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The Game Department's new warmwater fish culture program is aimed at producing more and better angling in Washington for bass, walleyes, catfish and bluegills.

Home-grown Spinyrays

by Terry Rudnick

It isn't likely that Washington state will ever become the warmwater fish capital of the world, but the Evergreen State does offer some excellent fishing opportunities for bass, panfish and other warmwater, or spinyray, species. If a current Department of Game program produces the expected result, fishing could get even better for at least five warmwater species — largemouth and smallmouth bass, walleye, channel catfish and bluegill. None of the five is native to Washington waters, but all five will soon be produced in hatcheries here, according to Doug Fletcher, manager of the department's warmwater fish program.

As more people move to Washington

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from other parts of the country — places where warmwater fishing is extremely popular and as more native Washingtonians discover the fun of catching these species, the need to provide more warmwater fish will continue to grow. Fletcher says the Game Department will have to provide fry and fingerlings at the rate of 100,000 channel catfish, 250,000 bluegill, 300,000 largemouth bass, 300,000 smallmouth bass and 1.5 million walleyes per year over the next five years to keep up with requests from the department's six administrative regions.

To meet the demand for warmwater fish, Fletcher considered five possibilities. One was to expand current efforts to capture wild fish and transplant them to areas where they were needed. Although this approach would provide an immediate fishery and offers the opportunity to use warmwater fish salvaged from lake-rehabilitation projects, it requires a great deal of effort for the number of fish provided.

Fletcher also considered acquiring fish from other agencies around the country, purchasing fish from out-of-state commercial vendors and changing current laws to allow private culture and sale of warmwater fish. All three have more disadvantages than advantages.

Fletcher has decided instead on a fifth strategy — using existing Game Department programs and facilities to produce the fish. And so, for the first time, the department has begun to spawn warmwater fish in state fish hatcheries.

The program's goal is to produce the 2.45 million walleyes, bass, bluegill and channel cats each year. Fletcher admits that the most feasible way to do that with the materials, money and time available is to raise the fish to fry size and either plant them immediately or ship them to the regional fish biologists who request them. If the fish are to be held for planting at a larger size, the region will provide the holding facilities. By starting out with a goal of fry production only, he says, the department will have the opportunity to test theories and work out details before spending large sums of money on warmwater fish production.

During the early stages of planning, it became apparent that few Game Department hatcheries fit all the requirements for testing and developing a warmwater fish-culture program. Ideally, the facility should be centrally located, since it would have to serve the entire state. The hatchery could not be one that was restricted to trout-only production by federal funding requirements. It had to be large enough to provide adequate spawning and rearing space for warmwater fish as well as the trout that were already being produced. The facility also had to have access to enough water to fill the required ponds and raceways when needed, and its water source would have to be fairly warm, since these fish require warmer temperatures than trout to spawn and hatch.

Only two of the department's hatcheries, at Yakima and Naches, survived the analysis, but neither has enough room for the entire warmwater fish program. The solution is to use both, so Fletcher has decided to spawn channel catfish, bluegills and largemouth bass at Yakima and smallmouths and walleyes at Naches.

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Home-grown Spinyrays

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Stu Mercer, a fish biologist who was involved in the department's sea-run cutthroat program for the past few years, has been transferred to the Yakima region as part of the warmwater fish-culture program.

Some of the raceways and other equipment already in place at the hatcheries can be used for spawning and rearing warmwater fish to fry size, but since both hatcheries were originally designed to produce trout and steelhead, some new equipment is being added. Spawning and rearing warmwater fish also calls for specialized techniques not used in the production of trout.

Channel catfish, for example, must be paired off, with one male and one female placed in each of 50 wooden cages. Each cage is about three feet wide, four feet long and four feet high. A spawning box, concrete tile or other kind of cover large enough for both fish is placed in each cage.

After spawning occurs, the eggs are removed to hatching troughs, where they hatch in 5 to 10 days, depending on water temperature. Several hundred channel cats, purchased from a California vendor two years ago, are being held at the Yakima hatchery, and brood fish for this first year's spawning will be selected from those fish.

