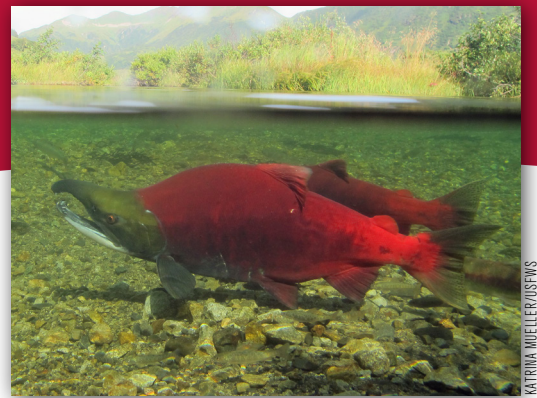


THE HEAT IS ON

Species feeling the effects of climate change



KATRINA MUELLER/USFWS

Sockeye Salmon

Oncorhynchus nerka

Region:

Pacific Northwest

Area affected:

Columbia, Snake and Fraser Rivers

Climatic change:

Warmer water

Impact:

Heat-related mortality

ABOUT THIS SPECIES

Sockeye salmon are a widespread and commercially important species in Alaska but are imperiled in the southern part of their range, particularly in Washington's Snake River. Most sockeyes are anadromous, meaning that they hatch and spend their first one to three years in freshwater bodies such as lakes and rivers, then move downstream to the ocean where they live most of their lives before making a final return journey upriver to their birthplaces to spawn and die. Sockeyes are silver in color during the ocean phase of their life cycle, but turn a brilliant red during spawning season. Young sockeyes feed on plankton and small invertebrates, and older ocean fish live mainly on small invertebrates and fish. Sockeye salmon display tremendous fidelity to the site where they were spawned and even to the season in which spawning occurred.

DESCRIPTION OF IMPACT

Sockeye salmon are impacted by warming waters at every stage of their lives. The timing between when eggs hatch and young fish emerge from the gravel has sped up. In addition, the time sockeye salmon spend in their birth lakes before heading to the ocean has been cut from two years to one, because warmer lakes speed up the growth rate of salmon. The shorter lake time, however, means that the fish spend an extra year in the ocean, where competition for food is fierce. The net effect is lower survival overall. The temperature of rivers used by salmon have also increased, and warmer water holds less oxygen. When temperatures exceed 68 F, salmon begin to experience oxygen stress and become susceptible to disease. **In 2015, over 250,000 sockeye salmon in the Columbia River died due to extremely warm water temperatures.** As global warming continues to impact waterways, especially in the contiguous U. S., the survival of sockeye salmon is at risk.

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