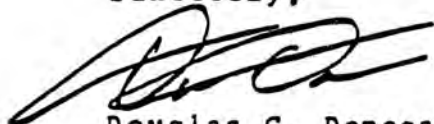
Mr. Weyhrauch

-2-

December 7, 1990

Manny also said that it was clearly stated that the agencies were investigating the possibility of a total prohibition against the use of these fish as a human food product. If you need any additional information about the meeting, please contact Mr. Soares at 563-0318.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Donegan', with a stylized flourish at the end.

Douglas C. Donegan
Director

Enc: Canned Salmon Control Plan

cc: Manny Soares, I.H., Anchorage

b. Water Supply and Ice

(1) Fresh water or sea water used in the plant shall be effectively sanitized at the plant unless the water is currently approved by a federal, state or local agency.

(2) Water for unloading, fluming or refrigerated holding of round fish may come from a natural water supply if it has been effectively sanitized, or if it has been approved by a federal, state or local agency, or if the fish are rinsed with effectively sanitized plant water before they enter the plant.

(3) The intake for natural water sources shall be located with the intent of avoiding pollution from shore facilities, marine vessels or processing effluents.

(4) Water used to cool cans after retorting shall be chlorinated or otherwise sanitized. There shall be a measurable residual of the sanitizer employed, when checked at the discharge end of the cooling system. Sanitizer checks shall be conducted at least two times per day during production. Records showing the times, locations and results of these checks shall be maintained. The can cooling water shall be of acceptable microbiological quality.

(5) Ice should be made from a supply of potable water. It should be manufactured, handled, stored and used in a sanitary manner.

c. Raw Material

(1) Wholesomeness of the fish shall be monitored by qualified plant personnel designated by the plant superintendent. Raw fish (fresh or frozen) shall be rejected by the packer if they are decomposed or in such a condition that a sound, wholesome product cannot be produced. This shall include, but not be limited to, bacterial spoilage and "freezer burn." Fish judged as not wholesome at the plant shall be disposed of in such a manner that they will not be processed. Hatchery brood stock, which either has been stripped for roe or milt, or has reached maturity and has been held to be used for roe or milt, shall not be processed.

(2) Occasionally, the packer may desire further assurance of the in-plant quality control program, concerning certain lots. Such lots shall be packed, coded, handled and sampled separately from the normal production. Such lots shall be sampled in bookkeeping code lots using twice the bookkeeping code sample size. The Association shall be notified of such lots when the samples are submitted and the Association shall promptly notify the Administration.

(3) The practice of pugging fish in the body shall not be permitted:-----

(4) Fish parts used for salmon oil shall be handled in a sanitary manner. Salmon oil for edible purposes shall be packed in clean sanitary food grade containers.

(5) Raw materials such as salt and cans shall be handled and stored in a sanitary manner and be free from adulteration. Salt used in canned salmon shall meet the specifications for food grade salt as listed in the Food Chemicals Codex and otherwise be free from contamination.

d. Containers

(1) Examinations shall be made to assure that tin stocks, including side seams and ends, or pre-formed cans are essentially free from defects. Records shall be prepared



PACIFIC SEAFOOD PROCESSORS ASSOCIATION
4019 - 21st Ave. West, Suite 201
Seattle, WA 98199
(206) 281-1667
FAX (206) 283-2387

102-10633
1714
358128

1300 MAR 32

March 25, 1991

The Honorable Governor Walter J. Hickel
State of Alaska
PO Box A
Juneau, Alaska 99811

Dear Governor Hickel:

The Alaska Salmon Industry has been an integral part of Alaska's economic structure for over one hundred years. Processors have been important participants in the industry and the state has benefited from this association in many ways.

We are writing to you to express our concern with developments taking place with state approved salmonid enhancement facilities. The maintenance and protection of the genetic integrity of the wild stocks is of paramount importance to the continued long-term viability of the resource. Serious industry related problems have arisen as a result of production and harvesting matters arising from these facilities. In addition, we have concern with research proposals directed at producing altered sex ratio runs and the management problems related to these actions if implemented on a large scale.

We believe that there should be an immediate review of the status of the state's rehabilitation efforts and an examination of its possible long-term impact on the fishing industry.

Respectfully yours,

Charles H. Bundrant
Chairman

cc: Senator Frank Murkowski
Senator Ted Stevens
Congressman Don Young
Rick Lauber

M012

SOUTHEAST ALASKA SEINERS ASSOCIATION
P.O. BOX 9579
KETCHIKAN, ALASKA 99901
(907) 225-5156

April 2, 1991

Senator Lloyd Jones
Alaska State Senate
P.O. Box V
Juneau, Alaska 99811

Dear Senator Jones,

At the last Board of Fisheries meeting in Juneau there was a lot of discussion regarding the proper role of private non-profit in relation to the management of wild salmon stocks. As you know, some of the concerns even emerged in the Senate Fisheries/Finance Committee meeting on Thursday, March 7th.

This winter, Southeast Alaska Seiners (SEAS) submitted several proposals (copy enclosed) relating to the fishermen's understanding of the intended role of the private non-profit hatcheries. At the time we submitted these proposals, ~~we were aware of an Attorney General's opinion that "clouded" the issue. It was Mr. White's opinion that prevented the Board of Fisheries from taking definitive action on our proposals and requesting legislative clarification (letter from the Board should be forthcoming). In any event, the discussion from the Board was worthwhile as they did not accept the AG opinion carte blanche and instead raised very relevant questions.~~

I am making you aware of these developments in hopes that you would initiate some legislative hearings on the issue this year. The private non-profit hatchery program was intended to operate in a manner that would not adversely affect natural stocks, but does this mean not adversely affecting management of wild stocks? The hatchery fish released are "subject to regulation under applicable law in the same as fish occurring in their natural state" (AS 16.10.440), but does this mean the State manages for broodstock the same way they manage for escapement? In Southeast, hatchery fish are a minor component of the overall fishery (about 5%) yet in Prince William Sound the situation is reversed. Should wild stocks have a management priority nonetheless? Some hatcheries owe the State large sums of money, does this give them the right to put pressure on management to close down fishing opportunities on wild stock? The State is the banker and the regulator of the resource which repays the loans. Shouldn't there be some protection for the fishermen caught in this potential conflict of interest? This year pink salmon production is expected to exceed processing and market capacity. Are we producing too many fish? Should Prince William Sound proceed at doubling their pink production to the detriment of Southeast and Kodiak fishermen? Is anyone looking at the Statewide picture of hatchery production? These are just some of the questions that the legislature needs to begin asking now, in hopes of formulating a more enlightened hatchery policy for Alaska's fishery.

*Is this
what is
the mark
impact of
this prod*

DRAFT

OK

hatcheries

Joint Bd. of Fisheries

our Assistant AG Steve White

While the Board of Fisheries certainly will be pursuing these concerns, many of these concerns will undoubtedly end up in the legislative arena. Enclosed is a legal opinion I solicited in response to the AG opinion's that "clouded" this issue for the Board of Fisheries. The opinion from our lawyer examines constitutional history and legislative intent on the private non-profit hatchery program. If you read it you will realize all the more that the legislature must ultimately revisit the hatchery issue. As such, I think it would be prudent to have some hearings on the hatchery program this year. Hearings this year will help focus any legislative action for next year. *as soon as possible. would allow give some direction for interim work and research and*

Hatcheries will always have a role to play in Alaska's fisheries. Nonetheless, given all the developments in the hatchery program statewide it is time to review exactly what role hatcheries are to have. I hope you concur.

Please call if you have any questions regarding this request.

Sincerely yours,

Kathryn Troll
Executive Director

Enclosures

c.c. Senator Eliason
Representative Ben Grussendorf
Representative Cliff Davidson
Commissioner Carl Rosier

} OK

as these need
statutory clarification

SOUTHEAST ALASKA SEINERS

P.O. Box 9579

Ketchikan, Alaska 99901

TO: Mary McDowell

DATE: 4/2/91

FROM: Kate Troll

TALK: (907) 225-5156

FAX: (907) 225-5258

RE: _____

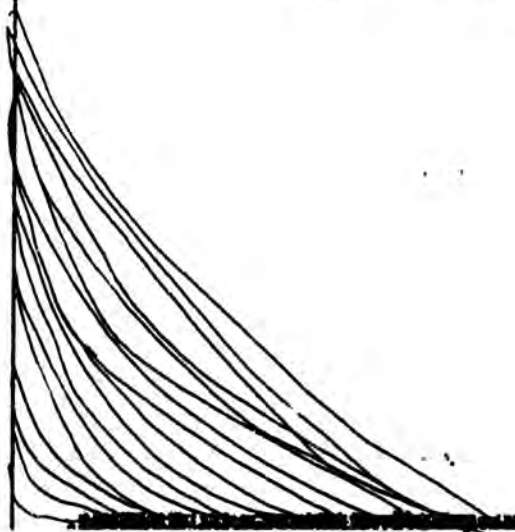
PAGES FOLLOWING COVER SHEET 2 PLEASE ADVISE IF ALL PAGES
ARE NOT RECEIVED

Mary,

Your comments on content
and process i.e. cc's would be appreciated.

Thanks,

Kate



SOUTHEAST ALASKA SEINERS ASSOCIATION
P.O. BOX 9579
KETCHIKAN, ALASKA 99901
(907) 225-5156

April 9 1991

Senator Lloyd Jones
Alaska State Senate
P O Box V
Juneau Alaska 99811

COPY

Dear Senator Jones:

At the last Board of Fisheries meeting in Juneau (Feb. 26- March 10) there was a lot of discussion regarding the proper role of private non-profit hatcheries in relation to the management of wild salmon stocks. As you know, some of the concerns even emerged in the Joint Senate Fisheries & Finance Committee meeting on Thursday March 7th.