Fletcher doesn't have a supply of largemouth bass yet for this year's spawning efforts, but he estimates that with a little help from the state's bass fishermen there should be little problem collecting adult bass. Spawning mats made of nylon felt will be installed in two raceways at the Yakima hatchery. Black plastic will be placed over the raceways to help heat the water and provide cover for the spawning fish.

Several days after spawning takes place, the egg-laden mats will be removed and the eggs placed into hatching jars, where they will hatch in about two weeks. As the yolk sac is absorbed and the fry begin to feed, they'll be moved into a rearing facility, where they will feed on naturally occurring organisms. Two dozen temporary rearing pools are now being constructed at the hatchery for that purpose.

Smallmouth bass are cultured much the same as largemouths, but instead of spawning mats, the raceways are equipped with sets of two boxes, one inside the other, with short legs to keep the whole thing off the bottom and prevent siltation. The inner box contains small rocks, into which the smallmouths spawn. The eggs sift through the rocks and settle in a mesh screen in the outer box.

As with largemouths, eggs collected from the boxes are transferred to hatching jars. But unlike largemouths, at least some smallmouth fry can be transferred to other places almost immediately after hatching, depending on the temperature of the water to which the fish are being sent. Smallmouth brood fish were collected earlier this year by Fletcher and members of the Columbia Basin and Three Rivers bass clubs, both of Kennewick.

In some ways, the bluegill is more difficult to produce than the other warmwater species with the facilities available here, according to Fletcher. For one thing, they require warmer water for spawning, and the fry do not remain in tight schools after leaving the nests, so they are difficult to capture for transfer to rearing ponds.

Adult bluegills, rather than spawning just once a season, tend to continue spawning as long as water temperatures are favorable, so a large, continuous supply of food must be provided or the newly produced fry will quickly starve. Fortunately, unlike some other warmwater species, bluegills readily take prepared food pellets, so continuous feeding won't be too big a problem.

Anglers are expected to help provide adult bluegill for this year's spawning. Once the brood fish are collected, several raceways at the Yakima hatchery will be prepared by placing black plastic over them to help warm the water and provide cover for the spawning fish. Spawning will take place on 15 to 20 small piles of pea gravel that will be scattered throughout the raceway. The adult bluegills should begin spawning within 24 hours after they are placed in the raceways, if water temperatures are at least 68 degrees, and the eggs should hatch in about four days.

Like salmon and steelhead, walleyes are spawned by stripping eggs and sperm into pans rather than allowing the adult fish to spawn more-or-less naturally in ponds or raceways. After the eggs are collected, fertilized and allowed to harden for several hours, they are placed in hatching jars, where they hatch in 18 to 20 days if water temperatures are kept at 45 to 50 degrees.

Fletcher, with help from bass club members and other volunteers, captured a number of adult walleyes for spawning earlier this year. The Department of Game also got a million walleye fry from the New Mexico Game and Fish Department in April, and those fish have been stocked in the Pend Oreille River and a couple of eastern Washington lakes.

With a million tiny walleyes from New Mexico now planted in Washington waters, and with more walleyes, channel catfish, largemouth bass, smallmouth bass and bluegills being produced in hatcheries at Naches and Yakima, the Department of Game has taken a big step toward helping to provide adequate numbers of warmwater fish for a growing fishery. Right now it's only a research project, and none of the facilities used for spawning and rearing warmwater fish is permanent. But if things go as hoped, the production of our warmwater fish could some day become a big part of this state's freshwater fish management program. □

Ghosts of the Selkirks

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According to Washington non-game biologist Jerry Hickman, the caribou of the Selkirks are holding their own. As a small, isolated population, they have survived the dangers of inbreeding, internal parasites, habitat destruction and illegal killing.

But current herd numbers are too low to stand much buffeting — by man or nature. Considering the herd's vast range requirements, biologists still feel a population of 75 animals is possible without unduly constricting human activity in the area. And some argue that this is a minimum number to ensure herd survival.

Caribou will never be numerous in Washington, but it's a credit to concerned citizens and modern wildlife managers that these animals still wander in the lichen-cloaked forests of northeast Pend Oreille County. With cooperation from other state, federal and provincial agencies, and continued public support for caribou management, these ghosts of the Selkirks may become more visible in the future. □