Oregon Coast Coastal Cutthroat Trout

Species Management Unit Description

The Oregon Coast Coastal Cutthroat Trout Species Management Unit (SMU) includes all populations of cutthroat trout inhabiting ocean tributary streams from the Necanicum River south to the Sixes River. The Oregon Coast Coastal Cutthroat Trout SMU passed all six interim criteria and its conservation risk classification for this Status Report is "not at risk."

Existing Populations

The Oregon Coast Coastal Cutthroat Trout SMU is comprised in this report of 24 historical populations (Table 170). All four life-history types are present within the SMU and within several populations.

It is the professional opinion of the local ODFW biologists (Confer, Gray, Muck, Buckman, Braun, 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 24 populations in the Oregon Coast SMU, verifying that all historical populations continue to exist. ODF fish presence surveys and other monitoring (including the ODFW Western Oregon Rearing Project and watershed council rapid bio-assessments) have found coastal cutthroat trout in all populations over the last seven years. It is presumed that some proportion of the coastal cutthroat trout found in headwater streams are resident fish. Fluvial fish are believed to be present in most large river systems. Adfluvial cutthroat trout are present in areas that permit this life-history strategy (i.e., Devils Lake, Loon Lake, Siltcoos Lake, etc.). Anadromous cutthroat trout are thought to be present in all Oregon coastal streams that lack an upstream barrier to fish passage near the ocean entrance point (Hooton 1997).

Table 170. Description, status, and life-history of Oregon Coast Coastal Cutthroat Trout SMU populations.

Exist	Population	Description	Life-history Strategies Present
Yes	Necanicum	Necanicum River.	Resident/Fluvial/Anadromous
Yes	Nehalem	Nehalem River.	Resident/Fluvial/Adfluvial/Anadromous
Yes	Rockaway	Coastal Tributaries near Rockaway.	Resident/Adfluvial/Anadromous
Yes	Tillamook	All tributaries to Tillamook Bay.	Resident/Fluvial/Anadromous
Yes	Netarts	Netarts Bay and surrounding Coastal Tributaries.	Resident/Anadromous
Yes	Nestucca	Nestucca River.	Resident/Fluvial/Anadromous
Yes	Neskowin	Neskowin Creek and Sand Lake watersheds.	Resident/Anadromous
Yes	Salmon	Salmon River.	Resident/Fluvial/Anadromous
Yes	Devils Lake	Devils Lake.	Resident/Adfluvial/Anadromous
Yes	Siletz	Siletz River.	Resident/Fluvial/Anadromous
Yes	Depoe Bay	Coastal Tributaries near Depot Bay.	Resident/Anadromous
Yes	Yaquina	Yaquina River.	Resident/Fluvial/Adfluvial/Anadromous
Yes	Beaver	Beaver Creek plus coastal tributaries between the Alsea and Yaquina rivers.	Resident/Anadromous
Yes	Alsea	Alsea River.	Resident/Fluvial/Adfluvial/Anadromous
Yes	Yachats	Coastal tributaries from Siuslaw River to Alsea River.	Resident/Fluvial/Adfluvial/Anadromous
Yes	Siuslaw	Siuslaw River.	Resident/Fluvial/Adfluvial/Anadromous
Yes	Siltcoos	Tributaries to Siltcoos and Tahkenitch Lakes.	Resident/Adfluvial/Anadromous
Yes	Lower Umpqua	Umpqua River basin upstream to mouth of North Fork Umpqua River.	Resident/Fluvial/Adfluvial/Anadromous
Yes	Upper Umpqua	North and South Fork Umpqua River basins.	Resident/Fluvial/Adfluvial/Anadromous
Yes	Tenmile	Tributaries to Tenmile and Eel lakes.	Resident/Adfluvial/Anadromous
Yes	Coos	Coos River.	Resident/Fluvial/Anadromous
Yes	Coquille	Coquille River.	Resident/Fluvial/Anadromous
Yes	Floras	Floras Creek basin plus coastal tributaries north to the Coquille River.	Resident/Adfluvial/Anadromous
Yes	Sixes	Sixes River.	Resident/Fluvial/Anadromous

