

ALASKA LEGISLATURE SPECIAL COMMITTEE/SUBJECT FILE 8672
1869 SCOMM 75: MARICULTURE (FISH FARMING), 1987-1990

86

Stormy seas ahead for F/V Arctic Storm

UNITED STATES BANKRUPTCY COURT
WESTERN DISTRICT OF WASHINGTON AT SEATTLE

In re
ARCTIC STORM, Inc.,
Debtor.

In Proceedings for
Reorganization Under
Chapter 11
Case No. 87 09177

VOLUNTARY PETITION

by Don Crouch

Seattle—In the early dawn hours of November 10, under cloudy skies and the watchful eyes of Stan Hovick, president of Arctic Storm, Inc., the F/V Arctic Storm slithered into the misty waters of the Duwamish River at Pier 115.

Sea trials began Dec. 17 and formal delivery of the F/V Arctic Storm is scheduled on or before Dec. 23, 1987, subject to court action.

Perhaps the name "Arctic Storm" and cloudy skies under which she was launched cast forebodings of future events to unfold in the saga of this vessel.

On Dec. 3, 1987, Arctic Storm, Inc., filed for Bankruptcy Chapter

as president of Nordic Fury, Inc., and Pacific Fury, Inc., Richard Prout, as president of Spindrift Fisheries, Inc., and Walter T. Perrera, president of Profish International, Inc.

Wright Schuchart's attorneys, Irvin Sandman of the Graham & Dunn law firm, Seattle, will be handling the appeal of the Dec. 11 Bankruptcy Court Order to the U.S. District Court. Wright Schuchart's answer to the adversary proceeding complaint does not appear in the court file. Wright Schuchart has 20 days to file an appearance and answer in that matter.

Wright Schuchart has moved for Relief from Stay (when a Chapter 11 Petition is filed all matters relating to the Debtor are automatically

committed — to foreign companies one might ask. And how many of the 103 crew members will be U.S. citizens — again more questions. Could it be, that except for some payoffs to a few U.S. citizens, all substantial benefits contemplated by the Magnuson Act (including direct U.S. employment) will be lost to foreign interests?

The Arctic Storm case raises many questions and Chapter 11 may be the bamboozle to cement foreign control of U.S. fisheries resources.

It is odd and unfortunate that the Bankruptcy Court and a Bankruptcy Judge could write the epitaph to the Magnuson Act and to the future of U.S. fisheries.

Stay tuned for the next episode.

Those interested in more details may obtain a copy of the 5-page court print-out of proceedings by sending \$2.50 and a self-addressed, stamped return envelope to: The Fishermen's News, C-3 Bldg., Rm. 110, Fishermen's Terminal, Seattle, WA 98119. Attn. Don Crouch.

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11, in the U.S. Bankruptcy Court, Western District of Washington, at Seattle, Case No. 87-09177, and in an unusual move also filed an adversary proceeding, Case No. 87-09179.

A flurry of proceedings (over 41 docket entries) immediately followed, with papers flooding in from the law firms hired to engage in battle. When the smoke cleared, it appeared that the Mikkelsen law firm and Eugene Craig, attorney, co-counsel, for the debtor, Arctic Storm, Inc., had gained a decisive field advantage, in convincing Bankruptcy Judge Sidney Volinn to sign an order (dated December 11, 1987) circumventing established admiralty law and without notice to all creditors, requiring that the vessel be surrendered by Wright Schuchart Harbor upon the execution of a guarantee by Oyang Fisheries Co., Ltd., a South Korean corporation beyond the jurisdiction of U.S. courts, and Stanley Hovick,

stayed, i.e., frozen) and that matter is scheduled to be heard by Judge Volinn, Dec. 30 at 2 p.m., according to Court records.

Whatever the final outcome of this battle between legal titans, one thing is for certain. The lawyers will have a very prosperous holiday season and a financially fantastic new year.

The Court filings herald other forebodings of a more sinister nature. Aside from the legal issues raised by the attorneys, questions can be raised as to whether the intended operation of the F/V Arctic Storm is a circumvention of the Magnuson Act, 16 U.S.C. 1801 et seq., and other U.S. laws including the new immigration act, 8 U.S.C. 1101 et seq., and existing shipping and maritime laws, 46 U.S.C.

Oyang Fisheries of South Korea is listed as a 50 percent owner of Arctic Storm. Questions could be raised as to Oyang's real ownership and control? Production contracts have apparently already been

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Regency Electronics, Inc. promotes Ron Cooper



Indianapolis, IN.—Regency Electronics, Inc., has announced the promotion of Ron Cooper to Vice President of Sales and Marketing.

Cooper joined Regency Electronics in 1986 as the Manager of Marketing Services. Prior to joining Regency, Cooper served in sales management positions for a variety of electronics firms.

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Cooper is a graduate of Butler University in Indianapolis, with a Bachelor of Science degree.

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Fatality focuses need for better Morro entrance

by Christine Neilson

Improving the entrance of Morro Bay Harbor is receiving attention from commercial fishermen of the area in the wake of the recent accident which claimed the life of longtime local skipper Al French and his *F/V Langosta II*.

Fred Sears, president of the Morro Bay Commercial Fisherman's Organization, says that it is up to the small community, rich in talent, to unite and take over the reins in a drive to improve safety at the treacherous entrance.

"Commercial fishermen don't expect the community of Morro Bay to bear the total expense of this project. It's not right to ask 10,000 people for money toward efforts that will affect thousands of people," Sears stated. His organization campaign includes a memorial fund for the late skipper.

Margaret French, wife of the late Al French, has asked that the memorial fund be used to promote the campaign for safety, according to Sears, who said the Fisherman's Organization received \$1,800 in donations at a recent barbeque held in memory of French. The Morro Bay Yacht Club has given to the Memorial Fund \$1,000, and commercial fisherman Andy Zanco has contributed another \$1,000.

The organization is also collecting signatures of support on petitions and requesting letters of support from local organizations and businesses.

Sears said the harbor entrance problems start at the jetty. The primary problem we face is shallow water from the end of the jetty out.

A short term cure would be a dredge ship.

"I'm in favor of a dredge ship, but I don't know all the mechanics involved. A dredge ship avoids all objectionable environmental concerns. There are no pipelines, and the ship can take tailings two to three miles out and gently layer them," said Sears.

"With dredging you don't have to dump the sand on the north or west side of Morro Rock; it wouldn't disturb the peregrine falcons."

A task force, appointed by the Harbor Advisory Board, drafted a resolution of support which was recently passed by the Morro Bay City Council, according to Sears, who serves on the task force with Morro Bay sports fisherman Mike Fitzsimmons of Virg's Landing, recreational boater Howard Smith and commercial fisherman Bill Blue.

"Now that the city has approved the resolution," said Sears, "we can contact other municipalities, plus get support of people not in the commercial fishing business to put political pressure on the U.S. Army Corps of Engineers, the governmental body in charge of dredging the harbor, but not the entrance.

"You have to have an Act of Congress to change the jurisdiction at the harbor entrance," said Sears.

The Corps of Engineers will be holding a public hearing in Morro Bay this month to discuss the results of a reconnaissance study they have prepared on the harbor entrance.

According to Jared Miller of the Corps, the study includes "positive alternatives for improving the entrance."

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Jones Maritime issues pulled from free-trade pact

Months of haranguing negotiators of the U.S.-Canadian Free Trade Agreement has paid off with the removal of maritime transportation issues from the text of the final agreement.

Deletion of the transportation annex means the U.S. maritime industry can experience at least a little holiday cheer. This trade pact is not the place to overturn decades of maritime law and certainly not the place to determine the fate of the U.S. Merchant Marine," stated Walter B. Jones (D-NC), chairman of the House Merchant Marine and Fisheries Committee.

"I applaud the good sense -- albeit long overdue -- shown by negotiators

on both sides. Perhaps constant Congressional pressure had something to do with the outcome," stated Chairman Jones.

Chairman Jones has led Congressional opposition to including maritime provisions in the FTA, and in July introduced a resolution calling for the removal of maritime issues. House Congressional Resolution No. 151, attracted 245 co-sponsors in the House. He has also held private meetings with U.S. and Canadian officials.

"Over the past months we have had to mount what can only be called an educational campaign to explain the maritime industry to those who see only ships. While commercial

trade is certainly a primary function of the industry, another little known but incredibly important mission is to serve as an integral part of our national defense. Our arguments that this point made maritime issues unique and therefore inappropriate in the FTA have apparently been

persuasive, or at least we have outlasted our opponents," concluded Chairman Jones.

The final text of the FTA is expected to be delivered to Capitol Hill on Wednesday. The agreement was to have been signed on January 2, 1988.

PGA's Fish Pac '88 set for Jan. 29 in Vancouver, B.C.

More than \$20 million is invested annually in gear and maintenance of the 3,000-boat gillnet fleet of British Columbia. Gus Jacobson, president of Pacific Gillnetters Association, stated in announcing the second annual trade fair sponsored by his organization of 250-plus fishermen.

The one-day expo of what's new in nets, gear and equipment is set to coincide with P.G.A.'s annual meeting the following day.

Fish Pac is set for from 9 a.m. to 7 p.m., Friday, January 29, in the Croatian Cultural Center at 16th Ave. and Commercial Dr., Vancouver, B.C.

More than 50 suppliers have reserved booth space at the exhibit, ready to show and sell what's new in the industry.

In addition to displays of merchandise and explanations of services available, Fish Pac is to feature speakers on a variety of subjects of particular interest to commercial fishermen; topics: Can Commercial

Fishermen co-exist with salmon farmers? Commercial Fishermen and The Law; Native Land Claims and Their Possible Effects on the Commercial Fisheries; Diesel Engine Maintenance and Marine Safety.

"At the annual meeting," Jacobson stated, "we expect to be discussing controversial issues of allocations, especially long-term allocations, as well as changes in gear, regulations and Native Land Claims."

Tom Siddon, Minister of Fisheries and Oceans, is to address the P.G.A. annual meeting goers, and will have senior staff people from the Ministry along to provide additional information.

Visitors are welcome to the annual general meeting. Tickets to Fish Pac '88 will be available at the door, from P.G.A. members, from exhibitors and through the P.G.A. Office, 7-17655 57th Ave., Cloverdale, B.C., V3S-1H1; 604-567-8032, Karen Radatzke, Secretary.

News writer wins award

Marilyn George of Petersburg, Southeast Alaska writer for *The Fishermen's News*, won first place in the documentary category of KTOO-TV, SE Alaska, Public Television station's Home Video Contest with an entry entitled "How to Enjoy Your Retirement."

In the 45-minute, 16mm movie that she submitted, KTOO selected a brief segment to air during an hour-long presentation of the winners on December 6. Other categories were drama, comedy, music, children and professional.

The professional presentation of a women's soccer game by Terence O'Malley of Juneau was judged the overall best.

George's film showed their experiences from the time they launched their salmon troller, "I Gotta", at Port Townsend in 1978, until they leased it in 1987. Marilyn put a



narration on tape, and KTOO put them together.

The segment that KTOO chose showed a 40-pound lingcod, a 40-pound salmon, Gut and Red Bluff Bays, herring and whales at Tyee, some sunsets and sunrises and an eagle diving for scraps.

George took the films for their own use and had not planned to show them publicly. "We wanted a record of our fishing for the children and grandchildren," she said.

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Sea Grant workshop set

Washington Sea Grant Marine Advisory Services has scheduled a workshop on fiberglass: Maintenance and Repair for commercial fishermen and recreational boaters. It will be held on Tuesday, Jan. 12, from 6:30 to 9:30 p.m. at the Maritime Training Center of Seattle Central Community College, 4455 Shilshole Ave. NW in Ballard. Fee

for the workshop is \$5.

The workshop will discuss boat construction, what to look for when buying a fiberglass boat, blistering, maintenance, painting and repair.

Because of limited space, preregistration is advised. Checks for the \$5 per person registration fee should be made payable to the University of Washington and mailed to Sarah Fisksen, Washington Sea Grant, Bldg. C-3, Rm. 124, Fishermen's Terminal, Seattle, WA 98119. For more information contact Sarah Fisksen at 206/543-1225.

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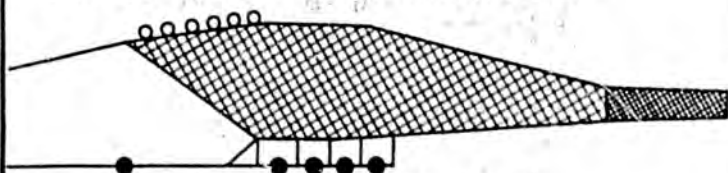
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High Seas Driftnet Bill

The House Subcommittee on Fisheries and Wildlife Conservation and the Environment recently passed legislation designed to monitor and control high seas driftnet fishing. The bill is sponsored by Congressman Don Young (R-Alaska).

HR 3584 would direct the Secretary of State to achieve agreements with foreign countries covering the cooperative monitoring of the effects of driftnets, and the cooperative enforcement of all laws currently in force covering the use of driftnets. Failure to achieve an agreement will subject those nations to sanctions against directed fishing allocations, joint venture activities, and fisheries trade.

The bill also directs the Secretary of Commerce to report to Congress on driftnet activities and to develop recommendations on how to mark driftnets for identification purposes.

"This bill is the result of a commitment that the Committee leadership made to me earlier this year," Congressman Young said. "The high seas driftnet activities being conducted by fishermen from Japan, Korea and Taiwan are a real threat to Alaska's salmon industry, and its marine mammal and sea bird populations. This bill puts in place mechanisms to insure that laws and regulations governing driftnet fishing are enforced."

Cayucas abalone farming flourishing after 15 slow years

The first and still the only operating facility that profitably raises abalone from seed-to-table completely on land, has now become the world's largest abalone hatchery of any kind. So states Frank Oakes, president of The Abalone Farm, Incorporated, Cayucas, California.

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acity within two years. This translates into \$8 million in gross revenues. With further plant growth, in five years they forecast \$17-\$18 million annually.

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The Abalone Farm also has activated commercial-type pilot programs with other types of seafood to be raised away from the sea.

The Abalone Farm, Inc. evolved from one of the original abalone research partnerships. California Marine Associates formed in 1967, and its successor, Estero Bay Mariculture. The present successful firm emerged after 15 commercially unprofitable seasons.



FIGURING POWER — Manager Steve Mazepink talks Lehman Power with visitors to Fish Expo '87 from Duna Industries company, Arcadia, California. With Young B. Park, Duna president, and Kap D. Kim, a director of Duna, are Young Park (a cousin) and James Shim. The Duna company works in equipment export to the ROK, mostly seafood equipment. —TFN photo

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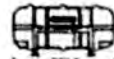
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'Commercial Fishermen Fishing For America' sues for open meetings

Salmon For All is pressing on for rights of its members as it has been doing since formed, initially, during the early 1960s.

"Commercial Fishermen Fishing for America" is the current bumper-strip line of the non-profit corporation comprised of major elements of non-Indian, licensed Columbia River commercial gillnet fishermen and fish processors and buyers of salmon harvested in the ocean, Washington coastal and Columbia River waters.

October 30, 1987, Salmon For All filed suit against the State of Washington, acting through its Department of Fisheries and director Joseph Blum seeking open-to-public meetings of state-tribal negotiations, per requirements of Washington's Public Meetings Act.

A companion bill had been filed on behalf of Salmon For All earlier in October in the state of Oregon.

According to Dennis Reynolds, fisheries issue specialist, of the law firm of Pressentine and Reynolds, depositions will be taken during January and February, with hopes of getting the matter to court sometime during March of this new year.

The suit notes that WDF "has operated, and continues to operate in a private fashion . . . that the director, or his deputy director or

assistant directors, have engaged in non-public policy discussions with tribal, Oregon and federal officials relating to management of Washington and Columbia River salmon . . . discussions resulting in agreements which control decision making of the Columbia River Compact (between Washington and Oregon) and the (WDF) Director of Fisheries . . . said public meetings are entirely a sham, in that they give the appearance of state officials being willing to receive comment, testimony and argument from members of the public affected by their action, while denying them that right in substance."

The brief quotes the Open Meeting Act: "All meetings of a governing body of a public agency shall be open and public and all persons shall be permitted to attend any meeting of the governing body of a public agency."

Relief sought, specifically, is for "A judgment of this court (Superior Court, Thurston County, Washington) declaring that the State of Washington, its Department of Fisheries and Director of Fisheries, is required by the terms of the Open Meetings Act "to open to all citizens of the State of Washington, in a public fashion all meetings, including deliberations, discussions,

considerations, reviews and evaluations, held with Washington State tribes or with the State of Oregon and Columbia River fishing tribes relating to management of salmon runs . . ."

Greg Neitzel, SFA president, early last month presented highlights of Salmon For All's current litigation efforts to the Washington Senate Environment and Natural Resource Committee at its special meeting in Longview, Washington, one of five such meetings in Western Washington, investigating complaints regarding management of Washington's fisheries resources.

"Our efforts were warmly received by Sen. Jack Metcalf (R-Langley, committee chairman)," Neitzel stated.

Vice president of Salmon For All is Jim Hogan. Bob O'Bryant is secretary-treasurer.

SFA's Board of Directors is comprised of Bill Finucane, John England, Les Clark, Keith Hartley, Doug Heater, and Alan Pakalo. Alternates (to ensure a quorum, should some fishermen members be away fishing during meetings) are Kim Barklow, Jack Davis, Dwight Eager, Bob Hyke, Jack Riser, and Steve Gray.

Meetings are held Tuesdays

(weekly, depending upon business) at 3:30 p.m. at the Port of Astoria, Pier One.

Contact: Salmon For All, Inc., P.O. Box 56, Astoria, OR 97103; 503/325-3831.

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WHAT EVERY SALMON FISHERMAN SHOULD KNOW

Submitted by "FISH UNLIMITED"

Within the memory of men now living, the once tremendous runs of North Pacific salmon which thronged into every river and filled this entire coast, have dwindled away down. The species cannot stand the merciless inroads made upon them by every type of gear man's ingenuity can devise.

The onward march of so-called "civilization" is the worst hazard which every form of wildlife contends against. The fine balance which nature seeks to maintain is upset almost every case where man enters the picture. We might liken the setting of our country to the movement of a sort of super-locust swarm, as far as most natural resources are concerned. Our forests disappear, factories spring up, our waterways become open sewers and in the highly competitive life we lead, the people alter or spoil most natural things.

No one objects to making use of the things we find here upon this world of ours. There is no wrong in using for legitimate purposes. We invade only against shortsighted, needless waste. Our salmon constitute a striking case in point.

Extermination

We have been asking the impossible of the salmon species. In our greedy exploitation we have ruined vital watershed areas, blocked off once-populous salmon streams and fouled up, by pollution of every sort, so much of the waters through which these anadromous fish must migrate. Even though we have made progress in artificial propagation and rearing, to somewhat counteract these losses, it is a wonder that the species have survived as well as they have.

Much has been said and written on the subject. There is now a more or less widespread knowledge on the causes of salmon decline. Perhaps one-half of our state's population understand the situation fairly well and are quite in sympathy with any logical scheme which promises remedy. The great difficulty lies in combating human indolence and in eradicating certain abuses which impose utterly needless handicaps on the species. Our people seldom are as alert as they should be to their own best interests. They need accurate information. They need better leadership.

Conservation Effort

There are a number of groups working toward salmon conservation and improvement. "Fish Unlimited" is dedicated simply to Better Fishing, Better Health, Better Living. (We claim they all go together). It is an attempt to do for the salmon what has been done for waterfowl under "Ducks Unlimited." We draw our membership from every walk of life, not alone the actual salmon fishermen, either "sports" or "commercial." We serve no special interests, but desire only to build back our salmon runs.

We would band together all persons who are willing to make some sacrifices to bring the salmon back. We aim to build a constructive force which shall be heard and heeded. While we might liken in a way all conservation efforts at this time to the futile attempts of the old-time Indians who sought to stem the flood of "palefaces" over the

lands, yet we must not allow the species to go the way of the Atlantic or European salmon. Although the coming war brings bigger issues to the fore, it becomes our plain duty to keep those blessings which make our country the greatest among all the nations!

Our salmon fishery and the industry built up directly and indirectly around it is our State's most valuable asset, but we must consider this great resource from the standpoint of its recreational value even more than direct economic importance. However, there is no reasonable excuse for strife or hard feelings between sports and commercial fishing interests. Nature created salmon for both "hook" and net fishermen. Sockeyes, pinks and chum salmon comprise the far greater portion. They are the major commercial take. These kinds seldom bite a hook. It is the kings, silvers, and in less

more than 9 parts of free oxygen per million parts of water. This oxygen supply is constantly maintained by nature's processes. Pollution attacks this dissolved oxygen. Tubs have been made in some of our worst polluted harbors, with zero or near-zero oxygen readings recorded. Under such conditions all fish life suffers severely and baby salmon are among the first to die. They normally live in the top water where most oxygen exists, but because of their susceptibility are seldom seen in badly polluted areas. They die before reaching the worst polluted places.

In their early migrations young salmon must by nature spend some time in or near the river mouths, as they acclimate themselves to the change from fresh to salt water. It follows that sulphite pulp mills and other industrial plants whose liquid wastes are not

industry and resource. They should pay for the damage their death traps have wrought our fisheries!

More Dams?

In the past many dams have been built without proper regard for fish and wildlife welfare. So long as the damage has been already done in certain places (such as Grand Coulee Dam), we favor full development at such sites before building new dams. And since it is possible to locate future power plants where a minimum of damage would be done, we advocate that no new installations be built without the cooperation and approval of Fish & Wildlife Service and our State Game and Fisheries Departments.

In the past not enough attention has been given our fisheries, with over-emphasis placed upon power development and land reclamation. We demand that in future an equal consideration be granted fisheries; that everything of a reasonable nature be done to improve natural salmon spawning areas, to make up in all possible ways for outright losses of such natural areas.

Regulations?

From their very nature it is quite evident that our salmon cannot be rehabilitated by fishery regulations alone. We need more uniform legislation with the state of Oregon, to benefit the Columbia River. We need international cooperation to protect our offshore fishery, from lower California up to and including the Bering Sea.

We have a fine example expressed in the feeling between our organized Sportmen and the State Game Department. We need a greater spirit of friendly cooperation between our commercial fishing interests and the State Fisheries Department, but we feel that regulations on the fishing alone will never bring the salmon back!

Education Program

Even a cursory survey of the situation reveals the need of greater public education. Thoughtless individuals kill tiny salmon that should have been returned unharmed to the waters. Camp fires are left to burn themselves out, or cigarette butts carelessly flipped away, and thus great watershed areas have been burned over. Many common practices are to be condemned.

Industrial concerns drain all manner of waste liquids into our waters, while cities dump raw sewage where it can become a health menace and an offense to human decency. Not only is this a health menace, the practice is as unsound economically as it would be to shovel barnyard manure into our rivers. Forests are indiscriminately cut down and perhaps the final product so administered that little human benefit accrues. The aggregate needless destruction in our nation is a cause of great concern in every student. There is only one answer, MORE PUBLIC EDUCATION.

FISH UNLIMITED is an attempt to do this as regards our fish and wildlife. To understand the situation is to desire to preserve and perpetuate all our God-given natural resources. Help us do this job. It is YOUR obligation too.



ser degree the humpbacks (pinks) that are the "hook" fisherman's special concern.

Kings and silvers are present in Puget Sound and all coastal waters throughout the larger portion of their lives, and in the case of some of the families or sub-species, spend all their lives in nearby waters, where great numbers are taken as immature "salmon trout." These life habits throw the kings and silvers directly in contact with all forms of water pollution and contamination, which factor alone would decimate them in time. If our northwest becomes over-industrialized and overpopulated as is the east coast. This is a condition we must not overlook or under-rate!

Carp or Salmon?

Calfish, carp or suckers can live in an element fouled up with filth, but trout and salmon must have reasonably clean water. Normal stream water contains not

properly rectified create a deadly menace to such fish. Where such plants are built up or near river mouths a great harm has been done the salmon.

Statement of Position

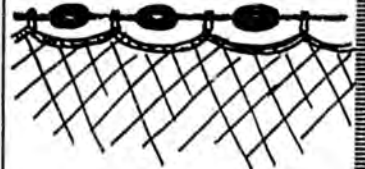
Our State Pollution Control Commission has proven that this damage exists! Experienced biologists contend that such damage to our state fishery amounts to millions of dollars every year! Therefore, we advocate that damage suits be instituted at once against the worst offenders and that moneys so collected be used to rebuild salmon runs.

We realize that with wartime conditions imminent these industries may be unable to obtain certain necessary materials to rectify their plants, and, contributing a vital war effort they should not be summarily closed down. We need their continued operation, but they must not be allowed to ruin an equally if not more important

This leaflet is paid for and distributed by FISH UNLIMITED

- Fishermen Unite - Circa 1940 leaflet of 'Fish Unlimited' notes that inter-state and international cooperation to protect Columbia River and coastal fisheries, from Lower California to the Bering Sea requires more than regulations. Also, that habitats must be protected, "if our Northwest becomes over-industrialized and overpopulated as is the East Coast." (thanks to Jack Metcalf)

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USCG issues recommendations for 'uninspected' vessel exposure suit requirements



The safety rule-making for "Uninspected Vessels," or commercial fishing vessels, was established as voluntary standards. The Coast Guard "recommends" that uninspected vessels carry USCG approved Immersion Suits for each crew member on vessels operating on the U.S. coastal waters, except for Hawaii, the Gulf of Mexico, and the Caribbean Sea. In these waters, the Coast Guard recommends suits be considered when vessels operate offshore in winter, or where prompt rescue may not be available.

However, Federal District Judge Edward Leavy's decision (Lasseigne & Sons Inc., vs Warren Bacon, May

6, 1987, Civil No. 86-490, Portland, Oregon) sets an important precedent for commercial fishing vessel litigation in the future, and will undoubtedly have an impact on insurance rates and coverage requirements. Judge Leavy held "as a matter of law that the lack of a suitable life raft and survival suit for each crew member rendered the vessel unseaworthy. I find the owner negligent in not providing basic lifesaving equipment for its employees in such a hazardous occupation."

The U.S. Coast Navigation and Vessel Inspection Circular (5-86) establishes voluntary standards for U.S. uninspected commercial fishing vessels with regard to: vessel stability; radio and navigation equipment; fire safety; lifesaving equipment; vessel construction and maintenance; machinery installation; electrical installation; and pollution.

Those standards on the "Lifesaving Equipment and Protection of the Crew" (Chapter 4), which pertain to Immersion Suits, appear below. Additional copies are available from Parkway/Imperial.

Parkway/Imperial has been producing neoprene exposure garments for 31 years. The foremost producer of immersion suits for cold water survival, Imperial supplies over half the suits used in the United States. The Imperial Immersion Suits are the only suits manufactured in the U.S. to have passed Norwegian Maritime Directorate standards, the most stringent in the world. For information about Imperial's Immersion Suits contact: Parkway/Imperial, 241 Raritan Street, South Amboy, NJ 07503; (201)721-5300.

(For "Inspected Vessels" -- ships, tankers, mobile offshore drilling units -- the U.S. Coast Guard requires Immersion Suits in compliance with IMO/SOLAS 74/83 regulations which came into force July 1, 1986, on new ships, and five years later on existing ships.)



U.S. Coast Guard "Lifesaving Equipment and Protection for Crew" standards for Immersion Suits on U.S. Uninspected Commercial Fishing Vessels (USCG Navigation and Vessel Inspection Circular No. 5-86):

EXPOSURE SUITS

A. Federal Regulations (46 CFR 25.25) Exposure suits may be substituted for required Type I, II or III PFDs on vessels not carrying passengers for hire. Exposure suits substituted for PFDs must be:

1. Coast Guard approved with an approval number beginning "160-071/-"
2. Equipped with Coast Guard approved retroreflective material (provided by the manufacturer on Coast Guard approved suits); and
3. If in ocean, coastwise, or Great Lakes service, equipped with a Coast Guard approved personal flotation device light. The light must have an up-to-date power supply (unexpired battery) and be securely attached to the shoulder area of the suit.

B. Recommendations

1. Coast Guard approved exposure suits are recommended for each member of the crew on vessels operating on all U.S. coastal waters, except for Hawaii, the Gulf of Mexico, and the Caribbean Sea. Even in these waters, exposure suits should be considered if the vessel will operate far offshore in winter, where prompt rescue may not be available. Exposure suits come in a variety of

Continued on page 35

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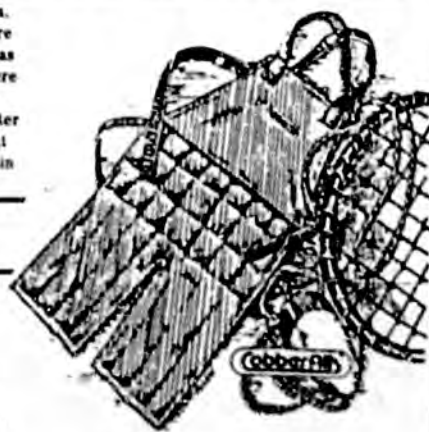
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Recommendations Issued for 'uninspected' vessel exposure suit requirements

Continued from page 34

sized so the operator should ensure each person on board has a suit that fits.

