

ALASKA LEGISLATIVE COUNCIL / SUBJECT FILE 8672
1855 SCOMM 75: MARICULTURE (FISH FARMING), 1987-1990

112



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Jim Butler

Signature of Camera Operator

9/14/95

Date

SCOMM 75: MARICULTURE (FISH FARMING), 1987-1990

These files were compiled and used by staff of Senator Dick Eliason while he was Chair of Senate Resources Subcommittee on Fisheries in 1987-88 and 1989-90, and Chair of Senate Special Committee on Domestic and International Fisheries in 1991-92. The files, largely subjects ones, contain background information on the mariculture bills sponsored by Senator Eliason and the Senate Resources Committee, 1987-1990.

Contents: 2' of files.

LIST OF FILES (PAGE 1)

MICROFICHE #

1987-88

1. SB 106 - AQUATIC FARMING
2. SB 106 - FISH FARMING
3. SB 297 - MORATORIUM ON ISSUANCE OF PERMITS
FOR COMMERCIAL FINFISH FARMING
4. SB 482
5. SB 514 - BILL
6. SB 514 - DRAFT VERSIONS OF BILL
7. AG'S OPINION - MARICULTURE
8. AMA (ALASKA MARICULTURE ASSOC.) INFORMATION
9. AQUACULTURES
10. COMMERCE STUDIES
11. MARICULTURE - 1988 PROPOSED LEGISLATION
12. NEWS ARTICLES - MARICULTURE
13. UFA (UNITED FISHERMEN OF ALASKA)
INFORMATION

1989-1990

14. SB 195
15. SB 397 - SUPPORT CORRESPONDENCE
16. SB 397 - GENERAL INFO

SCOMM 75: MARICULTURE (FISH FARMING), 1987-1990

LIST OF FILES (PAGE 2)

MICROFICHE #

17. SB 397 - BACKUP
18. SB 397 - NEWSPAPER CLIPPINGS/EDITORIALS
19. SB 397 - AGAINST, CORRESPONDENCE
20. SB 397 - FISH FARMING BAN
21. SB 531 - LABELING OF FARMED FISH
22. ASMI - COMBAT FARMED FISH MARKET PROBLEMS
23. FINFISH FARMING TASK FORCE (FFTF) REPORT
24. FFTF - NEWSPAPER CLIPPINGS/EDITORIALS
25. FFTF - GENERAL INFO.
26. MARICULTURE IN NORWAY
27. MARICULTURE 1989
28. MARICULTURE - GENERAL INFO.
29. MARICULTURE MASTER FILE (STAFF AIDE'S)
30. WESTCOTT/THORN FERGUSON

MISCELLANEOUS REPORTS AND VIDEOCASSETTES

31. "COST OF PRODUCTION MODEL FOR PEN-REARING OF SALMON IN ALASKA AND CURRENTLY PRODUCING REGIONS" BY DPA GROUP FOR AK DEPT. NAT. RES., 3/88
 32. "DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT: FISH CULTURE IN FLOATING NET PENS" BY WASHINGTON STATE DEPARTMENT OF FISHERIES, 1/89
 33. "ETOLIN ISLAND AREA MARICULTURE PILOT PROJECT," BY ALASKA DEPT. OF NAT. RES., 1988
- AQUATIC FARM DISTRICT PROJECT MATERIALS,
1988

SCOMM 75: MARICULTURE (FISH FARMING), 1987-1990

LIST OF FILES (PAGE 3)

MICROFICHE #

34. "WORLD MARKETS FOR SALMON: PEN-REARED SALMON IMPACTS", BY SEA FARE GROUP FOR AK DEPT. OF COMMERCE, 4/88
35. VIDEOCASSETTE: "CHEMICALS IN AQUACULTURE FISH"
36. VIDEOCASSETTE: "EURO JOURNAL FISH FARMING," 2/27/90
37. VIDEOCASSETTE ON NORWEGIAN MARICULTURE INDUSTRY
38. VIDEOCASSETTE: "OYSTER CULTURE IN ALASKA"
39. VIDEOCASSETTE: "WASHINGTON'S AQUACULTURE CONTROVERSY: MARINE ENVIRONMENTAL CONSORTIUM," 2/89 (NEWS COVERAGE, FISH VIRUS, SEATTLE TV STATIONS 2-28-89/3-1-89)

SCOMM

75:1



Senate Rules Committee

Senator Richard L. (Dick) Eliason, Chairman

Dennis

826-3438

Watson

P.O. 134

Craig, Ak
99921

Keep posted on
mariculture

ALASKA STATE LEGISLATURE - SENATE

SENATOR RICHARD I. ELIASON

RULES COMMITTEE, CHAIRMAN
LABOR & COMMERCE COMMITTEE, VICE-CHAIRMAN
LEGISLATIVE COUNCIL
RESOURCES COMMITTEE
FISHERIES SUBCOMMITTEE, CHAIRMAN



P.O. BOX 143
SITKA, ALASKA 99835

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

* PRESS RELEASE * * FOR IMMEDIATE RELEASE * * PRESS RELEASE *

PUBLIC TESTIMONY ON FISH-FARMING, MARICULTURE SOUGHT IN SOUTHWEST & SOUTHEAST ALASKA BY SENATE FISHERIES PANEL

JUNEAU, ALASKA. APRIL 1, 1987. The Fisheries Subcommittee of the State Legislature's Senate Resources Committee today announced a tentative schedule of hearings in Southeast and Southwest Alaska to take public testimony on proposed aquatic farming legislation.

Senator Dick Eliason (R-Sitka), Fisheries Subcommittee Chairman, explained that the panel plans to gather testimony from different coastal regions of the state on pen-rearing of salmon and mariculture farming in general. The Senate's aquatic farming measure, Senate Bill 106, was referred to Eliason's subcommittee last week, and a comprehensive review of the issue is planned.

"We will have to objectively evaluate both the positive impact and the potential negative impact of this proposal," said Eliason. "It is in the best interests of the state to

understand, as thoroughly as possible, the ramifications of pen-rearing salmon. We have to look carefully at how pen-rearing might affect natural stocks, anticipate the impact it might have on the fishing industry and the state as a whole, rather than simply turning everyone loose in this modern day gold rush."

The Fisheries Subcommittee also includes Sen. Fred Zharoff (D-Kodiak), sponsor of SB 106, and Sen. Jim Duncan (D-Juneau). Hearings will be conducted during the month of April in Dillingham, Kodiak, Ketchikan, and Sitka, and details can be obtained from the Legislative Information Offices in those communities.

#

Attachment

For further information, please contact Senator Dick Eliason, P. O. Box V, Juneau, (907) 465-4916.

SENATE RESOURCES FISHERIES SUBCOMMITTEE
TENTATIVE HEARING SCHEDULE

FRIDAY, APRIL 10

3:15 - 5:30 (or later)

Dillingham City Hall Council Chambers, Dillingham

(Dillingham Legislative Information Office - 842-5319)

TUESDAY, APRIL 14

1:30 - 5:00

Kodiak Borough Assembly Chambers, Kodiak

(Kodiak Legislative Information Office - 486-8116)

FRIDAY, APRIL 24

9:00 - 1:00

Ketchikan Legislative Information Office conference room

(Ketchikan Legislative Information Office - 225-9675)

SATURDAY, APRIL 25

10:00 - 12:00, 1:00 - 3:00

Centennial Building, Maksoutoff Room, Sitka

(Sitka Legislative Information Office - 747-6276)

ALASKA STATE LEGISLATURE - SENATE

SENATOR RICHARD I. ELIASON

RULES COMMITTEE, CHAIRMAN
LABOR & COMMERCE COMMITTEE, VICE-CHAIRMAN
LEGISLATIVE COUNCIL
RESOURCES COMMITTEE
FISHERIES SUBCOMMITTEE, CHAIRMAN

P.O. BOX 143
SITKA, ALASKA 99835

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

MEMORANDUM

TO: Sen. Uehling, Chairman
Finance Sub-committee on Dept. of Commerce Budget

FROM: Sen. Eliason

DATE: April 6, 1987

RE: ASMI Budget

About a month ago I wrote to you in support of adequate funding for the Alaska Seafood Marketing Institute. I continue to feel very strongly that that is an important part of the state budget and hope that you will see that it receives the funding necessary to carry on with its good work.

Now I would like to request that some intent language be added to the ASMI budget to give some direction in an area which is just beginning to emerge as a possible source of some contention or confusion; that is, the area of mariculture. The distinction is between seafood which will be "farmed" in Alaska, rather than growing naturally in the wild and then being caught by fishermen. Will ASMI be under pressure to use its resources to promote the fledgling mariculture industry instead of, or in addition to, its original purpose?

ASMI was clearly established to promote natural Alaska seafood. Much of ASMI's advertising plays up the fact that this seafood is a natural wild product which feeds and grows in the "cold clear waters" off Alaska. Beyond that, ASMI's board of directors is made up of fish processors and fishermen involved in the traditional Alaskan fisheries, and the state funding of ASMI is matched by industry contribution.

Some traditional fisheries in Alaska are likely to be in direct marketing competition with mariculture which might develop. For example, the troll fishery which has always been a part of ASMI's campaign, could be severely damaged if salmon farming gets off the ground. It would certainly be unfair if ASMI began to shift its emphasis to specifically promoting pen-reared salmon. As it is, the generic advertising that ASMI does for "Alaskan seafood" will greatly benefit anyone engaged in mariculture.

My concern is that ASMI should continue to put its full energies into the promotion of the traditional fisheries and keep that industry strong and growing. If the mariculture industry chooses to establish a marketing institute that will be fine. Or perhaps eventually that industry could set up a contribution plan to ASMI, and ASMI can promote those products on a scale proportional to its contribution. But it should not take some of its already limited resources away from its original charge to begin promotion of the new industry.

I would propose the following intent language to be added to the ASMI budget:

"It is the intent of the Legislature that ASMI direct its efforts to the promotion of the traditional seafood industry of Alaska; that is, seafood which feeds and grows naturally, and is harvested by the fishing industry."

Thank you for your consideration of this request.

Jon C. Zuck
4340 Raspberry Road
Anchorage, Alaska 99502

April 7, 1987

Senator Richard Eliason
Alaska State Legislature
Pouch V (MS 3100)
Juneau, Alaska 99811

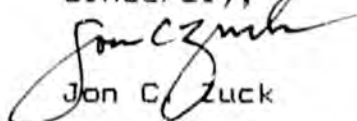
Dear Senator Eliason:

As a resident of the State of Alaska in Senate District G, I urge you to support proposed Senate Bill No. 106, "An Act relating to aquatic farming; and providing for an effective date".

Tremendous potential exists within the State of Alaska for development of an economically viable mariculture industry. This budding industry could complement the present seafood/fishing industry in providing year-round employment opportunities, opening new markets for quality seafood products, maintaining conservation efforts in our fisheries resources, in addition to adding new sources of revenues to the State's economy. The essence of the proposed bill is a framework to provide means in which to encourage responsible private sector development of mariculture opportunities. In structuring this mariculture bill, I believe careful attention must be given to streamline the present permitting process, to ensure an Alaskan owned and operated interest, and to avoid conflicts with existing fisheries (ie, salmon fisheries).

Thank you for your attention to this matter.

Sincerely,


Jon C. Zuck

cc: Senator Mitchell Abood
Senator Patrick Rodey
Senator John Coghill
Senator Fred Zharoff

This is a copy of testimony I submitted
to the House Resources Committee on March 31, 1987.
Please take this into consideration as you
review Senate Bill 106. Thank you.

Julie Hursey
Box 213
Petersburg, Alaska
F/V Thunder

APR 7 1987

Mike

I am opposed to the passage of House Bill 108, but before outlining the arguments I have with this bill, I will say that I am not opposed to mariculture ever being developed in Alaska. In particular, I think that shellfish mariculture could coexist well with the existing fisheries. However, the development of any kind of mariculture must follow a careful management plan to minimize adverse effects to the marine environment and our existing fisheries resources. My main argument with this bill is that it does not outline any such specific management plan, and too many crucial issues are left unresolved. Some of these issues include possible environmental degradation and adverse impacts on wild stocks of fish, realistic costs to the state, and conflicts over area use by different groups. I will address each of these in turn.

In order to ensure that development of the mariculture industry does not damage the environment, it is essential that a thorough monitoring plan is in place PRIOR to development. This program would oversee site selection, monitor water quality, conduct inspections of sites to maintain health standards and control any problems with disease. However, BEFORE such a monitoring program can be designed, and BEFORE the costs to state agencies can be assessed, there must be some sort of policy on the development of mariculture which would delineate the ultimate size and direction of industry growth. This bill fails to address controls over size and rate of growth of the mariculture industry.

Without knowing the ultimate number of farms, what size they will be or even where they will be, it is impossible to design an adequate environmental monitoring program, or to ensure environmental protection. According to the Gillespie Report "An Inquiry Into Finfish Aquaculture in British Columbia", environmental monitoring represents a major deficiency in the regulation of fish farms. In fact, this report mentions that site inspections have become infrequent because "approval agencies were too busy with the backlog of plans to conduct field inspections". To jeopardize environmental health because of such poor planning is inexcusable. We can learn from Canada's mistakes.

My particular concern is the effects that the uncontrolled development of salmon farming could have on environmental quality and the health of our wild stocks. It is a fact that if salmon farms are not carefully sited, fish wastes and excess feed can cause a pollution problem. Also, if a site is not properly located, penned salmon populations can become stressed and subject to disease. Canada is already having problems with farms that are improperly sited, and this in part led to the moratorium on new permits.

Julie Hursey
Box 213
Petersburg, Ak.
F/V Thunder

The probability of disease transmission from farmed salmon to wild salmon is unknown at this time. In Norway, where most of the research has been done, there were few natural stocks to worry about. Eventually, however, even they are planning to develop "green zones" or areas that are aquaculture free to protect what wild stocks they do have. House Bill 108 does not adequately address the question of protecting the health of the wild stocks. Perhaps these "green zones" should be considered. In any case, no industry should be allowed to develop at the expense of our healthy marine environment, and our wild stocks of fish.

If mariculture is to benefit state revenues, then we must have an accurate assessment of its costs to state agencies. Questions raised last week during testimony indicate that this is an area which needs to be addressed more carefully.

The number of farms that will be developed will determine the costs in part. According to Bryan Alle, the Fish and Game fiscal note is predicated on 100 permits being issued the first year, and an actual 20 farms being operational by 1992. What if this prediction falls short? Alle says that then costs will go up. But how much would they increase, and does the state have the resources to cope with a greater than expected increase in the numbers of farms? It is obvious that a range of fiscal scenarios must be presented by each agency, in order to have a more realistic picture of the probable costs, and to be able to plan accordingly.

In Canada, staff and funding levels have not kept pace with industry growth. According to Bryan Alle, there is a critical lack of pathologists in British Columbia, and we could face the same problem here if the mariculture industry grows beyond present predictions. Do these agencies have a contingency plan to deal with such a problem if it arises? What will happen if there are not adequate funds to cover the costs? Diverting funds from existing fisheries management programs is not an option. I must admit, the zero fiscal note submitted by the Department of Environmental Conservation mystifies me. Now they are reassessing that note. Good idea. I think this entire area needs more thorough investigation.

Another issue that is not addressed in this bill is how disputes over use of an area will be resolved between conflicting user groups, and the possible pre-emptive use of areas by the mariculture industry. Fish farms could be located in areas that have been traditionally used for anchorages, fishing grounds, gear storage areas, recreational uses, and even marine transportation corridors. Another source of conflict would arise if fish farms were placed in areas that are already used as spawning or nursery grounds for wild stocks. Canada is already having problems with these kinds of conflicts now, and it has reached serious proportions, according to Vince Goboyan, a Canadian delegate from the Canadian Standing Senate Committee on Fisheries.

Julie Hursey
Box 213
Petersburg, Alaska
F/V Thunder

A coastal zone management plan is urgently needed, to take inventory of our coastal resources, and to designate areas for specific uses. At this time, no such plan exists in the areas where mariculture could occur. It is essential to acknowledge the multiple uses of coastal waters and tidelands, and the diversity of user groups in order to minimize conflicts.

This brings to mind the question of how decisions will be made on area designations. Will this be made on a site by site basis, or will there be a comprehensive plan with public hearings? How much will it cost? Will the user groups have any input into this process, and what avenues will be available? The bill specifically precludes the Board of Fish from participating in site selection, but does not address the question of public participation in the process. This hardly seems fair.

In summary, I will say that I strongly object to the passage of this vaguely worded bill. I do not believe that enough planning and research has gone into determining an adequate environmental monitoring program to protect the marine environment, or our wild stocks of fish. I don't think that the costs to the state have been adequately assessed. I think the great potential for conflicts over area use could create a miasma of problems. I do not believe that we should start this industry, then develop the management plan as we go along. This would be extremely short-sighted, and could offer only band-aid solutions to the major problems which could arise. I think we can learn from the mistakes that Canada has been making.

House Bill 108 does not adequately address the problems that could arise from the development of mariculture. Until we have a better plan for avoiding problems, and until we know that we have the resources to deal with these problems as they occur, I am opposed to the passage of House Bill 108. Thank you very much for taking the time to consider this.

