

FACTS ABOUT NATIVE CHAR

Description

The bull trout (*Salvelinus confluentus*) and Dolly Varden (*Salvelinus malma*) are part of the subgroup of the salmonid family known as char. Although they are two distinct species, they are often

grouped together due to their very similar characteristics.

Native char can be identified by their olive green to brown bodies with yellow or cream spots, in contrast with the Pacific salmon that have dark spots on a lighter body. Dolly Varden tend to be smaller in size than bull trout.

Bull trout and Dolly Varden are the only char native to Washington waters.



Bull trout. (Ernest Keeley)

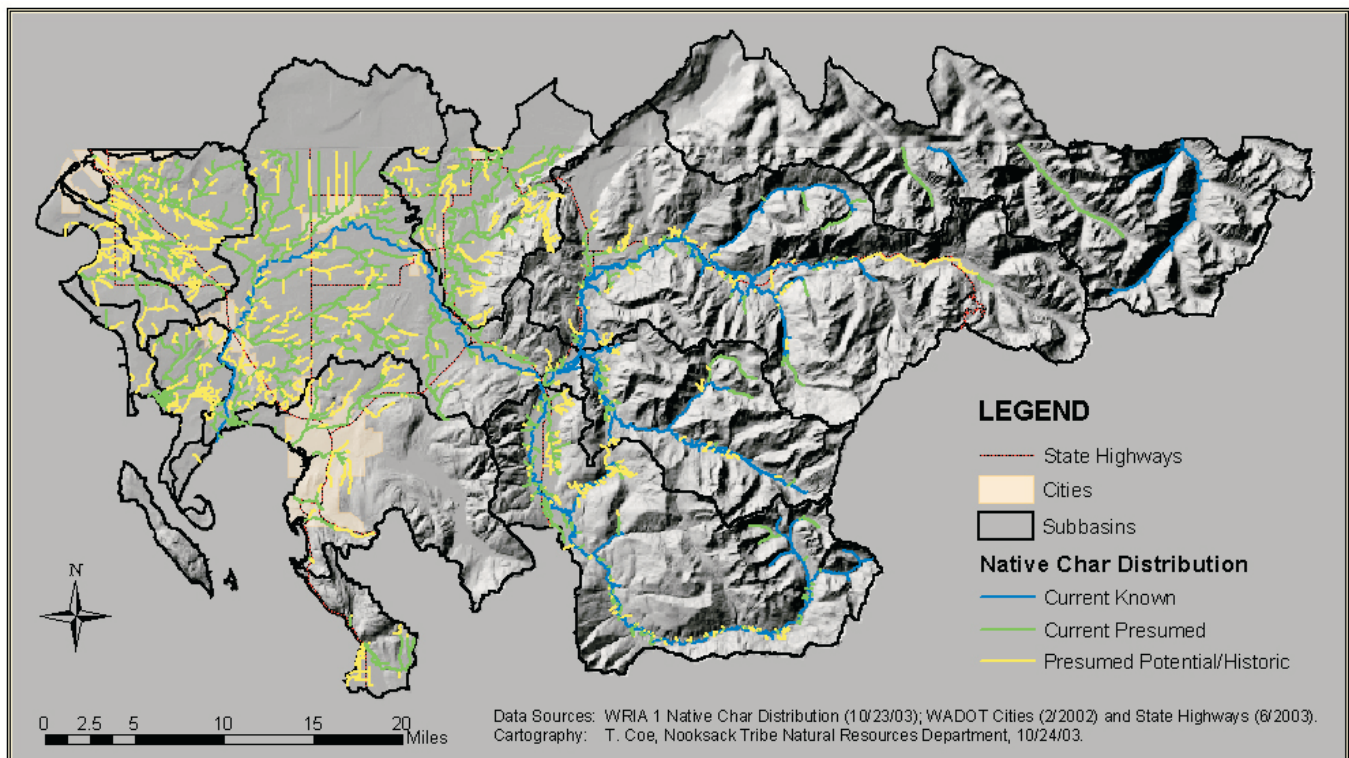
Distribution

The Washington Department of Fish and Wildlife has identified three stocks of native char within the Nooksack watershed. These stocks include: (1) Lower Nooksack River including the North Fork, lower Middle Fork and South Fork; (2) Canyon Creek; and (3) upper Middle Fork Nooksack above the City of

Bellingham diversion dam. Due to the dam, this third stock is reproductively isolated from the other stocks and is considered to be a "resident" population. The Canyon Creek stock has been identified as Dolly Varden and not bull trout, based on genetic sampling.

Bull trout and Dolly Varden historically occurred from northern California to the

Yukon River in Alaska and as far inland as Idaho, Montana, Utah and Nevada. They are now extinct in northern California.



Life Cycle & Reproduction

Bull trout reach maturity between the ages of four and seven years and can live up to 12 years. Unlike many salmonids, they are iteroparous (can reproduce more than once).

Upstream migration occurs in the Nooksack region between May and November. Spawning occurs between August and December in upstream tributaries as the temperature drops to 9-10 °C (48-50 °F). The female bull trout deposits from 100 to over 10,000 eggs in the redd (nest) for fertilization by the male. Incubation and intragravel development can last for more than 200 days. The anadromous bull trout juvenile will begin to outmigrate between January and July, but will move up and downstream from saltwater and back to freshwater throughout the year. They over-winter within the freshwater reaches and return to saltwater for its abundance of food as they grow and develop. The foraging juvenile and sub adult char may migrate throughout the basin looking for feeding opportunities--even following prey species up tributary streams. Because of this behavior, they may be found anywhere in the basin downstream of spawning areas.

Habitat Needs

Native char have four life history types, three of which are migratory. The *anadromous* form spawns and initially rears in freshwater, but moves to saltwater for growth and maturation. Spawning and early rearing of *adfluvial* stocks occurs in streams and most of the growth and maturation occurs in lakes. *Fluvial* char use smaller tributaries for spawning and early rearing and rely on mainstem river systems for growth and maturation. *Resident* char remain for all life stages in small headwater streams that are usually isolated due to impassable barriers such as large waterfalls or dams. All forms have been found to interbreed unless they have become separated due to a barrier.

All salmonids require cold clean water, a complex habitat structure, and connected habitats. For native char, these factors are even more critical for their survival. Char require complex forms of cover such as woody debris, undercut banks, boulders and pools throughout all their life stages from incubation until spawning. Additionally, char require waters that are colder than most other salmon, especially while

spawning, and are therefore found further upstream. They are generally not found in waters warmer than 18 °C (64 °F). The extensive time they spend developing in gravel also leaves them particularly sensitive to changes in flow that may deposit sediment or otherwise disrupt the substrate that they inhabit.

Due to the environmental specificity and susceptibility of all life stages to changes, native char are considered to be strong indicators of the ecological health of a watershed. In addition to threats caused by changing environmental conditions, native char are also susceptible to loss of population as a result of interbreeding with introduced species such as the brook trout. This mating results in sterile offspring and tends to deplete the bull trout of energy after spawning, leaving them less likely to survive to spawn in future years.

Current Status

- The Puget Sound bull trout was listed as "threatened" under the Endangered Species Act in November 1999.
- Dolly Varden are not currently listed, but are being considered.
- Small sport fisheries have existed for bull trout/Dolly Varden, but due to their ESA listing and decline in population numbers, takings are restricted.

Sources

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