2. Exposure suits should be stored in a very accessible, dry place, such as the wheel house. Every crew-member should know the location of all survival equipment, especially the exposure suits. Donning instructions should be posted in a place where crewmen will notice it.

3. Exposure suits should be carefully checked and maintenance performed at least once a year, preferably more often. A recommended maintenance check list follows.

a. Check all zippers for smooth operation. Any corroded, broken or malfunctioning zippers should be replaced.

b. Lubricate the watertight zipper on the front of the suit with paraffin, and make sure that the zipper is open (down) when the suit is repacked.

c. Check the stitching and gluing on all of the seams on the suit as well as the seams on the storage bag.

d. Inflate the external flotation bladder to insure that it will hold air. Pay particular attention to the joints and connection point of the inflation tube. Contact the manufacturer for instruction if repair is required.

e. Write the date that you inspected the suit on the outside of the storage bag.

C. Exposure Suit Performance

1. The Coast Guard approved exposure suit is a one-piece, insulated, dry suit that reduces the crippling effects of "cold shock" and immersion hypothermia. The term "survival suit" is often used to describe an exposure suit, but there are also devices such as "work suits" or "anti-exposure coveralls" which are approved as Type V PFDs that are sometimes called "survival suits". These other devices do not provide the same protection as an exposure suit. Make sure what you buy is an approved exposure suit.

2. Exposure suits are tested by placing people wearing them in ice water (32° F) for 6 hours and measuring body temperature drop. The insulation of the suits is quite effective.

3. Exposure suits do not provide indefinite protection from hypothermia, but they reduce the rate of body cooling and survival is possible for many hours or even days depending upon water temperature.

4. Exposure suits are leak tested to prove that the wearer will remain dry. This adds to the effectiveness of the insulation, but the suit will still keep a wearer warm and afloat even with some water inside. A trickle of water through a small leak can cause discomfort, but constant flushing of water in and out of the suit, through an open zipper or a large tear, will render it ineffective.

5. Exposure suits are NOT flame-proof. They are tested to make sure that after a two second exposure to flame and six seconds of being

allowed to burn before being extinguished, the suit is still serviceable. In that length of time it is assumed the wearer will have been able to extinguish any flames.

6. Present designs of exposure suits will NOT turn an unconscious wearer face up in the water. The assumption is that the wearer is more likely to remain conscious if warm. The suit will allow the wearer to turn face-up easily, and float nearly horizontal. The flotation bladder or pillow supports the head further out of the water to reduce fatigue.

7. Exposure suits are not appropriate for routine wear while working on deck. Although the suits are tested to ensure that a wearer can do simple things like walk on a wet deck, climb a ladder, and even pick up a pencil and write, all activities are slower and more difficult in the suit. The suit is for wear when abandoning ship or when encountering dangerous situations such as crossing a bar where there is a chance of being thrown into the water or vessel capsizing. For routine wear, you may want to invest in a Type V work suit.



D. Exposure Suit Maintenance

1. The suit comes in a storage bag and should be kept in that same bag. The bag itself is tested to provide significant protection to the suit, and is clearly marked.

2. The zipper of the suit needs to be waxed periodically to lubricate it. If no wax came with the suit, or if it is used up, buy paraffin (the type used for home canning, from a supermarket) or beeswax (from a sewing or fabric store). Rub the wax over the zipper teeth, then open and close the zipper several times to spread it around. Store the suit with the zipper open.

3. Do take the suit out and try it on, in the water if possible, as soon as you get it and periodically thereafter. This is a good way to check its condition, and the more familiar you are with it the more likely you are to survive if you ever need it. Treat it with reasonable care.

4. After use, hang or spread the suit out to dry thoroughly. When the outside is dry, turn it inside out to dry again. Water usually does get inside somehow, and it will cause mildew and odor if you skip this step.

5. Leaks or rips can render the suit ineffective. If they cannot be repaired using a kit packed with the suit, or by the manufacturer, the suit must be replaced.

6. If the fabric covering the exterior

of the suit is worn through, exposing the foam underneath, it's time to replace the suit.

7. Two manufacturers voluntarily recalled early suits because of problems with the inflation tube for the auxiliary buoyancy unit. We still find these suits in use today on some uninspected vessels who didn't get the word. If your suit manufactured in 1981 or before does not have a clamp around the tube at each joint, contact the manufacturer. You may have one of the problem suits. The

manufacturers involved are still making free repairs to those early suits.

8. Mark the suit with the vessel's name in large letters using a waterproof marker or stencil. Avoid using paint which may become brittle. Marking the suit permanently may help prevent theft and will help rescuers who may find a suit afloat to identify the vessel it came from.

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WHAT'S NEW

OFF THE PRODUCTION LINE

New line includes sex-sorter

Innovac Technology, Inc., Richmond, B.C., manufacturer of wet pumps & systems, is pleased to announce that they have been appointed to represent Pisces Industries Ltd. of Michigan, in the Pacific Northwest of the U.S.A. and in Canada. Innovac personnel will be available for both sales and service and system consultation.

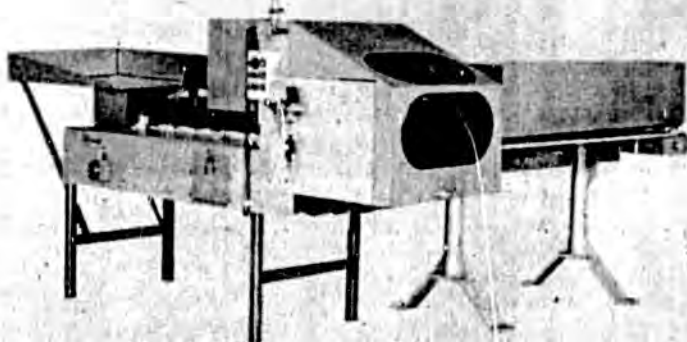
The Pisces line is marketed worldwide and consists of a full complement of fish processing equipment for

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New gangen introduced

Power's Twine has just introduced a new #72 halibut/black cod gangen. This gangen has a tighter braid for less hook snagging, and is softer, so it may be used for halibut or black cod. The new gangens are available at LFS Inc. in Bellingham, Washington.

LFS Inc., 851 Coho Way, Bellingham, WA 98225. Phone: (206) 734-3336, Washington toll free 1 (800) 562-8819, Alaska and Continental U.S., 1 (800) 426-8860.

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Circuits & Systems proudly announces the availability of a rugged high capacity platform scale with a large 20"x27" stainless steel platform for all heavy duty applications.

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List price of Series SX with stainless steel platform is \$1,045. Delivery is approximately two weeks ARO. Dealer inquiries are welcome. Call or write: Circuits and Systems Inc., Foot of Second Street, East Rockaway, N.Y. 11518. (516) 593-4301.

New digital bench-top scale

Circuits & Systems, Inc., proudly announces the release of their new model BX-5 digital electronic bench-top scale featuring a capacity of 5 lbs. with a resolution of .001 lb., ideal for precision industrial weighing.

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Continued on page 37

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VHF Channel 13 Survey

In order to determine the severity of traffic problems on VHF Channel 13 with regards to vessels transiting the Lake Washington Ship Canal and Hiram M. Chittenden Locks, the following brief survey has been prepared for regular marine radio users in the Seattle area. Results are to be used as a basis for reevaluation of local marine radio policies.

Name (Optional): _____

Vessel/Station (Optional): _____

Operating Area: _____

1) How many hours a week do you monitor VHF Channel 13 while in the Seattle Area?
1-4 hrs. _____ 5-20 hrs. _____ Over 20 hrs. _____

2) Do you feel that radio transmissions between vessels maneuvered in local area make up a Majority () or Minority () of the radio traffic or Haven't considered it ()

3) Have you ever had your transmissions blocked or broken by another transmission on Channel 13?
Yes _____ No _____ If yes: Often _____ Seldom _____

4) Have you noticed any appreciable change in the amount of radio traffic since the Locks limited their radio comm?
Yes _____ No _____

If yes: Improved () Made Worse () No Change ()

(Attach additional information if you wish.)

5) Do you as a radio operator approve of the limitations on radio comms. as enacted by the Locks?
Approve () Disapprove ()

6) Would you support a similar policy regarding pleasure boat radio contact with the Seattle bridges? Approve () Disapprove ()

Please mail to: VHF Survey, 2405 NW 80th #204, Seattle, WA 98107.

WHAT'S NEW

OFF THE PRODUCTION LINE

Continued from page 36

kg) and net/gross modes. Available options include rechargeable battery pack, set/point driver for filling



operations and BCD or analog outputs.

The BX-5 is the newest addition to a line of portable bench top scales, which now totals five models offering up to 100 lbs. capacity.

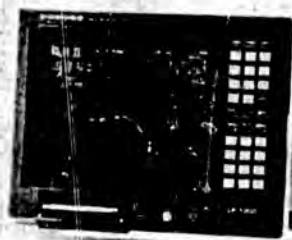
List price of Model BX-5 is \$845. Delivery is approximately two weeks ARO. Dealer inquiries welcome.

Write or call, Circuits & Systems Inc., Foot of Second St., East Rockaway, N.Y. 11518. Phone: (516)-593-4301.

New Loran/plotter

Furuno's new LP-1000 combines a high precision Loran C receiver with a 7" high resolution 512x400 pixel video plotter in a single, very compact cabinet. Presentation is

North-up Mercator with scaling from 1/2,000 to 1/5,000,000. The plot area can be easily expanded or contracted and memory capacity includes a 3,600-point course line and 100 points for waypoints and events. A ROM card stores 4 pages of 500-point electronic plots, equivalent to a whole day's trip for many commercial or sport fishermen.



Ten unique routes of ten waypoints each can be memorized and a course line can be entered into memory simply by sampling any 10 waypoints (defined by L/L, TD's, range/bearing, events, or cursor mark). Plot intervals can be set at 5 seconds, or as any integer-5 multiple of time or distance. The LP-1000 easily accepts input from external nav receivers, speed logs and heading sensors, and it has outputs for autopilots and printers.

For more information, write or call: Furuno U.S.A., Inc., P.O. Box 2343, So. San Francisco, CA 94083. Phone 415-873-9393.

Easy-to-use 'locator' loran

Interphase Technologies, of Santa Cruz, California, has introduced a new generation Loran C-the completely portable Interphase Locator, designed for fishermen and cruisers on both inland and coastal waters.



The Locator is so small and easy to use that it's hard to believe it has so many useful features. Its fully automatic operation makes finding your precise location a snap. And its simple waterproof keypad makes it easy to find and relocate up to 100 favorite fishing spots. Push the "Home" button and the Locator instantly displays the course and distance to reach home. Locator will even allow up to 40 positions to be "chained" together and then automatically help steer the boat to each point.

Its efficient microprocessor uses less than 1/10 amp, allowing up to 100 hours continuous portable use. It even comes complete with a built-in antenna for ease of installation. The Locator will also run on standard 110 VAC home wiring so the owner can take it home to practice, input

favorite locations and plan trips.

The Interphase Locator also displays actual speed and course over the bottom, time and distance to go, distance and direction off the desired course and an alarm sounds upon arrival.

The Locator comes complete and ready to use. Just extend the built-in antenna and turn it on. Locator measures only 6.75"Wx3.75"Hx4.5"D.

For further information, contact Tom Harris (408)426-2007.

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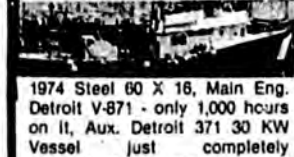
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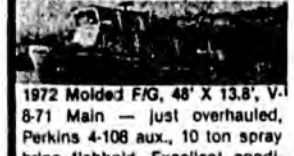
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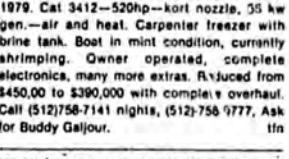
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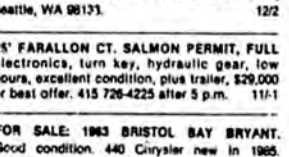
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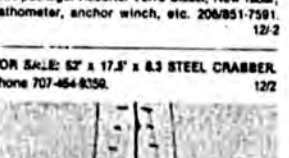
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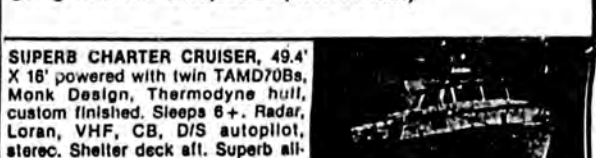


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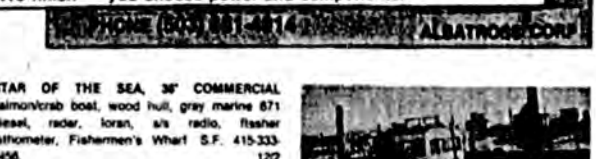
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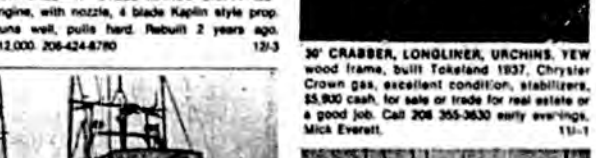
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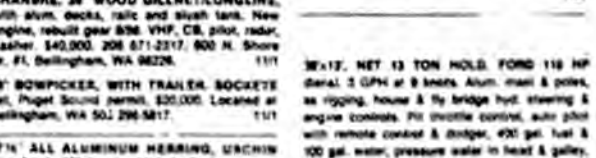
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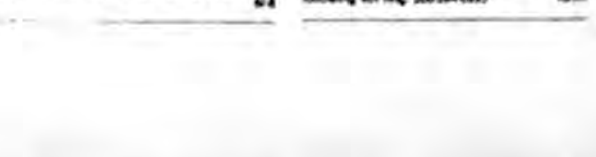
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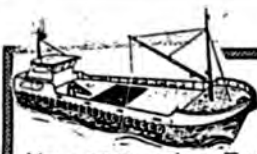
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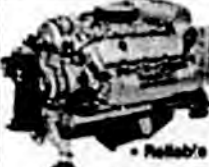
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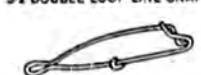
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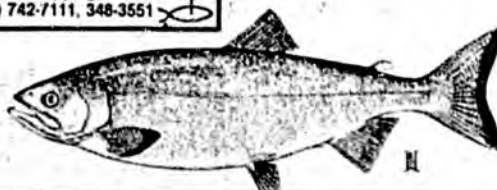
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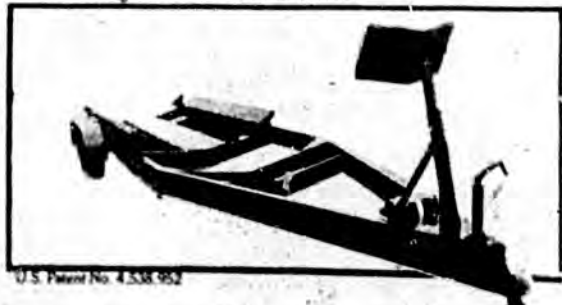
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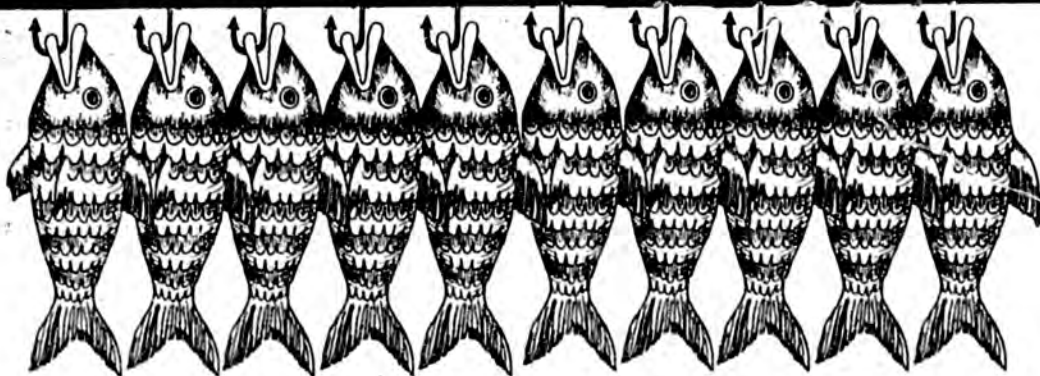
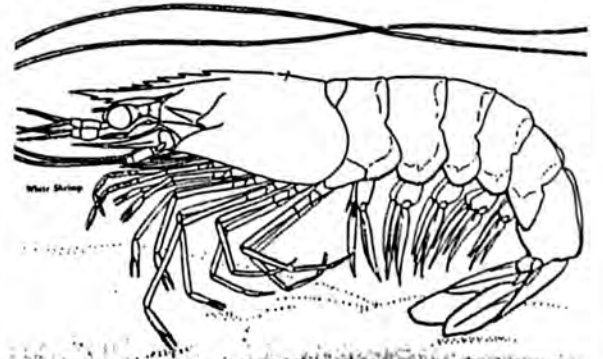


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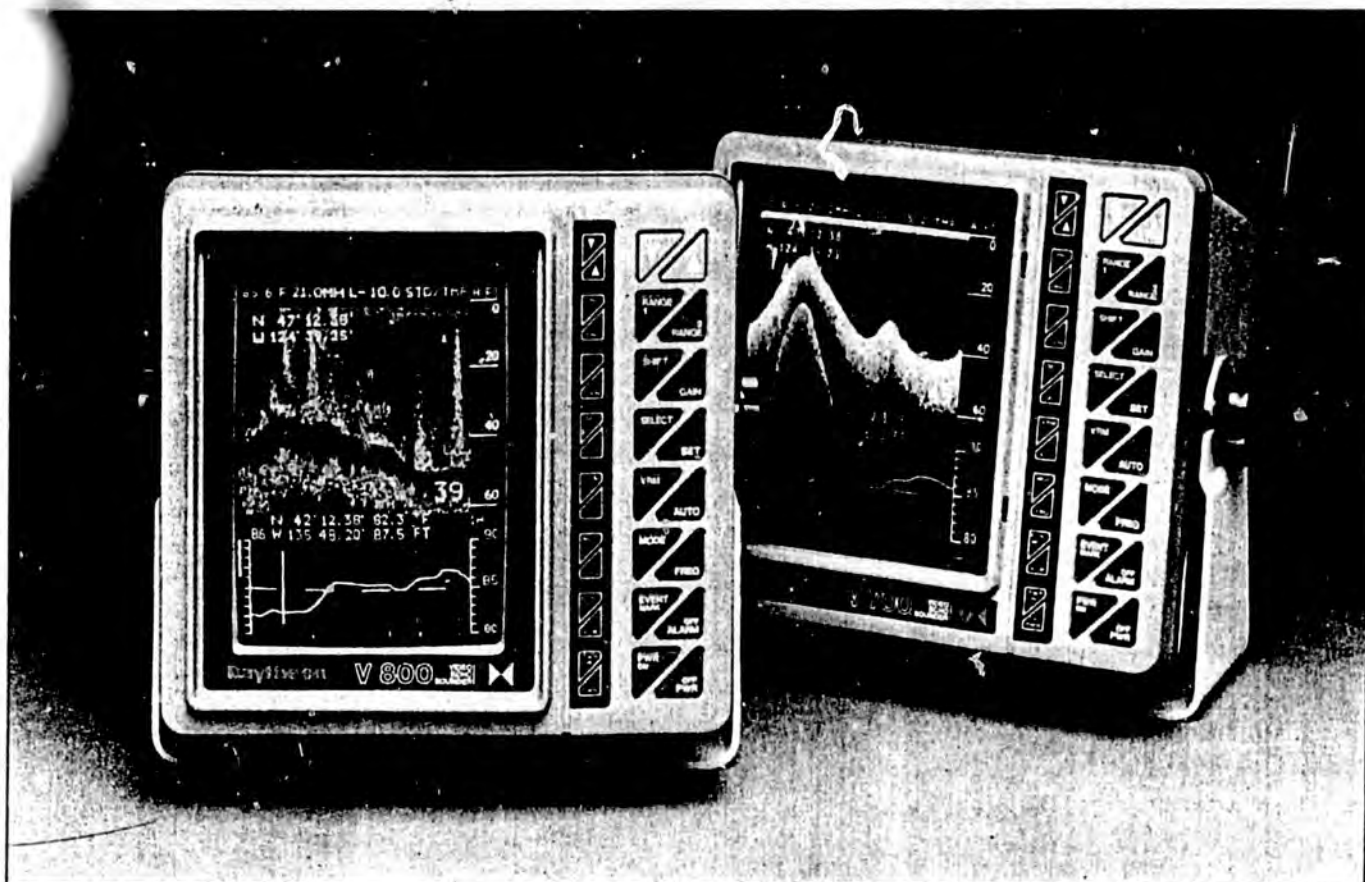
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Paddock is survived by his wife, Pauline, children Raymond III and Jason of Juneau, and Ruth, Robert, Ross Richard and Randy of Spokane, Wash. He is also survived by his father, Raymond E. Paddock Sr. of Tenakee Springs, sisters Shirley Davis of Anchorage and Carol Jorgenson of Juneau, brother James Paddock of Minnesota and numerous other relatives.

Congress has 90 days to review the agreement signed by Reagan administration officials and Japan. During that process, Murkowski said, he will propose amendments for full environmental impact statements on the 'cask-approva' process and on the transportation plans for the plutonium.

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Education a Job for All, ANB, ANS Told

By PAT FORGEY
Sentinel Staff Writer

William Demmert, commissioner of the state Department of Education, told the ANB Grand Camp convention Friday what he has been doing to advance Native education, but he also told the delegates what they must do to assist other Natives in getting a good education.

Demmert is a member of ANB Camp No. 2 in Juneau, and is the highest ranking Tlingit in the Cowper administration. His brother, LeRoy, is the principal of Sitka High School.

"The attitudes of parents and the community all work to influence how children do in school," Demmert said.

"We must strengthen family development programs for building parenting skills," he said.

Programs that strengthen families will help Native children do better both in school and in life, Demmert said.

"The extended family has broken down, and in some cases the immediate family has broken down also,"

Demmert warned. "We need to take steps to strengthen them."

Community-based early childhood educational programs are a must to help native children do well in school, he said.

"We see that as the single most important thing in helping to make children become successful adults," Demmert said.

Education for all Natives, not just some select people, is a must in order to strengthen the Native community, he said.

"We must encourage students who are not going to the university to stay in school," Demmert said.

Vocational and other especially designed programs may be necessary for those students, he said.

Demmert also told the convention about the ways the Department of Education is working to assist Natives in completing their education.

Alaska needs to have more Native teachers, if more Native children are to graduate from the schools, he said.

"We are working with the Universi-

ty of Alaska to attract and retain Native Alaskans into the ranks of the teachers," he said.

Demmert is a former dean of the school of education and liberal arts at the University of Alaska-Juneau.

Local ANS Camp No. 4 President Doris Bailey asked why more Native Alaskans are not hired as teachers in Alaska schools, and what Demmert could do about it.

"There are many qualified Native teachers, but they don't seem to be getting hired," Bailey said.

Demmert said that he was talking with local superintendents and principals about hiring more Natives, but the responsibility lies with local school boards.

"As school boards, they have the authority as well as the responsibility to hire proportional numbers of Native teachers for their schools," he said.

The placement office at the University of Alaska is making up a list of Native teachers who don't have jobs, which would give school districts looking for teachers a place to start, he

said.

Willard Jones, a Ketchikan ANB member, asked what Demmert was doing to make sure that non-Native teachers who teach Native children understand the Native culture.

Demmert said Alaska requires that every new teacher take classes in cross-cultural and multi-culture education.

Teachers currently working in Alaska will have to take similar classes in order to have their teaching certificates renewed, and before long every teacher in Alaska will have taken classes designed to familiarize them with other cultures.

Demmert promised his department will look at any recommendations made by the Grand Camp and other Native groups concerned with improving Native education.

One such group is the Southeast Alaska Native Education Commission, which comprises members of ANB-ANS, the Tlingit-Haida Central Council, and Sealaska Corporation.

Now is the time to take suggestions to that group, he said.

Commercial Pen-Rearing Of Salmon: Can Alaska Gamble?

By Senator Richard I. Eliason

There is a groundswell of interest in Alaska and around the world in the mariculture-aquatic farming industry, including the farming of finfish, shellfish and sea vegetables. Alaskans are actively exploring economic development possibilities and the concept of launching a new renewable resource industry in the state is a tantalizing one. Enthusiasm, however needs to be tempered with prudence.

The states or foreign countries currently involved in intensive fish-farming have done so because their natural stocks are no longer strong. However, the opposite is true in Alaska. Our wild salmon stocks yield harvest among the most abundant in the world. Alaska now produces 43 percent of the world-wide total of wild salmon, and 90 percent of all the wild salmon produced in the U.S. It is no exaggeration to assert that salmon is a mainstay of the state economy. The actual economic impact of Alaska's salmon harvest is worth many times the harvest value. Processing alone can nearly double the value of the catch. The seafood industry, in which salmon plays the leading role, provides more jobs than any other. The state's natural fishery resources and the industries they support must be protected.

The conscientious stewardship of Alaska's valuable seafood resources, maximizing their benefits while at the same time protecting them, is of overriding importance. If Alaska proceeds with finfish farming, the cost of this stewardship will increase significantly. Concern has been expressed about the potentially negative effect of fish farms on water quality. Water pollution from fish feces, unconsumed feed and land-based farm operations must be carefully controlled, necessitating the careful development of siting guidelines and a process for site reviews. The appropriate regulatory agency must have funding to carry out its monitoring and enforcement responsibilities. A means for resolving disputes over use of coastal waters must be created: many of the best prospective sites for finfish farming are cherished

as safe harbors by fishermen and recreational boaters.

The subject of fish disease has generated heated controversy. Indigenous fish diseases are found in natural stocks, but most are self-limiting in the wild. Wild fish tend to be dispersed, and are not subject to the stress of a pen-rearing environment. The effects of large concentrations of biomass in a limited area are largely unknown. The presence of unconsumed fish feed and feces provides a nutrient-rich environment conducive to the growth of bacterial populations harmful to fish, and no matter how clean the environment of the pen, there is always the risk of disease: bacterial, viral and parasitic.

The most disturbing aspect of the subject of fish disease is that most diseases are easily transmittable. Many pens are not designed to adequately safeguard against escapement of farm fish, wild fish can be attracted to the proximity of the pen by the presence of nutrients, and some diseases can even be borne in the water by currents. One can only speculate upon the impact of intensive pen-rearing of salmon on wild fish stocks. It won't necessarily be detrimental, but not enough scientific research has been conducted to prove that it won't be detrimental.

If private for-profit pen-rearing of salmon is authorized, the state will have to determine what government's role will be in terms of regulation and support. To what degree should the state regulate salmon farms to ensure their stocks are healthy? Is Alaska willing to expand public funds to gear up for a large-scale application of technical disciplines including fish-disease control? Failure to do so has been a source of a number of British Columbia's problems in its trouble-plagued experience with salmon farming.

Norwegian government subsidies have effectively reduced the price of their farmed salmon enabling that nation to become a leader in this new industry. Assistance takes the form of capital investment subsidies, capital grants, salmon shipping and transportation subsidies (including the creation of a complete road-sea-air system).

salmon product subsidier and salmon price subsidies. The government provides support in the areas of research and development, quality control, advisory services, free disease-diagnostic services and marketing assistance including international trade provisions.

These forms of government support make Norway a formidable competitor and will enable that nation to outstrip the U.S. as a leading fish exporter by 1990. By that time, worldwide farm production of the premium species of salmon may account for half of the total production of fresh and frozen salmon available on the work market. Some industry analysts predict that the supply of Atlantic salmon will overtake the demand by 1990. Given this scenario, will Alaska fish-farmers be able to compete successfully?

Just in order to gear up for the industry, the state would need to make operating budget appropriations to va-

rious agencies. How much support can the state afford to provide, or not to provide? Where will the money come from? Will we take resources away from our existing rehabilitation programs and product promotion efforts (programs which have already suffered from significant budget cuts the last two years) to put toward mariculture? Will we really be creating new jobs or will we be taking them away from one group and giving them to another? (Norway's 500 gillnetters will be legislated out of business next year — permanently.)

There may indeed be a place for mariculture in Alaska, but the unanswered questions about market conditions, profitability, fish disease and its impact on natural stocks and the degree to which the state is willing to support and subsidize the industry point to a cautious approach to finfish farming.

Court Wants Views in Alaska Mining Case

WASHINGTON (AP) — The Supreme Court said today it wants to hear the Reagan administration's views in a dispute over Alaska mining interests.

The court invited Justice Department lawyers to submit legal briefs in a case in which environmentalists and others are trying to force Alaska mining interests to pay the state for mineral deposits from public land.

A lower court ruling in the case is being challenged by miners and state officials on one hand and by a coalition of environmental, native Alaskan and fishing groups on the other.

The environmentalists and their allies want the miners to pay royalties or rent in compensation for minerals extracted from more than 103 million acres of land.

Jurisdiction over the land was transferred from the federal government to Alaska when it was granted statehood in 1958.