Habitat Use Distribution

Fish presence survey and ODFW Western Oregon Rearing Project (WORP) juvenile monitoring data show that coastal cutthroat trout are present throughout the Oregon Coast SMU and are found distributed widely in each major watershed. Since coastal cutthroat trout are rarely the target species in biological studies, we relied on this data and the assessment of other data by ODFW local district biologists (Confer – Rogue Watershed District; Gray, Muck – Umpqua Watershed District and Buckman, Braun – North Coast Watershed District) to assess populations for this criterion.

Over the past seven years, coastal cutthroat trout have been found in ODF fish presence surveys in the headwaters of virtually all perennial streams in the Oregon Coast SMU, as well as many seasonal streams. These headwater areas are presumed to be the historical limit of coastal cutthroat trout distribution. It is also presumed that coastal cutthroat trout occupy all available habitat downstream of these headwater areas. Lorensen et al (1993) reported that, in any given drainage greater than 40 hectares, there was an 80% chance that coastal cutthroat trout would be present. WORP coast-wide snorkel surveys of pools from randomly selected stream reaches

(~1000 meters) conducted since 1998 have found cutthroat (> 90 mm forklength) at greater than 75% of all sites sampled. Three-quarters of these sites were in this SMU (Figure 38), and were chosen from a stream network based on juvenile coho distribution. It is presumed that cutthroat would have been found in almost all reaches if sampling also included non-pool habitat. Periodic sampling by local biologists continue to document the existence of the 40 isolated groups of coastal cutthroat trout in this SMU above natural barriers that were described in ODFW's 1995 Biennial Report on the Status of Wild Fish in Oregon (Kostow 1995). Based on the above information, we conclude that virtually all historical habitat is still being used by coastal cutthroat trout in each population today. All populations and the Oregon Coast Coastal Cutthroat Trout SMU pass this criterion.

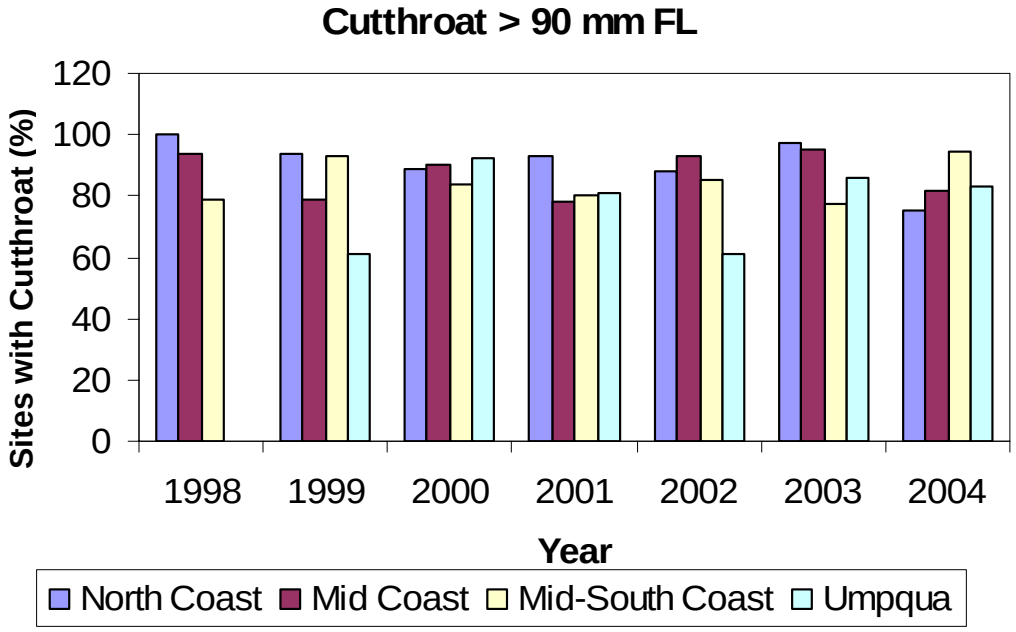


Figure 39. The percent of sites per monitoring area within the Oregon Coast SMU that had at least one cutthroat trout during Western Oregon Rearing Project sampling in juvenile coho habitat. Sites were 1,000 meter stream reaches in which only pools were snorkeled.

