



## Species of Concern

NOAA National Marine Fisheries Service

## Steelhead trout

*Oncorhynchus mykiss*  
Oregon Coast ESU



Photo credit: NMFS.

### KEY INFORMATION

#### Area of Concern

River basins on the Oregon coast from the mouth of the Columbia River south to Cape Blanco. For a map and further information see the website at:

<http://www.nwr.noaa.gov/1salmon/salmesa/slthorc.htm>.

**Year Identified as "Species of Concern"**  
1998

#### Factors for Decline

- Logging
- Genetic introgression with hatchery fish
- Agriculture and development
- Fishing
- Dams and other impediments

#### Conservation Designations

American Fisheries Society: Vulnerable

IUCN: Not Evaluated

Species of Greatest Conservation Need: OR

### Current Status:

#### **Demographic and Genetic Diversity Concerns:**

Although NMFS determined in 1998 (63 FR 13347) that listing of this **Evolutionarily Significant Unit** (ESU) was not warranted, it was placed on the **candidate** list (later redefined and included in the species of concern program) due to concerns over specific risk factors. In the initial coastwide status review (Busby et al. 1996), the Biological Review Team (BRT) concluded that this ESU was likely to become endangered in the foreseeable future based primarily on pronounced short- and long-term declines in abundance and substantial contribution of non-native hatchery fish to natural escapements in most basins. These factors indicated that it was likely that natural stocks throughout the ESU were not replacing themselves. Abundance and trend estimates available at the time of the status review were based on angler catch through 1992. Subsequently, Oregon Department of Fish and Wildlife (ODFW) implemented catch-and-release regulations for wild steelhead for most coastal streams, so angler catch no longer provided any information about wild steelhead abundance or trends. Therefore, in the updated status review (WCBRT 1997) the BRT was able to

review only recent abundance data for three of the over 40 steelhead populations in this ESU (North Umpqua River summer and winter-runs and Salmonberry River in the Nehalem River Basin). The updated data showed that trends were stable or increasing. However, these populations were among the few that showed relatively stable trends in



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the previous status review, so they may not have been representative of trends in the ESU as a whole (Chilcote 1997).

Additional information provided some indication that hatchery fish in natural escapements had declined in some of these populations since the initial review. However, significant opportunities for deleterious effects remained as many programs continued to release non-native fish and ODFW data showed that hatchery fish strayed into and spawned in streams with no hatchery releases.

### Brief Species Description:

The present spawning distribution of steelhead extends from the Kamchatka Peninsula in Asia, east through Alaska, and south to southern California; although the historic range extended at least to the Mexico border (Busby et al. 1996). *O. mykiss* exhibit great life history diversity, including varying degrees of **anadromy**, differences in reproductive biology, and plasticity of life history between generations. They can be anadromous or freshwater resident (and under some circumstances, apparently yield offspring of the opposite form). Anadromous *O. mykiss* are called steelhead, and nonanadromous (freshwater resident) forms are usually called rainbow trout. Anadromous forms spend up to 7 years in fresh water prior to **smoltification**, and then up to 3 years in salt water prior to first spawning. Another life history variation is the ability to repeat spawn (iteroparity), whereas all other *Oncorhynchus* species, except *O. clarki*, spawn once and then die (semelparity). Two major genetic groups of *O. mykiss* are recognized in North America: the *inland* and *coastal* groups, generally separated in the Columbia River Basin by the Cascade Mountains. In the Pacific Northwest, steelhead that enter freshwater between May and October are considered summer steelhead (= *stream-maturing* type) and steelhead that enter fresh water between November and April are considered winter steelhead (= *ocean-maturing* type). Summer steelhead enter fresh water in a sexually immature condition and require several months to mature and spawn; whereas, winter steelhead enter fresh water with well-developed gonads and spawn shortly thereafter.

Oregon Coast steelhead are *coastal* group and are primarily winter steelhead; native summer steelhead occur only in the Siletz and Umpqua Rivers. Populations of nonanadromous *O. mykiss* (rainbow trout) are uncommon on the Oregon coast, occurring primarily above migration barriers and in the Umpqua River Basin. Iteroparity is more common than in populations to the north, but more than two spawning migrations is unusual. Age structure is similar to other west coast steelhead, dominated by 4-year-old spawners. Most rivers on the Oregon coast are short, have a single peak in flow in December or January, and have relatively low flow during summer and early fall.

**Factors for Decline:** Factors for decline have been extensively examined by NMFS (1996).

### Contact Information

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### References:

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