John McMullen
P.O. Box 021875
Juneau, Ak 99802

Hon. Jack Coghill, Chairman
Senate Resources Committee
P.O. Box V
Juneau, Ak 99811

McG
FY1
APR 7 1987

Dear Senator Coghill:

eventually
Aquatic farming for salmon and shellfish should be allowed to proceed in Alaska, but House Bill 108 and Senate Bill 106 should be held over until 1988. The present bills should be re-drafted to describe what the mariculture program is to become. Will preference for sites and permits be afforded Alaskans? Will production capacity for individual farms be capped to promote competition, and therefore lessen the probability of economic failure of individual farms?

If aquatic farming develops in the absence of state policy, I could envision a scenario in which well financed organizations would obtain the expensive sites near transportation centers for the operation of large production facilities, which would probably contain costs through the manufacture of their own fish food. Less well heeled Alaskans might well end up at more remote sites, with smaller production units, and the need to buy higher cost commercial fish food, which would result in a relatively low profit margin.

The State's "Fisheries Cabinet", comprised of the commissioners of several state agencies performed a review of the aquatic farming bills. Their staffs also met several times to discuss the problems that might be involved in administering the program. My conclusions after listening to some of those discussions are: (1) the program could easily be swallowed in the bureaucratic process, and (2) it is going to take awhile to define the regulatory process by which the program is to be administered.

A recent Attorney General's opinion stated that fish farming is legal in Alaska anyway. However, I think the state should sit on that until legislation is in place which names the Department of Commerce as the agency responsible for the program. The Department of Fish and Game is far too conservative to adequately promote this program, but does have the biological expertise in place to deal with the technical aspects of disease prevention, as an example.

Therefore, my recommendation is that HB 108 and SB 106 be held back a year and re-written while the regulatory process is ironed out. The result could be a program for Alaskans, which will be ready for implementation.

This letter is being sent to the Commerce and Labor, and Resources Committees of the House and Senate. I wish you well in your deliberations.

Sincerely,

John McMullen



ADOPTED AUGUST 1972

CITY of WRANGELL, ALASKA

INCORPORATED JUNE 15, 1903

BOX 531, 99929

(907) 874-2381

April 6, 1987

Representative Adelheid Herrmann
House Resources Committee
Alaska State Legislature
Post Office Box V, (MS 3100)
Juneau, Alaska 99811

Re: City of Wrangell Resolution #03-87-267 relating to proposed House Bill 108, and Senate Bill 106.

Dear Representative Herrmann:

As per your request during the March 31, 1987 teleconference regarding the above captioned legislation, I am enclosing a copy of the City of Wrangell Resolution #03-87-267 relating to proposed legislation for "Aquatic Farming".

Quite a large segment of Wrangell's economic base is derived from the commercial harvest of wild salmon stocks. It appears there has been no truly qualitative analysis of the short, or long range biological effects of pen raising salmon in Alaskan waters, consequently we feel it is premature to enact legislation that would legalize pen rearing of salmon at this time.

Such a simplistic approach to finfish farming may be expedient in the eyes of the potential investor, but to jeopardize our highly successful and growing salmon enhancement programs without conclusive evidence of the effects on the delicate eco-system of the existing salmon stocks and other aquatic life, would indeed seem foolhardy.

We in Wrangell are excited about the future economic potentials of mariculture and aquaculture, and have been supportive of its development, however we feel that, as the old adage says, "You should always look before you leap."

We hope you will consider our position in this matter.

Sincerely,


Jim Gove
Economic Development Director

cc: Members House Resources Committee
Members Senate Resources Committee
Representative Robin Taylor
Senator Lloyd Jones

encl.

CITY OF WRANGELL, ALASKA

RESOLUTION NO. 03-87-267

A RESOLUTION OF THE COUNCIL OF THE CITY OF WRANGELL, ALASKA, RELATING TO LEGISLATION PROPOSED IN HOUSE BILL #108 AND SENATE BILL # 106, "AN ACT RELATING TO AQUATIC FARMING AND PROVIDING FOR AN EFFECTIVE DATE", URGING A THOROUGH STUDY OF THE BIOLOGICAL AND ECONOMIC EFFECTS OF PEN REARING SALMON BEFORE ENACTING LEGISLATION LEGALIZING THE PEN REARING OF SALMON IN ALASKAN WATERS.

WHEREAS, the proposed program for pen rearing salmon in Alaska has the potential of having a negative effect on our existing fisheries and commercial fishing fleet; and

WHEREAS, the existing enhancement and hatchery program in alaska has been highly successful to date; and

WHEREAS, there have been no biological or economic studies to determine the effects the pen rearing of salmon may have on our existing fisheries economy, or the environment of existing wild salmon stocks; and

WHEREAS, the City of Wrangell has been supportive of controlled mariculture of shellfish, aquatic plant life, and existing salmon enhancement programs; and

WHEREAS, the proposed legislation encompasses the unknown of pen rearing salmon in Alaskan waters.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF WRANGELL, ALASKA:

1. The Council of the City of Wrangell Does hereby respectfully request that the Fifteenth Legislature of the State of Alaska eliminate any reference to fish farming or pen rearing of salmon in proposed House Bill No. 108 and Senate Bill No. 106.

2. The Council of the City of Wrangell further requests that the Fifteenth Legislature of the State of Alaska support the completion of a thorough study of the economic and environmental effect of pen rearing of salmon in Alaskan waters before proceeding with any legislation directed toward legalization of fish farming.

PASSED AND APPROVED: _____, MARCH 24, 1987

ATTEST:


City Clerk


Mayor



MOSS LANDING MARINE LABORATORIES

CALIFORNIA STATE UNIVERSITY FRESNO, HAYWARD, SACRAMENTO, SAN FRANCISCO, SAN JOSE, STANISLAUS

P. O. BOX 450
MOSS LANDING, CA USA
95039-0450
(408) 633-3304

April 10, 1987

Dear Senator Eliason,

I moved to Alaska in 1981 and fell in love with the State. Later I graduated from U.A.A. with a degree in Natural Science. Currently I'm in California attending graduate school as a Marine Biology/Ichthyology student with the intention of returning to Alaska when my course work is completed.

While I was an undergraduate in Alaska I worked as a seasonal aide creel censusing salmon for the Department of Fish and Game Sportfish Division. I am very proud of the Alaskan salmon runs and the progressive management by the State of Alaska that has ensured the continuation of healthy wild salmon stocks.

I am not proud that the Alaskan lawmakers are apparently conforming to reactionary, uninformed, and greed induced tactics being used by special interest groups to stymie the development of mariculture. Just last week I attended a meeting of the Pacific Fisheries Biologists in Portland, Oregon where the strongest sentiments expressed were of regret for failing to develop mariculture for the fish export market. Oregon is now importing more salmon annually than their commercial fishery produces.

Commercial fishermen work very hard for their living and I would not deny them the opportunity to earn their livelihood. But I do object to a select, self-interested group overriding the best interests of Alaska. It should be kept in perspective that the ocean and the fish that the commercial fishermen are exploiting are public resources.

Compared to the world development of mariculture, the United States is a backward country. The countries that have committed to mariculture have been very successful (Chile, Norway, Japan, Israel for example) and are exporting fish around the world.

Because of heavy exploitation, Alaskan salmon stocks are now carefully regulated. Similarly the quality of mariculture operations can be regulated through the permitting processes and revenues generated by licensing.

The time is right for Alaska to diversify its economic base. Mariculture, like commercial fishing, is hard, honest work. If Alaska continues to block the efforts of would-be maricultural

entrepreneurs, the development will happen elsewhere where the political climate is more receptive. As a consequence, the fish will still be produced and exported worldwide, at no benefit to Alaska.

I will be finishing my Master's Degree in 1988 and I hope to be able to return to Alaska to develop my own mariculture business. If I'm faced with an uphill battle all the way and denied the opportunity to earn a living in the manner I choose, I'll be forced to go elsewhere. That's the cold, hard reality for Alaska. Alaska can't afford to lose creative, forward thinking people that care about the State and its future.

Sincerely,

Lucy Wold

Lucy Wold

April 14, 1987

Senators Duncan; Eliason Jones
Pouch V
Juneau, AK 99811

Dear Senator,

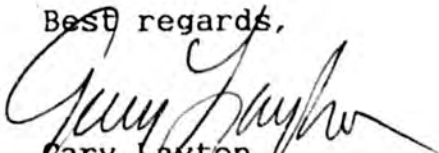
As a member of the Senate Resouce Comrittee, we urge your support of SB106, the Mariculture Bill, for two reasons.

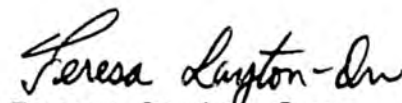
First, defeat of the Mariculture Bill will not prevent salmon farming. It will only prevent Alaskans from farming salmon. The world salmon farming industry is already established and growing.

Second, defeat of the Mariculture Bill will also prevent development of shellfish farming, a new industry with a growing market and having little, if any, conflict with established fisheries.

At a time when innovative additions to the Alaska economy are badly needed it seems wise to pass the Mariculture Bill.

Best regards,


Gary Layton
1803 Brenigan Circle
Kenai, AK 99611


Teresa Layton-Orr

Tina Ortman
P.O. Box 442
Talkeetna, AK 99676
(907) 733-2565

April 15, 1987

Dick Eliason
P.O. Box V
Juneau, AK 99811

Dear Mr. Eliason,

I am writing to voice my approval of Aquaculture. It is surprising to me that anyone would oppose developing our marine resources to their fullest. It would be like having a fertile, tilled garden plot but not planting any seeds. The fishermen who are opposed to aquaculture are like "the dinosaurs picketing the emergence of mammals". Aquaculture is the future, let's get started on it now.

Thank-you for your attention.

Kind regards,

Tina Ortman

Tina Ortman

From:
Rodger
Painter

Prospects

Of Debt and the Dollar

It was no accident that six of the so-called Group of Seven industrialized nations finally met last weekend to discuss the dollar, says Gert von der Linde, chief economist at Donaldson, Lufkin & Jenrette. The meeting came right on the heels of Brazil's announcement that it will suspend interest payments on its \$108 billion in international debt — a plan, says Mr. von der Linde, that has introduced a new threat to the dollar.

If American banks cannot collect on debt owed by Brazil or other South American nations, he says, foreign investors could lose confidence, withdraw their dollar deposits and sell the dollars on international markets — thus weakening the currency further.

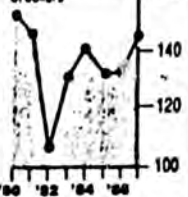
But the G-7 meeting "prevented substantial decline in the dollar," Mr. von der Linde said. And the participants' pledge to intervene in the future if the dollar dips too low should help neutralize the Brazilian factor. "With the threat of intervention, the potential negative that Brazil represents is at least postponed, if not eliminated," he said.

Plumper Profits

One reason for the stock market's soaring rise is that investors are anticipating loftier corporate profits in 1987, says Mickey

Profits

Of U.S. corporations after taxes, in billions of dollars



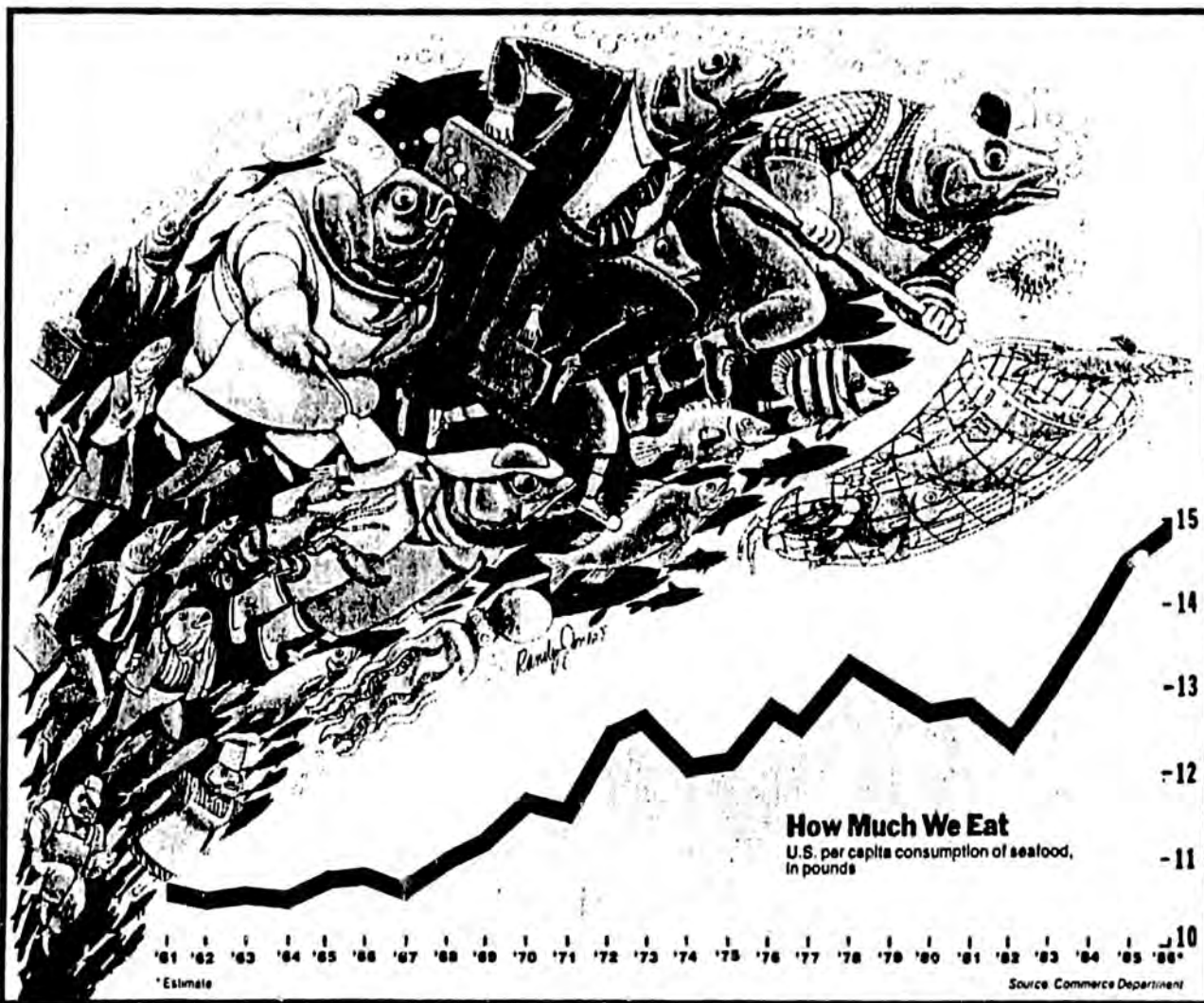
Source: '86 estimate and '87 forecast, Fidelity Bank

major wage settlements are not expected until 1988 — profit margins will increase.

Where will profit gains be the greatest? Probably among companies that have been hurt by foreign competition during the strong-dollar years — chemical and pharmaceutical corporations, for instance. Such companies are poised for greater profitability, says Mr. Levy, since by now "they have trimmed their inventories, lowered their operating costs and reduced their break-even points."

Passport Discrimination?

Across America, the Fish Are Jumpin'



maybe some lobsters or some shrimp, and that would

Seafood businessmen like to say that consumers

It's a bigger business than chicken. Even tilapia and skate wings sell.

By N. R. KLEINFELD

DURING Steve Connolly's early days in the seafood business back in the late 1940's, he was accustomed to getting the brush-off.

Working as a salesman for a Boston fish wholesaler, he would go out on his rambling pilgrimages to supermarkets and restaurants and, as he recalled, "I'd tell them I was selling fish. They'd say, 'Well,

maybe some lobsters or some shrimp,' and that would be it. All the time, I'd hear, 'We don't use much fish. Now get going. The meat man just walked in.'"

Five years ago, Mr. Connolly founded his own wholesale company in Boston, called Steve Connolly Seafood. When his salesmen make their rounds, he said, the reaction is, "You're selling seafood? Sit right down. Take the best chair. I want something of everything you've got." His company sold \$8 million worth of fish its first year and \$25 million last year.

The seafood industry has changed drastically. As Americans have become bewitched by things like orange roughy, tilapia and opakapaka, the business has gone from mom-and-pop dimensions to sizable operations like Mr. Connolly's that do \$10 million to \$40 million in fish sales annually. With something like 4,000 seafood wholesalers and processors in the country, no one dominates the fish industry, though consolidation is beginning to occur.

Seafood businessmen like to say that consumers have developed a penchant for just about anything that swims. To meet this demand, the 61-year-old Mr. Connolly has been fairly crafty in marketing peculiar fish products. Even he, though, is sometimes startled at what people will eat. His latest offering, for instance, is skinned skate wings (skate is a flat fish with the broad-winged body of a ray fish). It is tough to remove a skate's skin. Some people accomplish it by taking pliers and yanking it off. A few weeks ago, however, Mr. Connolly succeeded in adapting a machine normally used to skin liver to shave off skate wings.

"I think the wings are going to work well," he said. "They're cheap and so I see them having a wide appeal. Skate could really go."

Only a decade or two ago, fish had a dull image. It was something to eat grudgingly on Friday or when the budget was too strapped for a sirloin. Various fac-

Continued on Page 8

The Fish Are Jumpin' All



The New York Times/Sieve Liss

Culling live crabs at the dock for Connolly's Crabs in Gloucester (left). The crabs are shelled by machine.