Abundance

During various sampling activities, ODFW biologists have found coastal cutthroat trout in virtually every stream within the Oregon Coast SMU, including 40 isolated groups of cutthroat trout above natural barriers that were described in ODFW's 1995 Biennial Report on the Status of Wild Fish in Oregon (Kostow 1995).

To assess the abundance criterion, local ODFW biologists in the Oregon Coast 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). The biologists had difficulty identifying any sites within the distribution of coastal cutthroat trout in the SMU 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 near the upper limit of cutthroat distribution in the headwaters of streams where habitat is limited or in streams that had gone dry during drought conditions.

Coastal cutthroat trout are often found in high densities, with a variety of year classes present, and near carrying capacity in many pools (ODFW Southwest Regional Fish Management Meeting Report, 1995). Umpqua Watershed District sampling found densities of cutthroat trout in the Coos and Coquille River basins varied from 0.66 fish per square meter where cutthroat trout were allopatric and 0.12 fish per meter square where they were sympatric with other salmonid species.

Densities of cutthroat trout in the Oregon Coast SMU appear to have remained stable (no decrease) or may have increased over the last ten years. Densities of cutthroat trout in the Yachats River watershed remained stable from 1998 through 2003 (Mid-Coast Watersheds Council Rapid Bio-Assessment, 1998 - 2003). WORP sampling found densities of cutthroat trout in the Drift Creek sub-basin of the Alsea basin over the last seven years were comparable to densities seen during the Alsea Watershed Study in the 1960s. Data collected in the Salmon River estuary from 1999 through 2003 shows an apparent increase in anadromous coastal cutthroat trout (Figure 40). Catch per unit effort increased ten-fold from 0.21 cutthroat per seine haul in 1999 to 2.14 cutthroat per seine haul in 2003 (Krentz and Cornwell unpublished data). Data from ten Oregon Plan Lifecycle Monitoring migrant fish traps do not show a clear pattern in abundance of coastal cutthroat trout migrants (Figure 41), however, the number of migrants seen on an annual basis considered with the size of the stream being sampled suggests abundances above critical levels. The professional opinion of local ODFW biologists is that these streams are representative of the entire SMU and the stability of the densities of cutthroat documented in them are believed to have occurred throughout the SMU (ODFW,Gray, Muck, Buckman, Braun, personal communications).

