

determined that the Umpqua River cutthroat trout is a "species" as interpreted under the ESA. The number of adult cutthroat trout counted at Winchester Dam on the North Umpqua River has declined to extremely low numbers. Habitat degradation and recreational fishing are believed to be the major factors contributing to the decline; they continue to represent a potential threat to the Umpqua River cutthroat trout's existence. Should the proposed listing be made final, a recovery program would be implemented.

DATES: Comments must be received by September 6, 1994. Requests for a public hearing must be received by August 8, 1994.

ADDRESSES: Comments on this proposed rule should be sent to the Environmental and Technical Services Division, NMFS, Northwest Region, 911 NE. 11th Avenue, Suite 620, Portland, OR 97232.

FOR FURTHER INFORMATION CONTACT: Garth Griffin, Environmental and Technical Services Division, NMFS, Portland, OR (503/230-5430) or Marta Nammack, Protected Species Management Division, NMFS, 1335 East-West Highway, Silver Spring, MD 20910 (301/713-2322).

SUPPLEMENTARY INFORMATION:

Background

On April 1, 1993, the Secretary of Commerce received a petition from the Oregon Natural Resources Council, Umpqua Valley Audubon Society, and the Wilderness Society to list North and South Umpqua River sea-run cutthroat trout (*Oncorhynchus clarki clarki*) as threatened or endangered and to designate critical habitat under the ESA. On July 19, 1993, NMFS published (58 FR 38554) its intent to conduct a status review of North and South Umpqua River sea-run cutthroat trout. To ensure a comprehensive review, NMFS solicited information and data regarding the present and historic status of North and South Umpqua River sea-run cutthroat trout and whether this stock qualifies as a "species" under the ESA. NMFS also requested information on areas that may qualify as critical habitat for North and South Umpqua River sea-run cutthroat trout.

On August 19, 1993, NMFS received a petition from the Oregon Natural Resources Council and the Steamboaters for an emergency listing of North and South Umpqua River sea-run cutthroat trout. On December 17, 1993, NMFS published a notice of finding (58 FR 65961) that an emergency listing was not warranted at that time.

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 222

[Docket No. 940685-4185; I.D. 040694C]

RIN 0648-AG74

Endangered and Threatened Species; Proposed Endangered Status for North and South Umpqua River Cutthroat Trout in Oregon

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; request for comments.

SUMMARY: NMFS is issuing a proposed rule to list the Umpqua River cutthroat trout (*Oncorhynchus clarki*) as endangered under the Endangered Species Act of 1973 (ESA). NMFS has

123-74A

Status Review for Umpqua River Sea-run Cutthroat Trout

The NMFS Northwest Region Biological Review Team has prepared a "Status Review for Umpqua River Sea-run Cutthroat Trout" (Johnson et al. 1994), providing detailed information, discussion and references. This status review is available upon request (see ADDRESSES), and is summarized below.

Biological Background

The Umpqua River watershed covers approximately 4,560 square miles (11,810 km²) in southwestern Oregon, and enters the Pacific Ocean 60 miles (97 km) north of Cape Blanco. The river is approximately 210 miles (338 km) long and, above river mile 112, consists of two principal forks: The North Umpqua and the South Umpqua rivers.

In general, cutthroat trout are considered to be either migratory and anadromous, or non-migratory and resident. In some large river systems, however, cutthroat trout may make extensive in-river migrations but never enter the ocean. There is some evidence that this "potamodromous" life history form occurs in the Umpqua River. Potamodromous forms migrate to mainstem rivers or lakes, but otherwise their life history characteristics are similar to the anadromous form. Resident forms of cutthroat trout inhabit headwater areas throughout their lives, and seldom live beyond the age of 4 or 5 years.

Throughout their range, anadromous cutthroat trout usually spawn in small tributary streams. In Oregon, anadromous cutthroat trout re-enter fresh water between July and March; few, if any, overwinter in salt water. Spawning generally occurs during late winter and spring, but timing varies by geographic location. Anadromous adults may survive spawning and reproduce in one or more subsequent years.

