



U.S. Fish & Wildlife Service

Bull Trout

Salvelinus confluentus

Bull trout are members of the char subgroup of the salmon family (*salmonids*), which also includes the Dolly Varden, lake trout and Arctic char. Bull trout living in streams grow to about four pounds while those in lake environments can weigh more than 20 pounds.

Biologists distinguish char from other salmonids such as trout and salmon by the absence of teeth in the roof of the mouth; the presence of light colored spots on a dark background (trout and salmon have dark spots on a lighter background); the absence of spots on the dorsal fin; their smaller scales; and differences in skeletal structure. Char species such as bull trout live farther north than any other group of freshwater fish except Alaskan blackfish and are well adapted for life in very cold water.

Bull trout and Dolly Varden look very similar and once were considered the same species. However, taxonomic research has identified them as different species. Both have small, pale yellow to crimson spots on a darker background, which ranges from olive green

to brown above, fading to white on the belly. Spawning adults develop varying amounts of red on the belly. Both species also exhibit differences in size, body characteristics, coloration and behavior across their range.

Bull trout are larger than Dolly Varden, with a relatively longer and broader head. Bull trout are mainly an inland species, while Dolly Varden are more common in coastal areas. In Washington State, both species are present in the Puget Sound area.

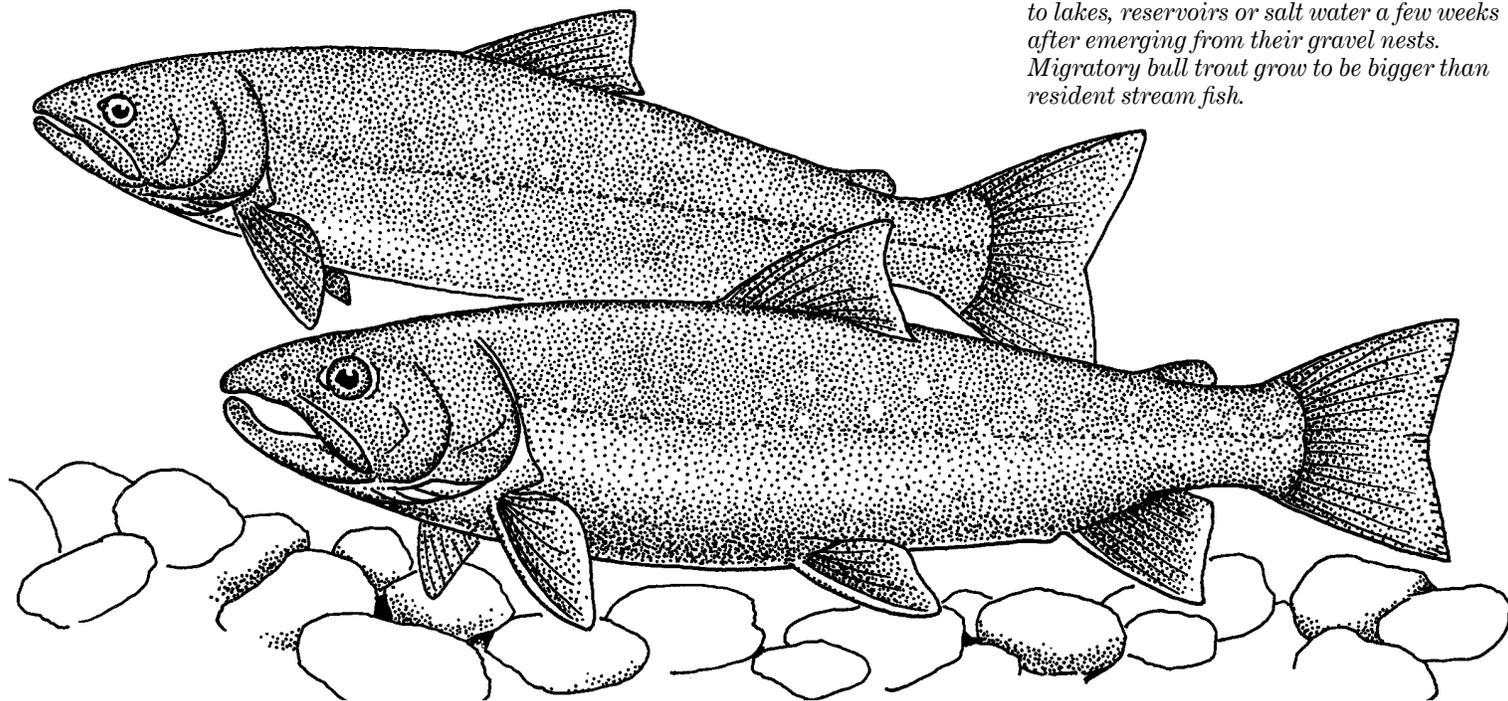
Historically bull trout occurred throughout the Columbia River Basin; east to western Montana; south to the Jarbidge River in northern Nevada, the Klamath Basin in Oregon, and the McCloud River in California; and north to Alberta, British Columbia, and possibly southeastern Alaska. Today bull trout are found primarily in upper tributary streams and several lake and reservoir systems; they have been eliminated from the main stems of most large rivers. The main populations remaining in the lower 48 states are in Montana, Idaho, Oregon and Washington

