

ALASKA LEGISLATURE SPECIAL COMMITTEE/SUBJECT FILE 8672
1893 SCOMM 75: MARICULTURE (FISH FARMING), 1987-1990

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INCOMING
TELEGRAM

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HANDLE THE SALE. AFTER A LARGE ADVERTISING CAMPAIGN
TO ATTRACT POTENTIAL BUYERS, 22 LARGE CHILEAN AND
FOREIGN COMPANIES PARTICIPATED IN THE BIDDING
PROCESS. PARTICIPATING BIDDERS WERE MOSTLY COMPANIES
WITH KNOWN EXPERIENCE IN SALMON AQUACULTURE. MOST
BIDS WERE IN THE RANGE OF 9 TO 10 MILLION DOLLARS,
HOWEVER THE WINNING BIDDER--THE JAPANESE COMPANY
NIPPON SUISAN KAISHA LTD. (NSK) OUTBID OTHERS BY
OFFERING 22.3 MILLION DOLLARS. NSK IS THE PARENT
COMPANY OF "EMPRESA DE DESARROLLO PESQUERO DE CHILE
(EMDEPES)"--EMDEPES IS ONE OF THE OLDEST FISHING
COMPANIES OPERATING IN CHILE WITH FACTORY VESSELS,
HOWEVER, EMDEPES DID NOT PARTICIPATE IN THE BIDDING
PROCESS ON BEHALF OF NSK, BUT NSK DID ITS BIDDING
DIRECTLY. CURRENTLY THERE IS LOT OF TALKING ABOUT
WHY THIS JAPANESE COMPANY PAID ALMOST 2.5 TIMES ABOVE
FAIR VALUE, FAR BEYOND ITS NEAREST COMPETITORS--SOME
OBSERVERS SUGGEST ONE OR MORE OF THE FOLLOWING
RATIONALES:

--NSK MUST HAVE A MUCH LONGER TIME HORIZON TO
EVALUATE THEIR INVESTMENTS THAN OTHER BIDDERS;
--NSK WANTED TO FRIGHTEN FUTURE BIDDERS AWAY ON OTHER
PROJECTS THEY MIGHT BID ON; AND
--THE JAPANESE COMPANY HIGHLY VALUED THE POTENTIAL OF
SA PRODUCT NAME.

THESE COULD HELP EXPLAINING WHY NSK PAID 4.5 TIMES
THE START-UP COST OF INITIATING A SIMILAR OPERATION
FROM SCRATCH. LOCAL INVESTORS THINK THAT THE RESULT
OF THIS BID CAN BE COMPARED WITH SIMILAR STRATEGIES
FOLLOWED BY JAPANESE INVESTING IN THE USA.

3. GROWTH POTENTIAL FOR SALMON AQUACULTURE

-A) PHYSICAL LOCATION: THE AQUACULTURE INDUSTRY HAS
ONLY BEGUN TO TAP THE GREAT MARINA EXPANSES OF CHILE,
HAVING EXPLOITED SO FAR ONLY A FEW PLACES OF THE
SCARCELY POPULATED TENTH AND ELEVENTH REGIONS, BUT
THIS IS CHANGING EACH DAY. AT PRESENT, MORE THAN 150
AQUACULTURE FACILITIES ARE RAISING PACIFIC AND
ATLANTIC SALMON, AND MORE THAN 10 APPLICATIONS ARE
SUBMITTED PER MONTH TO OBTAIN AUTHORIZATION TO START
NEW AQUACULTURE FACILITIES. GIVEN THE AREAS SIZE,
APT LOCATIONS WILL NOT BE A CONSTRAINT FOR GROWTH IN
THE FORESEEABLE FUTURE. THE TWELFTH REGION OF
CHILE--MAGALLANES--DOES NOT YET HAVE AN INDUSTRIAL
SALMON AQUACULTURE, BUT IS PREPARING FOR ONE BY
CARRYING OUT SALMON RESEARCH ACTIVITIES TO BETTER
DEFINE THE MOST SUITABLE TECHNOLOGY TO PRODUCE IN
THIS COLD-WATER REGION--LOCATED AT THE SAME LATITUDE
AS THE SOUTHERNMOST PART OF ALASKA.

-B) MARKETING: LAST YEAR, CHILEAN SALMON AND TROUT
PRODUCERS ORGANIZED A NATIONAL ASSOCIATION--COMPOSED
OF 32 PERCENT OF THE LARGEST PRODUCERS AND ACCOUNTING
FOR 95 PERCENT OF ALL CHILEAN SALMON EXPORTS--TO
DEVELOP MARKETING CAMPAIGNS FOR CHILEAN SALMON
ABROAD, AND TO DEVELOP A QUALITY CONTROL
CERTIFICATION LABEL. DISEASE CONTROL AND PREVENTION
IS ALSO INCLUDED AMONG THE OBJECTIVES OF THIS
INDUSTRIAL ORGANIZATION.

- TOP FIVE SALMON PRODUCERS IN 1987-1988 SEASON

COMPANY NAME	- PRODUCTION MT)
1. SALMONES ANTARTICA	749.4
2. AQUASUR	349.5
3. MAINSTREAM	241.7
4. UNIMARC	178.8
5. SALMONES AUCAR	175.8

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- TOTAL'S FIVE PRODUCERS- 1,694.4
- PERCENTAGE OUT OF TOTAL PRODUCTION 48.4

SOURCE: CHILEAN SALMON AND TROUT PRODUCERS ASSOCIATION

-C) DISEASE CONTROL: ALL THE SALMON AQUACULTURED
IN CHILE COME FROM FERTILIZED EGGS IMPORTED MAINLY
FROM THE U.S. AND CANADA. BEFORE SALMON WERE
INTRODUCED IN CHILE, THERE WERE NO FISH DISEASES SUCH
AS THE WORLD KNOWN BKD (BACTERIAL KIDNEY DISEASE).
ACKNOWLEDGING THE FACT THAT THERE IS NO WAY TO BUY
VIABLE SALMON EGGS CERTIFIED TO BE FREE OF BKD,
CHILEAN PRODUCERS HAVE EXPERIENCED SOME LOSSES.
NEVERTHELESS, COMMON HEALTH CONTROL PRACTICES HAVE
KEPT THIS PROBLEM FROM BEING A MAJOR CONCERN.

-D) PREPAREDNESS FOR ENVIRONMENTAL EMERGENCIES: CHILE
IS AT THE EARLY STAGES OF DEVELOPMENT OF THE SALMON
INDUSTRY AND A LOT HAS TO BE DONE TO UNDERSTAND THE
IMPACT OF INTENSIVE AQUACULTURE PRACTICES UPON THE
ENVIRONMENT. ALSO THE NATURAL ENVIRONMENTAL CYCLES
HAVE TO BE STUDIED TO DEVISE THE APPROPRIATE
PREVENTIVE ACTIONS. RECENTLY, THE GOC, SALMON
GROWERS AND SEVERAL UNIVERSITIES INITIATED AN
ENVIRONMENT MONITORING PROGRAM TO LEARN HOW TO
PREVENT LOSSES CAUSED BY ENVIRONMENTAL CHANGES. JUST
RECENTLY--EARLY SEPTEMBER 1988--CHILEAN SALMON
GROWERS WERE SURPRISED BY A SUDDEN PHYTOPLANKTON
BLOOM, A PHENOMENA UNKNOWN TO FISHERMEN, BUT FAMILIAR
TO MARINE BIOLOGISTS. A "NON-TOXIC BROWN TIDE"
GENERATED BY A MICROSCOPIC ALGAE--NORMALLY PRESENT IN
SEA WATER--BLOOMED WITHOUT ANY WARNING DUE TO THE
CONJUNCTION OF UNEXPECTED ENVIRONMENTAL
CONDITIONS--HIGH SEA WATER TEMPERATURE, MILD WINDS
AND HIGH ATMOSPHERIC INSOLATION. BEING THE FIRST
"BROWN TIDE" FOR THE CHILEAN "SALMONEROS" (SALMON
GROWERS), PANIC TOOK OVER AT A NUMBER OF LOCATIONS IN
CHILE (AYSEN IS TOO COLD FOR THIS ALGAE BLOOMING TO
OCCUR)--ONE OR TWO "SALMONEROS" LOST ALL THEIR SALMON
PRODUCTION, BUT OTHERS FARED BETTER BY WATCHING FOR
DAYS THE EVOLUTION OF THIS PHENOMENA TO DETERMINE
WHETHER TO MOVE THEIR PEN NETS TO A SAFER PLACE, TO
SINK THE PEN NETS BELOW THE ALGAE LEVEL (4 METERS),
OR TO HARVEST THE STILL UNDERSIZED AND WHITE-FLESHED
SALMON. THE FINAL RESULT OF THIS "ACCIDENT" WAS THAT
THE EQUIVALENT OF 2,000 MT OF SALMON (OUT OF 8,000 MT
POTENTIALLY HARVESTABLE) WERE LOST, MOSTLY SUFFOCATED
BY THE ALGAE, BUT LARGELY BY THE INEXPERIENCE AND
PANIC OF SALMONEROS. DESPITE THE "BROWN TIDE",
CHILEAN SALMON HARVEST WILL BE IN THE RANGE OF 6,000
MT FOR THE 1988/89 SEASON. THE MOST LIKELY EFFECT
FOR CHILEAN PRODUCERS WILL BE A LOWER AVERAGE PRICE
DUE TO THE REDUCED SIZE THE SALMON WILL ATTAIN AS A
RESULT OF THE STRESS SUFFERED WHILE THE BROWN ALGAE
BLOOMED.

4. LABOR

SOME 2,000 WORKERS ARE CURRENTLY WORKING IN THE
AQUACULTURE INDUSTRY. IN THE TENTH AND ELEVENTH
REGIONS, SALMON AQUACULTURE HAS HELPED TO DRIVE
UNEMPLOYMENT TO THE LOWEST LEVEL IN THE WHOLE
COUNTRY. FOR THE THIRD QUARTER OF 1983 UNEMPLOYMENT
WAS 4.4 PERCENT IN CHILE AND 6.2 PERCENT IN AYSEN.
IN THE SAME QUARTER OF 1988, UNEMPLOYMENT IN THOSE
TWO REGIONS WAS 3.1 AND 1.9 PERCENT, RESPECTIVELY.
ALTHOUGH UNEMPLOYMENT HAS CLEARLY DROPPED, THESE
STATISTICS COULD BE OVERSTATED. THE REASON IS THE
REGIONAL ECONOMY IS STILL LARGELY CHARACTERIZED BY A
SUBSTANTIAL SUBSISTENCE ECONOMY AND LABOR STATISTICS
MAY NOT BE COUNTING THE WORKFORCE IN THE SUBSISTENCE
SECTOR. NEVERTHELESS, THE SALMON INDUSTRY CLEARLY

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HAS BROUGHT PROSPERITY TO MANY IN THE REGION.
ADDITIONALLY, THE INDUSTRY HAS ATTRACTED SKILLED
LABOR TO THE REGION. NEWNESS OF THIS INDUSTRY, AND
THE SMALL POOL OF WELL TRAINED WORKERS AND
PROFESSIONALS IN THESE AREAS HAS HELPED BOOST
SALARIES SLIGHTLY HIGHER THAN THE AVERAGE WORKERS'
SALARY IN THE FISHING INDUSTRY IN GENERAL. A THREE
YEAR COLLEGE-TRAINED PROFESSIONAL, RESPONSIBLE FOR
MANAGING A NET PEN SITE, RECEIVES A MONTHLY SALARY OF
US\$600 PLUS HOUSING, WHILE A FOREMAN MAKES
US\$400/MONTH PLUS HOUSING AND A SKILLED WORKER AT A
SALMON AQUACULTURE FACILITY RECEIVES SOME US\$150.
THESE FIGURES COMPARE TO US\$300, FOR A COMPARABLE
THREE YEARS COLLEGE-TRAINED PROFESSIONAL IN THE REST
OF THE FISHING INDUSTRY, AND US\$100 THAT IS THE
AVERAGE SALARY OF A BLUECOLLAR WORKER IN CHILE.

5. FISH PROCESSING

THE FISH PROCESSING INDUSTRY THAT PRODUCES FISH
PRODUCTS FOR DIRECT HUMAN CONSUMPTION IS AN IMPORTANT
INDUSTRIAL ACTIVITY IN THE TENTH AND ELEVENTH
REGIONS. THIS ACTIVITY IS MOSTLY SUPPORTED BY
TRADITIONAL FISH AND SHELLFISH SPECIES (SEE CHILEAN
INDUSTRIAL OUTLOOK REPORT / FISHING 1987 (SPR 8484)
PRODUCED BY THE US EMBASSY SANTIAGO). THESE TWO
REGIONS COMPRISE MORE THAN 45 PERCENT OF ALL THE
LABOR FORCE WORKING IN THE CHILEAN FISH PROCESSING
INDUSTRY PRODUCING FISH PRODUCTS FOR DIRECT HUMAN
CONSUMPTION. THE REGION'S SHARE OF THE NATION'S FISH
PROCESSING CAPABILITY HAS EXPANDED FROM 48 PERCENT IN
1984 TO 62 PERCENT IN 1987. FOR BOTH REGIONS IT IS
EXPECTED TO GROW FURTHER AS RESULT OF THE SALMON
AQUACULTURE ACTIVITY AND A LONGLINE FISHERY, BOTH
STARTED WITHIN THE LAST FIVE YEARS. THIS EMERGING
INDUSTRIAL ACTIVITY IMPOSED "NEW" HYGIENE PRACTICES
ON WORKERS LABORING IN LOCAL FISH PROCESSING PLANTS.
LOCAL WORKERS' TRADITIONAL HYGIENE STANDARDS DID NOT
MATCH AT THE BEGINNING THE HIGH QUALITY CONTROL
STANDARDS DEMANDED BY FOREIGN BUYERS FOR PRODUCTS
SUCH AS FROZEN FISH AND SHELLFISH, AND MOSTLY FOR
FRESH SALMON. AS RESULT OF THE COMMITMENT CHILEAN
PROCESSORS HAVE MADE TO ACCOMPLISH THE HIGHEST
QUALITY STANDARD POSSIBLE, FISH PROCESSING PLANT
MANAGERS IMPLEMENTED PROCEDURES TO TRAIN AND ENFORCE
THEIR WORKERS' BASIC HYGIENE PRACTICES IN ORDER TO
MEET THE QUALITY REQUIRED BY IMPORTERS FROM ABROAD.

6. REGIONAL IMPACT

THE CHILOE ISLAND (X REGION) AND AYSEN (XI REGION)
WERE TRADITIONALLY ISOLATED WITH CLOSED SUBSISTENCE
ECONOMIES. THE INTRODUCTION OF INDUSTRIAL FISHING
ACTIVITIES, LARGELY DRIVEN BY SALMON AQUACULTURE,
HAVE TURNED THE QUIETNESS AND SLOW PACE OF THESE
REGIONS INTO FRANTIC CENTERS OF ACTIVITY FROM
DECEMBER TO APRIL--CHILE'S AUSTRAL SUMMER--WHEN
TOURISM AND AGRICULTURAL ACTIVITIES ARE AT THEIR PEAK.
-A) TRANSPORTATION: CHILOE ISLAND SALMON EXPORTERS
HAVE TO CONTRACT WELL IN ADVANCE FOR FERRY AND
ISOTHERMIC TRUCK SERVICES, AND AIRCARGO SPACE ON
REGULAR OR CHARTERED PLANES TO GET THEIR SALMON ON
THE BUYERS' TABLE NO MORE THAN 24 HOURS AFTER
HARVESTING AND PROCESSING. AYSEN PRODUCERS ARE
LOCATED ON THE CONTINENT SO UNLIKE CHILOE PRODUCERS
THEY DON'T HAVE TO FIGHT FOR FERRY SPACE. STILL,
SPECIALIZED TRUCKS ARE A SCARCE RESOURCE IN THE
REGION. SALMON AIRSHIPPED FROM BALMACEIDA AIRPORT
("THE" AIRPORT OF AYSEN) HAVE GENERATED A STRONG
DEMAND FOR CHARTERED AIRCARGO PLANES DURING THE

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SALMON HARVEST SEASON SINCE 1987. IN THE X AND XI
REGIONS CUSTOM AND FREIGHT AGENCIES ARE MUSHROOMING
TO COPE WITH THE DEMAND FOR THESE SERVICES.

-B) HOUSING: NEWLY ARRIVING MANAGERS (SOME ARE MBA'S
TRAINED ABROAD), ICTYOPATHOLOGISTS, FOOD PROCESSING
SPECIALISTS, CONSULTANTS, ENGINEERS AND MANY OTHER
SOPHISTICATED SPECIALISTS AND PROFESSIONALS
(SOPHISTICATED FOR WHAT THE REGION IS ACCUSTOMED TO)
HAVE EXHAUSTED THE LOCAL HOUSING STOCK. GOOD QUALITY
HOUSES ARE UNAVAILABLE. AS A RESULT OF THIS
PHENOMENA, A CONSTRUCTION BOOM IS CURRENTLY TAKING
PLACE, DISRUPTING AT THE SAME TIME THE REGION'S
ARCHITECTURAL CHARACTERISTICS--MOSTLY
WOOD-MADE--PUSHING STYLES, MATERIALS, AND BUILDING
TECHNIQUES MORE COMMON TO THE REST OF CHILE.

-C) SCHOOLS: CHILOE AND AYSEN'S HIGH SCHOOL STUDENTS
USED TO GO TO SANTIAGO, PUERTO MONTT OR CONCEPCION TO
GET THEIR EDUCATION. NEWCOMERS ARE DEVELOPING A
MARKET FOR HIGH QUALITY HIGH SCHOOL EDUCATION.
PRIVATE PROJECTS TO PROVIDE THESE SERVICES ARE UNDER
STUDY.

7. THE FUTURE

IT CAN BE EXPECTED THAT THE "SUDDEN DISCOVERY" OF
THE X AND XI REGION AS A SOURCE OF ECONOMIC GROWTH,
WILL BRING THE NATURAL BEAUTY OF THE CHILOE
ARCHIPELAGO AND THE UNTAPPED AYSEN'S FJORDS WITHIN
REACH OF MORE PEOPLE. THE WHOLE INTERIOR SEA BETWEEN
THE LARGE ISLAND OF CHILOE AND THE CONTINENT IS MAYBE
THE LARGEST NATURAL MARINA IN THE WORLD AND IS
WAITING FOR WEALTHY VISITORS AND THEIR YACHTS AND
MOTOR SPEED BOATS. ALL THIS COULD BE POSSIBLE AS A
CONSEQUENCE OF THE MORE THAN 100 CHARTER FLIGHTS
REQUIRED TO SHIP THE FRESH AND FROZEN SALMON
PRODUCTION OUT OF THESE TWO REGIONS. DEPENDING UPON
THE TYPE OF PLANES USED--WHETHER ARE MIXED
CARGO/PASSENGER OR JUST CARGO PLANES--THEIR RETURNING
FLIGHTS FROM THE US COULD HAVE EMPTY SEAT SPACE TO BE
USED TO START FLYING US TOURISTS INTO THIS MOSTLY
WILD AREA. IF CARRYING BACK PASSENGERS IS VIABLE,
CHILE WILL BE EXPORTING--CHILEAN GOODS AND
SERVICES--BOTH WAYS. GILLESPIE

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Alaska's salmon could face tough competition from pen-reared fish

7/27/88

THE ASSOCIATED PRESS

FAIRBANKS — Pen-reared Atlantic salmon do not compete strongly with wild chinook and coho salmon from Alaska, but peace in the marketplace might not last for long, said economists who conducted studies for an Alaska research program.

The Alaska industry could face a surge in competition if Norway enters the United States' retail salmon market, as fish farmers in that Scandinavian country have indicated they might, said researchers for the Alaska Sea Grant College Program.

If farm production of Atlantic salmon continues to rise, the fish could expand from a menu item in restaurants to a competitive product in U.S. supermarkets, said economist Biing-Hwan Lin, co-author of a study published in the Canadian Journal of Agricultural Economics last month. The study was carried out for the Alaska Sea Grant program, which is based in Fairbanks and operates primarily with federal money.

"Since the average shopper does not know the difference between a chinook, sockeye, coho or Atlantic salmon, they will check the prices and buy the lowest priced salmon," Lin said.

Norway is the world's largest pro-

ducer of farmed Atlantic salmon. Lin predicts that by 1990, that nation's harvest will nearly double to about 220 million pounds of the fish for sale on the world market.

If production by other fish-farming countries such as Sweden, Chile, Ireland, Scotland, Zealand and Japan is figured in, the harvest of pen-reared salmon likely would equal the combined United States-Canada catch of chinook, coho and sockeye salmon, Lin said. Farms for the rearing of Atlantic salmon also operate in the United States.

Parts of Lin's study are disputed. "Obviously, there will be competition between Atlantic and Alaska salmon, but I don't think we should exaggerate this," said Trond Bjørndal, associate professor of fisheries economics at the Norwegian School of Economics and Business Administration.

"I think Norwegian salmon will be sold in more European supermarkets and on the U.S. East Coast, but there will be more competition from Chile and British Columbia than from Norway and the U.S. West Coast salmon market."

The Juneau director of the Pacific Seafood Processors Association said he has heard forecasts of doom for the Alaska salmon industry over the

years and remains skeptical.

"We have never seen as much farmed salmon on the market as we have recently, and yet the prices (for wild salmon) are as high as they have ever been," Rick Lauber said. "It seems like there is enough demand for salmon that I don't see that much impact on the overall market."

But a University of Rhode Island resource economist who has studied the impacts of farmed salmon on U.S. markets since 1981 said that for years, Alaska has watched its share of the market erode.

The state "has not done much to improve its marketing and quality until recently," Rhode Island economist James Anderson said. Alaska should legalize aquaculture "to regain market share, to improve the consistency of supply and to diversify the Alaska economy," he said.

Lauber said that would harm the market appeal of wild salmon.

"I don't see Alaska's problems being solved by raising more farmed salmon," he said.

Researchers also found Alaska's grip on the European smoked-salmon market is slipping. "Quality and price are the reasons," said Brad Pierce, an analyst for a research agency of the Alaska Legislature.

Biologists battle lethal fish virus

The Associated Press

SEATTLE — A new and lethal fish virus from Europe may have infected Pacific Northwest salmon and trout, and federal regulators have begun an aggressive testing program to detect its presence in the wild.

Biologists said the virus — viral hemorrhagic septice-mia or VHS — has never before been seen in North America and they fear it could spread rapidly in Northwest hatcheries, net pens and open waters.

Wild salmon and trout are being captured for the test, which takes about two weeks to produce results.

The virus led two Washington hatcheries to destroy 3.8 million fish and eggs this week, about one percent of the entire Washington state hatchery production.

NORTHWEST

"This is classed as an emergency disease. It's not to be taken lightly," said Jerry Grover, a Fish and Wildlife Service regional manager.

"There's a 50-50 chance" wild fish have been infected with the disease, said Ray Brunson, a fish pathologist with the service.

The virus is not considered dangerous to people even if they eat infected fish. VHS was found only in Europe before the state's Glenwood Springs Hatchery in Orcas Island and the federally run Makah National Fish Hatchery in the Olympic Peninsula detected it in routine sampling.

In Europe, infected coho salmon carried the virus

with apparently no ill effects. But biologists worry whether the virus will be as benign for Pacific salmon. In laboratory tests, about 70 percent of the fish injected with heavy doses of the virus died.

A spokesman at Glenwood Springs said that fish had been transferred in and out of the hatchery prior to detection. Fish were still being killed at the two fisheries this week at the hatchery.

A "very aggressive" sampling schedule has been set up to detect the disease in wild fish, said Larry Peck, head of salmon-culture operations for the state Department of Fisheries.

Peck speculated by fish returning from the ocean brought the virus to the two hatcheries.

Virus threatens state's salmon and steelhead hatcheries

By Jane Hadley
and George Foster
P-I Reporters

State and federal biologists have destroyed almost 4 million fish and eggs at two Washington state hatcheries because some of the fish were infected with a fatal

viral disease that has never before occurred in North America.