Continued from Page 1

tors, however, have conspired to lift it from a food associated with penance to an everyday staple, and even a gourmet treat. Most of all, the concern for healthier diets has prompted consumers to gravitate to meat substitutes, like fish, that are low in calories and in fat. The steady spread of aquaculture, the science of raising fish on watery farms outside of oceans, has increased the seafood stock; some 12 percent of total American fish consumption now comes off farms, four times the amount in 1975. And wider use of airplanes to transport fish and better refrigeration equipment has introduced more fresh species to inland parts of the country.

These factors, says the National Marine Fisheries Service, have pushed per-capita seafood consumption up from 10.9 pounds in 1966 to 12.9 pounds in 1976 to 14.5 pounds in 1985. Expectations are that consumption may approach 30 pounds by 1990. That is still well shy of chicken, in the \$9.5-pound neighborhood, and beef, at a dwindling 79.

Nobody, though, expects fish to catch poultry or meat. Not enough fish swim in the world's waters for that to happen, even though America imports more than half its seafood. And most fish do not grow quickly enough for fish farms to meet huge demand. If chicken eating goes up, farmers can toss more eggs into the incubators and within weeks chickens are plump enough for market. Fish,

however, can take two or three years to mature, at sea or on the farm.

"To increase per-capita consumption by one pound," explained Lee Weddig, the executive vice president of the National Fisheries Institute, a trade association, "you would need to catch 700 million additional pounds of fish in the water. The total amount of cod and haddock caught in New England is about 100 million pounds. So you see the problem."

Nevertheless, the taste for fish and the preoccupation with health, have elevated seafood to a roughly \$16 billion annual business — compared with \$12 billion in revenue for chicken, which is cheaper, and \$44 billion for beef — and encouraged a lot of companies to take a new look at it.

Now you can visit any burger outlet — McDonald's, Burger King, Wendy's — and find fish. There is also a growing network of fish specialty chains like Long John Silver, Sea Galle and the Red Lobster. Supermarkets, meanwhile, are opening new and sizable seafood sections. And big corporations like Ralston Purina, W.R. Grace, Campbell Soup, Weyerhaeuser and Con Agra have gotten into fish farming. One group of companies has applied its energies to producing imitation fish products.

Demand keeps climbing even though prices of some species have reached the \$7 to \$10 a pound range. New, inexpensive varieties, however, are hitting the market, some selling for as little as \$2 a pound. Fish are hot

enough that "trash fish" like monkfish that used to be dumped back are now being served in expensive restaurants and at classy dinner parties.

Kroger's feels it is as plugged-in as the wisest supermarket chains to middle American tastes. It was one of the first to discover fresh seafood — even though its 1,050 stores are largely sprinkled through the Midwest, where not a lot of fish swim.

Kroger will fly red snapper in from Taiwan, if that's the only place it can get enough. The chain even has its own fresh fish distribution warehouse, handling 72 varieties, in Greensburg, Ind.

Kroger's got into fresh seafood in 1977, and is steadily adding departments to all of its stores. It has gotten up to store No. 491. Its sales are growing by 15 percent a year, according to Bill Parker, a vice president. "It's probably the best growth category we have," he added. Fish, moreover, generally command higher markups than meat and poultry, Mr. Parker said. And the supermarkets realize that there is an enormous opportunity to be mined, since fish have predominantly been a restaurant product. According to surveys, two-thirds of the seafood sold is consumed at restaurants, though fish people believe the pendulum is starting to swing toward home preparation.

Grand Union took enough care with its new seafood departments that it hired Milton Glaser, a well-known

graphic designer, to work on them. The white-tiled departments, with their ice cases and tanks for live shellfish, have helped Grand Union's seafood sales to spurt by 12 percent in each of the last two years, according to Steve Osder, the director of seafood merchandising.

Throughout the country, supermarkets have gotten onto a fish kick, putting in more display space and snazzier departments, as well as stocking greater variety. Supermarkets, Mr. Osder said, still sell more frozen than fresh seafood, although sales of frozen seafood have been stagnant. Canned fish, particularly tuna, is another growing category, driven by nutritional concerns and the American infatuation with the tuna fish sandwich; in 1985, annual per-capita canned fish consumption was 5.2 pounds, the highest level since 1937, when it was 5.3.

After tuna, shrimp is the most widely purchased seafood, in pounds sold, followed by codfish, clams and salmon. What's nice about fish is the variety. In all, something like 400 species are available to buy. Some of the hot newcomers are the orange roughy, the kingclip and the catfish (which used to be eaten mainly in the South but is now being promoted and accepted in the North). Kroger's, in fact, says catfish is its No. 1 seller.

There is still a sticky obstacle to selling catfish and other fresh seafood for home consumption: People don't know how to prepare them.

Not to worry at Kroger's. All of its fish departments pass out recipes. Some stores sport video units that enable a customer to call up recipes. At still others, Kroger's has specially designed scales. When attendants weigh a fish, they can punch a button and the scale will print out a recipe on the price sticker. Up to 150 recipes can be stored in each scale.

Recipes or not, it's a dicey managing seafood departments. Mr. Osder of Grand Union knows that all too well. Availability fluctuates almost daily. Prices become unpredictable, often surging with little warning. It has to do with the nature of how we get fish.

"Unlike all other agricultural commodities in the food chain, seafood is the only hunted commodity," Mr. Osder said. "Other products are farmed, and there is a degree of control. Some fish are farmed now — mainly trout, catfish and salmon — but everything else is hunted."

When Bob Valenti goes to get his fish, he steps outside his weather-beaten office, walks a dozen feet and gathers them up. Wind, rain, storms — those things don't stop him.

For 11 years, Bob Valenti has been raising striped bass in artificially made pools beside Napeague Bay in Amagansett, L.I. The early settlers called the area the Promised Land, and that's what Mr. Valenti hopes it will become for his Multi Aquaculture Systems Inc.

He is a jowly man of 43, roughly dressed, with a contagiously cheerful disposition. He gave up a career as a fish geneticist working for private marine laboratories to become a farmer. "I got tired of the politics involved in getting funds," he said. "So, like a lot of fish research people, I thought, hey, aquaculture looks promising. Let's go do it."

The heart of his operation is 22 circular tanks, each 26 feet in diameter. Some people, he said, think farm fish aren't as tasty. He shook his head vigorously. "How can't it taste the same? It swims in water, and the water has to be clean to keep the fish swimming, right?"

The rapid rise in demand for seafood has drained American waters and taxed the nation's fishing fleets. Hence, 64 percent of the all fish sold in the United States is imported, the fisheries service says. That makes this nation the world's No. 2 importer of fish, after Japan. We are also the No. 2 exporter, after Canada, selling mostly salmon and crab to Japan. Imports, though, far outshadow exports; in 1985, the latest figures available, about \$4 billion in fish came in; about \$1 billion went out.

To help keep fish on the dining table, entrepreneurs like Mr. Valenti and huge corporations have gotten into aquaculture, which is being looked on as the best hope of producing enough fish in this country to keep up with growing demand. But researchers have not yet discovered ways to grow many species in artificial settings. And most fish take years of feeding before they get big enough and therefore are often too expensive to farm profitably.

Fish farming began in China 4,000 years ago, but the sophistication has greatly improved as techniques have been perfected in the last decade. The most popular farmed seafood in this country are salmon, trout, crawfish



The New York Times/Michael Shephard
Amagansett fish farmer Bob Valenti showing off a stuffed striped bass (above). A skate about to be skinned.



and oysters. Virtually all the rainbow trout sold commercially in America is farmed, as is 95 percent of the catfish. These are species with short and therefore relatively inexpensive growing cycles. But other seafood — abalone, mussels, salmon — are being tried, and the technology is such that some species, like striped bass, now grow to eating size more quickly on farms than in their natural habitats offshore.

Because of all this, Bob Valenti thinks he is on the brink of big dollars. His farm strategy has gone through several cycles. For the first five years, he raised pan-sized striped bass to sell to restaurants and wholesalers, but then the commercial catch became plentiful enough that his income almost disappeared. He switched to raising young fish to sell to stock lakes or for other farms.

But a dwindling supply of striped bass, as well as contamination of them in some waters, has prompted various states in the last few years to restrict striped bass fishing. Thus Mr. Valenti is returning this year to raising pan-sized bass. He figures to produce about 35,000 pounds a year. Don't look for his fish tomorrow. It takes 12 to 18 months for farm bass to grow big enough to cook.

A lot of seafood fans seem perfectly happy to dine on surimi — a cheap fish disguised as an expensive one.

The disguise process begins with a fish block, generally made from the flesh of pollack, a fish available in enormous quantities from the Bering Sea. By complex cooking and blending techniques, the block is fashioned into different filaments, lengths and structures. Mixed in are ingredients such as egg white, wheat, food coloring and often artificial flavoring so that the pollack winds up appearing like a shellfish. Depending on the ingredients, it can appear as shrimp or crab or look almost anything.

"Surimi is like flour to the baker," said David Berelson Jr., the president of the Berelson Company, the biggest American surimi marketer. "It can be created into any product."

Berelson, which is based in San Francisco, brought the idea to America in 1975 from Japan, where surimi is an old art. The Sugyo Company, a small enterprise in Nanao, had sold Berelson other fish products, and when executives told David Berelson Jr. about surimi, lights went off.

"I was born and raised out in California," Mr. Berelson said, "and I always loved crab. I saw it get very scarce and very expensive and I thought, my God, this is a wonderful opportunity."

Berelson's Sea Legs brand is now the biggest selling surimi product. Sea Legs Supreme, a crab salad, is the most popular item, though the company also markets other crab and lobster surimi products. About 20 other companies also sell surimi versions of shrimp and scallops.

Since surimi's arrival in the United States, the concept has blossomed into what is estimated to be a \$400 million business. Berelson won't disclose what its surimi revenues are, but it says industrywide surimi sales

have doubled each year, until they leveled off in 1986 because of price increases of about 20 percent, set off by the rise in the value of the yen.

Surimi isn't for everyone. Some say it tastes awful compared with unprocessed fish. The product, moreover, doesn't contain as much protein or as many nutrients as fresh fish. Nevertheless, some restaurants drop surimi into salads and seafood offerings without advising consumers. That's legal everywhere but in Maine, where seafood ingredients must be identified.

Many fish, unfortunately, don't sound like something you would want to put in your mouth. They've got these abysmal names. Do you want to go out on a date and order dogfish? Would you ever serve the to-laws a helping of blowfish?

There's a simple solution. Change the names. Fish wholesalers have. Dogfish is more commonly known now as salmon shark or grayfish. Blowfish is called sea roach or sea squab. Monkfish, which not only sounds like something best left in the sea but also happens to be about the ugliest fish in the ocean, goes by lotie, its French name. "The name doesn't sound so hot, so you make up new ones," said Bill Desmond, a vice president of Inland Seafood, an Atlanta fish wholesaler. "A lot of the seafood business is marketing. Just about any fish in the sea, you have something similar to it. So you borrow that name."

The three-year-old Sea Grill Restaurant in Manhattan, in fact, has found a marketing edge by routing bizarre fish. Bob McKay, the assistant director, says that the establishment has been especially successful with Hawaiian fish like mahi, uno and opak. "They're going to be one of the trends to watch in 1987," he said. "We're finding that the public really has an open mind. They'll try these things they never heard of. And don't blame them. They're good."

STATE OF ALASKA 1987 LEGISLATIVE SESSION
FISCAL NOTE

REQUEST: _____

Bill Version: CSHB 108(L&C)

Publish Date: HOUSE 3/4/87

Revision Date: _____

Agency Affected: ADF&G

Title: _____

BRU: FRED

Sponsor: Zharoff et al. Ellis et al.

Components: FRED

Requestor: _____

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
PERSONAL SERVICES		157	157	183	236	330
TRAVEL		6	6	10	17	20
CONTRACTUAL		1	1	2	4	8
SUPPLIES		2	4	6	10	22
EQUIPMENT				1	2	5
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING		166	168	202	269	385

CAPITAL						
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REVENUE						
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FUNDING: (Thousands of Dollars)

GENERAL FUND		166	168	202	269	385
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME		2	2	3	3.5	9
PART-TIME		1	2	1	2	0
TEMPORARY		1	0	0	0	0

ANALYSIS: (Attach a separate page if necessary)

This analysis estimates costs of pathology services and permitting based on 100 permit applications in FY 88, ultimately resulting in 20 operational fish farms by FY 92 of economically significant size.

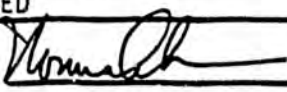
(see attached for additional comments)

Prepared by: Dr. Mike Kaill

Phone: 465-4160

Division: ADF&G/FRED

Date: _____

Approved by Commissioner: 

Date: 3-2-87

Agency: _____

Distribution (by preparer):

Legislative Finance

Legislative Sponsor

Requestor

Office of Management and Budget

Impacted Agencies

Senate Secretary

CONTINUATION OF FISCAL NOTE, SB106/HB108. rev 3/2/87

Estimated cost of services to be provided by ADF&G are fish pathology services, permit processing and technical oversight.

For pathology services, estimated costs are based on current workload and budget for the section at this time, to arrive at a per-unit cost (e.g. \$600,000/37 hatcheries = \$16,000/hatchery). An additional \$12,000 is budgeted for investigations and diagnostic services in the first year. Types of services are: diagnostic, broodstock, water source analysis, shellfish certification, pre-release inspection, and human health concerns.

For permitting and technical oversight services, an assessment of work requirements was made by calling the Marine Resources Division of the B.C. provincial government. For the first three years, two full-time technicians would be required. Thereafter, manpower needs will diminish. The types of work to be undertaken will be communication with applicants, review of application materials, coordination with programs such as coastal zone consistency review, and technical biology and fish culture oversight.

It is very difficult to anticipate what will happen if a mariculture program is enabled in Alaska. We have prepared this note based on observations and consultations with managers of similar programs. We then applied this to Alaska, using the incomplete data at hand. These must be considered rough estimates of cost. As further information becomes available, the fiscal note could change. Also, as the bill becomes modified as it passes through the legislative process, there may be changes in the bill that will have corresponding changes in the fiscal note.

STATE OF ALASKA 1987 LEGISLATIVE SESSION

FISCAL NOTE

REQUEST:

Bill Version: CSHB 108(L&C)

Publish Date: HOUSE 3/4/87

Revision Date: N/A

Title: Aquatic Farming: Mariculture

Agency Affected: Commerce & Econ. Dev.

BRU: Economic Development Advocates

Sponsor: Rep. Ellis/Senator Zharoff

Components: Office of Commercial

Requestor:

Fisheries Development

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
PERSONAL SERVICES	15.0	5.5	6.0	6.6	7.3	8.0
TRAVEL	10.0	5.5	6.1	6.7	7.3	8.1
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	25.0	11.0	12.1	13.3	14.6	16.1

CAPITAL						
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REVENUE	5.0	10.0	15.0	20.0	25.0	30.0
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FUNDING: (Thousands of Dollars)

GENERAL FUND	25.0	11.0	12.1	13.3	14.6	16.1
FEDERAL FUNDS						
OTHER						
TOTAL	25.0	11.0	12.1	13.3	14.6	16.1

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

This program will become a priority mission of OCFD and shall be assigned to existing personnel. Initial permit requests are not expected to exceed 80% of one Development Specialist II available time. Travel is programmed for site visits as envisioned by the bill and contractual includes phone, photocopy and

Prepared by: W.G. Paulick
 Division: Office of Commercial Fisheries Development

Phone: 465-2162

Date: 2/17/87

Approved by Commissioner: Anthony Smith

Date: 2/17/87

Agency: Department of Commerce and Economic Development**Distribution (by preparer):**

Legislative Finance

Legislative Sponsor

Requestor

Office of Management and Budget

Impacted Agency(ies)

Senate Secretary

5384W21787a

1987 LEGISLATIVE SESSION
FISCAL NOTE

Analysis: (Continued)

other expenses related to permitting as required by the bill. FY 87 includes funding for public hearings, etc., to finalize new regulations. Program receipts have been estimated by using a fee of \$100 per annual permit; 50 new permits per year.

STATE OF ALASKA 1987 LEGISLATIVE SESSION

FISCAL NOTE

REQUEST:

Bill Version: CSHB 108(L&C)

Publish Date: HOUSE 3/4/87

Revision Date: 2-4-87

Title: An Act Relating to Aquatic FarmingAgency Affected: Natural Resources
BRU: Land and Water ManagementSponsor: Ellis, Rieger, Cotten, Brown,
Requestor: etc.

