Natives turn to the land and sea

(Editor's Note: Fledgling Native corporations have dabbled in everything from construction to tourism since the passage of the land claims act in 1971. Many however have turned to land and sea, traditional sources of food and shelter, for a new look at an old way of living. In this, the first of two parts, Staff Writer Jeffrey R. Richardson traces the development of Alaska's marine resources.)

By JEFFREY R. RICHARDSON

Politics and economics have a way of spoiling good ideas. One good idea that has been victimized by both is aquaculture. Aquaculture is the artificial production of fish, shellfish and marine plants for human use.

In Alaska, aquaculture is now seeing better days because people are more and more concerned about rapidly declining salmon stocks. Because stocks have continued to drop in spite of government regulation, aquaculture is now seen as an important part of the strategy to rebuild and maintain those stocks.

Recent changes in Alaska aquaculture law have attracted the interest of Native profit and non-profit corporations. Profit corporations organized under the land claims act may invest in aquaculture projects. th[illegible] loans. While the non-p[illegible] under state law, may actually own and operate an aquaculture facility.

Although aquaculture has been practiced in Japan since the 1870's, its practice in this country has been severely limited for several reasons. First, until recently, there has not been enough biological information to understand the life cycles of various fish species. This has prevented researchers from creating artificial conditions that are enough like the natural environment to make reproduction successful.

Another problem is that fisheries are considered a public resource. Because of this, state governments have been hesitant to turn over management of fish hatcheries and other aquaculture projects to private businesses.

On the other hand, the public

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marine resources ...

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especially fishermen, have been very critical of the way hatcheries have been run by state agencies. They have objected to a government being in the fish business and have resented competition from the sale of state hatchery fish.

Most American experience with fish hatcheries has been in the Pacific Northwest, where aquaculture projects play a significant role in maintaining heavily fished salmon runs.

First Fish Hatchery

The first hatchery was built in Alaska in 1891 on Karluk Lagoon, Kodiak Island. Eight cannery operators started the project to improve the run of red salmon that spawned in Karluk Lake. Salmon were trapped and spawned in the lagoon but the resulting fry young salmon did not survive and the effort was dropped.

Although federal regulations around the turn of the century required canneries to produce in hatcheries a certain number of salmon for every adult salmon caught, these measures failed to increase the commercial catch and were discontinued.

Federal hatcheries built near Ketchikan in 1905 and Afognak Lake a couple of years later were closed in the 1930's because of financial difficulties caused by the Depression and because they too failed to improve commercial stocks in their areas.

The territorial government was not much more successful than the federal government in its attempts to operate successful hatcheries. Fish rearing facilities were built at Ketchikan, Cordova and Seward between 1917 and 1927, the legislature shut down all three hatcheries, and for good measure, abolished the Territorial Fish Commission as well.

New Hatcheries

Several new hatcheries were built after 1949, chiefly to satisfy sport fishing needs. Statehood brought a reorganization of Alaska's fisheries programs, but little was done to expand or greatly improve the hatchery situation.

A report prepared by the Prince William Sound Aquaculture Corporation states bluntly:

"In summary, the Alaska hatchery system is smaller than that of any other governmental entity between South Korea and California. It barely serves the needs of a segment of the sportsman population and contributes very little to the Alaska commercial fishery."

Besides salmon, several projects to artificially produce oysters and trout have been started but are very limited in scope.

Aquaculture Expensive

Why has aquaculture been so unsuccessful in Alaskan fisheries?

In a phrase, aquaculture has simply been too expensive. Knowledge on how to raise salmon has been limited until fairly recently, making hatcheries a risky business for anyone looking for a profit. What knowledge and technology has been available has been very expensive to obtain.

A review of previous Alaskan hatchery projects shows that most attempted to raise red salmon. Raising red salmon is more costly than other species because red fry must be raised in fresh water before being released in salt water. Other species, such as pink salmon, can be released directly into the ocean.

Following their natural cycles, returning fish will pass through the commercial fishery before reaching the hatchery (which requires relatively few fish) and sell the surplus stock to pay the costs of hatchery operation.

