USACE Natural Resource Management

Fish

Bull Trout, Lahontan Cutthroat Trout, and Chinook Salmon

Bull Trout (*Salvelinus confluentus*): Bull trout have small, pale yellow to crimson spots on a darker background that ranges from olive green to brown which transitions to white on the belly. The species can grown to more than 20 pounds in lake environments, but rarely exceeds 4 pounds in stream environments. Bull trout are members of the char subgroup of the salmon family, which includes the very similar in appearance Dolly Varden.

Status: Threatened, 1999 *(Originally classified Endangered, 1998)*

NatureServe: Secure

G5 Secure

Lahontan Cutthroat Trout *(Oncorhynchus clarkia henshawi)*: Lahontan cutthroat trout are steel gray to olive green on top with yellow-brown sides, and a pink or red belly. Notably, the species has crimson red or orange slash marks on its throat. As the largest subspecies of cutthroat trout, the species can grow to 50 inches and 40 pounds in lake environments while stream dwellers typically average 10 inches and weigh 1 pound.

Status: Threatened,1975 *(Originally classified Endangered, 1970)*

NatureServe: Vulnerable Subspecies

T3 Vulnerable Subspecies

Chinook Salmon *(Oncorhynchus tshawytscha)*: Chinook salmon are blue-green on the head and black/silver on the sides. Irregular black spots are found on the fish's tail, back, and upper fin. The average weight and length for chinook salmon is around 40 pounds and 28 inches which make them the largest of the Pacific salmon species. Records demonstrate the species has grown to as large as 135 pounds and 50 inches.

Status: Various (*2 species Endangered, 7 species Threatened, 1 species Candidate)*

NatureServe: *Imperiled & Critically Imperiled Populations*

T1 Critically Imperiled Population

T2 Imperiled Population

Salmonid Family: Salmonidae is a family of ray-finned fish. It includes salmon, trout, chars, freshwater whitefishes, and graylings.

Char (genus Salvelinus) are distinguished from trout and salmon by the absence of teeth in the roof of the mouth, absence of spots on the dorsal fin, small scales, and other characteristics.

Photos Left to Right: Bull Trout (USFWS) and Chinook Salmon (NOAA)

Management and Protection:

- Critical habitat was designated for the bull trout in 2010. Approximately 18,795 miles of streams and 488,252 acres of lakes and reservoirs in Idaho, Oregon, Washington, Montana, and Nevada were designated. Additionally, 754 miles of marine shoreline in Washington were designated. Bull trout are most common in high mountainous areas where snowfields and glaciers are present. They mainly occur in deep pools of large, cold rivers and lakes. (USFWS). The species has been negatively impacted by the combined effects of habitat degradation and fragmentation, blockage of migration corridors, poor water quality, the introduction of non-native species, and past fisheries management practices.
- Occupying just a small fraction of their historical range, Lahontan cutthroat trout typically occur in cool flowing water with available cover from well-vegetated and stable steam banks. Their decline has been attributed to loss and degradation of habitat (particularly spawning habitat), hybridization with non-native trout, and the competition from introduced species.
- Chinook salmon are an anadromous species that spends it's adult life in salt water and then migrates into it's natal freshwater streams to spawn. A variety of conservation efforts and initiatives have been undertaken by management jurisdictions to restore habitat, remove and modify dams, and improve water quality.

USACE ROLE: According to the Engineering Research and Development Center's Threatened and Endangered Species Team Cost Estimates, the USACE has expended over $1 billion dollars on efforts related to the bull trout, Lahontan cutthroat trout, and chinook salmon. Tracked expenses for these species have been incurred by multiple business lines including Regulatory, Navigation, Hydropower, Environmental Stewardship, Environment Restoration, Planning and Program Management.

Bull Trout = $ 48,820,196 (2005)

Lahontan Cutthroat Trout = $257,470 (2006)

Chinook Salmon = $907,262,591 (2005)

What is USACE NRM Doing: USACE operates a series of eight dams on the lower Columbia and Snake rivers that affect the habitat and migration of anadromous salmon and steelhead species. These are Bonneville, The Dalles, John Day and McNary on the lower Columbia; and Ice Harbor, Lower Monumental, Little Goose and Lower Granite on the lower Snake River. The dams impede juvenile and adult migrations to and from the ocean by their physical presence and by creating reservoirs. The reservoirs behind the dams slow water velocities, alter river temperatures, and increase predation potential. All eight of these dams have juvenile and adult fish passage facilities to enable fish to migrate past the dams; and, the dams are operated to improve passage as well as reservoir conditions for fish.

At Bonneville Lock and Dam, visitors have the opportunity to view a fish ladder with several different fish species migrating through. This provides a valuable opportunity for Park Rangers and biologists to interpret many species and ongoing conservation efforts.