Southeast Alaska Seiners (SEAS) submitted several proposals to the Board of Fisheries relating to the fishermen's understanding of the intended role of the private non-profit hatcheries. At the time we submitted these proposals, we were aware of an Assistant Attorney General White's opinion that "clouded" the issue. It was Mr. White's opinion that prevented the Board of Fisheries from taking definitive action on our proposals and instead prompting them to request legislative clarification (letter from the Board should be forthcoming). In any event, the discussion from the Board was worthwhile as they did not accept the Mr. White's opinion carte blanche and instead raised very relevant questions.

~~the private non-profit hatchery~~
the private non-profit hatchery program was intended to operate in a manner that would not adversely affect natural stocks, but does this mean not adversely affecting management of wild stocks? The hatchery fish released are "subject to regulation under applicable law in the same way as fish occurring in their natural state" (AS 16.10.440), but does this mean the state manages for broodstock the same way they manage for escapement? In Southeast, hatchery fish are a minor component of the overall fishery (about 5%) yet in Prince William Sound the situation is reversed. Should wild stocks have a management priority nonetheless? Some hatcheries owe the State large sums of money, does this give them the right to put pressure on management to close down fishing opportunities on wild stock? The State is the banker and the regulator of the resource which repays the loans. Shouldn't there be some protection for the fishermen caught in this potential conflict of interest? This year pink salmon production is expected to exceed processing and market capacity. Are we producing too many fish? What is the market impact of this production? Should Prince William Sound proceed at doubling their pink production to the detriment of Southeast and Kodiak fishermen? Is anyone looking at the Statewide picture of hatchery production? These are just some of the questions that the legislature needs to begin asking now, in hopes of formulating a more enlightened hatchery policy for Alaska's fishery.

While the Board of Fisheries certainly will be pursuing these concerns, many of these concerns will undoubtedly end up in the legislative arena for statutory changes.

[REDACTED] the opinion from our lawyer examines constitutional history and legislative intent on the private non-profit hatchery program.

[REDACTED] have some hearings on [REDACTED] would [REDACTED] for internal work that could lead to legislative action for next year.

Hatcheries will always have a role to play in Alaska's fisheries. Nonetheless, given all the developments in the hatchery program statewide it is time to review exactly what role hatcheries are to have. I hope you concur.

Please call if you have any questions regarding this request.

Sincerely yours,



Kathryn Troll
Executive Director

Enclosures

[REDACTED]
Representative Ben Grussendorf
Representative Cliff Davidson
Commissioner Carl Rosier
Mike Martin, Board of Fisheries Chair

A. W. BRINDLE
H. A. BRINDLE

PROCESSORS OF
CHOICE ALASKA SEAFOOD
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Wards Cove Packing Company

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SEATTLE, WA 98105-0030

Day Fax (206) 323-3200 Ext 258
Night Fax (206) 323-3204

May 1, 1991

The Honorable Dick Eliason
Alaska State Senate
P.O. Box V
Juneau, Alaska 99811

Dear Senator Eliason:

I thought you might be interested to see that the issue of salmon hatcheries and their impact on wild stocks is also of concern on the east coast. The enclosed article came from a magazine called COUNTRY LIFE which is published in Charlotte, Vermont.

Sincerely,



Alec W. Brindle

AWB:kmh
Enclosure

Taming T·H·E Wild Salmon

As natural stocks dwindle, aquatic farming holds new promise—and problems—for fish production

BY JON VARA

THE STELLWAGEN BANK SEASCAPE is representative of most views of this watery planet: an unbroken sweep of ocean water and sky. On this October morning, however, the view is not a distant one. There are 3-to-6-foot seas running, and a thick mist, leaking cold drizzle, hangs close to the water.

"It's not much of a day," Captain Frank Mirarchi had said as the *Christopher Andrew* eased out of Scituate Harbor, two hours before dawn. Mirarchi has a bad cold. A little more wind and rain, he says, and he could have stayed at home in bed with a clear conscience. Unprepossessing as it is, however, the day is too valuable to squander. Once winter sets in, Mirarchi knows, he'll be doing well to fish two or three days a week.

Stellwagen Bank—or Middle Bank, as it is better known to fishermen—is a submerged shoal that trends north from the northern terminus of Cape Cod. Mirarchi has been steering a course along the eastern slope of the bank for three hours, the funnel-shaped trawl net bumping unseen over the seabed, 120 feet below.

Long enough, he decides. He throttles back the engine—an action that instantly brings crewman Peter Downes scrambling from a bunk below—and climbs into his foul-weather gear. Mirarchi operates the winches and Downes manipulates heavy cables, chains and ropes through a practiced series of steps that culminates 15 minutes later as the overhead winch on the gallows frame winds in the last of the netting and brings the cod end—the baglike closed end of the funnel-shaped bottom trawl—up the steep stern ramp and onto the deck.

The trawl contains about 600 pounds of mixed fish. A third of it consists of skates, sea robins and undersized market species. They reset the trawl. Fish picks in hand—implements that resemble a policeman's nightstick with a 20-penny nail driven crosswise through the end—Mirarchi and Downes wade into the flopping mound of fish and begin sorting it by size and species.

ILLUSTRATION BY BRYAN LEISTER

In the process, some surprising objects come to light. There's a tangled 50-pound wad of gill netting, loaded with the limp, bone-white skins of long-dead dogfish. There are several aluminum beer cans and a clear-plastic soda bottle. From deeper in the pile, Mirarchi brings up an upholstered boat seat, an air-filter element from a diesel engine and a swatch of heavy nylon netting torn from a snagged trawl. The latter, he notes, is of a type no longer in general use.

"That's the old fine mesh," he says. "Just about everything that went into it stayed in the bag until you brought it up."

The net Mirarchi is using today, by contrast, is tied with 5½-inch "conservation mesh," which enables many undersized fish to escape. Large ones—unable to wriggle through the mesh—remain behind.

Relatively large ones, that is. Most of the yellowtail flounder, dab and gray sole in this bag weigh well under a pound. The largest of the cod looks as if it might go 8 or 10. There are no haddock in the net, and virtually none on Middle Bank.

It hasn't always been that way. It was not so long ago, Mirarchi says, that you could catch haddock with a hook and line just outside the harbor. Fifty-pound cod were not uncommon.

"Twenty years ago," he says, "we used to get 100-pound halibut out here. I've only seen two halibut this year, and neither one of them was over 10 pounds."

There are observers who say that fishermen like Frank Mirarchi may be going the way of the great schools of wild fish they once hunted. With cod and haddock in a steady decline over the past decade, fishermen are now harvesting species that for generations were considered unmarketable garbage—an assortment of bottom dwellers formerly considered too ugly to eat, including cusk, wolffish, hake and ocean

pout. While American consumers learn to accept these new offerings, Japanese seafood buyers have already established outposts up and down the coast to pay premium prices for fresh fish as well as such exotica as sea urchins and monkfish livers.

"Remember those old Tarzan movies?" Mirarchi asks. "Sometimes I feel like we're the guys with the spears. We're the guys who carry the ivory out of the jungle on our heads."

A FEW HUNDRED MILES UP THE COAST, Dan Marshall is scraping the bottom of a plastic feed bin with a hand scoop. He tosses a cup or two of pelleted feed to the salmon milling about the cage at his feet. They flash bright silver in the late-morning sun. There's an occasional splash as a foot-long salmon breaks the surface and skips across the water for a few feet, leaving a creamy trail of foam.

He squints, studying the speed at which they gobble the pellets. Another scoop of feed, more commotion in the water. Another pause.

"I don't know, Howie," Marshall says, finally. "They look awful good to me. I think you can push it up a third, you know, a third of a bag, this afternoon."

It's another day on the farm at Sea Farm Maine, in Lubec, Maine. Sea Farm Maine's acreage is a 25-acre plot of salt water in Johnson Bay, and its crop consists of about 200,000 Atlantic salmon.

The young salmon flashing in the sun at our feet began life at an inland hatchery, where fertilized eggs from carefully selected brood fish are hatched and nurtured in tanks of specially purified water for about a year, until the onset of smoltification—a physical change that indicates their readiness to move to salt water. The young fish—typically about 8 inches in length—lose the distinctive barred markings characteristic of their freshwater phase and assume a silvery color. They also exhibit a change in behavior: instead of facing into the pumped current of water that swirls through the circular tanks, they turn and begin to swim with the current—a course, instinct tells them, that will lead to the sea.

The modern hatchery smolt, however, has a much quicker seaward trip than its wild counterpart—in the back of a truck equipped with an oxygen-injection system to keep the fish alive and healthy along the way.

If all goes well, Marshall explains as he patrols the steel catwalk running down the center of the floating pens, the year-old smolts, weighing an average of 3 ounces or so, will reach market size of 8 to 10 pounds within 18 months of entering seawater.

Several times a year, each pen of fish must be "split," a laborious process in which the fish are sorted by hand to separate them into groups of uniform size. Splitting is necessary, Marshall explains, because the salmon don't grow at the same rate.

"If you leave the bigger ones and the smaller ones together," he says, "you end up with a runt problem." For the same reason, it's essential to start with smolts of uniform size from the hatchery. "They establish a pecking order right from the beginning, and fish that start out small never have a chance to catch up."

Day in and day out, however, feeding the fish is the most time-consuming job—a delicate chore that calls for care and experience. If feed is distributed too slowly, the most aggressive, dominant fish will get more than their share. If feed pellets are simply shoveled into the cages, however, much of it will sink through the mesh bottom of the cage before the

Wild fish are cleaned at sea, but the boat may not dock for a week. Farmed fish get to market in less than a day.





fish have a chance to eat it. Consequently, every ounce of the day's allotment of feed pellets must be broadcast, scoop by scoop, across the entire surface of each cage. When done properly, it's a fluid, graceful movement, reminiscent of sowing seed grain by hand on a prepared field.