The federal law authorizing statehood said mineral deposits in the public land are "subject to lease by the state as the state Legislature may direct." The law also said that lands or minerals "disposed of contrary" to the statute would be forfeited to the federal government.

The Alaska Supreme Court ruled in May that the state's failure to require payment for land with mineral deposits violated the federal law.

But the state court applied its ruling "only to those lands known to have been mineral in character at the time" the state selected the property for inclusion in its public lands.

The environmentalists and their allies said mining interests should pay royalties for minerals extracted from any of the 103 million acres of public land.

SALMON FARMING IN ALASKA?

WHY?

The states and foreign countries now involved in salmon farming either don't have any wild stocks to worry about or are trying to offset losses from diminishing wild stocks. Most of Alaska's salmon runs are stronger than ever before. So what's in it for Alaska?

WHO WILL DO IT?

Alaskan banks, like Canadian banks, have said they are not willing to finance salmon farms. They say it's too risky and if the farmer goes broke all the bank has left is the fish. As a result, at least 60% of British Columbia's operations are controlled by foreign investors. Can we expect it to be different in Alaska?

Can we expect foreigners to care about maintaining the health of Alaska's wild stocks?

Won't foreigners want to protect their investments by hiring their countrymen instead of Alaskans? They have in British Columbia. The Alaska Legislature has been completely unsuccessful in requiring local hire.

Can we prevent foreigners from taking their profits out of Alaska?

Can we expect foreigners to be willing to compromise with fishermen for increasingly scarce state money for fisheries programs?

WHO WILL PAY?

Every place with success in salmon farming spends millions of government dollars for research and regulation. Alaska's budget is getting tighter and fisheries programs are being cut every year. Legislators will find the only logical source of money to regulate salmon farming is current fisheries programs. This means fishermen will be hurt to help salmon farmers.

In British Columbia some of the salmon farmers have already gone bankrupt. Since going bankrupt means you can't afford to pay for anything, the government has been forced to spend money to clean up the sites and take care of the fish. It's cost everyone except the guys who have gone bankrupt.

Norwegian investors have required British Columbia's salmon farmers to buy their equipment and supplies from Norwegian companies. This has meant salmon farmers can't take advantage of competitive prices and local store owners receive few spin-off benefits.

WHO WILL IT HURT?

Tourists: Alaska's attractions, wilderness and scenic beauty, will be marred by the sights, sounds and smells of salmon farms.

Environmentalists: Uneaten fish food containing drugs and other additives will be washed into the ecosystem with unknown results.

Sport fishermen: Access to favorite fishing areas will be restricted. Hatchery funding will be cut. Diseases may be spread to wild stocks.

Commercial fishermen: Fisheries management programs will be cut. Anchorages will be blocked off. Competition for markets will be increased.

Store owners: Business will be hurt as these other activities are curtailed and salmon farmers are prevented from buying locally by their investment contracts.

Municipalities: Decreased revenue from these curtailed activities and from reduced property value, plus increasingly difficult decisions due to competing interests will cause more problems than it's worth.

Legislators: Policy and budget decisions required by salmon farmers will become increasingly unpopular at home.

The closer we look at the salmon farming experiences of other places, the surer we are that it will be actively harmful for Alaska.

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FACTS ABOUT SALMON FARMING

** Alaskan policies protect wild stocks from disease and genetic problems by banning importation of other species. In British Columbia, salmon farmers are now demanding to be allowed to import Atlantic salmon. They have learned Pacific salmon mature too early in pens, so the product isn't worth as much. Can we be sure this won't happen in Alaska?

** 80% of the cost of insurance for salmon farms is based on the experience of the operator. Few Alaskans have any experience. Alaskans will have either sky-high insurance rates or partners from another country with fish farming experience.

** Fish consumption is increasing because it's considered health food. How successful will fish farmers be when it becomes known their fish food is laced with antibiotics to prevent disease and pigmentation to make the fish a right color?

** Farmers concede they pay out about \$500,000 before they begin to profit. How many Alaskans can afford to have this much money drain on bank accounts before they even make their first sale?

** Much of Alaska's coastline is made up of small bays and inlets. British Columbia has found Pacific salmon need larger pens than Atlantic salmon to avoid diseases caused by stress. This means reduced access to coastal areas by sport and commercial fishermen, recreational boaters, and tourists.

** British Columbia's farmers have found they have to be close to transportation centers to make a profit. It has lowered the value of waterfront property and discouraged tourism to have smelly fish farms so close to towns. Will this happen in Alaska?

** Instead of expanding its salmon farming businesses, Norway is limiting their size and beginning an ocean ranching program like Alaska's. They've decided it's cheaper to let the salmon feed themselves in the ocean.

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Omega-3: The Troller's Trump Card in the New Salmon Game

by Kate Montgomery

The cards have been dealt. Wild salmon's strong suit is omega-3 fatty acids. Trollers can stay in the game if they play this winning card.

Nature endowed wild chinooks and cohos with an abundance of omega 3, a unique polyunsaturated fatty acid that has recently been credited with substantially reducing heart disease. Medical evidence and research support this fact. Nutritionists agree that omega 3 is superior to vegetable oils and to omega 6 (a related fatty acid) in the prevention of atherosclerosis and coronary heart disease.

The highly independent, self-reliant troller has some very real concerns with the impact of farm-reared salmon on his livelihood. Rightly so, as pen-reared salmon from domestic and foreign mariculture could spell economic ruin for trollers. The individualism inherent in the trolling lifestyle hampers organized, cooperative efforts by trollers to promote wild troll-caught salmon. Besides improving quality control measures, however, trollers can increase demand for wild salmon by educating the consumer about its nutritional advantages.

The characteristic determination of trollers to succeed is evident in their admiration for those who fish the longest and hardest even in the face of deteriorating weather. With equal determination, trollers are shortening trips, converting to freezer boats, and applying meticulous standards of care to improve the quality of their product. While commendable, these quality-control efforts have limits to their impact. A fish can only be so perfectly dressed and promptly delivered.

This leaves marketing as the real arena for competition. The intricacies of consumer opinion and consumer choice can be directly affected by educating the public. The nutritional superiority of wild fresh or fresh-frozen salmon over pen-reared must be conveyed to health-conscious consumers. Trollers need to play this trump marketing card in the new salmon game.

Within the next few years, saturation of the market with farmed salmon will probably occur. The resultant depressed prices may become self-limiting for the salmon farmer. If wild salmon are distinguished from the pen-reared variety ("Wild Premium" vs. "Farmed Substitute") and their uniquely healthful characteristics are emphasized, troll-caught fish may hold their own in the marketplace.

The nutritional advantages of including more fish in the diet are inarguable. Fish are low in sodium, a lean protein source, and rich in iodine. Most important, fish are low in saturated fat, the culprit responsible for elevating blood cholesterol

and causing arteriosclerosis. Regular fish eaters have a lower risk of heart disease because the fatty acids in fish can actually reverse the process of arterial damage. For example, Japanese fishermen with a high fish diet have a low incidence of

colder waters have more omega 3 fatty acids, presumably because they need more flexible membranes than fish in warmer waters. (Fatty acids are integral building blocks for cell membranes.) The logical conclusion is that wild salmon from colder

"Wild salmon have a distinct advantage over farm-reared salmon in their levels of omega-3."

heart disease. The fat that fish do contain is in the form of beneficial unsaturated fatty acids rather than harmful saturated fats. The so-called "fatty" fish (salmon, mackerel, herring) are unique because they are so rich in these desirable fatty acids. This is why Greenland Eskimos have such low incidence of heart disease despite a high fat diet. The fats they consume are the omega-3's which are much more effective than the omega 6 fatty acids in vegetable oils.

Media campaigns have convinced "heart-smart" consumers to use vegetable oils and corn oils. These oils contain primarily omega 6 linoleic acid ("omega" refers to the position of the first double bond in the biochemical formula). Recent evidence that the omega-3 variety found in fish is superior to the omega 6 type in vegetable oil should be the cue to develop a marketing campaign that would put margarine and cooking oil to shame. Consider the impact that simple education of the public would have if they were made aware of fish's superiority. Moreover, wild salmon have a distinct advantage over farm-reared salmon in their levels of omega-3.

Omega 3 makes platelets and clotting factors in the blood less sticky. Because of this anti-clumping characteristic, fewer heart attacks occur in individuals prone to coronary heart disease who have diets rich in omega 3. In addition, omega 3 decreases blood levels of triglycerides, is a natural anti-inflammatory, inhibits the growth of tumors (in rats), and combats the vascular initiation of migraine headaches. Of the common fatty fish, the omega-3 content is highest in chinook salmon, followed in order by mackerel, pink salmon, coho and sockeye salmon, and herring.

The fat content of fish varies seasonally and geographically, and depends on species, sex, salinity, and water temperature. Fish in

offshore environments may have higher relative omega 3 levels than fish confined to pens located in typically warmer and shallower water. It is interesting to note that during El Nino, the omega 3 content of wild salmon dropped because of the warmer current. Apparently, they didn't need as much omega 3 to maintain the flexibility of their cell membranes in warmer water.

Critical to the trolling/farming issue is recognition that the omega 3 levels in fish depend directly on the marine food chain. Marine fish are high in omega 3 because marine fish feed on phytoplankton. Phytoplankton are very rich in linoleic acids. This is relevant in terms of what is fed to farmed fish. The diet provided to confined fish affects their nutrient composition when harvested, as well as the final product for human consumption. Nutritionists are concerned about the diet of farm-reared salmon, specifically the processed fish-oil supplements which concentrate cholesterol and the antibiotics in fish feed. The catfish-rearing industry has set the precedent of reliance on feed antibiotics, and it is expected that salmon rearing will follow suit.

Research has demonstrated that omega 3 is required for fish growth. For example, catfish reared on corn must have omega 3 supplements to gain any size. Wild salmon tap natural omega 3 sources that support growth to more than 60 pounds. In the economics of mariculture, the cost of providing supplemental omega 3 vs. accepting growth concessions in farmed salmon will determine their competitiveness with wild salmon.

The chance of "phytoplankton" appearing on the menu of farmed salmon is quite remote. Instead, farmed salmon will receive processed fish oils in their feed to provide the missing omega 3. Fish meal, a component of salmon feed, contains very little omega 3. This is

because the process of fish meal production (from menhaden, and industrial species of fish) expresses or removes most of the omega 3. Adding it back in the form of processed fish oil is undesirable because processed fish oil contains concentrated cholesterol.

Similarly, the American Heart Association has advised against fish oil capsules in its dietary recommendations, because efficacy and safety of the capsules has not been confirmed. The utility of omega 3 may depend on its consumption with interacting components present in fish flesh. Fish oil capsules are made from pressed, eviscerated fish in a process which concentrates the cholesterol. Wild fish as a source of omega 3 do not transmit these discouraging amounts of cholesterol.

Bioaccumulation of contaminants occurs readily in some fish, particularly those with high fat reserves. Great Lakes coho currently have so many contaminants stored in their flesh that commercial sales and commercial fishing of them is prohibited. Thankfully, salmon from the Pacific Ocean are much less contaminated. Ocean-caught fish have had relatively less exposure to toxic chemicals and pollutants than fish raised in confinement near shoreline developments associated with polluting effluent. Pen rearing large numbers of salmon also concentrates fish feces and nitrate levels in their watery "feedlot."

Considering that West Coast trollers produce 33 percent of the world's supply of troll-caught kings and cohos, it is sad that our domestic markets aren't stronger. (We import 60-70 percent of our fish and we're Norway's biggest customer.) With the knowledge that troll-caught wild salmon have marketable advantages over their pen-reared relatives, trollers can play their hand confidently. The natural foodchain, cold offshore temperatures, and limited exposure to shoreline pollution make wild salmon a superior source of healthful omega 3. Trollers have a premium product and a premium opportunity to teach the marketplace why. □

Kate Montgomery fishes with her husband Robert on the troller Osprey. She is a graduate veterinarian and has worked in atherosclerosis research at Mayo Clinic.



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ANB, ANS Convention Ends; Grand Camp Gets Endowment

By PAT FORGEY
Sentinel Staff Writer

Sealaska Corporation has set up a \$500,000 endowment program to help fund the Alaska Native Brotherhood Grand Camp, the regional Native corporation announced during the Grand Camp convention.

The endowment program, assuring a stable source of funding for the ANB in its efforts on behalf of Natives, is the most important thing to come out of the convention, said Roy Bailey, president of Sitka ANB Camp No. 1.

The earnings from the fund are not earmarked for any specific purpose, but may be used however the Grand Camp desires.

"Our biggest problem has been a lack of money," said Doris Bailey, president of ANS Camp No. 4, in Sitka. "This will mean that the Grand Camp can really become effective in today's world," she said.

The formal announcement of the endowment came at the Friday evening dinner hosted by Sealaska and the Tlingit and Haida Central Council, which were referred to as "children of the ANB."

The amount of money the endowment will provide the Grand Camp will vary each year according to the prevailing interest rates, but will probably more than double the amount of money available to the Grand Camp, Bailey said.

The convention concluded with passage of 47 resolutions on various issues affecting Alaska Natives.

The resolutions ranged from a request to the federal government for an expansion of the 1972 Marine Mammal Act to one calling for compilation of a written history of the ANB and ANS.

A proposed resolution, reported by some camps from smaller villages called for a ban on the serving or availability of alcohol at any ANB hall or activity. After extensive debate, a substitute measure was passed calling for a study on the issue of alcohol in native life and ANB activities.

Delegates from larger camps generally opposed passage of the original resolution. One of those larger camps, Juneau, has a liquor license.

The resolution concerning the Marine Mammal Act recommends that the federal government maintain the status quo.

The resolution opposes turning over responsibility for managing marine mammals to the state government, which, the resolution states, is neither funded nor staffed to carry out that task.

The loss of commercial fishing permits held by Natives, and its effect on village economies, was another area of

concern expressed by a resolution. Because no one knew the extent of the problem, ANB Fisheries Committee members first want the problem studied, and then some action, possibly through the Limited Entry Commission, to be taken by the ANB-ANS.

The setup of a separate corporation to address natural resource issues, primarily fisheries, was also given the go-ahead by a Grand Camp resolution.

Though the new entity will be formed by ANB-ANS Grand Camp, it will probably become completely independent, like the Tlingit and Haida Central Council and the Southeast Alaska Regional Health Care Corp., which also had their beginning in the ANB, convention delegates said.

That possibility concerned some delegates, who opposed the resolution because they wanted to keep the new natural resources corporation fully under the control of the Grand Camp.

Sitka Camp No. 1 sponsored a resolution recommending to the governor and the legislature that elders be allowed to subsistence hunt from boats. State game regulations prohibit shooting at game from boats.

Many Alaska Native elders lose their subsistence rights, the resolution stated, because they are too weak for the physical exertion of hiking in the woods. In many cases, those elders are the ones most in need of the food gained by subsistence hunting, the resolution states.

Another resolution, sponsored by Roy Peratrovich Sr. and Frank O. Williams Jr., asked that the Grand Camp appropriate money to fund the compilation of a written history of the ANB-ANS.

There are only a few elders left, according to Williams, who know the history of the ANB from its founding. If that knowledge is not recorded soon it may be lost forever, he warned.

"They are the ones who can come up with as accurate as possible account of the ANB and ANS, as many of them were practically born and raised in the organization," his resolution stated.

One of the strong forces supporting the recording of a written history was Roy Bailey.

The historical segments presented throughout the convention by elders and others familiar with the history of the ANB-ANS were well received and helped arouse an interest in the group's history, Bailey said.

"Out of the convention came a very definite desire to get part of our history in writing," said Doris Bailey.

This year's convention marked the first program of historical segments scheduled throughout the proceedings. They replaced the camp reports from

around the state, which had been presented in the past.

There were fewer resolutions passed this year than last year, said Albert Kookesh, ANB secretary.

"This year we emphasized quality over quantity," he said.

The 1987 convention wound up Saturday with a grand ball and installation of new grand officers who will serve until next year.

Richard Stitt of Juneau was re-elected ANB grand president. The new first vice-president will be Jim Martinez, Klawock, and the new second vice-president will be Dan Johnson Jr., Angoon. Albert Kookesh, Angoon, was re-elected secretary; Dewey Skan, Klawock, was re-elected treasurer, and Charlie Jimmy, Haines, was re-elected sergeant-at-arms.

The entire slate of ANS grand officers was re-elected.

Trudy Wolfe of Hoonah was re-elected grand president; Marge Byrd, Wrangell, first vice-president; Sue Sargent, Juneau, second vice-president; Selina Iverson, Seattle, secretary; Evelyn Hotch, Klukwan, treasurer, and Millie Guthrie, Klawock, sergeant-at-arms.

Next year's ANB-ANS Grand Camp convention will be held in Anchorage, from Nov. 7-12, 1988, Kookesh said.

Four Fined for Halibut Catch

KODIAK (AP) — Four King Cove fishermen have been fined more than \$55,000 for illegal halibut fishing.

Richard Koso, Alvin Newman, Corey Wilson and Carl Koso were found anchored in four separate boats with halibut on board in a closed area in August.

Wilson was fined \$16,700; Richard Koso, \$14,500; Carl Koso, \$14,250 and Newman \$9,000. Richard Koso and Wilson also were fined \$500 each for log violations.

Man, Bear Meet At Outhouse

KETCHIKAN (AP) — There may at last be at least a partial answer to the age-old question of what bears do — and where.

Just ask Larry Hadselford, camp cook and manager at the El Cap Gold Mine on Koonak Island, 680 miles southeast of Anchorage.

Hadselford had just taken his morning constitutional to the camp outhouse on Nov. 11 when he inadvertently gathered data for the bear debate.

"I was just about to sit down and I hear this noise," he said. "Then I turn around and I'm looking straight into a bear's eyes."

He said the black bear's head was sticking up through the seat hole.

It was not known how the bear crawled into the privy. Four men at the camp shoved the outhouse over, freeing the animal, mine workers said.

State Panel Looks at Rules For Disciplining of Judges

KETCHIKAN (AP) — A watchdog panel that oversees the activities of Alaska's judges is studying whether the state should continue allowing public disclosure of alleged infractions while disciplining the jurists secretly, an official says.

Frank Flavin, staff director for the Commission on Judicial Conduct, said the panel asked him to study commission disclosure policies. News media lawsuits challenging secret proceedings against judges in two other states have spurred interest in Alaska, he said.

Flavin said present Alaska rules allow public disclosure of a charge made against a judge, but close the hearing that follows.

The commission hears complaints against judges and then submits to the Alaska Supreme Court recommendations for action against the judges or dismissal of charges.

"It's a sort of strange situation, where you open the window, but close the drapes," Flavin said. "The question is whether the hearing following the charge should be public."

Private censures of errant judges by the Supreme Court are more common than public action, Flavin said.

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POLLY'S POINTERS



Polly Fisher

Milk that is sour shouldn't be used

By Polly Fisher

DEAR POLLY — Is it OK to use milk that is about two weeks old and is starting to sour for baking, etc.? It is about a week after the expiration date and the milk is starting to turn. — A READER

DEAR READER — If the milk is just starting to taste a bit strong, it's probably safe to use in baking. However, I don't recommend using old milk that has soured naturally in baking since it could harbor harmful bacteria as well as the natural bacteria that make it sour tasting. When sour milk is called for in a recipe, it can be made safely by adding a tablespoon of vinegar or lemon juice to a cup of fresh milk, then letting it stand for 15 minutes for the souring action to

occur.

Milk that is too old can be spoiled as well as sour. You have no way of knowing if it's really safe to drink. — POLLY

DEAR POLLY — When my son was young and growing fast, I hand-basted Velcro strips placed in two or three places on his jeans' bottom edges, then folded up the bottoms to the correct length and pressed the velcro strips together. I let them down when I washed the jeans. These jeans grew with my child and the method didn't seem to leave as much of a crease mark as when you make an actual hem. — BARBARA

DEAR BARBARA — This is a great Pointer for those with fast-growing young bodies to clothe! Just to clarify the method, a strip of the "loop" half of the Velcro can be sewn at the very bottom inside edge of the jeans, then strips of the "fuzz" half of the Velcro can be sewn at intervals inside the leg as needed to make various lengths. Your helpful Pointer earns you the Pointer of the Week award, a copy of my book "Polly's Pointers: 1081 Helpful Hints for Making Everything Last Longer." Others who would like this book may order it for \$6.50. Make check payable to POLLY'S POINTERS and send to POLLY'S

POINTERS, P.O. Box 93863, Cleveland, OH 44101-5863. — POLLY

DEAR POLLY — I like making deviled eggs in many ways other than the conventional way.

When mixing the egg yolks, I add sandwich spread instead of mayonnaise. Then, to make the mixture different, I use chopped olives. I decorate each stuffed egg half with a half olive.

Or, I use one of the following mixed in with the egg yolk mixture:

Finely chopped ham or other meat.
Grated cheese, topped with paprika.

Grated carrots or dried parsley or other vegetables, dried or chopped fine.

Very crisp bacon or bacon bits,

crumbled.

Finely chopped pickles.
Your favorite dried herbs or spices.
Tiny or finely chopped shrimp or other seafood.

Any leftover egg mixture can be put on cheese or other snack crackers, or even used to make tiny sandwiches to be served along with the deviled eggs.

These are all good for party fare, picnics or just family get togethers. — EUNICE

Polly will send you a Polly Dollar (\$1) if she uses your favorite Pointer, Peeve or Problem in her column. Write POLLY'S POINTERS in care of this newspaper.

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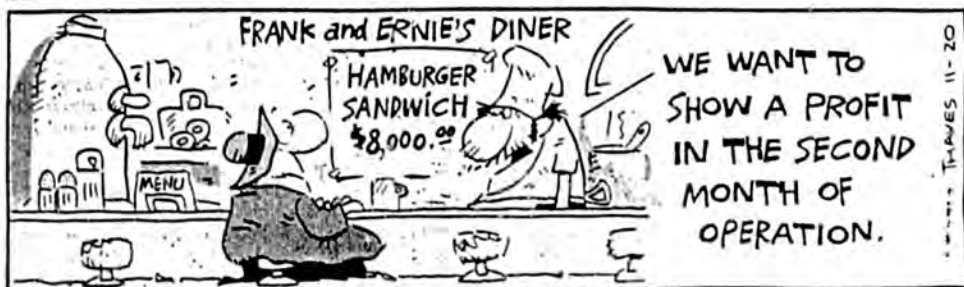
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BY CHUCK SHARMAN

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Dauenhauers Race to Preserve Language

By SUE CROSS

Associated Press Writer

JUNEAU (AP) — Nora Marks Dauenhauer remembers when speaking her native Tlingit tongue brought punishment at school and shame on the streets.

Today, she wins recognition as one of the last speakers of the language, known by thousands of people just two generations ago.

Professors in Germany and booksellers in Japan seek the legends she and her linguist husband, Richard, are trying to record before all who remember them are gone.

It's too late for Tlingit to survive as an everyday language, the Dauenhauers say, but they've taken a major step toward seeing it preserved as literature.

Their collection of Tlingit stories, "Haa Shuka," — Our Ancestors — is part of a series that, when completed, will be the largest collection of stories published in both Tlingit and English, and the first edited by a Tlingit. The book was released in July by the University of Washington Press and the Sealaska Heritage Foundation, of Juneau.

For the Dauenhauers, the work is a race against time. Since Mrs. Dauenhauer began collecting the stories in the 1960s, almost all the storytellers have died. Of the 12 elders whose tales are printed in the book, only three are living.

Mrs. Dauenhauer says perhaps 1,000 or more Tlingits still speak their native language, but they have not passed it on.

"We only know of two young men who can speak Tlingit, two under the age of 40. All of us who can speak it are now grandmothers," she says.

The Dauenhauers take great pride in responses they get from young Tlingits, even a note to say they got a given story all wrong.

A dispute over varied versions at least rekindles interest in the legends and might prompt youngsters to ask how their grandparents told the stories, Dauenhauer says.

The Dauenhauers hope such interest will turn their work of preservation into continuation, with the creation of new stories.

The potential for many new stories and versions is one major difference between oral traditions — those passed down through generations of storytellers — and written traditions, they say. Oral traditions generally have

more versions, and the stories are tailored to the knowledge of the audience.

Spoken tales also are created and forgotten more frequently, the Dauenhauers say.

The tales in "Haa Shuka" are considered Tlingit classics, which are not usually lost. But writing them, rather than recording on video or audiotape, gives the stories a life outside the Tlingit culture, Dauenhauer says.

To non-speakers, "If it's written, it's OK, it's true," says Mrs. Dauenhauer.

Around the turn of the century, when many white people moved into Southeast Alaska's Tlingit country, Indians lost land because their ownership was recorded by oral tradition, she says.

Names and boundaries were remembered and passed down by clan traditionkeepers. But that was not recognized by the whites, who said no one owned the land unless they had a piece of paper proving it.

The Marks family, which owned a mountainside near Juneau, lost all but 2.6 acres along the shore where the Dauenhauers live and work.



Nora and Richard Marks Dauenhauer

The emphasis on writing, plus school rules against speaking Tlingit, led to its rapid loss, Mrs. Dauenhauer says. Indians could have continued speaking the language out of school, but felt pressured not to. "There was a shame factor to speaking Tlingit," she says.

A written form of Tlingit in the Cyrillic alphabet was first developed by Russian priests in the 1800s. A Roman-alphabet version was developed later, and a modified version of it is used in "Haa Shuka."

Dauenhauer, who is not Tlingit, became interested in the language

before he came to Alaska. He moved to the state in 1969, intending to apply techniques learned studying Russian and German to native languages. While teaching at Alaska Methodist University, now Alaska Pacific, he met Nora Marks and read some speeches she had collected.

"I was absolutely moved by the beauty of the oratory. I thought this was as great as anything in English poetry," he recalls.

Dauenhauer says in addition to the scholarly research allowed by a written language, it has a hidden advantage: it

may help Tlingit stories get past what he views as discrimination in literary circles against oral traditions.

"There's a tendency for people to treat American native literature as though it was children's literature. But it's not," Dauenhauer says.

The themes of classic Tlingit tales are universal, he says: alienation, identity, conflict of loyalty, pride and arrogance, separation and loss, revenge.

He'd like to see the stories taught in comparative literature classes.

Medical Care Awards Given

ANCHORAGE (AP) — A 9-year-old boy who helped save his father's life, a doctor and a paramedic from Anchorage, a Skagway nurse and the Nome Ambulance Service were honored Friday for their contributions to emergency medical care.

The awards were announced at the banquet of the 12th annual Alaska Emergency Medical Services Symposium. About 600 doctors, nurses, firefighters and emergency medical technicians, most of them volunteers, were in Anchorage for the three-day event.

Young Andre Cossette of Kodiak won the consumer-citizen award for "quick thinking, common sense and initiative" not in the regular line of duty.

Cossette was working with his father at a boat storage yard in Dillingham when an overhead garage door, 14 feet by 20 feet, fell on the man. Coached by his father, Andre used a large plank to obtain leverage to lift the door enough to free the man. Firefighters said later they were impressed such a small boy was able to lift such a large door.

After freeing his father, the boy went to summon help, then returned and comforted his father until the ambulance arrived. The award cites Andre's "courage and aggressive action."

Dr. David Templin, chief of medicine at the Alaska Native Hospital, was given the George Longenbaugh Memorial Award for leadership and

dedication in the field of emergency medicine. Longenbaugh, a Sitka surgeon, is considered by many to be the father of emergency medical services in Alaska, and was known and respected by EMS professionals throughout Alaska and the U.S. He was killed in a traffic accident in Mexico in January 1985.

Templin is the emergency medical services coordinator for the Alaska Area Native Health Service. He was cited for his work in bringing advanced trauma life support training to the state. As a result, more than 270 doctors in Alaska have been trained in the special techniques for treating critically injured people.

The citation also notes Templin's work in promoting advanced cardiac life support training and medical evacuation flights.

Norm Miller, an Anchorage paramedic for 15 years, was named administrator of the year for emergency medical services. Miller began as a volunteer firefighter in Juneau in 1968. In 1972, he joined the Anchorage Fire Department, and the following year was a member of the first paramedic class in Alaska.

He was chief of paramedic training in Anchorage until a few months ago when he resigned to accept a similar position in Seminole County in southern Florida.

Miller also was well known around the state for counseling medical people, firefighters and law enforcement

personnel on coping with emotional stress resulting from deaths they encounter.

Polly Flemming has been a nurse in Skagway for 19 years. Often, she has been the only person staffing the clinic, meaning she's been on call 24 hours a day, seven days a week. Her citation notes that under similar circumstances, most people seek a less stressful job after just one to three years.

Her nearly two decades of service earned her the annual Health Care Provider award.

The Nome Ambulance Service was recognized for overcoming financial and logistical difficulties in caring for the sick and injured in the community and 14 surrounding Norton Sound villages.

Deschene Ends Training

Army Private Nelson B. Deschene, son of Charlotte McGuire of Angoon, has completed basic training at Fort Jackson, S.C.

During the training, students received instruction in drill and ceremonies, weapons, map reading, tactics, military courtesy, military justice, first aid, and Army history and traditions.

He is a 1986 graduate of Angoon High School.

