

## Big salmon, steelhead runs amaze biologists

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Numbers of salmon and steelhead returning up the Columbia River are well above the 10-year average again this year, including a record sockeye run that's amazed biologists and buoyed hopes of recovery for the endangered Snake River population.

Biologists cite favorable ocean conditions, improvements in freshwater rearing habitat and hatchery practices, and work at dams on the Columbia and Snake Rivers to improve fish passage as reasons for a chinook return that's 140 percent above the 10-year average and a sockeye run of 353,044 fish that has easily surpassed the previous record.

Steelhead counted at Bonneville Dam as of July 6 also was above the 10-year norm, with 9,188 wild steelhead counted -- 244 percent above the average. And based on catches of juvenile fish in May by researchers with NOAA Fisheries during an ocean survey, returns of wild and hatchery salmon and steelhead into the Columbia and Snake River system appear promising next year and beyond, biologists said last week.

"The overall pattern looks good," said John Ferguson, director of the fish ecology division at NOAA's Northwest Fisheries Science Center in Seattle. "Our ocean survey is just one indicator, and we caught a lot of (juvenile) fish. So overall we are looking for average to better than average returns in the future."

NOAA Fisheries and managers of other federal agencies involved in the recovery of the 12 species of wild salmon and steelhead that are listed under the Endangered Species Act in the Columbia River Basin say they are encouraged by this year's run. And it follows two previous years of strong runs.

On July 6, the overall chinook run past Bonneville was 326,176, compared with the 10-year average of 232,284. Steelhead are just starting to enter the Columbia, but the Bonneville count that day was 50,711 hatchery-raised and 22,497 wild steelhead. The average from 2000-09 is 26,675 hatchery and 9,188 wild steelhead. Sockeye numbers, however, dwarfed expectations. The 10-year average at Bonneville -- where counts have been done since 1938 -- is 87,675, and the previous record for a year was 237,748 in 1955. "Huge. It's amazing," said Rock Peters, fish program manager for the Northwest Division of the Army Corps of Engineers. Most of the run is headed to the upper Columbia River, and nearly all the Columbia River sockeye -- which are not listed -- come from Canada's Osoyoos Lake.

But this year biologists expect at least 1,400 listed Snake River sockeye to reach Lower Granite Dam, and the Idaho Fish and Game Department predicts at least 1,000 will return to spawn in Idaho's Stanley Basin, Ferguson said. By late in the week, 829 adult sockeye had reached Lower Granite. That compares with 335 in 2008 and 415 last year. Water temperatures also were cool in Idaho, which should encourage those fish to continue migrating upstream, Ferguson said.

"All in all, it's good news for Snake River sockeye," he said.

In contrast, virtually no sockeye returned to the Stanley in the 1990s, Peters said. There are several reasons for the apparent rebound.

Idaho and federal agencies now are raising and releasing 140,000 sockeye smolts annually. And even more are expected to be raised under a portion of a three-year, multi-faceted \$325 million federal BiOp plan intended to protect and restore endangered Columbia and Snake River fish.

"They have gone from the brink of extinction. The captive brood stock program helped keep them from going extinct," Ferguson said. "So hopefully they are stabilizing and trending toward recovery in the Snake River."

Sockeye and other salmon and steelhead also have benefited from habitat improvements in tributaries where fish spawn -- another area that will be emphasized in the next few years under the 2010-13 implementation plan of the Federal Columbia River Power System BiOp. Improvements at dams to bolster the safe passage of fish, including installation of removable spillway weirs, also have helped, managers said. And good biological and physical conditions in the Pacific Ocean in the past few years have been pivotal to increases in returning adults. NOAA researchers annually conduct surveys in the Pacific Ocean to assess conditions for juvenile salmon and steelhead, looking at everything from the availability of food to sea-surface temperatures, salinity and atmospheric conditions. Many of the fish returning as adults this year experienced good ocean conditions in 2008, Ferguson said.

"There are a couple of good years of ocean conditions that are coming into play" in numbers of returning adults, Ferguson said. Unexpectedly persistent rainfall throughout the Northwest in May and June -- which also delayed the melting of snow from a light winter snowpack -- filled reservoirs and led to increased spills over dams that also benefited fish, officials said. In Southeast Washington, cooler water temperatures and higher stream flows in the late spring allowed fish to reach cooler tributaries of the Walla Walla River, said Glen Mendel, fish biologist for the Washington Department of Fish and Wildlife in Dayton. In many years, the fish are blocked from the upper stretches until November or December because of high water temperatures and low flows. Overall, officials said the run this year shows promise for salmon and steelhead in the Snake River system.