The hatcheries have been quarantined, but the virus may already have spread into valuable Pacific salmon and steelhead stocks, alarmed fisheries experts say. The disease has previously infected European commercial

trout operations.

"The worse-case scenario is that every hatchery would become infected," Joseph Blum, director of the Washington state Department of Fisheries, said yesterday.

"The hatchery world throughout the U.S. has been put on alert. The word is out and traveling

quickly," said David Klinger, a spokesman for the U.S. Fish and Wildlife Service's regional headquarters in Portland.

The virus, which cannot be treated and is always fatal to infected fish, poses no risk to human health, even if a contaminated fish is eaten, according to

the state fisheries department. Two hatcheries, the Makah Hatchery near Neah Bay and the Glenwood Springs Hatchery on Orcas Island, are being disinfected. No fish or eggs can enter or leave the facility, said Klinger.

Coho, chum, fall chinook, and steelhead were destroyed.

The virus first showed up in December at Glenwood Springs, a joint private-state salmon rearing operation.

A short time later the virus appeared at the U.S. Fish and Wildlife Service's Makah Hatch-

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Virus: Threat to hatcheries

From Page 1

ery on the Olympic Peninsula. But the virus was not positively diagnosed until last week.

The disease, called viral hemorrhagic septicemia or "VHS," has previously been reported only in continental Europe, where it has caused "significant fisheries losses" at commercial trout operations, according to the fisheries department.

Blum said a little over 300 million young fish and 60 million eggs are produced annually in the state. The fish and eggs destroyed this week would amount to about 1 percent of that.

"Obviously, it's a significant number of fish," said Klinger. And the Makah hatchery fish also are considered especially valuable because the hatchery is so close to the open ocean that the fish have a very high survival rate, he said. But the possibility that the disease might spread to other hatcheries is now the main worry.

Glenn Yokoyama, manager of the University of Washington's fish hatchery on Portage Bay, said if fish and eggs were transferred into or out of the infected hatcheries after the virus discovered but before the quarantine was put into effect, it would heighten the chances the disease would spread.

Bob Byrne, a spokesman for the state Department of Wildlife, said department biologists are concerned that the virus will

"The likelihood of this virus showing up someplace else at some point is pretty high," he said.

Top fish disease experts throughout the Northwest met in Medford, Ore., this week to discuss the virus and other matters, according to the state fisheries department.

The disease causes the blood-forming tissues of the kidneys to degenerate.

The disease could have been introduced by certain fish species, or by ships or travelers carrying contaminated water.

"The possibilities are bilge water from vessels or that people who travel worldwide pick it up on their boots, or that other fish could have it," Blum said. "My understanding from our technical folks is that black sea bass are a carrier. Atlantic salmon have been known to have it."

The new disease may well fan the flames of the controversy over salmon net pens and other aquaculture operations in the state. Opponents have insisted that net pens pose the risk of introducing new fish diseases, while supporters have downplayed the risk. The favored fish at net pen operations is the Atlantic salmon.

The state has 13 net pen operations, most of which raise Atlantic salmon, and a number of new ones are proposed.

Hatcheries in this state have been plagued by a virus for many years known as IHN. Since 1982 the UW's hatchery has had to test each egg and young salmon individually for the presence of IHN.

Senator Eliason

The recent articles commenting on the success of Norway's fin fish farming industry have ignored the high price that Norway has paid in fish diseases that have ravaged their industry and destroyed thirty of their wild salmon rivers, and the very real fears their scientists have concerning genetic pollution of their wild stocks of salmon.

Norwegian salmon farmers, in the business for twenty years, find themselves continually fighting new diseases that have required the slaughter of tons of pen-farmed salmon. A group of farmers, who lost their harvest either to furunculosis (a disease that kills 60% of affected stocks) or to government control of diseased fish, is suing the Norwegian government for \$25 million dollars. Farmers themselves are demanding that 100 more fish veterinarians specializing in disease control be hired before anymore fish farm permits are issued... those in addition to 60 fish disease specialists and nearly 150 fish veterinarians already working around the country.

Norway's use of antibiotics for controlling these diseases rose over 170% last year to reach 48 tons. This is more than the amount used for animal husbandry and humans combined. With our focus on health and nutrition how does this use of such large quantities of antibiotics affect our view of pen farmed salmon? Scientists have expressed concerns of effects on the food chain and the increase of human resistance to antibiotics.

Last summer in Norway 5,000 farmed salmon infected with the deadly furunculosis escaped into their waters. Despite their best efforts to blockade and capture the sick fish, an infected fish was found in one of their rivers. "If the disease spreads to natural stock, the situation may be out of control in Norway," their scientists warned. Studies by three Norwegian fish biologists conclude that disease in farms can

lead to higher infection rates of wild stocks in the vicinity of the net pens even if the disease itself may already exist in the natural stocks.

The fish farm disease that kills wild salmon in rivers and has destroyed 30 wild salmon rivers in Norway is *Gryodactylus salaris*, a parasite that entered Norway via infected smolts from Sweden. The only way to clean up the rivers is by the use of a chemical called rotenone. Unfortunately along with killing the parasite, it also kills every other

living thing in the river, including wild salmon. A top Norwegian scientist says, "I feel we are on a sharp edge with diseases. If we have the *Gryodactylus salaris* in more rivers we may just accept our wild salmon is extinct."

It has recently been suggested that one of the reasons that Alaskans might be interested in a pilot project in salt water would be to assess the probability of fish escaping. We don't have to experiment... it is documented. At least 13% of farmed salmon escape and there are occasionally very large numbers that escape. For instance, this last December in Jarvis Inlet, B.C. an estimated 300,000 fish escaped from their pens in winter storms and residents reported many net pens floating up and down the coast. Also, in Washington State, commercial fishermen have reported substantial numbers of escaped farmed salmon in their catches. Should these escapees concern Alaskans?

Svein Mehli, head of Norway's Directorate for Nature Management, which is responsible for protection of wild salmon, appeared in Washington State on December 14 as an expert witness on fish disease and genetic pollution. He testified that up to 40% of the fish in many of their rivers is now of farmed stock origin and says they are very concerned about the genetic effects of farmed salmon on wild stocks. "We are very afraid it could affect their ability to migrate," he said. Three major fisheries institutes in Norway have reported that escaped farmed salmon do spawn in rivers. In order to combat this threat, Norway has implemented new zoning regulations this year. **no salmon farms will be located within 20 kilometers of salmon rivers, and entire fjords will be closed to farming where salmon rivers are present.**

In Alaska, using indigenous species that would take at least three generations to tame (until they had lost their basic will to survive in the wild) and the resulting genetic pollution from escaped fish could pose the same threat. Although the magnitude of that threat would be related to the population size and density in individual streams, spawning escaped salmon would still be a danger, especially in streams with small populations.

Alaskans who imagine that we could control diseases better than other countries because we have a large hatchery system and would not be forced to import eggs or smolts need to examine the situation in Washington State and British Columbia. Both these

areas have overturned strict fish regulations banning the importation of foreign stocks at the economic pressure of fish farmers who find that native wild stocks are slow to domesticate and growth rates are not rapid. The already domesticated Atlantic salmon is the economic savior of fish farmers. Fish biologists were mystified at the reversal of their regulations and a Canadian biologist wrote that his government was playing "Russian Roulette with our wild fish stocks." That same economic pressure forced Norway to lift their ban on importation and the result was the *Gryodactylus salaris* parasite that has caused such a tragedy in their country. Acquisition of eggs or smolts from hatcheries or river systems is also a major public policy issue for Alaskans to consider. The only experimental on-land tank farm in Alaska acquired its eggs from a northern sport fish hatchery... that may be fine as long as the public, through the Board of Fish process, has an opportunity to comment. The demand for eggs in British Columbia has created conflicts between sport and commercial fishermen and fish farmers.

In Washington, a local fish farmer is now suing in U.S. District Court alleging that foreign national interests, primarily Norwegian, have made an attempt to monopolize the commercial farming industry in his state. 80% to 95% of the fin fish farming industry in both Washington and British Columbia is owned by Norwegian Corporations. Could Alaska escape such a fate? It's doubtful.

There seems to be a plentiful supply of pen-raised salmon these days... it's starting to go into freezers in Europe as well as being sold fresh. Alaska is presently the world leader in ocean ranching. The State's hatchery programs are responsible for at least 80 million dollars in resident income and 2300 resident jobs.

Last year's mariculture legislation, which addressed shellfish and aquatic plant farming, also called for an Alaska Mariculture Task Force to study the issues relating to fin fish farming (especially, salmon pen rearing). We believe that this Task Force should be funded now to give all concerned parties and the Legislature an approved forum in which to study and assess the impacts of fin fish farming on Alaska. Alaska contains 48% of the wild salmon in the world... we should not let the winds of economic development sway our way of thinking. It is imperative that we fully understand the consequences of our actions and protect the future of our uni-

information, contact UFA's office in Juneau at 586-2820 or 1-800-478-FISH. *

Editor's Note: This article was provided by the United Fishermen of Alaska, Mariculture Committee. For more

POLLUTION ISN'T A SOUND POLICY

Should corporations use public waters for private profit?

By John de Yonge
P-I Columnist

Consider these things about floating fish farms:

■ A typical net-pen fish farming operation on Puget Sound produces pollutants "equivalent to untreated sewage from approximately 10,000 persons." That's what a state report says. The pollution comes from fish feces, urine and food pellets deposited in the water and on the bottom of the Sound.

■ There are 13 commercial pens now operating over 69 acres of aquatic lands leased from the state. These 13 operations daily deposit to the bottom of Puget Sound nearly six times as much oxygen-demanding fecal matter and other wastes than does Metro's Renton Waste Water Treatment Plant, which serves 430,000 people. Materials that deplete oxygen can radically change or kill off the life forms in an unpolluted environment.

■ Siting 27 more fish farms, now delayed by opposition from upland property holders, environmentalists and county officials, would add a pollution load to Puget Sound equal to that from building four new cities the size of Everett.

■ The "proper siting of 100 farms would not have significant impact on the aquatic environment." So says the state's just-issued environmental impact statement on floating net pens.

Those 100 fish farms would produce 55 metric tons of oxygen-demanding waste per day. That's 18 more tons a day than Metro's Renton and West Point treatment plants together produce from the sewage of 1 million people.

Analysis

The environmental impact statement was prepared by three private organizations that supply fish-farm companies with paid expert witnesses.

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The official evangelist is the Department of Agriculture's Dr. John Pitts, veterinarian and former Jefferson County commissioner who appears at meetings and hearings — in one case, as a paid witness for a net-pen applicant — to pooh-pooh environmental objections raised by net-pen opponents.

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Opponents include environmentalists like David Ortman of Friends of the Earth, who says: "Why should we be happy about fish farms that dump tons of fish poop every day into Puget Sound?"

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Atlantic salmon, not a salmon but a sea-run trout of the Atlantic seaboard, have escaped by the thousands from net pens here and in British Columbia. The B.C. government booms fish farms with a gusto exceeding even the ta-ra-ra-boom-de-ys from Gardner's men and from Brian Boyle, the separately elected head of the Department of Natural Resources, which manages shore bottoms and other public lands.

What's more, hundreds of thousands of Pacific salmon have also escaped from the pens, especially in British Columbia.

So what does that mean?

The state environmental impact statement points out that escaped exotic fish like the Atlantic salmon "could establish self-sustaining populations and compete with indigenous fish," such as steelhead trout.

That may not be far off.

In the North Puget Sound last year, commercial and sports fisherman caught hundreds, probably thousands, of Atlantic salmon weighing up to 10 pounds.

More dangerous by far is that for the first time ever at least three sexually mature Atlantic salmon showed up miles from the sea in the Nooksack River last year, near Bellingham, and one in the Nisqually, near Olympia. Rumor has a fourth Atlantic netted in the Skagit River at Sedro-Woolley.

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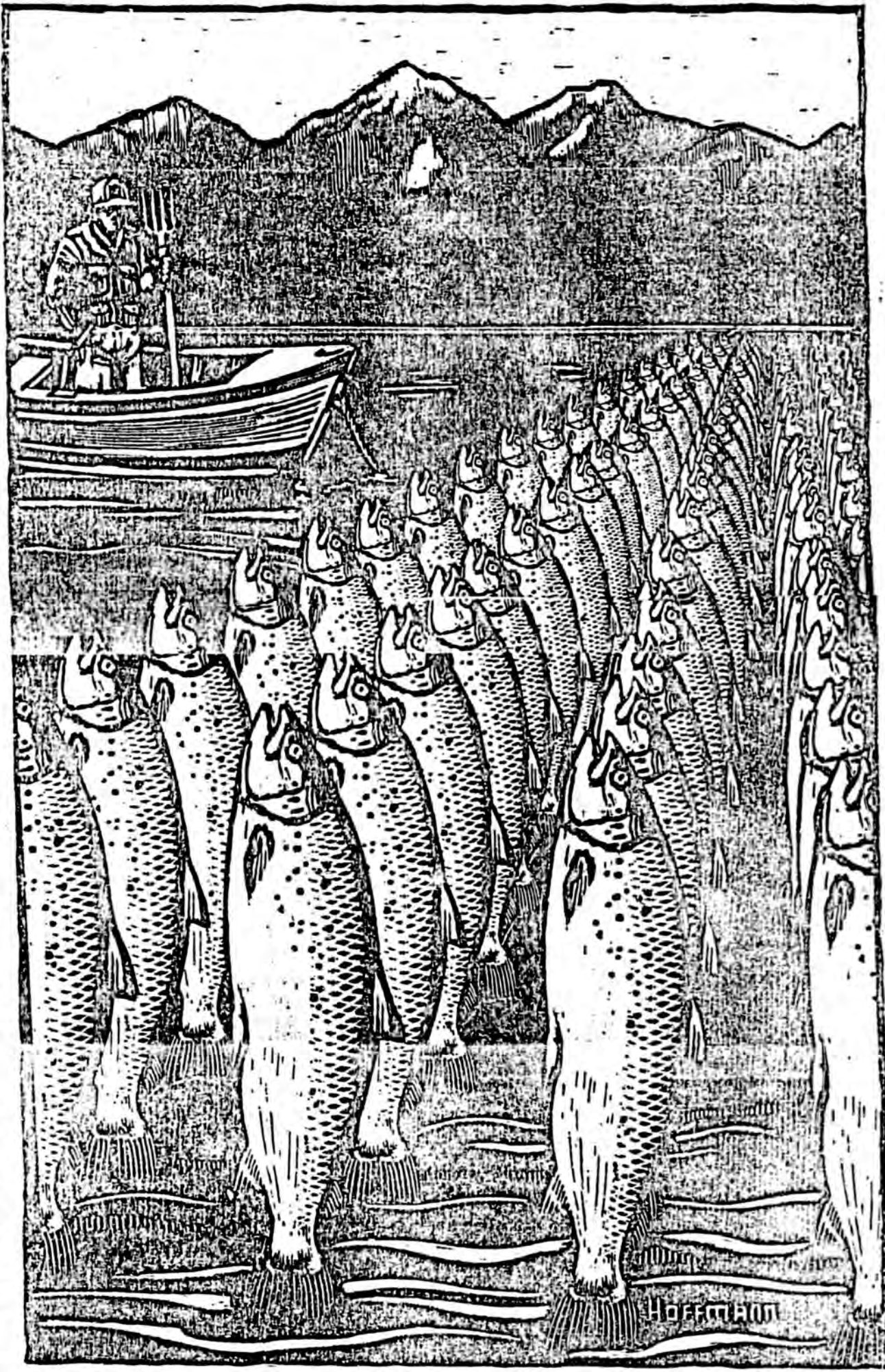
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VHS, state fish-disease experts say, has never been found to occur naturally in Atlantic salmon. They say that the chance that Atlantic salmon in pens here are the source of the disease is "virtually zero." The disease was found in chinook and coho salmon, species raised extensively at federal, state and tribal hatcheries and at commercial net-pen operations.

The impact statement does not dwell on what has happened in Norway, where other diseases associated with that country's extensive net-pen industry have ravaged wild Atlantic salmon runs in 32 rivers. The government was forced to poison some streams, set up a salmon sperm bank to preserve wild genes and consider banning any new net pen within 12 miles of a river mouth, an obvious rule not yet under consideration here.

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DUANE HOFFMANN/P-I

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CORRECTION

**THIS DOCUMENT
HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY**

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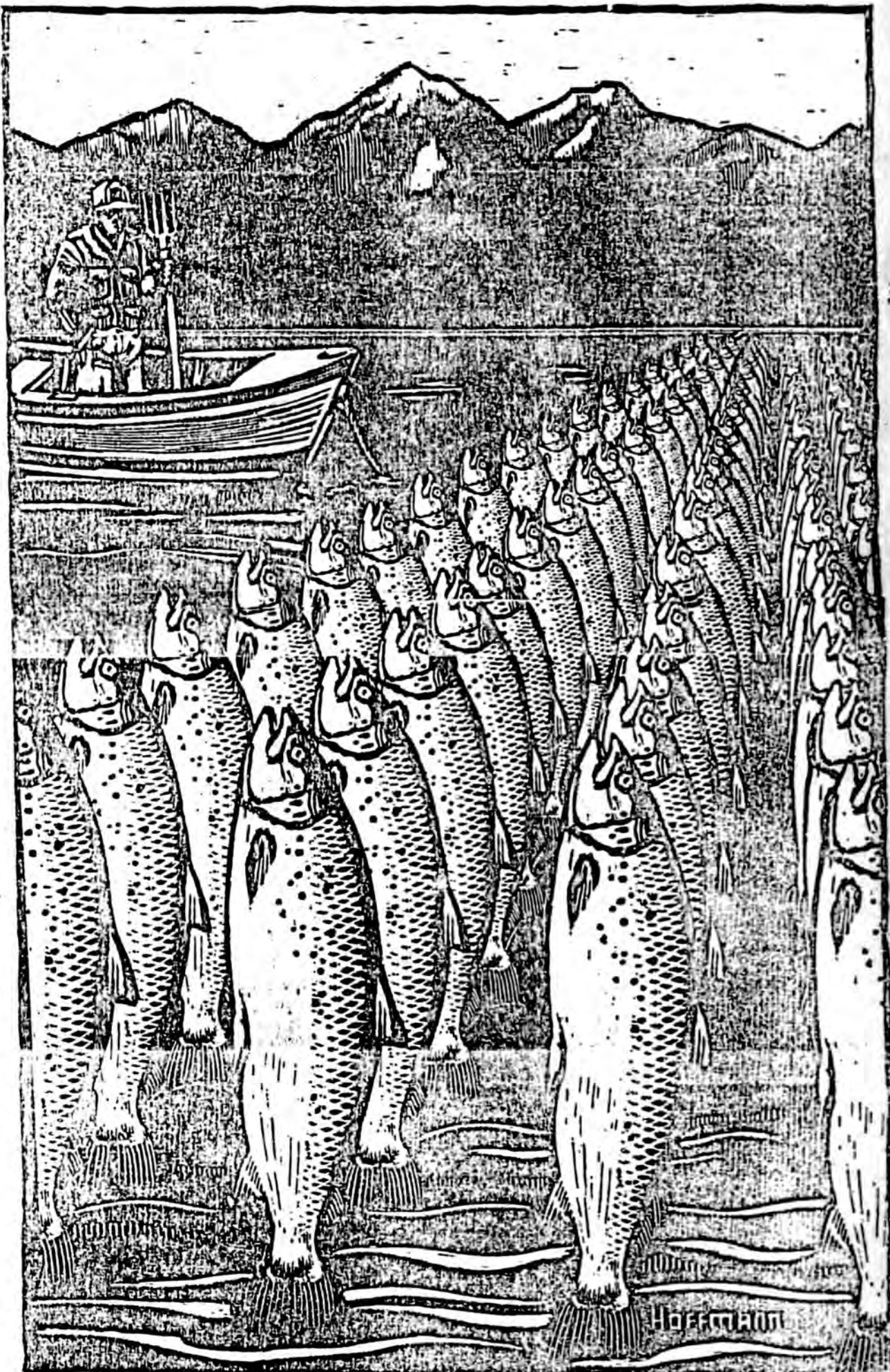
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Alaska Mariculture Association

M E M O R A N D U M

TO: All Legislators

FROM: Rodger Painter
Alaska Mariculture Association

DATE: March 2, 1989

RE: VHS Fact Sheet

The Alaska Mariculture Association (AMA) wishes to add its concern regarding the discovery of a fish virus in Washington State salmon stocks previously undetected in North America. To assist in the understanding of this disease, AMA has gathered the following facts on Viral Hemorrhagic Septicemia (VHS) from state pathology officials and Washington state officials and fish farmers.

1. VHS was isolated in chinook and coho salmon stocks in two anadromous release hatcheries in Puget Sound: the Glenwood Springs Hatchery, a private facility on Orcas Island, and Makah Hatchery, a joint U.S. Fish and Wildlife Service-Makah Indian Tribe operation near Neah Bay. These hatcheries are located a considerable distance from one another.
2. This discovery resulted in the destruction of roughly 3 million salmon fry and 1 million salmon eggs in the two hatcheries. The destroyed fry and eggs were buried. The facilities have been disinfected and quarantined to prevent the spread of the disease. Washington State and federal officials are working hard to track down potential sources of the infection, and are gathering thousands of wild salmon and trout from areas adjacent to the hatcheries to determine the extent of infection of wild stocks. Tests show that at least two returning adult salmon were infected with the VHS virus.
3. VHS primarily affects trout and can cause heavy mortalities in adult fish in fresh and salt water. There have been no mortalities of fish in either hatchery as a result of the infection, and contrary to press reports there have been no laboratory tests where trout were injected with VHS and mortalities have resulted. VHS is not treatable. The virus can be transmitted by contact with infected fish or contaminated water.

Denmark trout hatcheries and farms have had major problems with VHS in the past, and apparently have found ways to work around the disease. This is similar to the Alaska Department of Fish and Game's success in "farming around" Infectious Hematopoietic Necrosis Virus (IHNV) in its anadromous release sockeye programs. While the appearance of an exotic disease potentially as lethal as VHS is a source of utmost concern, the extent of the threat to Pacific salmon is unclear at this point. Coho salmon in Europe have been observed to be carriers of the disease without suffering ill effects.

4. ADFG and Washington fisheries officials say there is no evidence of how the hatcheries became infected. Some fisheries scientists theorize the virus was introduced through water sources into the two hatcheries, while others suspect adult salmon returning to the hatcheries were infected. Scientists also say it is unclear at this point how the virus was introduced into the Washington environment. One notable Washington disease expert said at a recent public meeting that VHS may have been present in North American fish stocks for some time, but it was not detected until the right environmental conditions existed for the disease to manifest itself in salmon stocks. The virus was detected in routine pathology examinations. Dr. Ted Meyers, Alaska's chief pathologist, said VHS would show up in initial screenings as very similar to IHNV and it's quite possible that VHS might have been mistaken for IHNV in the past. Dr. Meyers also said that a virus very similar to VHS has been identified in Pacific marine fish, and infection of salmon from contact with a cod could be one path.
5. Opponents of fish farming in Alaska and Washington have suggested that VHS was transmitted to Washington through Atlantic salmon farms in Puget Sound. Alaska and Washington fisheries officials say there is no substantiation for this allegation. Atlantic salmon eggs imported into Washington State were supplied by hatcheries in Finland, Scotland and Norway which were certified to be free of VHS. Washington's largest fish farming operation said VHS has never been detected in Finland and Scotland, and the only reported case in Norway involved a trout hatchery some 15 years ago. Washington State officials have contacted the European sources of Washington State Atlantic Salmon and have verified that VHS has never been detected in stocks utilized in supplying hatcheries. VHS has never been isolated in Atlantic salmon stocks in the wild, hatcheries or farms. A laboratory experiment showed the virus could be introduced into Atlantic salmon under clinical conditions and Atlantics could potentially be carriers of the virus. However, no ill effects were noted in the infected fish.
6. Washington State import procedures require the hatchery supplying the Atlantic salmon eggs to be certified as free of VHS and "whirling disease", tests are conducted prior to shipment to

ensure VHS and whirling disease are not present, and the eggs are held in strict quarantine until 90 days after hatch-out. The eggs and fry are closely inspected throughout the quarantine process for VHS and other diseases. The Washington fish farming company said its hatchery and others in Washington State handling Atlantic salmon were inspected by Washington fisheries officials last fall and were given a clean bill of health. There have been no reports of VHS present in any farmed Atlantic salmon.