Components: _____

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
PERSONAL SERVICES	0	84.6	171.3	171.3	210.6	210.6
TRAVEL	0	20.0	25.0	25.0	22.0	22.0
CONTRACTUAL	0	2.0	4.0	4.0	4.0	4.0
SUPPLIES	0	1.0	2.0	2.0	2.0	2.0
EQUIPMENT	0	0	0	0	0	0
LAND & STRUCTURES	0	0	0	0	0	0
GRANTS, CLAIMS	0	0	0	0	0	0
MISCELLANEOUS	0	0	0	0	0	0
TOTAL OPERATING	0	107.6	202.3	202.3	238.6	238.6

CAPITAL	0	0	0	0	0	0
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REVENUE	0	15.5	23.5	32.0	36.0	40.0
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FUNDING: (Thousands of Dollars)

GENERAL FUND	0	107.6	202.3	202.3	238.6	238.6
FEDERAL FUNDS	0	0	0	0	0	0
OTHER	0	0	0	0	0	0
TOTAL	0	107.6	202.3	202.3	238.6	238.6

POSITIONS:

FULL-TIME	0	2	3	3	4	4
PART-TIME	0	0	2	2	2	2
TEMPORARY	0	0	0	0	0	0

ANALYSIS : (Attach a separate page if necessary)

See Attached

Prepared by: Paula Burgess
Division: Land and Water ManagementPhone: 465-3400Date: 2/13/87Approved by Commissioner: [Signature]
Agency: Natural Resources

Date: _____

Distribution (by preparer):

Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)
Senate Secretary

In order to assess the fiscal impact of HB 108, we estimate the number of new applications for tideland leases and permits that we expect. The actual number of applications will vary depending upon the fee structure for leasing and permitting, and the "prove up" requirements of the bill. At present our permit fees are extremely low and the cost of obtaining a lease is quite high. At this stage no "land law" accompanies the bill to alter the lease or permit structure. We recognize that certain changes are desirable to encourage growth of the industry, such as the acceptance of a paper plat rather than a full survey for a lease in remote areas. While such changes may be forthcoming in later committees, the fiscal note here reflects the existing permit structure.

We estimate the number of new applications the first year to be the following:

- 30 salmon
- 25 scallop
- 10 oyster
- 3 mussel
- 2 kelp

We require one adjudicator in the Southeast Region and one adjudicator in the Southcentral Region to handle the new applications. The second year we require one additional adjudicator (to be located where the need is the greatest) to handle additional new applications. By the fourth year we are assuming the need of two adjudicators in each of the two regions.

The second year we require a part time contract administrator to handle the accumulation of two years of lease contracts, and a part time surveyor to review survey plats. (The survey cost may be reduced somewhat if the bill is amended to allow paper plats rather than full surveys in remote areas.)

A goal of the state and of those seriously interested in aquatic farming is to avoid land speculation. In order to accomplish this, it will be necessary to inspect most lease and permit sites once a year. Some inspections can be combined with other field investigations, and some may be performed under cooperative agreements with other agencies. A lean inspection program will cost \$10,000 for each adjudicator the first year (travel and per diem). In subsequent years the cost will decline as we establish inspection efficiencies.

Under existing statutes and regulations, the number of leases and permits estimated above would generate

approximately \$15,500 in revenue the first year. As the number of operations increases each year, the revenue increases modestly. If the bill were amended to allow the Commissioner to charge a percentage of gross receipts, revenues could increase substantially once the industry began to flourish.

Position Summary

Fiscal Year '88

Two (2) - Natural Resource Officers II (Range 16)

Fiscal Years '89 and '90

Three (3) - Natural Resource Officers II (Range 16)
One (1) - Part-time Contract Administrator (Range 14)
One (1) - Part-time Surveyor (Range 20)

Fiscal Years '91 and '92

Four (4) - Natural Resource Officers II (Range 16)
One (1) - Part-time Contract Administrator (Range 14)
One (1) - Part-time Surveyor (Range 20)

STATE OF ALASKA 1987 LEGISLATIVE SESSION

FISCAL NOTE

Bill Version: CSHB 108(L&C)
 Publish Date: HOUSE 3/4/87

REQUEST

Bill/Resolution No.: HB 108
 Title: "An Act relating to aquatic farming"
 Sponsor: ELLIS
 Requestor:
 Date of Request:

FISCAL DETAIL

Agency Affected: Environmental Conservation
 BRU: Environmental Health
 Components: Seafood Industry,
 Palmer Laboratory

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0	0	0	0	0	0

CAPITAL	0	0	0	0	0	0
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REVENUE	0	0	0	0	0	0
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FUNDING : (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	0	0	0	0	0	0

POSITIONS :

FULL-TIME	0	0	0	0	0	0
PART-TIME	0	0	0	0	0	0
TEMPORARY	0	0	0	0	0	0

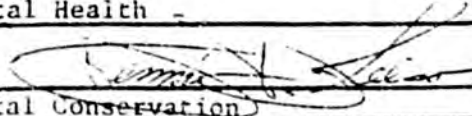
ANALYSIS : Attach a separate page if necessary

This Bill will have no fiscal impact on the Department of Environmental Conservation.

Prepared by: Douglas Donegan
 Division: Environmental Health

Phone: 465-2609

Date:

Approved by Commissioner: 
 Agency: Environmental Conservation

Date: 4/16/87

Distribution (by Agency preparing fiscal note):

Legislative Finance
 Legislative Sponsor
 Requestor
 Office of Management and Budget
 Impacted Agency(ies)



UNITED FISHERMEN OF ALASKA

SB106
Jack Cadigan
Executive Director
907-586-2820
1-800-478-FISH

BOB BLAKE TESTIMONY
SENATE LABOR & COMMERCE COMMITTEE 3/18/87

I hope each of the Committee Members has had the opportunity to read the paper describing the UFA's basic concerns on pen reared salmon I submitted for your past hearing on SB106. Those concerns we have listed are genuine and sincere, and we respectfully request that this Committee take them into serious consideration before moving this legislation. I would like to add a few additional comments and factors that should be evaluated.

Jobs - Additional employment has been the motherhood cry issued by proponents of pen reared salmon. We contend, what jobs? In 1985, Scotland had 83 salmon farms which employed 500 people. Norway had 500 farms which employed 1500 people. The cost estimate I have heard from a proponent of salmon farming is that there could possibly be 100 farms in Alaska. If we use an average between Scotland and Norway, we would employ 350 people directly. By comparison, in the Prince William Sound commercial fishery alone, there are 258 seine boats with an average of 4 persons per boat, or 1032 jobs and 538 drift boats for approximately 650 jobs, or a total of 1682 jobs on fishing boats alone. There are at least 150 additional jobs provided by the tender fleet. On the processing end, during the peak of the season, Cordova uses approximately 500 workers, Valdez 300 workers, Seward, Whittier and Homer, 200 to 300 workers, and probably on floaters, 250 to 300 workers, for a total of at least 1250 workers. This does not take into account fish that are hauled to Kodiak or upper Cook Inlet for processing. That is a total of 2932 jobs directly attributed to catching and processing common property salmon in just Prince William Sound alone. It does not take into account the many, many support service related jobs. Cordova would not exist if it were not for the vitality of the Prince William Sound salmon fishery. There are 11,584 individual salmon permit holders in Alaska, and there are more permits than that in total. Without going through a lengthy research process, I have not extrapolated the exact number of fishing jobs that number covers, but at a minimum, it is over 35,000 salmon fishery related jobs! The benefit of providing 350 jobs in direct salmon farming to us is irrelevant when compared to taking a chance on jeopardizing the 35,000 direct fishing jobs.

HB108, at least, states that aquatic farming be developed in a manner which assures full participation and full benefits to the people of the State. As that relates to actual jobs on salmon farms, I would think that this Committee might take a look at the British Columbia salmon farming industry to find out how many of the B.C. jobs are taken up by people who speak Norwegian and how many are actually held by Canadians.

Fiscal Impacts - One concern I would like to reemphasize before this Committee today is the very real concern fishermen have for lack of funding being provided by the State to continue research, management, and enhancement of the common property fisheries. We are very concerned that not only existing fisheries needs won't be met, but also if pen reared salmon was allowed, that there wouldn't be adequate funding available to cover proper management, enforcement, research, etc., for that industry also. This has already happened in B.C.. The pen farmed salmon industry is expanding rapidly and the budgets for research, management, enforcement and monitoring are being cut. The same thing is happening right now in Alaska before we even get involved with pen reared salmon! Many necessary research and management programs have been cut from ADF&G's Commercial Fish Division's budget because of shortfalls in State revenue. A prime example of ADF&G budget cuts is reflected also in the F.R.E.D. Division's budget which has four common property fish hatcheries being mothballed in FY88 for lack of funds. The one I'm most familiar with is the Cannery Creek hatchery in Prince William Sound, which for lack of approximately \$150,000 is scheduled for closure in July. This hatchery has a 100 million egg capacity, capable of producing between 3.5 and 4 million pink salmon, which in 1987 would be worth between \$3.5-\$5 million to the fishery. The raw fish tax revenue to the State from those fish would be \$140,000-\$200,000, with the regional non-profit aquaculture association receiving an additional \$70-\$100,000 in enhancement tax.

If the State is unwilling or unable to fund existing programs that have such significant benefit to the State and its people, why is the Legislature so intent on supporting a high-risk industry like pen reared salmon, which we don't even know is economically viable in Alaska, which will provide very few jobs or benefits to the State, and is a possible detriment to our proven, historic industry?

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF THE COMMISSIONER

STEVE COWPER, GOVERNOR

400 WILLOUGHBY AVE.
JUNEAU, ALASKA 99801-1796
PHONE: (907) 465-2400

February 24, 1987

The Honorable Tim Kelly
Chairman
Senate Labor and Commerce Committee
Alaska State Legislature
P.O. Box V
Juneau, AK 99811

Dear Senator Kelly:

Subject: Senate Bill 106, relating to aquatic farming.

Position: The Department of Natural Resources recommends that the Senate Labor and Commerce Committee pass SB 106 to the Resources Committee for further consideration of land use issues.

Background: SB 106 provides for the construction and operation of aquatic farms. Under AS 38.05.070, land, including tide, submerged or shoreland, to which the state holds title, may be leased in a manner provided in AS 38.05.070 - 38.05.105 and subject to the approval of the Commissioner of Natural Resources.

Recommendation: While the Department of Natural Resources generally supports the goals of SB 106 and the creation of new commercial opportunities through utilization of the state's resources, in the opinion of the department, SB 106 needs to further address land use issues.

Specifically, the department recommends that leasing and permitting processes be designed to encourage development of the mariculture industry, but discourage speculation. This could be accomplished, for example, by requiring applicants to demonstrate by prove up that their projects are viable by preparation of a development schedule. Additionally, leasing and permitting alternatives which encourage small operations, such as lease fees or rent based on gross receipts, could be considered.

The enclosed fiscal note is based on an estimate of the number of leases and permits that would result from the bill

Senator Tim Kelly

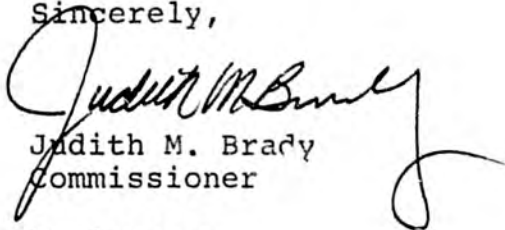
-2-

February 24, 1987

as presently written. The actual number of new applications will undoubtedly vary depending on the fee structure for leasing and permitting and any special requirements that the final bill contains.

I would be pleased to make my staff available to work with your staff regarding the land use issue. If you would like additional information or have any questions, please contact my office.

Sincerely,

A handwritten signature in dark ink, appearing to read "Judith M. Brady", is written over the typed name and title.

Judith M. Brady
Commissioner

Enclosures

cc: Committee Members
Sponsors
George Sullivan, Governor's Office
Rod Swope, Governor's Office
Paul Peyton, DCED
David Benton, ADFG
Tom Hawkins, DLWM

STATE OF ALASKA 1987 LEGISLATIVE SESSION

FISCAL NOTE

REQUEST:

Revision Date: 2/24/87
 Title: An act relating to aquatic farming
 Sponsor: Zharoff, Sturgulewski, et al
 Requestor: Senate Labor & Commerce

Bill Version: SB 106
 Publish Date: _____

Agency Affected: Natural Resources
 BRU: Land and Water Management

Components: _____

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
PERSONAL SERVICES	0	84.6	171.3	171.3	210.6	210.6
TRAVEL	0	20.0	25.0	25.0	22.0	22.0
CONTRACTUAL	0	2.0	4.0	4.0	4.0	4.0
SUPPLIES	0	1.0	2.0	2.0	2.0	2.0
EQUIPMENT	0	0	0	0	0	0
LAND & STRUCTURES	0	0	0	0	0	0
GRANTS, CLAIMS	0	0	0	0	0	0
MISCELLANEOUS	0	0	0	0	0	0
TOTAL OPERATING	0	107.6	202.3	202.3	238.6	238.6

CAPITAL	0	0	0	0	0	0
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REVENUE	0	15.5	23.5	32.0	36.0	40.0
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FUNDING: (Thousands of Dollars)

GENERAL FUND	0	107.6	202.3	202.3	238.6	238.6
FEDERAL FUNDS	0	0	0	0	0	0
OTHER	0	0	0	0	0	0
TOTAL	0	107.6	202.3	202.3	238.6	238.6

POSITIONS:

FULL-TIME	0	2	3	3	4	4
PART-TIME	0	0	2	2	2	2
TEMPORARY	0	0	0	0	0	0

ANALYSIS : (Attach a separate page if necessary)

See Attached

Prepared by: Paula Burgess Phone: 465-3400
 Division: Land and Water Management Date: 2/13/87

Approved by Commissioner: Judith M. Bandy Date: _____
 Agency: Natural Resources

Distribution (by preparer):

Legislative Finance
 Legislative Sponsor
 Requestor
 Office of Management and Budget
 Impacted Agency(ies)
 Senate Secretary

SB 106 Analysis

In order to assess the fiscal impact of SB 106, we estimate the number of new applications for tideland leases and permits that we expect. The actual number of applications will vary depending upon the fee structure for leasing and permitting, and the "prove up" requirements of the bill. At present our permit fees are extremely low and the cost of obtaining a lease is quite high. At this stage no "land law" accompanies the bill to alter the lease or permit structure. We recognize that certain changes are desirable to encourage growth of the industry, such as the acceptance of a paper plat rather than a full survey for a lease in remote areas. While such changes may be forthcoming in later committees, the fiscal note here reflects the existing permit structure.

We estimate the number of new applications the first year to be the following:

- 30 salmon
- 25 scallop
- 10 oyster
- 3 mussel
- 2 kelp

We require one adjudicator in the Southeast Region and one adjudicator in the Southcentral Region to handle the new applications. The second year we require one additional adjudicator (to be located where the need is greatest) to handle additional new applications. By the fourth year we are assuming the need of two adjudicators in each of the two regions.

The second year we require a part-time contract administrator to handle the accumulation of two years of lease contracts, and a part-time surveyor to review survey plats. (The survey cost may be reduced somewhat if the bill is amended to allow paper plats rather than full surveys in remote areas.)

A goal of the state and of those seriously interested in aquatic farming is to avoid land speculation. In order to accomplish this, it will be necessary to inspect most lease and permit sites once a year. Some inspections can be combined with other field investigations, and some may be performed under cooperative agreements with other agencies. A lean inspection program will cost \$10,000 for each adjudicator the first year (travel and per diem). In subsequent years the cost will decline as we establish inspection efficiencies.

Under existing statutes and regulations, the number of leases and permits estimated above would generate approximately \$15,500 in revenue the first year. As the number of operations increases each year, the revenue increases modestly. If the bill were amended to allow the commissioner to charge a percentage of gross receipts, revenues could increase substantially once the industry began to flourish.

Position Summary

Fiscal Year '88

Two (2) - Natural Resource Officers II (Range 16)

Fiscal Years '89 and '90

Three (3) - Natural Resource Officers II (Range 16)
One (1) - Part-time Contract Administrator (Range 14)
One (1) - Part-time Surveyor (Range 20)

Fiscal Years '91 and '92

Four (4) - Natural Resource Officers II (Range 16)
One (1) - Part-time Contract Administrator (Range 14)
One (1) - Part-time Surveyor (Range 20)

BY ZHAROFF, STURGULEWSKI,
COGHILL, UEHLING,
JOSEPHSON, FAIKS AND RODEY

1 IN THE SENATE

2 SENATE BILL NO. 106

3 IN THE LEGISLATURE OF THE STATE OF ALASKA

4 FIFTEENTH LEGISLATURE - FIRST SESSION

5 A BILL

6 For an Act entitled: "An Act relating to aquatic farming; and providing
7 for an effective date."

8 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

9 * Section 1. FINDINGS AND POLICY. (a) The legislature finds that

10 (1) aquatic farming in the state would provide a consistent
11 source of quality food, provide new jobs, increase state exports, create
12 new commercial fishing and other business opportunities, and increase the
13 stability and diversity of the state's economy;

14 (2) many areas of the state are ecologically suited for aquatic
15 farming development;

16 (3) aquatic farming would complement and enhance the variety and
17 quality of Alaska seafood and aquatic products, and thereby benefit the
18 state's economy; and

19 (4) the principal responsibility for development of aquatic
20 farming in the state rests with the private sector.

21 (b) It is the policy of the state to encourage the establishment and
22 growth of an aquatic farming industry and to assist in the planning and
23 orderly development of the industry.

24 * Sec. 2. AS 08 is amended by adding a new chapter to read:

25 CHAPTER 06. AQUATIC FARMING.

26 Sec. 08.06.010 AQUATIC FARM AND HATCHERY PERMITS. (a) A
27 person may not, without a permit from the commissioner, construct or
28 operate

29 (1) an aquatic farm; or

1 (2) a hatchery for the purpose of supplying aquatic plants
2 or aquatic animals to an aquatic farm.