Anadromous cutthroat trout first migrate to the ocean as smolts between the ages of 2 and 4 years. In Oregon, the downstream migration of smolts occurs between March and June. Because they spend a variable amount of time in the ocean, the growth rate of these fish varies.

Adult cutthroat trout (presumed to be anadromous) passing Winchester Dam (river mile 118 on the North Umpqua River) have been monitored since 1946. During this monitoring period, a maximum annual count of 2,364 (1966-67) and a minimum annual count of zero (1992-93) adult cutthroat trout have been recorded. The numbers of anadromous cutthroat trout returning to the South Umpqua River is unknown.

Consideration as a "Species" Under the ESA

To qualify for listing as a threatened or endangered species, Umpqua River sea-run cutthroat trout must be 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 a policy document (56 FR 58612, November 20, 1991) describing how the agency will apply the ESA definition of "species" to anadromous salmonid species, including sea-run cutthroat trout and steelhead. This policy provides that a salmonid population will be considered distinct, and hence a species under the ESA, if it represents an evolutionarily 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 "Pacific salmon (*Oncorhynchus* spp.) and the Definition of Species under the Endangered Species Act," which is available upon request (see ADDRESSES).

For the first criterion, NMFS considered available information regarding geographic and physical factors that may isolate Umpqua River sea-run cutthroat trout from other conspecific populations of cutthroat trout. The scarcity of available information about the different life history forms of cutthroat trout in the Umpqua River makes it difficult to assess accurately the reproductive isolation of the sea-run cutthroat trout within the Umpqua River basin. In general, the potamodromous life history form provides a possible link between anadromous and resident fish and may retard divergence of these two life history forms. Sea-run cutthroat trout generally do not overwinter at sea and may, after spawning, spend an entire year in fresh water prior to returning to the ocean. Incidence of repeat spawning in cutthroat trout is higher than in steelhead, and this distinctive life history trait may reflect a greater affinity

with resident life history forms. These traits suggest that opportunities for reproductive isolation between life history forms are not as great as with other *Oncorhynchus* species (e.g., *O. mykiss* and *O. nerka*). According to NMFS policy on application of the ESA species definition, anadromous and nonanadromous life history forms can be considered separately under the ESA if they are reproductively isolated, but they should be considered together if they are not. Because there is no clear basis for considering sea-run cutthroat trout in the Umpqua River as a separate entity from resident and potamodromous fish, NMFS has determined that, at least until more information is available, all life history forms of *O. clarki* in the Umpqua River should be considered part of the same ESU.

Unlike most other coastal rivers, the Umpqua River drainage originates in the Cascade Mountains and passes through the Coast Range. Anadromous cutthroat trout in the Umpqua River are believed to spawn farther from the ocean (125 miles (201 km or more) than most other sea-run cutthroat trout populations. The homing ability of sea-run cutthroat trout is generally considered to be highly precise and there is reason to suspect that populations in different drainages could become reproductively isolated. In addition, warm water temperatures in the lower mainstem of the Umpqua River may also act as an isolating mechanism. Although a scarcity of direct evidence (e.g., genetic information) highlights the scientific uncertainty regarding the degree of reproductive isolation of Umpqua River cutthroat trout, available circumstantial evidence suggests that all life history forms (i.e., anadromous, resident, and potamodromous) of cutthroat trout within the Umpqua River basin are substantially reproductively isolated from populations in adjacent basins.

Regarding the second ESU criterion, evolutionary significance, the lengthy migration of the anadromous form of Umpqua River cutthroat trout, possible adaptations for dealing with warm water temperatures, and distinctive hydrographic features of the Umpqua River drainage all suggest that there is an ESU at the Umpqua River level. The effects of the extensive releases of Alsea River Hatchery fish between 1961 and 1976 were also considered. During the period when the Umpqua River was stocked with Alsea River hatchery fish, counts of adult cutthroat trout (presumably sea-run fish) at Winchester Dam increased dramatically. This trend was not sustained after stocking was discontinued, and counts have declined

to precariously low levels. This may be evidence of the inability of Alsea River cutthroat trout to sustain a population in the Umpqua River. Further, during the stocking program, the sea-run cutthroat trout passing over Winchester Dam exhibited a later run timing than the indigenous population. After stocking was discontinued, this later run timing shifted back toward the original run timing. Although there are no data that directly address the effects of Alsea River fish on Umpqua River native fish (e.g., genetic information), available evidence suggests that the current population of cutthroat trout represented by the dam counts is a remnant of the indigenous cutthroat trout and may be genetically distinct from Alsea River hatchery fish.

