

Willamette River Coastal Cutthroat Trout

Species Management Unit Description

The Willamette River Coastal Cutthroat Trout SMU includes all populations of cutthroat trout inhabiting tributary streams to the Willamette River above Willamette Falls, as well as portions of the mainstem Willamette. The Willamette River coastal cutthroat SMU passed all six interim criteria and its conservation risk classification for this Status Report is “not at risk”.

Existing Populations

The Willamette River Coastal Cutthroat Trout SMU is comprised of 14 historical populations (Table 1).

It is the professional opinion of the local ODFW biologists (Alsbury, Mamoyac, Ziller, personal communications) that coastal cutthroat trout are found at least seasonally in virtually 100% of the available habitats for cutthroat trout in each of the 14 populations in the Willamette River SMU, verifying that all historical populations continue to exist. The entire SMU is located above Willamette Falls, which is a complete barrier to cutthroat trout upstream passage. No anadromous cutthroat trout are found within the SMU. Resident, fluvial, and adfluvial cutthroat trout life histories are believed to occur in each population that contains access to areas that would support such strategies.

Table 1. Description, status, and life history of Willamette River Coastal Cutthroat Trout SMU populations.

Exist	Population	Description	Life-history
Yes	Lower Willamette	Willamette Falls upstream to Santiam River.	Resident/Fluvial
Yes	Tualatin	Tualatin River.	Resident/Fluvial
Yes	Yamhill	Yamhill River.	Resident/Fluvial
Yes	Molalla	Molalla River.	Resident/Fluvial
Yes	Luckiamute	Luckiamute River.	Resident/Fluvial
Yes	North Santiam	North Santiam River.	Resident/Fluvial/Adfluvial
Yes	South Santiam	South Santiam River.	Resident/Fluvial/Adfluvial
Yes	Mid Willamette	Willamette River from Santiam River upstream to Coast and Middle forks.	Resident/Fluvial
Yes	Marys	Marys River.	Resident/Fluvial
Yes	Calapooia	Calapooia River.	Resident/Fluvial
Yes	Long Tom	Long Tom River.	Resident/Fluvial
Yes	McKenzie	McKenzie River.	Resident/Fluvial/Adfluvial
Yes	Middle Fork Willamette	Middle Fork Willamette River.	Resident/Fluvial/Adfluvial
Yes	Coast Fork Willamette	Coast Fork Willamette River.	Resident/Fluvial/Adfluvial

Habitat Use Distribution

Empirical and anecdotal evidence suggests that cutthroat trout are widespread throughout the Willamette River SMU and are found distributed widely in each major watershed. Since cutthroat trout are rarely the target species in biological studies, we rely on data and reports from local ODFW district biologists (Alsbury – North Willamette Watershed District and Mamoyac,

and Ziller – South Willamette Watershed District) and incidental documentation through various research activities.

It is the professional opinion of local ODFW biologists that all life-history types of coastal cutthroat trout expected are present and widely distributed throughout the entire Willamette River SMU (Alsbury, Mamoyac, Ziller, personal communications). Sampling on private and federal forest lands over the past ten years has found coastal cutthroat trout in the headwaters of most perennial streams sampled in the Willamette River SMU, as well as seasonal streams. These headwater areas are presumed to be the historical limit of coastal cutthroat trout distribution. Periodic sampling by local biologists continues to document the existence of the 104 isolated groups of coastal cutthroat trout above natural barriers that were described in ODFW's 1995 Biennial Report on the Status of Wild Fish in Oregon (Kostow 1995). Watershed district sampling focused on various activities or other species typically has documented the presence of coastal cutthroat trout in most areas of a watershed. Local ODFW biologists believe the results of these various sampling efforts represents the actual distribution of coastal cutthroat trout in all 14 populations within the SMU and that it verifies that virtually all historical habitat is currently being used by coastal cutthroat trout in each population. All populations and the SMU pass this criterion.

Abundance

Sampling throughout the SMU, including areas above barriers, that has looked at cutthroat trout densities has found consistent densities of coastal cutthroat trout. They are thought to be the dominant trout in most headwater tributaries. Multiple cutthroat trout age classes are present in most locations where resident cutthroat trout exist (Hooton 1997). Local biologists believe the present age class structure has not changed.