7. ADFG reports that VHS has not been found in any Alaska salmon or trout stocks. ADFG officials say Alaska regulations prohibiting the importation of non-indigenous fish stocks is the best protection against introduction of an exotic disease. Alaska also has a statutory prohibition against the importation of Atlantic salmon.



Alaska Department of Fish & Game

NEWS

FOR IMMEDIATE RELEASE

March 1, 1989

ALASKA CONCERNED ABOUT NEW FINFISH VIRUS

Juneau...Fishery pathologists in the Fisheries Rehabilitation, Enhancement, and Development (FRED) Division of the Alaska Department of Fish and Game (ADF&G) are very concerned about the discovery in the State of Washington of Viral Hemorrhagic Septicemia (VHS), a fish virus that has not occurred before in North America.

Recently, a VHS virus was identified in spawning coho and chinook salmon in two hatcheries in the State of Washington: the Glenwood Springs Hatchery on Orcas Island and the Makah Hatchery operated by the U.S. Fish and Wildlife Service near Neah Bay. All fish in these hatcheries were destroyed, and the facilities have been quarantined in order to prevent the spread of this virus.

VHS, first discovered in 1938 in Europe, causes disease primarily in rainbow trout in both fresh and salt water. Other fish shown to be susceptible include Atlantic salmon, brook trout, golden trout, rainbow trout-coho salmon hybrids, and goldfish. Transmission is by contact with other infected fish or contaminated waters. VHS has not been detected in North America despite extensive disease monitoring. VHS is capable of causing severe mortalities in older, larger fish, while Infectious Hematopoietic Necrosis Virus (IHNV), indigenous to wild Alaskan sockeye salmon, typically kills fry and juveniles. As with other viral diseases, there is no treatment for VHS except prevention.

Dr. Ted Meyers, Principal Pathologist for the FRED Division, has found no evidence of VHS disease in Alaskan

- MORE -

salmon stocks. According to Dr. Robert Burkett, Chief of Technology and Development for the FRED Division of ADF&G, Alaska maintains the best possible protection against invasion of exotic fish diseases because it prohibits the importation of any finfish into the state. "The most important thing was done ten years ago when regulations were established prohibiting import of finfish," Burkett says.

Dr. Meyers has been in contact with investigators performing the VHS identification and survey work at the Sand Point U.S. Fish and Wildlife Service Fish Pathology Laboratory in Seattle. Dr. Meyers will be travelling to the Seattle Laboratory to monitor the progress of the investigations and to determine the extent of the VHS problem in Washington and the Pacific Northwest. FRED Division pathologists will continue to monitor Alaskan salmonid stocks for IHNV using procedures that would detect other viruses as well, including VHS.

As a result of the potential risk to Alaskan stocks, the Commissioner of ADF&G, Don Collinsworth, is calling for the immediate formation of a Pacific Coastal Task Force composed of state and provincial representatives from Alaska, Washington, Oregon, Idaho, California, and British Columbia, with appropriate representatives from state, federal, tribal, and private industry, to investigate the risk of spreading VHS from infected hatcheries in Washington State and to develop effective control methods to contain this disease.

* * * * *

by Jack Broom
Times staff reporter

A potentially lethal fish virus that prompted biologists to destroy 3.8 million fish and eggs in two Washington hatcheries last week may also have infected wild salmon and trout and could spread like a plague, experts say.

"This is classed as an emergency disease. It's not to be taken lightly," said Jerry Grover, an associate manager in the U.S. Fish and Wildlife Service's regional office in Portland.

Thousands of wild salmon, trout and other species will be gathered in the next few weeks from areas around the two hatcheries where the virus was recently detected.

Biologists fear that viral hemorrhagic septicemia (VHS), never before seen in North

STEELHEAD RUN SUFFERS

■ An early count of fish at the locks is "terrible." Northwest, B 5.

America, may have the potential to spread rapidly in Northwest hatcheries, net pens and fish populations in open waters.

"Right now there's about a 50-50 chance" that the virus has infected fish in the wild, said Ray Brunson, a fish pathologist for the Fish and Wildlife Service.

The virus, known as VHS, is not regarded as dangerous to humans, even if people eat fish that have been infected.

Biologists say VHS may be far more dangerous to steelhead, a form of trout, than to salmon, but the extent of the danger to both species is not yet known.

In Europe, where VHS has been detected previously, coho salmon have been observed to carry the virus and suffer no ill effects, said Larry Peck, head of salmon-culture operations for the state Department of Fisheries. But Peck said that is no

Lethal virus may have infected wild salmon and trout, biologists say

'An emergency disease'

Please see FISH on A 6

The Seattle Times 2/28/89

WASHINGTON'S LARGEST NEWSPAPER ■ COPYRIGHT © 1989 SEATTLE TIMES COMPANY

FOR YOUR INFORMATION FROM SENATOR JAY KERTTULA 2/28/89

Virus called 'emergency'

FISH

continued from Page 1

guarantee that Pacific salmon would survive the infection.

In recent laboratory tests on trout here, about 70 percent died after being injected with large doses of the virus.

The presence of VHS was discovered in routine tests at the state's Glenwood Springs Hatchery on Orcas Island and the federally run Makah National Fish Hatchery on the Olympic Peninsula.

Although the virus itself had not killed any fish at those facilities, all fish and eggs at both hatcheries were intentionally killed to prevent its spread. Workers killed the fish by adding chlorine to the water or by turning off the fresh-water supply, causing the fish to die from lack of oxygen.

Yesterday, workers were still killing the last of the fish and putting them into trenches to be buried.

The next step is to determine whether fish outside the hatcheries have the infection.

"We're setting up a very aggressive sampling schedule," Peck said.

He said crews will use nets, lines, traps and electric-shock devices to gather fish from streams and open water near the two hatcheries.

After the fish are caught, it will take two weeks to test them for the virus.

Peck would not speculate on the chance that the virus is now in wild fish, but he said it's possible that salmon returning from the ocean brought the virus into the two hatcheries.

No one knows how the virus got to this country, Peck said. "If

anyone had a guess at this point," he said, "it would be just speculation."

Opponents of net-pen salmon raising believe, however, that the importation of Atlantic salmon eggs to the state is the most likely cause.

"It could have come over as infected Atlantic salmon eggs, and Pacific salmon could have picked it up from them. I think that's the most probable cause," said L. Joe Miller, president of the Marine Environmental Consortium.

Miller said his organization will ask at a public hearing tomorrow for a moratorium on new net-pen permits until the cause and extent of the disease are known.

It is impossible to determine how much damage the virus could do to fish populations here because so little is known about its effects, particularly on salmon.

In Europe, where the virus has been detected mainly in trout, it was responsible for killing 80 percent to 90 percent of the trout in a certain confined area, Grover said.

The ability of the disease to spread quickly among fish poses great concern to commercial operators raising salmon in net pens.

"We're cooperating with the state Department of Fisheries in its investigation," said Haavard Rabben, general manager of Global Aqua USA, which raises Atlantic salmon in floating net pens in Puget Sound.

Eggs and fry used by Global Aqua are routinely tested for many diseases and have never tested positive for VHS, Rabben said. But he said if the virus is in wild fish in Puget Sound, it could spread to his fish.

Brunson said the fish kill hurt the morale of hatchery workers. "They've invested a lot of their effort and their heart in trying to rear fish, and then we call them and tell them to kill them," he said.

The number of fish destroyed last week represented only about 1 percent of the fish raised in state, federal and tribal hatcheries in Washington state, but there is deep concern over whether the

disease will be found elsewhere.

"It was discovered in routine sampling at Glenwood Springs, and we know we've transferred fish in and out of that facility to and from other hatcheries," said Tony Floor, state fisheries spokesman.

But Peck said no eggs or fish were transferred out of the Glenwood Springs hatchery last year because egg samples from returning adult fish showed that some type of virus was present. "We knew we had some type of problem. We didn't know what it was, but we red-flagged that facility," he said.

Peck said it is too early to gauge the extent of the threat to the state's 30 major salmon hatcheries, but he said additional tests are being done at each site.

More than 327 million fish were released last year from state, tribal and cooperative hatcheries. The smaller federal fisheries program released 60 million fish last year in Washington, Oregon and Idaho.

Grover said the fish destroyed at the Makah hatchery represented "a substantial portion of our total production" in the Northwest. He said fish raised on the Olympic Peninsula are considered particularly valuable because they are close to the ocean and usually have a good survival rate when released.

CANADA'S

Norway sees mounting disease, pollution threat from fish farms

The deadly salmon disease furunculosis, previously unknown in Norwegian waters, is breaking out of fish farms and threatening beleaguered wild stocks, says a top government official.

Svein Aage Mehli, head of the division of Norway's Directorate for Nature Management which is charged with protection of wild salmon, told a Washington State regulatory hearing Nov. 14 that 5,000 farmed salmon infected with the disease escaped this summer into Hjørundfjorden near Molde.

Despite an intensive fishery to catch the fish and a system of net barricades at the mouths of salmon rivers, an infected fish was found in fresh water, he testified.

"If the disease spreads to natural stocks, the situation may be out of control in Norway," Mehli said.

"I feel we are on a sharp edge with diseases. If we have (the parasite) *Gyrodactylus salaris* in more rivers we may just accept our wild salmon is extinct."

(Furunculosis is present in B.C. waters and leads to loss of appetite, fluid retention, ulcers and eventually death in up to 60 percent of affected stocks. It had not been found in Norway until smolt transfers from outside the country were undertaken. *Gyrodactylus* also has been linked to fish farming and is treated by killing all host fish with rotenone.)

Mehli was qualified as an expert witness at a hearing in Lacey, Wash., of the Shoreline Hearings Board, which is hearing an appeal of a Skagit County decision to reject a fish farm in the mouth of the Skagit.

The fish farm proponents, a tribal group, are appealing the refusal of the Skagit County commissioners to issue permits for the farm on the basis that it threatens Skagit salmon and could pollute the sensitive estuary.

Proponents have denied there is any evidence of a disease threat to wild stocks from farmed salmon.

As a result, the appeal hearing has turned into a deep investigation of the environmental impact of salmon farms on wild stocks. Mehli was flown from Norway to testify on behalf of county commissioners, who backed up their decision by referring to the Suzuki Foundation report on Norway called *Journey to the Future*.



• Svein Aage Mehli, of Norway's environmental agency, testified last month to a Washington State regulatory agency.

Mehli responded angrily to suggestions by fish farm proponents that there is "no conclusive evidence" of disease spreading to wild stocks from farms.

"We are very concerned," he said. "It is not right to ask for conclusive evidence at such an early stage."

Furunculosis imported on smolts destined for salmon farms broke out two years ago and authorities felt they had eradicated it, he said.

This year's outbreak was a shock, as was the continued spread of bacterial kidney disease (BKD), which is very difficult to treat even with antibiotics.

"BKD poses a problem for natural stocks because it was diagnosed for the first time in 1980 and previously did not exist in nature," Mehli said. "It is very easy to see a connection between BKD (in salmon farms) and wild stocks in the river."

"It's reasonable to conclude" BKD spread from farms, he said, and Norwegian scientists "see logic in such a connection." BKD is diagnosed or suspected in 100 netpen operations and hatcheries.

Antibiotic use on Norwegian fish farms climbed to 48 tonnes last year, equal to the requirements for human use and animal husbandry combined.

"If you see the first diagnosis of redmouth disease in Norway just two years ago, it's impossible to ask what happened in such a case," Mehli continued. "Veteri-

narians underline the seriousness of that situation, that net operations have an impact."

Mehli said redmouth now present in 300 facilities but was unknown until 1985.

"Net pen operations may function as a multiplying station for disease," Mehli said. "They will give greater disease pressure on natural stocks that we didn't see before netpen operations."

Mehli said further studies on the straying of farmed fish into rivers show a sharp increase in the presence of farmed fish. A year ago, 15 percent of the fish found in the rivers studied were of farm origin. In 1988, the figure rose to 40 percent. The origin was confirmed by scale samples and electrophoresis.

Asked if strong regulations could control disease, Mehli agreed they could "minimize problems if they go far enough. Norway has not gone far enough."

Norway is proposing a ban on the transfer of eggs and smolts between regions of the country, he said, and considering a ban on all imports of sexual products like eggs and milt.

Even though existing regulations list diseases which must not be present in imported eggs, the list is limited and "in Norwegian cage culture we know other diseases are knocking at the door."

In theory, he said, fish farmers "want to get rid of disease, but if they see profit in the short term they may react in a different way."

Mehli also confirmed fears of negative genetic effects of farmed fish on wild stocks if they interbreed. "We are very afraid it could affect their ability to migrate."

Netpen salmon have undergone careful selection for size and growth rate, he said, but researchers may have inadvertently selected other characteristics which could have a negative impact if reintroduced into wild stocks.

"First there is a genetic problem and second an environmental problem. If Atlantic salmon (escaping in Pacific waters) have the same requirements as coho or steelhead trout -- and we know that salmon escape in great numbers -- then you will have competition for space in the rivers."

As to their ability to spawn, "we see them in rivers, they are mature, ready to spawn and we are very worried of what will happen."

New zoning regulations now being implemented in Norway will ban farms within 20 kilometres of salmon rivers and close entire fjords to farming where salmon rivers are present.

Don W. Collinsworth, Commissioner

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Alaska Department of Fish & Game

NEWS

FOR IMMEDIATE RELEASE

March 1, 1989

ALASKA CONCERNED ABOUT NEW FINFISH VIRUS

Juneau...Fishery pathologists in the Fisheries Rehabilitation, Enhancement, and Development (FRED) Division of the Alaska Department of Fish and Game (ADF&G) are very concerned about the discovery in the State of Washington of Viral Hemorrhagic Septicemia (VHS), a fish virus that has not occurred before in North America.

Recently, a VHS virus was identified in spawning coho and chinook salmon in two hatcheries in the State of Washington: the Glenwood Springs Hatchery on Orcas Island and the Makah Hatchery operated by the U.S. Wildlife Service near Neah Bay. All fish hatcheries were destroyed, and the facilities quarantined in order to prevent the spread of this

VHS, first discovered in 1938 in Europe, causes primarily in rainbow trout in both fresh and salt water. Other fish shown to be susceptible include Atlantic salmon, brook trout, golden trout, rainbow trout-coho salmon hybrids, and goldfish. Transmission is by contact with other infected fish or contaminated waters. VHS has not been detected in North America despite extensive disease monitoring. VHS is capable of causing severe mortalities in older, larger fish, while Infectious Hematopoietic Necrosis Virus (IHNV), indigenous to wild Alaskan sockeye salmon, typically kills fry and juveniles. As with other viral diseases, there is no treatment for VHS except prevention.

Dr. Ted Meyers, Principal Pathologist for the FRED Division, has found no evidence of VHS disease in Alaskan

- MORE -

salmon stocks. According to Dr. Robert Burkett, Chief of Technology and Development for the FRED Division of ADF&G, Alaska maintains the best possible protection against invasion of exotic fish diseases because it prohibits the importation of any finfish into the state. "The most important thing was done ten years ago when regulations were established prohibiting import of finfish," Burkett says.

Dr. Meyers has been in contact with investigators performing the VHS identification and survey work at the Sand Point U.S. Fish and Wildlife Service Fish Pathology Laboratory in Seattle. Dr. Meyers will be travelling to the Seattle Laboratory to monitor the progress of the investigations and to determine the extent of the VHS problem in Washington and the Pacific Northwest. FRED Division pathologists will continue to monitor Alaskan salmonid stocks for IHNV using procedures that would detect other viruses as well, including VHS.

As a result of the potential risk to Alaskan stocks, the Commissioner of ADF&G, Don Collinsworth, is calling for the immediate formation of a Pacific Coastal Task Force composed of state and provincial representatives from Alaska, Washington, Oregon, Idaho, California, and British Columbia, with appropriate representatives from state, federal, tribal, and private industry, to investigate the risk of spreading VHS from infected hatcheries in Washington State and to develop effective control methods to contain this disease.

* * * * *

Peninsula Clarion

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PENINSULA CLARION

Complimentary Copy
For

MEMBERS OF THE LEGISLATURE

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Borough panel urges fish farming ban

By JON LITTLE
Staff Writer

The borough's Planning Commission surprised some observers Monday when it ignored a state agency's request and called on the borough to forbid salmon farming in peninsula waters.

The state currently bans salmon farming, but may someday lift that restriction if studies indicate the practice poses no health risks to

native salmon stocks and other fish.

An amendment was submitted by state Department of Natural Resources officials and other agencies who wanted the borough policy to leave an option for salmon farming in the future.

But the policy supported by the Planning Commission that is set out in a proposed Coastal Management Plan prohibits all

finfish farming within the waters of the Kenai Peninsula Borough.

The DNR wanted the strict policy loosened a little. The agency wanted to continue the ban, but create an option by adding, "until such time as sufficient research, technology and public opinion favor this development."

That is, if the state were to lift its ban, the DNR apparently wanted the borough to be able to follow suit

so it wouldn't cut itself off from possible economic development, according to Sylvia Spearow, a borough planner who drafted the Coastal Plan.

Some fears were raised that the amendment would weaken local control on the salmon farming policy, Spearow said.

The sev. Planning Commission

See FISH, back page

ALASKA: An OPEC production limit is credited for stabilizing North Slope crude oil prices after months of hefty increases. Page 6.

BUSINESS: High energy efficient houses could be the key in reviving the depressed Alaska building market. Page 8.

NATION: John Tower admits to marital infidelity amidst his vow to keep fighting for Senate confirmation as defense secretary. Page 10.

WORLD: Venezuela death toll keeps climbing as new riots against price increases break out in the western slums of Caracas. Page 12.

Soaring insurance bill slams school district

By MACHELE MARTIN
Staff Writer

The school district's cost for employee health insurance is projected for a 37 percent rise next year and that's one reason district officials are hoping the state Legislature rules out any surprise cuts in funding.

If the state keeps its side of the deal by not tampering with the Foundation Funding formula for local schools, the Kenai Peninsula

said that is why the Anchorage schools have been able to cut their school taxes.

When more students are added to the classroom, it boosts the number of instructional units the formula applies. The formula multiplies a certain dollar amount by the overall number of instructional units to come up with the amount of state funding for each district. On the peninsula, roughly 13 to 17 students equals one in-



the fish.

The Coastal Plan, which is a list of objectives and policies set by the borough for the development of its coastal region, is still technically in flux. It needs final approval from the Borough Assembly, which follows reviews by separate state and federal agencies.

...Fish farming

Continued from page 1

members present Monday rejected the amendment in a 3-4 vote, then voted unanimously to accept the Coastal Plan as submitted to them.

"I was real surprised they changed the amendment, I was happy with it," said Sid Cox, a commercial fisherman from Clam Gulch who showed up to testify against salmon farming. "I was stunned to be perfectly honest."

Cox presented a 30-page document he compiled that contains scientific articles and comments from officials involved in salmon farming. He highlighted concerns about the spread of disease through pen-reared salmon and the use of antibiotics and pesticides on

Salmon farming is also known as "finfish mariculture." Salmon have been raised in floating rectangular pens by Norwegian fishermen for some 18 years. Other countries also allow the practice.

Within the state, some shellfish are raised in underwater farms, and one experimental salmon pen exists near Etolin Island in Southeast Alaska, according to Spearow.

Spearow said she, too, was surprised by the Planning Commission vote but indicated that she was not upset. "If we do feel strongly about finfish farming then we might as well make an absolute statement in our Coastal Plan document," she said.

If the plan makes it through the gauntlet of state and federal review councils with the policy intact, then, "There will be no finfish

farming allowed in the borough," she said.

She said the plan stood a good chance of state and federal acceptance, despite the DNR objections. The borough has worked with officials from the state and federal coastal policy councils in producing the draft plan, Spearow said. "I don't see that we're going to have a problem."

Besides the mariculture issue, some controversy remains over the proposed boundary of the borough coastal zone. The draft plan places everything below the 1,000-foot mark within the borough's coastal zone, which would make the zone stretch from Cook Inlet to the foothills of the Kenai Mountains.

Spearow said she presented the plan in the Assembly's March 21 meeting and action at that time would draft forward to the borough for federal review, and then to the Assembly for consideration into borough ordinances.

In theory, the coastal plan could be back for Assembly action this fall, Spearow said.

...Insurance bill

Continued from page 1

Great-West, the insurance carrier, is projecting, Swarner said after the meeting.

The district could take bids from other insurance carriers and that's something being considered.

"Any time costs go up like that, you've got to make that an alternative," Sandahl said about switching companies.

But Swarner said increases are occurring nationwide and it's unlikely some carrier is going to be any less. The problem, he said, really rests in the costs of medical care.

Tom Wagoner, chamber member and former Kenai mayor, asked if the employees couldn't begin to share some of the premium costs.

Sandahl said the health insurance premiums are set by contract. The teachers' four-year contract expires at the end of FY 90, and any suggestion to have employees share the cost would be up to negotiations on new contracts.

"We'll open it up for discussion

next year, but let me tell you, will be hardball," Sandahl said.

Swarner said any kind of employee payroll deduction benefits would have an immediate savings to the district. He said employee dollars deducted would be deposited into an account would be used to offset current costs for insurance premiums.

Swarner said the district number of insurance claims are 26 percent for unknown reasons. He said the district brainstormed all it can to cut without cutting benefits. One option under way is the formation of a "wellness" committee.

Various members of labor groups and administrators work on devising a program to make employees a healthier lot. "Without going in and changing the program or employees share the premiums, we've done everything we can to control costs," Swarner said.

Sandahl encouraged business organizations to familiarize themselves with the concerns of the schools and lobby the Legislature for full funding of schools.

...Heart money

Continued from page 1

the funds in the bank until the hospital requests the money. The money will be applied to the cost of the transplant.

The group also stipulated that it would re-evaluate Alexie's progress after six months to see if she were close to her transplant goal. The six-member group will then decide if the money should continue to be reserved for her or donated to someone else.

"If she's not had a transplant and the

money could go to someone else in a life-threatening situation, then we might do that," Swan said. "We've already had two people call up about the money."

Bodle said she felt good about donating the money to someone else.

"It's a good feeling," Bodle said. "Not only for me, but for the donors. I think they'd get a good feeling knowing the money was going to help someone."

Meanwhile, Bodle said she has her good and her bad days.

"I feel pretty good today," she said. "I know I don't have a lot of time left, but I'm going to try to enjoy my days as much as possible."

Carhartt

BROWN DUCK



Quilt Lined Coverall

Outdoors

Fairbanks Daily News-Miner, Fairbanks, Alaska

Friday, January 20, 1989—15



Arctic expectations

GENUINE ARTICLE—About 2,000 Arctic char, like this one, were stocked in Chena Lake on Tuesday. Another 500 are bound for Chena, 500 for two local ponds, and another 8,700 various-sized char are bound for Harding Lake. Ice anglers who catch char are asked to report the catches to the Alaska Department of Fish and Game, Sport Fish Division at 456-8819.

Charles Mason/News-Miner

Char in area waters could be boon to Interior angling

By KELLY BOSTIAN
Staff Writer

The power ice auger sputtered to a stop as Mike Doxey yanked it from the hole he had drilled in the Chena Lake ice. Water ran over his boots and splashed onto his snow pants, but it didn't matter—at 31 below the liquid turned to ice as soon as it touched the fabric.

During this week of 30-50 below temperatures, the most popular deliveries probably have been that of fuel oil. But Doxey, a sport fish biologist with the Alaska Department of Fish and Game, dumped a live cargo of 2,000 Arctic char into Chena Lake that promises to be very popular with area anglers.