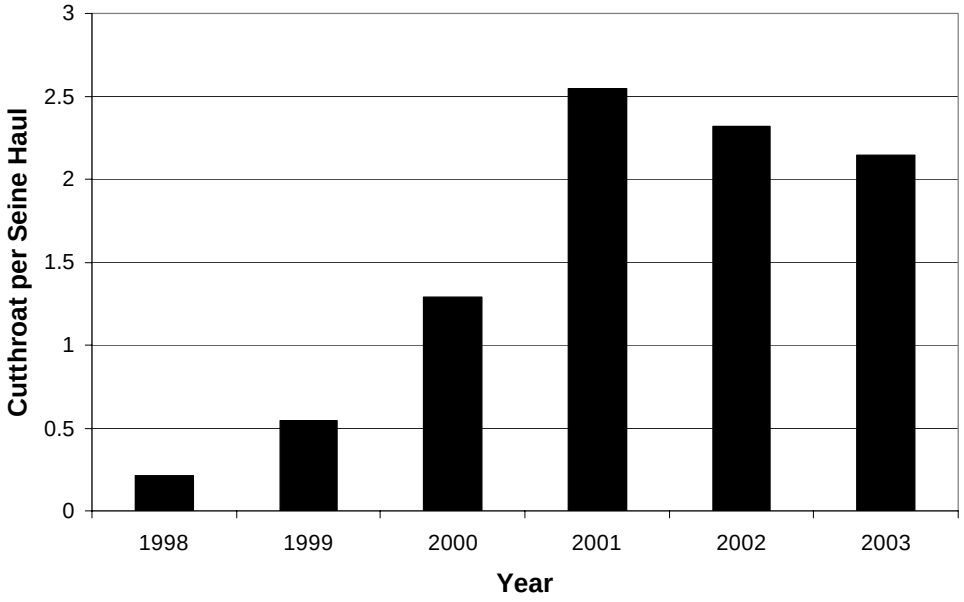
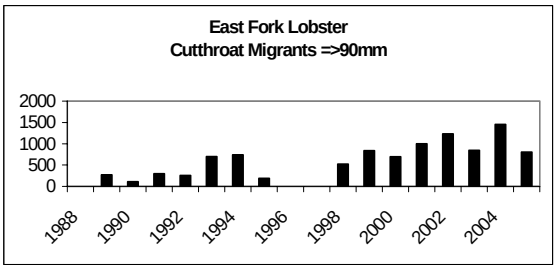
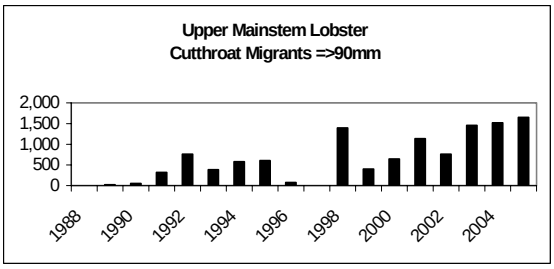
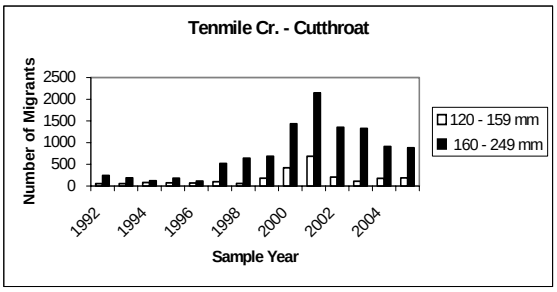
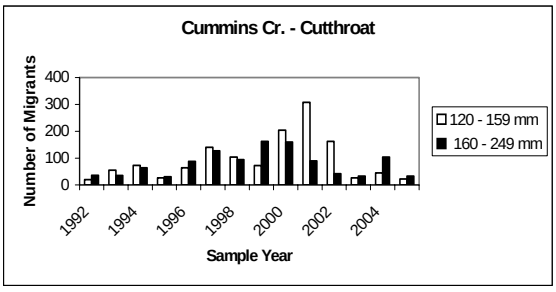


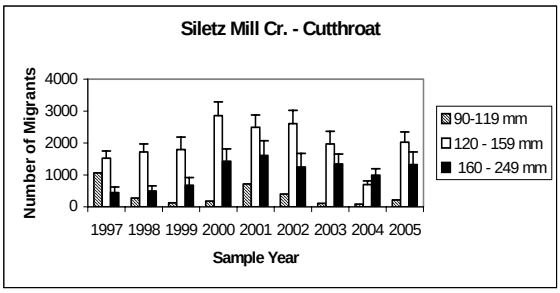
Figure 40. Catch per Unit Effort in the Salmon River Estuary 1998-2003 (Source Krentz & Cornwell, unpublished data).