3 (b) A permit issued under this section authorizes the permittee,
4 subject to the conditions of this chapter, to acquire, purchase, offer
5 to purchase, transfer, possess, sell, and offer to sell stock and
6 aquatic farm products that are used or reared at the hatchery or
7 aquatic farm.

8 (c) The commissioner, after consulting with the commissioner of
9 fish and game and the commissioner of environmental conservation, may
10 attach conditions to a permit issued under this section that are
11 necessary to protect the public health or natural stock.

12 Sec. 08.06.020. PERMIT APPLICATION AND RENEWAL. (a) An
13 applicant for an aquatic farming or hatchery permit required under
14 AS 08.06.010 shall apply on a form prescribed by the commissioner.

15 (b) An application for renewal must be accompanied by fees
16 required under AS 08.01.065 and a report of a health inspection of the
17 farm or hatchery to be permitted. The inspection shall be conducted
18 by the Department of Fish and Game or by a fish disease diagnostician
19 approved by the Department of Fish and Game. The inspection shall be
20 conducted not more than 30 days before the application is submitted to
21 the department.

22 Sec. 08.06.030. AQUATIC FARM STOCK ACQUISITION PERMITS. (a) A
23 person may not acquire aquatic plants or aquatic animals from wild
24 stock in the state for the purpose of supplying stock to an aquatic
25 farm or hatchery required to have a permit under AS 08.06.010 unless
26 the person holds an acquisition permit from the commissioner of fish
27 and game.

28 (b) An acquisition permit authorizes the permit holder to ac-
29 quire the species and quantities of wild stock in the state specified

1 in the permit for the purpose of supplying stock to an aquatic farm or
2 hatchery required to have a permit under AS 08.06.010.

3 (c) The commissioner of fish and game, in consultation with the
4 commissioner of commerce and economic development, shall specify the
5 expiration date of an acquisition permit and may attach conditions to
6 an acquisition permit, including conditions relating to the time,
7 place, and manner of harvest. Size, gear, place, time, licensing, and
8 other limitations applicable to sport, commercial, or subsistence
9 harvest of aquatic plants and aquatic animals do not apply to a har-
10 vest with a permit issued under this section.

11 (d) The commissioner of fish and game shall forward a copy of
12 each permit application under this section to the commissioner of
13 commerce and economic development. The commissioner of fish and game
14 shall issue or deny a permit within 30 days after receiving an appli-
15 cation.

16 (e) The commissioner of fish and game may deny or restrict a
17 permit under this section if the commissioner finds that the proposed
18 harvest will substantially impair sustained yield of the species. The
19 decision of the commissioner of fish and game must contain the factual
20 basis for the findings. If the substantial impairment could not have
21 been reasonably foreseen and avoided through available management
22 options, the commissioner of fish and game shall explain why in the
23 decision.

24 (f) Except as provided in (e) of this section, the commissioner
25 of fish and game shall issue a permit if

26 (1) wild stock is needed for initial farms or hatchery
27 stock;

28 (2) there are technological limitations on the propagation
29 of cultured stock for the species sought;

1 (3) wild stock is needed to maintain the gene pool of a
2 hatchery or aquatic farm; or

3 (4) commercial harvest of the species sought is not limited
4 under AS 16.43 and is not fully developed.

5 (g) Aquatic plants and aquatic animals acquired under a permit
6 issued under this section become the property of the permit holder and
7 are no longer a public or common resource.

8 (h) The commissioner of fish and game shall make stock available
9 for aquatic farming purposes.

10 Sec. 08.06.040. IMPORTATION OF AQUATIC PLANTS OR AQUATIC ANIMALS
11 FOR STOCK. A person may not import into the state an aquatic plant or
12 aquatic animal for the purpose of supplying stock to an aquatic farm
13 or hatchery unless authorized by the commissioner of fish and game or
14 by a regulation of the Board of Fisheries.

15 Sec. 08.06.050. LIMITATION ON SALE, TRANSFER OF STOCK, AND
16 PRODUCTS. (a) A private hatchery required to have a permit under
17 this chapter may sell or transfer stock from the hatchery only to an
18 aquatic farm or other hatchery that has a permit issued under this
19 chapter.

20 (b) Stock may not be transferred to or from an aquatic farm or
21 hatchery required to have a permit under this chapter without prior
22 notice of the transfer to the commissioner. A notice of transfer
23 shall be submitted at least 30 days before the proposed date of trans-
24 fer.

25 (c) A notice of transfer must be accompanied by a report of a
26 health inspection of the stock. The inspection shall be conducted by
27 the Department of Fish and Game or by a disease diagnostician approved
28 by the Department of Fish and Game.

29 (d) The Department of Fish and Game may restrict or disapprove a

1 transfer of stock if it finds that the transfer
2 (1) would present a substantial risk of spreading disease;
3 or
4 (2) in the case of a transfer from a hatchery for which a
5 permit has been issued under AS 16.10.400, would significantly impair
6 the production needs of the hatchery.
7 (e) A person may not sell, transfer, or offer to sell or trans-
8 fer, or knowingly purchase or receive, an aquatic farm product grown
9 or propagated in the state unless the product was grown or propagated
10 on a farm with a permit issued under this chapter. The permit must be
11 in effect at the time of the sale, transfer, purchase, receipt, or
12 offer.
13 Sec. 08.06.060. RELEASE OF CERTAIN FISH PROHIBITED. Salmon and
14 trout may not intentionally be released into the public water of the
15 state from a hatchery or aquatic farm required to have a permit under
16 this chapter without prior authorization from the Department of Fish
17 and Game.
18 Sec. 08.06.070. DISEASE CONTROL AND INSPECTION. (a) The De-
19 partment of Fish and Game may order the quarantine or the destruction
20 and disposal of diseased hatchery stock or of aquatic farm products
21 when necessary to protect wild stock. A holder of a permit issued
22 under this chapter shall report to the Department of Fish and Game an
23 outbreak or incidence of disease among stock or aquatic farm products
24 of the permit holder.
25 (b) A holder of a permit issued under AS 08.06.010 shall allow
26 the Department of Fish and Game to inspect the permit holder's farm or
27 hatchery during operating hours and upon reasonable notice. The cost
28 of inspection shall be borne by the Department of Fish and Game.
29 (c) The Department of Fish and Game shall develop a disease

1 management and control program for aquatic farms and hatcheries.

2 (d) The Department of Fish and Game may enter into an agreement
3 with a state or federal agency or a private provider to provide ser-
4 vices under (b) and (c) of this section, or inspections under AS 08.-
5 06.020(b).

6 Sec. 08.06.080. REGULATIONS. The commissioner may adopt regu-
7 lations necessary to implement this chapter.

8 Sec. 08.06.090. PENALTY. A person who violates a provision of
9 this chapter, a regulation adopted under this chapter, or a term or
10 condition of a permit issued under this chapter, is guilty of a class
11 B misdemeanor.

12 Sec. 08.06.900. DEFINITIONS. In this chapter

13 (1) "aquatic farm" means a facility that grows, farms, or
14 cultivates aquatic farm products in captivity or under positive
15 control;

16 (2) "aquatic farm product" includes an aquatic plant or
17 aquatic animal, or fish parts that are propagated, farmed, or cul-
18 tivated in an aquatic farm and sold or offered for consumption;

19 (3) "commissioner" means the commissioner of commerce and
20 economic development;

21 (4) "hatchery" means a facility for the artificial incu-
22 bation of stock, including rearing of juvenile aquatic plants or
23 aquatic animals;

24 (5) "positive control" means, for fish and other mobile
25 species, enclosed within a natural or artificial escape-proof barrier;
26 for species with limited or no mobility, such as a bivalve or an
27 aquatic plant, "positive control" also includes managed cultivation in
28 unenclosed water;

29 (6) "stock" means live aquatic plants and aquatic animals

1 acquired, collected, possessed, or intended for use by a hatchery or
2 aquatic farm for the purpose of further growth or propagation.

3 * Sec. 3. AS 03.05.020(a) is amended to read:

4 (a) The commissioner shall

5 (1) require routine inspection of food animals, fish,
6 poultry and derivative food products, to protect the public against
7 fraud, disease and spoilage, and in this connection adopt uniform
8 regulations establishing standards of identity and composition of
9 these food products and minimum standards of sanitation and handling
10 methods as to all phases of slaughtering, processing, storing, trans-
11 porting, displaying and selling of these food products;

12 (2) issue orders or cause the orders to be issued by an
13 authorized veterinarian prohibiting transportation and sale of food
14 products intended for human consumption which do not meet the minimum
15 requirements established under (1) of this subsection, and limiting
16 their use and disposal in conformity with protection of the public;

17 (3) adopt a schedule of fees or charges, and credit pro-
18 visions, for services rendered by state veterinarians to farmers and
19 others at their request in caring for livestock and poultry, and all
20 the fees shall be transmitted to the commissioner for deposit in the
21 state treasury;

22 (4) designate points of entry for admission of livestock or
23 poultry into the state, and arrange inspection at those points with or
24 without collaboration and assistance of the federal government, and
25 bar entry of stock or poultry not shipped under a valid permit or not
26 free from contagious or infectious disease;

27 (5) adopt, repeal, and amend regulations consistent with
28 existing law for

29 (A) the labeling and grading of milk and milk products

1 and standards of cleanliness and sanitation, to at least the
2 minimum of current recommendations of the United States Public
3 Health Service, for the operation of dairies selling, or offering
4 for sale, milk or milk products;

5 (B) the production and sale of ice cream and allied
6 frozen desserts;

7 (C) the production and sale of imitation milk and
8 imitation milk products;

9 (6) monitor aquatic farms and hatcheries that hold permits
10 under AS 08.06.010 for the possible presence of paralytic shellfish
11 poisoning.

12 * Sec. 4. AS 08.01.010 is amended by adding a new paragraph to read:

13 (27) regulation of aquatic farms and hatcheries under
14 AS 08.06.

15 * Sec. 5. AS 16.05.251 is amended by adding a new subsection to read:

16 (f) Except as expressly provided in AS 08.06.040, the Board of
17 Fisheries may not adopt regulations or take action regarding the
18 issuance, denial, or conditioning of a permit under AS 08.06, the
19 construction or operation of a farm or hatchery required to have a
20 permit under AS 08.06.010, or a harvest with a permit issued under
21 AS 08.06.030. Regulations or orders adopted by the Board of Fisheries
22 under this section do not apply to a harvest with a permit issued
23 under AS 08.06.030.

24 * Sec. 6. AS 16.05.330(a) is amended to read:

25 (a) Except as otherwise permitted in this chapter, a person may
26 not engage in sport fishing, including the taking of razor clams; in
27 hunting, trapping, or fur dealing; in the farming of [FISH,] fur [,]
28 or game; or in taxidermy, without having the appropriate license or
29 tag in actual possession.

1 * Sec. 7. AS 16.05.340(a)(14) is amended to read:
2 (14) [FISH OR] game farming biennial licenses.....200

3 * Sec. 8. AS 16.05.920(a) is amended to read:
4 (a) Unless permitted by AS 16.05 - AS 16.40 or AS 08.06, or by
5 regulation adopted under AS 16.05 - AS 16.40 or AS 08.06, a person may
6 not take, possess, transport, sell, offer to sell, purchase, or offer
7 to purchase fish, game, or marine aquatic plants, or any part of fish,
8 game, or aquatic plants, or a nest or egg of fish or game.

9 * Sec. 9. AS 16.05.930 is amended by adding a new subsection to read:
10 (g) AS 16.05.330 - 16.05.720 do not apply to an activity au-
11 thorized by a permit issued under AS 08.06.010 or 08.06.030, or to a
12 person or vessel employed in an activity authorized by a permit issued
13 under AS 08.06.010 or 08.06.030.

14 * Sec. 10. AS 16.05.940(14) is amended to read:
15 (14) "[FISH OR] game farming" means the business of prop-
16 agating, breeding, raising, or producing [FISH OR] game in captivity
17 for the purpose of marketing the [FISH OR] game or game [THEIR] prod-
18 ucts, and "captivity" means having the [FISH OR] game under positive
19 control, as in a pen [, POND,] or an area of land that [OR WATER
20 WHICH] is completely enclosed by a generally escape-proof barrier;

21 * Sec. 11. AS 16.10 is amended by adding a new section to read:
22 Sec. 16.10.269. LIMITATIONS. AS 16.10.265 - 16.10.267 do not
23 apply to the purchase or sale of aquatic farm products from a holder
24 of a permit issued under AS 08.06.010 or stock from a holder of a
25 permit issued under AS 08.06.030.

26 * Sec. 12. AS 16.10.380(b) is amended to read:
27 (b) In this section "user group" includes, but is not limited
28 to, sport fishermen, processors, commercial fishermen, aquatic farm-
29 ers, subsistence fishermen, and representatives of local communities.

1 * Sec. 13. AS 16.10.400 is amended by adding a new subsection to read:

2 (h) AS 16.10.400 - 16.10.475 do not apply to the construction or
3 operation of a private hatchery that has a permit issued under AS 08.-
4 06.010.

5 * Sec. 14. AS 16.10.420 is amended to read:

6 Sec. 16.10.420. CONDITIONS OF A PERMIT. The department
7 shall require, in a permit issued to a hatchery operator, that

8 (1) salmon eggs procured by the hatchery must be from the
9 department or a source approved by the department;

10 (2) no salmon eggs or resulting fry be placed in waters of
11 the state other than those specifically designated in the permit;

12 (3) no salmon eggs or resulting fry, sold to a permit
13 holder by the state or by another party approved by the department,
14 may be resold or otherwise transferred to another person, unless that
15 person holds a permit issued under AS 08.06.010;

16 (4) no salmon be released by the hatchery before department
17 approval, and, for purposes of pathological examination and approval,
18 the department shall be notified of the proposed release of salmon at
19 least 15 days before the date of their proposed release by the hatch-
20 ery;

21 (5) diseased salmon be destroyed in a specific manner and
22 place designated by the department;

23 (6) adult salmon be harvested by hatchery operators only at
24 specific locations as designated by the department;

25 (7) surplus eggs from salmon returning to the hatchery be
26 made available for sale first to the department and then, after in-
27 spection and approval by the department, to operators of other hatch-
28 eries authorized by permit to operate under AS 16.10.400 - 16.10.470,
29 or AS 08.06.010;

1 (8) if surplus salmon eggs are sold by a permit holder to
2 another permit holder, a copy of the sales transaction be provided to
3 the department;

4 (9) [REPEALED

5 (10)] a hatchery be located in an area where a reasonable
6 segregation from natural stocks occurs, but, when feasible, in an area
7 where returning hatchery fish will pass through traditional salmon
8 fisheries.

9 * Sec. 15. AS 16.10.450 is amended to read:

10 Sec. 16.10.450. SALE OF SALMON AND SALMON EGGS BY HATCHERY. A
11 hatchery operator who sells salmon returning from the natural water
12 [WATERS] of the state, or sells salmon eggs to another hatchery op-
13 erating under AS 16.10.400 - 16.10.470 or with a permit issued under
14 AS 08.06.010, after utilizing the funds for reasonable operating
15 costs, including debt retirement, expanding its facilities, salmon
16 rehabilitation projects, fisheries research, or for costs of operating
17 the qualified regional association for the area in which the hatchery
18 is located, shall expend the remaining funds on other fisheries activ-
19 ities of the qualified regional association. Fish returning to hatch-
20 eries and sold for human consumption must [SHALL] be of comparable
21 quality to fish harvested by commercial fisheries in the area, and
22 shall be sold at prices commensurate with the current market.

23 * Sec. 16. AS 16.43.140 is amended by adding a new subsection to read:

24 (d) This chapter does not apply to activities authorized by a
25 permit issued under AS 08.06.010 or 08.06.030.

26 * Sec. 17. AS 16.51.180(5) is amended to read:

27 (5) "seafood" means finfish, shellfish, and fish by-prod-
28 ucts, including but not limited to salmon, halibut, herring, flounder,
29 crab, clam, cod, shrimp, and pollock, but does not include aquatic

1 farm products as defined in AS 08.06.900;

2 * Sec. 18. This Act takes effect immediately under AS 01.10.070(c).



SENATOR FRED F. ZHAROFF
ALASKA STATE LEGISLATURE

P.O. BOX 405, KODIAK, ALASKA 99615 (907) 486-5259

DURING SESSION:

P.O. BOX V, JUNEAU, ALASKA 99811 • (907) 465-3473 • 465-3474

DISTRICT N

ALASKA PENINSULA • ALEUTIAN CHAIN • BRISTOL BAY • KODIAK ISLAND • LAKE CLARK/LAKE ILIAMNA • PRIBILOF ISLANDS • SHUMAGIN ISLANDS

March 6, 1987

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

Dear Dick:

A group of 12 Kodiak fishermen recently copied you on a letter written to me in which they expressed their concerns about Senate Bill 106, the aquatic farming legislation. Enclosed is a copy of my response.

Sincerely,


Fred F. Zharoff
Alaska State Senate



SENATOR FRED F. ZHAROFF

ALASKA STATE LEGISLATURE

P.O. BOX 405, KODIAK, ALASKA 99615 (907) 486-5259

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March 5, 1987

WaΨ

Dear ΨbΨ:

Thank you for your letter of February 24 regarding Senate Bill 106, "An Act relating to aquatic farming; and providing for an effective date."