The char, which ranged in size from about 8 inches to 12 inches, are classed as "catchables" and are available for ice anglers, Doxey said. "We hope people will be catching them through the ice soon," he said.

Temperatures of 40-50 below between Fairbanks and the Clear Hatchery at Clear Air Force Station, put a stop to the stockings after Tuesday. More stockings are scheduled for Chena Lake, Harding Lake, Bathing Beauty Pond near Moose Creek, and the weigh station ponds near the Richardson Highway weigh station just south of Fairbanks.

Bathing Beauty, and the weigh station ponds will receive 250 each

of the large catchables. Chena Lake is slated for 2,500 new residents and Harding will take on 8,700 char of varying sizes, Doxey said.

Dave Parks, hatchery manager, said he can hold on to the big fish for another week or two before crowding and a lack of food become a problem. It was too big a risk to send out a driver with thousands of char at 40 below, he said.

"We sort of picked the mid-minus 20s to be the deciding factor of whether we stock or not," Parks said. "When it gets down to 30 below I won't go to town myself. My main concern is a mechanical failure of the truck and then there we are sitting with a load of fish, the water getting colder and colder and the oxygen running out," he said.

Ice is no problem

Fish normally aren't stocked at this time of winter, and especially not when it's this cold, but Doxey said the department has had good luck stocking lakes through the ice.

Most stockings are done in early spring and throughout the summer, but even warm weather operations aren't without risk. Doxey said it can be a worse shock for a fish to go from cold water to warm water than from warm to cold. Also, small fish are slow for the first few moments in their new environment, which makes them easy prey for summer's sea gulls.

The temperature difference when stocking in winter is minimal,

Doxey said. He supposed the water in the hatchery is about 40 degrees and the water in the tank truck is near 33 degrees before the fish are dumped. "In the hole and right underneath the ice it's pretty cold," he said. "As you go down and get away from the bottom of the ice it warms up. Way down in Harding Lake in the middle of the winter it's right around 39 degrees."

Doxey stocked rainbow trout in Birch Lake, about 58 miles south of Fairbanks on the Richardson Highway, through the ice early last spring. Starting with fish that are healthy and have a lot of fat stored from hatchery food, the results of that stocking showed him the method is a good one.

"What happened was they took to it real well," Doxey said. "They had a higher survival. There was no predation from gulls. There was no thermal shock. And they can coast on that body fat if they don't get onto the food items that are available in the lake right away."

Tuesday's cold seemed much harder on Doxey and Assistant Hatchery Manager Tim Burke than it did on the fish. Ice formed on their mustaches and they struggled, alternately heating pipe connections with a torch and then quickly trying to fasten them.

Even a few leftover char that were manually scooped from the bottom of the truck's tank didn't seem to suffer from the cold as they were quickly shuffled down the hole



HEALTHY STOCK—Tim Burke, assistant hatchery manager for the Clear Hatchery, examines a net of char after a ride from the hatchery to Fairbanks in 30-below temperatures. A little ice floated inside the insulated tank, but all the fish seemed to be enjoying the balmy 33-degree water.

Kelly Bostian/News-Miner

through which their predecessors were piped.

Yup, they're real char

There sometimes is confusion

over what is a dolly varden and what is an Arctic char. Doxey said that taxonomists have agreed that, generally, the species that travel from salt to fresh water are dolly

vardeen and fresh water lake-dwelling species are Arctic char.

"These are true Arctic char," Doxey said of the Chena Lake fish.

(See CHAR, Page 16)

for the contest will be accepted during February. All entries must be 35mm color slides and must be postmarked by midnight Feb. 28.

Up to eight slides will be accepted from each entrant. Duplicates will be accepted for judging purposes but originals must be provided for reproductions. Winning entries will be kept on file for use by the Department of Fish and Game until January 1990.

The grand prize is \$250 with a first prize of \$150, a second prize of \$100 and a third prize of \$50. Ten honorable mentions will also be awarded. All winning photos will be reproduced in an issue of Alaska Fish and Game magazine.

Entrants should be sure to include their name and address on each entry and include a self-addressed, stamped envelope. Entries should be sent to Alaska Fish and Game magazine Photo Contest, P.O. Box 3-2000, Juneau, Alaska 99802-2000. For information, phone (907) 465-4112.

New road accesses Mount St. Helens

LONGVIEW, Wash. (AP)—Spirit Lake Memorial Highway will be

ATLANTA (AP)—Thousands of Americans are beginning the winter prowling of boat show floors and the industry is expecting another record year.

Jeff Napier, president of the National Marine Manufacturers Association, advises the 750,000 or so people who will buy boats this year to make sure what you're buying is really what you want in a boat.

Today there are boats to fit every purpose and hybrids that will handle several jobs, such as fishing and water skiing.

"The most important thing is to figure out what you really are going to use it for," Napier said by phone from the New York boat show. "Are you going to use it for cruising, or to be a fisherman?"

"A lot of people buy a boat because it looks kind of neat, but it doesn't fit their needs. Figure out what your use is going to be."

The average American's average boat continues to be the 16-foot outboard, "the bread and butter of the industry," Napier said.

Americans spent \$17.93 billion on boating products and services in 1988, double the 1982 level.

"In 1989, keeping in mind we're already running at record levels, we don't see the growth of the last six years, but after six record

CHAR

(Continued from Page 15)

The fish appear olive in color with some iridescence and yellow spots. They should be easily identified in comparison to the colorful rainbow trout and shiny silver salmon.

Doxey is interested in knowing how soon and how many of the fish are caught. A creel census will be conducted at popular spots, but Doxey said he would appreciate it if anglers called in unrecorded catches. He can be reached at 456-8819.

Doxey is cautiously holding high hopes for char in local lakes. "We hope they will work out well. It looks like they will. They grow real well in the hatchery, but we'll just have to wait and see how they do as far as compared to rainbows and silvers. But, we're pretty optimistic."

Parks has found that char grow three to four times faster than rainbow trout in the hatchery environment. Growth in the lakes remains to be seen, but Parks said he wouldn't be surprised if some even-

tually grow to 8-10 pounds.

Their fast growth rate makes them less expensive to raise, thus making them popular in private commercial hatcheries. Clear already has had requests for eggs from fish culturists in Alaska and Outside, Parks said.

The other good thing about the char, even if it turns out that they don't grow to great sizes, is that they are voracious eaters. That should make them popular among anglers.

Doxey used the example that rainbow trout and silver salmon complement each other because, when one species is slow or not biting, the other seems to take over. Char, hopefully, will fill their own niche and help keep anglers busy.

"One of the characteristics of char is they're real opportunists," Parks said. "They don't care what they eat: other fish, insects, anything that's available in the water they'll take advantage of—including their own."



Lamps similar to the illustrated. Many are shown. All quantities to stock on hand. effective through January 27th, 1988. subject to sale at retail.

decades by a decade
to solve waste water treatment problems."

He seemed to have in mind, with good reason, not only collaboration in planning the execution of problems, but also broader sharing of the enormous financial outlay required.

In its report to Congress, the agency set this at \$83.5 billion. ... The figure, incidentally, points up something we have cause to be glum about: Congress approved the Clean Water Act in 1972, yet 17 years later the problems it addresses still plague the nation. ...

With two-thirds of the nation's waste water treatment plants deficient in some way, it is clear that we need to put more effort – and that means more money – into achieving what Congress intended 17 years ago.

Bangor (Maine) Daily News on the Salman Rushdie affair: The ayatollah (Ruhollah Khomeini of Iran) is meddling directly in the internal affairs of other states (with his execution order for "The Satanic Verses" author Salman Rusdie).

He is using a new form of terrorism – state-funded assassination – to intimidate into silence the resident of a country where freedom of expression is cherished.

He has created a new threat to world commerce. If one nation dislikes a product or process allowed in another, Khomeini has established his own corollary to caveat emptor: Paint a bull's-eye on the head of the foreign manufacturer.

What began as just another strange, almost comical episode in the reign of Khomeini has evolved into a broad confrontation over principles of personal and economic freedom.

The U.S. and its European allies must maintain pressure on the Iranian government to lift the death sentence on Rushdie, a British citizen of Indian heritage who has been made an international symbol of the value of freedom of expression. The Iranians must not be allowed to make him a martyr.

The Morning News Tribune, Tacoma, Wash., on Hirohito's funeral: Few Americans would have blamed George Bush had he chosen to skip Emperor Hirohito's funeral. ... The president had personal reasons not to honor Hirohito's memory.

Like millions of other Americans, he was drawn unwillingly into World War II as a result of Japan's attack on Pearl Harbor. While serving as a naval aviator, he was shot down by the Japanese over the Pacific Ocean in 1944.

Historians today dispute Hirohito's role in the Japanese aggressions of that era. But there's no question the emperor at least reluctantly endorsed Japan's decision to wage war against the United States and other Pacific powers. ...

By attending the funeral, Bush made it clear that what happened in the Pacific nearly a half-century ago no longer has any bearing on America's relationship with Japan. And that relationship – despite all the grumbings about trade balances – is one of friendship. ...

World War II is history. America's future is now inseparable from Japan's. Nothing could demonstrate those realities better than George Bush's presence in Tokyo.

4 JUNEAU EMPIRE

THURSDAY, MARCH 2, 1989

LETTERS

Finfish mariculture

Dear Editor:

On January 28, a Sealaska spokesman, at a Ketchikan symposium on regional economic needs, suggested that one of the most attractive new economic diversification opportunities for Southeast is mariculture and discussed finfish mariculture in particular.

The statement was not meant as an endorsement of immediate or even ultimate public policy authorization of finfish mariculture. Sealaska's purpose was to stimulate the continuing debate on the subject. Sealaska's only position on finfish mariculture is that a responsible public policy debate needs to continue based on objective, scientific, environmental, community needs and economic considerations and not on emotion and self-interest.

Sealaska also believes that other forms of mariculture opportunity not be jeopardized in the controversy over finfish mariculture. The world-

DOONESBURY



TODAY SHE CALLED ME "MAMA"! ISN'T THAT WILD? SHE CALLED THE BABY-SITTER "MAMA"!



FORUM

Pen-farmed salmon industry requires more research

By SONJA CORAZZA

Alaska fishermen's concerns over genetic pollution and disease problems associated with escaped pen-farmed salmon are not unwarranted.

Thirteen to 20 percent of all farmed fish escape, as documented by Norwegian scientists and European countries, and large numbers can escape from pens.

The escapees can spawn in rivers up to a proven distance of 20 kilometers from their net pens.

As a consequence of this research, and with great concern for the genetic integrity and survival of their wild salmon stocks, Norway has just imposed a series of new regulations on their pen-



farmed salmon industry. No salmon farms will be located within 20 kilometers of salmon rivers, and entire fjords will be closed to farming where salmon rivers are present.

This past December in Jarvis Inlet, B.C., 300,000 pen-farmed salmon escaped in winter storms that hit Canada. Floating net pens were found for miles up and down the coast.

Norwegians have lost tons of their pen-farmed salmon to a deadly salmon disease *furunculosis*, and last summer 5,000 fish infected with

furunculosis escaped in Norway. Despite intensive efforts to capture the diseased fish, an infected fish was found in a freshwater stream.

In order to control disease in pens, Norway's use of antibiotics in pen farming has risen 170 percent in the past two years to reach a level of 48 tons, more than the use in animal husbandry and human use combined.

With the present focus on health and nutrition, how does this reliance on antibiotics fit our view of pen-farmed salmon as a healthy addition to our diets?

Norway's most severe threat to wild stocks is from the parasite *gyrodactylus salaris*, which has wiped out

30 wild salmon rivers. This parasite entered Norway via imported salmon eggs from Sweden. Importing eggs had been prohibited, but those regulations were overturned by farmers with economic concerns.

The chemical rotenone which kills the parasite destroys everything in the rivers, hence the loss of wild salmon by the tons in Norway.

In the state of Washington, which two years ago allowed the importation of Atlantic salmon for the economic benefit of their farmers, a report was released on fin fish farming and disease. It stated that the VHS disease carried by Atlantic salmon had never been

found outside of Europe and that there was little likelihood of it ever being a problem.

Now, VHS has been found and millions of their eggs and fish are being destroyed. VHS is particularly fatal for rainbow trout and steelhead.

Domesticating Pacific salmon takes three to four generations of fish and the gene pool may be reduced for docile characteristics. It is possible the migration instinct may breed out of wild salmon, and scientists are concerned interbreeding could affect the wild salmon's ability to migrate.

Ownership of the pen farming industry continues to be an issue. In Washington state a local fish farmer

is suing foreign corporations, primarily Norwegian, for attempting to monopolize the industry.

Who would own the farms in Alaska? Alaska is presently the world leader in ocean ranching and that program is responsible for at least \$80 million in resident income and 2,300 resident jobs.

The Alaska State Legislature should fund the Mariculture Task Force, a forum where legitimate concerns about fin fish farming need to be researched.

☐ Sonja Corazza is a member of the United Fishermen of Alaska, Mariculture Committee.

POINT COUNTERPOINT

Fish Farming: To Be or Not to Be?

Let's Get On With Fish Farming

by Senator Arliss Sturgulewski
(R. Anchorage)

This fall I attended the Aquaculture International Conference held in Vancouver, British Columbia, and returned home with mixed feelings of excitement and frustration. Worldwide, the aquaculture industry is experiencing explosive growth, particularly in the salmon farming industry in neighboring B.C. where private investment during the past few years now amounts to hundreds of millions of dollars. The enthusiasm and optimism of Canadian entrepreneurs is contagious. At the same time, I came away with a profound sense of dismay that the opportunity for this type of economic development, occurring, in Alaska.

With our inherently high production costs, we have very few opportunities for renewable resource developments that can be competitive on world markets. Finfish farming is a means of utilizing our comparative advantages of clean marine waters, vast stretches of uninhabited coastline, biological expertise and large public and private salmon hatchery capacity. Recent Alaska Depart-

ment of Commerce and Economic Development reports have shown that delivered costs for farmed salmon from Alaska could be comparable to those of many competing producers in U.S. and Japanese markets.

Fifteen other countries and numerous states have successfully dealt with the public policy issues surrounding finfish farming. Our own Department of Fish and Game experts tell us that disease and genetic concerns about salmon farming are essentially the same as those in the state's hatchery program and can be addressed via current regulations. Processes for identifying potential sites and resolving user conflicts have been adopted in Washington and B.C. (Note that a large salmon farming operation occupies about two acres—surely there is enough room in state waters to accommodate a moderate-sized industry of perhaps 50-100 farms.) Environmentalists worried about water quality and waste sedimentation forget that fish farmers have a powerful economic incentive to protect the marine environment.

In large part, organized fishing groups in Alaska have chosen to perceive the inevitable market effects of worldwide farmed salmon production as a threat to their livelihood rather than an opportunity for

See **LET'S GO** page 67

LET'S GO

continued from page 66

investment in year-round production capability. Through their cooperatives, fishermen in Alaska could augment their wild catch with farmed fish in the off-season and lock in a position in fast growing fresh salmon markets instead of sitting on the beach and watching their market share steadily decline.

According to experts at the Vancouver conference, the U.S. market for fresh and frozen salmon has plenty of room to grow. In 1987, each U.S. citizen consumed 238 pounds of protein but only 15.4 pounds was seafood, and less than 3.2 pounds was fresh and frozen salmon. As the president of National Seafoods, the largest seafood processing company in North America stated to the conference, "In the near future, any major fish processing company without an aquaculture card in its hand will find it very difficult to compete." Sales of eggs and smolts from public and private hatcheries to salmon farmers could help make the state's subsidized public and private nonprofit hatchery system, which primarily benefits commercial fishermen, self-sustaining.

By 1987, salmon farming had created 570 direct jobs in B.C. It has also resulted in large indirect economic impacts in the seafood processing and support industries—those which supply feed, smolts, equipment, transportation, financing, insurance and various consulting services—have spun off the local salmon farming industry. Direct and indirect employment is expected to grow to 3,500 jobs in B.C. salmon farming by 1990. These opportunities for economic development do not exist in coastal communities in Alaska.

What future does the commercial fishing industry hold for a Western

Alaska village family with five kids and one limited entry permit? How many investment opportunities are available for Southeast native corporations that will create jobs for shareholders once the NOLs are gone and their timber resource depleted? What kind of precedent do we set when we allow special interest groups to determine the scope of our economic development possibilities? What business do politicians have in limiting private investment opportunities? How can we afford to forego any means of attracting outside capital investment to diversify our economy away from petroleum revenue dependence?

These policy questions are troubling. It is somewhat embarrassing to speak with public officials from other states and countries who have been able to deal with the same issues we are facing and rise above special interest politics to seize the opportunity that aquaculture diversification, particularly finfish farming, presents. Frankly, they are astonished when I tell them about the political situation in Alaska. It is time for the legislature to move ahead on this issue, absent any positive leadership from the governor's office. Our competitiveness in future seafood markets is at stake. We should lift the moratorium on finfish farming and revise the burdensome regulations placed on shellfish farmers. We need to overcome our parochial differences and get on with the responsible development of our marine resources under a reasonable state regulatory regime.

State Senator Arliss Sturgulewski is Chairman of the Senate Community and Regional Affairs Committee and the Senate Special Committee on Local and Regional Economic Opportunity.

Let's Not Be So Hasty

by Oliver Holm
President, Board of Directors
Kodiak Regional Aquaculture
Association

Senator Sturgulewski appears to be infected by the excitement of the wealthy entrepreneurs now beginning to exploit British Columbia for salmon pen rearing. I would like to take issue with her arguments presented in her Dec. 21, 1988 guest opinion in the *Kodiak Mirror*.

I was dismayed, but not surprised to hear her suggest diverting the State's hatchery system into supplying smolts for pen rearing operations. This diversion would cost commercial, sport and subsistence fishermen millions of dollars worth of lost fish in order to benefit a few mariculturists. The very nature of the fish best for mariculture is different than what is desirable for ocean ranching enhancement fish. In Norway, Atlantic salmon have been bred for pen rearing so that they gain weight quicker and are more docile than wild stocks. This is fine for the profits of the pen farmers but should many pen fish escape, it is a disaster for their wild stocks. Straying farm fish are so diluting

their wild stocks genetically that the Norwegians are trying to set up a gene bank to preserve the genetic diversity of their wild stocks before it is lost.

Pen rearing experiments with king salmon at Little Port Walter in Southeast Alaska found kings very skittish in pens and prone to sexually maturing early when confined to pens—which halts further growth. Washington State and British Columbia quickly allowed importation of pen adapted Norwegian Atlantic salmon to boost the profitability of their farm operations. This is biologically a very poor policy. This year in Washington commercial fishermen caught escaped Atlantic salmon in many areas. These fish won't migrate out to sea like the native Pacific salmon. Instead they will be a new near-shore predator devouring juvenile wild and hatchery fish. This will cost the commercial and sport fishery in lost production.

Since some hatchery fish stray to other nearby streams and locally adapted stocks usually do better anyway, it is usually state policy and good hatchery management to use only local stocks for hatchery production. Using local stocks and letting the natural ocean environment do the selecting minimizes the genetic impacts of hatchery operations on our wild stocks. With the profits of an Alaskan pen rearing industry at stake I wouldn't want to count on good biological judgement always prevailing. ADF&G's FRED Division moved approximately 10,000,000 pink salmon eggs from Kitoi Hatchery on Afognak Island 450 miles out to Russell creek Hatchery in Cold Bay last year for brood stock. Even though local stocks would clearly be preferred, the transfer was approved by FRED Division because it would save money and was convenient.

There is still a lot of potential for growth in salmon production through increased enhancement efforts and research. It is still much cheaper to let the fish range the ocean to feed themselves. In many areas of the state fishermen are paying much of the enhancement costs through their regional aquaculture associations. This is not the time to divert the state's technical support away from a proven and effective program.

Bringing jobs to Western Alaska villages and fishermen would be admirable but seems unlikely from pen rearing. All of Alaska north of the Alaska Peninsula can be ruled out as unfeasible because of the ice. Southeast Alaska, Prince William Sound, South & East Kenai Peninsula and Kodiak Island are probably the only areas of the state feasible for farm operations.

Pen rearing provides relatively few direct jobs on site. These jobs require a year-round commitment, which doesn't fit in well with commercial fishing or a subsistence life-

style. It is unlikely that very many rural residents will get jobs in the transportation industry, finance, insurance or consulting services. Unless legislation specifically limits ownerships to co-operatives of rural residents or fishermen, the main benefits of pen rearing will flow to already wealthy entrepreneurs; many would be foreigners.

Most residents of Alaska's coastal areas don't consider the coast uninhabited. Kodiak Island waters are intensively used for numerous fisheries, sport fishing, access to hunting areas, water borne transportation and float plane launching. Senator Sturgulewski's remarks about "burdensome regulations" for shellfish mariculturists makes me think that she feels mariculture should have priority. In Washington State, commercial fishermen and recreational users are having to spend thousands of dollars and hours of time to protect their traditional access to waters that pen rearing applications are trying to usurp. Public policy on mariculture siting needs a very close look, or a much larger segment of the population than the commercial fishing industry will have problems with it.

The course of the timber industry in Alaska is a good example of the kinds of problems we can expect if the legislature jumps on the mariculture bandwagon. Long term sustained yield has been ignored. Small operators were put out of business by regulations and policies designed to help large foreign-owned corporations. There is unnecessary habitat degradation affecting fisheries fields, recreational users, and tourism. Most of the potential jobs are being exported.

Is it any wonder that fishermen are skeptical when promoters claim great economic benefits without any problems? I commend Governor Cowper for not jumping on the salmon farming bandwagon. Much of Alaska is now and always will be dependent on our marine resources. Leasing out our most productive near-shore areas to people who will be concerned primarily with their own profit picture rather than the overall ecological balance is the most serious fisheries management decision the State has ever faced.

CORRECTION

**THIS DOCUMENT
HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY**

...Fish farming

Continued from page 1

members present Monday rejected the amendment in a 3-4 vote, then voted unanimously to accept the Coastal Plan as submitted to them.

"I was real surprised they changed the amendment. I was happy with it," said Sid Cox, a commercial fisherman from Clam Gulch who showed up to testify against salmon farming. "I was stunned to be perfectly honest."

Cox presented a 30-page document he compiled that contains scientific articles and comments from officials involved in salmon farming. He highlighted concerns about the spread of disease through pen-reared salmon and the use of antibiotics and pesticides on

the fish.

The Coastal Plan, which is a list of objectives and policies set by the borough for the development of its coastal region, is still technically in flux. It needs final approval from the Borough Assembly, which follows reviews by separate state and federal agencies.

Salmon farming is also known as "finfish mariculture." Salmon have been raised in floating rectangular pens by Norwegian fishermen for some 18 years. Other countries also allow the practice.

Within the state, some shellfish are raised in underwater farms, and one experimental salmon pen exists near Etolin Island in Southeast Alaska, according to Spearow.

Spearow said she, too, was surprised by the Planning Commission vote but indicated that she was not upset. "If we do feel strongly about finfish farming then we might as well make an absolute statement in our Coastal Plan document," she said.

If the plan makes it through the gauntlet of state and federal review councils with the policy intact, then, "There will be no finfish

farming allowed in the borough," she said.

She said the plan stood a good chance of state and federal acceptance, despite the DNR objections. The borough has worked with officials from the state and federal coastal policy councils in producing the draft plan, Spearow said. "I don't see that we're going to have a problem."

Besides the mariculture issue, some controversy remains over the proposed boundary of the borough coastal zone. The draft plan places everything below the 1,000-foot mark within the borough's coastal zone, which would make the zone stretch from Cook Inlet to the foothills of the Kenai Mountains.

Spearow said she hoped to place the plan in the Assembly packet for its March 21 meeting. Assembly action at that time would issue the draft forward to the state level. The plan would then move on for federal review, and finally return to the Assembly for codification into borough ordinances.

In theory, the coastal plan could be back for Assembly action this fall, Spearow said.