Under the Alaska law, six hatcheries have been authorized: Nerka, Inc., Perry Island, Prince William Sound; Prince William Sound Aquaculture Corporation, Evans Island, Prince William Sound; Sheldon Jackson Hatchery, near Sitka; a hatchery operated by the Tlingit-Haida Central Council, Baranof Island Southeastern; Alaska Aquaculture Foundation, Etolin Island, Prince William Sound; and Douglas Island Pink and Chum, Douglas Island, Southeastern.

Only three of the hatcheries were in ooeration last summer.

Successful Enterprise

So far, the most successful aquaculture enterprise in Alaska is the Prince William Sound Aquaculture Sorporation PWSAC, formed by the Cordova Aquatic Marketing Association. The goal of the corporation is to rebuild the pink and chum salmon stocks in Prince William Sound from a 2-3 million fish catch in 1975 to a sustainable catch of 5-7 million fish.

Funding for the Prince William Sound Aquaculture Corporation was obtained from a a loan by Chugach Natives, Inc., a grant from the Economic Development Administration and a voluntary assessment on fishermen in the Sound area. Area processors matched the sum raised by the fishermen.

The contribution of funds to the hatchery program by fishermen and processors is important because it indicates they feel they are benefitting from the program. This, in addition to the technical success of PWSAC, makes the future of aquaculture in Alaska look brighter. Knowledge from the PWSACexperience is available to assist other, similar ventures.

Although the aquaculture picture is looking better, there are still problems. Money is still hard to come by. A bill passed by the legislature last spring authorizes $200 million in long-term, low-interest loans for hatchery construction.

Another bill passed last spring created a mechanism to establish regional associations to develop comprehensive regional hatchery plans.

Too Few Experts

Another problem in Alaskan aquaculture exists because hatchery plans are developing so fast. Aquaculture knowledge developed in other parts of the world must be adapted to a variety of peculiar Alaskan conditions. The problem is there are simply not enough people qualified to set up and operate

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Aquaculture suffers from lack of experts...

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hatcheries in the state. State and federdal officials, and the University of Alaska are willing to help, but there is simply are not enough experts to go around.

This problem is especially crucial in rural areas of the state, where village and regional groups may have difficulty attracting or developing the kind of assistance they need to get an aquaculture venture going.

Too Few Kelp and Clams

Although other marine products, such as kelp, can be raised artificially, they have never been found in nature in commercial quantities or used as extensively as salmon. It is costly to take a product such as kelp and find or develop a market for it. Kelp is harvested off the coast of California, and sells very well, but California kelpers are not faced with the transportation and other marketing difficulties that Alaskans would be.

Even products which have been exploited extensively by commercial operators, such as clams, are not considered aquaculture priorities because they have not been over-used to the extent that salmon resources have.

Even salmon aquaculture has not been thought of as an important method of fisheries conservation because fishermen and government officials have felt that traditional methods of regulation would prevent depletion of stocks.

Only in the last ten years, as the biological and economic crisis caused by over-fishing has grown steadily worse, has aquaculture been seen in a new light.

In 1971, the state legislature created the Division of Fisheries Rehabilitation, Enhancement and Development in the Department of Fish and Game. The division's job is to improve salmon spawning areas and upgrade hatchery research projects.

A change in the state constitution in 1972 removed a ban on private hatcheries, but it was not until 1974 that the legislature specifically authorized the construction of private, non-profit hatcheries.

Under the 1974 act, the Department of Fish and Game was directed to draw up regulations which must be met before a hatchery permit may be issued.

New Regulations

According to the guildelines:

--The hatchery must be located on a depleted or poor-producing stream;

--The non-profit corporation must be financially able to operate the hatchery;

--The hatchery must not interfere with the movement of wild salmon stocks;

--The hatchery must follow state policies on fish and genetics and disease control.

To explain hatchery operations simply: .The hatchery operator obtains male and female salmon eggs from approved streams and incubates (heats) them. The young salmon fry are released the following spring.

NEXT WEEK: Native village and regional corporations, whose stockholders depend on the sea for survival, take a a look at aquaculture.