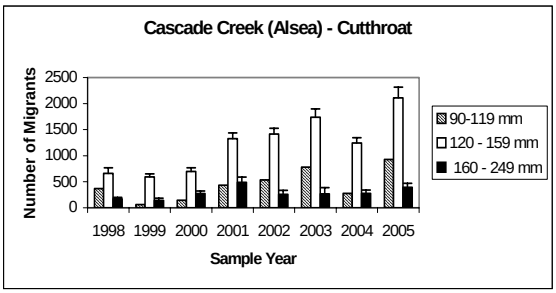

East Fork Lobster
Cutthroat Migrants =>90mm
2000
1500
1000
500
0
1988
1990
1992
1994
1996
1998
2000
2002
2004

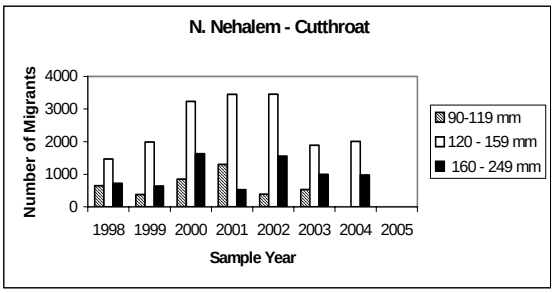

Upper Mainstem Lobster
Cutthroat Migrants =>90mm
2,000
1,500
1,000
500
0
1988
1990
1992
1994
1996
1998
2000
2002
2004

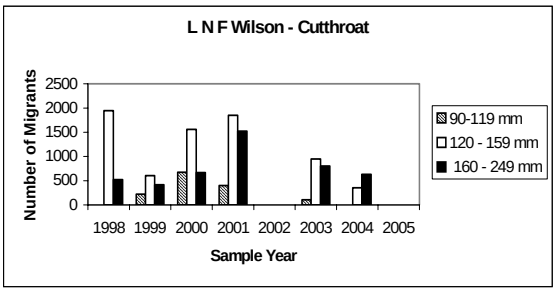

Tenmile Cr. - Cutthroat
Number of Migrants
2500
2000
1500
1000
500
0
1992
1994
1996
1998
2000
2002
2004
Sample Year
120 - 159 mm
160 - 249 mm

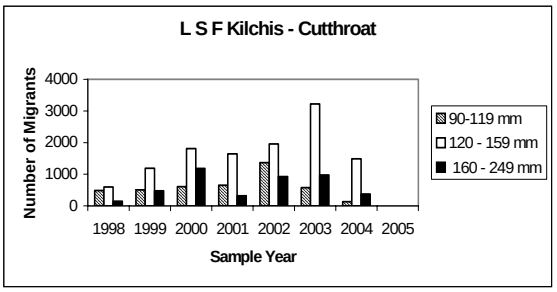

Cummins Cr. - Cutthroat
Number of Migrants
400
300
200
100
0
1992
1994
1996
1998
2000
2002
2004
Sample Year
120 - 159 mm
160 - 249 mm


Siletz Mill Cr. - Cutthroat
Number of Migrants
4000
3000
2000
1000
0
1997 1998 1999 2000 2001 2002 2003 2004 2005
Sample Year
90-119 mm
120 - 159 mm
160 - 249 mm


Cascade Creek (Alsea) - Cutthroat
Number of Migrants
2500
2000
1500
1000
500
0
1998 1999 2000 2001 2002 2003 2004 2005
Sample Year
90-119 mm
120 - 159 mm
160 - 249 mm


N. Nehalem - Cutthroat
Number of Migrants
4000
3000
2000
1000
0
1998 1999 2000 2001 2002 2003 2004 2005
Sample Year
90-119 mm
120 - 159 mm
160 - 249 mm


L N F Wilson - Cutthroat
Number of Migrants
2500
2000
1500
1000
500
0
1998 1999 2000 2001 2002 2003 2004 2005
Sample Year
90-119 mm
120 - 159 mm
160 - 249 mm


L S F Kilchis - Cutthroat
Number of Migrants
4000
3000
2000
1000
0
1998 1999 2000 2001 2002 2003 2004 2005
Sample Year
90-119 mm
120 - 159 mm
160 - 249 mm

