

in the present document, we considered our initial review (U.S. Fish and Wildlife Service 1999) to be the foundational compendium of information on the present-day status of WCT. In turn, the more-recent WCT status update report (Shepard *et al.* 2003), as well as the other materials that we received or otherwise obtained while conducting the new review, clarified and improved our understanding of the present-day status of WCT and also helped us to address the important issues that had been raised by the Court. While describing our findings in the present document, we will often compare the recently received information for WCT to that found during our initial status review.

#### *Findings of the New Status Review*

##### **Distinct Population Segments**

The Service and the National Marine Fisheries Service have adopted criteria (61 FR 4722; February 7, 1996) for designation of DPSs for vertebrate organisms, such as WCT, under the Act. To constitute a DPS, a population or group of populations must be: (1) Discrete (*i.e.*, spatially, ecologically, or behaviorally separated from other populations of the taxonomic group [*i.e.*, taxon]); (2) significant (*e.g.*, ecologically unique for the taxon, extirpation would produce a significant gap in the taxon's range, the only surviving native population of the taxon, or substantial genetic divergence occurs between the population and other populations of the taxon); and (3) the population segment's conservation status must meet the Act's standards for listing.

In our initial status review, we found no morphological, physiological, or ecological data for WCT that indicated unique adaptations of individual WCT populations or groups of populations that inhabit discrete areas within the subspecies' historic range. Although the disjunct WCT populations in Washington and Oregon, as well as the populations in Montana's upper Missouri River basin, met the first criterion for DPS designation (*i.e.*, discreteness), scientific evidence in support of the second criterion (significance) was absent or insufficient to conclude that any of those populations represented a DPS (U.S. Fish and Wildlife Service 1999).

Extant WCT show a remarkably large amount of genetic variation at the molecular level, both within and among WCT populations across the subspecies' historic range (Allendorf and Leary 1988; Leary *et al.* 1997). Leary *et al.* (1997) found that 65 percent of the total

measured genetic variation in the WCT genome is within WCT populations, 34 percent is among the populations themselves, and about 1 percent is between the aggregates of populations in the Columbia and Missouri River basins. Those authors also found that there can be genetic differences among WCT populations that are separated by short geographic distances. In the context of DPS designation, those differences suggest reproductive isolation among populations that may be indicative of "discreteness." Nevertheless, because of the large amount of genetic variation in the WCT subspecies, the occurrence of a WCT population with molecular genetic characteristics that differ statistically (with adequate sample sizes) from those of other WCT populations is often sufficient to meet the discreteness criterion but not sufficient to meet the significance criterion indicative of unique morphological, behavioral, physiological, or ecological attributes.

Recently, the Northwest Environmental Defense Center (2002) argued that the WCT populations in Oregon's John Day River drainage merited listing as a DPS; however, the Northwest Environmental Defense Center provided no supportive, empirical evidence for that contention and only speculated as to why those populations may be significant in the context of DPS designation. Congress has made clear that DPSs should be used "sparingly" in the context of the Act (*see* Senate Report 151, 96th Congress, 1st Session). While conducting the new status review for WCT, we found no compelling evidence for recognizing DPSs of WCT. Instead, for purposes of the new status review, we recognize WCT as a single taxon in the contiguous United States.

##### **Disjunct Westslope Cutthroat Trout Populations in Washington**

In addition to the historic range of WCT previously described (*see* Background), Behnke (1992) speculated that the WCT is native to the Wenatchee and Entiat River drainages in Washington. Because Behnke's conclusion was largely speculative, we did not consider those two drainages as being within the historic range of WCT in our initial status review (U.S. Fish and Wildlife Service 1999). Similarly, those drainages were not included in the WCT status update report (Shepard *et al.* 2003) because the Washington Department of Fish and Wildlife did not consider those drainages to be within the historic range of WCT.

Because of the extensive introductions of hatchery-produced

WCT (and the probable human transport and stocking of native WCT into waters outside the subspecies' historic range) during the 20th Century, WCT populations are more numerous and widely distributed in Washington today than prior to European settlement (U.S. Fish and Wildlife Service 1999). Those populations now occur in over 493 streams and 311 lakes in Washington (Fuller 2002). Similarly, some WCT populations have been intentionally established in Oregon's John Day River drainage (Unterwegner 2002). However, as was done during our initial status review (U.S. Fish and Wildlife Service 1999), our decision whether or not to recommend listing the WCT as a threatened or an endangered species, as described in the present document, will be based entirely on WCT that presently occur within the formally recognized historic range of the subspecies (Behnke 1992), as modified by Shepard *et al.* (2003) in their status update report.

Recent data from ongoing studies suggest that native WCT populations do occur in the Yakima, Entiat, and Wenatchee River drainages of Washington (Trotter *et al.* 1999, 2001; Howell and Spruell 2003). In assessing the origins of the cutthroat trout they collected from selected streams in those drainages, Trotter *et al.* (1999, 2001) assumed that the absence of a written stocking record for WCT, particularly in the studied streams where those fish are now present, was evidence that WCT are native to those areas. However, as pointed out by Howell and Spruell (2003), who are presently conducting a similar study of the WCT in those drainages as well as in Oregon's John Day River drainage, the historic stocking records of management agencies in Washington and Oregon are incomplete and have "large gaps." Moreover, as Trotter *et al.* (2001) indicate, during the 20th century it was common for the representatives of many Federal, State, and county agencies, and even private citizens, to stock hatchery-produced fish. Those fish were often readily obtained from nearby fish hatcheries, whose managers took advantage of the willingness of citizens to haul hatchery fish to remote areas by whatever means. Moreover, angler conservationists often moved fish from established populations to nearby ostensibly fishless streams.

Howell and Spruell (2003) concluded that WCT in the Yakima, Wenatchee, Entiat, and Methow River drainages of Washington are probably native WCT because populations from each of those drainages possessed some genetic characteristics (*i.e.*, allozyme alleles) that were absent from those of the Twin