

that our decision to not list the WCT as threatened was arbitrary and capricious. In the subsequent oral argument before the Court, plaintiffs conceded that their strongest argument, and the one from which their other concerns stemmed, was that we included hybridized fish in the WCT subspecies considered for listing under the Act, while also recognizing hybridization as a threat to the subspecies. The hybridization threat to WCT is posed by certain nonnative fishes that management agencies and other entities stocked into streams and lakes in many regions of the historic range of WCT, beginning more than 100 years ago. Subsequently, those nonnative fishes or their hybrid descendants became self-sustaining populations and remain as such today.

On March 31, 2002, the U.S. District Court for the District of Columbia found that our listing determination for WCT did not reflect a reasoned assessment of the Act's statutory listing factors on the basis of the best available science. The Court remanded the listing decision to us with the order that we reconsider whether to list the WCT as a threatened species, and that in so doing we evaluate the threat of hybridization as it bears on the Act's statutory listing factors. Specifically, the Court ordered us to determine: (1) The current distribution of WCT, taking into account the prevalence of hybridization; (2) whether the WCT population (*i.e.*, subspecies, as used in the present document) is an endangered or a threatened species because of hybridization; and (3) whether existing regulatory mechanisms are adequate to address the threats posed by hybridizing, nonnative fishes.

The Court also pointed out that the draft Intercross policy (61 FR 4710; February 7, 1996) in no way indicates what degree of hybridization would threaten WCT, or that the existing levels of hybridization do not presently threaten WCT. Furthermore, the Court directed the Service to present a scientifically-based conclusion about the extent to which it is appropriate to include hybrid WCT stocks (*i.e.*, populations, as used in the present document) and populations of unknown genetic characteristics in the WCT subspecies considered for listing.

On September 3, 2002, we announced (67 FR 56257) initiation of a new status review for the WCT and solicited comments from all interested parties regarding the present-day status of this fish. We were particularly interested in receiving data, information, technical critiques, and relevant comments that would help us to address the issues that had been raised by the Court.

During the subsequent comment period, we received written requests for an extension of that period from the fish and wildlife agencies of the States of Washington, Oregon, Idaho, and Montana, as well as the Kalispel Tribe of Indians and the Earthjustice Legal Foundation. In their letters, those entities indicated that they were assembling or awaiting important information relevant to the status of WCT and that those entities wanted to make such information available to us for use in the new status review. Accordingly, on December 18, 2002, we announced (67 FR 77466) that the comment period was reopened until February 15, 2003.

For the purposes of this listing determination, "WCT subspecies" refers explicitly to all populations of WCT within the international boundaries of the United States, although populations of WCT also occur in Canada. As part of this listing determination, the WCT subspecies may be found to consist of DPSs, as described in a subsequent section of this finding.

#### *The Value of Hybrid Westslope Cutthroat Trout in Listing Determinations*

As described in the preceding section, the U.S. District Court for the District of Columbia ruled that the Service must provide a scientifically-based conclusion about the extent to which it is appropriate to include "hybrid WCT stocks" and "stocks of unknown genetic characteristics" in the WCT subspecies considered for listing. We herewith respond to the Court.

In the past, natural hybridization between congeneric or closely-related species of fish was thought to be rare. However, during the first half of the 20th Century, Professor Carl Hubbs and his associates demonstrated that natural hybridization between morphologically distinct species, particularly for temperate-zone freshwater fishes in North America, was common in areas where the geographic ranges of those species overlap (Hubbs 1955). Such natural hybridization may be especially common among centrarchid (basses and sunfishes) and cyprinid (minnows) fishes in the central United States (Avice and Saunders 1984; Dowling and Secor 1997).

Many investigators have subsequently demonstrated that several extant species of fish most likely originated from the interbreeding of two or more ancestral or extant species (Meagher and Dowling 1991; DeMarais *et al.* 1992; Gerber *et al.* 2001). Indeed, natural hybridization between taxonomically distinct species has long been recognized as an

important evolutionary mechanism for the origin of new species of plants (Rieseberg 1997). Conversely, natural hybridization has only recently been recognized as an important evolutionary mechanism for the origin of new species of animals (Dowling and Secor 1997). Natural hybridization is now acknowledged as an important evolutionary mechanism that: (a) Creates new genotypic diversity, (b) can lead to new, adaptive phenotypes, and (c) can yield new species (Arnold 1997).

Hybridization also can result in the extinction of populations and species (Rhymer and Simberloff 1996). Indeed, hybridization resulting from anthropogenic factors is considered a threat to many species of fish (Campton 1987; Verspoor and Hammar 1991; Leary *et al.* 1995; Childs *et al.* 1996; Echelle and Echelle 1997). In particular, the extensive stocking of rainbow trout (*O. mykiss*) outside their native geographic range has resulted in appreciable hybridization with other species of trout (Bartley and Gall 1991; Behnke 1992, 2002; Dowling and Childs 1992; Carmichael *et al.* 1993). This interbreeding also has occurred for WCT where natural hybridization with introduced rainbow trout and Yellowstone cutthroat trout (*O. c. bouvieri*; YCT) is considered a threat to the WCT subspecies (see subsequent section, Hybridization with Nonnative Fishes).

Hybridization also can result in the genetic introgression of genes from one species into populations of another species if F1 (*i.e.*, the first filial generation) and F2 hybrids are fertile and can interbreed, or *backcross*, with individuals of a parental species. For example, first-generation hybrids between WCT and rainbow trout appear to be fully fertile (Ferguson *et al.* 1985), and levels of genetic introgression or "admixture" vary widely (<1 to >50 percent) among natural populations of WCT (*e.g.*, Weigel *et al.* 2002). In this context, admixture refers to the percentage of a population's gene pool derived from rainbow trout genes (or alleles) versus WCT trout genes. In these latter situations, the Service must determine which populations represent WCT, and the genetic resources of WCT, under the Act and which populations threaten the continued existence of the WCT subspecies.

The purpose of the Act is to conserve threatened and endangered "species" and the ecosystems on which those species depend. The definition of "species" under the Act includes any taxonomic species or subspecies, and "distinct population segments" of vertebrate species. The issue here for