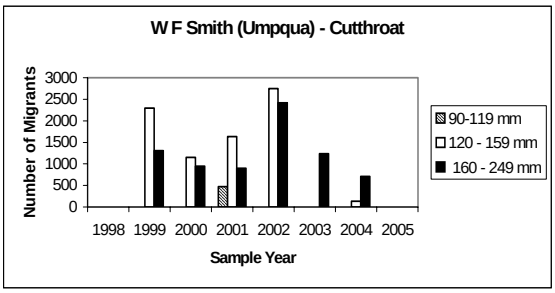

W F Smith (Umpqua) - Cutthroat
Number of Migrants
3000
2500
2000
1500
1000
500
0
1998 1999 2000 2001 2002 2003 2004 2005
Sample Year
90-119 mm
120 - 159 mm
160 - 249 mm

Figure 41. Expanded numbers of coastal cutthroat trout downstream migrants captured in ten ODFW Lifecycle Monitoring Program migrant traps. Years in which expansions could not be made were not graphed.

The relatively stable densities of cutthroat trout found throughout the SMU in random and routine sampling along with the virtual absence of areas of low abundance suggests all populations of coastal cutthroat trout have been above critical levels in all of the last five years. The stable or increasing nature of these densities over the decades that sampling has occurred indicates that the populations have stayed above these critical levels for some time. All of the Oregon Coast SMU populations passed the abundance criterion. The SMU also passes the criterion.

Productivity

Coastal cutthroat trout are abundant and widely distributed in virtually all stream segments in this SMU. Sampling in conjunction with forestry activities throughout the SMU has found cutthroat in most headwater reaches. Lorensen, et al. (1993) reported that, in any given drainage greater than 40 ha within the Oregon Coast SMU, there was an 80% chance that coastal cutthroat trout would be present. Local ODFW biologists have noted that the 40 isolated groups of coastal 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. The densities of cutthroat (fish/m^2 of pool habitat) seen in the past five years in the Drift Creek (Alsea) subbasin (WORP) are comparable to those densities seen in the subbasin in the 1960s (Alsea Watershed Study). Similar coastal cutthroat trout densities have been documented in areas throughout the SMU. All historical life-history strategies continue to be expressed.

Anadromous coastal cutthroat trout are the only life-history type in this SMU that have experienced a documented decline in abundance in the last several decades. Densities of adults during annual North Coast Watershed District snorkel surveys in the Nestucca, Trask, and Wilson rivers had declined during the 1980s and 1990s (Figure 42). This is believed to be a result of poor ocean survival conditions. Coho salmon in the same areas also declined during these years. Densities of the anadromous life-history type have increased significantly since 2000 (ODFW, Knutsen, unpublished data), demonstrating the ability for coastal cutthroat trout with their multiple life-history strategies to respond in the face of environmental variability. The catch per unit effort of anadromous coastal cutthroat trout in the Salmon River estuary also increased over this time period (Krentz and Cornwell, unpublished data)(Figure 40). During the period the anadromous life-history type declined, local ODFW biologists believe overall cutthroat abundances were stable in these basins.

ODFW Watershed District biologists in the Oregon Coast 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. Streams that go dry during the summer months 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.

The productivity criterion is intended to assess the ability of population levels to rebuild after experiencing low abundances. The stable level of cutthroat found in the Alsea from the 1960s to the present along with their almost universal distribution is evidence that this population is fully utilizing the available habitat and maintains abundances near capacity. Similar densities of cutthroat have been found in most, if not all, of the other populations in conjunction with juvenile coho sampling from the 1980s to the present. These densities 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 Oregon Coast SMU pass the productivity criterion.