Before I respond to your specific concerns, please allow me to preface my remarks by saying that I fully recognize the importance of the commercial fishing industry to our region's economy. It has provided and will continue to provide a livelihood for generations of Alaskans. Neither I nor any Alaska legislator would knowingly take actions that would damage this industry or our natural resources. SB 106 is simply predicated on the recognition that aquatic farming is a growing worldwide industry. For at least the last couple years, there has been considerable discussion about whether Alaska should enter this new field. Without legislation, this discussion is purely theoretical and academic. I introduced SB 106 to put the issue on the table. We need to make decisions now about whether Alaska will develop mariculture, and, if so, in what form.

Let me now address the specific issues you raised.

The legislative findings section states -- in a very general fashion -- the legislature's goals for aquatic farming. The findings are neutral on potential conflicts, though language recognizing the current users' concerns could certainly be inserted. The House version, HB 108, now says, "that the industry be developed in a manner consistent with the protection and enhancement of traditional high value industries and with protection of the state's natural resources".

The brood stock acquisition permit section most likely will be revised. It was written mainly for shellfish. If done properly, the collection of brood stock for scallops, oysters, clams and mussels would have little impact on commercial fishing activities. However, more time for public comment and more protection for commercial fishing -- especially for fully allocated fisheries -- would be appropriate.

There still needs to be discussion of the Board of Fisheries' exact role in the issuance of aquatic farm permits, possibly to review brood stock acquisitions. Our intent, to date, has been to create as much as possible a self-contained permit system in which the commercial fishermen's and general public's interests can be heard and addressed.

I expect the state to recover the costs of paralytic shellfish poisoning testing and disease diagnostic services from either user fees or taxes on the revenues generated by aquatic farms. As a point of clarification, we have found that the Alaska Department of Environmental Conservation already is obligated under existing statutes to monitor shellfish production for paralytic shellfish poisoning. Section 3 of the bill, which contains language to this effect, is unnecessary and will be deleted.

The amendment in Section 17 to AS 16.51.180(5) does not exempt aquatic farm products from the fisheries business tax. It exempts aquatic farm products from the Alaska Seafood Marketing Institute, which was established to promote traditional seafood industry products. I wrote an inquiry to the commissioner of revenue requesting him to clarify the status of aquatic farm products in relation to the fisheries business tax statutes (AS 43.75.010 - 43.75.140). I am awaiting his response.

Your letter all but accuses me of supporting the Japanese Longliners Association's Pacific cod allocation in trade for the Coastal Fisheries Development Feasibility Study agreement between the Japanese Overseas Fisheries Cooperation Foundation and the State of Alaska. This is not true. The agreement -- signed August 1, 1986 -- provided for a surimi demonstration project, and feasibility studies for kelp in Sitka and scallops in Kodiak. As a longstanding advocate of Americanization, I do not support "hidden" agreements.

In the December 9 letter to the North Pacific Fishery Management Council that you reference, I and other members of the legislature's bush caucus requested the council to make a "sufficient" Pacific cod allocation so that joint ventures could continue with the resident fishermen of Bristol Bay and Norton Sound. We did not request a specific amount. The council's final decision was to recommend that the longliners receive a 22,000 m.t. allocation, leaving 258,000 m.t. to be taken by the domestic industry.

I signed the letter in order to support the herring joint venture between the Japanese longliners and the Bristol Bay Herring Marketing Cooperative. This joint venture directly benefits the resident, small boat gillnetters of Bristol Bay, who, to date, have never been able to secure commitments from domestic processors for markets. The joint venture, unfortunately, would not be economically viable unless the longliner fleet had access to Bering Sea bottomfish, in this case Pacific cod. The herring cooperative is on notice that it cannot count on the continued presence of the Japanese in our waters. It must develop alternate markets. While I am willing to support this exception this year in the case of the herring cooperative I still favor strongly a phase out of all foreign fishing. I recognize the economic benefits that will accrue to our state the sooner this is accomplished.

My position on improving the district's economy is that we must promote all possible sources of development, including a phase out of all foreign fishing and, over the long term, the development of mariculture.

Under present state statutes, however, no formal regulatory or permitting process exists for Alaskans to participate in the mariculture industry. The current version of SB 106 represents a first attempt at establishing the rules

and providing a forum for discussion. My intention is to develop regulatory procedures to avoid conflicts in advance.

I appreciate your effort in informing me of your concerns about SB 106. You should be aware, however, that a bill is a working document. It is subject to constant revision. The committee process provides us with an official forum in which to listen to concerns and address the important issues. The concerns you have raised, all valid, will be addressed.

As previously stated, aquatic farm production -- especially salmon -- is growing on a worldwide basis. I can just imagine three years from now people sitting around, scratching their heads, wondering what happened to Alaska's seafood markets. "Why didn't the legislature do anything?" they will say. Rather than wait until then, let us give this issue a long hard look now.

In the coming months, every aspect of aquatic farming will be discussed, debated and analyzed. I invite and encourage both you and every other interested individual to participate in this process. Please check with the Legislative Information Office about the dates and times for hearings. The United Fishermen's Marketing Association and the Kodiak Regional Aquaculture Association is organizing a special meeting on this bill for later in the month. Again, I appreciate the issues you raised in your letter. I welcome all constructive comments and specific suggestions about areas to consider. If you have further concerns, please do not hesitate to contact me.

Sincerely,

Fred F. Zharoff
Alaska State Senator

cc: Representative Cliff Davidson
Senator Dick Eliason
Governor Steve Cowper
Bill Osborne, KANA
Kodiak Daily Mirror



CORDOVA DISTRICT FISHERMEN UNITED

P.O. Box 939

Cordova, Alaska 99574

(907) 424-3447

February 23, 1987

Senator Mike Szymanski
P.O. Box V
Juneau, AK 99811

Dear Senator Szymanski:

Cordova District Fishermen United (CDFU) supports the orderly controlled development of shellfish and plant mariculture. Before mariculture is introduced into Alaska, however, a socio-economic study should be done. The study was requested by the United Fishermen of Alaska (UFA), CDFU, Prince William Sound Aquaculture Corporation (PWSAC) and recommended by the fisheries mini cabinet.

The development of salmon farming without the state studies, coastal community input and the recent land grab for fish farm sites in Canada have raised many eyebrows in Alaska. The people of Alaska have entrusted millions of dollars to enhance wild stocks. In 1975, the fishermen of Prince William Sound formed PWSAC and started the most successful hatchery and enhancement program in North America. Enhancement of wild stocks and ocean ranching is the best investment the State of Alaska has ever made. This tremendous investment is now paying for the state and the fishermen. As wild stocks are on the decline, hatchery production is kicking into gear.

PWSAC is one of seven private non-profit regional associations in Alaska and was created by the fishermen and the legislature to enhance salmon production. Prince William Sound fishermen passed a 2% salmon enhancement tax to financially support the salmon enhancement program of PWSAC. The 2% salmon enhancement tax received by PWSAC will amount to \$750,000 annually and will, in turn, partially support the program that will provide \$25 million annually to the commercial fisheries by the year 1995, at which time PWSAC will be providing over half of the commercial fishery revenues in Prince William Sound.

Page Two
Senator Mike Szymanski
February 23, 1987

It makes no sense to the CDFU Board of Directors to cut funding for state hatcheries, management of the commercial fishery and the enforcement division to start a new industry which will require millions of dollars to get started.

We are harvesting 130 million salmon per year and continuing to build our future salmon runs to obtain greater harvests. We are the fish farmers of Alaska and have made a big commitment to the State of Alaska by building new hatcheries, paying assessments, upgrading fishing vessels and putting out a better quality of salmon all the time. CDFU is concerned that the coastline, wild stocks, traditional fishing grounds and enhancement programs are protected before a fish farming bill is passed.

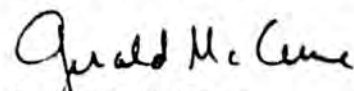
Ocean ranching is the biggest investment in the State of Alaska and the State should keep funding the enhancement programs. Commercial fishing has and always will be a major employer in Alaska, where fish farming will only employ a few.

Foreign companies in some cases are prevented from expanding in their own countries because of legislation protecting local communities. We have made our choice to protect the wild stocks and enhance the salmon runs in the State of Alaska. In five years, the State of Alaska could have five new hatcheries operating and generating revenues before the first pen-raised salmon ever hit the market. We need to keep investing our money to compete on the world market by freezing, labeling and storing our fish products in the State to be distributed all year round.

We urge you to take no action on legislation and development of fish farming mariculture until all concerned groups and communities have had a chance to respond to the impacts of fish farming.

Sincerely,

CORDOVA DISTRICT FISHERMEN UNITED



Gerald McCune
Vice President

GM/mb1

CORDOVA DISTRICT FISHERMEN UNITED
RECOMMENDATIONS

1. Strict controls to prevent foreign corporations and banks from taking over fish farming in Alaska. This industry should be kept in the hands of U.S. corporations and citizens if Alaska wants the full benefits of fish farming to stay in Alaska.
2. A complete study of the environmental effects of salmon farming on wild stocks and coastline communities.
3. No use of fish farming as a trade off for wild stock fishery habitat lost.
4. Control development of fish farming sites.
5. Alaska keeps control of any aquaculture development.
6. Clearcutting at sites have quality control standards.
7. Limits on proximity of fish farms to other sites and density controls of fish in farms.
8. Regulations covering location of fish farms.
9. Studies of tidal flush out at fish farms.
10. Environmental impact, with respect to wild fish stocks.
11. Concerns of commercial fishing, sport fishing, recreation groups and coastal communities should be addressed.
12. Studies of Norway and Scotland controlled development of fish farming.
13. Continued state funding of PNP and FRED hatcheries to enhance the wild stocks and enhance salmon production by ocean ranching. This means leave the funding in Commerce for the state and PNP to advance our enhancement programs.
14. No importation of Atlantic salmon eggs into Alaska.
15. Research, health inspection and testing of facilities be set up to address concerns of the use of hormones and antibiotics, impacts of toxicants, disposal of dead fish and human waste, predator control and efficient feed practices. Studies have been done implicating the toxicant Tributyltin (TBT) as a human health risk and has recently been found in imported farm salmon. A ban of TBT in the State of Alaska should be made into law.

CDFU CONCERNS

1. Reallocation of State funds and services to fish farming.
2. A rush on salmon farm sites in Alaska without proper guidelines. Loss of traditional fishing grounds.
3. Predator control for fish farms be reviewed and identification of appropriate predator control methods.
4. Impact on water quality and marine environment.
5. Excess feed falling through netpens.
6. Good tidal flush-out sites.
7. Separation of fish farms and shellfish farms.
8. Navigational obstruction of fish farms and safe anchorages lost to the commercial vessels.
9. Conflicts with fish farmers and commercial fishing vessels.

Alaska troll sector fights farmed salmon impact

Fearful that farmed salmon will destroy prices and markets for Pacific troll-caught salmon, Alaska fishermen and processors are launching a campaign to promote the virtues of wild fish.

But the man heading up the campaign admits his efforts are largely a defensive effort designed to retain the market share that still exists for troll salmon.

"We've seen our market share for troll fish from Alaska and B.C. get smaller and smaller over the last five years," says Barry Lester, of the Alaska Troll Salmon Processors Association. "We've seen it reflected in prices."

"From our own point of view as processors our goal is to maintain the markets we have and not see any decline. If we succeed, we should try to expand."

Lester's organization was formed during the spring in response to growing concern in the American troll industry about the impact of farmed fish.

Lester said in an interview Aug. 7 that farmed salmon has invaded traditional troll salmon markets in the European and New York smoked salmon industries. Second grade farmed salmon not suitable for restaurant sale is going into the smoker market as volumes of production rise.

Lester said the processors decided to take a positive approach: "We don't want to say it swims in its own waste and is filled with chemicals against disease. We're trying to talk about the virtues of wild salmon."

The program involves promotions with buyers in European

and New York markets as well as improved grading and quality standards on the grounds and in the plants.

Earl Krygier, spokesman for the Alaska Trollers Association, said his organization is pledged to support the campaign. "We've seen prices soften quite a bit, especially because our troll coho go to European markets. The Norwegians are definitely making inroads."

Krygier said Alaskan fishermen are solidly behind the moratorium imposed on salmon farm-

ing in Alaska and are reaping the benefits of their non-profit hatchery system. "It would be a real mistake to bring farms in here."

So far the processors have financed the campaign internally, but Lester hopes support will come from other quarters.

Continued erosion of the troll fishery could have "a devastating effect on the economy of Alaska," he said. "We're talking about a way of life. This goes beyond the economic situation to the very existence of fishermen."

B.C. production adds to farmed salmon glut

As trollers see coho and chinook prices tumble under the assault of farmed salmon, experts in Norway are predicting Atlantic salmon production there could soar to 150,000 metric tonnes by 1990.

Even B.C.'s farmed salmon production is shooting up, with harvests this year likely to hit 2,000 tonnes up from only 250 tonnes in 1985.

The forecast Norwegian production is a staggering leap from about 30,000 tonnes last year and double recent forecasts of 80,000 metric tonnes. The 1986 harvest should be between 63,000 and 68,000 tonnes.

Canadian federal and provincial fisheries departments have just begun to assess the impact of the farmed production on existing salmon sales from B.C.

Jim Fralic, aquaculture co-ordinator for the provincial agriculture department says B.C. farmed salmon production should jump to 2,000 tons this year, up from 250 in 1985.

He said declining prices may have an impact on the viability of B.C. salmon farms, which normally forecast their economic position based on the strong prices of the past two years. "We've always been of the opinion that prices for farmed fish would come down," he said.

"We hoped to reduce the cost of production at the same time by reducing the rate of natural mortality. There are indications this is happening as people get more experienced."

Troll prices dive to \$2.25

Trollers found fairly good fishing as the season opened June 20 but needed the volume to partly compensate for a major price cut.

Opening prices posted by B.C. Packers for spring salmon were \$2.20 for large, \$1.65 for medium and \$1.30 for small.

That was a 17 percent cut from last year's July 1 opening prices of \$2.65, \$2.10 and \$1.50. By June 23 this year the prices had moved up to \$2.25, \$1.70 and \$1.35, still far below the July 8, 1985, range of \$2.75, \$2.25 and \$1.70.

Without the protection of a minimum price agreement, troll fishermen are at the mercy of price-cutting processors, who are blaming Norwegian farmed salmon in European markets for the depressed prices.

By July 10, B.C. Packers had raised its prices to \$2.35, \$1.80 and \$1.40.

Coho prices were more stable, opening at \$1.30, \$1.20 and 85 cents this year, compared with 85 cents, \$1.25 and \$1.40 in 1985.

Initial troll spring landings on the west coast of Vancouver Island were good, apparently more because of abundance than increased effort.

Spring returns to the Skeena were double the 10-year average for the first week in July, according to fisheries northern director Paul Sprout. That was in stark contrast to the sharp decline in sockeye returns.

By July 10, the fisheries department could report total chinook catches of 35,537 in the northern area up to July 5 and warned that catch controls could be necessary if "current catch rates continue."

Northern coho catches totaled 336,537, including 126,036 taken in the week of July 5 alone.

Chinook catches on the west coast of Vancouver Island also were running ahead of forecast. On July 7 the department closed the Big Bank to slow the harvest rate. By the end of the week ending July 5 the troll catch had hit 145,300, a figure that fisheries salmon coordinator Eric Kremer said could reflect both increased effort and increased abundance.

Coho catches to the same date were 614,300, also close to the 696,000 mark at which conservation measures could be imposed. Kremer said the department was very close to curbing the coho fishery.

Troll chum catches to July 5 were 64,100 and the Gulf troll catch had hit 36,250.

Sockeye non-retention regulations remain in effect.

Warnings of new difficulties in chinook markets were issued June 13 in *Friday*, the publication of the Pacific Coast Federation of Fishermen's Associations. Even before the season opened, some purchasers refused to sign market contracts.

According to the PCFFA, the California, Oregon and Washington fleet had to return to port in the second week of the season to negotiate a lower price. The prices were slashed from U.S. \$2.65, \$2.35 and \$2.05 to \$2.30, \$2 and \$1.75.

Sales were good until the first week of June when rumors of Norwegian farmed salmon being dumped on the market slowed sales. The story was false but the PCFFA quoted reliable reports indicating that Norwegian sellers dropped prices 50 to 75 cents a pound to retain a market share after the fresh salmon season began.

Toxic chemical detected in farm salmon

A spokesman for B.C.'s ministry of the environment confirmed Nov. 7 that there are no controls in this province on the use of a toxic anti-fouling agent that has been detected in farmed salmon.

The substance is called tributyltin, or TBT, and is one of the most toxic substances known to man. Popular as an anti-fouling paint for boat bottoms, it has been banned in a number of European countries because of the damage it inflicts on the environment.

Now TBT has been detected in pen-reared salmon sold in U.S. seafood markets. According to *Friday*, the publication of the Pacific Coast Federation of Fishermen's Associations, aquaculture products from Puget Sound and Norway purchased in public markets contained concentrations of .28 to .9 micrograms per gram of TBT.

