

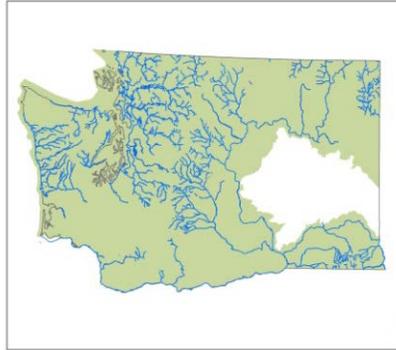
Species Fact Sheet

Bull Trout

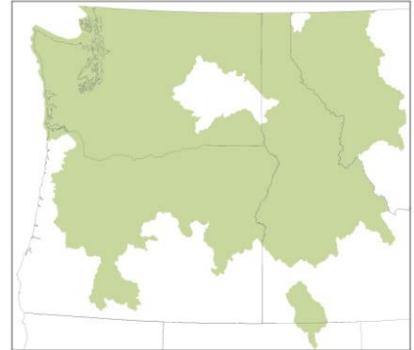
Salvelinus confluentus



Photo credit: R. Tabor, FWS



Washington



Conterminous United States

STATUS: THREATENED
CRITICAL HABITAT:
DESIGNATED

Bull trout potentially occur in these Washington counties: Whatcom, Skagit, Snohomish, King, Pierce, Thurston, Lewis, Cowlitz, Clark, Skamania, Clallam, Jefferson, Mason, Grays Harbor, Pacific, Wahkiakum, San Juan, Island, Kitsap, Okanogan, Chelan, Kittitas, Yakima, Klickitat, Benton, Grant, Douglas, Walla Walla, Franklin, Lincoln, Ferry, Stevens, Pend Oreille, Spokane, Whitman, Columbia, Garfield, Asotin

(Maps may reflect historical as well as recent sightings)

In 1999, the populations of bull trout, *Salvelinus confluentus*, within the conterminous United States were federally listed as threatened by the U.S. Fish and Wildlife Service (Service). The most recent critical habitat designation was completed in 2010.

Current and Historical Status

Bull trout (*Salvelinus confluentus*, family Salmonidae) are char native to the Pacific Northwest and western Canada. The historical range of bull trout includes major river basins in the Pacific Northwest at about 41 to 60 degrees North latitude, from the southern limits in the McCloud River in northern California and the Jarbidge River in Nevada to the headwaters of the Yukon River in the Northwest Territories, Canada. To the west, the bull trout's current range includes Puget Sound, various coastal rivers of British Columbia, Canada, and southeast Alaska. Bull trout occur in portions of the Columbia River and tributaries within the basin, including its headwaters in Montana and Canada. Bull trout also occur in the Klamath River basin of south-central Oregon. East of the Continental Divide, bull trout are found in the headwaters of the Saskatchewan River in Alberta and Montana and in the MacKenzie River system in Alberta and British Columbia, Canada.

Bull trout are believed to have declined throughout 50% of their range. There are nine major watersheds where bull trout have likely been extirpated: the Okanogan River, Lake Chelan, Satsop River, Lower Nisqually River, and White Salmon River in Washington; the Clackamas River (recently reintroduced here), Santiam River, and Upper Deschutes River in Oregon; and the McCloud River in northern California.

Description and Life History

Bull trout are a cold-water fish of relatively pristine stream and lake habitats in western North America. They are grouped with the char, within the salmonid family of fishes. Bull trout coloration ranges from green to greyish-blue (sometimes displaying silvery sides when in lakes and marine waters), and are spotted with pale yellowish to orange spots. The absence of black spots on the dorsal fin distinguishes bull trout from most other species of char and trout that are native to the Pacific Northwest.

Bull trout should not be confused with Dolly Varden (*Salvelinus malma*). Although they look very alike based on external similarity of appearance, morphological (form and structure) and genetic analyses have confirmed the distinctiveness of the two species in their different, but overlapping, geographic distributions. Both species occur together in western Washington, for example, with little or no interbreeding. Lastly, bull trout and Dolly Varden each appear to be more closely related genetically to other species of *Salvelinus* than they are to each other. The bull trout is most closely related to the Japanese white-spotted char (*S. leucomaenis*) whereas the Dolly Varden is most closely related to the Arctic char (*S. alpinus*).

The size and age of bull trout at maturity depends upon life history strategy. Resident fish tend to be smaller than migratory fish at maturity, and produce fewer eggs. Bull trout normally reach sexual maturity in 4 to 7 years and may live longer than 12 years.