with a small population in northern Nevada. Bull trout are now extinct in northern California.

Small bull trout eat terrestrial and aquatic insects but shift to preying on other fish as they grow larger. Large bull trout primarily prey on fish such as whitefish, sculpins and other trout.

Bull trout reach sexual maturity between four and seven years of age and are known to live as long as twelve years. They spawn in the fall after temperatures drop below 48° Fahrenheit, in streams with cold, unpolluted water, clean gravel and cobble substrate, and gentle stream slopes. Many spawning areas are associated with cold water springs or areas where stream flow is influenced by groundwater. Bull trout eggs require a long incubation period compared to other salmon and trout (four to five months), hatching in late winter or early spring. Fry remain in the stream bed for up to three weeks before emerging. Juvenile fish retain their fondness for the stream bottom and are often found at or near it.

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Some bull trout live near areas where they were hatched. Others migrate from streams to lakes or reservoirs (or, in the case of coastal populations, salt water) a few weeks after emerging from the gravel. Migratory bull trout grow to be bigger than resident stream fish. However, lakes and reservoirs are not good spawning habitat, so migratory bull trout may swim considerable distances to spawn when habitat conditions allow.

The ability to migrate or move within stream systems is important for healthy bull trout populations to maintain local fish numbers, facilitate gene flow among subpopulations and reestablish extirpated groups.

Bull trout are vulnerable to many of the same threats that have reduced salmon populations in the Snake River Basin. They are more sensitive to increased water temperatures, poor water quality and low flow conditions than many other salmonids. Past and continuing land management activities such as timber harvest and livestock grazing have degraded stream habitat, especially those along larger river systems and stream areas located in valley bottoms, to the point where bull trout can no longer survive or reproduce successfully. In many watersheds, remaining bull trout are small, resident fish isolated in headwater streams.

Brook trout, introduced as a sport fish throughout much of the bull trout's range, easily interbreed with bull trout, producing sterile offspring. Non-native brook trout also reproduce earlier and at a higher rate than bull trout, often supplanting bull trout populations. Interbreeding between bull trout and brown trout and lake trout is a problem in some areas. Dams and other in-stream structures also affect bull trout by blocking migration routes, altering water temperatures and killing fish as they pass through and over dams, or are trapped in irrigation and other diversion structures.

In June 1998, the U.S. Fish and Wildlife Service listed the bull trout in the Columbia River and Klamath River as threatened under the Endangered Species Act of 1973. An *endangered* species is considered in danger of extinction throughout all or a significant portion of its range. A *threatened* species is considered likely to become endangered within the foreseeable future.

For listing purposes the range of bull trout was broken into distinctive population segments. Bull trout occur in widespread, but fragmented habitats and have several life history patterns. In addition, threats are diverse and the population status and trends vary considerably throughout the range.

By examining distinct population segments, bull trout in most need of federal protection become a listing priority.

Many of the actions intended to protect other declining salmonids may also help bull trout. Stream and habitat protection and restoration, reduction of siltation from roads and other erosion sites, and modification of land management practices to improve water quality and temperature are all important. Several state fish and wildlife agencies have enacted regulations reducing or prohibiting bull trout harvest. Several states also have drafted or adopted conservation plans to help bull trout populations recover.

Besides the measures outlined above, a strong commitment by private citizens, industry, state, federal, and tribal groups to change, reduce or eliminate activities that degrade streams and rivers will be necessary to truly recover many species of native fish. Much bull trout habitat in mainstream rivers and streams is privately owned, making conservation activities on private lands a key element to restoring aquatic habitat and recovering native fish populations. In some areas, reducing the potential for hybridization of bull trout with non-native fish species would enhance bull trout survival and recovery.

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