"You've got to be careful with feed," Marshall says. "Feed makes up almost half our operating cost."

As he explains, however, each unit of feed goes a long way. "When we started here, our feed conversion was around 2 to 1. But we've managed to fine-tune that down to less than 1.5 to 1."

Figures like these are enough to make a landlocked agronomist sit bolt upright and blink hard. Broiler chickens, for example, typically convert feed at an efficiency of around 5.5 to 1, meaning that 5.5 pounds of feed are required to produce each pound of edible poultry. Pigs convert feed at a ratio of 7 to 1. Beef cattle clock in at about 15 to 1.

As thrifty as salmon are, some farmed fish do even better. Mahimahi, for example – a pelagic fish native to the Pacific, now being cultured in Hawaii – seems to be the current champion. Under controlled conditions, researchers have achieved the apparently supernatural feed-conversion rate 0.62 to 1 – equivalent to making 10 pounds of fish from 6.2 pounds of fish food.

FISH OF VARIOUS KINDS have been raised in farm ponds in Europe and Asia for centuries. In North America, aquaculture is a relatively new phenomenon, with rapidly expanding production of farmed shrimp, trout, catfish, striped bass, mussels and coho and chinook salmon, two species native to the West Coast.

The Atlantic salmon industry, however – the first such enterprise to reach a worldwide market – got its start during the mid-1960s, when Norwegian researchers began to experiment with raising fish in dammed saltwater estuaries, and later in shore-based tanks through which seawater could be circulated with pumps. By the mid-'70s, these early efforts

Broadcasting feed over the pens at Sea Farm Maine, a salmon farm whose "fields" are the waters off the coast of Maine.

had been superseded by the floating-cage-culture system used today.

The demand for salmon has traditionally been strong in northern Europe, and the industry grew rapidly. In 1976, Norwegian growers produced about 2,000 metric tons of salmon; by 1989, the figure had increased to more than 120,000 tons. Along the way, a strong export market developed – thanks to the Norwegian Salmon Marketing Council, which spawned promotional literature by the ton – and fresh salmon began flowing to the rest of Europe, North America and the Far East, especially Japan.

By the early 1980s, the Norwegians were exporting not only salmon, but the technology to grow them. Norwegian-financed salmon farms began to proliferate in Scotland, Ireland, the Pacific Northwest, Atlantic Canada and – most recently – Maine. Sea Farm Maine, in fact, is a subsidiary of Sea Farm Inc., a corporation whose ownership is 50 percent Norwegian.

The industry's rapid growth has not been entirely smooth. During the early- and mid-1980s, many Norwegian farms suffered heavy stock losses from disease. To combat such problems – which were associated with the buildup of fish wastes and uneaten feed in the surrounding water – limits were placed on farm size and stocking density. (Those limitations, in fact, had much to do with the diaspora of Norwegian capital that led to the opening of salmon farms in North America.)

Norway's water-quality problems also served as an object lesson on the importance of good site selection. Today's salmon farmers recognize the importance of a strong tidal flow – an attribute often described, with unintended irony, as "flushing action" – in maintaining healthy fish.

Sea Farm Maine – like those elsewhere in the region – is

admirably sited in this respect. A pair of 20-foot tides—the highest in the nation—scrub out its cages each day. It's conceivable that water pollution will someday become a problem on this side of the Atlantic, as some critics charge. For the time being, however, it's a problem that remains mostly theoretical.

The potential for longer-term—and much more far-reaching—environmental effects has received far less attention. Foremost among them is the question of feed. Ironically, the growth of aquaculture—long looked to as the best hope for increasing the world's supply of protein—may actually reduce the amount of protein available to the world's hungry.

That is because farmed carnivorous fish, such as salmon, require large amounts of high-quality protein in their diets. And for the foreseeable future, at least, that protein is going to continue to come from the ocean, in the form of ground, dehydrated fish, known as fish meal. When the issue of protein is examined closely under a strong light, in fact, the impressive feed-conversion numbers typical of aquaculture assume a different perspective.

A beef steer, for example, feeds on grass for most of its life, converting lignocellulose—undigestible to humans—into usable protein. Even during the last four to six weeks before slaughter, when fed corn, soybeans or other higher-quality feed, the protein content of a beef animal's feed is relatively low.

SALMON, BY CONTRAST—in common with shrimp, trout, striped bass and other highly profitable farmed species—require a large proportion of high-quality protein throughout the entire 18 months it takes them to reach market size. By weight, salmon feed is typically about half protein, of which three-fourths or more is derived from fish meal. And since the dry, pelleted feed contains very little water—much less than the fish themselves—the cultured fish receive the protein in a highly concentrated form.

To express that another way, each pound of farmed salmon, shrimp or other carnivorous fish represents roughly three pounds of wild ocean fish as feed. Cheap fish meal is to modern aquaculture what cheap chemical fertilizer is to a land-based corn or soybean farm: the essential input that makes all the wheels turn.

At present, most of the world's fish meal comes from small plankton feeders, such as herring and menhaden, although some meal is also produced from cannery waste and other fishing industry by-products. In accordance with the basic laws of biology, plankton-feeding fish are far more abundant than the larger predacious fish that feed on them.

That is not the same thing as saying that they will always be abundant. Given their habit of gathering in huge, dense schools, in fact, the sardinelike species that serve as the raw material for fish meal are highly susceptible to overfishing.

One of the first species to be exploited for large-scale fish-meal production, for example, was the abundant North Sea herring. Herring had long been heavily fished for human consumption, but with the additional pressure of the meal industry—which began operation in the early 1900s—stocks declined steadily until the mid-1950s, when they collapsed altogether. They have yet to recover fully, although limited fishing has resumed.

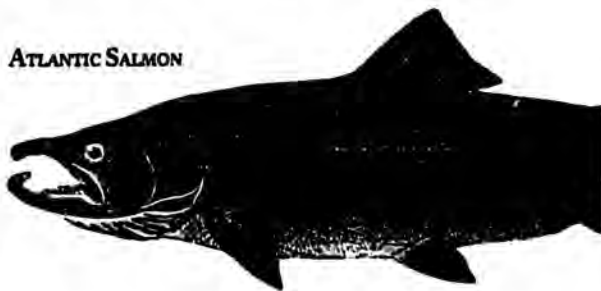
The loss of the North Sea herring fishery was instrumental in luring European factory ships across the Atlantic—beginning in the 1960s—to harvest the rich herring grounds

Fresh From the Farm

Crawfish and mussels, alive-alive-o!

MAN HAS BEEN RAISING EDIBLE FISH for at least four millennia, but one of the first records of what might be called a truly modern approach to aquaculture comes from the Roman historian Pliny. According to Pliny, the nobleman Lucius Murena excavated a series of 'fish reservoirs' on his summer estate during the first cen-

ATLANTIC SALMON



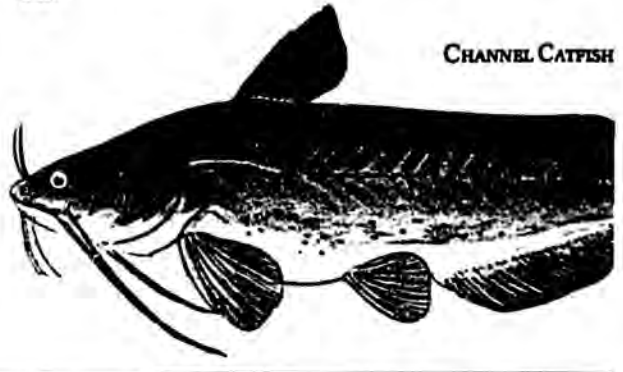
tury B.C., at a cost exceeding that of his house. It apparently proved to be a worthwhile investment, however; Pliny noted that the fish the ponds eventually produced were sold for four million sesterces.

The same forces that nudged Lucius Murena into the fish-farming business—the desire to produce and sell a farm product at a profit, and the willingness to make a heavy capital investment in order to do so—are identical to those driving the burgeoning aquaculture industry today. While small-scale subsistence fish farming is still the rule in much of Africa and Asia, modern, large-scale aquafarms are ultimately more concerned with cash than with fish.

As a result, recent research and development efforts have tended to focus on species that fetch a high price in the marketplace. Atlantic salmon is the most familiar example, but certainly not the only one. The following list is by no means all-inclusive, but it does mention those aquaculturally produced species that the American consumer is increasingly likely to encounter at the supermarket:

Catfish accounts for half of all United States aquacultural production. Last year's total catfish harvest came to nearly 350 million pounds, with three-fourths of it coming from the state of Mississippi. (Catfish, in fact, is now the state's single most valuable agricultural export.) Mild, white, grain-fed catfish fillets can be found fresh in supermarkets all over the United States and well into Canada. Prices are generally comparable to that of cod or other white fish.

CHANNEL CATFISH



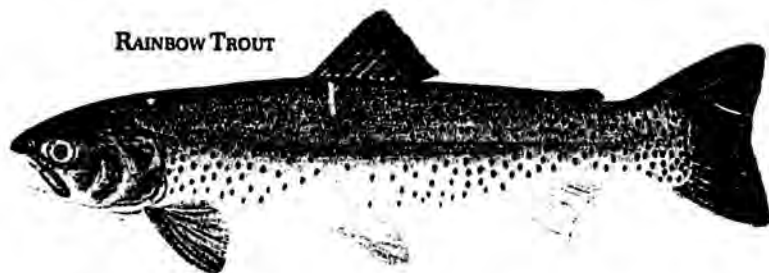
Tilapia: One of the few commercially farmed fish that thrives on an all-vegetable diet, tilapia are extraordinarily efficient protein producers. Long a favorite in the Third World, they have often – if unfairly – been regarded as trash fish elsewhere.