Status of Umpqua River Cutthroat Trout

The precarious status of the remaining sea-run cutthroat trout in the Umpqua River is not in question. However, the existence of potamodromous fish is still largely speculative. Resident cutthroat trout numbers are not known, but there are a few lakes within the Umpqua River Basin believed to contain cutthroat trout. Although there is no direct information (e.g., abundance estimates) on the current status of the species, it is likely that there have been significant reductions in the numbers of resident and potamodromous fish due to widespread habitat degradation in the Umpqua River Basin.

A key factor influencing NMFS' determination of the status of the Umpqua River cutthroat trout concerns the evolutionary significance of the anadromous life history form to *O. clarki* as a whole. On the issue of anadromy/nonanadromy, Waples (1991) states:

If substantial gene flow occurs or has recently occurred between the two forms, they represent polymorphisms within a single population and should be considered as a unit for purposes of the Act. In determining whether such a population unit is an ESU, the anadromous and non-anadromous traits should be considered in the same manner as other population characteristics. . . . The important questions are whether the traits have a genetic basis and whether they help to make the population unit "distinct" from other populations. For example, an anadromous/nonanadromous unit might be considered an ESU if other ecologically comparable populations of the species harbored only the nonanadromous form. In this case, if the population unit is considered to be an ESU solely or primarily on the basis of the anadromous trait, then the potential loss of anadromy should be a legitimate ESA concern. A key question would be whether the nonanadromous form was likely to give

rise to the anadromous form after the latter had gone locally extinct. Therefore, an anadromous/nonanadromous population unit could be listed based on a threat to one of the life-history traits, if the trait were genetically based and loss of the trait would compromise the "distinctness" of the population. (p. 16)

Thus, even if the resident form were determined to be healthy, the risk of losing the anadromous form would still be an ESA concern if the trait has a genetic basis and it contributes substantially to the species' ecological and genetic diversity. Although there are no data that directly address the genetic relationship between the different life history forms of Umpqua River cutthroat trout, circumstantial evidence regarding population abundance and run-timing suggests that a component of the native run persists, and the possibility of losing this life history form must be considered in determining whether to list the entire population.

NMFS concludes that the best available information indicates that this stock meets both of the criteria necessary to be considered an ESU. Therefore, NMFS determines that the Umpqua River cutthroat trout is a "species" under the ESA.

Summary of Factors Affecting the Species

Section 2(a) of the ESA states that various species of fish, wildlife, and plants in the United States have been rendered extinct as a consequence of economic growth and development untempered by adequate concern and conservation. Section 4(a)(1) of the ESA and the NMFS listing regulations (50 CFR Part 424) set forth procedures for listing species. The Secretary of Commerce must determine, through the regulatory process, if a species is endangered or threatened based upon any one or a combination of the following factors: (1) The present or threatened destruction, modification, or curtailment of its habitat or range; (2) overutilization for commercial, recreational, scientific, or education purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; or (5) other natural or human-made factors affecting its continued existence.

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

Habitat degradation and impacts associated with logging and related land management activities in particular have likely contributed to the Umpqua River cutthroat trout population's

decline. Removal of forest canopy can cause an increase in both the maximum and the diurnal fluctuation of water temperatures, leading to disease outbreaks, altered timing of migration, and accelerated maturation. The removal of streamside vegetation can deplete the bank area of potential new woody debris that provides cover for cutthroat trout. Siltation is another result of some logging practices; it is known to hinder fry emergence from the gravel and may limit production of benthic invertebrates. Dissolved oxygen content of both surface and intragravel water can decrease as a result of logging operations. Logging can also cause changes in stream flow regimes, resulting in potentially adverse water velocity and depth characteristics.

