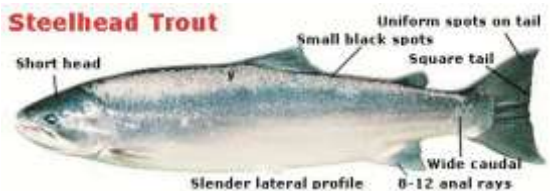
Facts about Steelhead

Description

Steelhead trout (Onchorhyncus mykiss) are rainbow trout that spend part of their lives in the ocean. They look like rainbow trout but tend to be larger, averaging 20 to 30 inches in length and 8 to 9 pounds in weight. Steelhead are bluish-green along the back fading to olive, with small, regularly spaced spots covering the sides, back and both lobes of the tail. The color becomes slivery to white along the belly.

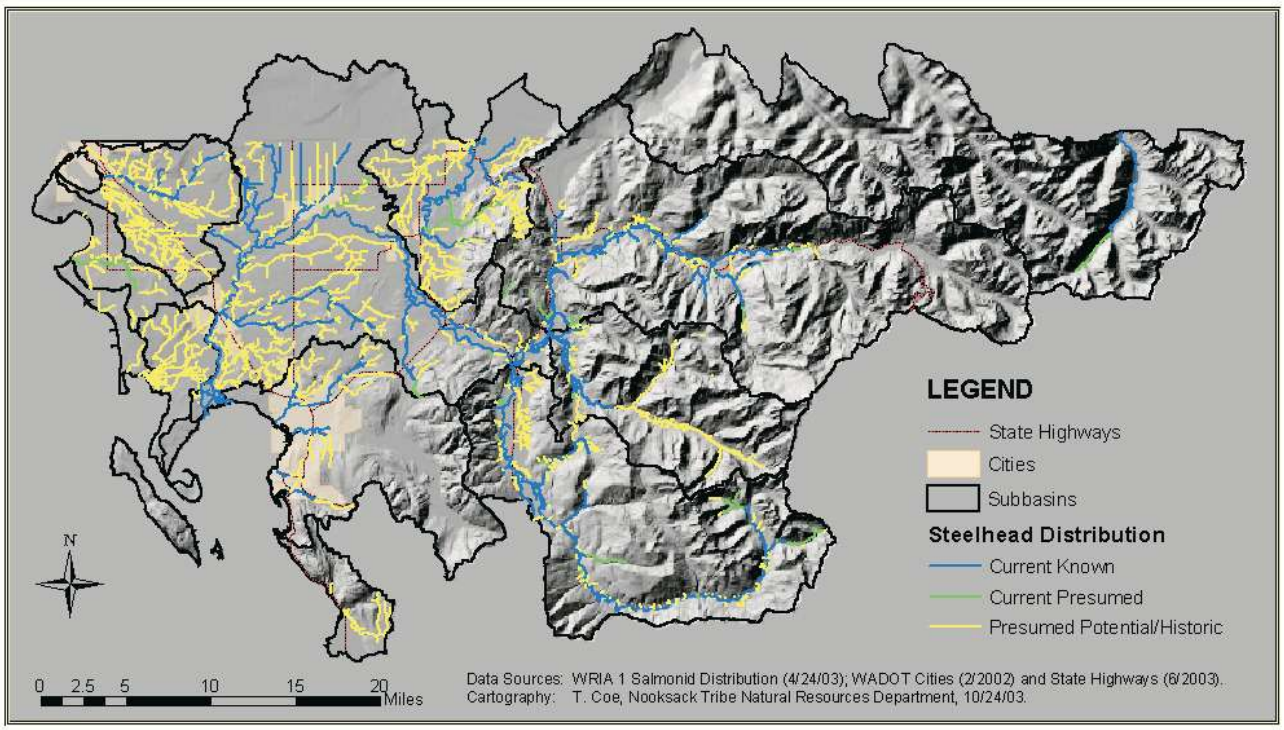


Steelhead trout in its ocean colors. (Credit: Fisheries and Oceans Canada)

Steelhead can be distinguished from cutthroat by the lack of teeth under the tongue and an absence of a red slash under the jaw, and from other salmon by its smaller head and short anal fin base (relative to the length of the dorsal fin base).