That appears to be changing, however. The mild, white-meat fillets of farm-raised tilapia, like catfish, are good-tasting and versatile, fitting into many types of recipes. Several large-scale aquafarms are now producing tilapia in quantity. One of the largest is Solar Aquafarms, Inc., which cultures, processes and markets its "Golden Tilapia" line in Sun City, California. Its passive-solar-heated tanks maintain optimum temperatures year-round. By mid-1991, Solar Aquafarms expects to produce 8 million pounds of tilapia, marketed mostly as skinless, boneless fillets.

Trout: Rainbow trout – a close relative of the Atlantic salmon – is one of the mainstays of the U.S. aquaculture industry, with about 57 million pounds produced annually. Idaho accounts for nearly two-thirds of the total, with most of the remainder coming from North Carolina, California and Wisconsin.

Trout farming has been an established business for the better part of a century, but trout farmers have been quick to take advantage of recent advances in biotechnology. Many growers now treat their

RAINBOW TROUT



breeding stock (although not the market fish themselves) with hormones to produce a strain of all-female progeny, which grow faster and yield better-quality flesh.

Crawfish – or, if you prefer, crayfish – are native to much of the United States, but only two species are currently raised for food on a significant scale. Louisiana provided at least three-fourths of 95 million pounds harvested last year – and consumed about the same proportion. As those figures suggest, crawfish is largely a regional specialty. About half of the total farmed yield comes from small, semicultivated ponds, and in rotation with rice farming, where the crawfish graze the stubble remaining in the fields after the rice harvest.

Shrimp: Shrimp is America's favorite seafood. Demand has been growing steadily for years, although the wild harvest worldwide has been static for the past decade or so. Farmed shrimp – which accounts for about a fourth of the world's total shrimp consumption – has made up the balance, and will continue to do so for the foreseeable future.

That has led to a worldwide boom in farmed shrimp, led by China, Taiwan, Ecuador and Indonesia. Ecuador, with its close proximity to the U.S. market, is our biggest supplier. Shrimp exports now account for about a fifth of that country's export income – more than bananas and cacao combined, and twice as much as coffee.

The rapid growth of the shrimp industry has had some unpleasant side effects, however. In Ecuador, thousands of acres of coastal mangroves have been destroyed to furnish land for shrimp ponds – an ironic development, given that most of the "seed" shrimp used

to stock the ponds are captured from the wild and that the wild shrimp rely on the coastal mangrove forest for breeding habitat.

Mussels, clams and oysters: The United States is the world's largest consumer of oysters, and as the environmental conditions in the Delaware and Chesapeake Bays – traditionally the major sources of wild oysters – continue to deteriorate, farmed oysters will capture an increasing share of the market. In 1987, domestic production of clam, oyster and mussel meats totaled at least 30 million pounds.



SCALLOP

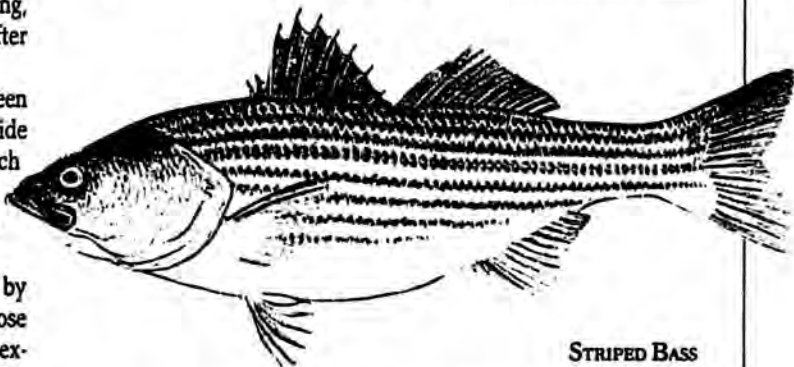


MUSSEL

The biggest obstacle to expansion of the shellfish farming industry is the availability of lease sites with acceptable water quality, since shellfish will absorb any contaminants present in the water in which they are raised. As a result, closed-tank systems will probably become increasingly important in the years to come.

MANY OTHER SPECIES will be added to this list in the near future. Norwegian and Canadian researchers, for example, are working furiously to develop economical culture systems for Atlantic halibut. Given the current retail price for halibut – which routinely fetches \$6 to \$7 a pound, when it is available at all – they have considerable incentive to succeed. The Norwegians are already marketing modest quantities of farm-raised halibut, and it may be available in quantity by the end of the decade. Cod culture lies further in the future, but research is already well under way on both sides of the Atlantic.

Hybrid striped bass show promise, as well, with a number of producers successfully raising them in landlocked freshwater tanks.



STRIPED BASS

A strong market already exists for striped bass – one which has gone increasingly unsatisfied in recent years, with the closure of the commercial striped-bass fishery.

Other species to watch include the troutlike arctic char, sea scallops, American lobsters and sablefish, or blackcod.

–J.V.

Lethal Liaisons

When the wild meet the tame, genetic disaster may occur

IF FISH MARKETERS ARE REJOICING in the success of aquaculture, marine biologists have some deep concerns about the rapid growth of fish farming, fearing that the relationship between wild and farmed salmon may prove disastrous to the untamed strains. The problem, in essence, is one of intermingling—a process biologists call genetic introgression—between wild and domesticated strains of fish.

According to Dr. John M. Anderson of the Atlantic Salmon Federation in St. Andrews, New Brunswick—an organization that works with the breeding of domestic strains, as well as conservation of wild salmon—the process through which Atlantic salmon find their way from their home rivers to their winter feeding grounds and back is not completely understood. Current thinking, however, suggests that it is a two-part process that combines instinct and learning. The ability to navigate in the open ocean is almost certainly genetically transmitted. It could hardly be otherwise, since salmon unerringly find their way across hundreds or thousands of miles of ocean to a place they have never known.

The same genetic mechanism works in reverse when it leads the fish back to the right stretch of coastline generation after generation. But a salmon does not instinctively know its home river when it gets there; it has to learn to recognize it through a process described as "imprinting."

During the year or more that they spend in the fresh water of their home rivers, before entering the sea for the first time, the young salmon develop a permanent memory of the composition of the tributary where they hatched—its mineral content, the organic matter it contains, and perhaps other chemical markers. After smoltifying, the immature salmon head for the sea. On that downstream journey, it is believed, their last taste of fresh water provides the clue that enables them to find the same river mouth again when they return—a year or two later—to spawn.

Farmed salmon smolts, by contrast—which travel from the hatchery to the sea by truck—never imprint on a particular river system. As a result, those that escape into the ocean, as some inevitably do, behave erratically. Many may find their way to the same offshore winter feeding grounds used by wild salmon, and come back on shore during the spring spawning run. Lacking home rivers of their own, however, they may enter any river system in the area to spawn, more or less randomly.

By reproducing in the "wrong" river system, these homeless salmon tend to muddy the genetic waters. Although their progeny will imprint on the river system in which they hatch, they may lack

Farmed salmon have some genetic traits that are good for the market, but they lack others needed for survival in the wild.



the inherited ability to find their way from the winter feeding grounds to within "tasting range" of their adopted home river. The plight of such fish is analogous to that of a motorist who knows which exit to look for but can't find the correct highway.

Even wild salmon are not perfect navigators, of course. There has always been a certain amount of genetic exchange between

river systems through the medium of stray fish. Salmon farming, however, has increased the number of strays—and potential strays—exponentially. That is a particular cause for concern where wild salmon populations are sparse to begin with—as is the case in all of the Northeastern U.S. In the event of a major “spill” at a farm—which might involve thousands of fish—the relatively small wild population might find itself genetically overwhelmed.

All of that would be cause for alarm even if it were a matter of large-scale intermingling between populations of thoroughly wild fish. What causes fisheries biologists even greater concern, however, is that many farmed fish are by now several generations from the wild, having been selectively bred for certain characteristics.

One trait that salmon farmers seek to avoid, for example, is “gril-sification,” in which the salmon mature sexually at the end of their first year in salt water, at an average weight of 4 to 6 pounds. Because the market wants 8-to-10-pound fish, and because salmon gain weight very slowly after sexual maturity—when most of their energy goes into gonadal development—that costs the grower money. As a result, concerted efforts are being made to eliminate the trait from hatchery brood stock.

In the wild, however, early-maturing strains apparently have an advantage in some areas. In parts of Newfoundland, 90 percent or more of the wild fish mature after one winter at sea. If that naturally selected trait were diluted through contact with domesticated strains, the survival rate of the wild salmon in those areas could be compromised.

Those are more than theoretical possibilities. At a meeting held in Loen, Norway, in April 1990—attended by scientists and managers from most North Atlantic countries with salmon interests—it was established that escaped farmed salmon are indeed breeding successfully in the wild. In some Norwegian rivers, in fact, over half of the adults present during the spawning season are farmed fish. There is also evidence that suggests that farmed fish construct their gravel nests—or “redds”—somewhat later than the wild fish, disturbing preexisting redds in the process.

At the Loen conference, a number of possible countermeasures were considered. The designation of aquaculture-free zones in the vicinity of threatened wild stocks is one possibility, as is the sterilization of farmed stock at the hatchery. The establishment of gene banks—thus retaining the genetic diversity of wild fish for the future—was also supported. Finally, researchers stressed the importance of controlling the transportation of farmed stock from one region to another, to prevent the spread of disease or parasites. (It is generally agreed that the disappearance of wild salmon from 33 Norwegian rivers can be attributed to a species of freshwater parasite, *Gyrodactylus salaris*, transmitted

from imported Swedish hatchery stock.) As William Hershberger—a fisheries biologist at the University of Washington—states, “We just don’t know much about the kinds of problems genetic mixing can lead to, since most farmed animals are already extinct in the wild.” It would be ironic if *Salmo salar*’s comeback at the market heralded its disappearance from the wild.