Good Political Climate Said Key To Getting Sea Farms Financed

By WILL SWAGEL
Sentinel Staff Writer

People seeking financing for ocean farming will need to convince prospective investors of both the economic potential of their individual enterprise and the political stability of the industry as a whole, cautions a Canadian government official involved in ocean farm development.

Jim Fralick, the manager of aquaculture and industrial development for the British Columbia Ministry of Agriculture and Fisheries, delivered that message Thursday to a session of the Alaska Aquaculture Conference now under way in Sitka.

The British Columbia ocean farming industry, mostly involved with pen-rearing of salmon, has expanded rapidly not only because of favorable environmental conditions, but because of Canadian government support, Fralick said.

The government offered prospective salmon farmers interest-free startup loans of up to \$100,000, with no repayment required for several years.

But despite that program and others, British Columbia salmon farmers still find financing to be a major problem, he said.

Fralick said 129 B.C. salmon farms operating today are expected to need infusions of \$2 million each to expand to their potential.

The British Columbia farms are financed by a combination of venture capital and stock sales, he said. Foreign investment in B.C. mariculture is also high, Fralick said, adding that he did not know the exact figures.

Both Alaska and British Columbia have the ability to attract foreign investment, Fralick said, because of their proximity to the lucrative Pacific Rim market. That ability would increase, he noted, as more farmed products entered the market, and lower transportation costs could give Alaska and B.C. products a pricing edge.

Government could assist the young industry by building up the transportation and communication infrastructure between the salmon farming areas and their markets, Fralick said.

Without strong government support, Alaska mariculturists may find themselves

in a catch-22 situation, said Bill Hall, a business development officer with the Alaska Fishing and Agriculture Bank. The bank has helped provide financing for people entering various aspects of Alaska's fishing industry.

Hall said that if the economic viability of ocean farm enterprises can be proven, there would be no scarcity of private sector capital. But a prime test of economic viability is whether it will attract private sector capital.

That's the dilemma facing Tim Tirrell of Cordova, who wants to expand his already-successful oyster and herring roe-on-kelp operation in Prince William Sound, but can't get financial institutions to listen.

"I've got a phone bill that looks like the national debt," said Tirrell, referring to his search for capital in and out of state. "I've got proven abilities and I can't get in the front door."

Hall said he could promise that his bank would let Tirrell in the front door, but couldn't promise him much more than that.

Mariculture, he said "is, in essence, an untested enterprise."

Patrick Anderson, the director of the University of Alaska's Small Business Development Center, said the financing problems sea farmers face stem not only from a skittishness about the mariculture industry, but the overall

hesitancy of American banks to invest in small business.

Industry pioneers, said Anderson, might have to look to foreign investors or to possible state programs that might arise once the state has resolved some of the political questions about the industry.

He suggested that potential sea farmers draw up a detailed financial plan to present to banks or other investors. Anderson said the University's Small Business Development Center in Juneau, the Cooperative Extension Service, the Marine Advisory Program and private consultants are all sources of information that might help sell an investor on a project.

But one glimmer of financing hope may be signalled by the identity of those who traveled to Sitka to attend the conference.

E. James LeBouef, who heads credit operations for the First National Bank of Ketchikan (First Bank), said he had come to the conference because of the mariculture industry's world-wide growth.

LeBouef said Alaska banks will be forced to loosen up credit for mariculture ventures as the industry gains a larger and larger share of the world sea-food market.

"It has to happen," LeBouef said, "the question is when."

Village Corporation To Pay Dividend

ANCHORAGE (AP) — The Clarks Point village corporation will pay each of its shareholders a \$1,000 dividend this year, corporation President Joseph Clark said.

The dividend — \$10 a share for the corporation's 116 shareholders — would be the first offered by Saguyak Inc., Clark said. Each shareholder received 100 shares of village corporation stock as part of the Alaska Native Claims Settlement Act.

Saguyak's profits over the years from its stock market portfolio allowed the dividend, he said. The corporation's board committed to the dividend before the stock market crash last month.

Clark said the shareholders should be receiving their dividends before Christmas.

Corps Spends Record in Alaska

ANCHORAGE (AP) — The U.S. Army Corps of Engineers says it spent a record \$214 million in Alaska in the recently completed federal fiscal year.

Corps spokeswoman Pat Richardson said the total was 27 percent more than the previous year. The amount included spending on construction, goods and services and payroll.

The Corps has spent more than \$3 billion in Alaska since 1946, four-fifths of it for military construction.

The construction budget for the current fiscal year is being debated by a congressional conference committee.

Pay, Benefits Boost State Needs

JUNEAU (AP) — The state budget is climbing to cover employees wages and benefits, even though talks between the Cowper administration and the largest public employees union have collapsed with no firm result.

Budget Director Jay Hogan said Thursday the administration wants to win between \$27.6 million and \$32.8 million in supplemental appropriations from lawmakers. The money's needed to fully fund salaries and health insurance benefit costs through June 30, 1988, he said.

"The governor believes the level of state services has fallen as far as it should go. Last year we hoped that the outcome of collective bargaining talks would result in savings. That has not happened, but there is no direct connection between the talks and the level of services that the public should have," Hogan said.

"For that reason, until something happens in negotiations, we have to seek more money to pay for those services," he said.

Last spring the administration proposed to cut funding for state personnel services by 10 percent — about \$40 million — in anticipation of state workers accepting contract concessions. But in the face of union opposition, the state has stopped seeking any pay cut.

To cover that contingency, lawmakers in May inserted a clause in this year's budget providing \$37.7 million this spring for salaries if the concessions couldn't be won.

But a 29 percent hike in health insurance premiums, plus budgetary changes over the past six months, mean Gov. Steve Cowper will need at least \$27.8 million for personnel costs.

The amount could go as high as \$32.8 million, depending how much agencies can save elsewhere in their budgets during the remainder of the fiscal year.

Hogan said if the legislature refuses to spend the added money, many employees will have to be laid off next spring in order to keep the state from running in the red.

"The size of the layoffs is impossible to predict. They would increase each week this spring, depending upon how late you have to wait to see if the layoffs will be needed," Hogan said.

Political Consultant Cleared by APOC

ANCHORAGE (AP) — The Alaska Public Offices Commission decided Thursday that political consultant Bill McConkey didn't break campaign finance disclosure laws when he conducted a last-minute pamphlet attack on state Sen. Joe Flood in 1984.

After a 90-minute closed-door discussion, the commission voted 4-0 to dismiss the complaint against McConkey.

The combative McConkey, who also is a boxing promoter and referee, said he intends to sue the state for the whole controversy.

"The public offices commission kicked me around, cost me (consulting) business, cost me a fortune," McConkey said. "Now they shrug it off and go on about their business. The public offices commission is no different than Joe McCarthy."

McConkey was referring to the late Wisconsin senator who used innuendo and guilt by association to label thousands of people as communists in the early 1950s.

Commission Chairman Daniel O'Tierney said the decision to dismiss the case was made "with some reservations."

The Anchorage attorney said the evidence just wasn't sufficient to substantiate the exact allegations that were made initially.

"There's no question it was one of the most revolting series of facts that's happened in recent years in terms of campaign activity, and we don't overlook that fact," O'Tierney said.

McConkey used almost \$2,000 from Sarah Closkey to prepare the pamphlet, which claimed Flood had dodged child support payments to his two ex-wives. The commission decided McConkey did not violate the law by failing to report the activity because the expenditure was made independently of the campaign of state Sen. Mitch Abood, R-Anchorage, Flood's opponent.

McConkey was Abood's paid campaign consultant at the time.

Under APOC regulations then in effect, such independent expenditures did not have to be reported. Since then, the regulations have been revised to require such activities be reported.

"I also want to make very clear that that problem has been cured," O'Tierney said. "This sort of scenario could not be repeated and escape a conclusion by this panel that a violation occurred."

Closkey said the money she gave McConkey came from her husband-to-be, Joe Norris. Closkey was unemployed at the time, and did not live in Abood's Senate district.

Norris told investigators he had gotten the money from someone else, but declined to identify the donor.

Alaska Movie Wins Award

FAIRBANKS (AP) — "Make Prayers To The Raven," a documentary series on Alaska natives produced by KUAC-TV and the University of Alaska-Fairbanks, has won the silver medal for cultural programming at the International Film and Television Festival of New York.

Producer Mark Badger received the medal on behalf of KUAC at the 30th annual festival in New York last week.

The five-part series, inspired by the book of the same title by anthropologist Richard Nelson of Sitka, competed with

22 other entries.

The review by the Christian Science Monitor said the production may be "the most profound series airing on any channel this year."

The series explores how traditional spiritual values and beliefs guide the lives of people living on the Koyukuk River in Alaska's northwestern interior.

Mariculture Red Tape Short, Agencies Say

By PAT FORGEY
Sentinel Staff Writer

Although applications for mariculture permits must be approved by five different government agencies, most requests should be either approved or rejected within 90 days of submission, a panel of representatives from those agencies told the Alaska Aquaculture Conference Thursday.

More than 100 persons are attending the fourth annual conference, which started here Wednesday in the Centennial Building. It is sponsored by the University of Alaska Sea Grant program.

Represented on Thursday night's panel on "permitting" were the state Department of Natural Resources, the U.S. Forest Service, the U.S. Army Corps of Engineers, the Alaska Department of Fish and Game and the state Department of Environmental Conservation's Divisions of Environmental Health and Environmental Quality.

The panel was moderated by Diane Mayer, of the Division of Governmental Coordination.

Mayer's agency coordinates the review of each mariculture permit application. It uses a "project-based" review system, in which each of the agencies reviews the entire application simultaneously.

"That prevents the problem of receiving approval for the first part of a project, and then having the second phase rejected after the first is already complete. It also helps to speed the process along, she said.

"If the project doesn't meet regulatory requirements, you may have to change the location or proposal," she said, but you won't be stopped partial-

ly through construction.

The first step for somebody considering entering the mariculture business is to contact Mayer's agency, she said.

"We help the applicant determine what permits are needed, after considering what their proposal is," she said.

One kind of permit that nearly every project requires is some type of site approval.

That approval must be granted by the state Department of Natural Resources, and, if the land is on a national forest, the Forest Service must give its approval also. Most mariculture facilities must be located in the ocean or tidelands, so approval from the U.S. Army Corps of Engineers is also required.

Authority to use federal lands comes either as a temporary land use permit or a lease, said John Harmening, representing the Forest Service.

The temporary land use permit is easier and cheaper to get, but the lease gives much stronger legal rights to the land.

To get a lease, the applicant must pay for a site survey and appraisal, which can cost several thousand dollars.

Land use permits, Harmening cautioned, are only given if there is no usable private land available, the project is judged to be in the public's best interest, and it is consistent with applicable land use plans for the area.

The Forest Service does feel that aquaculture is a valid use of Forest Service lands, Harmening said.

The first step in getting a permit, after a site has been selected, would be an informal talk with the Forest Ser-

vice.

"We'll tell you what the other users we know of are, and what the land use plans say about the area," he said.

Mariculture usually conflicts with other types of uses, Harmening warned.

"We don't have a lot of areas that are really good for mariculture that are not needed for a lot of other purposes," he said.

The Army Corps of Engineers requires a permit for any structure placed in navigable waters, said the Corps' Jeanne Hanson.

Corps of Engineers approval involves 30 days of public notice about the proposed construction, after which conflicting uses are considered before permission is given.

The state Department of Environmental Conservation's Division of Environmental Quality must also give its approval before the Corps of Engineers can issue a permit, Hanson said.

That state permission is a certificate of reasonable assurance that water quality can be maintained.

The other area in which Environmental Quality Division comes in is concerning sewage disposal for any caretaker's cabin on the site.

The Alaska Department of Fish and Game considers things like how the project will affect natural stocks, particularly commercial stocks, said David Benton of the department.

"We want to protect wild stocks from potential disease and genetic problems," Benton said.

Fish and Game also reviews success potential of various operations, in case it is necessary to decide who should be able to use choice sites.

The Department of Environmental Conservation's Division of Environmental Health must also give its approval for harvesting and processing shellfish.

"Normally our section of the department doesn't get contacted until one or two years down the line," said Manny Soares, of that division.

The division checks shellfish for paralytic shellfish poisoning, as well as surveying growing areas for sources of pollution, he said.

He requested that early informal contact be made with the department by those interested in mariculture, as a way of avoiding problems before they start.

At present, most of the state and federal officials responsible for issuing the various permits only devote a small part of their time to dealing with aquaculture, Mayer said.

The processing of permits is going to become more efficient as more facilities are begun, Mayer said.

"As more and more of these come on line, the understanding will increase," she said.

Friday's sessions focused on shellfish mariculture, and the conference was to wrap up Saturday night after a full day devoted to discussions and reports on finfish mariculture.

Saturday panelists will include representatives of the Alaska Department of Fish and Game, the Alaska Mariculture Association, the Alaska Trollers Association, the National Marine Fisheries Service, United Fishermen of Alaska and Seafarm Norway. The Alaska Legislature will be represented by state Sens. Dick Eliason and Fred Zharoff.

Tasty toppings highlight holiday pumpkin pies

For many, pumpkin pie is one of the most delicious elements of a sumptuous Thanksgiving or Christmas dinner. No matter how full we all claim to be, there always seems to be room for a slice (or two) of pumpkin pie.

Pumpkin pie, whether served plain, or topped with a dollop of whipped cream, is always popular. This year, though, why not add an extra special touch to this traditional dessert? A myriad of delicious toppings exists which can add fun and spark to your holiday pumpkin pie.

One particularly appetizing garnish for pumpkin pie is Streusel Pecan Topping. This crunchy, sweet mixture combines chopped pecans, cinnamon, ground ginger, sugar and a bit of flour for a lip-smacking "topper" bound to please the most finicky dessert fans.

Those who regard pumpkin pie and whipped cream as an inseparable twosome should appreciate Spiced Whipped Cream Topping.

Flavored with pumpkin pie spice and powdered sugar, this tasty whipped cream also complements a mug of steaming apple cider, hot chocolate or coffee.

Pastry Decorations are another unique topping. From the variety of holiday cookie cutters available, create shapes such as turkeys, fall leaves, Pilgrim's hats, Christmas trees, stars, Santas, elves or specially wrapped gift boxes.

Serve — and enjoy — these uniquely decorated pies as traditional, yet novel, desserts at this year's holiday dinner.

FAMOUS PUMPKIN PIE (Makes one 9-inch pie)

- 2 eggs, slightly beaten
- 1 can (16 ounces) LIBBY'S Solid Pack Pumpkin
- ¾ cup sugar
- ½ teaspoon salt
- 1 teaspoon ground cinnamon
- ½ teaspoon ground ginger
- ¼ teaspoon ground cloves
- 1½ cups (12-ounce can) undiluted CARNATION Evaporated Milk
- 1 9-inch unbaked homemade pie shell with high fluted edge

Preheat oven to 425° F.

Combine filling ingredients in order given; pour into pie shell. Bake 15 minutes.

Reduce temperature to 350° F. Bake an additional 45 minutes or until knife inserted near center comes out clean.

Decorate with favorite pie topping.

STREUSEL PECAN TOPPING

- ½ cup flour
- ½ cup sugar
- ¼ teaspoon ground ginger
- ¼ teaspoon cinnamon
- 4 tablespoons butter, chilled and cut into small bits
- ¾ cup chopped pecans

Combine flour, sugar, ginger, and cinnamon. Cut butter into flour mixture until crumbly. Stir in pecans. Sprinkle over pumpkin pie during last 20 minutes of baking time.

SPICED WHIPPED CREAM TOPPING

- 1 cup whipping cream
- 2 tablespoons powdered sugar
- ½ teaspoon pumpkin pie spice

Combine all ingredients and whip at high speed for four minutes or until whipping cream holds its shape. Chill. Spoon over cooled pumpkin pie.

PASTRY DECORATIONS

Roll out leftover pie dough trimmings to approximately ¼". Cut out shapes using holiday cookie cutters. Place on lightly greased cookie sheet. Brush tops lightly with milk and sprinkle with sugar.

Bake in preheated 350° F. oven for approximately 10 minutes or until golden brown. Allow to cool completely. Use to decorate the tops of cooled pumpkin pies.



SPRUCE UP YOUR PUMPKIN PIE THIS YEAR with Streusel Pecan Topping, Spiced Whipped Cream Topping or Pastry Decorations in festive holiday shapes.

Man Sentenced To Wilderness

KALISPELL, Mont. (AP) — A man convicted of breaking into two wilderness cabins has been ordered to restock them by packing in food over 27 miles and hand-cutting ¾ cords of wood.

Larry Courtois, 38, of Seeley Lake, was fined \$625 and ordered to replace what he took last winter from two Forest Service outposts deep in the Bob Marshall Wilderness Area.

Because of wilderness regulations, Courtois will have to ferry the supplies more than 27 miles on foot or horseback and cut the wood only from dead or fallen trees, without the use of a chainsaw.

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Former SJ President Les Yaw, 86, Dies

Services for William Leslie Yaw, an outstanding Sitka community leader, were held this week.

Yaw died last Wednesday evening while gardening at his home, 701 Lincoln St. He was 86.

A memorial service was held Monday at the First Presbyterian Church with the Rev. David Morelli moderating. A reception followed at Latta Hall.

A memorial worship service was held 10 a.m. Tuesday at the church, followed by commitment at Sitka Memorial Park. Members of the family served as pallbearers.

The family suggests that in lieu of flowers donations be made to the Yaw Family Scholarship Fund at Sheldon Jackson College.

Yaw was born Dec. 26, 1900, on a farm near Alexander, Iowa, to W. H. and Gertie (Robbins) Yaw. He was graduated from Iowa Falls High School and from Cornell College in Mt. Vernon, Iowa.

He married Caroline Ruth Witzigman June 1, 1923, and in August he left for Sitka and a job serving as a teacher, coach and dorm counselor at Sheldon Jackson School. His bride stayed in Iowa to finish her last year of college, then she too joined the SJ staff.

The next year they were transferred to what is now Warren Wilson College in Asheville, N.C., but midway through the year the SJ superintendent, Dr. James Condit, asked Yaw to return to Sitka to be his assistant. After he received his master's degree in education at Columbia University, the Yaws returned to Sitka.

He was named superintendent in 1930 and, in 1944 when the school became a college, he became the first president.

He resigned in 1952, and in 1954 was appointed superintendent of the Pioneers Home. After his retirement five years later he went into investments.

His association with and support of SJ continued until his death. He led a successful effort in 1980 to keep the school then struggling from financial hardships, from being merged with the University of Alaska or having its assets sold.

He was a trustee of the school for many years and was consulted frequently by those at the school. At last summer's reunion of Sheldon Jackson school, many tributes were paid to him, and the affection and respect the students and faculty held for him was obvious.

Two buildings, the Caroline Yaw Chapel and the Yaw Building, are named in his family's honor.

He received the school's Christian Citizenship Award in 1963.

The award was one of many his philanthropy and dedication to his church, school and community earned him over the years.

In appreciation of the major role he played in the rebuilding of St. Michael's Cathedral, destroyed in a fire Jan. 2, 1966, he was presented the Holy Cross of St. Herman by the Orthodox, Catholic and Apostolic Church in 1978.

He was presented with the Chamber of Commerce's Cossack Cap Award in 1976 for his service to the community; Jessen's Weekly of Fairbanks gave him the Distinguished Service to Alaska award in 1948; and he received many, many certificates of appreciation from such groups as the Salvation Army, Boy Scouts and Girl Scouts, school groups, Rotary Club and the Presbyterian Church.

He also was involved in such projects as getting bells for St. Michael's; moving the "Blarney Stone," reputed to be the one Russian-American Company Manager Alexander Baranof stopped by on his walks to Indian River, to a more prominent position by Crescent Harbor; establishing the first Sitka bank, now National Bank of Alaska; obtaining the Prospector Statue for the Pioneers Home; carving a Tlingit canoe which is now on exhibit by Ketleson Memorial Library; and transferring the utilities from private to public operation.

He was a lifetime member of the Rotary Club; a member and past president of the Chamber of Commerce; served on the Salvation Army advisory board for many years; helped raise funds for the Boy Scouts and Girl Scouts; and at the time of his death was a member of the Governor's Advisory Council on the Pioneers Homes.

He was active in the Presbyterian Church, serving as a trustee and elder. The Alaska Presbytery presented him with an award for "faithfulness and service" in 1983, and in 1985 he was presented with a certificate of appreciation by the Synod of Alaska Northwest.

He also was the author of "Sixty Years in Sitka," published in 1985. A collection of hunting tales is being published.

Caroline Yaw died June 29, 1983.

On June 6, 1985, he was married to Elisabeth Tyler at Mary Lake, Minn. A friend of the Yaw family, Mrs. Tyler had served as a Volunteer in Mission at Sheldon Jackson in the 1980s.

The Yaws' oldest son, Robert Edgecumbe Yaw, drowned in San Francisco in 1946 while serving with the U.S. Navy.



William Leslie Yaw

Survivors include his wife, Mrs. Tyler-Yaw; daughters Helen Finney of Ketchikan, Nancy Davis of Anchorage and Betty Jo Potter of Miliani, Hawaii; son Charles Yaw of Kirkland, Wash.; and a brother, Forrest K. Yaw of Hampton, Iowa.

Also surviving are grandchildren Debra Finney Brandes of San Antonio, Texas; Kevin and Brad Finney of Ketchikan; Terry Potter of South

Bend, Ind.; Dee Ann Potter of Honolulu; Lance Potter of Washington, D.C.; Lt. Taylor G. Potter, stationed with the U.S. Air Force in Spain; Caroline Yaw Davis, now touring in Australia; Scott Davis, Princeton College; Roblyn "Rob" Davis of Whitman College, Walla Walla, Wash.; Brian Yaw and Monica Yaw of La Conner, Wash.; and one great-grandchild, Brannon Finney of Ketchikan.

Wash. Fish Farmers Like Atlantic Salmon

SEATTLE (AP) — Washington's budding fish farming industry is moving toward use of Atlantic, rather than Pacific, salmon, says the fish enhancement project manager at the National Marine Fisheries Service at Manchester in Kitsap County.

"It's a numbers game, really," said Conrad Mahnklin. "We have found that the Atlantic salmon is growing faster and has a better survival rate than the Pacific salmon."

"The major new producers here will go for the Atlantic," added Dr. John Pitts of the Washington State Agriculture Department, the state's aquaculture coordinator. "It has been easier to domesticate, and the Atlantic salmon reared in Puget Sound is hardy and relatively disease-free when compared to the native Pacific salmon."

While British Columbia salmon farmers are raising Pacific salmon, Washington farmers increasingly are electing to raise Atlantic salmon.

The reasons are economic. The Atlantic salmon attracts a better price in the market.

The smaller coho, a Pacific native, gives a return of 75 cents to \$1.50 on the dollar, while the Atlantic salmon return is from \$3 to \$4.

The wholesale value of Washington's fish-farmed trout and salmon was \$15 million in 1985, the most recent figures available showed.

Washington now has 11 commercial salmon net pen farms, four of which have begun harvesting.

Three Washington fish farmers will produce about 1 million pounds of Atlantic salmon this year and come close to doubling that next year. A fourth farm will produce about 2 million pounds of coho, but is likely to switch to Atlantic salmon during the next three years.

"If that happens, it'll set the tone for this state," said Mahnklin.

During the past three years, British Columbia has added about 125 fish farms.

The Canadian province has been reluctant to permit the import of salmon eggs from the Atlantic for fear of introducing new diseases. Some fish farmers say that fear is unfounded, and the Atlantic salmon used in Washington actually is not a newcomer to the Pacific.

Under the administration of Gov. Booth Gardner, who took over in January of 1985, the state has adopted a pro-development aquaculture policy. The policy is providing a new incentive for fish farming on Puget Sound and the Strait of Juan de Fuca.

The state will help in streamlining the permit process.

Gardner has called for a state aquaculture conference on Jan. 30.

Standard Time

Standard time is reckoned from Greenwich, England, recognized as the prime meridian of longitude. The world is divided into 24 time zones, each one hour different from those adjacent to it.

Richard Kito Dies of Cancer

PETERSBURG (AP) — Services are scheduled here Tuesday for Richard Kito, former Petersburg mayor and past director of the Alaska Housing Finance Corp.

Kito died here Saturday after a long fight against cancer. He was 56.

The Petersburg native and fisherman served as mayor in 1969-1973 and 1978-1981.

He was director of the AHFC in 1979-1980.

Kito, of Tlingit and Japanese descent, also was active in native affairs. He was a member of the Alaska Native Brotherhood from 1947, was named to the first board of directors of the Sealaska regional native corporation in 1971 and served on the board until 1983. Kito was a member of the Tlingit-Haida

Central Council committee for 10 years.

He was born in Petersburg on Feb. 9, 1931, graduated from the local high school as valedictorian of his class, and served with the U.S. Marine Corps in Korea during the 1950s. He is a past state commander of the American Legion.

In Petersburg he was known for pioneering the harvests of herring roe and roe on kelp, and for his ownership of Kito's Kave, a bar.

Kito is survived by his father and mother, Tom and Lucy; sisters Anhe Kito and Geannette Yamada; wife Leilani and sons Richard, Thomas, Tyroon and Thurman.

The family has asked that in lieu of flowers, memorial donations be sent to the American Cancer Society.



DOT IN THE WILDERNESS — Bill Lockard looks over the mining camp on Admiralty Island, where the Greens Creek Mining Co. is building what's expected to be the nation's most productive silver

mine. Because of environmental conditions, the company cannot expand its mine site much beyond what is shown in the photograph. The entrance to the mine is at the bottom of the excavated hillside in the background. It's expected to open in the fall of 1988. (AP photo)

Greens Creek Developers Keep Low Profile in the Wilderness

By SUE CROSS

Associated Press Writer
ADMIRALTY ISLAND, Alaska (AP) — It's a ramshackle place to prompt all these superlatives, this tiny shantytown of trailers and mud.

The crude camp on the banks of Greens Creek is home to what will be the country's biggest silver mine, in a huge wilderness, a national forest monument, and smack in the middle of the thickest bunch of grizzly bears known in the world.

It also sits on one of the richest deposits of silver, gold, lead and zinc ever discovered.

But there'll be no boom town, no second Klondike here.

From the window of a De Havilland Beaver flying overhead, the Greens Creek mine might be the head of a pin, lost in the haystack mountains of spruce forest, above an invisible lode of riches.

The mine will never look like much more, and that's part of the plan since environmentalists and miners — traditional adversaries — decided to make Greens Creek a model of cooperation.

"To build a 1,000-ton-a-day mine is no great feat, if you do it in Nevada or even Seattle. But to do it on an island, in the middle of a national monument, adjacent to a wilderness where you have no facilities, is quite a challenge," says Jack Bingham, vice president of Greens Creek Mining Co.

"Our site preparation costs alone are going to be almost 10 times higher here than they would be for a similar plant in

Washington state, say, because of the soil conditions and the environmental conditions," Bingham says.

The mine's development budget is \$80 million and growing. At least a third of that is being spent solely to protect the environment, he says. As a result, he says "It's not a bonanza."

Conservationists weren't happy about the mine when most of the rest of Admiralty's 1,790 square miles were designated a wilderness in 1980.

But they've been pleasantly surprised by the Greens Creek management, says K.J. Metcalfe, a former Forest Service manager for Admiralty Island who resigned and now speaks for the Southeast Alaska Conservation Council.

Environmentalists see Greens Creek as proof of a position that's rarely believed, Metcalfe says, "That they're able to support development when it's done in a responsible way."

Environmental protections dictate the mine's design, from the construction camp and future port, a tight little town where every square foot counts, to the equally cramped mine entrance camp a few miles away.

"That's one of the problems with the space," says mine employee Bill Lockard, as his Silverado 4-x-4 comes windshield-to-wheel with a massive logging truck. Lockard takes refuge on the road bank. The truck takes the track with inches to spare.

The mine's entire surface development — 91.8 acres, excluding 13 miles of road — is squeezed into less than half the area normally required for such a project, Bingham said. The roads are

unpaved and precariously narrow.

Developed areas are sharply defined. On one side is the mine; on the other is wilderness.

Vivian Kee's job is making sure the two don't overlap.

"It's kind of an unusual marriage. Their primary interest is in production and our main interest is in preserving the environment. It involves constant coordination — I pull my hair out a lot," says Kee, Forest Service coordinator for the project.

The Alaska National Interest Lands Conservation Act of 1980 gave the mine site the unusual status of a forest monument, where only a specific type of development is allowed by Congress — in this case, the mine.

"Once the mine life is over and they are put to bed, the land is essentially going to go back to wilderness state," Kee says.

Kee, two other Forest Service employees who work full-time at the mine, and five special advisers are in charge of protecting the wilderness.

Among the odd conditions there are a ban on hunting or hiking in the surrounding mountains. With 200 construction workers and up to 250 miners once Greens Creek opens in the fall of 1988, it wouldn't take many walks to damage the delicate rain forest.

Construction workers now bunk in on-site trailers, but as soon as the mine is built, workers will travel to and from it on two ocean-going ferries, now under construction in Sitka.

Every day, a ferry will make a 25-minute, 15-mile crossing from the mainland just north of Juneau, across

Stephens Passage to a floating dock in Admiralty's Young Bay. From there it's a five-minute bus ride across an isthmus to the shores of Hawk Inlet and the marine port. It's another eight-mile ride to the mine entrance in the mountainous heart of the island.

