

Salmon and Science

Salmon and steelhead in the Columbia River basin have been negatively affected for more than a century by factors that include urbanization, overfishing, dams and diversions, hatcheries, predation, loss of habitat and ocean conditions, among others. Improving the survival of young salmon migrating to the ocean has been a focus of fish protection efforts for at least 30 years, including major investments in fish passage, collection and barging of fish around the dams, and improving in-river conditions through major changes in operations of the dams. However, a successful recovery strategy also must include habitat, hatchery, harvest and predator mitigation measures. And, ocean conditions are now thought to be the overriding factor linked to salmon survival and recovery.

The 2008 Federal biological opinion takes the needed comprehensive approach: the science analysis identifies specific factors inhibiting the recovery of each listed species throughout their lifecycle from the gravel to the ocean and back. Armed with this information, the BiOp includes actions across all the “H’s” that ensure no further harm to the listed species and places them on a path towards recovery.

Science Foundation of the Biological Opinion

- The science-based BiOp was developed collaboratively, bringing together federal, state, tribal and other scientists and fishery managers to review the best science and make recommendations.
- The analysis started at the population level, with results and measures identified at the species level to account for unique migration paths, timing and needs of each species.
- The fish passage model, analytics and assumptions, were reviewed by the region’s Independent Science Advisory Board four different times and adjustments made based on its recommendations.
- NOAA and the federal agencies have committed to ongoing collaboration and adaptive management throughout the 10-year period to monitor implementation, ensure performance standards are met and review updated scientific information and make adjustments if needed.

What We Know – Science and Salmon

- NOAA research is now showing that survival for juvenile salmon is as high now as it was in the 1960s and early 1970s before the Snake River dams were constructed.
- Science is now showing that the hydropower system is reaching the point where additional survival past the dams will be difficult and expensive. The survival standards in the BiOp require 96% survival as fish pass the dams in the spring and 93% survival in summer.
- Fish numbers are rising: Chinook salmon are returning in record numbers to Bonneville Dam. The three largest returns to Bonneville since the dam was built in 1938 occurred 2001-2003.
- Recently NOAA found that the collapse of the California salmon runs was primarily caused by poor ocean conditions when the juvenile fish enter the estuary/ocean.
- Preliminary research is now showing that survival through the Snake and Columbia rivers is approximately the same as survival in the free-flowing Fraser River in British Columbia.
- Science continues to show that predation by fish, birds and marine mammals continues to be a large source of mortality. The new BiOp will increase the efforts to control predation.

Northwest RiverPartners is an alliance of farmers, utilities, ports and business that promote the economic and environmental benefits of the Columbia and Snake Rivers and Salmon recovery policies based on sound science.

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