—J.V.

in the Gulf of Maine, on Georges Bank, and as far south as Cape Hatteras. That influx quickly reduced the Gulf of Maine stocks by half—nearly killing off the Maine sardine industry—and devastated the stocks of Georges Bank, where catch totals fell from nearly 400,000 tons in 1967 to 40,000 tons in less than 10 years.

None of those past excesses—or many others not mentioned—can be blamed on the aquaculture industry. By far the largest share of the world’s fish-meal supply is used in poultry feed. By most estimates, aquacultural feeds now account for about 10 percent of the total. As world aquaculture continues to grow, however, so will the demand for feed. The U.S. Department of Agriculture estimates that at least a quarter of the world seafood production will be farmed by the end of the decade, better than doubling its current contribution. No one knows what that will mean to the world’s oceans.



Farm-raised salmon are netted, then dropped in the “knock out tank,” where they are immobilized with carbon dioxide.

“It makes me a little nervous,” says Susan Goldhor, a zoologist who serves as a consultant to the fish and shellfish processing industry. “You have to question the wisdom of putting so much pressure on the bottom of the food chain.”

An alternative, of course, is to cultivate that end of the food chain directly. Raising plankton-feeding fish—or fish that feed on larger aquatic plants—does away with the need for such intensive protein mining. Shellfish like clams, mussels, and oysters feed on microorganisms filtered directly from seawater, as do some finfish, such as tilapia. Carp—one of the most heavily produced fish, which has been raised in ponds in Europe and Asia for centuries—thrives on an all-vegetable diet.

The economics of aquaculture, however, are such that the products with the highest cash value are those like shrimp, salmon and other species with very high protein demands. Predictably, that is where development has been most rapid (see “Fresh From the Farm,” page 34).

THREE CENTURIES AGO, when Atlantic salmon ran up Northeastern rivers by the hundreds of thousands, they were sometimes used to fertilize corn. Indentured servants often insisted on contract clauses limiting

Let Them Eat Dogfish

"Fish" no longer means cod or haddock

WATCH OUT FOR THIS ONE," fisherman Frank Mirarchi says. He tosses a writhing, snapping, 3-foot long wolffish into a sorting bin.

A decade ago, wolffish were routinely thrown back over the side or converted into fish meal. This one, however, will be eaten, probably by a restaurant patron who orders fish chowder, a fish fillet sandwich or the generic deep-fried fish dinner. Cod or haddock—which is what the unqualified word "fish" used to mean in the Northeast—are almost always marketed by name these days. That has left the generic white fish category to former trash species, such as hake, cusk, ocean pout and wolffish. Before long, in fact, the category may be broadened even further, to include several species of small sharks known collectively as dogfish.

A sizable portion of the dogfish catch is destined for Europe, where, Mirarchi explains, it will become a salty, smoked snack food called *schillelocken*—or "golden curls"—that is a popular beer-hall treat in Germany. Most, however, will be served as just plain fish. English fish-and-chips establishments have been big users of dogfish for many years. To encourage the opening of a domestic market, the U.S. Department of Commerce—which determines which names may legally be attached to fish species in the marketplace—recently



Today's catch may include many species formerly considered trash fish.

ly gave the okay for retailers to present dogfish under the more appealing name "cape shark."

"I won't tell you it's the best fish in the world," Mirarchi says, "but if it's handled right, it can taste pretty good."

But even if cape shark catches on in a big way, it may prove impossible to keep the market supplied for long. Dogfish are abundant today because fishermen on this side of the Atlantic have worked hard at not catching them for the better part of 500 years. They have extremely low reproductive rates, take many years to attain sexual maturity, and school by sex for much of the year. As a result, large mature females—the preferred raw material for *schillelocken*—are easily harvested in bulk. Until they're gone, at least; that's why the Europeans are buying them here. —J.V.

the amount of salmon in their diets.

That is hardly the case today, when most of the Atlantic salmon raised in Maine—as in most North American salmon farms—ends up at white-tablecloth eating establishments. Restaurateurs have embraced it—along with shrimp, striped bass, rainbow trout, oysters, mussels and a lengthening list of other aquacultural products—for a number of reasons. Unlike many wild species, which are highly seasonal, farm-raised seafood is available throughout the year. While wild-caught seafood may be less expensive than its farm-raised counterparts during seasons of abundance, year in and year out the farmed product often comes out ahead.

Even more important, from the standpoint of the restaurant trade especially, farmed fish tend to be consistent in both size and quality. That tends to reduce preparation time, simplify menu planning and increase the number of satisfied patrons.

In the traditional seafood industry, by contrast, quality is spotty, at best. At the wholesale level, most fish and other seafood is marketed in about the same manner as corn, soybeans or other nonperishable commodities. Under the current system, most fish is bought and sold sight unseen. The fish at the bottom of the iced fishhold—which may be a week old or more by the time a boat ties up at the dock—commands the same price as the fish on top of the pile, which may have been caught that morning.

That system made a certain amount of sense 20 years ago, when fish was regarded as a cheap substitute for chicken wings or hamburger. But today, with fresh cod often selling for almost as much as sirloin steak, it has become a liability. Frank Mirarchi feels that it is costing the traditional fisheries customers.

"You stand at the dock in New Bedford," he says, "and plenty of times you'll see baskets of fish sitting in the sun in the middle of a cloud of flies. The fisherman doesn't get any more for quality fish than he does for garbage, so quality doesn't matter to him. That kind of attitude goes right down the line. The supermarket starts out with fish that's a week old; they don't want to get stuck with it. They rinse it in brine every night to keep it from smelling too bad. A week later somebody buys it, and they wonder why it tastes awful."

The salmon in Sea Farm Maine's cages, by contrast, follow an express, straight-line path to market. In October, Sea Farm Maine will begin harvesting the 8-to-10-pound salmon that have been putting on weight in its floating cages for the past year and a half. The big silvery fish are netted and quickly transferred to the "knockout tank"—a 4-foot square plastic box filled with seawater that has been saturated with carbon dioxide gas—which quickly immobilizes them. The veins that supply blood to their gills are severed, and they are dropped into a second tank filled with water and crushed ice to "bleed out," a process that improves the texture and flavor of the flesh.

Those initial steps occur at the cages in Johnson Bay. The slaughtered fish will then be loaded onto one of two converted mackerel schooners—the *Grayling*, built in 1917, or the *Medrick*, three years older—for transfer to the R.J. Peacock Canning Company plant, a mile away. There they will be gutted, washed and packed in ice-filled waxed cartons for shipment. Twelve to 16 hours after emerging from the water, Sea Farm Maine's salmon—marketed under the Sterling Brand label—will be ready for early-morning

buyers at the Boston fish market.

If the fishmongers and restaurateurs are eager to see aquaculture flourish, they are not alone. Economists see a potential boost to our balance of trade. (The United States currently imports 60 percent of its seafood, which accounts for a trade deficit of \$3.3 billion.) Politicians see jobs. Cooks and consumers see cheaper, better-quality seafood. The traditional fishing service and supply industries—purveyors of rope, foul-weather gear, floats, netting and similar products—have experienced little difficulty in adjusting to the needs of aquaculturists.

All but forgotten in this feast of economic development are the commercial fishermen themselves, to whom aquaculture represents the same sort of enclosure of the commons that occurred on land centuries ago. Sea Farm Maine, for example, pays the state of Maine about \$1,000 a year for the exclusive right to a 25-acre column of seawater and the underlying seabed in Johnson Bay. Assuming that all the conditions are met, the lease will remain in effect for 10 years.

Ron Smolowitz is a fishing-industry consultant and columnist for the trade publication *Commercial Fisheries News*. He worries that the increasing emphasis on aquaculture will imply, to some, that the ocean itself is expendable.

"That's wrong," he says. "We still haven't begun to manage the ocean for food production."

A potential long-term solution, Smolowitz feels, is to start thinking of the continental shelves as range or pastureland, rather than hunting grounds. That might mean trying to eliminate some species, while fostering or introducing others.

"People say, 'No, you can't do that, you'll alter the ecological balance.'" He pauses. "What do they think is happening out there right now?"

FROM THE BEGINNING, people have wanted to see wild Atlantic salmon as one of the main beneficiaries of salmon farming. The reasoning was simple: it should be cheaper to grow salmon than to catch it. According to Economics 101, wild-caught salmon should be wholly unable to compete with its farm-raised counterpart, and the heavy fishing pressure on this species would be relieved.

Unfortunately, it hasn't worked out that way. The world's wild harvest has hovered at somewhere between 5,000 and 8,000 metric tons annually for the past few years (farmed Atlantic, by way of comparison, accounted for 170,000 metric tons), and the wild salmon has no trouble finding buyers.

Because the word "wild" plays so well in the marketplace, in fact, wild salmon commands a premium price—often two or three times that of farmed fish. That is ironic, since the farmed product—thanks to more careful handling and faster shipment to market—usually is equal to or better than wild salmon, as blind taste tests have repeatedly shown.

"At first glance," says a State of Maine development publication, "the advantages of aquaculture would appear to be disadvantages for wild product. Closer inspection of seafood markets, however, indicates a probable favorable effect—at least in the longer term—on wild-product markets."

Perhaps. In the shorter term, though, traditional fishermen are not lining up to become fish farmers. That does not surprise Dan Marshall.