The life history of bull trout may be one of the most complex of any Pacific salmonid. Four general life-history forms of bull trout have been recognized:

- ***Nonmigratory or resident bull trout.*** This life history form includes fish generally found in small streams and headwater tributaries. These non-migratory bull trout, in general, appear to grow more slowly than other life-history forms, are smaller at maturity, and generally do not live as long as migratory forms.
- ***Riverine or fluvial bull trout.*** This freshwater life history form includes fish that migrate entirely within fresh water streams. This includes fish that overwinter and mature in large rivers or streams and then migrate to small tributaries to spawn.
- ***Lacustrine or adfluvial bull trout.*** This freshwater life history form includes fish that overwinter and mature in large lakes or reservoirs and then migrate to small tributaries to spawn. These are typically the largest forms of bull trout, reaching sizes up to 30 lbs.

- **Marine or amphidromous/anadromous bull trout.** This is the rarest life history form, and only occurs in western Washington within the coterminous United States. This includes fish that migrate out to marine nearshore waters and sometimes into other stream systems to overwinter and mature, returning to small tributaries in their natal watershed to spawn.

Bull trout typically spawn from late July to December, with peak spawning in September for most interior populations and late October for most coastal populations. The period of egg incubation to emergence of fry from their spawning gravels may take up to 210 days (7 months). Juvenile migratory bull trout rear one to four years in their natal stream before migrating either to a river, lake/reservoir, or nearshore marine area to mature. Resident and migratory forms or mixed migratory forms may all be found together, and either form may give rise to offspring exhibiting either resident or migratory behaviors.

Habitat

- Bull trout have some of the most specific habitat requirements of any salmonid, and these are often described as the "Four C's": **Cold, Clean, Complex and Connected habitat.**
- Bull trout require **colder water** temperature than most salmonids. Water temperature above 15 degrees Celsius (59 degrees Fahrenheit) is believed to limit bull trout distribution. They typically spawn in water temperatures below 9 degrees Celsius (48 degrees Fahrenheit).
- They require the **cleanest stream substrates** for spawning and rearing. Juvenile bull trout frequently use the spaces between cobble and boulders to shelter.
- They need **complex habitats**, including streams with riffles and deep pools, side channels, undercut banks, and lots of large instream wood/logs for shelter and foraging.
- They also rely on river, lake and ocean **habitats that connect** to headwater streams for annual spawning and feeding migrations. These annual migrations are necessary to complete their life history.

Reasons for Decline

The following activities or types of land use have contributed to the bull trout's decline: dams, forest management practices, livestock grazing, agricultural practices, transportation networks, mining, residential development and urbanization, fisheries management activities, and any of a host of general practices as well as some natural events (e.g., fire or flood under certain

circumstances) that may contribute to historical and current isolation and habitat fragmentation. Nonnative species, forest management practices, and fish passage issues are the top factors limiting bull trout populations at the range-wide level, both currently and historically.

Conservation Efforts

Areas of critical habitat have been designated within their range in the coterminous United States to protect habitat and promote the recovery of the species. Three separate draft bull trout recovery plans were completed between 2002 and 2004, first for the Columbia and Klamath region (U.S. Fish and Wildlife Service 2002) and then subsequently for the Coastal-Puget Sound region (U.S. Fish and Wildlife Service 2004a) and Jarbidge River region (U.S. Fish and Wildlife Service 2004b). None have been finalized. In 2008, a 5-year status review conducted by the Service concluded bull trout status was stable (status remained unchanged) range-wide, including some populations that were increasing and others that were decreasing in various parts of the range. Numerous conservation efforts (e.g., culvert replacements, fish passage improvements at dams, instream and riparian habitat restoration, nonnative fish suppression, improved forest management and livestock grazing practices) have occurred across their range since the time of listing which have resulted in significant improvements to bull trout habitat.

Beginning in 2010, the Service began to revise its recovery strategy for bull trout across the coterminous United States and anticipates issuing an updated draft recovery plan in 2012.

References and Links

[Final Rule to List Bull Trout](#) (November 1999)
[Final Designation of Critical Habitat for Bull Trout](#) (October 2010)
[Bull Trout Critical Habitat Map for Washington State](#)
[Final Critical Habitat Designation - Unit Maps](#)
[5-Year Status Review for Bull Trout](#) (April 2008)
[Draft Bull Trout Recovery Plans](#) (2002 and 2004)