All told, the daily commute will take about 1½ hours each way, Bingham said.

Communication now is limited largely to three-a-day float plane flights, a schedule that makes "getting out" a frequent topic of conversation among mine workers.

But things are getting easier. At the construction camp and headquarters, which will become the marine port, two satellite dishes sit on a bluff next to the workers' trailers.

Lockard, community relations manager for the company, says they're part of an independent phone system that will tie Greens Creek to the rest of the world.

Until a month ago, the road to the mine was not passable and the only way there was by helicopter.

Now dump trucks, cranes, backhoes and buses play dodge-em in a basin of mud outside the mine entrance, a sort of Paul Bunyan-scale bumper-car arena where workers are racing against construction deadlines.

In 1620, a group of religious dissenters known as the Pilgrims set sail on the Mayflower for the New World. In November of that year, they sighted Cape Cod and decided to land at Plymouth Harbor. Before going ashore 41 members of the group drew up the Mayflower Compact.

Villages Tell of Deep Financial Troubles

ANCHORAGE (AP) — Nearly half of Alaska's towns and villages say their residents are worse off economically this year than last, and 95 percent of the local governments say they have reduced at least one municipal service.

David Hoffman, commissioner of Community and Regional Affairs, said Friday 18 villages are deeply in debt and 20 more will be by year's end.

Some are so desperate for money that they have sought disaster relief from the state Department of Military and Veterans Affairs — the agency that delivers help only in life-threatening emergencies such as floods and fires.

Of 128 Alaska towns and villages

recently surveyed by Hoffman's department, 14 percent reported they are so strapped for cash that they're having trouble paying even federal withholding taxes.

The grim picture was painted by officials who attended a presentation by Gov. Steve Cowper's Cabinet Committee on Economic Dislocation.

Many came to hear what Cowper intended to do for them as they scratch for cash to heat buildings and meet payrolls in the aftermath of state budget cuts brought by the oil bust of 1986.

They were told the state wants to help with financial and technical advice, but

can offer no immediate financial relief. Cowper himself put it more succinctly earlier this week when he told an Alaska Municipal League luncheon crowd that unless legislators find new sources of revenue, he foresees no increases in state aid to cities and villages.

"I guess I'm a little bit disappointed," said Walton Smith, the city manager of Mountain Village, a community of 700 on the Yukon River in western Alaska.

Smith, who waited anxiously all week for the committee to unveil a rumored relief package, is looking at a \$250,000 deficit in his budget after cutting his

staff from four people to two.

"You talk about bankruptcy. I don't know what that means. But I can tell you we're broke," Smith said.

He drew one of the few laughs of the session when he said: "There are some advantages to being broke. You don't get many bill collectors on the Yukon River."

Smith said those who think Mountain

Village is in tough shape haven't looked closely at scores of other villages around the state.

"If you look, you're going to find that we're a long ways from being in the worst shape."

Denali Park Resort Plan is Resurrected

ANCHORAGE (AP) — Planning efforts for a resort in Denali State Park have been resurrected with \$100,000 from the National Park Service, state officials say.

A combination of public opposition and the Legislature's refusals to ante up \$200,000 for further study and preparation of a concession contract halted the planning 18 months ago.

But with the \$100,000 from the park service, the state over the next 10 months will revise the Denali State Park master plan. The revisions will provide site selection criteria for a visitor complex and assess the effects of increased public use and recommend park amenities such as trails, campgrounds and parking areas, officials say.

"One of the elements will be the

concept of a resort complex and a National Park Service visitor center," said Neil Johannsen, director of state parks.

The state Department of Natural Resources and federal government hope to increase tourism at the 324,240-acre state park and relieve overcrowding at Denali National Park about 100 miles to the north.

"Things are getting worse up there," Johannsen said of the national park. "We're hitting the point where arguably the top visitor attraction in the state has hit the saturation point."

The Department of Natural Resources also will try again for \$200,000 grant when the Legislature convenes in January. The money would allow the state to look more closely at the economics of a visitor complex in

the state park, draft a contract proposal and seek bids from private developers, Johannsen said.

The idea of a resort at Denali State Park has been kicked around for nearly 20 years. It first surfaced in state-federal study of how and where tourism might be increased. That study prompted the Legislature in 1970 to create the state park.

"For all the work, the study, setting aside the land, the controversy, the state has never offered the opportunity to the private sector" to develop a resort, Johannsen said.

No site for a resort will be selected until public comments have been considered, Johannsen said. The plan would either select a site for a lodge or create a zone of consideration. Developers could submit proposals for

sites in the zone.

"This is clearly a better process," said Cliff Eames, issues director for the Alaska Center for the Environment. That conservation group opposed the state's 1986 proposal to allow development on Curry Ridge, a section of high ground east of Byers Lake on the south end of the park.

Eames said his organization likely will renew its objections if Curry Ridge again is selected. "I would urge the department to look at what scale might be appropriate and to look at private lands first. Next, they should look at sites on public lands where the environmental impacts are less and the physical conditions are superior."

Public hearings are expected between February and May. The final master plan revision is due on Aug. 1.

EMS Progress in Alaska Described

ANCHORAGE (AP) — Seriously ill or critically injured people in Alaska have much better access to care today than 10 or 15 years ago, the chief of the state's emergency medical services section says.

But the budget restraints affecting all levels of government threaten the progress made in recent years, Mark Johnson told the 12th annual EMS symposium Friday.

About 600 doctors, nurses, paramedics, emergency technicians and firefighters — most of them volunteers — participated in the three-day session.

Excluding the military and other federal agencies, there were only 22

ambulances services statewide in 1972, Johnson said, and none was capable of providing advanced life support.

Today, there are 80 ambulance services, 35 of which provide round-the-clock advanced life support, he said. Seventy are staffed entirely or mostly by volunteers.

In 1973, there were only 29 ambulances, none of which met current standards. Today, there more than 190.

In 1973, barely half of the 335 ambulance personnel were certified emergency medical technicians. Today, there are 1,761 EMT I's, 385 EMT II's, 229 EMT III's, 110 paramedics, 148 EMT instructors and thousands of emergency trauma technicians.

EMT III's are more highly trained to provide special cardiac care.

Johnson said a national study in 1985 showed Alaska was among 14 states with the highest standards for EMT training and certification.

In addition, tens of thousands of Alaska residents have been trained in cardio-pulmonary resuscitation through the EMS system and the American Red Cross and American Heart Association.

Johnson said 85 percent of Alaska's population can reach police, fire or emergency medical services by telephoning 911.

The state vital statistics reports show a 30 percent reduction in the unintentional injury death rate between 1978 and 1985, Johnson said. "While EMS system improvements probably can't account for all of the reduction, they undoubtedly were contributing factors."

But fiscal crises could undermine the progress, Johnson said.

"Since EMS is a relatively new program, it could face continued funding reductions as hard choices are made regarding services to be cut to balance budgets," he said. "Even if government funding support stays about the same, it will be very difficult to continue development of the system, because maintaining current levels of services will use up most, if not

all, available funds."

In a state where injury is the number-one cause of death and disability, the benefits of a sound EMS system should far outweigh the costs of continued development, Johnson said.

"We need to educate our political leaders of the value of a comprehensive, state-of-the-art EMS system, so they fully understand the potential impacts of cutting EMS budgets."

Cruise Ship Crewmen Sentenced Over Drugs

KETCHIKAN (AP) — Three Colombian crewmen on a cruise ship were sentenced to six months in jail for selling cocaine in Ketchikan, but they will be released this week because of credit for time already served, officials said.

The three will be handed over to the U.S. Immigration and Naturalization Service, which will send them home, said Assistant Ketchikan District Attorney Stephen West.

The men sold 78 grams of cocaine to an undercover state officer in a Ketchikan bar last July.

Ketchikan Superior Court Judge Thomas Schulz passed down sentences Monday against Jairo Diaz, 26, Jairo Banda, 25, and Jaime Banda, 30. Each was charged with third-degree misconduct with drugs.

Michael Harpold, Ketchikan-based Southeast agent for INS, said the agency will fly the men to Colombia and

bill the owner of the cruise ship Regent Sea for costs of their deportation.

Court records show that on July 9 in

Jineau, Jairo Diaz contacted Cpl. John Lichtenberger, an undercover state trooper, and arranged to deliver 5 ounces of the drug the next day in Ketchikan. The agreed price was \$2,200 per ounce, or \$11,000.

Lichtenberger and another trooper then met the three men in a bar, where less than 3 ounces of the drug was handed over to the officers on promise of a \$6,600 payoff. The authorities promptly arrested the Colombians.

Ketchikan prosecutors said \$5,300 in cash was found in Jaime Banda's room. West said federal authorities have filed a civil suit for forfeiture of the cash, alleging it was gained in illegal drug trafficking.

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Young Seeks Tough Fish Boat Bill

Congressman Don Young introduced legislation January 6 that would require all vessels engaged in fishing, fish processing, and fish tendering to be built in the U.S., owned by American citizens, and manned by American crews.

While the 1987 bill is similar to the one introduced by Young last year, there are some important differences. Foremost is the requirement that 75 percent of the crew aboard any processor, tender or fishing vessel be American citizens.

The perceived danger of reflagging lies not only in the competitive advantage of being able to use cheaper, foreign-built vessels, but in staffing them with a foreign crew. While the current loophole in the law is yet to be fully tested, one scenario suggests that if the voyage starts in a foreign port, a reflagged vessel can crew-up in Korea, process fish as an American processor and deliver product to Vancouver, B.C., with a minimum of U.S. officers on board.

Korean processing workers are said to make as little as 45 cents per hour. Maintaining a foreign crew on a reflagged foreign vessel would offer operators a substantial cost advantage over those utilizing a fully American crew on a U.S.-built vessel.

Another provision of Young's bill clarifies what is meant by American ownership where a corporation owns a vessel. There is currently some confusion over situations where a corporation may be substantially foreign-owned, though it maintains a majority of U.S. citizens on its board of directors. The new legislation would require that 50 percent of the corporation be owned by American citizens.

The third provision is the same as last year, requiring that any fishing, fish tendering, or fish processing vessel documented after October 31, 1986 be built in the United States. The current definition of U.S.-built requires that the hull and superstructure of a vessel be built in the U.S. It places no restrictions on the origin of the engines, gear or electronics; nor does it require that the outfitting be done in the U.S.

Though the 1986 cutoff date remains in the 1987 legislation, some sources doubt whether the Congress will pass the legislation without consideration for projects already under way.

Nevertheless, Young would like the bill to move swiftly.

"I have written this bill as broadly as possible to cover all aspects of foreign control," Young said. "I intend to seek early hearings from the Committee and have a final bill reported that will resolve this pressing problem." □

SALMON prices are falling, and the Irish Sea Fisheries Board/BIM is predicting that they will continue to do so over the next five years.

BIM commissioned a study to examine the potential supply and demand situation for farmed Atlantic salmon in the next decade, and the effects of increased production levels on prices.

Using information based on the Norwegian, Scottish and Irish salmon farming industries, BIM concludes that adherence to strict quality standards and efficiency in production, marketing and distribution will become of crucial importance; but prices will still fall.

At the SIAL food show in Paris last year, some experts were forecasting a situation where salmon prices would be on a par with cod. The last two months of 1986 certainly saw a drop in price levels.

In France, farmed salmon from the Faroes was selling at Fr29-32 per kg (\$2.07-2.8/lb), while top quality Norwegian salmon was available at

Salmon prices fall as supply forecasts rise

between Kr36.50-39.50/kg (\$2.28-2.46/lb). In Germany, prices for Norwegian product were higher at between Kr40 and Kr51/kg (\$2.49-3.17/lb).

Prices were higher still in Switzerland, but lower in Italy and Belgium.

In the USA plentiful supplies also pushed prices down, and this is expected to continue. Primary wholesale selling prices for Norwegian Atlantic, head-on and dressed at the end of November were: 4.8-7.2lbs, \$3.35-4.25/lb; 7.2-9.6lbs, \$3.80-4.50/lb; 9.6-12lbs, \$3.60-4.75/lb.

Meanwhile, in all countries, production forecasts are up for this year. According to Globefish, Nor-

way anticipates 55,000 tonnes (40,000 last year) and Scotland 14,000 tonnes (9,700). Ireland and Canada also expect large increases.

In Iceland, sources are forecasting a big future for Atlantic salmon farming. This year's production will be around 500 tonnes and is forecast to reach over 2,000 tonnes by 1988. Icelandic Freezing Plants Corp has invested over \$530,000 in two new projects.

Future emphasis is likely to be on frozen fillets, portions, blocks and prepared items, with merchandising aimed at convincing the consumer that each country's salmon is the best.

COD

FORECASTS coming out of Canada look depressing on cod. A 50,000 tonne reduction is anticipated in the quota next year.

In the USA the market for cod blocks continues to be strong with very good demand and limited supplies, reports the Irish Sea Fisheries Board/BIM in its market information bulletin. Prices at the end of 1986 were round \$1.50 per lb, compared to \$1.25 in 1985.

Boneless, skinless fillets in 5 lb packs (containing one to three fillets) were making \$2-2.15 per lb for product from Canada and \$2.55/lb for supplies from Denmark.

In Europe, landings of cod continue to be disastrously low in the main supplying countries, although there were some slight signs of recovery at the end of last year.

AGB Fishnet reports that November landings were down 6 per cent on October, and were still way short on November 1985 at 17.6m lbs, a 28 per cent drop.

Prices reacted in a predictable manner, with average November figures reaching £10.76 per lb (\$1.06), up 20 per cent on October and showing a 53 per cent increase over November 1985.

However, there is better news from Norway where good spawning years will see the cod quota shooting up to around 350,000 tonnes in 1987 from 250,000 tonnes.

HADDOCK

THE 1987 supply situation looks difficult and Canada is expecting quotas to be cut by 35 per cent.

The EEC is also in trouble: on scientists' recommendations total allowable catches could be cut by half. This will particularly affect the UK which could come down from 146,000 tonnes to 80,000 tonnes.

Only Norway seems to have good news with quotas expected to rise by 80 per cent to 160,000 tonnes.

At the end of last year, haddock landings in Europe fell back considerably to 20.3m lbs in November, down 34 per cent on November 1985. Prices however, showed little change at £0.45/lb (\$0.7).

SEATROUT

BUYERS in West Germany are now reluctant to handle fresh seatrout farmed in the country. This is because farmers use the additive Canthaxanthine in trout feed to give the fish flesh and pink colour. The Federal authorities are now investigating the matter.

The problem of marketing smoked seatrout as smoked salmon now appears to have ended. Consequently, there is now little or no demand for larger fish for smoking.

SARDINES

NORWAY'S boycott of South Africa is expected to cost Norway Foods Kr100m (nearly \$6m) in lost sales.

South Africa is a big consumer of Norwegian canned sardines. It takes about 100,000 cases a year from Norway Foods, reports the fishery paper *Fiskaren*.

Meanwhile, South African seafood traders are reported to be looking to the East for their

markets. Oriental countries, it is believed, are unlikely to follow the West in boycotting the country.

SALTFISH

PRICES have moved up fast. This has resulted in Iceland increasing exports by 14 per cent in the first nine months of 1986. By mid-September, Icelandic saltfish exports at 49,000 tonnes were worth \$126m, compared to \$29m for the same period in 1985.

Portugal continues as the main market, taking around 50 per cent of Icelandic exports. Spain, Italy, France and West Germany are also taking Icelandic saltfish.

MUSSELS

THE current shortage of Dutch mussels is causing the price of both Dutch and French bottom product to increase, reports BIM.

LOBSTER

INDIA has found a good market for rock and slipper lobster in France which is paying 20-30 cents a lb more than the USA.

Lower freight charges also put France in front of the USA as a market.

Prices for live Canadian lobsters are falling in Europe, reports BIM. By the end of November 1986, prices (in Canadian dollars) were as follows:

Chicks: 1lb, \$8 per lb; 1.25lb, \$8.10/lb; 1.5lb, \$8.35/lb; 2lb, \$8.55/lb. Jumbos: \$8/lb. Cripples: \$6.85/lb.

These prices were expected to have dropped another 20 cents/lb during December.

TUNA

SASHIMI prices are on a high in Japan. Low supplies of large southern bluefin tuna have sent prices soaring to a top level of Y9,000 (\$41) per kilo (\$17/lb).

ALASKAN POLLOCK

SURIMI prices could move up as a result of problems with the main resource. The biomass of Alaskan pollock is in trouble, according to scientists.

CRAYFISH

A SERIOUS shortage of Turkish crayfish (*Astacus leptodactylus*) may be developing, according to reliable sources associated with FAO.

As 4,000 tonnes of this species is exported to western Europe, principally Sweden and France, there may be an increased interest in importing Louisiana crayfish.

American exporters, however, must be prepared to send a purged product that has been boiled according to the importer's precise instructions.

See also this month's special Crayfish feature on page 40.

SQUID

AFTER the prawnburger from Denmark, the haddock burger from Britain, the salmonburger from the USA and the sardineburger from Japan, squid is the latest species to receive the burger treatment, and this time it is New Zealand which has set its eyes on the gigantic fast food market.

A test batch of 50 tonnes of squid burgers from Wanganui Trawlers was favourably received in the USA.

FARMED FISH: Do They Really Compete?

by John van Amerongen

Competition for salmon markets is a lot like musical chairs—nobody loses as long as there are enough seats to go around. The big question come 1990 is whether there will be enough salmon markets for all the salmon produced, given the astronomical production figures currently being tossed about by salmon farmers and those who keep an eye on them.

The growth potential of the Norwegian salmon industry is now beyond debate. In 1971 Norway produced a mere 100 metric tons. By 1985 Norwegian farmers produced 34,000 mt. There's no reason to doubt they'll produce at least 80,000 mt. of Atlantics by 1990. That same year Canadian farmers are expected to market 30,000 mt. of coho and chinook. And that has wild harvesters legitimately nervous. The Canadian projection alone is 6,000 metric tons more than the total wild catch of coho and chinook salmon in

White explained. "Pessimists believe competition is going to be the result...increased demand will be met by increased production and drive down the price."

The optimists, said White, believe that farmed and wild salmon will complement each other in the marketplace. "High priced and high quality imports will create a taste in consumers' mouths that will create an explosion in the market," he said, assuming the role of one whose glass was half-full instead of half-empty.

But White had a problem with the upbeat view that wild and pen-reared salmon will walk hand-in-hand to economic glory. There's "no evidence," he said; "I can't find

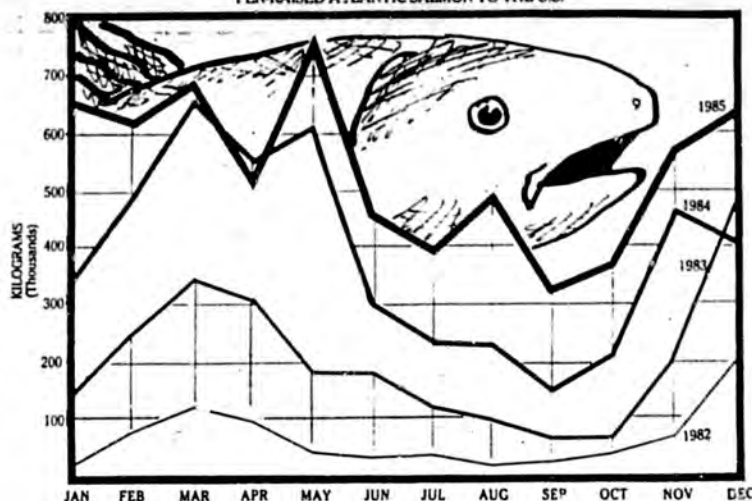
anything concrete that makes me believe that is going to be the result."

Still, White had almost as much

difficulty finding evidence to confirm that the sky was falling. What he did find was a recent study

See FARMED FISH page 33

MONTHLY EXPORTS OF FRESH NORWEGIAN
PEN-RAISED ATLANTIC SALMON TO THE U.S.



FARMED FISH

continued from page 5

co-authored by Ron Rogness of the North Pacific Fishery Management Council and the School of Management at the University of Fairbanks, and Dr. Bing-Hwan Lin of the Department of Agricultural Economics at the University of Idaho. The title of the Rogness-Lin study is "The Marketing Relationship Between Pacific and Pen-Raised Salmon: A Survey of U.S. Seafood Wholesalers."

According to White, the survey was taken as preliminary research for a master's thesis on the subject in conjunction with Alaska Sea Grant. Now that the authors are busy elsewhere [away from the University of Alaska at Fairbanks], White doubts that the research will be completed. Nevertheless, the survey does reveal some interesting information.

In July of 1985, Sea Grant sent out surveys to 925 seafood wholesalers and distributors in Boston, New York, Chicago, Los Angeles, San Francisco, and Seattle. About 24 percent (127) of those surveyed responded to a series of questions dealing with their salmon purchasing decisions.

Of central concern to White were the survey questions aimed at the "substitutability" of wild and farmed salmon. If there's no substitutability, the argument goes, there's no competition.

The responses concerning pan-sized coho, the variety raised by Domsea Farms in Puget Sound, offered no particular cause for alarm among wild salmon harvesters. The "overwhelming majority" of respondents said they did not consider the small silvers a legitimate substitute for wild Pacific salmon. If anybody has to worry about pan-sized coho, it's the farmers of rainbow trout.

And if you can believe the survey, the bulk of frozen Pacific salmon appears to be on its own in the marketplace as well. Only 15 of the 57 respondents viewed fresh pen-reared Atlantics and frozen wild Pacifics as substitutes. Since only about three percent of the Alaska harvest is sold fresh, the authors concluded that "97 percent of the harvest...would be more or less unaffected by the pen-raised Atlantics."

That's good news unless you happen to be a troller. "...It should be noted," the authors caution, "that a significant portion of the troll-caught chinooks and cohos in Southeast Alaska is frozen and marketed to white tablecloth restaurants which is one of the primary markets of fresh pen-raised Atlantic salmon; the 15 (out of 57) votes for the substitutability between fresh Atlantic and frozen Pacific salmon should therefore not be discounted."

Still, the authors weren't particularly worried about the overall impact of fresh Atlantics on the domestic market for Alaska-caught fish. According to Rogness and Dr. Lin, "...the results seem to suggest that much of the concern shown by many commercial salmon fishermen in Alaska may be somewhat unwarranted."

Like it or not, the survey suggests two separate market niches for fresh farmed and frozen wild-caught Pacific salmon. In automotive terms, one is viewed as a BMW, the other is a lot like riding the bus.

The situation for fresh wild-caught fish seems to be different. The overwhelming majority of respondents (49 of 62) said that pen-raised Atlantics were a legitimate substitute for fresh wild Pacifics.

But legitimate substitutes are not always the same, as the Rogness and Dr. Lin discovered.

Two questions in the survey asked respondents to list the advantages of each variety over the other.

Asked what advantages pen-raised Atlantics had over wild Pacifics, the characteristic most often cited was availability year round (28), followed by freshness or quality (26), consistency (19), size (12), price (11), and shelf life (5).

Asked what advantages wild-caught had over farmed, the most common response was price (27), followed by flesh characteristics — color, firmness, fat content (19), availability of large fish (5), volume of supply (2), and ease of ordering (1).

Price appeared to be the most motivating factor in choosing wild over farmed, while year-round availability and high quality were the best reasons to buy farmed fish, according to the survey. Four respondents could find no advantages



Only the best wild fish are considered "legitimate substitutes" in the pen-raised market.

of pen-reared over wild, while eight could see no advantages of wild over pen-reared. In automotive terms,

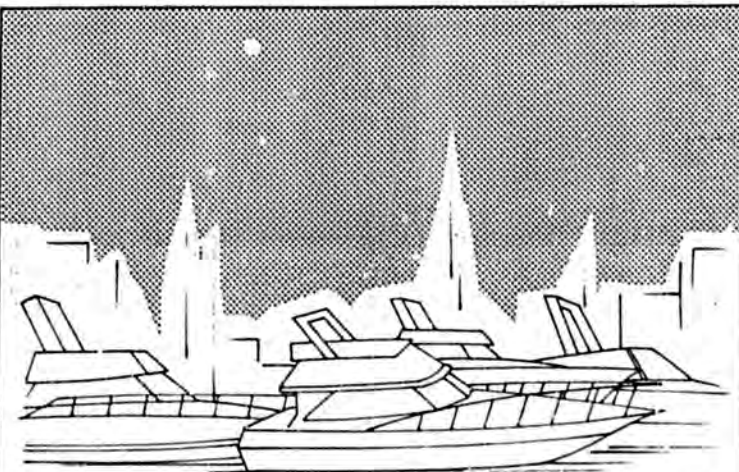
they are both good cars — one a BMW, the other a Ford Thunderbird. Ford has a better idea as long as the sticker price is right.

How long wild salmon can maintain a price advantage over pen-reared fish is another key question addressed by Mr. White at the FRI seminar. Trollers would understandably like to see the price of wild salmon rise, and salmon farmers aren't anxious to see the price of pen-raised fish fall. As the world supply of salmon increases, however, it's going to be more and more difficult to keep the prices apart and avoid a head to head battle in the marketplace.

Right now transportation costs and the relative inefficiency of the small farms have kept the cost of Norwegian salmon up. The falling value of the dollar in world currency markets is helping, too. When British Columbia comes on line in 1990, however, the situation could be very different. As one industry wag put

See FARMED FISH page 35

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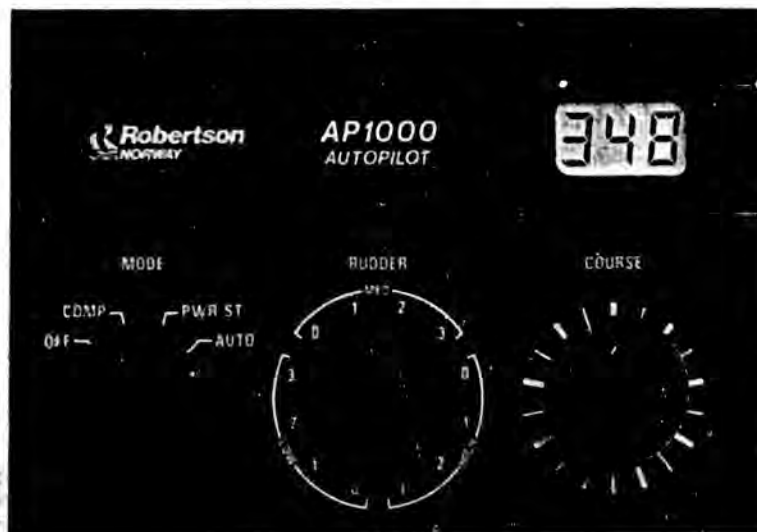
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In Salmon School the Favorite Subject Is Lunch

And how to avoid becoming the special

by John van Amerongen

Ever wonder what fish are really learning in school? A select group of coho salmon smolt at Hatfield Marine Science Center in Newport, Oregon, has been learning how to avoid becoming lunch for lingcod as part of a research project studying juvenile survival in the marine environment. Head teacher and director of the three-year program is Bori Olla, behavioral scientist and professor of oceanography at Oregon State University.

According to Olla, his salmon self-defence class is only part of a larger project aimed at pinpointing factors that govern the survival of a variety of species, including pollock and sablefish, in the open ocean.

Hatchery salmon, Olla said, have a particular problem because species like chinook and coho are held in hatcheries for a year in what Olla termed "a deprived environment." Leading a sheltered hatchery life with regular feedings of food pellets and few predator attacks, the smolt may not be getting everything they need to make it in the big water of the real world.

To examine whether a hatchery childhood really makes a difference, Olla and his colleagues first studied the feeding habits of hatchery fish.

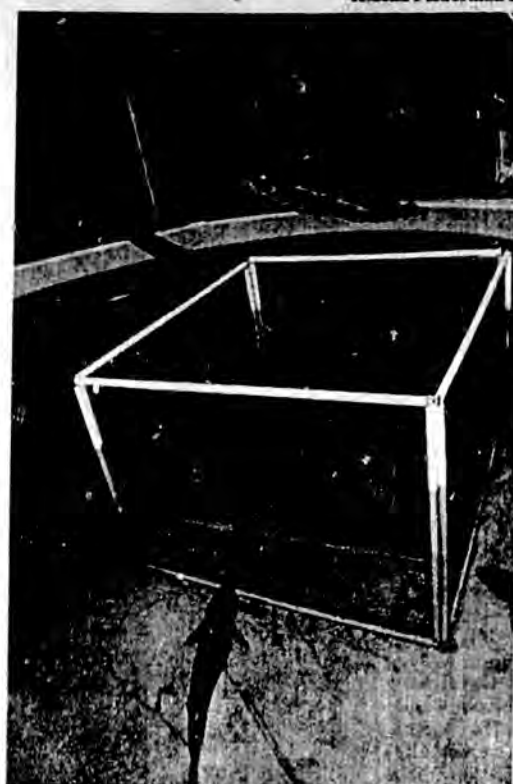
What does a fish that has been fed pellets all its life do when it has to catch its own dinner for the first time?

To find the answer, Olla placed the smolt in a tank equipped with two feeding tubes. One tube presented the familiar pellets; the other offered two types of natural live prey, sand shrimp and sand lances.

