


## SOURCES

The fish passage tour shows upstream and downstream migration. These investments, combined with managing river flows, are improving salmon survival past dams.

For the 2014-2023 time-period, the 10-year rolling average of salmon and steelhead returning to the basin was 2.3 million. This is similar to the average of 2.4 million returning between 2004-2013. That's a dramatic improvement from the average in the 1990s, which fell to 1.3 million returning fish.

Much work, however, still needs to be done to meet the 1987 goal of 5 million salmon and steelhead returning to the basin past Bonneville Dam by 2025. This goal was set by the Northwest Power and Conservation Council.

Reaching this aspirational goal faces several challenges. Climate change contributes to less snowpack and hotter summers in some years, thus raising river temperatures to levels that negatively affect adult salmon survival; extensive fish harvesting in international waters reduces returns of adults to spawn; predation from sea lions, terns and other species reduce the number of juveniles migrating to the ocean; and poor ocean conditions related to Pacific Decadal Oscillation (multiyear patterns of variation in sea surface temperature), El Niño (abnormal warming of the Pacific Ocean off northern Peru and Ecuador causing nutrient-poor water), and marine heatwaves also contribute to lower salmon returns.

Hydropower generators are addressing these challenges by investing millions of dollars annually to support and ensure fish survival. Doing so is part of hydropower continuing to be the foundation for a renewable, carbon-free power generation future. 

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