

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[Docket No. 910648-3148]

**Endangered and Threatened Species;
Lower Columbia River Coho Salmon**

AGENCY: National Marine Fisheries Service (NMFS), NOAA, Commerce.

ACTION: Notice of determination.

SUMMARY: On June 7, 1990, NMFS received a petition from Oregon Trout, with co-petitioners Oregon Natural Resources Council, the Northwest Environmental Defense Center, American Rivers, and the Idaho and Oregon Chapters of the American Fisheries Society, to list lower Columbia River coho salmon and to designate critical habitat under the Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 *et seq.* (ESA). NMFS published a notice on September 11, 1990 (55 FR 37342), that the petition presented substantial scientific information indicating that the listing may be warranted. NMFS also announced its intention at that time to conduct a status review of lower Columbia River coho salmon and requested comments from any party having relevant information. A Technical Committee comprised of individuals with expertise relevant to lower Columbia River coho salmon, representing public interest groups, Federal and State agencies, Indian tribes, industry and professional societies was convened by NMFS to provide technical information and comment on data in the administrative record. NMFS has evaluated the status of lower Columbia River coho salmon and concluded that available biological evidence indicates that these fish do not constitute a "species" under the ESA and, therefore, a proposal to list is not warranted at this time.

ADDRESSES: Environmental and Technical Services Division, NMFS, Northwest Region, 911 NE, 11th Avenue, suite 620, Portland, OR 97232.

FOR FURTHER INFORMATION CONTACT: Tracey Vriens, Environmental and Technical Services Division, NMFS, Portland, Oregon, 503-230-5420 or FTS-429-5420.

SUPPLEMENTARY INFORMATION: The NMFS Northwest Region Biological Review Team prepared a "Status Review for Lower Columbia River Coho Salmon" providing more detailed information, discussion and references. The status review is available upon

request (see **ADDRESSES**), and is summarized below.

Background

Coho salmon (*Oncorhynchus kisutch*) range throughout the temperate waters of the northern Pacific Ocean. The species was once abundant throughout the Columbia River Basin, with naturally spawning populations exceeding 600,000 fish annually. Two-thirds of the historical Columbia River coho salmon production is thought to have originated in the lower Columbia River (LCR). The LCR, for the purposes of this document, is defined as the Columbia River and its tributaries below Bonneville Dam, Columbia River (upstream from John Day Dam) and Snake River coho salmon were drastically reduced or eliminated prior to the 1950s and are now extinct. LCR coho salmon were reduced to less than 5 percent of historic abundance levels by the late 1950s. Excessive harvest and habitat alteration are the primary factors responsible for this decline of Columbia River coho salmon.

This drastic decline in coho salmon abundance precipitated the development of an extensive hatchery program which restored LCR coho salmon adult returns to historic levels, often exceeding 400,000 fish annually during the last 30 years. Intensive hatchery production and the overharvest of wild coho salmon in mixed stock fisheries resulted in their continued decline. The LCR is managed exclusively for the commercial exploitation of hatchery coho salmon.

Consideration as a "Species" Under the ESA

To consider LCR coho salmon for listing, it must qualify as a "species" under the ESA. The ESA defines a "species" to include any "distinct population segment of any species of vertebrate . . . which interbreeds when mature." NMFS published an interim policy (March 13, 1991; 56 FR 10542) on how it will apply the ESA species definition in evaluating Pacific salmon. This policy provides that a salmon population will be considered distinct, and hence a species under the ESA, if it represents an evolutionary significant unit (ESU) of the biological species. The population must satisfy two criteria to be considered an ESU: (1) It must be reproductively isolated from other conspecific population units; and (2) it must represent an important component in the evolutionary legacy of the biological species. The first criterion, reproductive isolation, need not be absolute, but must be strong enough to permit evolutionarily important differences to accrue in different

population units. The second criterion would be met if the population contributed substantially to the ecological/genetic diversity of the species as a whole. Further guidance on the application of this policy is contained in the NMFS paper "Definition of Species under the Endangered Species Act: Application to Pacific Salmon" and is available upon request (see **ADDRESSES**).

Regarding the first criterion, available information is not conclusive as to whether LCR coho salmon are reproductively isolated from coastal populations of coho salmon in Washington and Oregon. Available information does not indicate that LCR coho salmon satisfy the second criterion, which stipulates that a population must represent an important component in the evolutionary legacy of the biological species to be considered "distinct" (and hence a "species") for the purposes of the ESA. Information on coho salmon habitat utilization, life-history characteristics, and phenotypic and genetic traits was inconclusive, and did not demonstrate that LCR coho salmon are "distinct" from other wild coho salmon populations.

Special Considerations

The release of hatchery-reared fish into an area inhabited by a wild population, and overharvest, can affect a wild population to such an extent that it does not represent a "distinct" population segment under the ESA. Each of these factors has profoundly affected LCR coho salmon.

Non-indigenous coho salmon stocks have been extensively transferred into the LCR since the 1890s. All of the LCR coho salmon hatchery stocks evaluated exhibited a heritage of coastal or other non-indigenous coho salmon. Although the effect of non-indigenous stock transfers on the genetic character of LCR coho salmon has not been adequately studied, the extent and magnitude of these transfers suggest that significant introgression of non-indigenous stocks has occurred into LCR hatcheries.

Coho salmon have also been extensively transferred from various hatcheries into streams and drainages throughout the LCR. This practice (outplanting) began in the early 1960s and continues today (a period of over ten coho salmon generations) and has resulted in hatchery fish being transferred into practically every accessible stream in the LCR. In 1986, researchers from the Oregon Department of Fish and Wildlife found the density of wild coho salmon in

streams supplemented with hatchery coho salmon fry was reduced by over 40 percent and that the majority of returning adults from the year of the outplants had run-times representative of the hatchery, rather than of the wild population. Thus, outplanting, combined with the high percentage of coho salmon from hatcheries spawning in the wild, likely resulted in significant hatchery introgression of the indigenous population throughout the LCR.

Overharvest has severely affected wild coho salmon indigenous to the LCR. Ocean and in-river harvest rates for LCR coho salmon increased

dramatically during the 1960s, and have stabilized at approximately 90 percent. Conservation measures for wild coho salmon indigenous to the LCR were not incorporated into the operation of hatcheries constructed to mitigate the decline in this population. Increased hatchery production, beginning in the 1960s, allowed harvest rates to remain high, and wild LCR coho salmon, already depressed in abundance, were not afforded an opportunity to recover.

Determination

Section 4(b)(1)(a) of the ESA requires that determinations whether any species

is threatened or endangered be based solely on the best scientific and commercial information available after conducting a review of the status of the species. NMFS has evaluated the status of LCR coho salmon and determined that available biological evidence does not indicate that these fish represent a "species" under the ESA; therefore, a proposal to list LCR coho salmon under the ESA is not warranted at this time.

Dated: June 21, 1991.

Samuel W. McKeen,

Acting Assistant Administrator for Fisheries.

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