"We didn't want to make it too easy for them," said Olla, who noted that shrimp and lances possess "great escape mechanisms" in their ability to hop and wiggle. To catch them, the coho would have to develop a different strategy for each. The pellets, on the other hand, could be eaten at will.

The scientists hypothesized that the salmon would take the path of least resistance and go for the pellets. What they found was that the coho preferred to catch their dinner, even though they had trouble doing it, expending energy in the process. Still, it didn't take them long to get the hang of it. In two hours, Olla said, "they were as practiced as they were ever going to be at capturing prey."

Looking at results from a series of experiments, Olla said, "We had to reject the hypotheses of a disadvantage (to hatchery rearing) in terms



A frozen lingcod is lowered into the plexiglass tank as unfrozen ones bang their noses against it.

Courtesy of Bori Olla

of feeding." The coho possessed an easily awakened genetic predisposition to eat on the run.

But what about predators? How fast could the coho learn to avoid the multitude of jaws waiting for them as soon as they left the hatchery raceway?

Olla noted that coho have few opportunities for error when learning to avoid predators. Two hours may be an acceptable time in which

to learn to catch a live sand lance, but it only takes one mistake and school's out for good when it comes to playing tag with a lingcod.

Olla hypothesized that hatchery fish might be victimized easily, since they were almost always fed at the surface of rearing ponds, free from attack by birds and other natural predators. Such "free-lunch" experience could prove to be "maladaptive."

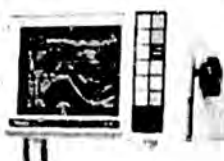
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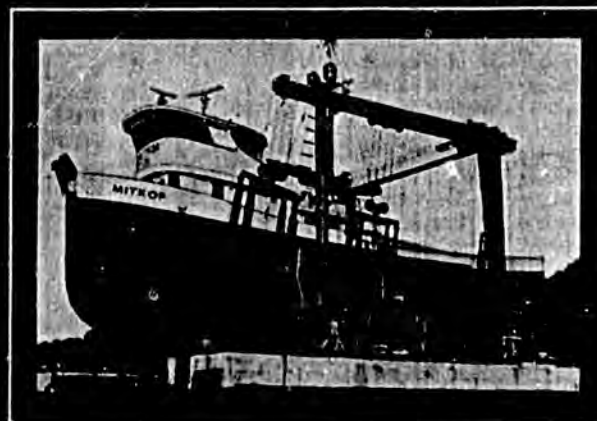
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To study the hatchery coho response to predators Olla set up several experiments using a 16-foot pool inhabited by lingcod up to 10 pounds.

Why lingcod?

"Because they're voracious predators," explained Olla. "They're so great because we can predict their motivation to feed." It's tough to watch a game when nobody wants to play. And the lingcod were always willing to play catch-the-coho.

The first thing Olla did was to 20 or 30 smolt into the pool with the lingcod. After half of them had been eaten (about 30 minutes), he rescued the survivors and let them rest and recover from the stress. But, alas, their trials weren't over. When they'd recuperated, Olla put them back into the pool with an equal number of inexperienced smolt.

"In every case," said Olla, "the animals that had the experience were less likely to be captured."

In another variation, Olla conducted a series of tests timing equal numbers of experienced and 'naive' smolt separately. As before, the experienced fish lasted significantly longer.

"Every time we got this result," Olla said, "but it didn't tell us they learned anything."

What it did tell researchers, said Olla, was the existence of a "a tremendous individual variation in their ability to escape predation. It was classic 'survival of the fittest,'" Olla said, "but we didn't know what made them the fittest."

So Olla set out to see if learning had anything to do with it. This was the fun part of the experiment: how to give all the naive smolt, even the wimps, the experience of a lingcod attack without getting them killed.

To accomplish this Olla created a safe chamber of plexiglass that he lowered into the tank with the lingcod. Smolt to be tested were put into the chamber with the lights out so as not to excite them or the lingcod. Other smolt were put into the larger tank to give the lingcod something to chew on.

When the lights went on, the lingcod would typically charge the chamber in the center of the tank and bump against the plexiglass. The fish inside would be duly startled and swim to the other side of the chamber. To add realism, researchers dropped a frozen lingcod into the tank repeatedly, for visual effect, and pumped water into the chamber from the main tank, where the smolt were really being eaten. Olla didn't want his students deprived of the "smells and chemical cues" associated with feeding predators.

After two separate trials of 15 minutes, the coho were removed and allowed to recoup again. Then they were mixed with naive smolt for the final exam. If their lessons really helped, they would last longer than their uneducated friends.

Unfortunately, the results, while positive, were "not as overwhelm-

ing as the survival of the fittest test," Olla said. It was difficult to isolate the positive of the learning experience from the negatives of the stress.

So you can put a fish in school but you can't always make him learn. Still, Olla thinks the results are significant. "If our experiments continue to bear out," he said, "it can be applied cheaply in hatcheries. We're suggesting that some practices can be changed to awaken a genetic memory."

He didn't suggest that hatchery workers tow frozen lingcod around the ponds to "Flight of the Valkyrie," but he did suggest that they might simply disturb the pond surface at feeding time or at least feed fish at the bottom of the pond for a few weeks before release.

Hatchery returns are typically so low, and the cost of raising fish is so high, Olla noted, that even a small increment in terms of survival could be a great improvement overall. □

FARMED FISH

continued from page 33

it, "The Canadians have never met a market they couldn't dump."

White put it another way: "There's a great potential for over-supply." British Columbia is planning to produce 'a lot of product,' White said, "...and there's no indication that product has any market set up for it."

This may have been music to the ears of fishermen who are looking for a gigantic shake-out to put the salmon farming industry on its gills. But White saw it differently.

"Which industry is going to survive the Crash of '89?" White asked. "If the farms crash," he said, answering his own question, "we'll go down with it."

One might think White's best advice to the fisheries students in the audience would have been to pack up their pee-chees and head it on over to the School of Dentistry.

But he didn't suggest that. Perhaps all the doom and gloom was just a test to see who was really serious about a career in the salmon industry.

His conclusion offered a ray of hope, even if the light at the end of the tunnel turns out to be Madison Avenue.

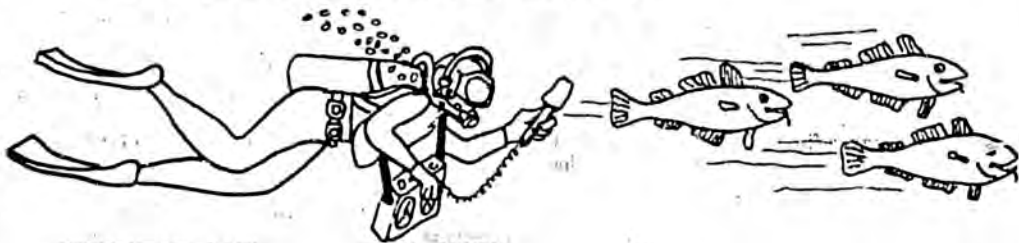
The salmon industry, said White, is in a state of transition. "The biological hurdles," he said, "are pretty much over."

"The next problem," said White, "is how [the salmon] can be marketed to keep the [aquaculture] industry alive and maintain the commercial fishing industry."

To accomplish this White suggested 'a conciliation' between wild harvesters and farm producers. "Our real target is not each other," he said, noting that salmon sales are completely eclipsed by beef and chicken. "They're the targets, not each other."

—John van Amerongen

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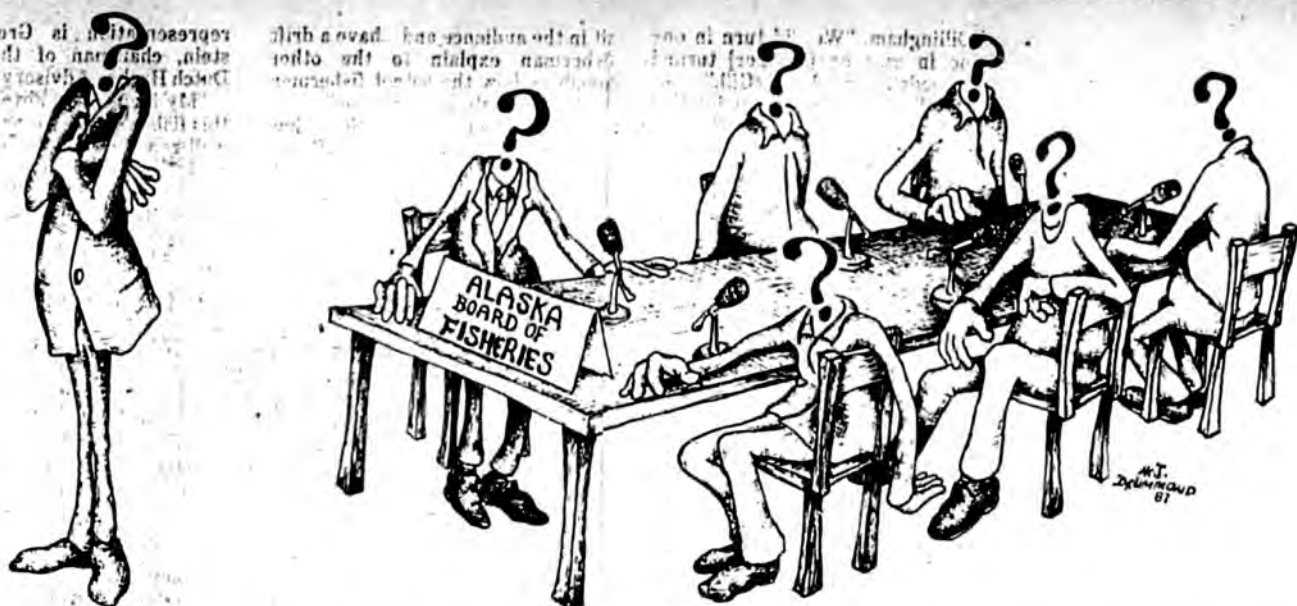
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Cowper Studying Long List of Board Candidates

Names have been rolling into Governor Steve Cowper's office, from Anton Anvel to Vernisa Zylis, as fishing groups, Native leaders, and other interested parties push their particular candidates for the Board of Fish.

The Board's membership depleted rapidly during its last meeting, amid charges of vote-swapping over the False Pass seine fishery. Three members whose terms were set to expire January 31 took "early retirement," and the Board adjourned abruptly, leaving several hundred

proposals lying on the table.

Cowper has sent a letter to more than 250 groups and individuals around the state, calling for nominations to those three seats formerly occupied by Ron Jolin of Kodiak and John Garner and Jeri Museth of Juneau. By mid-January, 29 potential candidates had surfaced, including False Pass seiners and sport and recreational-use advocates.

Although the Board is supposed to be above partisan politicking and gear-group squabbling, the events of the last meeting lend political over-

tones to whatever appointments are eventually made. One version of the meeting's breakdown alleges that four Board members, the four that are staying, cut a secret deal to enhance salmon escapement for sport fishermen in exchange for the elimination of the False Pass fishery. Another holds that the False Pass supporters on the Board saw the tide turning against them and simply refused to go on with the meeting.

Whether either version is accurate may never be known, but False Pass supporters are convinced

that changes are needed on the Board, and simply filling the three vacancies won't do the trick.

"We feel very strongly that the entire Board should be replaced," said Juneau attorney Michael Stanley, who represents a group known as Concerned Area M Fishermen.

"We see the four people who are left [Val Angasan, Bix Bonney, Ernie Carter and Jesse Foster] as the ones the vote-trading rumors were swirling around. They got the Board off track. We feel they were making decisions for political reasons and



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their own political benefit."

Stanley said the group has not yet endorsed any of the 29 names on the Governor's list, but had not offered any suggestions of its own. He said the group might sponsor a candidate before the January 30 deadline, but the group's primary concern is that the four alleged vote-swappers not be allowed to remain.

"The people who are getting off the Board were the ones saying, 'Let's listen to the Department [of Fish and Game] on this,'" he said. "The others were ignoring the data, and attempting to make an allocation decision on a conservation rationale."

"We feel that's intellectually dishonest," said Stanley, "and it's the wrong path for the Board to be taking. That's why we don't think any of the Board members should remain."

Mitch Kink, executive director of the the Alaska Independent Fishermen's Marketing Association, doesn't agree.

"We're recommending that we hold on to Val [Angasan]," said Kink. And he expressed additional concern that the Governor might be pressured to scrap the whole idea of a board of fishermen, given the conflict-of-interest hassles.

"We should avoid a professional Board," Kink said from his home in Bellingham. "That's just what we've got down here in Washington and Canada—with no input from fishermen at all."

"Put more laymen on it," Kink advised, "and let the chips fall where they may. At least we have some semblance of being heard."

So far, Cowper has made no move to effect a clean sweep of the Board; aides say he recalls the mess created when Governor Sheffield tried that a few years ago.

Jeff Stephen, manager of United Fishermen's Marketing Association in Kodiak, remembers it too. "That," he said, "was a political disaster."

By exposing seven appointments to a year-long confirmation hassle, said Stephen, Sheffield prevented the Board from acting effectively on many pressing issues. "There were good productive people [on that Board] who should have served out their terms," he said.

As for the Board that just adjourned, Stephen said, "History will judge them as one of the best...given the issues before them."

UFMA has endorsed the nomination of Oliver Holm.

"We had a series of meetings where we discussed other potential Kodiak candidates," said Stephen, "and decided to endorse Oliver because of his longevity in the fishery. He has a very good geographic and species background...and we feel he would be the most unbiased representative for this area and Western Alaska as well."

The Alaska Dragger's Association has offered a different candidate from Kodiak, endorsing longtime fisherman and processor Harold Jones. Jones has been fishing in Alaska since 1947.

"We feel there's no finer candidate around than Harold," said association president Mickey Serwold. "He has the honesty, integrity, and the broad-based experience the Board needs right now."

As for re-appointments, Serwold said, "Personally, I don't think any of the four should be re-appointed...not necessarily over this False Pass thing either. It would take too long to tell you why I think they have to go."

"As long as we get somebody from here," said Harvey Samuelson, president of the Western Alaska Cooperative Marketing Association

of Dillingham. "We did turn in one name in case he [Cowper] turned everybody down... Joe McGill."

McGill, a Dillingham fisherman and former legislator, is president of Alaska Herring Corporation, the group involved in the Togiak herring J-V with the Japanese.

"I hear the setnetters are in a position to put a setnetter on the Board," said Samuelson, "and I just want somebody with a broader basis than a setnetter...that's involved in herring, salmon, and possibly halibut, if that [proposed halibut Area 4G] comes about."

Linda Dowie didn't share Samuelson's feelings about setnetters. As a setnetter herself and president of the Alaska Setnetters Association, Dowie said, "We are pushing for a setnet fisherman on the Board."

"I think it's important," she said, "...that they [the Board] have the knowledge and information about the setnet fishery, because we do fish a little bit differently than the drift fishermen or the seine fishermen do. It's very difficult for me to

sit in the audience and ...have a drift fisherman explain to the other members how the setnet fishermen do it...it isn't always accurate."

The Setnet Association has endorsed three setnetters for Board appointment: Doug Blossom of Cook Inlet; Michael Owecke of Prince William Sound; and Sid Omlid of Kodiak.

While he didn't want to name names, Sid Gronholdt of the Peninsula Marketing Association in Sand Point expects some local candidates. "I don't think there's any question that most of the people here felt that they've been on the short end of the stick," Gronholdt said. "Some people on the Board vote one way, regardless of what the facts are—at least the facts as the guys out here see them."

"We just want people with an open mind on the Board," Gronholdt continued. "It doesn't matter if they're all from Barrow. As long as they're all good candidates, we wouldn't care."

Another one looking for better

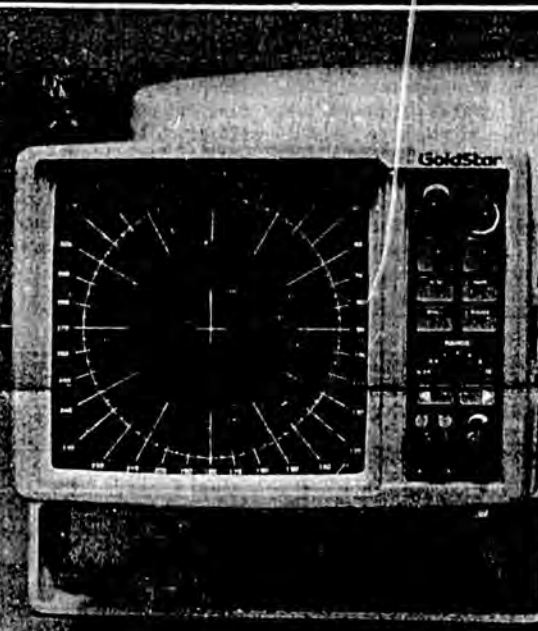
representation is Greg Gerhardtstein, chairman of the Unalaska/Dutch Harbor Advisory Committee.

"My feeling has always been that this fishery out here has never been well represented on the Board," he said. "We had Jolin who was probably as well-versed with Bristol Bay, Dutch Harbor, and the western Aleutians fishery as anybody," Gerhardtstein continued, "but he was still from Kodiak."

"I would like to think that one of these days," he said, "one of these boards will have an individual on it that's from this area, a Dave Stanchfield-type of individual or somebody that's a resident of this area."

Dave Stanchfield, an Unalaska resident, is skipper of the *Morning Star* and active in both the crab and bottomfish industries.

Whether Governor Cowper will appoint another sportfishing representative is an open question, but the Alaska Sportfishing Association is pushing a full slate of three candidates, according to executive



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director Russ Redick.

"We support Bob Stickle's of Talkeetna, the former director of [Alaska Fish and Wildlife] Protection, as well as myself and Bud Hodson, the owner of the Tikchik Narrows Lodge," said Redick. Redick is a former regional supervisor for the ADF&G sportfish division.

As for replacing or re-appointing current members, Redick said his group would be happy to see either Garner or Jolin back, but they don't see that as a likely event.

"In general, we'd like to see more names in tune with recreational interests," Redick said.

United Fishermen of Alaska weighed in with a list of ten candidates for the three seats. They advocated the re-appointment of Jolin and Museth, and threw Larry Painter, Tim Towarak, Don Kalb, Jack Foster, Sr., Mike Haggren, Joe Demmert, Alvin Osterback, and Paul Dale into the ring, as well.

Some groups contacted by the JOURNAL have not made endorsements at press time. These include Bethel's Nunam-Kitlutsitsi and the Alaska Federation of Natives.

The Kodiak Area Native Association supports Bill Berestoff, and the Traditional Council of Kotlik is backing Terry Cook.

Haines residents Cecily Stern and Carmen DeFranco's names are in the hat, while Paul Dale has the support of United Cook Inlet Drift Association. Juneau's John Martin, Sr., and Robert Roys have been nominated. Other names include June Thiele, Jonathan Solomon,

Lonnie Thomas, and Dennis Watson. The Bristol Bay Driftnetter's Association is backing David Whitmire.

Beth Stewart, executive director of the Division of Boards, says she has advised the Governor's Office that they should make a decision on these appointments by February 13, at the latest. The new members would then have to get together immediately to decide which proposals to consider. Thirty days public notice will have to be given before the Board can meet.

Complicating the issue is the upcoming meeting of the joint Boards of Fish and Game, said Stewart.

"It's a big one," she said. "That meeting is set for March 13th or 14th...so I suspect it's more than likely that the joint boards will meet in mid-March, and then they'll split up, at which point the Board of Fish could consider some or all of these proposals that were left on the table. Right now, we're just waiting for a new Board, so we know what they want to do."

It's also possible the March meeting may take place in Anchorage. With just one Southeast issue that has a sunset problem (relating to net-catch mortality), the Board may opt to save on travel expenses by staying in Anchorage.

Stewart added that the Board has already decided not to have a shellfish meeting this year. That one will not be a conflict.

—Peter Kenyon, Bob King,
John van Amerongen

STIKINE

continued from page 31

frontage backed by a naturally occurring salmon rearing pond.

As a fisherman, Blanchard is unhappy with the United States/Canada Salmon Treaty. He thinks Canadian fisheries gave away Stikine River salmon in exchange for fishing rights on the Fraser River. "The treaty should have been negotiated by commercial fishermen instead of people from Ottawa who don't know a river of salmon when they see it. There's a lot more fish than Fisheries knows about. Originally, they based their statistics on Tahltan Lake, but the lake probably contributes only about forty percent of the fish," Blanchard says that most of the sockeye spawn not in the river, but in side sloughs and glacial lakes.

One of Blanchard's main concerns is logging and specifically, how it will affect his own backyard rearing pond. He has twenty-eight acres, but his property doesn't protect the entire stream that empties into his pond.

Blanchard sees the Stikine as the last major river on the North American continent that hasn't been appreciably damaged, and he'd like to see it stay that way. He proposed that the province make the area a protected reserve but says the response was, "You just want your own private moose hunting preserve." What Blanchard was actually prepared to offer, he says, was to trade his own property so that it

might be included in the protected area.

Meanwhile, the river rushes along its mighty and familiar way. Dave Ellis of Petersburg, who sometimes takes older fishermen up the Stikine River after they retire, has been exploring its channels and sloughs for thirty years. He says the changes that have taken place since he's known it are almost imperceptible. "Thirty years of time is such a snatch in the grand scheme of things. You see these huge banks and tree stumps and river bars and you think it would be able to fill up Sumner Straits and the flats out here in just a matter of weeks, and then you think about the fact that it's been doing that for hundreds of years and hasn't really made a noticeable change. A hundred feet of bank will go one year and the next year it looks as if it's been that way forever."

This report was prepared with support from Alaska Discovery.

LETTER

continued from page 27

remove all restriction quotas—observe, do not manage. The Montague Straits experimental area has shown the "resilience" of the spot shrimp. Of course, restrict it to trap fishing, as least destructive to bottom habitat—very important in the spot shrimp life cycle.

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Salmon Farming Goes Crazy in B.C.

by Clark Miller

Salmon farming in British Columbia— they're calling it a Gold Rush, an out-of-control frenzy of production that will glut the world market and plunge prices in two years. Is it really that hazardous?

Vance Lipovsky thinks so. He is director of aquaculture development for British Columbia Packers, Ltd., in Vancouver, B.C. He says production of farmed salmon in British Columbia will hit 30,000 tons by 1990— in 1984 it was only 107 tons. Meanwhile, prices to producers will dive below \$3 a pound—right now, they're between \$3.50 and \$3.75.

Kicking off a series of lectures on aquaculture at the University of Washington's School of Fisheries last month, Lipovsky said, "It's impossible to keep up with the industry up there... and the pace will not change." In 1985, there were 45 farms. Last year, there were 106 farms. This year there are perhaps 150, with more than 500 applications pending.

"In the three or four years British Columbia will be the largest exporter of salmon to the U.S.," he predicts.

Orders for salmon cages are backed up for six months. B.C.'s 20 hatcheries are charging 65 to 79 cents each for smolts (there ten to twenty more hatcheries on line, Lipovsky says).

The provincial government slowed things down with a 30-day freeze on licenses in October, in order to ask a few questions, but basically decided there are no com-

elling reasons to interfere with something that is boosting the economy of a traditionally depressed area with 69,000 miles of wilderness coastline. "A month later, it was business as usual," Lipovsky said.

One question asked during the moratorium involved the impact of aquaculture on wild salmon prices. The answer in Canada was, None.

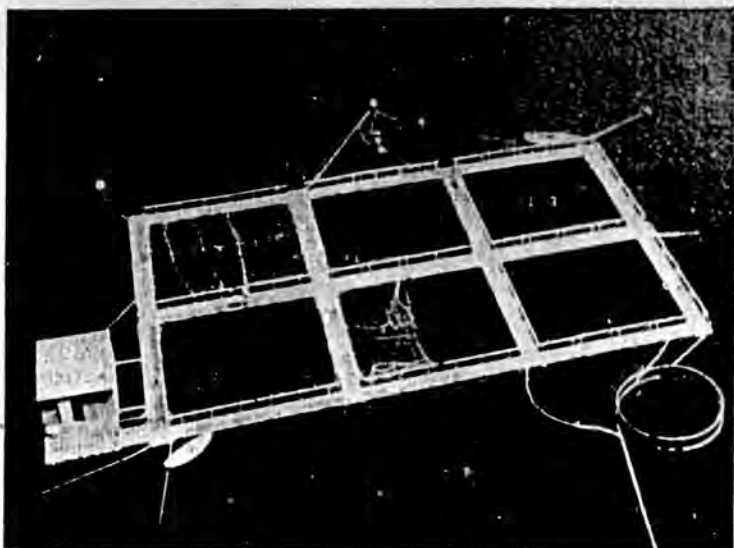
One way of measuring the growth is the number of smolts that are reared each year. In 1984, the number was 1.5 million. In 1985, it was 5 million. In 1986, it was 14 million. This year it will be 30 million. Figuring 50 percent mortality (35 percent is typical, even lower in the north), a million smolts yields about 1,000 tons of salmon. Therefore, 1990's harvest should easily reach 30,000 tons; the B.C. government predicts 40,000, with a potential value to farmers of \$352 million.

Will the market be able to absorb that amount? "Markets are the big unknown," says Lipovsky. "Only the markets will limit us."

Lipovsky thinks the future will be a mixture of successes and failures. In addition to softening prices, he's worried about the high price of feed and a predicted shortage of skilled labor. He told the mostly student audience that employment prospects in aquaculture look very good in B.C. for the next five years at least.

"1991 will be the first crash of the industry," he predicts. Then the "merger phase" will begin; Lipovsky expects to see bargains on farms in two years.

Forty percent of the investment



This photograph from a Norwegian equipment supplier shows a typical small Norwegian fish farm. B.C. farmers have no such size restrictions.

so far is Norwegian, Lipovsky speculates. Norwegian applications for sites began mounting in 1984.

Have the commercial fishermen of B.C. become involved? No, Lipovsky said, the lifestyle is too harsh (he wasn't joking— he said the stresses of living in these isolated wilderness areas is taking its toll on participants, especially women).

The B.C. government makes it easy to get into this business: \$100,000, interest-free loans; grants; no environmental impact statement required for sites. You can claim virtually any wilderness site for \$150, as long as it's a mile and a half from the nearest salmon farm (that's one of the new rules, non-retroactive; formerly, it was only a half mile). Annual rent on government land is only \$200 per acre.

This massive buildup of salmon farming includes some problems. The fish— chemically neutered coho and feminized chinook— aren't growing as fast as they should, and no one is sure why. Inventories are

mysteriously low— farmers accuse the hatcheries of shortchanging them. Much of the feed has been low in quality, but now farmers are being offered high-fat, extruded feeds (at 40 cents a pound, expected to climb to 60 cents by 1990).

Some stress-related diseases have cropped up, as well as some minor hassles with algal blooms. However, Lipovsky gave the impression that the government finds very little to worry about with aquaculture so far.

One of the paradoxes of the business, according to Lipovsky, is that farmers are mostly growing 4-6 pounders, even though the greatest market-size need is for 6-9 pounders (restaurants prefer the big fish for "steaking"). The reason— the price of feed. Physical growth is rapid and economical during the first 24 months, especially for coho; continued growth, however, cuts profits.

"Coho will be the fish of the future because of its fast growth rate," Lipovsky said. □

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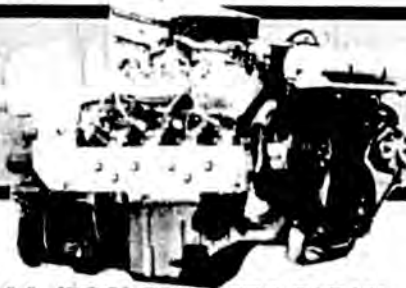
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1

ADDRESS BY ROBERT W. LOESCHER
VICE PRESIDENT FOR RESOURCE MANAGEMENT
SEALASKA CORPORATION
TO
UNITED FISHERMEN OF ALASKA
ANNUAL MEETING
FEBRUARY 5, 1986

AQUACULTURE DEVELOPMENT

INTRODUCTION

SEALASKA CORPORATION HAS BEEN ASKED TO SPEAK TO UNITED FISHERMEN OF ALASKA DUE TO OUR INTEREST IN AQUACULTURE DEVELOPMENT IN ALASKA. BRIEFLY, SEALASKA BELIEVES THAT AQUACULTURE REPRESENTS AN OPPORTUNITY FOR ALASKA TO:

1. DIVERSIFY STATE AND LOCAL ECONOMIES;
2. PROVIDE ECONOMIC GROWTH AND EMPLOYMENT FOR ALASKANS;
3. AND, TO DEVELOP AN INDUSTRY THAT UTILIZES ALASKA'S VAST NATURAL COASTLINE, ESTUARIES AND HABITAT RESOURCES IN A MANNER COMPATIBLE WITH EXISTING LIFESTYLES AND INDUSTRIES.

