Alaska Plans New Salmonid Hatchery Facilities

Alaskan voters gave their salmonid hatchery program a boost last year by approving $26.9 million in fisheries development bonding, the Alaska Department of Fish and Game (DFG) reports. This means that the DFG's Division of Fisheries Rehabilitation, Enhancement and Development (FRED) can proceed with plans to build four salmon and trout hatcheries.

The new hatcheries—at Snettisham near Juneau, Main Bay in Prince William Sound, Ship Creek near Anchorage, and at Kotzebue Sound—will have a combined capacity of 155 million eggs. FRED Division Director Robert Roys said the hatcheries will produce fish for Alaska's burgeoning sport fishing population, and will help maintain the commercial salmon industry at a more constant level.

Planned expansion of the Ship Creek hatchery complex, to be built on the military base at Fort Richardson, is intended primarily to benefit sport fishermen. Along with producing 7 million king and coho salmon smolts annually, the proposed expansion will increase rainbow trout production from 500,000 fingerlings to 2.5 million. Alaska Department of Fish and Game planners estimate that the trout production alone will create the potential for an additional 600,000 recreational man-days of angling yearly.

The Snettisham hatchery will be the largest of the new facilities, with a capacity of 71.5 million chum salmon eggs and 5.4 million king and coho salmon eggs. The Snettisham hatchery site also has an unusual water supply. While most hatcheries are constructed along rivers and streams, this hatchery will be built adjacent to a hydroelectric plant operated by the Alaska Power Administration (APA). Water for the power plant is diverted to the site through a 2-mile tunnel from Long Lake, and the hatchery will use water from plant's tailrace, which has been determined to be suitable for fish culture. With FRED and APA sharing the facilities, each agency will be able to operate at lower cost, according to the DFG.

At Main Bay, a hatchery will be built with an initial capacity of 65 million chum and pink salmon eggs. Pink salmon are to be phased out of production at Main Bay after a broodstock of the more valuable chum salmon has been developed. These fish are intended for the gillnet and seine fisheries of Prince William Sound. The hatchery site is remote, but there is plenty of good water and room for future expansion.

The Kotzebue hatchery was added to the bond request by Alaska's Legislature, and consequently, planning for the facility is still at an early stage. It will be a demonstration project, to determine the potential of fish culture in Arctic regions. FRED planners estimate that the four hatcheries will produce $20 million worth of salmon annually when they achieve full production.

TEXAS BAY OYSTER PRODUCTION DOWN

October 1978 sampling in Galveston Bay, where 75 percent of the Texas' oyster crop is harvested, showed a scarcity of marketable oysters, according to Texas Parks and Wildlife Department marine biologist Bob Hofstetter in Seabrook. The situation reflected poor spats (spawns) in 1975, 1976, and 1977 when there was little reproduction, Hofstetter said.

In one major market area west of the Houston Ship Channel in Galveston Bay, the numbers of market-size oysters was down 85 percent from 1977. In another major harvest area around Redfish Reef, market oysters were down 70 percent, he said. For much of the oyster harvest in the past 3 years, oystermen have relied on the abundant crop produced in 1974, but present indications are that the remainder of these 4-years-old oysters from the 1974 crop took a beating last summer, Hofstetter explained.

"In 1978 oyster drills, stone crabs, and disease organisms which prey on oysters flourished due to high bay salinities, and their predation on the mature oysters was severe," he said. Since high salinities

Waste Heat Boosts Growth of Salmon

Use of waste heat from industry can accelerate the growth of coho salmon, reduce production costs, and make a major contribution to salmon production, University of Washington researchers report. E. L. Brannon of the College of Fisheries at the University in Seattle says that a Washington Sea Grant has been utilizing waste heat to reduce generation time of the hatchery population of coho from 3 years to 2 years.

A total of 240,070 coho smolts were reared in warm water and released to migrate to sea after 6 months instead of the usual 18 months in natural waters or in state hatcheries. Encouraged by results of the Sea Grant study, a local electrical utility has proposed the use of waste heat from nuclear power plants for coho salmon and steelhead trout rearing.

prevailed all along the Texas coast last summer, oyster predation was probably significant in middle and lower coast bays as well, he added.