B. Overutilization for Commercial, Recreational, Scientific, or Education Purposes

Cutthroat trout are not harvested commercially, and scientific and educational programs have probably had little or no impact on Umpqua River cutthroat trout populations. However, the cutthroat trout is a popular gamefish throughout the Pacific Northwest and available information indicates that recreational fishing has likely contributed to the general decline in Umpqua River cutthroat trout populations. Also, poaching may pose a major threat to depressed populations of salmonids in the Umpqua River.

C. Disease or Predation

Disease is not believed to be a factor contributing to the decline of cutthroat trout populations in the Umpqua River. Several non-native fish species introduced to the Umpqua River are known to prey on or compete with salmonids; however, there is no specific information regarding predation impacts by these or native fishes on Umpqua River cutthroat trout.

D. Inadequacy of Existing Regulatory Mechanisms

Because recreational fishing is believed to have been a factor contributing to the general decline in cutthroat trout populations in the Umpqua River basin, Oregon sportfishing regulations now require anglers to release naturally produced cutthroat trout (i.e. fish without clipped adipose fins) that are greater than 12 inches in length. However, anglers are still allowed to catch and keep up to five fish per day between 8-12 inches in length in the Umpqua River and estuary. Therefore, existing harvest regulations may not be adequate to protect a substantial portion of the Umpqua

River's juvenile and adult cutthroat trout population from overutilization by recreational anglers.

The significant decline in numbers of cutthroat trout passing Winchester Dam suggests that management plans and practices followed by the U.S. Forest Service (FS), Bureau of Land Management (BLM), and Oregon Department of Fish and Wildlife have not provided adequate protection for this species. Although the State of Oregon listed the Umpqua River sea-run cutthroat trout as a sensitive species in 1990, the designation has not reversed the decline of this species. Furthermore, the designation has not protected the species from adverse effects resulting from Federal actions.

A Federal interagency cooperative program, the Record of Decision for Amendments to FS and BLM Planning Documents Within the Range of the Spotted Owl (the Forest Plan, April 1994), has recently been implemented to provide a coordinated management direction for the lands administered by the FS and the BLM. Region-wide management direction will amend existing management plans, including Forest Plans, Regional Guides, Timber Sales Plans, and Resource Management Plans for lands within the range of the northern spotted owl (including the Umpqua River Basin). As part of the Forest Plan, implementation of the Aquatic Conservation Strategy (ACS) should help reverse the trend of aquatic ecosystem degradation and contribute toward recovery of fish habitat. Coordination between the Federal land management agencies and NMFS, the Environmental Protection Agency, and the U.S. Fish and Wildlife Service should ensure that the ACS objectives are achieved. Although the restoration measures should benefit the species in the future, they have just been implemented, and the effectiveness of these measures is not known and cannot be assessed with certainty until future runs return.

NMFS is aware of timber sales that were awarded prior to implementation of the Forest Plan. Although the Forest Plan does not address previous actions, the FS and BLM have screened previously sold or awarded timber sales in the Umpqua River Basin to avoid potential direct, indirect, or cumulative adverse impacts to salmonids. During the screening process, several concerns regarding individual sales were identified. Although the direct adverse effects of these individual timber sales were addressed and mitigated, there may be remaining cumulative effects concerns (i.e., amount of canopy removal).

E. Other Natural or Manmade Factors Affecting Its Continued Existence

The Alsea River Hatchery fish stocking program (1960–75) may have been a factor in the decline of Umpqua River cutthroat trout, although there is considerable uncertainty regarding the ability of these hatchery fish to sustain a population in the river. The stocked fish may have affected the native fish through behavioral and genetic interactions, competition, predation, and the spread of disease. However, circumstantial evidence regarding population abundance and run timing suggests that a component of the native run persists.

Proposed Determination

The ESA defines an endangered species as any species in danger of extinction throughout all or a significant portion of its range, and a threatened species as any species likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Section 4(b)(1) of the ESA requires that the listing determination be based solely on the best scientific and commercial data available, after conducting a review of the status of the species and after taking into account those efforts, if any, being made to protect such species.