...Insurance bill

Continued from page 1

Great-West, the insurance carrier, is projecting, Swarner said after the meeting.

The district could take bids from other insurance carriers and that's something being considered.

"Any time costs go up like that, you've got to make that an alternative," Sandahl said about switching companies.

But Swarner said increases are occurring nationwide and it's unlikely some carrier is going to be any less. The problem, he said, really rests in the costs of medical care.

Tom Wagener, chamber member and former Kenai mayor, asked if the employees couldn't begin to share some of the premium costs.

Sandahl said the health insurance premiums are set by contract. The teachers' four-year contract expires at the end of FY 90, and any suggestion to have employees share the cost would be up to negotiations on new contracts.

"We'll open it up for discussion

next year, but let me tell you, will be hardball," Sandahl said.

Swarner said any kind of employee payroll deduction benefits would have an immediate savings to the district. He said employee dollars deducted would be deposited into an account that would be used to offset current costs for insurance premiums.

Swarner said the district number of insurance claims at 26 percent for unknown reasons.

He said the district brainstormed all it can to cut without cutting benefits. One option under way is the formation of a "wellness" committee.

Various members of labor groups and administrators work on devising a program to make employees a healthier lot.

"Without going in and changing the program or employees share the premiums, we've done everything we can to control costs," Swarner said.

Sandahl encouraged business organizations to familiarize themselves with the concerns of the schools and lobby the Legislature for full funding of schools.

...Heart money

Continued from page 1

the funds in the bank until the hospital requests the money. The money will be applied to the cost of the transplant.

The group also stipulated that it would re-evaluate Alexie's progress after six months to see if she were close to her transplant goal. The six-member group will then decide if the money should continue to be reserved for her or donated to someone else.

"If she's not had a transplant and the

money could go to someone else in a life-threatening situation, then we might do that," Swan said. "We've already had two people call up about the money."

Bodle said she felt good about donating the money to someone else.

"It's a good feeling," Bodle said. "Not only for me, but for the donors. I think they'd get a good feeling knowing the money was going to help someone."

Meanwhile, Bodle said she has her good and her bad days.

"I feel pretty good today," she said. "I know I don't have a lot of time left, but I'm going to try to enjoy my days as much as possible."

Carhartt

BROWN DUCK



Quilt Lined Coverall

Peninsula Clarion

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PENINSULA CLARION

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Borough panel urges fish farming ban

By JON LITTLE
Staff Writer

The borough's Planning Commission surprised some observers Monday when it ignored a state agency's request and called on the borough to forbid salmon farming in peninsula waters.

The state currently bans salmon farming, but may someday lift that restriction if studies indicate the practice poses no health risks to

native salmon stocks and other fish.

An amendment was submitted by state Department of Natural Resources officials and other agencies who wanted the borough policy to leave an option for salmon farming in the future.

But the policy supported by the Planning Commission that is set out in a proposed Coastal Management Plan prohibits all

finfish farming within the waters of the Kenai Peninsula Borough.

The DNR wanted the strict policy loosened a little. The agency wanted to continue the ban, but create an option by adding, "until such time as sufficient research, technology and public opinion favor this development."

That is, if the state were to lift its ban, the DNR apparently wanted the borough to be able to follow suit

so it wouldn't cut itself off from possible economic development, according to Sylvia Spearow, a borough planner who drafted the Coastal Plan.

Some fears were raised that the amendment would weaken local control on the salmon farming policy, Spearow said.

The seven Planning Commission

See FISH, back page

ALASKA: An OPEC production limit is credited for stabilizing North Slope crude oil prices after months of hefty increases. Page 6.

BUSINESS: High energy efficient houses could be the key in reviving the depressed Alaska building market. Page 8.

NATION: John Tower admits to marital infidelity amidst his vow to keep fighting for Senate confirmation as defense secretary. Page 10.

WORLD: Venezuela death toll keeps climbing as new riots against price increases break out in the western slums of Caracas. Page 12.

Soaring insurance bill slams school district

By MACHELE MARTIN
Staff Writer

The school district's cost for employee health insurance is projected for a 37 percent rise next year and that's one reason district officials are hoping the state Legislature rules out any surprise cuts in funding.

If the state keeps its side of the deal by not tampering with the Foundation Funding formula for local schools, the Kenai Peninsula

said that is why the Anchorage schools have been able to cut their school taxes.

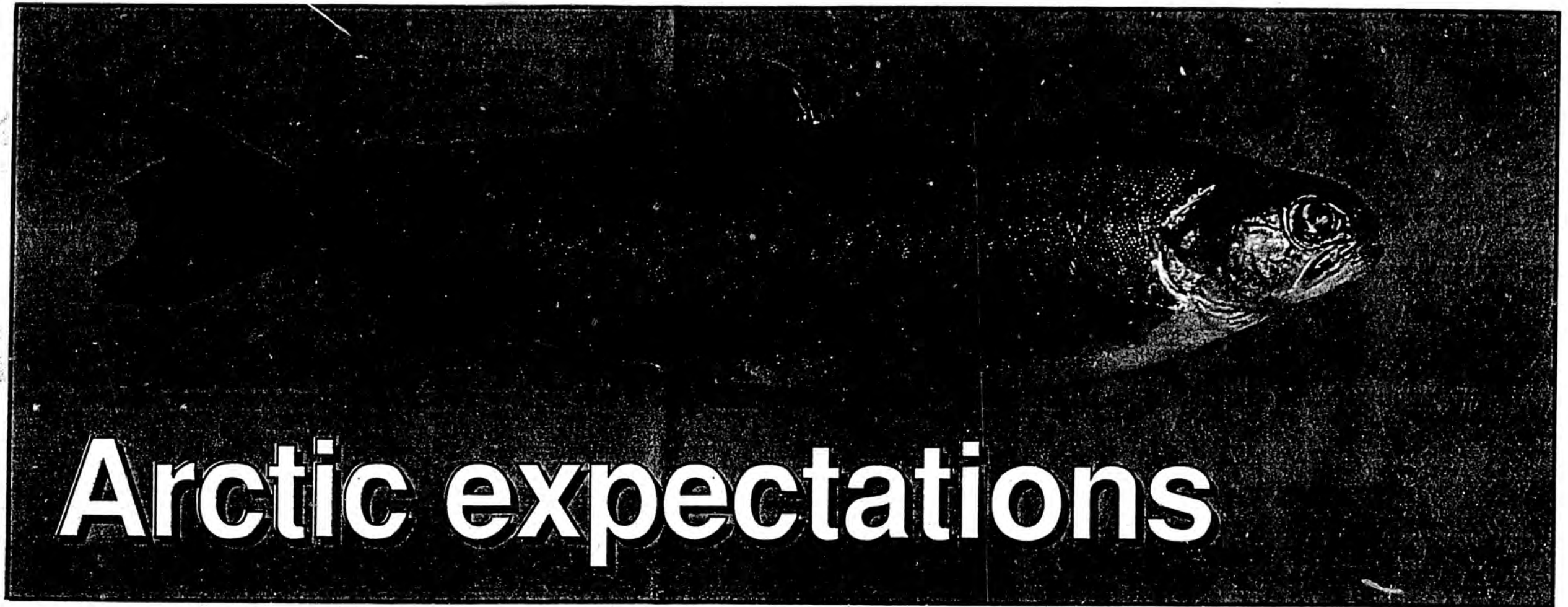
When more students are added to the classroom, it boosts the number of instructional units the formula applies. The formula multiplies a certain dollar amount by the overall number of instructional units to come up with the amount of state funding for each district. On the peninsula, roughly 13 to 17 students equals one in-



Outdoors

Fairbanks Daily News-Miner, Fairbanks, Alaska

Friday, January 20, 1989—15



Arctic expectations

GENUINE ARTICLE—About 2,000 Arctic char, like this one, were stocked in Chena Lake on Tuesday. Another 500 are bound for Chena, 500 for two local ponds, and another 8,700 various-sized char are bound for Harding Lake. Ice anglers who catch char are asked to report the catches to the Alaska Department of Fish and Game, Sport Fish Division at 456-8819.

Charles Mason/News-Miner

Char in area waters could be boon to Interior angling

By KELLY BOSTIAN
Staff Writer

The power ice auger sputtered to a stop as Mike Doxey yanked it from the hole he had drilled in the Chena Lake ice. Water ran over his boots and splashed onto his snow pants, but it didn't matter—at 31 below the liquid turned to ice as soon as it touched the fabric.

During this week of 30-50 below temperatures, the most popular deliveries probably have been that of fuel oil. But Doxey, a sport fish biologist with the Alaska Department of Fish and Game, dumped a live cargo of 2,000 Arctic char into Chena Lake that promises to be very popular with area anglers.

The char, which ranged in size from about 8 inches to 12 inches, are classed as "catchables" and are available for ice anglers, Doxey said. "We hope people will be catching them through the ice soon," he said.

Temperatures of 40-50 below between Fairbanks and the Clear Hatchery at Clear Air Force Station, put a stop to the stockings after Tuesday. More stockings are scheduled for Chena Lake, Harding Lake, Bathing Beauty Pond near Moose Creek, and the weigh station ponds near the Richardson Highway weigh station just south of Fairbanks.

Bathing Beauty, and the weigh station ponds will receive 250 each

of the large catchables. Chena Lake is slated for 2,500 new residents and Harding will take on 8,700 char of varying sizes, Doxey said.

Dave Parks, hatchery manager, said he can hold on to the big fish for another week or two before crowding and a lack of food become a problem. It was too big a risk to send out a driver with thousands of char at 40 below, he said.

"We sort of picked the mid-minus 20s to be the deciding factor of whether we stock or not," Parks said. "When it gets down to 30 below I won't go to town myself. My main concern is a mechanical failure of the truck and then there we are sitting with a load of fish, the water getting colder and colder and the oxygen running out," he said.

Ice is no problem

Fish normally aren't stocked at this time of winter, and especially not when it's this cold, but Doxey said the department has had good luck stocking lakes through the ice.

Most stockings are done in early spring and throughout the summer, but even warm weather operations aren't without risk. Doxey said it can be a worse shock for a fish to go from cold water to warm water than from warm to cold. Also, small fish are slow for the first few moments in their new environment, which makes them easy prey for summer's sea gulls.

The temperature difference when stocking in winter is minimal,

Doxey said. He supposed the water in the hatchery is about 40 degrees and the water in the tank truck is near 33 degrees before the fish are dumped. "In the hole and right underneath the ice it's pretty cold," he said. "As you go down and get away from the bottom of the ice it warms up. Way down in Harding Lake in the middle of the winter it's right around 39 degrees."

Doxey stocked rainbow trout in Birch Lake, about 58 miles south of Fairbanks on the Richardson Highway, through the ice early last spring. Starting with fish that are healthy and have a lot of fat stored from hatchery food, the results of that stocking showed him the method is a good one.

"What happened was they took to it real well," Doxey said. "They had a higher survival. There was no predation from gulls. There was no thermal shock. And they can coast on that body fat if they don't get onto the food items that are available in the lake right away."

Tuesday's cold seemed much harder on Doxey and Assistant Hatchery Manager Tim Burke than it did on the fish. Ice formed on their mustaches and they struggled, alternately heating pipe connections with a torch and then quickly trying to fasten them.

Even a few leftover char that were manually scooped from the bottom of the truck's tank didn't seem to suffer from the cold as they were quickly shuffled down the hole



HEALTHY STOCK—Tim Burke, assistant hatchery manager for the Clear Hatchery, examines a net of char after a ride from the hatchery to Fairbanks in 30-below temperatures. A little ice floated inside the insulated tank, but all the fish seemed to be enjoying the balmy 33-degree water.

Kelly Bostian/News-Miner

through which their predecessors were piped.

Yup, they're real char

There sometimes is confusion

over what is a dolly varden and what is an Arctic char. Doxey said that taxonomists have agreed that, generally, the species that travel from salt to fresh water are dolly

vardeen and fresh water lake-dwelling species are Arctic char.

"These are true Arctic char," Doxey said of the Chena Lake fish.

(See CHAR, Page 16)

the contest will be accepted during February. All entries must be 35mm color slides and must be postmarked by midnight Feb. 28.

Up to eight slides will be accepted from each entrant. Duplicates will be accepted for judging purposes but originals must be provided for reproductions. Winning entries will be kept on file for use by the Department of Fish and Game until January 1990.

The grand prize is \$250 with a first prize of \$150, a second prize of \$100 and a third prize of \$50. Ten honorable mentions will also be awarded. All winning photos will be reproduced in an issue of Alaska Fish and Game magazine.

Entrants should be sure to include their name and address on each entry and include a self-addressed, stamped envelope. Entries should be sent to Alaska Fish and Game magazine Photo Contest, P.O. Box 3-2000, Juneau, Alaska 99802-2000. For information, phone (907) 465-4112.

New road accesses Mount St. Helens

LONGVIEW, Wash. (AP)—Spir-it Lake Memorial Highway will be

ATLANTA (AP)—Thousands of Americans are beginning the winter prowling of boat show floors and the industry is expecting another record year.

Jeff Napier, president of the National Marine Manufacturers Association, advises the 750,000 or so people who will buy boats this year to make sure what you're buying is really what you want in a boat.

Today there are boats to fit every purpose and hybrids that will handle several jobs, such as fishing and water skiing.

"The most important thing is to figure out what you really are going to use it for," Napier said by phone from the New York boat show. "Are you going to use it for cruising, or to be a fisherman?"

"A lot of people buy a boat because it looks kind of neat, but it doesn't fit their needs. Figure out what your use is going to be."

The average American's average boat continues to be the 16-foot outboard, "the bread and butter of the industry," Napier said.

Americans spent \$17.93 billion on boating products and services in 1988, double the 1982 level.

"In 1989, keeping in mind we're already running at record levels, we don't see the growth of the last six years, but after six record

CHAR

(Continued from Page 15)

The fish appear olive in color with some iridescence and yellow spots. They should be easily identified in comparison to the colorful rainbow trout and shiny silver salmon.

Doxey is interested in knowing how soon and how many of the fish are caught. A creel census will be conducted at popular spots, but Doxey said he would appreciate it if anglers called in unrecorded catches. He can be reached at 456-8819.

Doxey is cautiously holding high hopes for char in local lakes. "We hope they will work out well. It looks like they will. They grow real well in the hatchery, but we'll just have to wait and see how they do as far as compared to rainbows and silvers. But, we're pretty optimistic."

Parks has found that char grow three to four times faster than rainbow trout in the hatchery environment. Growth in the lakes remains to be seen, but Parks said he wouldn't be surprised if some even-

tually grow to 8-10 pounds.

Their fast growth rate makes them less expensive to raise, thus making them popular in private commercial hatcheries. Clear already has had requests for eggs from fish culturists in Alaska and Outside, Parks said.

The other good thing about the char, even if it turns out that they don't grow to great sizes, is that they are voracious eaters. That should make them popular among anglers.

Doxey used the example that rainbow trout and silver salmon complement each other because, when one species is slow or not biting, the other seems to take over. Char, hopefully, will fill their own niche and help keep anglers busy.

"One of the characteristics of char is they're real opportunists," Parks said. "They don't care what they eat: other fish, insects, anything that's available in the water they'll take advantage of—including their own."



Lamps similar to the illustrated. Many a shown. All quantities to stock on hand. effective through January 27th, 1989. subject to sale at retail.

decades by a decade,
to solve waste water treatment problems."

He seemed to have in mind, with good reason, not only collaboration in planning the execution of problems, but also broader sharing of the enormous financial outlay required.

In its report to Congress, the agency set this at \$83.5 billion. ... The figure, incidentally, points up something we have cause to be glum about: Congress approved the Clean Water Act in 1972, yet 17 years later the problems it addresses still plague the nation. ...

With two-thirds of the nation's waste water treatment plants deficient in some way, it is clear that we need to put more effort – and that means more money – into achieving what Congress intended 17 years ago.

Bangor (Maine) Daily News on the Salman Rushdie affair: The ayatollah (Ruhollah Khomeini of Iran) is meddling directly in the internal affairs of other states (with his execution order for "The Satanic Verses" author Salman Rushdie).

He is using a new form of terrorism – state-funded assassination – to intimidate into silence the resident of a country where freedom of expression is cherished.

He has created a new threat to world commerce. If one nation dislikes a product or process allowed in another, Khomeini has established his own corollary to caveat emptor: Paint a bull's-eye on the head of the foreign manufacturer.

What began as just another strange, almost comical episode in the reign of Khomeini has evolved into a broad confrontation over principles of personal and economic freedom.

The U.S. and its European allies must maintain pressure on the Iranian government to lift the death sentence on Rushdie, a British citizen of Indian heritage who has been made an international symbol of the value of freedom of expression. The Iranians must not be allowed to make him a martyr.

The Morning News Tribune, Tacoma, Wash., on Hirohito's funeral: Few Americans would have blamed George Bush had he chosen to skip Emperor Hirohito's funeral. ... The president had personal reasons not to honor Hirohito's memory.

Like millions of other Americans, he was drawn unwillingly into World War II as a result of Japan's attack on Pearl Harbor. While serving as a naval aviator, he was shot down by the Japanese over the Pacific Ocean in 1944.

Historians today dispute Hirohito's role in the Japanese aggressions of that era. But there's no question the emperor at least reluctantly endorsed Japan's decision to wage war against the United States and other Pacific powers. ...

By attending the funeral, Bush made it clear that what happened in the Pacific nearly a half-century ago no longer has any bearing on America's relationship with Japan. And that relationship – despite all the grumblings about trade balances – is one of friendship. ...

World War II is history. America's future is now inseparable from Japan's. Nothing could demonstrate those realities better than George Bush's presence in Tokyo.

4 JUNEAU EMPIRE

THURSDAY, MARCH 2, 1989

LETTERS

Finfish mariculture

Dear Editor:

On January 28, a Sealaska spokesman, at a Ketchikan symposium on regional economic needs, suggested that one of the most attractive new economic diversification opportunities for Southeast is mariculture and discussed finfish mariculture in particular.

The statement was not meant as an endorsement of immediate or even ultimate public policy authorization of finfish mariculture. Sealaska's purpose was to stimulate the continuing debate on the subject. Sealaska's only position on finfish mariculture is that a responsible public policy debate needs to continue based on objective, scientific, environmental, community needs and economic considerations and not on emotion and self-interest.

Sealaska also believes that other forms of mariculture opportunity not be jeopardized in the controversy over finfish mariculture. The world-

DOONESBURY



TODAY SHE CALLED ME "MAMA"! ISN'T THAT WILD? SHE CALLED THE BABY-SITTER "MAMA"!



FORUM

Pen-farmed salmon industry requires more research

By SONJA CORAZZA

Alaska fishermen's concerns over genetic pollution and disease problems associated with escaped pen-farmed salmon are not unwarranted.

Thirteen to 20 percent of all farmed fish escape, as documented by Norwegian scientists and European countries, and large numbers can escape from pens.

The escapees can spawn in rivers up to a proven distance of 20 kilometers from their net pens.

As a consequence of this research, and with great concern for the genetic integrity and survival of their wild salmon stocks, Norway has just imposed a series of new regulations on their pen-

COMPASS

POINTS OF VIEW FROM OUR COMMUNITY

farmed salmon industry. No salmon farms will be located within 20 kilometers of salmon rivers, and entire fjords will be closed to farming where salmon rivers are present.

This past December in Jarvis Inlet, B.C., 300,000 pen-farmed salmon escaped in winter storms that hit Canada. Floating net pens were found for miles up and down the coast.

Norwegians have lost tons of their pen-farmed salmon to a deadly salmon disease *furunculosis*, and last summer 5,000 fish infected with

furunculosis escaped in Norway. Despite intensive efforts to capture the diseased fish, an infected fish was found in a freshwater stream.

In order to control disease in pens, Norway's use of antibiotics in pen farming has risen 170 percent in the past two years to reach a level of 48 tons, more than the use in animal husbandry and human use combined.

With the present focus on health and nutrition, how does this reliance on antibiotics fit our view of pen-farmed salmon as a healthy addition to our diets?

Norway's most severe threat to wild stocks is from the parasite *gyrodactylus salaris*, which has wiped out

30 wild salmon rivers. This parasite entered Norway via imported salmon eggs from Sweden. Importing eggs had been prohibited, but those regulations were overturned by farmers with economic concerns.

The chemical rotenone which kills the parasite destroys everything in the rivers, hence the loss of wild salmon by the tons in Norway.

In the state of Washington, which two years ago allowed the importation of Atlantic salmon for the economic benefit of their farmers, a report was released on fin fish farming and disease. It stated that the VHS disease carried by Atlantic salmon had never been

found outside of Europe and that there was little likelihood of it ever being a problem.

Now, VHS has been found and millions of their eggs and fish are being destroyed. VHS is particularly fatal for rainbow trout and steelhead.

Domesticating Pacific salmon takes three to four generations of fish and the gene pool may be reduced for docile characteristics. It is possible the migration instinct may breed out of wild salmon, and scientists are concerned interbreeding could affect the wild salmon's ability to migrate.

Ownership of the pen farming industry continues to be an issue. In Washington state a local fish farmer

is suing foreign corporations, primarily Norwegian, for attempting to monopolize the industry.

Who would own the farms in Alaska? Alaska is presently the world leader in ocean ranching and that program is responsible for at least \$80 million in resident income and 2,300 resident jobs.

The Alaska State Legislature should fund the Mariculture Task Force, a forum where legitimate concerns about fin fish farming need to be researched.

☐ Sonja Corazza is a member of the United Fishermen of Alaska, Mariculture Committee.

POINT COUNTERPOINT

Fish Farming: To Be or Not to Be?

Let's Get On With Fish Farming

by Senator Arliss Sturgulewski
(R. Anchorage)

This fall I attended the Aquaculture International Conference held in Vancouver, British Columbia, and returned home with mixed feelings of excitement and frustration. Worldwide, the aquaculture industry is experiencing explosive growth, particularly in the salmon farming industry in neighboring B.C. where private investment during the past few years now amounts to hundreds of millions of dollars. The enthusiasm and optimism of Canadian entrepreneurs is contagious. At the same time, I came away with a profound sense of dismay that the opportunity for this type of economic development, occurring, in Alaska.

With our inherently high production costs, we have very few opportunities for renewable resource developments that can be competitive on world markets. Finfish farming is a means of utilizing our comparative advantages of clean marine waters, vast stretches of uninhabited coastline, biological expertise and large public and private salmon hatchery capacity. Recent Alaska Depart-

ment of Commerce and Economic Development reports have shown that delivered costs for farmed salmon from Alaska could be comparable to those of many competing producers in U.S. and Japanese markets.

Fifteen other countries and numerous states have successfully dealt with the public policy issues surrounding finfish farming. Our own Department of Fish and Game experts tell us that disease and genetic concerns about salmon farming are essentially the same as those in the state's hatchery program and can be addressed via current regulations. Processes for identifying potential sites and resolving user conflicts have been adopted in Washington and B.C. (Note that a large salmon farming operation occupies about two acres—surely there is enough room in state waters to accommodate a moderate-sized industry of perhaps 50-100 farms.) Environmentalists worried about water quality and waste sedimentation forget that fish farmers have a powerful economic incentive to protect the marine environment.

In large part, organized fishing groups in Alaska have chosen to perceive the inevitable market effects of worldwide farmed salmon production as a threat to their livelihood rather than an opportunity for

See **LET'S GO** page 67

Let's Not Be So Hasty

by Oliver Holm
President, Board of Directors
Kodiak Regional Aquaculture
Association

Senator Sturgulewski appears to be infected by the excitement of the wealthy entrepreneurs now beginning to exploit British Columbia for salmon pen rearing. I would like to take issue with her arguments presented in her Dec. 21, 1988 guest opinion in the *Kodiak Mirror*.