"Fishermen are basically hunters," he observes. "They know more about the ocean than you or I ever will, but they don't know much about raising animals." The bottom line, according to Marshall, is that it's easier to teach a farmer to run a skiff and an outboard motor than it is to teach a fisherman the finer points of feed conversion and disease control.

Marshall himself is the proof of that. Before he took the job managing Sea Farm Maine's operation, he spent a number of years as a farm manager for DeCoster Farms, Maine's largest producer of eggs and broiler chickens. Burton Blanch, the president of the Cobscook Bay Finfish Association, is a former dairy farmer who turned to salmon farming in 1985.

Like their landlocked brethren, fish farmers have one overriding worry: overproduction and low prices. The price of salmon, Dan Marshall observes, has been dropping for several years. "The days of \$2-a-pound profits are over," he says. "If we make 50 cents a pound this year, I'll be happy."

Still, he is optimistic about the future. A vigorous secondary processing industry, he says, will do much to stimulate demand.

"I saw that happen in the poultry business," he says. "Sales were flat for years, and then someone came up with the idea of chicken nuggets, and business took off."

Last year, Marshall and young Bobby Peacock of the R.J. Peacock Canning Company experimentally sliced some smaller salmon—too small for normal market outlets—into steaks with a bandsaw and packed them in sardine cans. Marshall gave me a can to try, and it was good.

"I think you're going to see a lot more of that kind of thing," he says. "You'll see salmon in microwave packages, and I think you'll see it in Weight Watchers' meals. The whole industry is still at the caveman stage."

Jon Vara is a regular HARROWSMITH COUNTRY LIFE contributor who lives in Marshfield, Vermont.



As the price of farm-raised salmon drops—and profits decrease—canneries like the R.J. Peacock Co. in Maine are experimenting with marketing strategies to stimulate demand.



SOUTHEAST ALASKA SEINERS ASSOCIATION
P.O. BOX 9579
KETCHIKAN, ALASKA 99901
(907) 225-5156

May 2, 1991

James Brooks
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802

Dear Mr. Brooks

As we discussed over the phone, I am interested in understanding the history behind the Private Non-Profit Hatchery program which was established in 1974 when you were at the helm as Commissioner of Fish and Game. Since 1974, hatcheries have made their mark throughout Alaska's fisheries. The expanding roles of hatcheries in the different regions of the State has prompted a renewed interest in the original vision and intent of hatcheries in relation to management of Alaska's fisheries. To this extent, I would appreciate your timely response to these questions:

1. Wasn't the primary intent of the PNP Hatchery legislation to assist in the rehabilitation of the state's depleted salmon fishery?
2. Were there apprehensions about this program at the time it was considered? If yes, what were they?
3. In discussing the requirement of hatchery fish being available for common use when ever they occur in their common state (exception being recognized terminal harvest areas) was there any discussion of who owned these fish?
4. For management purposes, was it a given that there would be a management priority on wild stocks of salmon whenever hatchery and wild stocks co-mingled in harvest areas?
5. What was the prevailing understanding on how hatchery broodstocks were to be managed outside of the terminal special harvest areas?
6. What was the prevailing understanding on how hatchery cost recovery needs were to be managed outside of the terminal special harvest areas?
7. What was the goal for hatchery contribution to the common property fisheries?
8. When hearings were held with the fishermen regarding private non-profit hatcheries what did the Department communicate in regards to wild stock and hatchery management?

Written responses would be most appreciated but in the interest of your remaining time at NMFS, oral responses can be accommodated. Please call if you have any questions? I look forward to hearing from you.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Kathryn Troll". The signature is fluid and stylized, with a prominent initial "K" and a long, sweeping underline.

Kathryn Troll
Executive Director

May 6, 1991

The Honorable Richard Eliason
President
Alaska State Senate
P.O. Box V
Juneau, AK 99811

Dear President Eliason:

This letter is in response to a request by the Senate Resources Committee and the Special Senate Fisheries Committee when Board of Fisheries members appeared before the committee in March. We appreciated the opportunity to sit down with the committee and discuss items which will improve the board's ability to serve the people of Alaska.

In managing fisheries that involve hatchery raised salmon, the Board of Fisheries has encountered problems due to ambiguities in the current Alaska statutes. These problems commonly arise when the management of hatchery stocks conflicts with either the health of wild stocks or with the opportunity of fishermen to harvest wild stocks. Essentially, the statutes are not clear on the status of wild stock management.

State statutes also are not clear about the state's duty to provide fish for hatchery broodstock and cost recovery, and about the hatcheries' obligations to contribute to the common property fisheries. We perceive that the development of state policy toward hatcheries may have created a conflict of interest. On one hand, the state manages fisheries as a common property resource for the benefit of all user groups. On the other hand, the state loans money to hatcheries with the expectation that the hatcheries will receive enough fish to be able to repay these loans.

The board has the following comments on the existing statutes:

1. AS 16.10.375 Regional Salmon Plan. Should new language require a review or synthesis of the regional plans to give a statewide perspective on hatchery production?

President Richard Eliason

May 6, 1991

Page Two

2. AS 16.10.380 Regional Associations. One of the great strengths of the regional associations is the representation of all user groups on their boards of director. However, the PNP's have no such requirement. Should all hatcheries and enhancement activities in a region be under the control of the regional associations?

Should state laws apply to all hatcheries and enhancement activities in Alaska and not just private non-profit hatcheries? Other activities that might be covered include state-owned hatcheries, regional hatcheries, and the U.S. Fish and Wildlife Service, the U.S. Forest Service, and the National Marine Fisheries Service. Should all these activities be included in the Regional Comprehensive Plan?

Should the role of the regional associations be to coordinate region wide production and allocation subject to biological review by the Regional Planning Team and allocative review by the Board of Fisheries?

Given an expanded role for the regional associations, should their means and levels of funding be re-examined by the legislature?

3. AS 16.10.400 Permits for Salmon Hatcheries. The legislature should re-examine (g) of this section: "During the development of a comprehensive plan for a region no permit may be issued for a hatchery unless the commissioner determines that such an action would result in substantial public benefits and would not jeopardize natural stocks."

The first ten words of this section, "During. . . region . . .", suggest that once the plan is completed, the prohibited actions could be allowed. Perhaps this wording should be deleted. Also, we believe that there should be more specific grounds and procedures for terminating hatchery permits after they have been issued.

President Richard Eliason
May 6, 1991
Page Three

Legislators should note that 5 AAC 40.860 provides generic standards for performance review of hatchery success in producing smolt from broodstock. There are no statutory standards, however, for performance review of hatchery contribution to common property fisheries. If a hatchery cannot demonstrate that it is providing "substantial public benefit", is the state required to continue to provide for returns to the hatchery for broodstock or cost recovery purposes?

In this subsection, "substantial public benefit" is not clearly defined. The board recommends that the legislature consider linking the number of eggs taken as broodstock or the number of smolt released by a hatchery to that hatchery's required contribution to the common property fisheries.

The board may contribute to clarifying "substantial public benefit" by requiring the marking of hatchery fish. While we believe that the board has the authority to require this, it would be helpful to have this authority specifically provided by statute. Should the cost of implementing a marking program be borne by the producers of hatchery fish or by the state?

The last five words of this subsection, ". . . would not jeopardize natural stocks", is one of only two places (the other is AS 16.10.420(10)) which declares that it is the legislature's intent that the conduct of the entire state hatchery system is conditional on the protection of natural stocks. Perhaps because our hatcheries have flourished over time, and given some of the intense debate occurring in Oregon, Washington and Canada on how hatchery stocks have impacted natural systems, it is especially timely for the legislature to review the treatment natural stocks receive.

4. The necessity of protecting Alaska's vigorous natural stock populations is recognized by Department of Fish and Game regulations and policies. The regulations are in 5 AAC 40. For example, some of the strongest language exists in 5 AAC 40.220(b)(1), "the proposed hatchery returns may not unreasonably or adversely affect management of natural stocks. . .". Additional language exists in 5 AAC 40.005(a), (c), and (e), 5 AAC 40.007(b), 5 AAC 40.170 (2), 5 AAC 40.220 (b)(1), (3) and (7), and 5 AAC 40.860 (b)(2) and (4). As this issue of natural stock protection is examined by the legislature, the board recommends that the legislature seek input from the Commissioner of the Department of Fish and Game.

President Richard Eliason
May 6, 1991
Page Four

5. The legislature may wish to further clarify their intent in additional and more concise definitions of terms used in Title 16. For example, the following terms should be clarified: "escapement", "brood stock", "cost recovery", "substantial public benefit", and "private non-profit."

Should escapement apply strictly to natural stocks returning to natural systems?

Should broodstock be defined as the number of eggs authorized by permit to meet the production levels of the hatchery and to contribute to the common property fisheries? Some wording to this effect would be valuable in light of AS 16.10.420 and AS 16.10.450 which allow for the sale of salmon and salmon eggs for cost recovery. Fish which return to the hatchery for broodstock should be differentiated from fish which return and may be taken for cost recovery.

Does the legislature wish to rank or prioritize escapement to natural systems compared to return of broodstock to hatcheries?

"Cost recovery" is another term which warrants some further clarification. However, a clear definition of broodstock, coupled with a definition of substantial public benefits in terms of what is contributed to common property fisheries from broodstock, would provide a de facto identification of fish available for cost recovery as long as identification of hatchery stocks can be achieved.

These concerns of the Board of Fisheries are presented for your consideration. Your interest, and past support, in these resource issues has been greatly appreciated.