Klamath River Salmon Run Short of Target

The California Department of Fish and Game (DFG), has announced that preliminary estimates indicate 87,000 adult salmon escaped all Klamath River system fisheries last fall to spawn. This is 28,000 fewer salmon than the 115,000 adult fish set by the DFG as the 1978 fall run spawning escapement goal for the Klamath River.

Test fishing conducted by the department through late August 1978 indicated that the escapement goal might not be reached, and led to closures of Indian commercial net fisheries and total closures of all salmon sport fishing in the river. Indian subsistence fishing above the Highway 101 bridge was allowed to continue.

DGF Director E. C. Fullerton observed that "while the 28,000 spawner shortage does not mean that salmon will disappear from the Klamath, it does mean that fewer fish will return in 1981 and 1982 than would have been the case had the goal been reached.

"Repeated or severe failure to meet the escapement goal could get us into real trouble, and result in long term declines in both fish populations and fishing success," he said.

Fullerton also noted that the 1978 run was below those occurring in 1976 and 1977, and that the decline could be the result of the recent drought. "If that is the case," he said, "there is no reason to expect the run to increase in 1979, because the effects of the drought on that run will be even more pronounced." Most king salmon return to spawn at 3 or 4 years of age.

Before the emergency closures ordered late in August, sport anglers caught an estimated 1,700 adult salmon, and Indian net fisheries below the Highway 101 bridge took 10,000. Indian subsistence fisheries above the bridge were unmeasured, but informed guesses as to the catch there range upward from 15,000 fish.

Fullerton acknowledged that the closures were less than popular, and resulted in severe financial problems for local business as well as disruption of the vacation plans of many hundreds of anglers. However, he explained, "our first resposibility is to the resource, and continued fishing, particularly the intensive and effective gillnetting below the Highway 101 bridge, could have resulted in a first-class disaster for the 1978 salmon run. Under the circumstances, we had no choice, and the closures appear to have been warranted."

Department figures indicate that in addition to the 87,000 adult salmon, the run included 23,000 2-year-old males. These smaller fish, called "jacks" or "grilse," do not contribute to the egg potential of the run and are excluded from the escapement goal.

Texas' Tarpon May Be Coming Back

During routine trammel net sampling in Aransas Bay last year, Texas Parks and Wildlife Department biologists caught their third tarpon of 1978 in the Aransas Bay system. This fish was caught at the mouth of Corpus Christi Bayou leading into Redfish Bay. It was 31 inches long and weighed 13 pounds. Increased catches of tarpon by biologists and increasing reports of catches by sportfishermen along the entire Texas coast indicate the tarpon may well be on its way back from recent low populations, the Department says.

South Carolina Seeks Data on Shrimp Habits

South Carolina Wildlife and Marine Resources Department biologists tagged and released some 2,000 large white shrimp in Charleston Harbor last December in an attempt to evaluate how many shrimp overwinter along the coast and how many migrate south.

"Previous tagging studies indicate that large shrimp at this time of year tend to move offshore and then as far south as Florida," said Charles Farmer of the Department. "Small shrimp, on the other hand, appear to remain in our coastal waters during the winter and constitute the spring roe shrimp crop," he added. Farmer is head of the department's Crustacean Management Section within the Office of Conservation Management and Marketing.

Farmer said that previous tagging studies were conducted during years when shrimp were abundant. Currently, white shrimp movements may be different. "Shrimp migration at this time of year (December) depend largely on winter conditions and temperatures, but there is still a lot we don't know about the movements of these animals," Farmer said.

The shrimp were tagged with a red "spaghetti" tag attached to the tail. A number of tags had quickly been returned by commercial trawlers fishing in the Morris Island and Folly Beach areas. Farmer asked that shrimpers save the entire tagged shrimp not just the tag and notify the department at once of any tagged shrimp in their catch. Biologists hoped to tag another 3,000 shrimp early this spring.

Milk Substitute From Fish Waste?

Biologically extracted fish protein hydrolysate (FPH) shows high promise as a milk replacer, particularly in the area of animal feeds, reports the University of Washington, Seattle. According to George Pigott of the Institute for Food Science and Technology at the University, "It is a high protein source and could prove to be of great value, particularly in the diet of weanling calves."