WORLD AQUACULTURE PRODUCTION

AQUACULTURE IS OF INTEREST BECAUSE THE WORLD PRODUCTION OF NATURAL STOCKS OF ALL SPECIES HAVE REMAINED STATIC AT 70-75 MILLION METRIC TONNES DURING THE LAST 15-20 YEARS. AT THE SAME TIME, THE WORLD DEMAND FOR QUALITY FISH AND OTHER AQUATIC PRODUCTS IS INCREASING. ONLY AQUACULTURE HAS THE POTENTIAL TO SIGNIFICANTLY INCREASE THE PRODUCTION OF FISH AND OTHER AQUATIC PRODUCTS TO MEET THESE NEEDS. THE WORLD PRODUCTION OF AQUACULTURE PRODUCTS IS INCREASING RAPIDLY. IN 1984, IT WAS

ESTIMATED THAT ABOUT 10 MILLION METRIC TONNES OF AQUACULTURE PRODUCTS WERE PRODUCED.

AQUACULTURE IN ALASKA

IN ALASKA, OPPORTUNITIES AND INTEREST IN AQUACULTURE DEVELOPMENT FOCUS ON OYSTERS, MUSSELS, SEAWEED AND SALMON. OTHER POTENTIAL OPPORTUNITIES ALSO EXIST FOR OTHER SHELLFISH, MOLLUSCS AND FINFISH SPECIES. THE PRESENTATION TODAY WILL FOCUS ON SALMON AQUACULTURE AND PARTICULARLY SALMON FARMING.

TYPES OF SALMON AQUACULTURE

SALMON AQUACULTURE OCCURS IN TWO FORMS -- SALMON OCEAN RANCHING AND SALMON FARMING. OCEAN RANCHING CONSISTS OF THE PRODUCTION OF AND RELEASE OF SALMON FRY OR SMOLTS INTO THE NATURAL WATERS OF THE STATE. THESE FISH MIGRATE THROUGH THE OPEN OCEANS AND LATER RETURN TO THEIR PLACE OF ORIGIN. DURING THIS MIGRATORY PHASE THE FISH ARE HARVESTED BY THE VARIOUS FISHERIES OF THE STATE. WITHIN ALASKA, THE OCEAN RANCHING PROGRAM IS WELL ESTABLISHED UNDER STATE LAW AS A STATE OR PRIVATE NON-PROFIT HATCHERY PROGRAMS.

SALMON FARMING IS THE REARING OF SALMON IN NET PEN OR OTHER ENCLOSURES. THE FISH ARE HARVESTED BY THE GROWER WHEN THEY REACH MARKETABLE SIZE. THERE ARE TWO GENERAL MARKET SIZES OF FARMED SALMON, PAN-SIZED AND GROW-OUT. PAN-SIZED SALMON ARE SOLD WHEN THEY REACH APPROXIMATELY ONE POUND IN SIZE. GROW-OUT SALMON ARE GENERALLY SOLD WHEN THEY REACH TWO POUNDS OR MORE. THE BEST PRICES FOR GROW-OUT SALMON ARE FOR SIZES BETWEEN SEVEN TO TWELVE POUNDS. CURRENTLY SALMON FARMING IS BELIEVED TO BE PROHIBITED IN ALASKA. THERE WILL BE A NEED TO ENACT ENABLING LEGISLATION IF THIS TYPE OF INDUSTRY IS TO PROCEED IN ALASKA.

WORLD SALMON FARMING INDUSTRY

SALMON FARMING AS IT CURRENTLY EXISTS EVOLVED IN NORWAY IN THE

1960S. THIS WAS LARGELY AN EXPERIMENTAL PROGRAM TO CREATE A BROAD BASED, GEOGRAPHICALLY DISPERSED INDUSTRY, THAT WOULD PROVIDE EMPLOYMENT OPPORTUNITIES IN REMOTE REGIONS AND FOR NATIONAL SECURITY PURPOSES. THE FIRST COMMERCIAL PRODUCTION OF NORWEGIAN FARMED SALMON OCCURRED IN 1971 WHEN 98 METRIC TONNES WERE PRODUCED. BY 1973, THE NORWEGIAN FARM PRODUCTION INCREASED TO 171 METRIC TONNES. IN 1981, NORWAY PRODUCED ALMOST 9,000 METRIC TONNES OF FARMED SALMON. IN 1981, TWELVE OTHER COUNTRIES PRODUCED AN ADDITIONAL 3,000 METRIC TONNES, FOR A TOTAL 1981 PRODUCTION OF 12,000 METRIC TONNES OF FARMED SALMON. BY 1984, THE WORLD FARMED SALMON PRODUCTION DOUBLED TO OVER 24,000 METRIC TONNES AND BY 1990 THE FORECAST FOR A WORLD PRODUCTION IS 126,000 METRIC TONNES.

THE IMPORTANCE OF SALMON FARMING BECAME READILY APPARENT IN 1980. BY THIS PERIOD SIGNIFICANT QUANTITIES OF FARMED SALMON WERE BEING EXPORTED FROM NORWAY TO 14 OTHER COUNTRIES. THE UNITED STATES AND JAPAN BEING THE LARGEST MARKETS FOR NORWEGIAN SALMON. FARMED SALMON WAS BEING WIDELY RECOGNIZED AND ACCEPTED AS A PREMIUM QUALITY SEAFOOD PRODUCT. SEALASKA HAS FOUND THESE PRODUCTS TO BE ENTERING EUROPEAN MARKETS TRADITIONALLY HELD BY FRESH FROZEN SALMON FROM ALASKA.

THE RAPID GROWTH AND MARKET ACCEPTANCE OF FARMED SALMON IS OCCURRING BECAUSE IT IS A "NEW PRODUCT FORM" THAT MEETS THE BUYER AND CONSUMER NEEDS. THE ATTRIBUTES OF FARMED SALMON IN THE MARKETPLACE ARE:

1. AVAILABLE IN THE SIZE PREFERRED BY THE CONSUMER.
2. OFFER CONSISTENTLY EXCELLENT QUALITY WITH FIRM FLESH, GOOD COLOR AND SILVER SIDES.
3. ARE AVAILABLE FRESH TO ALMOST ANY MARKET WITHIN THREE DAYS.
4. AND, DO NOT ENCOUNTER THE SEASONAL AVAILABILITY AND HIGH

STORAGE COSTS THAT OCCUR WITH COMMERCIALY CAUGHT FISH.

NORWAY, WHICH HAS 592 FARMS AND 649 HATCHERIES, SUPPLIES MOST OF THE CURRENT WORLD PRODUCTION. OTHER EUROPEAN COUNTRIES, JAPAN, CHILE, NEW ZEALAND, CANADA AND THE UNITED STATES, ARE PROMOTING SALMON FARMING IN THEIR REGIONS. THE OBJECTIVE IS TO DIVERSIFY LOCAL ECONOMIES AND TO CREATE NEW JOBS. IN 1984 BRITISH COLUMBIA HAD 10 FARMS PRODUCING APPROXIMATELY 100 METRIC TONS, IN 1985 THERE WERE 35 PRODUCING FARMS AND IN 1986 THERE WILL BE AN ESTIMATED 146 PRODUCING FARMS. BRITISH COLUMBIA OFFICIALS CONSERVATIVELY ESTIMATE THAT IN 1990 FARM SALMON PRODUCTION WILL BE BETWEEN 12,000-15,000 METRIC TONS, WORTH APPROXIMATELY \$122 MILLION DOLLARS. IN WASHINGTON STATE, THE GROWTH OF SALMON FARMING IS EQUALLY DRAMATIC. OFFICIALS IN WASHINGTON ESTIMATE THAT THERE WILL BE 100-140 FARMS BY 1990. IN BOTH WASHINGTON AND BRITISH COLUMBIA THE GOVERNMENTS RECOGNIZE THE SOCIAL, ECONOMIC AND ENVIRONMENTAL BENEFITS OF SALMON FARMING AND HAVE FORMULATED LAWS AND OTHER INSTITUTIONAL PROGRAMS TO PROMOTE SALMON FARMING IN THEIR RESPECTIVE REGIONS.

THE SUCCESS OF SALMON FARMING IN NORWAY AND OTHER COUNTRIES AND NOW CLOSER TO HOME IN BRITISH COLUMBIA AND THE PACIFIC NORTHWEST STATES IS PROOF THAT FARMED SALMON HAVE ESTABLISHED A PERMANENT PLACE IN THE WORLD FOOD MARKETS. THE PRODUCTION OF FARMED SALMON IS NOW MARKET-DRIVEN WITH PREVIOUSLY NON-PRODUCING REGIONS AGGRESSIVELY PROMOTING SALMON FARMING IN ORDER TO CAPTURE A SHARE OF THE NEW MARKETS AND REALIZE THE SOCIAL AND ECONOMIC BENEFITS FROM SALMON FARMING. CLEARLY, AS A RESULT OF THESE DEVELOPMENTS ALASKANS MUST NOW CONSIDER SALMON FARMING AS PART OF THE GROWING ALASKA SEAFOOD INDUSTRY.

SEALASKA CORPORATION, AS A MAJOR FISHERIES INDUSTRY PARTICIPANT, HAS CONCLUDED THAT SALMON FARMING MAY BE WELL SUITED FOR ALASKA CONDITIONS. IF ECONOMICALLY FEASIBLE, SALMON FARMING WOULD PROVIDE SIGNIFICANT ECONOMIC AND SOCIAL BENEFITS IN ALASKA. EQUALLY SIGNIFICANT IS THAT A FAILURE OF ALASKA TO ACT ON SALMON

FARMING WOULD MEAN A LOSS OF INCOME AND SOCIAL BENEFITS TO THE STATE AND ITS RESIDENTS. IN LATE 1984 AND 1985, SEALASKA COMMISSIONED AN AQUACULTURE FEASIBILITY STUDY WITH SWEDISH AND ALASKAN CONSULTING FIRMS TO EVALUATE SALMON FARMING POTENTIAL.

THE STUDY OBJECTIVES WERE TO:

1. EVALUATE COSTS OF FARMING SALMON IN ALASKA.
2. DETERMINE IF SALMON FARMING IS ECONOMICALLY FEASIBLE; AND
3. EVALUATE POTENTIAL SOCIAL AND ECONOMIC BENEFITS TO ALASKA AND ITS RESIDENTS.

THIS STUDY FOUND THAT:

SALMON FARMING IS ECONOMICALLY FEASIBLE IN ALASKA UNDER CURRENT CONDITIONS, HOWEVER, COST CONTROL FARM EFFICIENCY AND A FAVORABLE REGULATORY STRUCTURE ARE ESSENTIAL TO MAINTAIN PROFITABILITY.

- o THE CURRENT MARKET PRICE FOR FARMED SALMON IN HOUSTON OR LOS ANGELES IS IN EXCESS OF \$4.00 PER POUND.
- o THE DELIVERED COST OF FARMED SALMON FROM SOUTHEAST ALASKA FROM URBAN OR RURAL/REMOTE LOCATIONS RANGES BETWEEN \$2.78 AND \$2.98 PER POUND FOR AN ESTABLISHED METRIC TON FACILITY.
- o ASSUMING A CONSERVATIVE PRICE OF \$3.50 PER POUND THE GROSS PROFIT FOR A 200 METRIC TONNE SALMON FARM IN SOUTHEAST ALASKA WOULD BE BETWEEN \$217,000 AND \$268,000 OR 17% TO 21% PROFIT MARGIN.
- o THE PRODUCTION COSTS OF FARMED SALMON IN ALASKA ARE APPRECIABLY HIGHER THAN COSTS TO PROVIDE THE SAME FISH IN WASHINGTON OR BRITISH COLUMBIA. IF GOVERNMENTAL AND REGULATORY PROGRAMS DO NOT ENCOURAGE SALMON FARMING, ALASKA

WILL BE UNABLE TO COMPETE WITH THE LESS EXPENSIVE FISH FROM THESE REGIONS.

A SALMON FARMING INDUSTRY IN ALASKA WILL CREATE A SIGNIFICANT NUMBER OF NEW JOBS AND PROVIDE SMALL BUSINESS OPPORTUNITIES FOR ALASKANS.

- o AN ALASKA FARMED SALMON INDUSTRY PRODUCING 20,000 METRIC TONNES WOULD HAVE A PRODUCT SALES VALUE OF OVER \$132 MILLION DOLLARS AND WOULD CREATE 2,800 JOBS. THIS IS 20% OF THE 1982 FISH AND SEAFOOD HARVESTING INDUSTRY ANNUAL AVERAGE EMPLOYMENT.
- o IN AN ALASKA COMMUNITY FIVE TO TEN FARMS PRODUCING 500 METRIC TONNES WOULD CREATE APPROXIMATELY 33 NEW JOBS AND HAVE A SALES PRODUCT VALUE OF 3.3 MILLION DOLLARS.
- o A 500 METRIC TONNE SALMON INDUSTRY IN A TYPICAL SMALL ALASKA VILLAGE WOULD EMPLOY 25% OR MORE OF THE AVAILABLE UNEMPLOYED LABOR FORCE AND CONTRIBUTE UP TO 50% IN ADDITIONAL WAGE EARNINGS TO THE COMMUNITY.

SALMON FARMING WILL PROVIDE DIRECT AND INDIRECT JOBS AND BENEFITS TO THE COMMERCIAL FISHING INDUSTRY.

- o COMMERCIAL FISHERMEN MAY OWN AND OPERATE SALMON FARMS AS WELL AS CONTINUING TO FISH COMMERCIALLY. SALMON FARMING IS A YEAR-ROUND ACTIVITY, HOWEVER, DURING THE SPRING AND SUMMER MONTHS OPERATING A SALMON FARM IS AT A MAINTENANCE LEVEL REQUIRING REDUCED LABOR FORCE AND DIRECT MANAGEMENT THEREBY FREEING THE OWNER TO COMMERCIAL FISH. DURING THE WINTER HARVESTING AND PROCESSING PERIOD, THE COMMERCIAL FISHERMAN OWNER WILL BE AVAILABLE TO MANAGE THE OPERATION.
- o SALMON FARMING REQUIRES LARGE QUANTITIES OF RAW FISH FOR USE AS FISH FOOD OR FISH MEAL. THESE RAW PRODUCT DEMANDS WILL

CREATE NEW AND DIFFERENTLY COMMERCIAL FISHING OPPORTUNITIES.

- o CURRENTLY, SIGNIFICANT PORTIONS OF THE STATE AND PRIVATE NON-PROFIT OCEAN RANCHING FACILITIES BUDGET IS FOR PURCHASE OF EXPENSIVE FISH FOOD WHICH IS RECEIVED FROM WASHINGTON OR OREGON. THE FISH FOOD DEMANDS OF THESE FACILITIES IS INSUFFICIENT TO JUSTIFY A FISH FOOD PRODUCTION PLANT NEAR THESE FACILITIES. WITH THE GROWTH OF A SIGNIFICANT SALMON FARMING INDUSTRY SUFFICIENT FOOD REQUIREMENTS WOULD EXIST TO JUSTIFY REGIONAL FISH FOOD PRODUCTION PLANTS. THIS WOULD REDUCE COSTS TO THE OCEAN RANCHING FACILITIES.

SALMON FARMING IN ALASKA WILL NOT EFFECT THE ALASKA COMMERCIAL FISHING INDUSTRY DUE TO WORLD PRODUCTION AND MARKETS THAT ALASKA FARMED SALMON WILL ENTER

THE PRODUCTION OF FARMED SALMON IS VERY EXPENSIVE. IN ALASKA THE PROJECTED DELIVERED COSTS OF PRODUCING FARMED SALMON IS \$2.78 TO \$2.98 PER POUND. DUE TO THESE COSTS, FARMED SALMON FROM ALASKA WOULD ENTER ONLY VERY SPECIAL DOMESTIC MARKETS THAT WILL PAY PREMIUM PRICES.

AREAS OF POTENTIAL COMPETITION MAY BE FOR PREMIUM QUALITY COMMERCIALLY CAUGHT CHINOOK AND POSSIBLY COHO SALMON ENTERING FRESH AND FRESH FROZEN MARKETS. COMPETITION WILL NOT BE DIRECT BECAUSE FARMED SALMON CANNOT COMPETE WITH THE PRICES OF COMMERCIALLY CAUGHT FISH. FOR THIS REASON, FARMED SALMON GENERALLY ENTER THE MARKET DURING A 31-WEEK PERIOD (WINTER THROUGH LATE SPRING) WHEN FRESH COMMERCIALLY CAUGHT SALMON ARE NOT AVAILABLE. FARMED SALMON MAY ALSO IMPROVE MARKETING OF COMMERCIALLY CAUGHT FISH BY CREATING NEW MARKETS SUCH AS RESTAURANTS THAT PREVIOUSLY DID NOT CARRY SALMON. IN THESE MARKETS, PREMIUM QUALITY COMMERCIALLY CAUGHT FISH WOULD BE PURCHASED IN SEASON WHILE FARMED SALMON WOULD BE PURCHASED DURING THE OFF-SEASON.

SALMON FARMING IS OCCURRING THROUGHOUT THE TEMPERATE AND SUB-ARCTIC CLIMATES OF THE NORTHERN AND SOUTHERN HEMISPHERE. THERE IS PRESENTLY AN UNDECLARED RACE THROUGHOUT THESE REGIONS TO DEVELOP A SALMON FARMING INDUSTRY WHICH CAN SECURE A SHARE IN THE NEW MARKET. EACH COUNTRY IS POSITIONING ITSELF TO FIND THE GEOGRAPHIC MARKET AREA IN WHICH THEY WILL HAVE A COMPETITIVE ADVANTAGE OVER OTHER PRODUCING REGIONS. RECOGNIZING THE EXISTENCE OF THIS RACE, IT IS SAFE TO CONCLUDE THAT THE WORLD DEMAND FOR FARMED SALMON WILL BE FILLED. THUS, REGARDLESS OF ALASKA'S PARTICIPATION, IN SALMON FARMING THE MARKETS WILL BE FILLED. FAILURE OF ALASKA TO PARTICIPATE WILL ONLY MEAN A LOSS OF JOBS AND INCOME TO ALASKA.

EXPEDIENT DEVELOPMENT OF SALMON AQUACULTURE POLICY AND REGULATIONS IS NECESSARY IF ALASKA IS GOING TO COMPETE IN MARKETS FOR FARMED SALMON

- o THE GROWTH OF A SALMON INDUSTRY INVOLVES CONSIDERABLE LEAD TIME. FOR EXAMPLE, IT TOOK NORWAY 20 YEARS BEFORE THE COUNTRY WAS ABLE TO PRODUCE 9,000 METRIC TONNES.
- o IN ALASKA, THE LEAD TIME REQUIRED TO PRODUCE A MARKETABLE PRODUCT WILL BE AT LEAST FOUR YEARS.
- o IT IS ESTIMATED THAT IT WILL TAKE A MINIMUM OF EIGHT TO 10 YEARS FOR ALASKA TO PRODUCE MORE THAN 5,000 METRIC TONNES. THIS ASSUMES THAT THE STATE WILL PROVIDE A MINIMUM OF 1.1 MILLION EGGS ANNUALLY AND THAT VERY FAVORABLE GOVERNMENTAL SUPPORT AND REGULATIONS ARE IN PLACE.
- o A DELAY IN AUTHORIZING SALMON FARMING IN ALASKA WILL PREVENT ALASKA FROM ESTABLISHING ITS OWN FARMED SALMON MARKETS. THIS WILL ENABLE OTHER COUNTRIES SUCH AS CANADA AND FARMS IN THE UNITED STATES TO FILL THE DOMESTIC MARKETS BEFORE ALASKA PRODUCTION IS AVAILABLE.

SALMON FARMING WOULD BE BENEFICIAL TO ALASKA, HOWEVER, THE SUCCESS OR FAILURE OF THE INDUSTRY IS PREDICATED ON EXPEDIENT POLICY DECISIONS TO ALLOW THE INDUSTRY IN ALASKA

THE PROJECTED DEMAND FOR FARMED SALMON WILL CONTINUE TO EXCEED SUPPLY THROUGH THE EARLY 1990S. THIS DEMAND WILL MAINTAIN A HIGH PRODUCT PRICE AND EXCELLENT PROFIT MARGIN. IT IS ANTICIPATED, HOWEVER, THAT AS THE MARKET DEMAND IS MET THE PRICE MAY DECREASE. ESTABLISHED SALMON FARMS WILL STILL BE ABLE TO MAINTAIN GOOD TO EXCELLENT PROFIT MARGINS THROUGH IMPROVED EFFICIENCY OF THEIR OPERATIONS AS PRICE DECLINES OCCUR.

THE SUCCESSFUL EVOLUTION OF A NEW SALMON FARMING IN ALASKA IS PREDICATED ON DEVELOPING THE INDUSTRY WHILE THE PRODUCT REMAINS HIGH. IF THE PRICE DROPS BEFORE ALASKA'S INDUSTRY IS ESTABLISHED, ALASKA WILL NOT HAVE THE EXPERIENCE AND IMPROVED EFFICIENCY NECESSARY TO MAINTAIN PROFIT MARGINS. THIS WILL HAVE ADVERSE IMPACTS ON DEVELOPING SMALL SALMON FARMING BUSINESSES THAT DO NOT HAVE SUFFICIENT CAPITAL TO WITHSTAND THE DEVELOPMENT PHASE.

IN CONCLUSION

ALASKA IS ON THE THRESHOLD OF OPPORTUNITY TO PROMOTE A NEW INDUSTRY IN THE STATE. THIS INDUSTRY WILL AFFORD SIGNIFICANT OPPORTUNITIES TO:

1. DIVERSIFY LOCAL AND STATE ECONOMIES.
2. ADD SIGNIFICANT NEW CAPITAL TO THE COMMUNITIES, PROVIDE NEW YEAR-ROUND EMPLOYMENT OPPORTUNITIES ALLEVIATING THE EXTREME UNEMPLOYMENT LEVELS DURING THE FALL AND WINTER MONTHS.
3. PROVIDE SIGNIFICANT NEW SMALL BUSINESS OPPORTUNITIES TO OUTLYING COMMUNITIES; AND

4. INCREASE OFF-SEASON OPPORTUNITIES FOR THE COMMERCIAL FISHING AND SEAFOOD PROCESSING INDUSTRIES.

THESE BENEFITS AND MORE CAN BE REALIZED BY DEVELOPING A SALMON FARMING INDUSTRY. SALMON FARMING IS A NON-EXTRACTIVE INDUSTRY WHICH REQUIRES MAINTENANCE OF ENVIRONMENTAL AND WATER STANDARDS AND IS CONSISTENT WITH ALASKA LIFESTYLES.

THE SUCCESSFUL DEVELOPMENT OF SALMON FARMING CANNOT ENCOUNTER PROTRACTED DELAY. THERE IS A WINDOW OF OPPORTUNITY TO DEVELOP THE INDUSTRY BUT DUE TO RAPID GROWTH OF SALMON FARMING IN OTHER REGIONS OF THE WORLD, COMPETITION FOR MARKET WILL INCREASE. ONCE THIS HAPPENS THE WINDOW OF OPPORTUNITY FOR MANY ALASKANS, PARTICULARLY SMALL BUSINESSES, MAY BE CLOSED.

SEALASKA BELIEVES THAT AQUACULTURE AND SALMON FARMING WILL BE BENEFICIAL TO ALASKA AND THAT EXPEDIENT DEVELOPMENT OF PUBLIC POLICY TO PROMOTE SALMON FARMING IS NECESSARY. DEVELOPMENT OF THIS MUST OCCUR WITH THE CLOSE COOPERATION AND INVOLVEMENT OF THE ALASKA SEAFOOD FOOD INDUSTRY. RECENTLY, THE GOVERNOR'S AQUACULTURE ADVISORY COMMITTEE PROPOSED AN AQUACULTURE POLICY FOR THE STATE AND A PLAN OF ACTION TOWARD IMPLEMENTING THAT POLICY. SEALASKA CORPORATION IS A PARTICIPANT TO DEVELOPMENT OF THE POLICY AND BELIEVES THAT IT REPRESENTS A PRACTICAL AND ACHIEVABLE PROCESS FOR THE PUBLIC TO CONSIDER THE BENEFITS AND IMPACTS OF OCEAN FARMING AND TO MAKE INFORMED DECISIONS REGARDING THE FUTURE OF SALMON FARMING IN ALASKA.

From the desk of

Rick Harris



SENATOR ELIASON

I THANK YOU FOR TAKING TIME TO
MEET WITH ROGER AND I, FOR OUR
DISCUSSION ENCLOSED IS A COPY OF
A PRESENTATION SEALASKA MADE TO
THE UFA. IT INCLUDES SOME BASIC
BENEFITS THAT WOULD BE DERIVED
FROM THE SALMON FARMING. I WILL
BE COMPILING SOME MORE STATISTICS
IN THE NEAR FUTURE.

ALSO ENCLOSED IS A PRESENTATION
MADE BY ANFAA AT THE S.E. MUNICIPAL
CONFERENCE REGARDING AQUATIC FARMING.

RICK HARRIS

SEALASKA CORPORATION
One Sealaska Plaza
Suite 400
Juneau, Alaska
99801
(907) 586-1512

Richard P. Harris
Vice President
Resource Planning & Administration

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SEALASKA CORP.
JUNEAU, ALASKA

October 1, 1986

Richard P. Harris
Environmental Coordination Manager
Sealaska Corporation
One Sealaska Plaza
Juneau, AK 99801

Dear Rick:

Per your request, please find the enclosed copy of my presentation at the Southeast Conference. I look forward to receiving copy of yours, as well as the resolution passed by the conference on mariculture.

Thank you.

Sincerely,

Katherine Aschaffenburg

for Tom Kron
Chief of Operations

Enclosure

Presentation given to S.E. Conference, Petersburg, Alaska
September 18, 1986

I would like to thank Karen Hofstad and the Southeast Conference for the opportunity to talk with you today. Seafood production through sea farming is increasing rapidly around the world and represents a very real opportunity for economic diversification in southeast Alaska. In my presentation this morning, I will try to provide you with an overview of the world perspective and then try to bring some of the local options into focus.

Landings from world commercial fisheries have increased dramatically since 1950 (see Fig. 1). In 1983 landings reached slightly more than 158 billion pounds. Most of the world's natural fish production potential is now being tapped for harvest. As such, the harvest is expected to increase only slightly in future years.

Americans ate an average of 14.5 pounds of fish or shellfish in 1985 (see Fig. 2). This was slightly more than the per-capita consumption of chocolate. Seafood consumption in the United States is increasing and is expected to double in the next three decades. Seafood is health food; the omega three fatty acids in seafood are reported to possess near-magical qualities for improved human health. The trend toward increased per-capita seafood consumption is being observed in other developed countries as well. World population increases further increase the demand for seafood.

It is apparent that the demand for many types of seafood is going to outstrip the natural-production capacity of the world's commercial fisheries.

Sea farming is driven by demand for seafood products and economic opportunity. In 1983 sea farming produced 22 billion pounds of seafood worldwide. This was 12.2% of the total seafood supply. At present, most of the seafood production from sea farming is coming from the Orient and northern Europe. Oyster farms produce the lions' share of the oysters on the market. In the past two decades, Japan has developed the technology for farming scallops and now commands the world market with more than 50% of the total world production. Farmed shrimp are also dominating world markets. In 1983 73% of the shrimp consumed in the United States was imported with most of the imported shrimp coming from shrimp farms. Sea vegetables are also a very important product of sea farming in some parts of the world. In Japan, for example, the production of one species of sea vegetable, called nori, is a billion-dollar industry. That makes nori farming in Japan a bigger industry than the commercial salmon fishing industry in Alaska.

While the imports of hundreds of tons of farmed shrimp, scallops, and oysters into the United States have not precipitated a great deal of public concern, the import of ten thousand tons of farmed

salmon has. It is easier to understand that concern when you look at this figure (see Fig. 3). Please also note where the production is coming from.

The United States moved rapidly to become a world leader in agriculture on land. We have progressed from buffalo hunters to ranchers and farmers, and presently hold a commanding position in the world in the production of food grains, land vegetables, fruits, and live stock. . . At present we lag far behind countries like Japan and Norway in farming the sea.

Based on Alaska's abundant, high quality, coastal water resources, the close ties between our coastal communities, and our marine environment, some forms of sea farming represent real opportunities for economic diversification. Oyster and mussel farms have been developing in several areas along our coast. There are a number of oyster farms in the Wrangell area.

Governor Sheffield established an advisory committee in July 1985 to evaluate sea farming. The committee included representatives from fishermen's organizations, fish processors, a native corporation, government agencies, the university, as well as individuals involved in sea farming. Both of the speakers who will follow me (Rick Harris and Earl Krygier) served on that committee. The committee observed that farming of shellfish and sea vegetables appears to be quite compatible, and generally promoted their development. Based on the possibility for social and economic conflicts with existing fisheries, the committee recommended that a more cautious approach was in order for salmon farming. I have copies of the committee's proposed policy for those of you who are interested. The proposed policy is currently undergoing further review.