To assess the abundance criterion, local ODFW biologists in the Willamette River Coastal Cutthroat Trout SMU were asked to review the results of the various sampling efforts that have been conducted over the last ten years to identify those locations within the distribution range of coastal cutthroat trout where abundances were found at critical levels (as defined in the Coastal Cutthroat Trout Assessment Methods section). Very few sites in the SMU could be identified where very few or no cutthroat trout were found. In the few cases where abundances were found to be at critical levels, the location was either near the upper limit of cutthroat distribution in the headwaters of streams where habitat is limited, or in an area where significant steelhead juveniles or rainbow trout were present that likely out-competed cutthroat trout for occupation of the habitat. Even including these areas of expected low abundances of coastal cutthroat trout, the proportion of these areas to all areas sampled is still well below the criterion level of >50%. It is the professional opinion of the local ODFW biologists that the sampling efforts reviewed are indicative of the abundance of each coastal cutthroat trout population within the Willamette River SMU (Alsbury, Mamoyac, Ziller, personal communications).

ODFW seining conducted over the last six years has shown no declining or increasing trend in cutthroat numbers. In 2003 catch per unit effort (cutthroat per seine haul) ranged from 5.86 in the McKenzie River and 4.57 in the upper Willamette to 0.03 in the lower Willamette River. Seining is conducted during the summer (ODFW, Schroeder and Kenaston, unpublished data). Increased temperatures in the lower Willamette River likely account for the reduced catch per unit effort found there.

The relatively healthy densities of cutthroat trout found throughout the SMU in random and routine sampling suggests all populations of coastal cutthroat trout have been above critical

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levels in each of the last five years. The stable nature of these densities over the decades that sampling has occurred indicates that the populations have stayed above critical levels for some time. For these reasons, all of the populations passed the abundance criterion. The Willamette River Coastal Cutthroat Trout SMU also passes the criterion.

Productivity

Coastal cutthroat trout are found in almost all stream segments in the Willamette River SMU. Sampling in conjunction with forestry activities throughout the SMU has found cutthroat in most headwater reaches. Local ODFW biologists have noted that the 104 isolated groups of cutthroat trout above natural barriers described by ODFW in 1995 (Kostow 1995) have continued to maintain stable levels over the recent decades that sampling has occurred. All historical life-history strategies continue to be expressed.

ODFW Watershed District biologists in the Willamette River Coastal Cutthroat Trout SMU, as stated in the abundance criterion section, have found few streams during various sampling efforts where coastal cutthroat trout are not present in expected densities for the habitat present. This includes streams that have experienced catastrophic events such as droughts, floods, and debris torrents that would likely have reduced or eliminated the abundance of coastal cutthroat trout. Local biologists have identified streams that go dry or become too warm that do not support cutthroat trout during the summer months, but have been found to support reasonable densities of cutthroat the following spring. Most areas that have been found with low numbers of cutthroat trout due to a debris torrent have been found to contain reasonable densities of cutthroat a few years after the event. Examples of such resilience in coastal cutthroat trout have been identified in almost every basin by the local biologists (Alsbury, Mamoyac, Ziller, personal communications).

The productivity criterion is intended to assess the ability of population abundances to rebuild after experiencing low abundances. The stable level of cutthroat found in the Willamette River SMU along with their almost universal distribution is evidence that these populations fully utilize the available habitat and maintain abundances near capacity. The densities sampled have been found before and after catastrophic events such as 100-year floods, debris torrents, and severe droughts. The fact that stable densities of cutthroat trout are found in almost all streams in this SMU despite events that undoubtedly diminished their abundance, provides evidence that all coastal cutthroat trout populations in the Willamette River SMU pass the productivity criterion.

Reproductive Independence

Data specific to reproductive independence are not available for Willamette River coastal cutthroat trout. Instead we used current and historical stocking records to evaluate the risk of hatchery origin cutthroat trout to native coastal cutthroat trout. Stocking has occurred throughout much of the SMU. All stocking of hatchery cutthroat trout in the Willamette River SMU was discontinued in 1980. The residual effects of hatchery cutthroat on wild coastal cutthroat have not been determined. However, since no stocking of hatchery fish has occurred in over twenty years, all populations passed this criterion.

Hybridization

Interspecific hybridization with non-native trout has not been identified as an issue for Willamette River coastal cutthroat trout.

Summary

Our final assessment of the Willamette River Coastal Cutthroat Trout SMU is “Not at Risk”. There is substantial quantitative and qualitative data that indicate this species appears to be able to quickly respond to changes in habitat quality or quantity and to populate those habitats to capacity. Populations of coastal cutthroat trout have persisted where they are isolated and where they interact with populations of other salmonid and non-salmonid species. There is no conservation risk to this species at this time. Many of the datasets used in this assessment were developed with different protocols and assumptions, making it difficult to compare between datasets. During conservation plan development for the Willamette River Coastal Cutthroat Trout SMU these datasets will be analyzed thoroughly to ensure this interim assessment is accurate.