I was dismayed, but not surprised to hear her suggest diverting the State's hatchery system into supplying smolts for pen rearing operations. This diversion would cost commercial, sport and subsistence fishermen millions of dollars worth of lost fish in order to benefit a few mariculturists. The very nature of the fish best for mariculture is different than what is desirable for ocean ranching enhancement fish. In Norway, Atlantic salmon have been bred for pen rearing so that they gain weight quicker and are more docile than wild stocks. This is fine for the profits of the pen farmers but should many pen fish escape, it is a disaster for their wild stocks. Straying farm fish are so diluting

their wild stocks genetically that the Norwegians are trying to set up a gene bank to preserve the genetic diversity of their wild stocks before it is lost.

Pen rearing experiments with king salmon at Little Port Walter in Southeast Alaska found kings very skittish in pens and prone to sexually maturing early when confined to pens—which halts further growth. Washington State and British Columbia quickly allowed importation of pen adapted Norwegian Atlantic salmon to boost the profitability of their farm operations. This is biologically a very poor policy. This year in Washington commercial fishermen caught escaped Atlantic salmon in many areas. These fish won't migrate out to sea like the native Pacific salmon. Instead they will be a new near-shore predator devouring juvenile wild and hatchery fish. This will cost the commercial and sport fishery in lost production.

Since some hatchery fish stray to other nearby streams and locally adapted stocks usually do better anyway, it is usually state policy and good hatchery management to use only local stocks for hatchery production. Using local stocks and letting the natural ocean environment do the selecting minimizes the genetic impacts of hatchery operations on our wild stocks. With the profits of an Alaskan pen rearing industry at stake I wouldn't want to count on good biological judgement always prevailing. ADF&G's FRED Division moved approximately 10,000,000 pink salmon eggs from Kitoi Hatchery on Afognak Island 450 miles out to Russell creek Hatchery in Cold Bay last year for brood stock. Even though local stocks would clearly be preferred, the transfer was approved by FRED Division because it would save money and was convenient.

There is still a lot of potential for growth in salmon production through increased enhancement efforts and research. It is still much cheaper to let the fish range the ocean to feed themselves. In many areas of the state fishermen are paying much of the enhancement costs through their regional aquaculture associations. This is not the time to divert the state's technical support away from a proven and effective program.

Bringing jobs to Western Alaska villages and fishermen would be admirable but seems unlikely from pen rearing. All of Alaska north of the Alaska Peninsula can be ruled out as unfeasible because of the ice. Southeast Alaska, Prince William Sound, South & East Kenai Peninsula and Kodiak Island are probably the only areas of the state feasible for farm operations.

Pen rearing provides relatively few direct jobs on site. These jobs require a year-round commitment, which doesn't fit in well with commercial fishing or a subsistence life-

style. It is unlikely that very many rural residents will get jobs in the transportation industry, finance, insurance or consulting services. Unless legislation specifically limits ownerships to co-operatives of rural residents or fishermen, the main benefits of pen rearing will flow to already wealthy entrepreneurs; many would be foreigners.

Most residents of Alaska's coastal areas don't consider the coast uninhabited. Kodiak Island waters are intensively used for numerous fisheries, sport fishing, access to hunting areas, water borne transportation and float plane launching. Senator Sturgulewski's remarks about "burdensome regulations" for shellfish mariculturists makes me think that she feels mariculture should have priority. In Washington State, commercial fishermen and recreational users are having to spend thousands of dollars and hours of time to protect their traditional access to waters that pen rearing applications are trying to usurp. Public policy on mariculture siting needs a very close look, or a much larger segment of the population than the commercial fishing industry will have problems with it.

The course of the timber industry in Alaska is a good example of the kinds of problems we can expect if the legislature jumps on the mariculture bandwagon. Long term sustained yield has been ignored. Small operators were put out of business by regulations and policies designed to help large foreign-owned corporations. There is unnecessary habitat degradation affecting fisheries fields, recreational users, and tourism. Most of the potential jobs are being exported.

Is it any wonder that fishermen are skeptical when promoters claim great economic benefits without any problems? I commend Governor Cowper for not jumping on the salmon farming bandwagon. Much of Alaska is now and always will be dependent on our marine resources. Leasing out our most productive near-shore areas to people who will be concerned primarily with their own profit picture rather than the overall ecological balance is the most serious fisheries management decision the State has ever faced.

LET'S GO

continued from page 66

investment in year-round production capability. Through their cooperatives, fishermen in Alaska could augment their wild catch with farmed fish in the off-season and lock in a position in fast growing fresh salmon markets instead of sitting on the beach and watching their market share steadily decline.

According to experts at the Vancouver conference, the U.S. market for fresh and frozen salmon has plenty of room to grow. In 1987, each U.S. citizen consumed 238 pounds of protein but only 15.4 pounds was seafood, and less than 3.2 pounds was fresh and frozen salmon. As the president of National Seafoods, the largest seafood processing company in North America stated to the conference, "In the near future, any major fish processing company without an aquaculture card in its hand will find it very difficult to compete." Sales of eggs and smolts from public and private hatcheries to salmon farmers could help make the state's subsidized public and private nonprofit hatchery system, which primarily benefits commercial fishermen, self-sustaining.

By 1987, salmon farming had created 570 direct jobs in B.C. It has also resulted in large indirect economic impacts in the seafood processing and support industries—those which supply feed, smolts, equipment, transportation, financing, insurance and various consulting services—have spun off the local salmon farming industry. Direct and indirect employment is expected to grow to 3,500 jobs in B.C. salmon farming by 1990. These opportunities for economic development do not exist in coastal communities in Alaska.

What future does the commercial fishing industry hold for a Western

Alaska village family with five kids and one limited entry permit? How many investment opportunities are available for Southeast native corporations that will create jobs for shareholders once the NOLs are gone and their timber resource depleted? What kind of precedent do we set when we allow special interest groups to determine the scope of our economic development possibilities? What business do politicians have in limiting private investment opportunities? How can we afford to forego any means of attracting outside capital investment to diversify our economy away from petroleum revenue dependence?

These policy questions are troubling. It is somewhat embarrassing to speak with public officials from other states and countries who have been able to deal with the same issues we are facing and rise above special interest politics to seize the opportunity that aquaculture diversification, particularly finfish farming, presents. Frankly, they are astonished when I tell them about the political situation in Alaska. It is time for the legislature to move ahead on this issue, absent any positive leadership from the governor's office. Our competitiveness in future seafood markets is at stake. We should lift the moratorium on finfish farming and revise the burdensome regulations placed on shellfish farmers. We need to overcome our parochial differences and get on with the responsible development of our marine resources under a reasonable state regulatory regime.

State Senator Artiss Sturgulewski is Chairman of the Senate Community and Regional Affairs Committee and the Senate Special Committee on Local and Regional Economic Opportunity.



SENATE LABOR & COMMERCE COMMITTEE

Senator Richard L. (Dick) Eliason, Chairman

Senator Pat Rodey, Vice-Chairman

Senator Jan Faika

Senator Jalmar Keritula

Senator Jack Coghill

When your regs are completed re: aquatic farmings, will they be applicable in

state parks? *Our regs only apply to land managed by the Div. of Land & Water*

marine parks? *Under Title 38, Parks land are managed under title 41 and as you know the Div. of Parks has regs out for review.*

If the state park's regs are adopted to allow aquatic farming, will you be involved in the process? *Aquaculture is already allowed, by statute, in marine parks. Land and Water will not automatically be involved in their decisions.*

What does L+WM view as "aquaculture"? We haven't really defined "aquaculture" in our regs, we have used the term aquatic forms and referenced the definition used in title 16 changes in SB 514. I don't know what a departmental definition would be.

Do you think that L+WM view "aquaculture" as meaning only ~~2~~ enhancement projects or do you think they view it as "aquatic farming"?

I think we would look for a text book or dictionary definition.

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF THE COMMISSIONER

STEVE COWPER, GOVERNOR

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

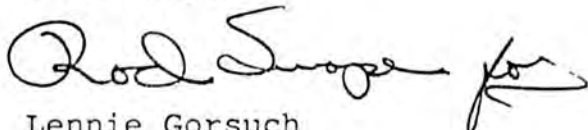
January 30, 1989

The Honcrable Tim Kelly
President of the Senate
P.O. Box V
Juneau, AK 99811

Dear Mr. President:

Please find attached the Aquatic Farm Report to the Legislature required by Section 19, Chapter 145, SLA 1988.

Sincerely,



Lennie Gorsuch
Commissioner

Attachment

cc: All Senators/w attachment

**AQUATIC FARM REPORT
TO THE LEGISLATURE**

January 30, 1989



Steve Cowper
Governor
State of Alaska

Lennie Gorsuch
Commissioner
Department of Natural Resources

Gary Gustafson
Director
Division of Land and Water Management

For more information:
Janet Burleson
Project Manager
Division of Land and Water Management
465-3400

This report is submitted in response to Section 19, Chapter 145, SLA 1988 which requires the Commissioner of the Department of Natural Resources (DNR) to provide a report to the legislature detailing the department's implementation of AS 38.05.083 and 38.05.856 which allows individuals to acquire property rights on state-owned tidelands for aquatic farming purposes.

Summary:

Last year the legislature passed new legislation pertaining to aquatic farming in Alaska. The law authorized the farming of aquatic plants and shellfish, prohibited the farming of Atlantic salmon, extended the moratorium on finfish farming until July 1, 1990 and established the Alaska Finfish Farming Task Force. It provided a new system for accepting applications and issuing permits for aquatic farming for DNR. However, no funding was appropriated for implementation. In response to the legislation, the department proceeded to develop regulations and create the aquatic farm districts as required by the law, but has not opened any districts to applications due to lack of resources.

Background:

Aquatic farming is the cultivation of aquatic farm products in captivity. The new law authorizes shellfish and sea vegetable farming in Alaska. There are currently approximately 40 permitted aquatic farms in the state, primarily growing mussels and oysters. A few research operations involve scallops and kelp.

Prior to the enactment of this law DNR issued permits for aquatic farming, but used a general type of permit that did not include a property right and was revocable at will. The permit was issued for one to three years and included no preference for a lease or another permit when the permit expired.

The new law created several additional standards. It requires the department to create aquatic farm districts and hold a 60 day application period in each district annually. An aquatic farmsite permit is now a property right that can only be revoked for breach, giving the permittee the secure tenure needed to obtain financing and to make the significant capital investment necessary to develop a producing farm. A permittee who successfully develops an aquatic farm has an automatic preference right to a lease. Because issuing an aquatic farmsite permit is a "disposal of an interest in state land," as that term is used in Article VIII of the Alaska Constitution, DNR must first comply with all procedural safeguards applicable to land disposals; land planning and classification, best interest findings, public notice and review, reservation of access easements, etc.

Report:

Specifically, Section 19 requires the department to provide a report that includes:

1. The number of applications received under AS 38.05.083 and 38.05.856, the number of leases and permits issued, according to type of aquatic farm product.

The department has not yet accepted any applications, due to lack of resources. However, we have taken the steps to otherwise implement the program.

First, the department began the process of determining boundaries for the aquatic farm districts required by AS 38.05.855. To assist in developing district boundaries, the department solicited nominations from the public and state and federal agencies for areas which might be available for aquatic farming and areas that should be excluded from aquatic farming. In the Southcentral Region of Alaska we received a total of 574

nominations; 88 for areas that should be available for aquatic farming, 79 for areas that should be excluded from aquatic farming and 412 pieces of information indicating recreation areas, fishing areas and anchorages. In the Southeast Region, we received a total of 1031 nominations; 162 areas were nominated for development, 369 areas were nominated for exclusion and 500 pieces of information about recreation areas, fishing areas and anchorages. In addition to requesting review by other state and federal agencies, DNR asked for the assistance of an informal citizen's advisory group to help identify districts. The group represented shellfish growers, conservation organizations, and commercial fishermen. The group met several times and reached a consensus on the district boundaries. The group agreed to the establishment of 5 districts in the Southcentral Region and six districts in the Southeast Region. The district boundaries basically conform to DNR's existing or proposed area plan boundaries or coastal district/municipal boundaries. In southeast, the districts include Ketchikan/Misty Fjords, Prince of Wales Island, Stikine/Admiralty Island, Juneau/Haines boroughs, Chichagof/Baranof/Kruzof Island group and Yakutat/Glacier Bay. In the southcentral area the districts include the Alaska Peninsula, Kodiak Island, Kenai Peninsula Borough, Prince William Sound and Cape Suckling/Icy Bay.

Second, the Department of Law advised that the mandatory language in AS 38.05.856 required that regulations be adopted before decisions on permits could be made. Therefore DNR immediately began drafting regulations that set out its policies for carrying out the new program.

The first draft of the regulations was distributed informally in June. A preliminary public hearing draft was then written and distributed for comment to interest groups, individuals and other departments. The department gathered comments on the preliminary hearing draft, then the advisory group met to discuss the comments. The advisory group spent many hours in detailed analysis and discussion. Advisory group members served without compensation, and traveled to Juneau and Anchorage at their own expense.

Ideas suggested by advisory group members and incorporated into the draft regulations included: using a mailing list for effective notice of public comment opportunities; letting permit development plans include both a "floor" and a "ceiling" for development; allowing two renewals of the permit for a total term of nine years (to leave time for the extensive capital investment needed to become profitable); if strictly necessary, authorize onsite housing (removable within 30 days) of personnel at the permit stage, but provide for public review; before deciding to issue a permit, consider the effect on other land uses such as commercial fishing, primary anchorages, recreation and tourism; make sure that overland access to tidewater is not defeated by obstacles in the water itself; and allowing for site testing by means of ordinary revocable-at-will permits, which can be issued quickly because they are not land disposals.

These discussions took place in November. A public hearing draft was then developed which incorporated the comments of the advisory groups as much as possible. The draft was distributed to over 500 individuals, groups and agencies. Eight public hearings were held during mid-January in Anchorage, Homer, Cordova, Kodiak, Juneau, Ketchikan, Wrangell and Petersburg. The public comment period expired on January 20, 1989. The department proposes to incorporate the comments and adopt the regulations by mid-February. They must then proceed to the department of Law to be approved and on to the Lt. Governor to be promulgated.

The draft regulations (11 AAC 63) detail the entire process of applying for and obtaining an aquatic farmsite permit or lease. Sec. 010 of the new chapter explains the subject of the chapter and defines an aquatic farmsite permit as a type of land disposal. Sec. 020 covers the process of calling for area nominations to help set application district boundaries, then opening the district to applications for aquatic farmsite permits, mapping the open area

advertising the opening and setting filing guidelines for applications. Sec. 030 sets filing requirements for permit applications, including the requirement for a proposed development plan and schedule, and explains what will be done if applications overlap or too many applications are filed for a limited area. Sec. 040 covers associated facilities for storing equipment, of housing personnel and puts restrictions on authorizations for such purposes; it also covers the rights of upland owners and offers a preference right to an applicant who will put such facilities on the applicant's land rather than on state land.

Sec. 050 specifies the review process used for complete applications and the criteria for a preliminary finding under AS 39.05.035(e) that granting permits would be in the state's best interest. Sec. 060 sets rules for notice and the opportunity to comment, including notice to upland owners, and specifies that a permit will not be issued if the upland owner will not authorize upland use that the applicant states is necessary. Sec. 070 covers the process of issuing permits after a final best interest finding and sets out permit requirements, including posting a bond and paying a use fee. It also allows for two renewals of a permit under specific circumstances. Sec. 080 explains how the permit or lease bond amount will be determined. Sec. 090 covers the transition from permits issued under AS 38.05.850 (an older law on permits for general natural resource uses) and defines which permits qualify under a "savings clause" that the legislature included in sec. 18 of the law. It limits the circumstances in which the department will issue permits for aquatic farm related purposes using the older permit law rather than the new law. Sec. 100 sets out the requirements for getting and keeping an aquatic farmsite lease. Sec. 110 includes general conditions for both permits and leases and sec 120 defines terms used in the new chapter.

2. The restrictions attached to permits and leases

The department recognizes safeguards in the bond required in the law, the proposed regulations and the statute. Typical conditions to be included in permits and leases (such as prohibiting unlawful activities on the premises, requiring compliance with all applicable laws, and providing for amendments) are set out in the proposed 11 AAC 63.110. Site-specific conditions necessary to resolve or mitigate conflicts may be drawn from guidelines set out in applicable land use or coastal management plans. Where no such guidelines are available, the proposed 11 AAC 63.050 directs that the guidelines included in the department's final Etolin Island Area Mariculture Pilot Project be consulted.

3. A discussion of the system the department implements for issuing leases and tideland and land use permits

Through the summer of 1988 the department met with representatives from the Departments of Fish and Game, Environmental Conservation and the Division of Governmental Coordination, state agencies which are also impacted by the law. The primary purpose of this interagency group was to incorporate the new procedures into existing Alaska Coastal Management Program (ACMP) procedures, streamline the process for the permittee as much as possible and amend the existing aquatic farm application to reflect the changes in the new law. The interagency group developed a consolidated application form used by the applicant to obtain authorizations routinely required by the above departments. Attached to this report are charts which 1) outline DNR's procedures and 2) specify how all the affected agencies processes will work. Also attached is the draft Application for Aquatic Farm Permits developed by the interagency group. The agencies intend to process all applications within a particular aquatic farm district simultaneously. The result should be that all the applicant's state authorizations will be issued at the same time. When the draft regulations are adopted, we will proceed to implement the program, given the availability of sufficient resources.

4. The level of public involvement in the issuance process

The level of public involvement is prescribed in the law. It expanded the notice requirements under AS 38.05.945 which requires notice to municipalities, Native corporations, newspapers, community councils and community organizations to include coastal resource service areas and fish and game advisory boards. A coastal review process is also required. A public hearing is required under AS 38.05.946 when the preliminary decision is completed. Recognizing the interest the public has shown regarding aquatic farming, the department solicited nominations for areas of interest for aquatic farming, mailed over 500 copies of the proposed regulations, established an advisory group to assist in the creation of districts and regulations and held public hearings on the regulations in eight coastal communities. The draft regulations provide that people may get on a mailing list for notice of district openings and best interest findings. In short, we expect the demonstrated public interest in the program to continue and we're prepared to accommodate it.

5. A discussion of how the program is working and the department's plans for modification

The districts are in place and the regulation process is in the final stages. The next step is to open sequentially all districts for 60 day annual application periods, followed by application processing and permit issuance. However, because no money was appropriated to implement the new law, the affected state agencies, including DNR, cannot proceed further at this time.

Attachments (3)

- A DNR Processing Time Line
- B Aquatic Farm Siting Process Under CSSB 514 and ACMP
- C Application for Aquatic Farm Permits

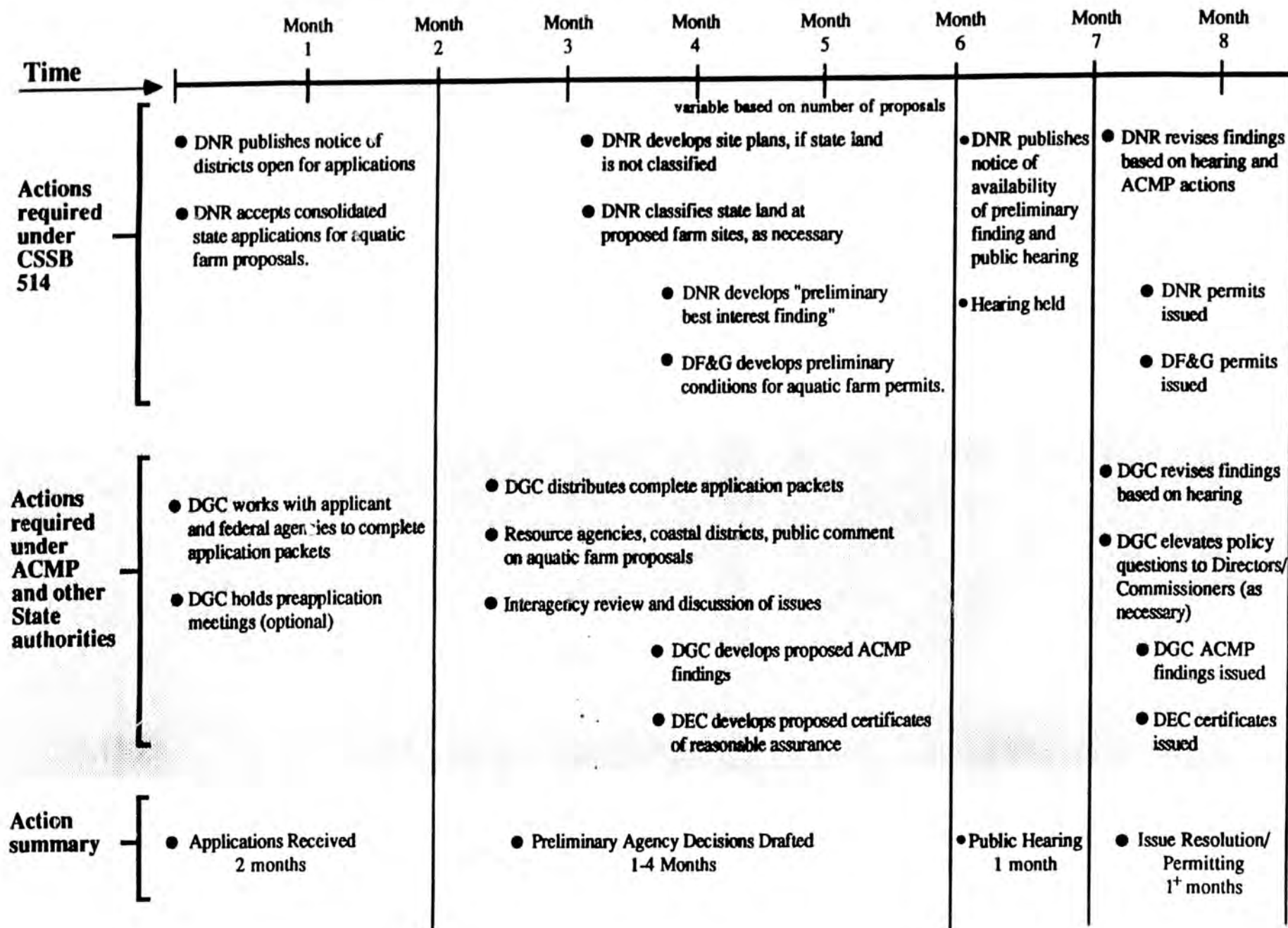
ATTACHMENT A

DNR ESTIMATED PERMIT PROCESSING TIME LINE*

Prior to Month 1	DNR Publishes Notice of Districts Open for Application
Month 1-2	Aquatic Farm Proposal Applications Accepted
Month 3-6	Site Plans Developed for Unclassified Lands Lands Classified as Necessary Preliminary Best Interest Finding Developed
Month 7	Notice of Preliminary Best Interest Finding and Public Hearings Published Public Hearings Held
Month 8	Findings Revised as Necessary Permits Issued

* ADF&G, DEC and ACMP Actions and Reviews Are Completed
In The Same Time Frame.

Aquatic Farm Siting Process Under CSSB 514 & ACMP



STATE OF ALASKA

OFFICE OF THE GOVERNOR

DIVISION OF GOVERNMENTAL COORDINATION

STEVE COWPER, GOVERNOR

CENTRAL OFFICE

P.O. BOX AW
JUNEAU, ALASKA 99811-0165
PHONE: (907) 465-3562

SOUTHEAST REGIONAL OFFICE

431 NORTH FRANKLIN
P.O. BOX AW, SUITE 101
JUNEAU, ALASKA 99811-0165
PHONE: (907) 465-3562

SOUTHCENTRAL REGIONAL OFFICE

2600 DENALI STREET
SUITE 700
ANCHORAGE, ALASKA 99503-2798
PHONE: (907) 274-1581

NORTHERN REGIONAL OFFICE

675 SEVENTH AVENUE
STATION H
FAIRBANKS, ALASKA 99701-4596
PHONE: (907) 456-3084

Dear Aquatic Farm Applicant:

The Aquatic Farm Application is designed to help you obtain the authorizations routinely required by the State of Alaska Departments of Natural Resources (DNR), Fish and Game (DFG), Environmental Conservation (DEC), and Division of Governmental Coordination (DGC) to site and construct your mariculture project. This form can be used to apply for the Aquatic Farm Operations Permit and Fish Habitat Permits from DFG, Water Quality Certification (401), wastewater system plan review, and Waste Discharge Permit from DEC, Aquatic Farm Site Permit from DNR, and the Coastal Zone Consistency Certification from DGC. This application also addresses solid waste disposal for single-family use; facilities larger than single-family are required to apply for a solid waste disposal permit from DEC.