TBT, sometimes used to treat netting used in salmon pens, can be toxic in levels as low as five parts per trillion. Two scientists working for the National Marine Fisheries Service found the substance in baby coho sold in public markets.

"We have no controls on the use of anti-fouling agents," B.C. environment ministry spokesman Michael Coon told *The Fisherman* Nov. 7. "We're in the process of collecting samples. We're trying to assess the problem. It's something we don't know very much about."

Evidently the pan-sized fish are not exposed to the TBT for long enough to die from its effects. The chemical concentrates over time in certain parts of the body.

Coon said the toxic effects of anti-fouling agents are a concern. "It's in everyone's interest to make sure fish aren't contaminated."

UFAWU secretary-treasurer Bill Procopation said the threat of TBT's is another example of the chaos surrounding the B.C. fish-farming issue. "We'll need more than a 30-day review to establish regulations to prevent this kind of damage," he said.

The two American researchers also studied the effect of low concentrations of TBT on juvenile salmon, concluding that exposure to low doses may increase susceptibility to disease.

Norway's salmon farms face tight regulation

Is B.C.'s aquaculture industry as tightly regulated as Norway's?

A day-long seminar on Norwegian fish farming sponsored by the Norwegian Trade Commission June 2 provided the answer: a resounding no!

Among regulatory programs now in place in Norway but barely under consideration in Canada:

- a ban on the use of hormones;
- controls on the use of antibiotics;
- compulsory quarterly inspection for disease;

• limits on corporate concentration, the proximity of farms to each other and the density of fish;

• clearcut quality control standards;

• regulations to ensure safe construction and mooring of pens with environmental controls now being codified in Norway;

• regulation covering the location of farms.

During the 1970s the government actually slowed development and halted the issuance of licences to allow the Norwegian industry to consolidate.

National aquaculture policy claims to protect wild fish

Canada moved a step closer to national aquaculture policy April 28 with an agreement by provincial and federal fisheries ministers to establish interlocking aquaculture legislation.

In a meeting in Winnipeg fisheries minister Tom Siddon told his provincial counterparts that the agreement "is an important step in furthering the development of aquaculture's great potential in Canada."

Although B.C. has no fisher-

ies minister, the province has begun developing similar federal-provincial agreements as a result of a First Ministers' Conference in Halifax in 1985.

The first federal-provincial arrangement, signed between Ottawa and Nova Scotia in March, gives the province the sole licensing authority for aquaculture enterprises as long as federal requirements pertaining to fisheries and related matters are satisfied.

The Winnipeg meeting adopted a statement of national goals and principles for the development of commercial aquaculture. The seven goals include:

• to encourage the development of commercial aquaculture in Canada in a manner that is complementary to the continuing development of the wild fishery;

• to increase the economic returns from "intensified production and harvest of high value, marketable species of fin fish, shell fish and marine plants";

• to improve the quality and expand the variety of Canadian fish products; and

• to encourage long-range stability in the country's fish production through diversity and continuity of supply.

The agreement gives the lead to the private sector in aquaculture development, but pledges government support in economic development and research.

Farm fish to hit wild salmon market

Salmon farmers will be training their guns on traditional wild salmon markets by the end of the decade, say Norwegian experts, and dropping prices could move the date even closer.

Growing production of farmed salmon both in Norway and B.C. has sparked fears among commercial fishermen that existing markets will be undermined by the new production.

This year buyers are predicting a sharp decline in troll chinook prices because of a glut in European smoker markets caused by Norwegian production. The Norwegian product already competes effectively on restaurant tables in Seattle and Vancouver, the heartland of wild salmon production.

But Norwegian marketing expert Karl Johan Ringstad told a Vancouver fish farming seminar June 2 that farmed production of coho and chinook will outstrip wild fish catches by 1990.

Production of farmed Atlantic salmon has already hit 42,000 tonnes, well above the worldwide production of 27,000 tonnes of chinook in 1985 and 43,000 tonnes of coho.

Virtually all Norwegian pro-

duction is exported, 30 percent of it to the United States. By the end of the decade, Ringstad predicted, farmed production will dominate the quality "white table cloth market" and take 15 percent of the fresh market.

"The challenge is to get into other segments of the market," he said. "In the last few months a price drop has reduced profitability in Norway. As the price of farmed salmon decreases it will open new markets. It can be delivered year-round."

In 1975 the smoked salmon market was dominated by wild production, he noted, but now the tables have turned. In the future, farmed salmon may be marketed alongside fresh meat and poultry. "I leave it to you to speculate how many tonnes are required to supply retail outlets even in California alone."

How low will the price go? "I wish I knew," Ringstad said, "but look at the price of chicken."

Farmed salmon is going head to head with chinook already. A later speaker quoted prices in Seattle of \$4 to \$4.25 a pound for chinook between six and nine pounds. Atlantic salmon was being delivered for between \$3.97 and \$4.37.

Ireland freezes foreign fish farms

Ireland has slapped a ban on foreign ownership of salmon farm leases to head off what officials feared could be a take-over of the country's industry.

"We could fill every bay on the Irish coast with salmon cages within two years if we allow the Norwegians in without restriction," a local official told *Fish Farming International*. He later corrected himself and said "non-nationals" rather than Norwegians.

The Irish Fisheries Department has announced that no further licences will be issued for salmon-farming projects in which nationals of countries outside the European Economic Community have a major stake.

A policy review is under way.

By contrast, there is absolutely no curb on foreign investment or control in B.C.'s salmon farming industry, which has a

large Norwegian element. Norwegian investors are attracted to B.C. by much looser regulation than they face at home.

Opponents of outside investment in the Irish industry claim that Norwegians control 60 per cent of the fishing farming industry in Scotland and have starved locally-owned farms of smolts from Norwegian-controlled hatcheries.

Angry fishermen are reported to have rammed salmon cages in Scotland in frustration.

Fishermen in Ireland are concerned about the implications of a Scandinavian proposal to raise farmed salmon in converted oil tankers. Even other farmers are fearful of its impact on the environment and markets.

Smolts for the scheme would come from Iceland, posing the threat of importing kidney disease to Ireland.

DFO aquaculture subsidy hits \$3 million in '85

Fisheries department expenditures in support of the aquaculture industry totalled \$3 million nationwide in 1984-1985, says fisheries minister Tom Siddon.

In reply to a query from Skeena NDP MP Jim Fulton, Siddon said June 2 that DFO "has been the lead federal department in fostering the development of aquaculture in Canada, focussing particularly on research and experimental development, the protection of fish from communicable diseases and the transfer and application of research results to industry."

In the year ending March 1985, the department spent \$2.5 million on aquaculture research,

a period when salmonid enhancement spending was frozen. A further \$300,000 was spent to assist aquaculturists to use the latest methods in rearing and harvesting.

The amount spent on research has increased to \$2.5 million up to March 1985 from \$2.3 million during the previous year.

Siddon told Fulton that fish farmers are eligible for interest-free loans under the Canada B.C. Subsidiary Agreement on Small Business Incentives. More than \$9 million of \$50 million loaned under the program went to fish farmers.

Siddon could not provide a breakdown on how much of the research money was spent on the Pacific coast.

fish farming

INTERNATIONAL

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MONTHLY £1.50

DECEMBER 1986, VOL. 1

SURPLUS SALMON WARNING

A NEW estimate of farmed Atlantic salmon production and demand comes from the Irish Sea Fisheries Board (BIM).

In a research study of international production and market trends, it finds that the market is expected to grow to 153,000 metric tons by 1990 — with Norway providing 190,000 tons, Scotland 25,000 tons and Ireland 10,000 tons.

For Ireland alone, this could mean farm earnings of IRE32 million, exports of IRE44 million and 1200 jobs.

According to the report of this study, Europe's technical maximum of farmed salmon production is around 250,000 to 300,000 tons. Norway, says the report, can produce 200,000 tons a year, Scotland up to 30,000 tons and Ireland up to 15,000 tons.

The market will determine

Production may exceed demand by 23,000 tons

Atlantic salmon farming has also been greatly assisted by recent major developments in feed compounding and stock improvement programmes have been underway for some time.

But, with the prospect of rapidly increasing supplies, there will be a need for increasing emphasis on marketing with effective performance making the difference between success and failure.

With the growth in production, falling real price trends for fish and frozen salmon are already evident in most European and North American countries. If continued, they should induce greater consumption. And growing awareness of salmon's health value will add to its marketability.

However, total world demand for Atlantic salmon

demand by 1990 could cause reductions in price and margins greater than farmers and traders presently envisage.

Lower margins will force the least efficient producers out of the industry and will deter potential small-scale new entrants.

The emphasis on greater efficiency will stimulate high standards of technology and training, and a larger minimum-volume production unit.

Salmon farms based on integrated smolt and sea cage production are unlikely to be less than 500 tons a year capacity, notes the BIM report.

Investment needed for such a project would be around UK£22 million and would be payable at interest

ditions) would reduce this return to zero.

● We shall be looking at this BIM report and its conclusions in more detail in our January 1987 issue.

FROM THE CLEAR WATERS
OF IRELAND



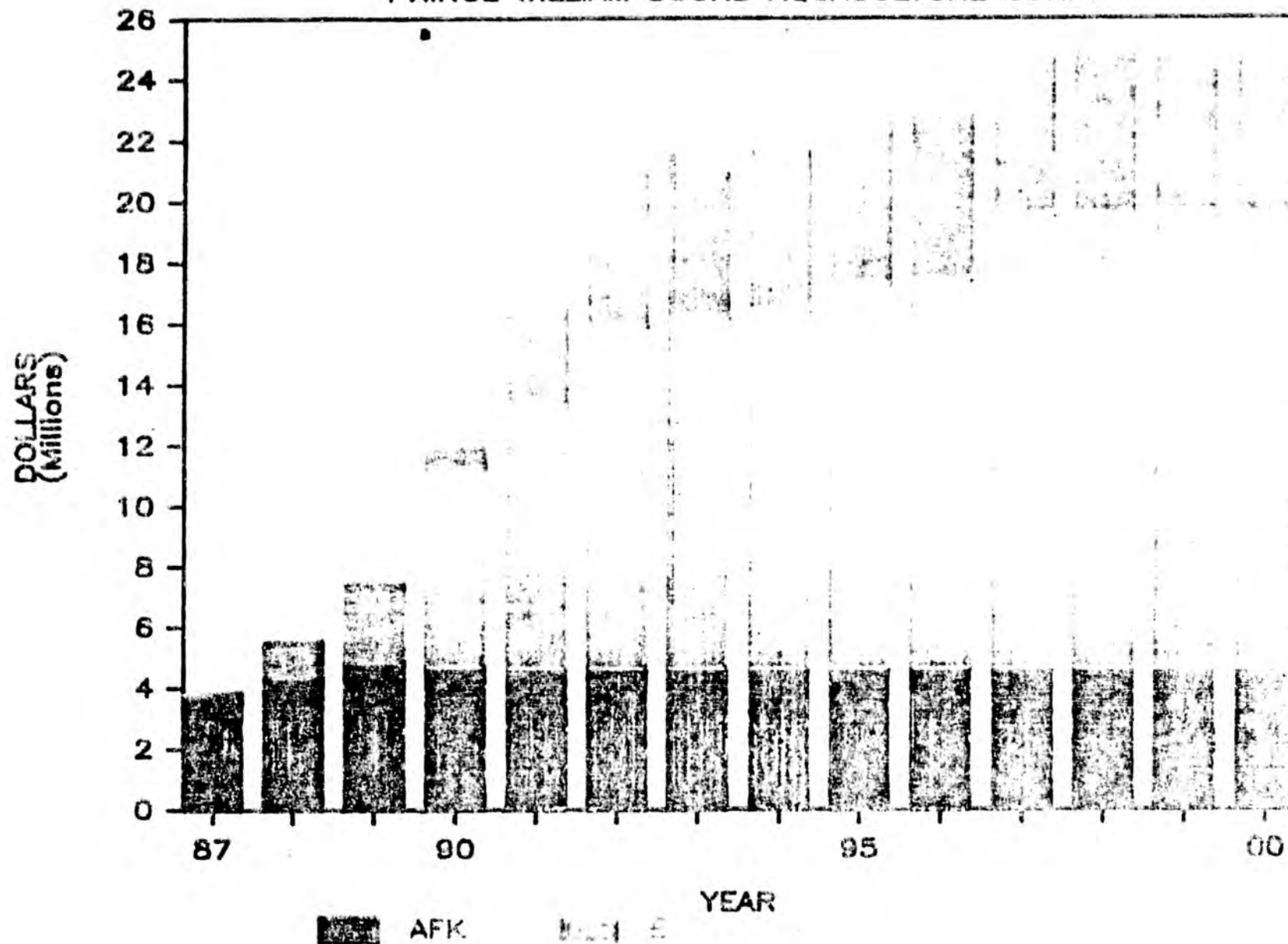
A NEW colour brochure in English, says that the salmon's natural habitat location for developing Irish salmon, by the Irish Sea Fisheries Board (BIM) notes that the first crop of farmed salmon was harvested in 1977. Production is projected to reach 10,000 tons in 1990.

Bridgestone "Hi-Seas" Fish



TOTAL COMMERCIAL FISHING REVENUE

PRINCE WILLIAM SOUND AQUACULTURE CORP.



PRINCE WILLIAM SOUND SALMON HATCHERY PRODUCTION

HATCHERIES	1986 BROOD YEAR EGG NUMBER (millions)					FINAL EGG CAPACITY (millions)				
	Pink	Chum	Coho	Chinook	Sockeye	Pink	Chum	Coho	Chinook	Sockeye
Armin F. Koernig	126	--	--	--	--	137	--	--	--	--
Esther Island	78	40	1.0	0.12	0.9	211	111	1	4.0	30.0
Solomon Gulch	64	4	1.3	--	--	136	18	1	.3	--
Main Bay	3	85	--	--	--	25	100	--	--	--
Cannery Creek	39	--	--	--	--	111	--	--	--	--
Gulkana Springs	--	--	--	--	30.0	--	--	--	--	30.0
TOTAL	310	129	2.3	0.12	30.9	620	242	2	4.3	60.0

ARMIN F. KOERNIG HATCHERY
PRINCE WILLIAM SOUND, ALASKA
PINK SALMON PRODUCTION DATA

BROOD YEAR	FRY RELEASE	FISHERY HARVEST	HARVEST RATE	BROOD STOCK	HATCHERY HARVEST	TOTAL RETURN	TOTAL MARINE SURVIVAL
1975	1,000,000	4,000	10%	15,155	24,845	44,000	4.4%
1976	11,010,577	--	--	40,432	114,188	154,620	1.4%
1977	16,950,784	275,000	50%	54,207	223,748	552,955	3.3%
1978	22,774,739	1,038,700	70%	108,061	346,728	1,493,489	6.6%
1979	21,500,000	1,358,907	60%	198,901	707,037	2,264,845	10.5%
1980	69,787,000	3,615,086	70%	164,545	1,354,732	5,134,363	7.4%
1981	70,118,000	2,990,225	80%	124,278	607,999	3,722,502	5.3%
1982	87,384,533	2,226,423	80%	186,431	387,146	2,800,000	3.2%
1983	76,746,000	3,772,962	75%	271,513	986,141	5,030,616	6.6%
1984	103,531,000	3,872,222	78%	277,706	814,072	4,964,000	4.8%
1985	112,527,515	--	--	--	--	--	--



UNITED FISHERMEN OF ALASKA

Jack Cadigan
Executive Director
907-586-2820
1-800-478-FISH

Mr. Chairman and Members of the Committee:

My name is Bob Blake and I am here to express some of the concerns the United Fishermen of Alaska and the Cordova District Fishermen United have with the CS for House Bill #108.

Our basic concerns are outlined in the United Fishermen of Alaska's Resolution 87-3, passed unanimously by the Board of Directors at their annual meeting the first week in February, which is:

Keeping in mind that Alaska has 90% of the U.S. salmon production and 43% of the world salmon production, excluding pen-reared salmon, you can understand our anxiety.

We raise the following issues:

1. (a) Disease related problems have the potential of affecting existing stocks of wild salmon which are fully utilized by sport, commercial and subsistence users, or are needed for PNP brood stock or spawning escapement.
(b) Potential of polluting the quality environment needed for continued production of wild stocks of salmon, sea run trout and other aquatic plants and animals by use of antibiotics in treating pen-reared disease problems, surplus fish food damaging the bottom dwellers around net pens, restriction of water current movement because of net pen placement, human waste and garbage contamination, etc.
(c) Genetic alterations are a potential concern; after several cycles of altering and domesticating, pen-reared salmon, upon escaping, could in turn effect the gene pool of wild stock.
(d) What are the impacts of hormones, toxicants (ie. TBT) antibiotics, etc., on the natural environment, animals and the human food chain?
2. Where do the smolt or eggs come from to start up a Mariculture industry?
(a) Certainly not from imported stocks - the history of importing smolts is laden with disease problems.
(b) Wild chinook in Southeast is still in the build-up stage to help fulfill the U.S./Canada Treaty obligations.

Southeast hatcheries are not up to maximum capacities to meet that collection either, and even if they are closed, what about the ever increasing needs of the sportfish, commercial and subsistence salmon property users? Chinook and coho stocks in Southeast are fully utilized under the existing fisheries and industry. The same goes for Cook Inlet and Prince William Sound, any surplus spawning escapement is currently utilized by FALD and FNP hatcheries for supplementing existing user group fisheries. All the chinook and coho stocks West of Cook Inlet are also fully utilized by existing fisheries or escapement.

