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River operators cut power production; help salmon survive

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FOR MORE INFORMATION, CONTACT: Crystal Ball, BPA, (503) 230-5133

Reach BPA's Media Relations staff at 503-230-5131 or online at mediarelations@bpa.gov.

DESERT AIRE, Wash. — River operators on Sunday completed a concerted effort to save Chinook salmon. Nearly 600 salmon redds, nests containing fertilized eggs, were counted in the upper protection level of Vernita Bar, 20 percent more than last year.

The bar is located in eastern Washington about four miles downriver from Priest Rapids Dam. It represents nearly 40 percent of all the spawning in the Hanford Reach, one of the last free-flowing stretches of the Columbia River.

Thanks to the work of a coalition of federal and state agencies, Indian tribes and public utility districts, flows in the Columbia River at Vernita Bar were regulated to encourage salmon to spawn at lower elevations, which will be protected through the winter and spring. Sunday, a team of representatives from this coalition pulled on rubber boots to look for and count the redds.

Under normal conditions, adult salmon spawn during the day. Because flows are high during daytime to meet power needs, the fish had tended to build their redds high on the bar. Unfortunately, at night, when power demands dropped and flows went down, the redds containing salmon eggs were left exposed and dried out.

This problem first came to river operators' attention in the mid-1970s when the Columbia River was drawn down to unusually low levels in the Hanford Reach, according to BPA fisheries biologist Scott Bettin. That drawdown exposed hundreds of redds containing fertilized eggs. Left exposed, the eggs did not hatch.

To make sure this wouldn't happen again, river operators agreed to regulate the flows so that the fish would build their redds where they would remain submerged until all the eggs hatch sometime between mid-April and late June. These flow regulations occur each year starting in mid-October and continue through the weekend before Thanksgiving.

These regulations, formally adopted as the Vernita Bar Agreement in 1988, reverse the pattern of high daytime flows and low nighttime flows by regulating flows from the six dams below Grand Coulee. Called reverse load factoring, the action ensures the eggs are deposited on the part of Vernita Bar that will remain submerged day and night until the eggs hatch. Thanks to the operation, this past winter and spring, 97 percent of the redds at Vernita Bar stayed submerged.

Signatories to the Vernita Bar Agreement include the Bonneville Power Administration, which foregoes maximum power sales as a result of the river manipulation; Grant, Chelan and Douglas public utility districts; the states of Oregon and Washington; and the Yakama, Umatilla and Colville tribes.

"BPA is responsible for providing adequate flows out of Grand Coulee Dam which can be shaped down to meet the daily discharge targets from Priest Rapids Dam," according to Bettin, whose job it is to integrate fish and hydro operations.

The Chinook salmon's activities are monitored each fall by fishery biologists from the Vernita Bar coalition. The team determined the amount of flow needed over Vernita Bar should not go below 65 thousand cubic feet per second – measured at Priest Rapids Dam – to protect the redds. On average, redds must remain submerged under at least six inches of water to survive.

"It's a guessing game because we're trying to project flows six months in advance," says Bettin. "But it's critical to the fish that we make the right call."

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