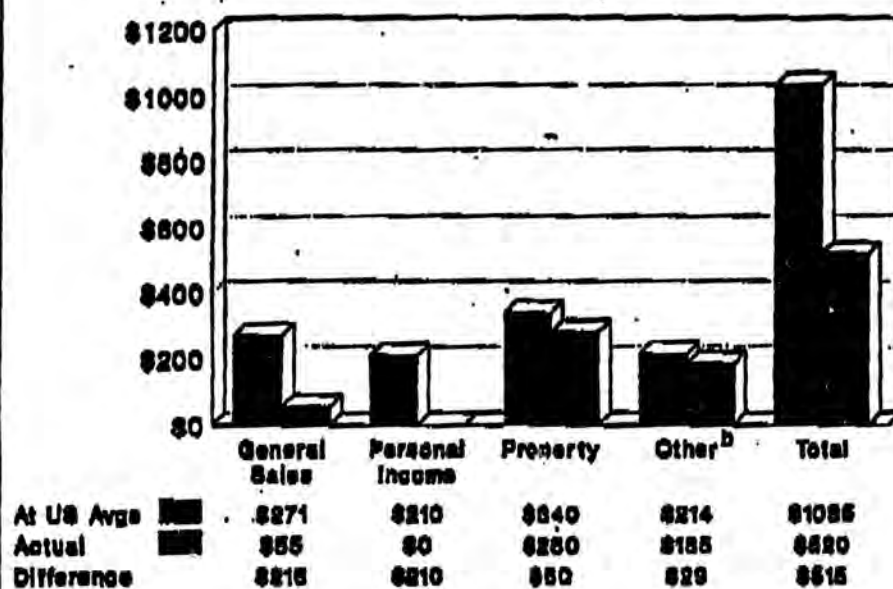
Should you have further questions, please feel free to call me.

Sincerely,

Michael R. Martin
Chair
Alaska Board of Fisheries

cc: Board of Fisheries members
Carl Rosier, Commissioner, ADF&G

**Figure 8. Alaska State and Local Taxes
Paid by Individuals and Businesses
Actual and at Estimated U.S. Average Rates^a
(In Millions of 1988 Dollars)**



^a Based on 1985 tax base calculations. Excludes taxes paid by petroleum and other resource producers.

^b Other taxes include selective sales taxes and non-petroleum corporate income tax.

double current tax collections. (We don't include charges and user fees here because those kinds of charges support different services in different locations, making comparisons meaningless. Also excluded are the potential net proceeds of a state lottery, which we estimate could be \$10 million annually.)

Resource Production Revenues: Alaska collects both taxes on and ownership payments from resource extraction. In this section we compare the rate of taxation of the resource base across states and specifically exclude ownership payments. Our estimates are necessarily rough approximations, given the difficulties in valuing each resource base.

Figure 9 compares tax rates on resource industries in Alaska and nationwide in 1987 (the most recent year for which we have figures) by showing the approximate percentage of their value added (the industry contribution to gross national product) paid in taxes, excluding income

taxes. (The box on page 14 provides further discussion of our tax base calculations.)

Figure 9 shows that some resources are taxed at much higher rates than others nationwide. For instance, mining (which is primarily coal mining) nationally paid about 14 percent of its value added in taxes in 1987. The oil and gas industry paid the next highest rate nationally, or about 12 percent of its value added. The other industries paid in the neighborhood of 4 to 5 percent of their value added in taxes nationally.

In Alaska, petroleum, far and away our most important resource, paid just about the same percentage of its Alaska

value added in taxes as it did nationally — about 12 percent. (The Alaska Legislature in 1989 changed the formula for calculating severance taxes on petroleum — the Economic Limit Factor, or ELF. Although the change increased 1989 tax collections by about \$150 million over what they would have been, the legislature essentially restored 1989 tax rates to their 1987 levels. So the tax percentage we show is still a valid approximation.)

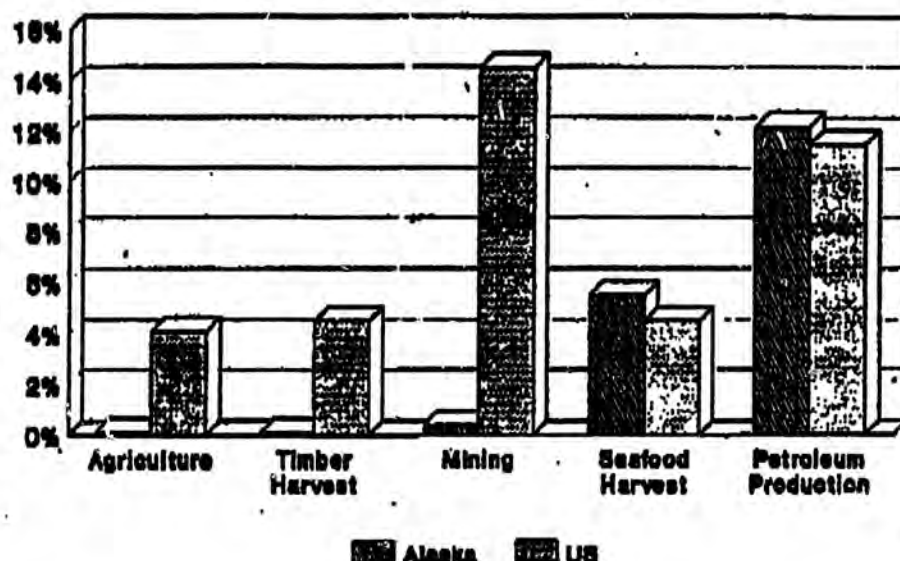
Alaska's next most important resource, commercial fishing, also was taxed roughly as much in Alaska as nationally in 1987 — around 5 percent of its value added. Other resource industries in Alaska paid little tax. Mining in Alaska paid less than 1 percent of its value added in taxes in 1987, as compared with 14 percent nationally. Agriculture and forestry in Alaska paid much less than 1 percent in taxes, as compared with about 4 percent nationally. (We weren't able to make comparisons for tourism because of the difficulties in identifying taxes paid and tax base.)

Figure 10 shows actual taxes paid by Alaska's resource industries in the late 1980s and estimates of what taxes would be at U.S. average rates. Modest changes in the national rates have an insignificant effect on collections, except of course for petroleum.

At national average rates, the petroleum industry in Alaska would pay about \$1.2 billion in taxes. (We make that estimate by applying the national average rate for petroleum in Figure 9 to the industry's Alaska tax base). The seafood harvesting industry would pay about \$31 million at the national average rate for that industry.

The severance tax, property tax, and special income tax on petroleum, and the raw fish tax, are the primary resource taxes in Alaska. Resource taxes collected from these industries in Alaska are consistent with national rates.

Figure 9. Alaska and U.S. Resource Industries Taxes as Percent of Value Added (1987)

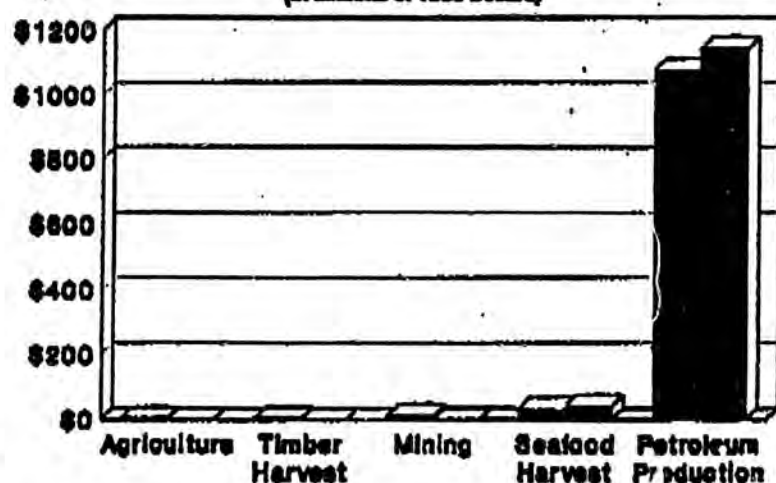


Alaska's mining, timber harvesting, and agriculture industries have much smaller tax bases than petroleum and fishing, and those smaller tax bases are taxed at rates considerably below the national averages. Alaska has no production tax on timber harvesting. Instead of a production tax on mineral extraction, Alaska has a mining license tax on net operating income. Were these industries to pay taxes at national average rates, the state would collect (at current

production levels) approximately \$10 million more annually.

As an owner of resources (as distinct from a tax collector), Alaska receives considerable revenues — again, mostly from the sale of oil and gas, but also smaller amounts from timber, minerals, and land sales. These payments to the state are

Figure 10. Alaska State and Local Taxes Paid by Resource Production Industries Actual and at Estimated U.S. Average Rates (in Millions of 1988 Dollars)



Note: Excludes revenue from ownership of resources.

■ At US Avg ■ Actual

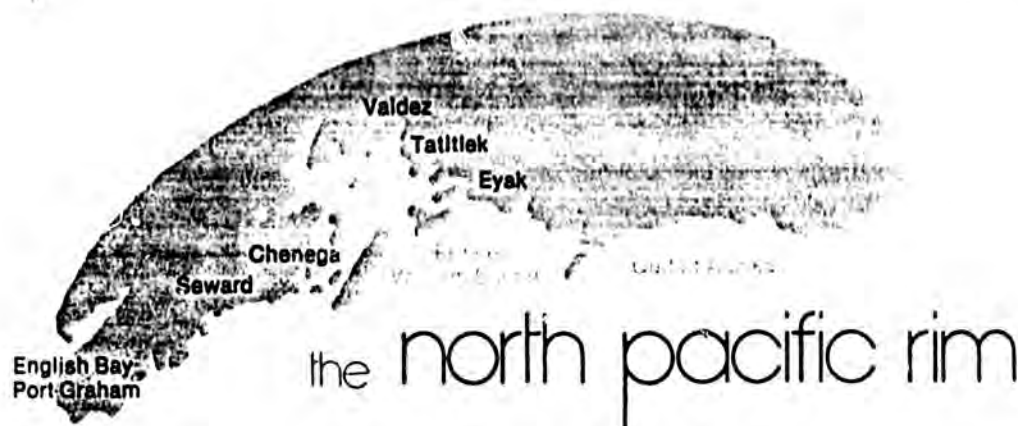
*Alaska Seafood*Alaska Seafood Marketing Institute
Facsimile Message

Date: 5/9/91 Time: 3:50 # Pages (including this one) 3
To: Mary McDowell From: Kim
Gen. Eliason's Office Alaska Seafood Marketing Institute
P.O. Box D
Juneau, AK 99811-0800
FAX #: 467-4728 PH: (907)586-2902
FX: (907)463-3273

Mary -

Here are the pages of the ISER report. Unfortunately, I copied only those two pages for my files and did not copy the cover page. My guess is that this was a 1990 special report.