Several procedures for production of FPH have been suggested in recent years for fish waste, gutted fish, and fish fillets, but in general these products have failed to meet published product standards,

says Pigott. According to these standards, milk replacers should have a fat content of less than 1 percent, an ash content of less than 10 percent, and a protein content greater than 70 percent. Work conducted by Pigott and Per O. Heggelund (presently of the University of Alaska), under Washington Sea Grant funding, has succeeded in producing a final product (in powdered form, as a rule) that complies with these limits. The raw material used in the study was fresh fish waste resulting from filleting English sole.

Commercial production looks promising, the researchers report. In addition to creating new milk substitutes, the project has the added advantage of revealing yet another use for waste fish, thus furthering the ecologically sound concept of total utilization.

SHAD BOOSTS SOUTH CAROLINA'S ECONOMY

The South Carolina shad fishery, a lowcountry tradition in the spring may mean more to the state's economy than previously believed. A South Carolina Wildlife and Marine Resources Department project to assess the extent of the fishery determined that in 1978 at least 287,000 pounds of shad worth $197,000 were landed in the state.

This represents the best annual catch reported since 1928 when shad, once abundant, began to decline due to a variety of causes. These included loss of spawning grounds to dams and pollution, and perhaps because of overfishing. But the increased landings probably reflect better reporting of the catch more than a resurgence in the shad population, the Department points out. According to Glenn Ulrich, head of the Department's Marine Resources Division's Finfish Management Section, shad landings are usually not well reported since many fishermen do not sell their catch through commercial seafood dealers.

"Much of the shad catch is sold to small country stores and other individual outlets," said Ulrich. "It is difficult to get an accurate assessment of the fishery when the fish are sold in so many places." Last spring, however, biologists contacted as many as possible of the state's 600 licensed shad fishermen as well as a variety of small retail outlets. The result of this work, according to Ulrich, represents a much more accurate account of shad landings than those compiled strictly through commercial seafood dealers. The shad fishery assessment project, funded in part by the National Marine Fisheries Service, was extended for another year.

"We're now finding that the shad fishery is extensive enough to warrant additional research on the stocks," Ulrich explained. "We hope that by gaining more knowledge of shad we will be in a better position to manage the fishery while maintaining a viable shad population," he added. Finfish Management Section biologists are continuing to work with cooperating fishermen and retail and wholesale outlets to assess the shad catch. In addition, shad caught commercially are being examined to determine age, size, and sex composition of the stocks.

Commercial Salmon Stamp to Aid California Fish

Beginning 15 April, California's commercial fishermen working aboard vessels which land salmon in California must have a commercial salmon stamp affixed to the commercial license. Stamps, at $15, are available through state Department of Fish and Game (DFG) offices and license agents.

The stamp is required under terms of Assembly Bill 2956, which was sponsored by commercial fishermen's associations and carried by then-Assemblyman Barry Keene. The bill was signed into law last year.

Funds raised by stamp sales will be matched by an equal amount from Fish and Game funds and the total will be used to pay costs of rearing 2 million king salmon to yearling size—about 6 inches long. According to the DFG, the program has the potential to increase ocean salmon landings by 100,000 fish. The estimated value of the additional catch which will be generated by the program could run in excess of $2 million annually, the DFG said. The salmon will be raised in the converted spawning channel at Feather River Hatchery in Oroville. Fish reared to yearling size (10 to the pound) will be those that would otherwise be released from the hatchery as fingerlings (90 to the pound).

Experimental programs rearing salmon for release as yearlings show that the technique significantly increases the ocean catch, the DFG said. Stamp sales for the license year beginning 1 April based on about 5,200 vessels in the fleet and a total of about 7,000 working fishermen, are expected to produce about $100,000, half the projected $200,000 cost of the undertaking. Commercial season was scheduled to open 15 April.

Texas Sets Seatrout Size and Bag Limits

The Texas Parks and Wildlife Commission adopted the first bag, possession and minimum size limits ever imposed on the taking of spotted seatrout by sport fishermen in that state late last year. In a public hearing the commission authorized a daily bag limit of 20, possession limit of 40 and a 12-inch minimum size for spotted seatrout (speckled trout) in all regulatory counties for anyone other than the holder of a commercial fishing license.

Commercial fishermen are not restricted to the bag and possession limits, but already were subject to a 12-inch minimum length limit. The new sport fishing regulation went into effect 1 December 1978.

In approving the staff recommendation, commissioners received assurance that the new regulation would be included for review in public regulatory hearings to be held statewide in March 1980. In the meantime, biological surveys will be made to determine the effects of the limits on the resource.