Study: Hatchery Trout Spawn Less in Wild

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The Associated Press
Thursday, October 4, 2007; 7:02 PM

GRANTS PASS, Ore. -- Steelhead trout grown in hatcheries lose their ability to produce offspring in the wild, raising concerns about whether captive breeding programs can help save endangered fish, a new study concludes.

Scientists at Oregon State University found that even when hatcheries breed fish captured in the wild, their offspring become less and less successful at reproducing in the wild than their cousins that never left the river.

"The argument that hatchery fish and wild fish are functionally equivalent is basically dead," said Michael Blouin, a population geneticist and associate professor of zoology at Oregon State University. "If the idea is just to produce for harvest, hatcheries are really good at that. If the goal is to help wild populations, then you are in a completely different ball game."

While the specific reason for the lack of success remains unknown, it is clearly genetic, Blouin said.

"There must be really intense natural selection leading to strong domestication," in the hatcheries, Blouin added. "And it happens within two generations. That is what is so surprising."

The study appears in the Friday issue of the journal Science.

Steelhead are rainbow trout that, like salmon, spawn in rivers, but go to sea, where there is much more food, to grow to be adults. As logging, farming, dam construction and urban development destroyed their river habitat, hatcheries have been built to fill the gap.

About 95 percent of the salmon and steelhead returning to rivers in the Northwest's Columbia Basin were born in plastic trays and reared in concrete pools in hatcheries.

Federal, state and private spending on hatcheries amounts to more than $90 million a year in Puget Sound and the Columbia Basin, which cover the bulk of Oregon, Washington and Idaho. About half the salmon and steelhead populations in the West are protected by the Endangered Species Act, which limits destruction of habitat and overfishing.

In hopes of getting some salmon and steelhead runs off the endangered species list, property rights advocates, development interests and farm groups have been trying to

force federal agencies to count hatchery fish along with wild fish, but recent court rulings have held they don't have to.

The study is based on 15 years of genetic samples collected from every steelhead, wild and hatchery, that passes over a dam on the Hood River, which flows off Mount Hood in Oregon into the Columbia River. Technicians take scales from every fish that goes through a trap. The scales reveal the age and DNA of each fish. So far about 15,000 fish have been examined.

"The real problem right now is our wild fish are driven to such low numbers that any kind of effect, including hatchery effects, take on a greater importance," said Rob Jones, NOAA fisheries branch chief for hatcheries in Oregon, Washington and Idaho. "In many places we wouldn't have any fish at all if it wasn't for hatcheries."