Spawning steelhead acquire a pinkish-red stripe above and below the lateral line that blends along the side. This coloration faces back to silver after returning to the ocean.

Distribution



There are five separate steelhead stocks in the Nooksack region. The four winter-run-stocks – all considered to be native in origin with wild production- are found in: 1) the Mainstem and North Fork Nooksack, 2) the Middle Fork Nooksack, 3) the South Fork Nooksack, and 4) Dakota Creek. The fifth is a summer-run stock found in the upper South Fork Nooksack and is also thought to be native with wild production.

Steelhead currently ranges from Kuskokwim River in Alaska in the north to the Ventura River in California in the south, but historically was present as far south as northwestern Mexico.

Life Cycle and Reproduction

Steelhead spend from one to four years at sea before reentering freshwater. The winter runs of steelhead return to the Nooksack generally between October and June at various stages of maturity and hold within the river for several months until they have reached full sexual maturity and are ready to spawn, usually between December and July. The summer-run steelhead return from April through October and require almost a full year of development in the river before spawning the following spring between February and April.

The female steelhead will lay her eggs in a series of redds (nests) dug into medium sized gravel located between steep areas of the stream. The male and female simultaneously deposit the eggs and sperm into the redd for fertilization. The female will repeat the process until all her eggs have been deposited. Like other trout, but not other Pacific salmon, steelhead may spawn more than once (iteroparity), although it is usually the larger females that survive to do this.

The embryos will develop in the gravel for approximately two months. Following emergence, the fry will remain in the freshwater system for one to four years before migrating to the ocean as smolts.

Habitat Issues

Steelhead exhibit varying life history types, from anadromous (migrating to the ocean), to resident, to the anadromous ones who, after spawning remain in freshwater and become part of the rainbow trout population. In some cases, resulting offspring can be the opposite of their parents' migratory habits. Additionally, there is variation in the timing of maturity from those who mature prior to re-entering freshwater (ocean-maturing) to those who re-enter, hold over and mature in the freshwater for almost a year before spawning (stream-maturing). Typically, the winter runs are ocean-maturing and the summer runs are stream-maturing.

Because of this variability, the success of the steelhead species is highly dependent on pristine conditions throughout a range of habitats including streams, rivers, estuaries, and the ocean.

Spawning steelhead require flat water greater than 24 cm (9.4 inches) deep with gravel small enough to dig in found between areas of steep gradients with large gravel.

Developing embryos and alevins are susceptible to siltation, which is usually caused by human impacts such as road development and logging practices.

Juvenile steelhead feed upon insects, copepods, crustaceans and young fish such as sand lance, eulachon and herring while in the freshwater and estuaries. When they enter the ocean, their diet consists of squid amphipods, and other fish.

Economic Value

Steelhead is one of the top five sport fish in North America. A steelhead fishery is open in Bellingham Bay and the Nooksack River from mid-December to January for recreational fishing. Commercially, only

Nooksack and Lummi tribal fishers are permitted to catch steelhead in Whatcom County's local waters, but they primarily fish for non-native stocks that have an earlier run time than the native runs.

Current Status

The South Fork Nooksack summer stock has typically been a smaller population than the winter runs; however, the population status for all stocks in the region is unknown pending further study.

Sources

Anchor Environmental, LLC. 2003. *Fish Periodicity in WRIA 1*.

National Marine Fisheries Service. 1996. *Status Review of West Coast Steelhead from Washington, Oregon, and California.*

Pacific States Marine Fisheries Commission. 1996. *Steelhead Facts* (http://www.psmfc.org/habitat/edu_steelhead_facts.html).

Smith, Carol. 2002. *Salmon and Steelhead Limiting Factors in WRIA 1*.