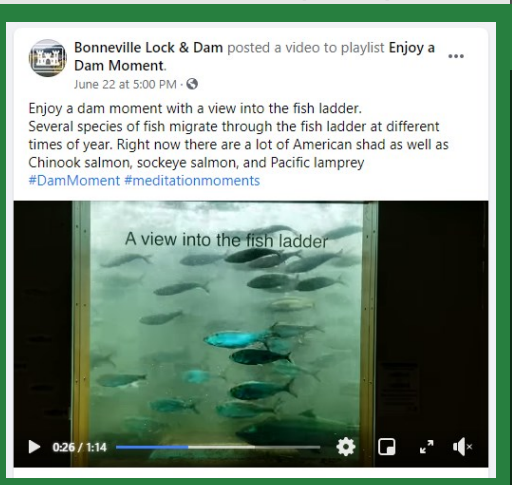
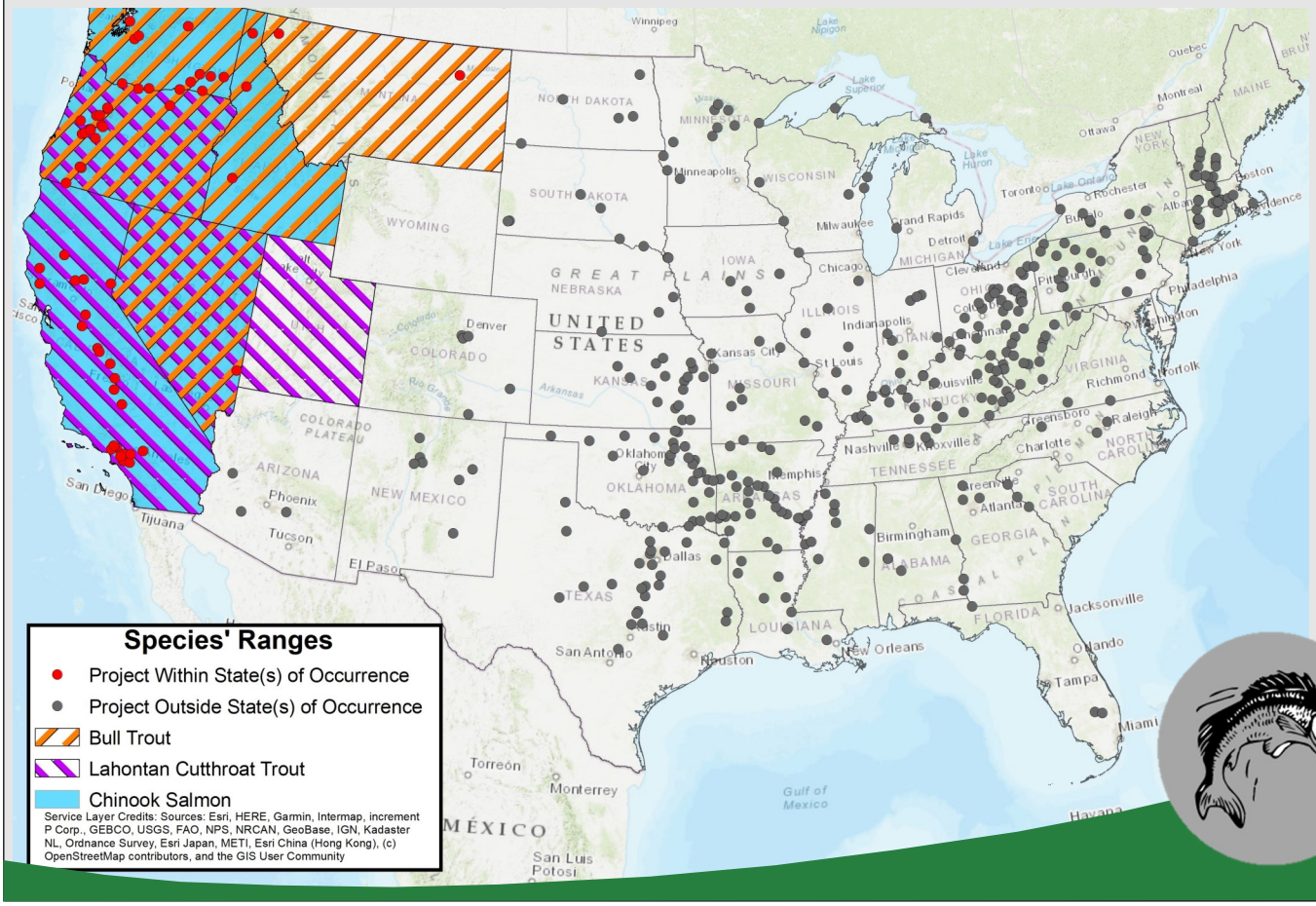


Photo: A view into the fish ladder. Bonneville Lock & Dam, built and operated by the U.S. Army Corps of Engineers, was the first federal lock and dam on the Columbia and Snake rivers. The project's first powerhouse, spillway and original navigation lock were completed in 1938 to improve navigation on Columbia River and provide hydropower to the Pacific Northwest.

This fact sheet has been prepared as an unofficial publication of the U.S. Army Corps of Engineers (USACE). This online publication is produced to provide its readers information about best management practices related to special status species. Editorial views and opinions expressed are not necessarily those of the Department of the Army. Mention of specific vendors does not constitute endorsement by the Department of the Army or any element thereof.



Fish

Source: Map provided by Ashleigh Boss, ORISE Fellowship, Institute for Water Resources