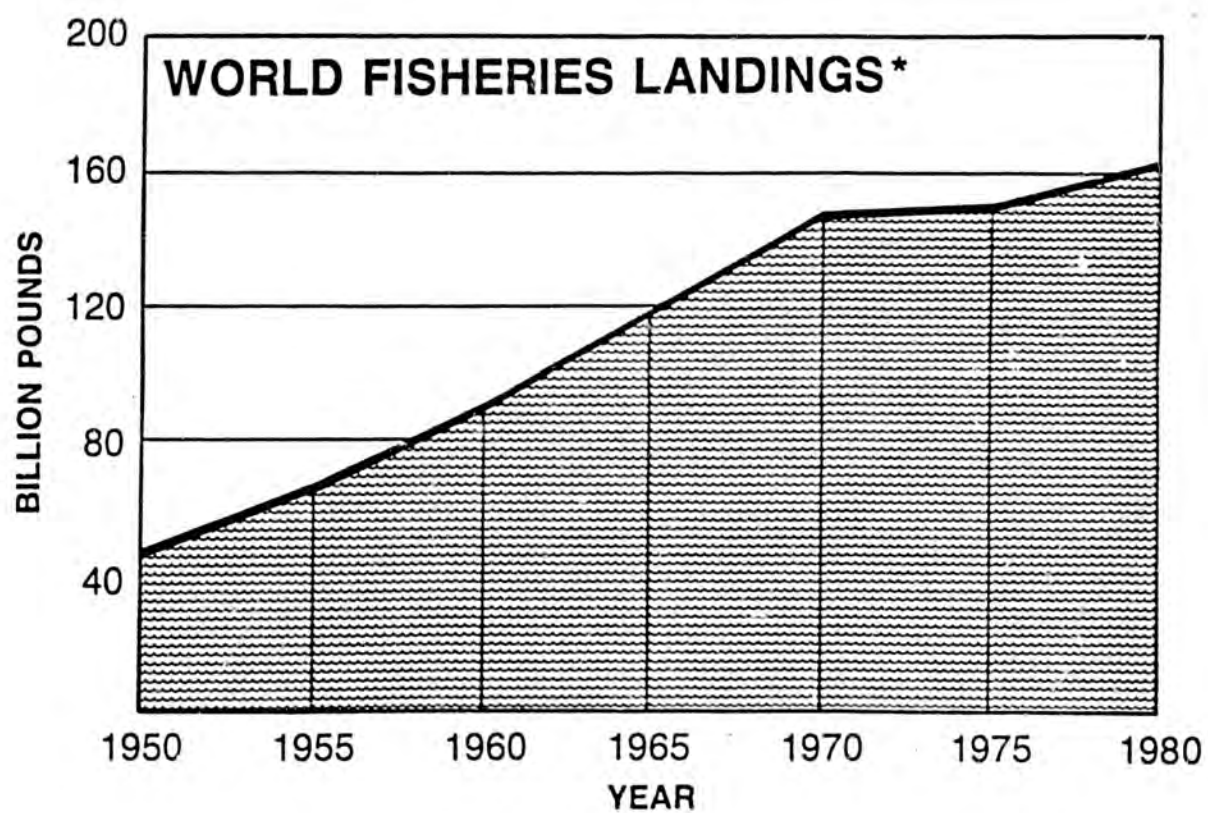
A cooperative agreement was signed this summer between Alaska and Japan's Overseas Fishery Cooperation Foundation which will incorporate Japan's technical support in feasibility studies for farming weathervane scallops in the Kodiak area and giant Alaskan kelp in the Sitka area. The scallop farming feasibility study is scheduled to begin next spring. Japanese and Alaskan scientists are just now meeting in Kodiak to solidify work plans for the scallop portion of the project. The giant kelp project is to begin in summer 1988.

A research project at Little Port Walter on the southern tip of Baranof Island is examining the biological and economic feasibility of salmon farming. This cooperative project is being conducted by the NMFS, ADC&ED, and ADF&G.

In both the past and present, Alaska has been characterized by change. Sea farming will be part of our changing future. While we promote some types of sea farms, we may decide not to participate in others since they are controversial. Decisions to restrict our options could one day be viewed as an important opportunity lost rather than a wise choice to protect and maintain the status quo.

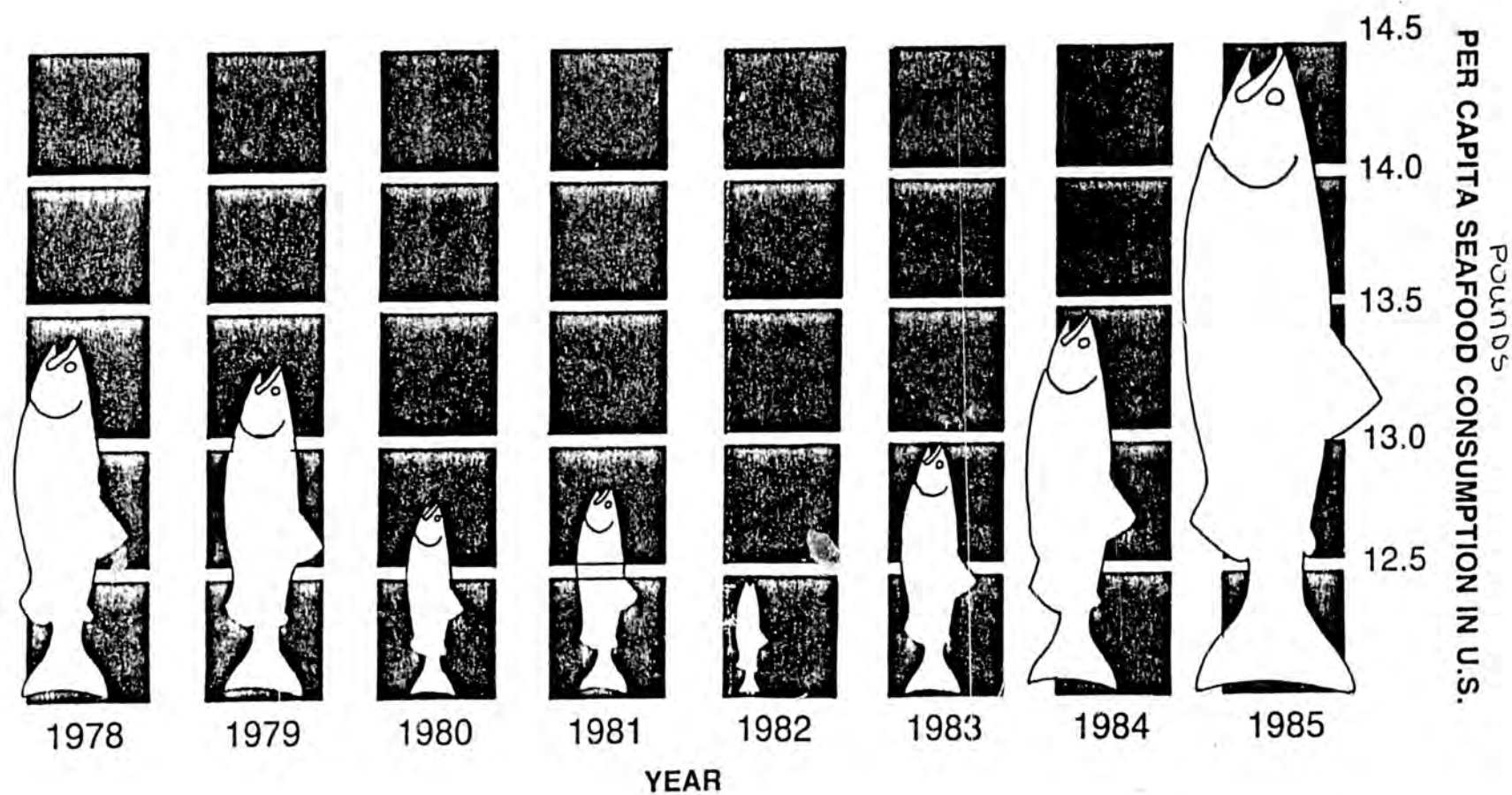
For me, the need for economic diversification and the creation of the opportunity for more jobs becomes most real when we ask ourselves what new jobs will be available for our kids in Alaska? Are they going to farm barley? Will they be able to get a limited entry permit to commercial fish? Will there be new jobs in the timber or oil industry 10-20 years from now? Will there be any new jobs for our kids in Alaska? How will you and I create the opportunity for more jobs in fisheries in Alaska for the future?

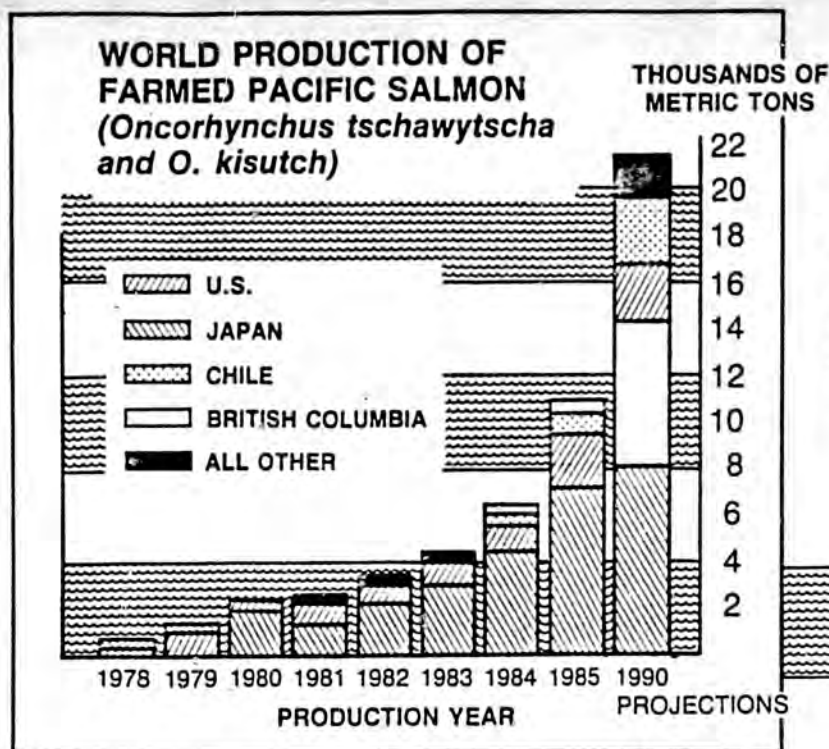
Thank you.



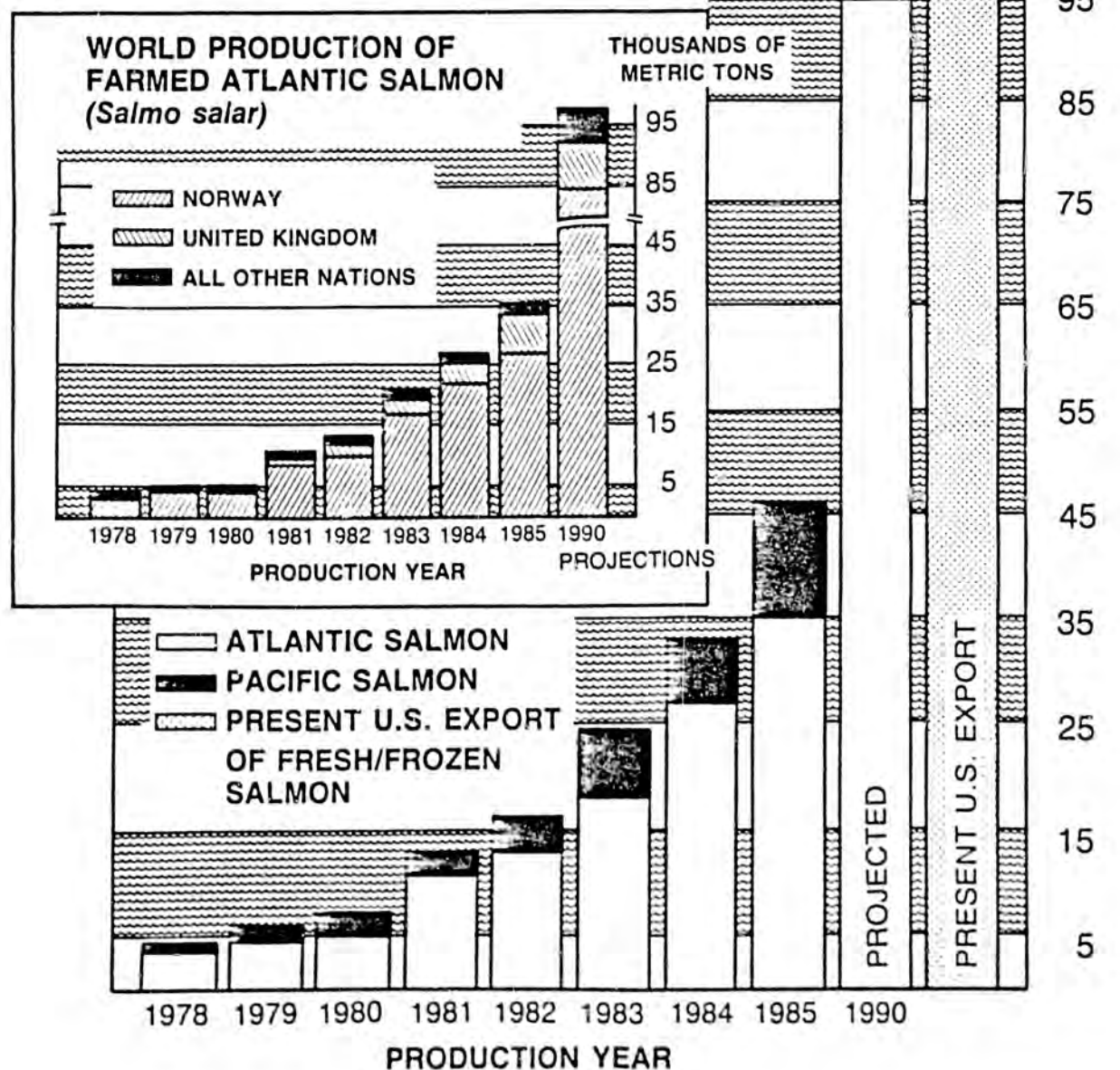
*Fish and shellfish captured from the sea.

SEAFOOD CONSUMPTION SOARS





WORLD PRODUCTION OF FARMED SALMON AND U.S. EXPORTS OF FRESH, FROZEN AND FILLETED SALMON



Alaska State Legislature

Advisory Council Members
Senator Kerttula, Chairman
Senator Bennett
Senator Fahrenkamp
Senator Vic Fischer



JAN 17 1984

Pouch V
State Capitol
Juneau, Alaska 99811
Phone: (907) 465-3114

SENATE ADVISORY COUNCIL

MEMORANDUM

TO: All Senators

FROM: Bill Hall *art*
Senior Advisor

DATE: January 17, 1984

RE: Alaska's Salmon Aquaculture Program -- Issue Identification

Senator Kerttula requested that I prepare this for your information.
Please do not hesitate to call on me if you desire more information.

ALASKA'S SALMON AQUACULTURE PROGRAM -- ISSUE IDENTIFICATION

PREPARED BY BILL HALL, SENIOR ADVISOR

JANUARY 1984

Background:

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"...it is readily apparent that the State must develop a plan for the management of its salmon resources that integrates the management goals of wild salmon stocks with the production of hatchery salmon in such a manner that will produce the maximum benefits for the industry and the people of the State."

The Task Force then identified the following problems as requiring immediate attention:

1. Coordination between public and private salmon aquaculture programs needs to be improved.
2. There is dissatisfaction with the production levels of hatcheries operated by the ADF&G.
3. More money is needed to complete the construction of State owned hatcheries so that they can operate at designed capacity.
4. The regional salmon enhancement planning process needs to be improved.
5. The lending policy of the Division of Business Loans is not consistent with statutory intent for the enhancement loan program.
6. Public misconceptions about possible adverse consequences resulting from interactions of hatchery salmon and wild salmon stocks needs to be addressed through an educational program.
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8. Private sector aquaculture must be maintained on a non-profit status. Any efforts to change this would be considered a threat to the industry.

The final recommendation of the Task Force was the creation of an Aquaculture Policy Study Group to perform an in-depth examination and analysis of the present State Salmon Aquaculture Program, its goals and its problems.

In December of 1983, Governor Sheffield announced a moratorium on new loans for construction of hatcheries in the private sector pending a review of the State's Salmon Aquaculture Program. He assigned the responsibility for this review to his fisheries mini-cabinet which is composed of Commissioners Collinsworth, Lyons and Neve'. Lennie Boston, the Governor's Assistant for Natural Resources, is Chairman of that mini-cabinet, and Greg Baker, the Director of the Office of Commercial Fisheries Development, is the mini-cabinet's staff member.

Concurrent with the above described events the first session of the thirteenth Alaska Legislature considered two bills dealing with the transfer of State owned hatcheries to private non-profit corporations. One bill was sponsored by Senator Eliason (SB156) and the other was sponsored by Representative Bettisworth (HB393). Senator Eliason's bill was passed by both houses of the Legislature and subsequently vetoed by the Governor. In his veto message the Governor cited the following reasons for his action:

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following comments have been prepared in an attempt to identify some of the issues that might be addressed. Each issue of course can be reviewed in much greater depth, should that be desired by any member of the Senate.

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Financial -- The Administration is reported to be concerned about the costs of the State's Salmon Aquaculture Program and the absence of quantifiable benefits to be produced by it. There is a perception that the State is funding two programs (the private non-profit through loans and the public through appropriations to FRED) which overlap and duplicate one another with resultant cost inefficiencies.

Questions have also been raised about the ability of the non-profit regional associations to repay their loans and the overall economic viability of the program.

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pop operators), ADF&G personnel, Department of Commerce salmon enhancement loan officials, administration officials including Governor Sheffield, legislators, professional biologists and persons interested in profit motivated aquaculture in Alaska.

Thus while the increased escapement should help the user groups negotiate for a better season (i.e., higher harvest), the increased natural spawning is not likely to result in any increased production due to the habitat carrying capacity and may actually result in reduced production than the escapements of the past three years have provided.

Added to this is the failure this year by the Reagan Administration to include an appropriation for the Klamath River Salmon restoration as called for in H.R. 4217. This means that the work aimed at restoring habitat and rebuilding runs will be further delayed unless Congress acts to provide an appropriation. Coupled with all of this is the Bureau of Indian Affairs (BIA) attempt to be the lead agency for the Klamath Fisheries Management Council created by H.R. 4217. There has been a general consensus among the parties involved that the U.S. Fish & Wildlife Service is the appropriate lead agency for the Council.

On Tuesday and Wednesday, 20-21 January, marathon negotiations were held among the affected users of Klamath-origin salmon and the agencies culminating at 9:00 pm on Wednesday evening with a tentative long-term agreement for the sharing of the resource. PCFFA president Nat Bingham is the representative for the California troll fishery, assisted by PCFFA secretary Kevin Collins and Dave Bitts of the Humboldt Fishermen's Marketing Association. Scott Boley is the representative of the Oregon troll fishery. The tentative agreement is being sent back to the various organizations, including PCFFA, for ratification.

* * * * *

WFN ANNUAL MEETING

The annual membership meeting of the Northern California Chapter of the Women's Fisheries Network will be held Saturday, 31 January at the Bay Model Visitors Center, 2100 Bridgeway in Sausalito beginning at 11:00 a.m. (see this issue's insert). This meeting's topic will be crab - from the biology of the Dungeness, to the market, to surimi. For more information, call Stephanie Revesz-Thornton (415) 527-3346 or Nancy Rogers (415) 332-3871.

* * * * *

Dick - Mary - Sheila
23 January 1987

B.C. FISH FARM MORATORIUM LIFTED*

The provincial government of British Columbia has begun issuing permits again for salmon farms in that province. A moratorium was imposed on 31 October shortly after the election of Premier William VanderZalm, as a result of a request by the United Fishermen & Allied Workers Union (UFAWU). The moratorium came as a surprise to the bureaucrats in the Social Credit (Socred) government that has had a long adversarial history with commercial fishermen and has been an active promoter of salmon farming in B.C.

Brian Gillespie, a Kamloops attorney, was appointed to do a one man inquiry into the B.C. fish farming policy. In November the UFAWU, along with other groups, submitted briefs to Gillespie's "B.C. Finfish Aquaculture Inquiry" with a list of objections regarding the "gold rush" mentality surrounding salmon farming and issuance of permits, giving 15 specific recommendations. UFAWU along with other fishing groups, environmentalists and natives had been voicing concern for over two years regarding the issuance of permits, but those objections had fallen on deaf ears in the previous Socred government.

On 12 December, Gillespie released his report with 47 recommendations. Although most of the recommendations have not been implemented and many may not be, the government has begun issuing permits again for those who submitted applications prior to 31 October. Indeed, the UFAWU has stated the only hold-up on the issuance of all the permits that have been requested is the total number of them and the time it takes to process them.

Many of the "farmers" meanwhile are finding that pen rearing salmon is not gold mining. Disease and low production have plagued the B.C. operators. UFAWU and other coastal groups have formed an organization called the "B.C. Coast Guard" that is calling for the implementation of the Gillespie report recommendations before any new permits are granted.

For a copy of the Gillespie report summary and recommendations or the UFAWU brief, contact either the PCFFA office (415) 332-5080 or the UFAWU, 160-111 Victoria Drive, Vancouver, B.C. V5L 4C4. (604) 255-1366.

* * * * *

PCFFA Newsletter

23 Jan '87

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PREPARED BY BILL HALL, SENIOR ADVISOR

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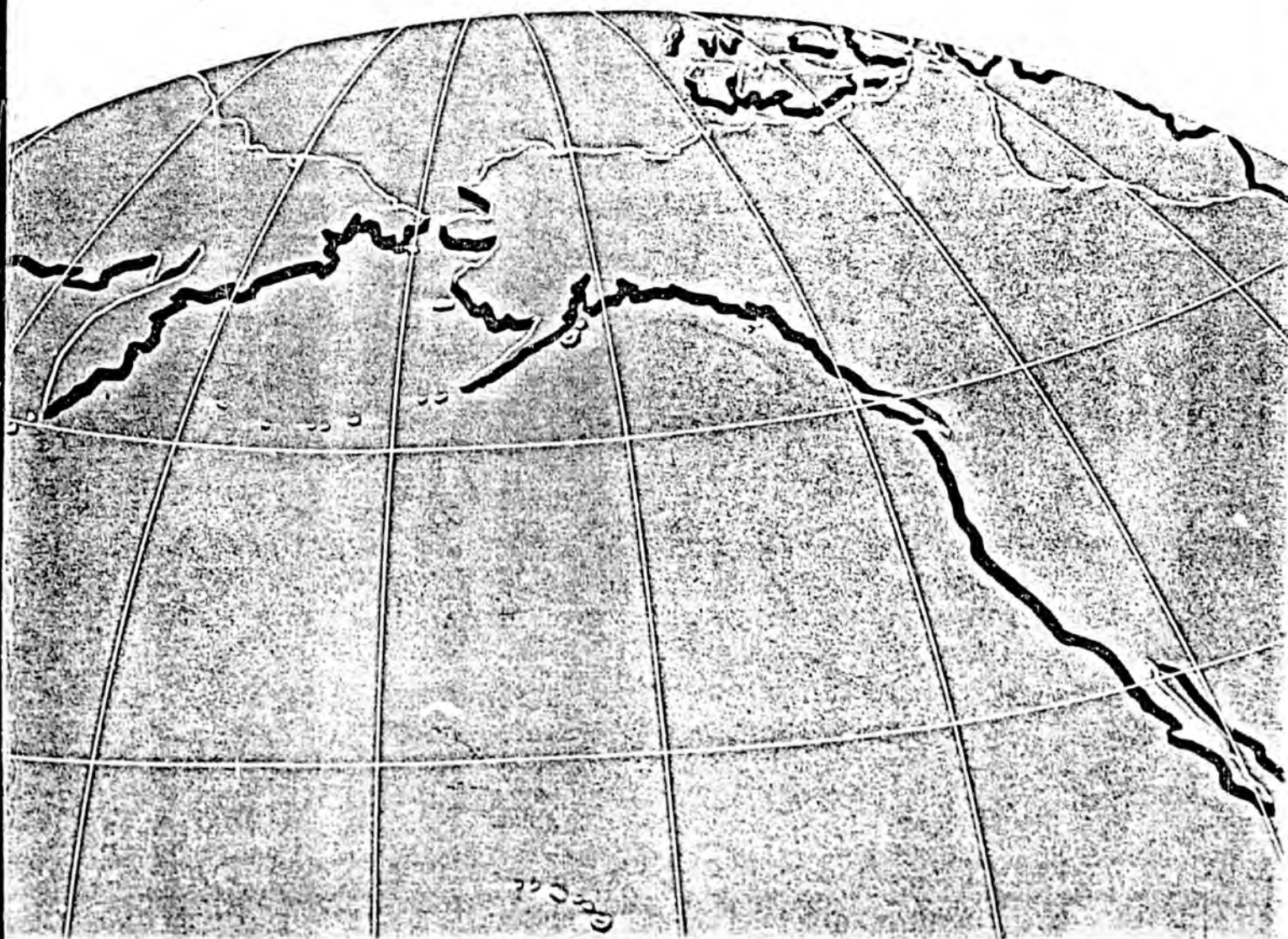
College of Ocean and
Fishery Sciences
University of Washington
Seattle, Washington 98195

School of
Oceanography

THE ENVIRONMENTAL EFFECTS OF
FLOATING MARICULTURE
IN PUGET SOUND

Donald P. Weston

August 1986



THE ENVIRONMENTAL EFFECTS OF FLOATING MARICULTURE
IN PUGET SOUND

Donald P. Weston, Ph.D.¹

School of Oceanography, WB-10
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Prepared for:

Washington Department of Fisheries
and
Washington Department of Ecology

August, 1986

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13400-B Northup Way, Suite 38, Bellevue, Washington 98005

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Dennis Willows - University of Washington, Friday Harbor, Washington
Ron Zebal - Washington Department of Fisheries, Point Whitney, Washington

ABSTRACT

Mariculture, particularly net-pen culture of salmon and suspended culture of shellfish, has grown rapidly in Puget Sound and the potential exists for this growth to continue. This review attempts to assess the probable magnitude of environmental changes that may result from mariculture operations in Puget Sound. The environmental changes which have been addressed can be summarized in four categories. First, there are some adverse changes which are highly probable for most salmon or suspended shellfish culture operations. These would include the accumulation of organic-rich sediments beneath the culture structure, and the consequent effects on the benthic macrofauna community. Secondly, the potential exists for mariculture effects on water circulation, water quality, phytoplankton productivity and the introduction of exotic species. However, the likelihood of these effects and their potential magnitude is highly dependent upon site-specific conditions or the species cultured. Thirdly, there are several issues for which available data are inadequate for a conclusive determination of significance. These include: 1) the environmental effects of antibiotic usage; 2) alteration of the wild gene pool; 3) the capacity for a mariculture operation to serve as a disease reservoir for the infection of wild organisms; and 4) the proliferation of human pathogens in the vicinity of mariculture sites. These potential effects of mariculture have not yet been demonstrated, and the existence of such effects remains largely speculative. Finally, there is little likelihood that mariculture would adversely affect local abundance of fish and megafauna.

Water circulation - A culture structure placed in the marine environment will reduce current velocity in the surrounding area, particularly in the down-current direction. This reduction in current velocity will impair dilution and dispersal of wastes downstream of the culture operation. However, this effect is not likely to be significant except in cases of intensive culturing in an area with very restricted natural circulation.

Water quality - Cultured organisms and culture practices alter the chemistry of the water passing through the culture structure, most notably increasing ammonia concentrations and decreasing dissolved oxygen concentrations. Greater

changes will occur with salmon net-pen culture than with mussel culture, given the relative production capacities of typical Puget Sound facilities.

The concentrations of nutrients and BOD in the water passing through a mariculture structure are generally very dilute compared to most other discharges to the marine environment. Field studies have typically observed little or no changes in water quality outside the culture structure in well-flushed areas. Adverse effects would be anticipated only in areas of extremely limited flushing or very intensive culturing activity.

Phytoplankton - Floating mariculture is unlikely to have a measurable effect on phytoplankton standing stock or productivity in most of Puget Sound. In the Main Basin of Puget Sound nutrients are not limiting to phytoplankton growth. Thus, additional nutrient input attributable to mariculture should have no effect on productivity. Nutrients may be periodically limiting in some vertically stratified area (e.g., Saratoga Passage), however, in many of these areas the dilution of nutrients which would occur prior to their utilization by phytoplankton would probably make any effect on productivity unmeasurable. A localized and measurable effect on productivity would be expected only in highly stratified and poorly flushed areas (e.g., some embayments of the southern Sound) in which the water passing through a culture structure could maintain its integrity with minimal dilution.

Sedimentation - Floating mariculture generates large amounts of solid wastes in the form of feces and unutilized feed (salmon culture) or feces, pseudofeces and shell debris (shellfish culture). These materials are generally deposited in the immediate vicinity of the culture structure. This deposition results in physical and chemical changes to the natural sediments including decreased redox potential, increased sediment oxygen consumption and increased concentrations of total volatile solids, total organic carbon, sulfides, nitrogenous compounds, and phosphates. While there are profound effects on sediment chemistry, and consequently the sediment biota, these effects are very localized. Visible accumulation of solids and the alteration of sediment chemistry typically extends no more than 30 m from the culture structure.

Accumulation of organic-rich sediments occurred around most culture facilities reviewed. The depth of this accumulation depends for the most part upon water depth and current velocity. In general, accumulation of sediments can be