The application must be submitted to the state within the 60-day opening announced by DNR for the district in which you intend to farm. A Coastal Project Questionnaire, which is available from any of these agency offices, must also be submitted with your Aquatic Farm Application to help determine which specific permits must be obtained prior to constructing your project. If you determine that your specific project design requires additional permits for activities such as an increase in water use or solid waste disposal, or use of state owned timber or gravel, you must also file supplementary applications with the standard Aquatic Farm Application.

You will receive a notice and processing schedule for the state coastal zone consistency review from Division of Governmental Coordination when your application has been accepted for processing. Your permits will also be processed on this schedule.

Please read this application carefully. A properly completed application is required for the state agencies to process your request. AN INCOMPLETE APPLICATION MAY BE RETURNED TO YOU FOR CORRECTION AND RESUBMISSION. Please note that an acceptable application must be received within the 60-day district filing period. Information which you provide in this application will

be considered as your development plan and schedule. If approved, this development schedule will be used to determine your eligibility for permit renewals or state land leases.

If you need technical assistance in completing this application, please refer to the list of agency representatives provided at the back of the coastal project questionnaire. If you have questions about this application process, or you are not able to determine which agency can best answer your technical questions, contact the Division of Governmental Coordination in Juneau at 465-3562, in Anchorage at 274-1581, or in Fairbanks at 451-2818.

Stocking your Farm or Selling your Products.

In addition to the permits and approvals to site your aquatic farm, which you are applying for in this Aquatic Farm Application, you will also need to separately apply for and obtain a Shellfish or Aquatic Plant Transport Permit from ADF&G to obtain and hold broodstock, and a Growing-Area Certification and a Harvester's Permit from DEC in order to sell your product. These permits are not covered by this application since they are required for later phases of your project.

A Shellfish or Aquatic Plant Transport Permit is required by ADF&G before you can obtain, hold, transport, and raise shellfish and aquatic plants. We encourage you to contact the Fisheries Rehabilitation, Enhancement and Development (FRED) Division in Juneau at 465-4160 or in Anchorage at 267-2157 as early as possible in order to apply for and obtain a Transport Permit.

Water quality in the growing area must meet the standards of the National Shellfish Sanitation Program incorporated by reference in 18 AAC 34.170 and state water quality standards. You should contact DEC regarding certification requirements so that you can be reasonably sure that your site will qualify. The growing area must be free from sewage discharge and all sewage discharges must be 300 feet or more from the boundary of an approved growing area depending on the type of discharge and local condition. All facilities used to retain, collect, treat or dispose of human wastes must be approved by the DEC.

We recommend that you apply for Growing Area Certification and a Harvester's Permit at least six months before you intend to harvest shellfish. Individuals requesting growing area surveys must bear the cost of transporting the DEC representative to and from the growing area from the nearest commercial airport. Also, the individual must bear the cost of shipping daily water samples during the five-day survey to the DEC laboratory in Palmer, Alaska. To obtain more information on certification requirements, please contact DEC in Anchorage at 563-0318.

State of Alaska
Application for Aquatic Farm Permits

General Instructions

1. Answer **all** questions using the blanks provided or additional pages.
2. If additional space is needed, mark the additional pages with the corresponding number in the application.
3. Type or print your answers **clearly in ink**.
4. The applicant or an authorized representative must **sign the application**.
5. Submit the **original application**, a copy of the coastal project questionnaire, and a **filing fee of \$50.00** to the Department of Natural Resources in the region in which the farm is to be located.

DNR
Southeast Regional Office
400 Willoughby Avenue
Suite 400
Juneau, Alaska 99801

DNR
Southcentral Regional Office
3601 C Street, Anchorage
Mailing Address:
P.O. Box 107005
Anchorage, Alaska 99510-7005

DNR
Northern Regional Office
3700 Airport Way
Fairbanks, Alaska 99709

6. Submit a copy of the application and the original coastal project questionnaire to the appropriate regional Office of the Division of Governmental Coordination.

DGC
Southeast Regional Office
431 North Franklin Street
P.O. Box AW, Suite 101
Juneau, Alaska 99811-0165
(907) 465-3562

DGC
Southcentral Regional Office
2600 Denali Street
Suite 700
Anchorage, Ak 99503-2798
(907) 274-1581

DGC
Northern Regional Office
675 Seventh Avenue
Station H
Fairbanks, AK 99701-4596
(907) 451-2818

7. **Please note:** This application is for a specific aquatic farm project. You will need to submit a new application if you change any of the following:
 - A. The species to be grown
 - B. The size or design of your operation
 - C. The location of your operation

State of Alaska
Application for Aquatic Farm Permits

3/15/88
Revised: 1/89

A. APPLICANT INFORMATION

- | | |
|---|---|
| 1. _____
Name

Mailing Address

City _____ State _____ Zip Code _____
Phone _____ | 3. _____
Authorized Agent (if applicable)

Address

City _____ State _____ Zip Code _____
Phone _____ |
| 2. _____
Business Name (if different than above)

Business Address

City _____ State _____ Zip Code _____
Phone _____ | |

B. GENERAL INFORMATION

1. Provide a brief description of the facility and your overall proposal. Include upland, tideland, and submerged land facilities.
- _____
- _____
- _____
2. Housing on state lands can only be approved if site development requires daily attention at the time housing begins, if personnel cannot reasonably commute by road or boat, and no suitable private lands are available for rent or sale (see 11 AAC 63 040(a)).

Does your proposal include caretaker housing on state land or water? Yes___ No___

If yes, please describe why onsite housing is necessary.

3. a) Do you currently own or lease upland property adjacent to, or near the proposed farm site? Yes___ No___
- b) Are you applying for a preference right under 11 AAC 63.040(b)? Yes___ No___
- c) Do you agree to contain your aquatic farm support facilities (storage, dwellings, etc.) on these privately owned or leased lands? Yes___ No___
- If yes, attach a copy of the ownership deed or lease agreement.
4. In order to process your application, we need to know who owns the adjacent lands. Please provide the names and addresses of the landowners of adjacent uplands and tidelands.

Uplands

Tidelands

C. PROJECT LOCATION

1. Is the Project on: (please mark with ✓)
State Land _____ Federal Land _____ Private Land _____ Municipal Land _____
2. Attach a topographic map (U.S.G.S. Scale 1: 63,360) and nautical chart to this application that show the site location boundaries and general area. Clearly indicate the site location and identify the map and chart reference number.
3. Township _____ Range _____ Meridian _____ Section _____ Longitude _____ Latitude _____
4. Number of acres of state land applied for: Uplands _____ Tidelands _____

D. FARM DEVELOPMENT AND OPERATING PLAN

1. Species to be raised:

Species	Annual Production Goal	
	maximum	minimum
a _____	_____	_____
b _____	_____	_____
c _____	_____	_____
2. Please provide a timetable showing approximate dates for installation of spat collection gear, placement of production and support facilities, date of first sale, and a schedule for reaching expected maximum production. If you plan to operate at this site less than year round, please include your operating schedule.
Note: You may submit both a minimum and maximum development goal if you are uncertain about your construction schedule. Reasonable use of the site must be proposed.

3. Donor Stock
 - a. What is the source of the donor stock for your farm? _____
 - b. If you plan to capture wild stock, please identify your proposed capture location.*

* Please be advised that other permits and authorizations are required from the Department of Fish and Game, and possibly the Commercial Fisheries Entry Commission for capture of wild stock.

E. SITE PLAN & PHYSICAL DESCRIPTION

1. Provide a site plan drawn to scale (no less than 1" = 50') which shows the layout, location, and dimensions of the following (a sample site plan is provided on page 6 for your reference).
 - a. The rafts or other production facilities employed (please include size and number).
 - b. Anchoring systems and shoreties.
 - c. Docks, upland dwellings, floating structures associated with caretaker facilities
 - d. The location of waters, including any drinking water wells or other drinking water system sources, fresh water(s), and salt water, within 200 feet of the proposed wastewater disposal system.
 - e. Wastewater disposal systems, including both sewage and greywater discharge points (e.g. greywater means domestic wastewater from laundry, kitchen etc., which does not contain human waste).
 - f. Solid waste storage and disposal sites (note: you are encouraged to use existing permitted sites for the disposal of solid wastes).
 - g. Roads or air strips.
 - h. Other upland or tideland facilities at the site associated with the farming operation.
 - i. Fuel and chemical storage.
 - j. Properties referenced in #4 and #5 of Section B.
 - k. The boundary of the farm area which is located on state lands, including tide and submerged lands.

2. Attach a cross sectional diagram of the proposed facilities, and identify the construction materials. (Diagrams prepared for the Corps of Engineers permits are acceptable.)
3. On the site plan, draw lines and identify the tide level at the following stages:
 - Mean Lower Low Water (MLLW)
 - Mean Higher High Water (MHHW)
 - Mean High Water (MHW)
4. On the site plan, diagram the prevailing direction of the surface water flows at the ebb and flood tides.
5. What is the maximum surface tidal current speed at ebb tide? _____ At flood tide? _____ Did you estimate or measure the speed? _____
6. What is the water depth at the site of culture gear at MLLW? _____

F. SITE SUITABILITY

1. Physical and Biological Characteristics

- a. Provide any information you may have regarding tidal flushing, water temperature, salinity, and turbidity/sedimentation at the site. Include the dates these data were recorded.

- b. Describe the bottom type composition at the site (if more than one type, indicate percent).

sand _____ mud _____ rock _____ gravel _____ eelgrass _____

other: _____

- c. Describe winter conditions at the site (temperatures, icing, storms, etc.).

- d. Do anadromous fish (e.g. salmon) use any streams in the area for spawning? yes _____ no _____
If yes, indicate which streams are used and label them as such on the site plan.

- e. Is the target species naturally present in the area? yes _____ no _____
If yes, describe abundance and condition.

- f. Describe measures you would propose to control predation by marine mammals, seabirds, or other potential predators.

- g. Indicate which of the above responses in Section F are based upon on-site investigations by circling the corresponding letter: a, b, c, d, e.

G. WATER QUALITY

Note to Applicant: Sewage or industrial discharge(s) may accumulate in or harm the growth or consumptive use of your shellfish product. Oysters, mussels and scallops are filter feeders and may accumulate fecal coliform bacteria and associated pathogens from sewage discharges. If a caretaker facility is needed for the site, and its discharge is located near the culturing operation, there may be a risk of contamination. To ensure that your growing area can be certified by DEC, the department has developed the following requirements for those aquatic farms where a sewage discharge is necessary. 1) Discharges must meet water quality standards (18 AAC 70), wastewater disposal regulations (18 AAC 72), and requirements of the National Shellfish Sanitation Program (incorporated by reference in 18 AAC 34.170). 2) No sewage discharge will be allowed within 300 feet from the boundary of an approved growing area (the boundary encompasses the entire growing area). 3) Outhouse and septic systems must maintain a minimum 100 foot horizontal separation distance from surface waters and a minimum 4 foot vertical separation distance from the high ground water table. The department will require a waste discharge permit and system plan review for all sewage discharges. Additional information may be required by the DEC depending on the type and complexity of wastewater system proposed. After review of application materials, the DEC may decide it is not necessary to issue a waste discharge permit for facilities generating very small daily volumes of sewage and greywater.

1. Wastewater Discharge and System Plan Review

- a) Is there is a floathome, dwelling or upland caretaker's facility proposed for the site? Yes _____ No _____
b) Will wastewater be discharged from any of these facilities? Yes _____ No _____
If yes, please provide the following information.
- What are the daily maximum and average discharge volumes? Maximum _____ Average _____

PLEASE SUBMIT THE FOLLOWING INFORMATION ON SEPARATE PAGES

(Contact the Department of Environmental Conservation to determine submittal requirements for your specific proposal.)

- Wastewater system design plans consisting of reports and/or drawings that clearly and legibly depict the design, type, and volume of discharge. (Design plans may require preparation by a registered engineer.)
- A description of proposed and existing wastewater treatment works, disposal systems, or sewers.
- Sufficient soils and topographic information to allow evaluation of the soil type, absorption area, depth to water table and impervious surfaces, and topography, if treatment or disposal (other than a conventional on-lot soil absorption system) is into or onto land or subsurface land.

2. Were there any sources of past pollution at the site, such as a shorebased seafood processor, industrial facility, or a town or village? yes _____ no _____

If you answered yes to the above, identify:

- The type of previous use (e.g. mine, village, seafood processor) _____
- The last known date of use _____
- The distance from site of previous use to your project site _____

3. Are there any current potential sources of human or industrial pollution in the area? (For example, sewage outfalls, industrial transfer facilities or upland operations, boat harbors, etc.) yes _____ no _____

If yes, please describe:

- The type of discharge(s) _____
- The location and distance from your site _____
- The name of the discharger(s), if known _____

4. Are you aware of any other planned development in the general area of your proposed farm? yes _____ no _____ . If yes, please describe them.

H. CURRENT LAND USE

Are there any other human uses of the project site and the surrounding area such as commercial development, mining, timber harvest or transfer, sheltered anchorage, subsistence, recreation, commercial fishing, sport fishing, or residential use, etc? Yes____ No____

If yes, please describe.

Certification Statement

The information contained herein is true and complete to the best of my knowledge. I understand that I must separately apply for and hold a Transport Permit from the Department of Fish and Game in order to hold, transport, and raise shellfish or aquatic plants, and a Growing Area Certification and a Harvesters Permit from the Department of Environmental Conservation in order to sell my product.

Signature of Applicant or Agent

Date

Jim Hemmings - Halibut Cove
Tim Torrell - oyster - Kodiak
John Nielson - Wrangell

Shellfish Growers at
Reg mtg

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

SOUTHEAST REGIONAL OFFICE DIVISION OF LAND AND WATER MANAGEMENT

STEVE COWPER, GOVERNOR

400 WILLOUGHBY AVENUE
SUITE 400
JUNEAU, ALASKA 99801-1000
PHONE: (907) 465-3400

PROPOSED AQUATIC FARMSITE REGULATIONS

December 15, 1988

Dear Alaskan:

Enclosed are proposed new regulations of the Alaska Department of Natural Resources. The Division of Land and Water Management (DLWM) is soliciting comments on the proposed regulations at public hearings to be conducted in Cordova, Juneau, Kodiak, Anchorage, Petersburg, Wrangell, Homer, and Ketchikan from January 9 to January 12, 1989, or by mail by January 20, 1989. Please see the enclosed "Notice of Proposed Changes in the Regulations of the Department of Natural Resources" for more information on how, when, and where to comment on the regulations.

The proposed regulations are intended to implement 1988 legislation on aquatic farming or mariculture. The new law was enacted as SB 514 and is now officially known as Chapter 145, SLA 1988. It allows people to raise shellfish or aquatic vegetables such as kelp on state land, but prohibits any "change of use" and extends an existing moratorium against finfish mariculture until July, 1990.

Chapter 145, SLA 1988 also created new responsibilities for the Department of Fish and Game and the Department of Environmental Conservation. However, these draft regulations deal only with duties of the Department of Natural Resources. The new legislation set up a system of three-year permits and preference-right leases for state land managed by the Department of Natural Resources under AS 38. It does not apply to state parks designated by the legislature in AS 41.

DLWM had issued permits for mariculture in the past, but formerly used a general type of permit that did not include any property rights and was revocable at will. The new system is different. An aquatic farmsite permit is a property right and a permittee who successfully develops an aquatic farm has a preference right to a lease. Because issuing an aquatic farmsite permit is a "disposal of an interest in state land," DLWM must first comply with the usual procedural safeguards applicable to land disposals: land planning and classification, preparing a "best interest" finding, public notice and review, reservation of access easements, etc. The draft regulations set out this process in more detail.

DLWM would like to take this opportunity to thank a very dedicated group of Alaskans for their work in developing the proposed regulations. In addition to requesting review by other agencies, DLWM asked for the assistance of an informal citizens' advisory group representing shellfish growers, conservation organizations, and commercial fishermen in southeast and southcentral Alaska. The group spent many hours in a detailed analysis and discussion of the draft regulations. As might be expected from such a diverse group, opinions differed on many points. But the entire group showed a willingness to compromise and to work toward a common goal of proposing public land policies that would be fair to everyone. Not only did advisory group members serve without compensation, those who traveled from their homes to Juneau and Anchorage did so at their own expense because agency budgets did not include any funding to implement the new legislation. The effort these public-spirited citizens devoted to the project is a fine example of volunteerism in action.

Ideas suggested by advisory group members and incorporated into the draft regulations include: using a mailing list for more effective notice of public comment opportunities; letting permit development plans include both a "floor" and a "ceiling" for development; allowing two renewals of the permit for a total term of nine years, to leave time for the extensive capital investment needed to become profitable; if strictly necessary, authorize onsite housing (removable within 30 days) of personnel at the permit stage, but provide for public review; before deciding to issue a permit, consider the effect on other land uses such as commercial fishing, primary anchorages, recreation, and tourism; make sure that overland access to tidewater is not defeated by obstacles in the water itself; and allow for site testing by means of ordinary revocable-at-will permits, which can be issued quickly because they are not land disposals.

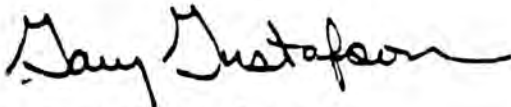
Another key policy developed during the review of the draft regulations implements a savings clause in the legislation. That clause allows continued operations by those who were "lawfully operating an aquatic farm or related hatchery" on June 9, 1988, the act's effective date. DLWM interpreted the clause as granting a preference right to one of the new aquatic farmsite permits. However, some permittees who were not yet "operating an aquatic farm" had already made significant good-faith investments. Therefore the regulations expand the preference right to those who had obtained necessary permits and had undertaken the initial steps that would lead to full-scale operations.

For a summary of other main points in each of the draft regulations, see the "Notice of Proposed Changes in the Regulations of the Department of Natural Resources."

In your review of the draft regulations, you will notice some wording that is underlined. This underlined wording indicates new material that the department is proposing to add to an existing regulation (11 AAC 05.010) or to the existing list of chapters within Title 11 of the Alaska Administrative Code. The rest of the draft regulations have no underlining or bracketing because they would form a completely new chapter, 11 AAC 63.

Your comments on the draft regulations will be most useful to DLWM if you refer to particular regulations by section number, rather than by page, and if you suggest specific wording changes that you feel would improve the clarity of the regulations or would constitute better public policy. If you have questions on any provision contained in this proposal, the division's contacts on this project are Mary Kaye Hession in our Anchorage office, phone 762-2680, and Janet Burleson in our Juneau office, 465-3400. The Department of Natural Resources thanks you for your time and interest in this matter.

Cordially,

A handwritten signature in dark ink, appearing to read "Gary Gustafson". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Gary Gustafson
Director

Attachment

NOTICE OF PROPOSED CHANGES IN THE
REGULATIONS OF THE DEPARTMENT OF NATURAL RESOURCES

Notice is given that the Department of Natural Resources, under authority vested by AS 38.05.020 and AS 38.05.856, proposes to adopt regulations in Title 11 of the Alaska Administrative Code, dealing with issuance of property rights to undertake aquatic farming (mariculture for shellfish and aquatic vegetables) on state-owned land, to implement AS 38.05.083, AS 38.05.855, AS 38.05.856, and sec. 18 of Chapter 145, SLA 1988 (1988 legislation formerly known as "SB 514"), as follows. The purpose of the regulations is to carry out the new responsibilities these new aquatic farming laws place on the Department of Natural Resources.

11 AAC 05.010, an existing regulation that sets application fees for most authorizations by the Department of Natural Resources, is proposed to be amended to add a fee for aquatic farmsite permit and lease applications, including renewals and extensions.

A new 11 AAC 63 is proposed to be adopted. This new chapter covers the entire process of applying for and obtaining an aquatic farmsite permit or lease. Sec. 010 of this new chapter explains the subject of the chapter and defines an aquatic farmsite permit as a type of land disposal. Sec. 020 covers the process of calling for area nominations to help set application district boundaries, then opening the district to applications for aquatic farmsite permits, mapping the open area, advertising the opening, and setting filing guidelines for applications. Sec. 030 sets filing requirements for permit applications, including the requirement for a proposed development plan and schedule, and explains what will be done if applications overlap or too many applications are filed for a limited area. Sec. 040 covers associated facilities for storing equipment or housing personnel and puts restrictions on authorizations for such purposes; it also covers the rights of upland owners and offers a preference right to an applicant who will put such facilities on the applicant's land rather than on state land. Sec. 050 specifies the review process used for complete applications and the criteria for a preliminary finding under AS 38.05.035(e) that granting permits would be in the state's best interest. Sec. 060 sets rules for notice and the opportunity to comment, including notice to upland owners, and specifies that a permit will not be issued if the upland owner will not authorize upland use that the applicant states is necessary. Sec. 070 covers the process of issuing permits after a final best interest finding and sets out permit requirements, including posting a bond and paying a use fee. It also allows for two renewals of a permit under specific circumstances. Sec. 080 explains how the permit or lease bond amount will be determined. Sec. 090 covers the transition from permits issued under AS 38.05.850 (an older law on permits for general natural resource uses) and defines which ones qualify

under a "savings clause" that the legislature included in sec. 18 of the 1988 aquatic farming legislation. It limits the circumstances in which the department will issue permits for aquatic farm-related purposes using the older permit law rather than the new legislation. Sec. 100 sets out the requirements for getting and keeping an aquatic farmsite lease. Sec. 110 includes general conditions for both permits and leases and sec. 120 defines terms used in the new chapter.

Notice is also given that any person interested may present oral or written statements or arguments relevant to the proposed action at hearings to be held in Cordova at the Cordova City Library conference room, 622 First St., at 12 noon on Jan. 9, 1989 (via teleconference); in Juneau at the 4th floor conference room in the Willoughby Building, 400 Willoughby, at 7 p.m. on Jan. 9, 1989; in Kodiak at the Fort Abercrombie State Park Headquarters Building (on East Rezanof Drive four miles from city center) at 12 noon on Jan. 10, 1989 (via teleconference); in Anchorage at Room 336 in the Frontier Building, 3601 C Street, at 7 p.m. on Jan. 10, 1989; in Petersburg at the Petersburg City Hall Council Chambers, 12 South Nordic, at 12 noon on Jan. 11, 1989; in Wrangell at the Wrangell City Hall, 205 Bruger, at 6 p.m. on Jan. 11, 1989; in Homer at the Homer Senior Citizen Center, 3935 Svedlund, at 6:30 p.m. on Jan. 11, 1989; and in Ketchikan at the Ketchikan City Hall, 334 Front Street, at 5 p.m. on Jan. 12, 1989. In addition, written statements or arguments may be sent to Director Gary Gustafson, Division of Land and Water Management, Department of Natural Resources, P.O. Box 107005, Anchorage, Alaska 99510, to be received no later than Jan. 20, 1989.

It is estimated that this action will require increased appropriations as follows: FY89, \$85,300; FY90, \$154,100; FY91, \$154,000.

Copies of the proposed regulations may be obtained by writing to the Division of Land and Water Management at the above address or from the division's Southcentral Regional Office (3601 C Street, Suite 1080, Anchorage) or Southeast Regional Office (400 Willoughby Avenue, Fourth Floor, Juneau).

The Department of Natural Resources, upon its own motion or at the instance of any interested person, may after the comment period adopt proposals within the scope of this notice without further notice or may decide to take no action on them.

Date: December 15, 1988


Gary Gustafson, Director

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PUBLIC HEARING DRAFT 12/15/88

TITLE 11. NATURAL RESOURCES

Part 1. Office of the Commissioner (11 AAC 03--11 AAC 06)

Part 6. Lands (11 AAC 52--11 AAC 98)

PART 1. OFFICE OF THE COMMISSIONER.