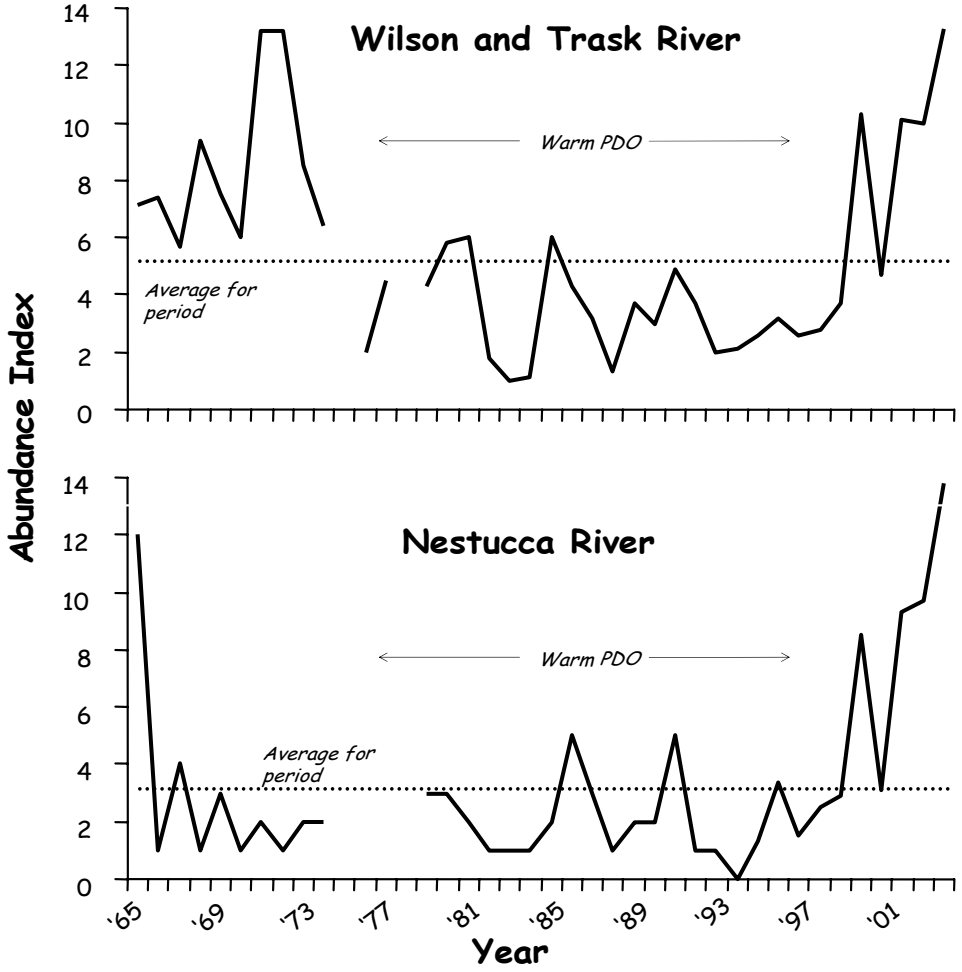


Figure 42. Abundance of adult anadromous coastal cutthroat trout in the Wilson and Trask rivers (combined) and the Nestucca River based on ODFW snorkel surveys 1965-2004. Abundance Index is based upon number of observations per pool surveyed. Dotted line represents the mean number of observations per pool for the period. Surveys were not conducted in 1975 and 1978 (Wilson River), and 1975 and 1977-78 (Trask and Nestucca rivers). Period of low ocean productivity (warm Pacific Decadal Oscillation, PDO) is identified. (From ODFW, Knutsen, unpublished data).

Reproductive Independence

Data specific to reproductive independence are not available for Oregon Coast 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 most of

the SMU. All stocking of hatchery cutthroat trout in the state was ceased in 1996 and many of the programs in the Oregon Coast SMU were discontinued prior to that. The residual effects of hatchery cutthroat on wild coastal cutthroat have not been determined. However, since no stocking of hatchery fish has occurred in the last eight years, the presence of hatchery fish on the spawning grounds is unlikely, therefore all populations passed this criterion.

Hybridization

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

Summary

Our final assessment of the Oregon Coast 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 Oregon Coast Coastal Cutthroat Trout SMU these datasets will be analyzed thoroughly to ensure this interim assessment is accurate.