



[Nisqually River](#)

[Madison and Missouri Rivers](#)

[Waterways Throughout the Southern Company Territory](#)

[Conneticut River](#)

[Columbia River](#)

[Little Tennessee and Cheoah Rivers](#)

[Clark Fork River](#)



Printer Friendly

Columbia River

Rocky Reach and Rock Island Hydroelectric Projects Chelan County PUD

Summary of Results

Completion of a major study showing that spilling did not provide a benefit for sockeye, and may have in fact lowered survival through other passage routes. The data will help the utility make adjustments to operations or structures that will improve fish survival. Additionally, results indicate that up to five percent of the sockeye released were lost within the 10 miles of their release. The results will allow Chelan to focus efforts in the appropriate areas.

River

Originating in British Columbia, The Columbia River extends through seven U.S. states and flows more than 1,200 miles before emptying into the Pacific Ocean. It is the fourth longest river in the country and second only to the Mississippi-Missouri system in the amount of water it moves. The river has been extensively developed, with 14 dams on the mainstream (11 in the U.S.) and about 150 on reservoirs and tributaries throughout its system. A defining feature of the Pacific Northwest, the river provides the backbone of economic development in the region—lending itself to hydropower production, irrigation, recreation, municipal and industrial uses, and fish and wildlife habitat. The Columbia River is also famous for its role in the life-cycle of salmon and steelhead, which migrate from its tributaries to the ocean and back again to spawn.

Project and Energy

The Rocky Reach and Rock Island projects on the Columbia River represent two of Chelan PUD's three hydroelectric dams (the third is on Lake Chelan). Construction of the 1,286 megawatt (MW) Rocky Reach Project began in 1956. The Project has 11 generating units; seven commenced operation in 1961 and four were added by 1971. The 624 MW Rock Island Project has two powerhouses; the original 11-generating unit powerhouse was constructed in 1933, while the second powerhouse (added in 1979) has eight-generating units. Both dams are run-of-river projects. Electricity generated at the Rocky Reach Project avoids approximately 918,000 metric tons of carbon emissions that might otherwise be produced by fossil fuels; approximately half as much emission is avoided by Rock Island Project operations.

span class=header>Environmental Stewardship The study and resulting projects will help protect sensitive salmon and steelhead spawning and rearing habitat.

Historical Information

The Rocky Reach and Rock Island Anadromous Fish Agreements and Habitat Conservation Plans (HCPs) commit Chelan PUD to a 100-percent No Net Impact standard for salmon and steelhead species migrating past its projects. This standard is to be met through a combination of survival improvements within the geographic area of the project, hatchery programs, and habitat restoration and conservation in Mid-Columbia tributary streams. In 2003, Chelan PUD constructed a \$107 million juvenile fish bypass system at the Rocky Reach Project to facilitate downstream passage. This system has been shown to increase survival rates for several fish species passing the project. In the early years of HCP implementation, stakeholders are focusing on whether the utility can meet (over a three-

year period) an average survival rate of 93 percent for salmon and steelhead at both projects (the standard is based on survival for fish throughout the reservoir and past the dam itself). This goal was met for yearling Chinook at Rock Island in 2004 due to an early start on survival studies. In 2004, Chelan PUD also put in place the framework for its hatchery compensation obligations and tributary enhancement fund.

Challenges As in 2004, project survival estimates for sockeye at the Rocky Reach Project in 2005 were below the standards required to meet the three-year 93 percent average survival standard. In 2005, Chelan PUD initiated new studies in an attempt to identify the source of the problem.

Innovation

While meeting the high standards set for sockeye survival under the HCP has been a challenge, results of studies in 2005 provided an opportunity for Chelan PUD to focus its survival improvement efforts. This may include encouraging more fish to use successful passage routes, such as the \$107 million fish bypass system. Because of the questions surrounding sockeye survival at Rocky Reach, the calculation of the "three-year average" survival for sockeye has been delayed while targeted additional measures are implemented. Information also suggests that reservoir mortality could also be a problem for yearling Chinook. And although the survival is very close to the standard, the parties to the HCP have also agreed to postpone survival studies for yearling chinook as well, assuming that measures implemented for sockeye as a result of 2005 and 2006 studies are expected to improve yearling Chinook survival.

Collaboration/ Cooperation

The parties to the Rocky Reach and Rock Island HCPs include stakeholders who worked together over more than a decade to develop the plans. Parties are Chelan PUD, NOAA Fisheries, U.S. Fish and Wildlife Service, Washington State Department of Fish and Wildlife, Confederated Tribes of the Colville Reservation, and the Yakama Indian Nation (which signed the HCPs in 2005 subsequent to FERC approval). These organizations are involved due to their regulatory responsibilities or their tribal interests. Representatives of each of these parties participate in the HCP Coordinating Committee, the Tributary Committee, and the Hatchery Committee. These Committees, which are coordinated by independent chairs, are the forums through which many HCP decisions are made. The Committees meet on a regular basis, generally once a month. As a method of facilitating communication and coordination among Committee members, Chelan PUD maintains an HCP Web site: <http://www.midcolumbiahcp.org/>

Accomplishments

Detection arrays showed that over five percent of sockeye released in the tailrace of an upriver dam were no longer detectable several miles before they reached the Rocky Reach Dam forebay. This indicates that there is an unknown cause of mortality before the fish even reach the Rocky Reach Project. Further investigations into the cause of this mortality were proposed in 2005 and will occur in 2006. Also, an experimental study in 2005 incorporating site-specific releases of fish, along with future studies, are expected to help pinpoint the problem and offer possible solutions.

Future

In 2006 Chelan PUD and the Coordinating Committee will continue to investigate possible causes of reservoir mortality and the effects of spill. The Hatchery Committee will begin to make recommendations for adjustments to Chelan PUD's rearing facilities, methods and species mix. The Tributary Committee will continue to solicit projects and award funding under the Plan Species Account. In the fall of 2006, groundbreaking is expected to occur on the projects awarded in 2005. For the long-term, all parties continue to focus on the goal of meeting the No Net Impact standard. Chelan PUD has until 2013 to meet the standard. If the standards continue to be met, the HCP will endure for 50 years.

What Others are Saying

"The HCP committees are a model of interagency cooperation and highlight the shared commitment of the PUDs and the fishery agencies to rebuilding the anadromous resources of the Mid-Columbia."— **Mike Schiewe**, Chair, Rock Island and Rocky Reach HCP Coordinating and Hatchery Committees

“HCP Tributary Fund is a unique tool to assist PUD ratepayers who are working to protect and restore habitat for salmonids listed under the Endangered Species Act. This is an innovative approach that benefits both the PUD and the community which it serves. The Tributary Fund of the HCP has been received well by the community, and will likely support the efforts of many stakeholders within the area as they develop and implement a regional salmon recovery plan.”—**Bob Bugert**, Chair, Rock Island and Rocky Reach HCP Tributary Committees

[↑ Top](#)

National Hydropower Association

1 Massachusetts Ave., NW Suite 850 | Washington, DC 20001 | Phone: 202.682.1700 | Fax: 202.682.9478 | Email: help@hydro.org