Chapter

05. Fees for Departmental Services (11 AAC 05.010--11 AAC 05.900)

CHAPTER 05. FEES FOR DEPARTMENTAL SERVICES

Section

010. Fees

11 AAC 05.010. FEES. (a) Non-refundable fees to apply for authorizations or fees to obtain publications or services from the department are as follows:

(6) surface leasing

(K) application for aquatic farmsite permit or lease; for amendment or renewal of aquatic farmsite permit; or for amendment, extension, or assignment of aquatic farmsite lease, \$50;

(Eff. 1/1/86, Register 96; am 8/10/86, Register 99; am 8/23/87, Register 103; am / /89, Register)

Authority: AS 03.10.020
AS 27.21.030
AS 38.05.020
AS 38.05.035
AS 38.05.295
AS 38.05.856
AS 38.09.110
AS 38.35.020
AS 38.35.050
AS 38.50.160
AS 38.95.240
AS 41.06.020
AS 41.21.020

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AS 41.21.026
AS 44.37.020
AS 44.37.025
AS 45.50.315
AS 46.15.020

PART 6. LANDS.

Chapter

63. Aquatic Farmsite Permits and Leases (11 AAC 63.010--11 AAC 63.120)

11 AAC is amended by adding a new chapter to read:

CHAPTER 63. AQUATIC FARMSITE PERMITS AND LEASES.

Section

- p. 2 010. Applicability
- p. 3 020. Nominations; application periods
- " 030. Aquatic farmsite permit applications
- p. 5 040. Associated facilities; upland owner preference right; upland owner access right
- p. 7 050. Best interest finding
- p. 7 060. Notice and opportunity to comment
- " 070. Aquatic farmsite permit
- p. 4 080. Bond
- " 090. Transition; permits under AS 38.05.850
- p. 12 100. Aquatic farmsite lease
- p. 14 110. General permit and lease provisions
- p. 15 120. Definitions

11 AAC 63.010. APPLICABILITY. (a) This chapter covers aquatic farmsite permits issued under AS 38.05.856 and leases issued under AS 38.05.083 for the development and operation of an aquatic farm or related hatchery, as those terms are defined in AS 16.40.199. An aquatic farmsite permit or lease may be issued for tideland, submerged land, and shoreland managed by the department under AS 38. The aquatic farmsite authorization may include authorization for associated storage and housing facilities, including facilities on adjacent upland managed by the department under AS 38, in accordance with 11 AAC 63.040.

(b) Issuance of an aquatic farmsite permit is a disposal of an interest in state land. An aquatic farmsite permit is revocable only for breach of its provisions. It conveys the exclusive, non-transferable right during a three-year term to improve and develop the site as an aquatic farm or related hatchery in accordance with the permit's provisions, and includes a preference right to an aquatic farmsite lease if the permittee develops the site for aquatic farming or related hatchery

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operations in accordance with the permit's provisions. (Eff. /
/89, Register)

Authority: AS 38.05.020
AS 38.05.083
AS 38.05.855
AS 38.05.856

11 AAC 63.020. NOMINATIONS; APPLICATION PERIODS. (a) The commissioner will, in his or her discretion, periodically call for public nominations of areas to be opened to or withheld from aquatic farmsite permit applications. The commissioner will, in his or her discretion, use area nominations in setting or revising boundaries of districts to be opened to aquatic farmsite permit applications. An area nomination is not an application for an aquatic farmsite permit.

(b) The commissioner will give notice that a district is open to aquatic farmsite permit applications by publication, beginning before the application period opens, in at least one newspaper of statewide circulation and one newspaper of general circulation in the district.

(c) The commissioner will, in his or her discretion, set application filing guidelines for a district such as minimum or maximum size limits for aquatic farmsites, minimum distances from anchorages or the mouths of anadromous fish streams, or a limit on the total number of applications that a person may file or permits that a person may hold in that district. Filing guidelines will be available at the places listed in the public notice of the application period.

(d) Maps of a district that is open to aquatic farmsite permit applications will be available at the places listed in the public notice of the application period. To the extent practical, the map will indicate areas known to be unavailable or unsuitable for aquatic farmsite permits. For example, an area may be unavailable because it is already subject to aquatic farmsite authorizations or because aquatic farming is prohibited by a local zoning ordinance, approved district coastal plan, state land use plan, or classification; an area may be unsuitable because of known water pollution inconsistent with raising shellfish and aquatic vegetables for human consumption. (Eff. / /89, Register)

Authority: AS 38.05.020
AS 38.05.855
AS 38.05.856

11 AAC 63.030. AQUATIC FARMSITE PERMIT APPLICATIONS. (a) An aquatic farmsite permit application is subject to 11 AAC 67.007, except that it may be filed only at the regional office

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that is responsible for the district involved. The application must:

(1) be submitted on a form approved by the commissioner;

(2) include the non-refundable application fee required by 11 AAC 05.010;

(3) include a clear drawing of the site applied for on a state township plat or, if no state plat is available for that township, on a Bureau of Land Management master title plat;

(4) be accompanied by a completed coastal project questionnaire as required by 6 AAC 50, unless the application is solely for shoreland outside the coastal zone; and

(5) comply with all application filing guidelines set under 11 AAC 63.020(c), except that the applicant may request a waiver of a filing guideline that sets a maximum size limit. The commissioner will, in his or her discretion, waive the size limit if the applicant shows that a waiver is justified by its experience, capitalization, and need for a larger site in order to form an economic unit and the commissioner, after considering the reason for which the size limit was imposed, determines as part of the finding under 11 AAC 63.050 that the waiver is in the state's best interest.

(b) Each application must include sufficient detail on the applicant's proposed site improvements to allow the commissioner to determine the amount of the bond required under 11 AAC 63.080. It must also include a proposed development plan and schedule. The development plan and schedule must result in reasonable use of the site and ensure that the site is developed for aquatic farming or related hatchery operations before the permit expires. In this chapter and in AS 38.05.083, "developed for aquatic farming or related hatchery operations" means that all planned capital improvements are in place and functioning at their planned capacity to produce aquatic plants or shellfish; however, the aquatic plants or shellfish need not be marketed or be of marketable size in order to fulfill the development requirement. The commissioner will, in his or her discretion, approve the development plan and schedule or amend it as the commissioner considers necessary to make reasonable use of the site. The application may include both a minimum and maximum development plan and schedule; if both are approved, fulfilling the minimum development plan and schedule will fulfill the development requirement, and the permittee may operate at any higher level up to the maximum development plan and schedule without the need for an amendment.

(c) An applicant may file as many applications during the application period as desired, unless the commissioner has limited

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the number by setting a filing guideline under 11 AAC 63.020(c). In no case may a person file more than one application per site.

(d) Except as provided in 11 AAC 63.040(b) and 11 AAC 63.090(b), all complete applications received during a district application period are considered to have been simultaneously filed. If the number of applications filed for a particular area exceeds the number of sites that the commissioner decides to grant, the commissioner will hold a lottery to eliminate the excess applications.

(e) If two applications overlap in an area where the commissioner does not propose to limit the number of authorized sites, the applicants will be granted 30 days to agree on amendments that eliminate the overlap. If an application overlaps an existing aquatic farmsite permit or lease, or a mariculture testing or development site subject to a preference right under 11 AAC 63.090(a), the applicant will be granted 30 days to amend the application so as to eliminate the overlap. The commissioner will, in his or her discretion, amend an application

(1) to eliminate an overlap if the applicant has failed to do so, or

(2) to eliminate or reduce other site or resource use conflicts. (Eff. / /89, Register)

Authority: AS 38.05.020
AS 38.05.855
AS 38.05.856

11 AAC 63.040. ASSOCIATED FACILITIES; UPLAND OWNER PREFERENCE RIGHT; UPLAND OWNER ACCESS RIGHT. (a) The commissioner will, in his or her discretion, authorize associated facilities for storing equipment or housing personnel at the aquatic farmsite, including upland managed by the department under AS 38, if the commissioner is satisfied that the associated facilities are necessary for aquatic farming. An applicant who wants authorization for associated facilities at either the permit or lease stage must request it as part of the permit application so that it can be considered during agency and public review.

(1) The following conditions apply to authorizations for housing personnel at the aquatic farmsite during the permit stage. The commissioner will authorize such housing only if the applicant shows that the level of site development at the time the housing is expected to begin will require that personnel be present on a daily basis, the personnel cannot reasonably commute to the site by road or by boat on a daily basis, and no nearby land suitable for housing is available for rent or sale. The housing facility may not be used as the personnel's primary residence. It must be designed and constructed so that it can be removed and the site completely restored within 30 days if the

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permit terminates or if housing personnel at the aquatic farmsite ceases to be necessary. The facility may not be placed on a permanent foundation, except that a foundation of wooden pilings may be used if the applicant agrees either to remove the pilings or to cut them off at ground level if site restoration is required.

(2) The following additional conditions apply to authorizations for floating housing at the aquatic farmsite during either the permit or lease stage. The commissioner will authorize floating housing only if such use is consistent with the floathouse provisions of an applicable land use plan and if the Department of Environmental Conservation determines that such housing would not result in wastewater discharges that would be incompatible with raising shellfish or aquatic vegetables for human consumption.

(3) The nature and extent of associated facilities are a factor in setting the bond amount under 11 AAC 63.080, setting the fee for an aquatic farmsite permit under 11 AAC 63.070, and appraising the fair market value of a lease under 11 AAC 63.100.

(4) After a permit or lease terminates, the former permittee or lessee has no entitlement or preference right to continue using or occupying any portion of the aquatic farmsite, including anchoring a floathouse at the site.

(b) The owner or lessee of adjacent or nearby upland may apply for a preference right to an aquatic farmsite permit by agreeing to place the applicant's associated facilities for storing equipment or housing personnel on the applicant's land or leasehold rather than on state-owned land. For a lessee to be eligible for a preference right, the term of the upland lease must equal or exceed the combined terms of an aquatic farmsite permit and lease. The commissioner grants this preference right to eligible upland owners and lessees in order to increase the compatibility of aquatic farming with upland management policies. An upland owner preference right is secondary to a preference right that the commissioner grants under 11 AAC 63.090(a). If the number of applications eligible for an upland owner preference right exceeds the number of permits that the commissioner decides to grant, the commissioner will hold a lottery as set out in 11 AAC 63.030(c) among the eligible applications only. An upland owner or lessee who wants a preference right must apply under this subsection and has no entitlement under AS 38.05.075(c) to an aquatic farmsite lease.

(c) No aquatic farmsite permit or lease will be issued that would deny an upland owner's right of reasonable access to tidewater. (Eff. / /89, Register)

Authority: AS 38.05.020
AS 38.05.083

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AS 38.05.855
AS 38.05.856

11 AAC 63.050. BEST INTEREST FINDING. (a) After the aquatic farmsite permit application period closes, complete applications will undergo review by agencies and affected coastal districts in accordance with 6 AAC 50.070 for consistency with the Alaska Coastal Management Program. Compliance with this requirement fulfills the agency consultation requirement of AS 38.05.855(c). Comments received will be considered both for the division of governmental coordination's proposed consistency determination and for the commissioner's preliminary best interest finding. If applications are filed for sites within a state game refuge or critical habitat area, the commissioner will request the approval of the commissioner of the Department of Fish and Game as required by AS 16.20.060 or 16.20.530.

(b) The commissioner will prepare a preliminary best interest finding that proposes sites for which permits may be issued. If the sites are unclassified, a proposed land use plan and classification order must be prepared and may accompany or be included as part of the preliminary best interest finding. If the commissioner decides to deny an application, to require its amendment, or to limit the number of sites to be authorized, the finding will explain the reason. Criteria that must be considered in the finding include:

(1) Whether the Department of Fish and Game considers that the proposed aquatic farm or hatchery meets the criteria of AS 16.40.105 (that is, that the physical and biological characteristics of the site are suitable for farming the shellfish or aquatic plant proposed; that the proposed farm or hatchery does not require significant alterations in traditional fisheries or other existing uses of fish and wildlife resources; that it does not significantly affect fisheries, wildlife, or their habitats in an adverse manner; and that its plans and staffing plans demonstrate technical and operational feasibility);

(2) Whether the Department of Environmental Conservation determines that the proposed aquatic farmsite is protected from pollution from adjacent and upland activities to ensure product wholesomeness, and that effective pollution control measures can be implemented to protect land and water at the site from pollution caused by the proposed aquatic farm or hatchery;

(3) Whether the division of governmental coordination proposes to find the proposed aquatic farm or hatchery consistent with the Alaska Coastal Management Program;

(4) Whether aquatic farming is compatible with official land management policies applicable to the proposed aquatic farmsite and nearby upland, including legislative or congressional designations such as parks or wilderness areas and adopted

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federal, state, and local land use plans, land classifications, and zoning;

(5) Whether aquatic farming conflicts with existing or pending uses of the site and of nearby land (whether or not in state ownership), including

(A) Impacts on nearby communities or residential land, including the cost to communities or residential users if increased wastewater treatment will be needed after the area is certified for growing shellfish;

(B) Traditional and existing uses of the site, including commercial fishing, sport or subsistence fishing, use as a primary anchorage (one for which there is no available alternative), navigation, recreation, sightseeing, and tourism; consideration of this criterion may be combined with a traditional use finding if such a finding is required by AS 38.05.830;

(C) Historic and cultural resources;

(D) Commercial or industrial facilities, such as log transfer facilities, seafood processing plants, or harbor development, that would be incompatible with aquatic farming;

(6) How public access to and along public waters, and the upland owner's right of reasonable access to tidewater, will be ensured by reserving easements under 11 AAC 53 or by other means; if upland access to the water is limited to a specific point by topography, existing improvements, or other factors, the commissioner will ensure that aquatic farming facilities do not obstruct water access to that point;

(7) How the interests served by the public trust doctrine, specifically the public's right to use navigable waters and the land beneath them for navigation, commerce, fishing, and other purposes, will be protected;

(8) Whether special permit provisions or other measures are needed to mitigate identified conflicts; for this purpose the commissioner will consult guidelines set out in an appropriate land use or coastal management plan or, where no such plan or guidelines exist, will consult the guidelines set out on pp. 80-85 of the final Etolin Island Area Mariculture Pilot Project;

(9) Other significant social, economic, and environmental effects of the proposed aquatic farming.

(b) In general, the commissioner will not grant aquatic farmsite permits that would encumber more than a third of the surface area estimated to exist at mean lower low water of a bay, bight, or cove, unless the commissioner finds it is in the state's

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best interest to concentrate permits in one such bay, bight, or cove so as to keep other water bodies completely unencumbered.
(Eff. / /89, Register)

Authority: AS 38.05.020
AS 38.05.035
AS 38.05.127
AS 38.05.128
AS 38.05.855
AS 38.05.856

11 AAC 63.060. NOTICE AND OPPORTUNITY TO COMMENT. (a) Notice under AS 38.05.945 that the preliminary best interest finding is available for written comment may be combined with notice of the time, place, and location of a hearing to be conducted under AS 38.05.946(b); notice of a proposed determination of consistency with the Alaska Coastal Management Program; notice of a proposed land use plan and classification, if the land is not yet classified; and notice of the approximate date when the final best interest finding is expected to be available.

(b) The commissioner will conduct the public hearing that AS 38.05.946 requires in each district either in person or by teleconference.

(c) The department will maintain a mailing list of persons who request in writing to receive notice of district openings and notice of comment opportunities. Any interested person may request in writing to be put on an aquatic farming mailing list. The department will use the mailing list to notify recipients of opportunities for public comment and involvement such as a call for area nominations, the opening of a district application period, or the availability of a preliminary best interest finding.

(d) If the upland adjacent to an aquatic farmsite permit application is not managed by the department, the commissioner will attempt to give notice to the upland owner of the opportunity to comment under (a) of this section. If the aquatic farmsite permit applicant states that using upland for associated facilities is necessary for aquatic farming, and the upland owner notifies the commissioner in writing that the owner cannot or will not authorize the upland use, the commissioner will not grant the aquatic farmsite permit. (Eff. / /89, Register)

Authority: AS 38.05.020
AS 38.05.855
AS 38.05.856
AS 38.05.945
AS 38.05.946

11 AAC 63.070. AQUATIC FARMSITE PERMIT. (a) The commissioner will grant an aquatic farmsite permit to a successful applicant after the commissioner issues the final finding required

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by AS 38.05.035(e) and AS 38.05.855(d) and the division of governmental coordination issues a conclusive determination of consistency with the Alaska Coastal Management Program.

(b) Within 30 days after receiving the permit, the applicant shall sign it and return it to the commissioner along with

(1) the bond required by 11 AAC 63.080 and

(2) a use fee¹ set in a fee schedule approved by the commissioner to provide the state a reasonable return for the permittee's use of the site, but less than the fair market value rent.

(c) An aquatic farmsite permit is subject to the provisions set out in this section in addition to the general provisions required by 11 AAC 63.110.

(d) A permit may be also subject to special provisions that the commissioner imposes to make it consistent with the Alaska Coastal Management Program or that the commissioner otherwise considers necessary to serve the state's best interests.

(e) The aquatic farm development plan and schedule proposed in the application, as approved or amended by the commissioner, is incorporated as a provision of the permit.

(f) A permit may be cancelled, in whole or in part, if the permittee obtained it improperly through misrepresentation or error with respect to material facts.

(g) A permittee may apply for no more than two renewals of a permit. A new written finding is not required before the commissioner renews a permit. The commissioner will renew a permit if the commissioner is satisfied, based on information submitted by the permittee and testimony provided by interested persons under AS 38.05.856, that:

(1) the permittee is in substantial compliance with the permit's provisions and is in operation, or

(2) the permittee is in substantial compliance with the permit's provisions except that the permittee is not in operation, but that the failure to comply with the aquatic farm development plan and schedule and to begin operating is due to circumstances beyond the permittee's control. (Eff. / /89, Register)

¹Currently proposed as an annual fee of \$250 plus \$50 per acre during the first permit term, with an annual fee of \$500 plus \$50 per acre for the first or second renewal of the permit, and with an additional charge for floating or upland housing.

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Authority: AS 38.05.020
AS 38.05.035
AS 38.05.850
AS 38.05.855
AS 38.05.856

11 AAC 63.080. BOND. For any aquatic farmsite permit or lease, a bond, cash deposit, certificate of deposit, or other form of security acceptable to the commissioner must be posted and maintained in an amount determined by the commissioner to be sufficient to cover the cost of site cleanup and restoration and any associated cleanup costs. Factors the commissioner will use in determining the amount of the bond include the planned size and extent of improvements; travel costs to reach the site for cleanup or inspection; whether construction materials are combustible and could be burned at an available upland site; whether an authorized landfill site is available for disposal of noncombustible materials; whether heavy equipment would be necessary for site restoration and, if so, the cost of renting it; and whether associated facilities are afloat, placed on a temporary foundation onshore, or placed on a permanent foundation onshore. The commissioner will, in his or her discretion, subsequently change the amount of the required bond, based on changes in the level of site development, new information, or other appropriate factors. (Eff. / /89, Register)

Authority: AS 38.05.020
AS 38.05.035
AS 38.05.083
AS 38.05.856

11 AAC 63.090. TRANSITION; PERMITS UNDER AS 38.05.850. (a) If the commissioner finds that it is in the state's best interest to issue an aquatic farmsite permit, a person who has a permit in good standing that was issued under AS 38.05.850 for mariculture testing or development purposes has a preference right to the aquatic farmsite permit if:

(1) as of June 9, 1988, the person was either lawfully operating an aquatic farm at that site, or had obtained and was complying with all permits necessary to operate an aquatic farm at that site and, in reliance on those permits, had undertaken the initial steps that would lead to full-scale operations; photographs, purchase orders, receipts, or other evidence acceptable to the commissioner must be provided to establish eligibility; and

(2) the person files a complete application for the site during the appropriate district application period.

(b) An application filed by a person who has a preference right to the site under (a) of this section is exempt from the amendment or lottery procedures of 11 AAC 63.030(c).

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(c) A person who has a permit issued under AS 38.05.850 but who does not otherwise meet the requirements of (a) of this section does not have a preference right to an aquatic farmsite permit that may be issued for the site. However, the person may apply for an aquatic farmsite permit on a non-preference-right basis. If another person is chosen as the successful applicant, or if the commissioner decides that it is not in the state's best interest to grant an aquatic farmsite permit for the site, the commissioner will revoke the permit issued under AS 38.05.850 after reasonable notice to the permittee.

(d) A permit in good standing that was issued under AS 38.05.850 to a person who may have a preference right under (a) of this section will be renewed until the site is included in a district application period. In the interim, the permittee may continue operating so long as all required permits remain in good standing and no change of use occurs.

(e) Except as provided in this subsection, no new permit will be issued under AS 38.05.850 for aquatic farming purposes unless the applicant filed a complete application before June 9, 1988.

(1) A person may obtain a permit under AS 38.05.850 solely to test a site's suitability for aquatic farming or, to the extent allowed by 11 AAC 96, may undertake such testing without a permit from the Department of Natural Resources. Testing is limited to a period of no more than one year and to an area of no more than 16 square feet. Testing includes placing data collecting equipment and up to 2000 organisms in the water. The organisms may not be used for commercial purposes. A permit for testing site suitability may not be renewed.

(2) In an emergency, such as a dinoflagellate plankton bloom that could result in an unacceptable concentration of toxins in shellfish, the director will use his or her discretion under AS 38.05.850 to authorize relocating rafts or other rearing structures to another location until the emergency ends. (Eff. / /89, Register)

Authority: AS 38.05.020
AS 38.05.083
AS 38.05.850
AS 38.05.855
AS 38.05.856
sec. 18, ch.
145, SLA 1988

11 AAC 63.100. AQUATIC FARMSITE LEASE. (a) If the commissioner finds that it is in the state's best interest to issue an aquatic farmsite lease, an aquatic farmsite permittee who has developed the site for aquatic farming or related hatchery

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operations in accordance with the permit's provisions has a preference right to lease the site at its appraised fair market value without competitive bid. Only an existing aquatic farmsite permittee may apply for an aquatic farmsite lease.

(b) An aquatic farmsite permittee who has not succeeded in developing the site for aquatic farming or related hatchery operations does not have a preference right to any lease that may be offered for that site. However, if the commissioner offers the lease at public auction, the unsuccessful permittee may bid for the lease. The commissioner will offer a former permit site for lease at public auction only if the former aquatic farmsite permittee does not qualify for a preference right or chooses not to exercise the preference right.

(c) The term of an aquatic farmsite lease is ten years². If the lessee applies for an extension before the lease's tenth anniversary, the commissioner will, in his or her discretion, extend the term for an additional ten years. The commissioner will, in his or her discretion, require a lease diagram before issuing the lease. Before the commissioner extends a lease, the commissioner will determine whether AS 38.04.045 or a successor statute requires a cadastral survey. If AS 38.05.102 or a successor statute is still in effect when the lease expires, the lessee may apply to renew the lease.

(d) Before a lease is issued, a performance bond or other security must be posted as required by 11 AAC 63.080.

(e) Unless the commissioner grants a variance for good cause, the lessee shall continue to operate the aquatic farm at or above the operating level reached when the permittee applied for the lease. For a lease offered at auction, the commissioner will, in his or her discretion, impose a minimum lease operating level or require the bidder or lessee to propose a lease operating plan for the commissioner's approval.

(f) A lease that is in good standing may, with the approval of the director, be assigned. The assignee shall promptly and diligently seek to obtain all permits necessary for lawful operations.

(g) Lease rental must be paid annually on or before the anniversary date of the lease. (Eff. / /89, Register)

²Owing to a possible error in recently enacted legislation, a ten-year lease is both a short-term lease (for which no cadastral survey is required) and a long-term lease (which requires a cadastral survey). If this overlap is not corrected, the proposed regulation will set the initial term of the lease at nine years and 364 days rather than ten years.