DEC 9 1991



December 2, 1991

The Honorable Walter J. Hickel, Governor
State of Alaska
Box 110001
Juneau, AK 99811

Dear Governor Hickel:

I am writing to urge your support of a \$1.8 million capital project in the Fish & Game budget for the construction of a mariculture technology development center. The existence of this center is vital to the survival of the mariculture industry in Alaska.

The potential for mariculture in coastal Alaska is very promising and several Native villages in the Chugach region are looking to this industry as a means for developing a long-term economic base. Our investigations into mariculture development have revealed that several support structures will be needed if this industry is to survive. One is a shellfish hatchery producing seed stock in sufficient quantity to make Alaska independent of outside suppliers, and the other is a technical development center that will develop technology for producing various mariculture products efficiently as well as procedures for ensuring that these products are safe to use.

We have made the commitment to build Alaska's first shellfish hatchery and are currently putting together a \$1 million financial package to underwrite hatchery construction and initial operation. We plan to construct the hatchery on the University of Alaska, Institute of Marine Science grounds in Seward. We are hopeful that the state will underwrite the construction and operation of the technology development center and also locate it at IMS. We believe that a hatchery built and operated by private industry combined with a technology development center that involves the university as well as state agencies, will form a powerful engine for driving the mariculture industry in Alaska. With this type of support it is quite possible that Alaska could become one of the nation's major mariculture centers.

3300 "C" Street / Anchorage, Alaska 99503-3920 / Ph. (907) 562-4155 / Fax (907) 563-2891

The Non-Profit Corporation Serving The People Of The Chugach Native Region



The economic vitality of Alaska's rural communities is a major concern for all Alaskans. Mariculture has great economic potential for Alaska's coastal communities if this industry can get the basic support it needs to develop. The Native villages in the Chugach region are rapidly becoming involved in mariculture, mainly oyster culture. I am also aware of similar activity in Native villages on Kodiak and in southeastern. The potential for economic development in these villages is very limited. We cannot afford to pass this opportunity by. I hope we can count on your support.

Sincerely,
The North Pacific Rim



Richard A. Rolland
Executive Director

cc: Clem Tillion
Commissioners ADF&G, DCRA and DCED
State Senate and House members

ALASKA STATE LEGISLATURE · SENATE

SENATOR RICHARD I. ELIASON

LABOR & COMMERCE COMMITTEE, CHAIRMAN

RESOURCES COMMITTEE

RULES COMMITTEE

SPECIAL COMMITTEE ON HIGH SEAS
SALMON INTERCEPTION

SELECT COMMITTEE ON
LEGISLATIVE ETHICS



P.O. BOX 143
SITKA, ALASKA 99835

P.O. BOX V
JUNEAU, ALASKA 99811
907) 465-4916

FAX (907) 465-4928

February 8, 1990

Don Collinsworth, Commissioner
Alaska Department of Fish and Game
Box 3-2000
Juneau, Alaska 99802-2000

Dear Commissioner Collinsworth:

I would like to express some serious concerns that I have about the Private Non-profit Hatchery program and its public image, and enlist your help in exploring ways to alleviate some of these concerns.

I have always been a big supporter of hatcheries in Alaska, including the state-run hatcheries, those run by the regional aquaculture associations, and the other private non-profits. I believe that they have been crucial in the building and rebuilding of strong salmon stocks in the state, and have generally been endorsed and supported by the commercial fishing industry. But there is a new, and unfortunate sentiment growing in the state, a suspicion and mistrust of the PNPs. Fishermen are concerned that perhaps some of these hatcheries have lost sight of their intended purpose to produce fish for the common property resource, and may be operating on their own agenda without much direction and oversight. Indeed, we are seeing a growing perception that PNPs are becoming adversaries of commercial fishing, almost a "competing gear group" when it comes to fisheries management decisions.

I am still convinced that overall the PNP program has been, and continues to be, a great benefit to the fisheries. But there are several examples of mismanagement, permit violations, and so on which have come to light which give the whole program a bad image. These make the public skeptical about the motivations of PNP operators, about what kind of oversight exists to ensure that these operations are indeed sticking to their intended missions, and whether the net impact of these hatcheries on fishermen is positive or negative.

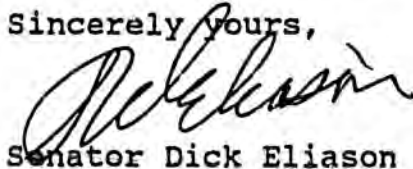
I have met with Brian Allee and Jerry Madden and discussed particular concerns that have surfaced regarding PNP operations at Meyers Chuck, Burnette Inlet, and Juneau. There are questions of egg-takes exceeding permitted levels without punitive action, "absentee" hatchery management that infuriates neighboring residents, and the specter of commercial fisheries being managed to ensure hatchery returns. Fishermen and community members are understandably distressed about these problems and we are facing the dilemma of growing mistrust. What I don't want to see develop is a situation where we end up "throwing the baby out with the bath water." That is, let's not let the bad PR generated by a few hatcheries polarize those affected to the point where fishermen are calling for the end of the PNP program. If something is not done, I think that could be where we are headed.

Evidently state law and departmental policy do not adequately provide for oversight of the PNPs. We need to develop a more "wholistic" approach to monitoring of the goals, budgets, salaries, production, management practices, problems and successes of the PNP hatcheries. There needs to be more coordination between the FRED Division, Commercial Fisheries Division, the Department of Commerce. And there needs to be a way of including fishermen in the process of monitoring and assessing whether the programs being permitted meet the goals and objectives spelled out in statute.

There needs to be a complete review of the PNP program, how it is functioning, where the shortcomings are in the management and oversight of it, how the bad operators can be weeded out and the good ones encouraged, how the doubts and concerns of the public and the fishing industry can be allayed, how we can maximize the contribution of PNPs to the common property resource. I request that you direct the appropriate people in your department to initiate such a review. While this will involve calling upon other departments, fishermen, and others for input, it seems appropriate that the FRED Division spearhead this effort to improve the performance and accountability of the PNP program.

I think that this review process is extremely important and ought to be undertaken right away. I hope that it results in some recommendations for specific action. If the review concludes that statutory changes or other legislative action is needed, please feel free to contact me. I look forward to working with you in tackling these problems.

Sincerely yours,



Senator Dick Eliason

Alaska Department of Fish and Game- FRED Division							
Alaskan Enhancement- Common property harvest of enhanced fish (in thousands)							
4/12/90: M McKean							
Year Area	Harvest	Chinook	Sockeye	Coho	Pink	Chum	Total
1990 Southeast	Total Commercial	332	2,186	2,864	51,195	1,884	38,201
	-Cost Recovery	22	0	117	888	837	1,485
	Adj. Comm total	310	2,186	2,747	50,307	1,047	36,716
	Enhanced	98	110	344	499	408	1,399
	% Enhanced	12.8%	5.2%	13.5%	1.7%	26.4%	3.8%
Prince William Sound	Total Commercial	22	912	524	44,165	967	46,591
	-Cost Recovery			17	8,858	32	8,907
	Adj. Comm total	22	912	507	35,307	935	37,664
	Enhanced	0	160	201	28,195	612	29,168
	% Enhanced	1.1%	16.4%	39.7%	79.9%	65.9%	77.4%
Cook Inlet	Total Commercial	18	3,807	503	988	358	6,870
	-Cost Recovery		9	6		1	16
	Adj. Comm total	18	3,799	497	988	357	6,854
	Enhanced	2	404	9	167	48	630
	% Enhanced	8.8%	10.6%	1.8%	17.0%	13.4%	9.2%
Kodiak/ Chignik/ Aleut AK Peninsula	Total Commercial	54	12,093	875	10,124	2,177	25,323
	-Cost Recovery						0
	Adj. Comm total	54	12,093	875	10,124	2,177	25,323
	Enhanced		2,291	7	592	4	2,895
	% Enhanced	0.0%	18.9%	0.8%	5.9%	0.2%	11.4%
Bristol Bay	Total Commercial	33	33,165	100	517	1,008	34,822
	Enhanced	0	0	0	0	0	0
	% Enhanced	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Arctic/Yukon/Kuskokwim	Total Commercial	189	205	532	17	1,136	2,078
	Enhanced	0	0	0	0	5	5
	% Enhanced	0.0%	0.0%	0.0%	0.0%	0.4%	0.2%
1990 Total	Total Commercial	647	52,317	5,199	86,994	7,531	152,687
	-Cost Recovery	22	9	141	9,848	970	10,989
	Adj. Comm total	625	52,308	5,058	77,146	7,161	141,698
	Enhanced	40	2,855	562	28,484	1,077	34,987
	% Enhanced	6.4%	5.6%	11.1%	38.2%	18.0%	24.0%

Note: Cost recovery numbers have been subtracted out to provide a common-property harvest figure.