3. Funding problems that need to be addressed:

F.R.E.D. Division of the Alaska Department of Fish & Game would be required to bear intervention costs. They would have to develop a disease control and management program and provide all types of associated services. What is the funding for these additional costs going to come from? The F.R.E.D. Division is faced by the proposed FY88 budget to close down some State hatcheries and reduce its other programs. All of which are valuable to existing users.

D.E.C. will have to be involved with all the environments, research and monitoring. While this agency's budget isn't proposed to be cut this year they simply don't have enough funding to monitor existing problems (even the Alaskan Pipeline Terminal).

D.N.R. is way behind on existing work loads of permitting, land use planning, etc. That agency's budget is being cut even further.

D.C.E.C. is set up in this legislation to be a lead-type agency. They are taking a 26% budget cut, I believe, for FY88.

None of the agencies involved are able to carry out their current legislative mandates and program needs for their existing respective user groups. Shouldn't their budgets be brought up to levels to meet the current needs of existing industries and user groups before the Legislature imposes more changes on them? I can appreciate the Legislature's desire to enhance the State's economy, but not at the expense of reducing the economic potential of existing industries.

4. Physical displacement of traditional users: Commercial fishermen fear disruption from traditional fishing grounds and anchorages, as well as the hazard to navigation salmon farms will pose. We have to assume that sport fishermen, recreational boaters and tourists will feel the same way. Waterfront property values could also diminish, depending on the siting of such farms. Tourism is a blooming industry in this State. People come to Alaska to find esthetic values, to photograph pristine environment, and to have the ultimate experience sportfishing and hunting, not to see salmon farms scattered all up and down the coast in all the favorite fishing spots and anchorages.

5. The PNP and State hatchery program has been stated as the best renewable resource investment the State has made with oil dollars. It's a shame that the State did not make more money available for this venture during times of plenty, because the program collectively has not come close to achieving its potential throughout the State. Our hatchery system supplements the wild stock resource for the common property fishery. Every person in this State has access to the hatchery-produced fish if they so desire, via commercial, sport or subsistence fishing. This venture in hatchery production has created many more jobs for State residents and helped maintain the economic viability of the commercial and sport fishing fleets in much of the State. In Prince William Sound, for instance, the commercial fishermen opted to increase the salmon resource rather than eliminate many of the fishing permits. We have done this through ocean ranching and it works. Our Prince William Sound hatcheries are also producing chinook and coho for sport fishermen and tourists. If the State is ever again going to invest in the salmon industry, it should invest in the proven commodity, and not in potential disaster. The existing industry provides many, many thousands of jobs.

6. Funding: As stated earlier, the State is not willing or able to fund the four agencies that will have to be involved with this Mariculture legislation to a level that will allow them to adequately manage their present obligations. This needs to be rectified first. Both the Enhancement and Commercial Fishing Loan programs have been mislabeled "revolving". The principle and the interest from both programs go directly into the General Fund upon repayment. Both loan funds are literally out of money unless the Legislature makes an appropriation to them. Some of the loans from these programs have been transferred to AIDA to help finance things like the Red Dog Mine. These loan repayments go directly to AIDA, not to the General Fund. It might be a consideration of this Committee to look into this "non-revolving" situation before there is no money left for reinvestment in the State's largest non-oil industry.

[illegible]

As the U.F.A. and the C.D.F.U. support the careful and controlled development of shellfish and plant mariculture, and we are not desirous of slowing down the process by which the existing shellfish farmers can continue, or new farmers becoming involved, we suggest that this Committee split the two issues into two separate bills, thus allowing shellfish legislation to proceed with little or no resistance.

We appreciate the opportunity to speak on this issue during its past hearing and will be providing more information and comments in the future. Thank you.



UNITED FISHERMEN OF ALASKA

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UNITED FISHERMEN OF ALASKA

RESOLUTION 87-3

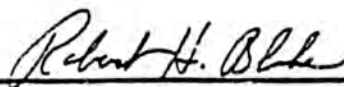
WHEREAS in 1985 the United Fishermen of Alaska requested the State of Alaska to perform a thorough study of the biological, economic and sociological problems and potentials of salmon pen rearing in Alaska, but this study has not yet been undertaken; and

WHEREAS the UFA supports the careful and controlled development of shellfish and plant mariculture; and

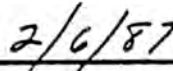
WHEREAS the development of the salmon farming concept of mariculture will adversely affect the fishermen and the most successful hatchery and enhancement program in North America by: (1) reallocating State funds and services; (2) competing with markets for wild salmon; (3) preventing water and land use of traditional fishing, hatchery, enhancement, and smolt rearing and release sites; (4) increasing the potential disease contamination of the wild stock; and

WHEREAS no realistic fiscal note has been produced to identify the cost to the state incurred by the management of the proposed activities;

NOW THEREFORE BE IT RESOLVED that the Board of Directors of the United Fishermen of Alaska urges the State of Alaska to take no action on legislation and development of salmon farming mariculture until such time as the aforementioned issues of concern are addressed through private and public forums.



Robert M. Blake
President



Date

SALMON FARMING POSITION PAPER

EXECUTIVE BOARD OF DIRECTORS
PRINCE WILLIAM SOUND AQUACULTURE CORPORATION
P. O. BOX 1110, CORDOVA, ALASKA 99574

Over the past twelve months the Executive Board of Directors of the Prince William Sound Aquaculture Corporation (PWSAC) had debated and discussed the pros and cons of establishing a salmon farming industry in Alaska. These discussions were prompted by the previous administration's apparent desire to explore the feasibility of developing the regulatory, administrative and legislative framework to implement a large scale salmon farming industry in Alaska. Considering the fact that legislation has been introduced to both the House and the Senate specifically for the purpose of legalizing the operation of salmon farms in Alaska, we feel that the time is appropriate to express our opinions and concerns to those individuals and agencies that will ultimately be responsible to formulate statewide policy on this issue. There are two major issues that we feel must be addressed and dealt with before the state takes any further steps towards legalizing the development of a salmon farming industry within state waters.

I. Long Term Social and Economic Impacts - Ocean Ranching vs. Salmon Farming

First of all, it is imperative that a long hard look be given to the relative benefit of ocean ranching vs. salmon farming in years to come. This should be done keeping in mind that success of an industry or undertaking be measured by the sum total of its contribution to the people, communities and industries of Alaska, both in terms of social and economic wealth.

The legislation that created both the private non profit hatchery program and the F.R.E.D. Division of AD&FG charged these programs with the responsibility of enhancing salmon runs statewide so that harvest levels in the common property fisheries would support and industry, meet the desires of sport fishermen, and satisfy the needs of subsistence fishermen. At first glance many people interpreted these programs as a "fish welfare subsidy" by which the state pays the bill and commercial, sport and subsistence fishermen thrive. In fact, after ten years of growing and developing, these programs are on the verge of becoming self-sustaining, cost efficient entities that will represent the backbone of Alaska's second largest industry.

The fishing industry is our largest employer and generates more dollars in ex-vessel value and final product marketing than any other industry in the state besides oil.

The ocean ranching programs in Alaska have undeniably stabilized salmon production in areas where unpredictable fluctuations in wild stock returns has kept the Alaska salmon industry from diversifying and growing due to the lack of a constant, ensured supply of product - a necessity in any resource related industry. Product diversification and progressive marketing strategies for pink and chum salmon have just begun to be explored. These avenues of development, aided by the consistent supply of wild and enhanced salmon we have realized in the early 1980's, have provided the salmon industry with its first long term, optimistic outlook in many years.

To try to express the value of Alaska's ocean ranching programs in terms of a cost benefit ratio is virtually impossible. The production of ocean ranched salmon provides fish to be harvested, jobs in the processing industry, product to be marketed and a consistent supply of product year to year. This assures lending institutions that investment in the industry is well-founded. As well as these direct benefits, there are the infinite number of multipliers of income generated to communities and support services throughout the state as the revenues associated with handling large volumes of salmon filter down.

This past year in Prince William Sound (PWS) the ADF&G estimated that 55% of the entire pink salmon harvest can be attributed to ocean-ranching production. The failure of wild stock returns to PWS was not predicted. Without the private non profit and F.R.E.D. Division enhancement programs, millions of dollars invested by fishermen and processors preparing for the coming season would have been lost. Raw fish tax revenues that supplement the city's operational and capital funding needs would have been greatly reduced. Ultimately the state would have had to deal with these losses in the form of subsidies or at least supplemental funding requests from the city. By 1992 PWSAC alone will generate better than \$20 million dollars in direct revenue to commercial fishermen. State investment and support of these programs to this point has been indispensable and demonstrates a great deal of foresight. To sell these programs short now would be a tragic mistake.

Specifically, it is the long term social and economic benefits that ocean ranching has provided that we feel are lacking within the proposed salmon farming industry. It is an undisputable fact that all ocean ranching production by the regional association and private non profit facilities is carried out on a zero budget level by the corporation involved. Incorporated under non-profit status as required by the enabling legislation and subsidized by commercial fishermen through a mandatory enhancement tax, the sole

purpose of this program is to produce fish for harvest in the common property fisheries. The only money retained by these corporations are used for operational funding and retirement of long term debt to the state's revolving hatchery loan fund.

In contrast, the salmon farming industry would operate as a strictly for-profit venture. According to the House Research Agency report "Aquaculture In Alaska" (H.R.A.-A.I.A.), most likely the major investment base in this industry would come from Scandinavian banks, similar to salmon farming development in British Columbia. Alaska has just begun to turn the tide of foreign investment in its fishing industry. If any one word stands out as a calling card to Alaska's fishing industry in the past five years, it is Americanization and what the implementation of the Magnuson Act has done toward that end. If the investment base in the salmon farming industry is for the most part other than domestic, it is safe to assume that the profits will be realized by other than domestic entities. If this is the case and it seems to be a worldwide trend in the salmon farming industry, why should Alaska invest it's resources (water and land) and it's money (resource agency monitoring and regulatory development) in salmon farming when it already has a program (ocean ranching) that it has funded that directly benefits its people and a thriving established industry.

Salmon farming is not a labor intensive undertaking. According to the House Research Agency Report Aquaculture In Alaska; Norway, the country that pioneered salmon farming directly employed only 2,000 individuals in 1984. This hardly represents an industry that could make a significant contribution to the job market in coastal Alaska. There are that many people employed directly by the salmon industry in the small town of Cordova in any given year.

The December 1986 issue of Fish Farming International reports in an article by the Irish Sea Fisheries Board (BIM):

"BIM's conclusion from this is that the imbalance of projected supply and demand by 1990 could cause reductions in prices and margins greater than farmers and traders presently envisage.

Lower margins will force the least efficient producers out of the industry and will deter potential small-scale new entrants.

The emphasis on greater efficiency will stimulate high standards of technology and training and a larger minimum-volume production unit.

Salmon farms based on integrated smolt and sea cage production are unlikely to be less than 500 tons a year capacity, notes the BIM report.

Investment needed for such a project would be around UK 22 million pounds and would be capable of earning 18 per cent internal rate of return.

But the investment is risky. A drop of ten per cent in real revenues through low prices would halve the rate of return. A stock loss say every five years (through disease or unusual weather conditions) would reduce this return to zero."

If this prediction by experts within the salmon farming industry proves true, it is clear that a developing industry in Alaska has little chance to establish a significant market share for a product that already shows signs of saturating the market for which it produces.

Further, the investment capital and the level of technology necessary to operate at the scale suggested in order to be competitive predicates an industry that holds very little hope for any vertical integration. This scenario is more likely to create high volume production salmon farms financed by large, multinational corporations that do nothing more than create a few local jobs and pass profits on to parent corporations.

Taking these facts into consideration is is hard to visualize this state government, confronted with extremely limited funding for existing programs, creating an industry (salmon farming) that will require extensive agency monitoring and regulatory development, while offering negligible long term social or economic benefits to the State of Alaska.

II. Salmon Farming: Funding and Operational Considerations

The House Research Agency report Aquaculture In Alaska suggests in its section on options for financing of salmon farms that repayment of capital construction loans from the private non profit aquaculture corporations to the revolving hatchery laon fund could be used to fund the development of salmon farming. On page 21 of the report the author states "The cornerstone of Alaska's aquaculture industry is the State's system of public (F.R.E.D. Division) and private non

profit (PNP) salmon hatcheries which are designed to augment the state's natural runs. As enumerated in Chapter One, by almost any economic measure (i.e., employment, income, total economic activity), aquaculture is probably the best renewable resource investment the state has made with its oil wealth."

In the preceding paragraph the author speaks of the tremendous, wise investment the state has made in its ocean ranching program. Yet in the next chapter he suggests taking away the only available funding mechanism the PNP hatchery program has to continue investing in its own and the state's future.

This rationale remains a mystery to us. Perhaps the authors need to be reminded that large portions of those loan repayments are made with funds generated by commercial fishermen paying a mandatory enhancement tax. We suggest that if the House Research Agency had held public hearings as recommended by the Fisheries Mini Cabinet Aquaculture Advisory Committee, they would have been informed by the public that fishermen much prefer their enhancement tax funds be used to further the combined effort of the PNP program and the F.R.E.D. Division in traditional enhancement and ocean ranching endeavors rather than financing a fledgling salmon farming industry.

The Regional Planning Team concept, a combined effort of regional aquaculture corporations and the sport, commercial, subsistence and F.R.E.D. Divisions of ADF&G have produced Regional Salmon Plans throughout the state that define the enhancement needs of each individual region. These plans develop a list of priority projects that will help achieve the enhancement needs of their respective regions. The only mechanism for funding available to the private sector to achieve these goals is the revolving hatchery loan fund and it is imperative that it remains in tact.

In the House Resource Agency report Aquaculture In Alaska the authors explain that if salmon farming were to become a reality both the genetics and disease control staff and lab facilities would need to be expanded. This represents only two of the many state programs in which both capital and operational funding would have to be expanded to support the salmon farming industry. From our point of view as a regional aquaculture association charged with responsible and beneficial enhancement development in PWS, this is where we find the greatest conflict between salmon farming and ocean ranching in Alaska.

Consider this fact: in 1987 the F.R.E.D. Division claims it will not operate its Cannery Creek hatchery in PWS. This facility cost the state \$4 million dollars in 1979. The hatchery can rear 111 million pink salmon eggs when filled to capacity. Because of a lack of \$180,000 in operational funding, the Cannery Creek facility will forego producing a return in 1989 of as many as 3.5 million adult pink salmon. It is very unlikely that there is any other situation in which the state could invest \$180,000 and produce direct revenues of \$3.5 million dollars, not to mention associated revenue to local communities through raw fish tax funds, local work force in the processing and shipping industry and support services region-wide that generate their income as large volumes of salmon are harvested in the region.

We are in a time that the state isn't even able to fund ongoing projects that for a relatively small investment can potentially produce significant economic gain. It seems irrational for the state to even consider the development of a new venture (salmon farming) that will not only require considerable state support but further, is most likely not even comparable to existing established programs in terms of its potential long term benefits.

In conclusion, we thank you for taking the time to consider our point of view on these issues. Most importantly, we hope you have gained a better understanding of how crucial the continued funding and development of our aquaculture programs are to Alaska's future.

Matthew Luck, on behalf of the
Executive Board of Directors
Prince William Sound
Aquaculture Corporation
February 24, 1987

Alaska Mariculture Association

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Alaska Mariculture and Seafood Markets

Development of mariculture in Alaska could strengthen the competitiveness of Alaska seafood in the world marketplace. By broadening the diversity of products and providing year-round supplies of premium quality seafood, sea farming will help Alaska take better advantage of the growing appetites of consumers for fish and shellfish.

Seafood consumption in the U.S. grew by 609 million pounds or 21.5 percent during the past four years for which statistics are available (1982-85), but nearly all of that growth came from increased imports of foreign products. In fact, imports of foreign fish and shellfish increased by 14 percent in 1985 alone. The U.S. fisheries trade deficit amounted to a staggering \$5.6 billion that year.

The growing consumer demand for seafood in the U.S. and throughout the world is being filled by aquatic farm products. Global aquaculture production in 1983 was 22 billion pounds and accounted for about 12.2 percent of the total world supply of edible fish and shellfish. Experts say aquatic farming production will reach 48 billion pounds by 2000.

At the same time, commercial fishing production in the U.S. is declining slowly and world fisheries landings have stabilized. World aquaculture production is expected to grow by 5.5 percent annually over the next 25 years, while fisheries landings are anticipated to increase by .5 percent annually.

Development of oyster, mussel and scallop farms would bolster Alaska's ability to offer a variety of high quality fresh seafood, while salmon farming could allow seafood distributors to offer year-round supplies of fresh Alaska salmon. A long-term strategy of supplementing commercial fisheries landings with supplies of cultured seafood is Alaska's best hope of remaining a major force in world markets.

Another important market consideration for Alaska in mariculture development is the potential impact of farmed salmon production in the state upon commercial fishermen. A close look at the discrete markets for Alaska's diverse salmon industry reveals that farmed salmon competes with a very small segment of our wild salmon production.

(more)