Regarding the Umpqua River cutthroat trout ESU determination and associated threatened or endangered classification, the NMFS status review identified three issues that cannot currently be resolved strictly on the basis of available scientific evidence: (1) The geographic extent of the ESU; (2) the effects of the Alsea River hatchery fish; and, (3) the status (threatened or endangered) of the ESU. Although there is uncertainty regarding assumptions about the above issues, the precarious status of the remaining sea-run fish suggests that the anadromous component of the Umpqua River cutthroat trout population (which may have a genetic basis) is in danger of extinction. Any evaluation of a proposal to list Umpqua River cutthroat trout must include full consideration of the potential consequences of the loss of the anadromous life history form.

Based on its assessment of the best scientific and commercial information available, NMFS determines that the Umpqua River cutthroat trout (i.e., all life forms) is a "species" under the ESA. The collective evidence suggests that an important component of the ESU is in danger of extinction throughout a significant portion of its range. Therefore, NMFS proposes to list all life forms of Umpqua River cutthroat trout

as endangered. With the proposal to list Umpqua River cutthroat trout, NMFS is assuming that: (1) All life history forms of cutthroat trout in the Umpqua Basin constitute one ESU, (2) the ESU represents the evolutionary legacy of the historical cutthroat trout population, and (3) either all life history forms of cutthroat trout in the Umpqua Basin have experienced extensive declines in abundance such that they are presently threatened with extinction, or the depressed sea-run component of the population is a substantial and important component of the ESU, and its loss would compromise the distinctness and viability of the inclusive ESU. NMFS will reconsider this proposed listing determination if it obtains relevant information regarding the extent of the ESU that contains Umpqua River cutthroat trout, the effects of previous stocking of Alsea River hatchery fish on current populations, or the relationship between anadromous, potamodromous, and resident life-history forms in the Umpqua River.

Critical Habitat

Section 4(a)(3)(A) of the ESA requires that, to the extent prudent and determinable, critical habitat be designated concurrently with the listing of a species. While NMFS has completed its analysis of the biological status of Umpqua River cutthroat trout, it has not completed the analysis necessary for designating critical habitat. NMFS has determined that a critical habitat designation will require a more detailed assessment of the relationship between the various cutthroat trout life forms. Therefore, to avoid delaying this listing proposal, NMFS will propose critical habitat in a separate rulemaking.

Public Comments Solicited

To ensure that the final action resulting from this proposal will be as accurate and as effective as possible, NMFS is soliciting comments and suggestions from the public, other concerned governmental agencies, the scientific community, industry, and any other interested parties (see **DATES** and **ADDRESSES**). The final decision on this proposal will take into consideration the comments and any additional information received by NMFS, and may differ from this proposed rule.

Classification

The 1982 amendments to the ESA, in section 4(b)(1)(A), restrict the information that may be considered when assessing species for listing. Based on this limitation of criteria for a listing

decision and the opinion in *Pacific Legal Foundation v. Andrus*, 675 F. 2d 825 (6th Cir., 1981), NMFS has categorically excluded all ESA listing actions from environmental assessment requirements of NEPA (48 FR 4413, February 6, 1984).

As noted in the Conference report on the 1982 amendments to the ESA, economic considerations have no relevance to determinations regarding the status of the species. Therefore, the economic analysis requirements of the Regulatory Flexibility Act are not applicable to the listing process.

Similarly, this proposed rule is exempt from review under E.O. 12866.

References

- Johnson et al. 1994. Status review for Umpqua River sea-run cutthroat trout. U.S. Dep. Commer., NOAA Tech. Memo. NMFS F/NWC-xxx, 112 p.
- Waples, R.S. 1991. Pacific salmon, *Oncorhynchus* spp., and the definition of "species" under the Endangered Species Act. Mar. Fish. Rev. 53(3):11-22.

List of Subjects in 50 CFR Part 222

Administrative practice and procedure, Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Dated: July 1, 1994.

Charles Karnella,

*Acting Program Management Officer,
National Marine Fisheries Service.*

For the reasons set out in the preamble, 50 CFR part 222 is proposed to be amended as follows:

PART 222—ENDANGERED FISH OR WILDLIFE

1. The authority citation of part 222 continues to read as follows:

Authority: 16 U.S.C. 1531-1543.

§ 222.23 [Amended]

2. In § 222.23, paragraph (a), the second sentence, is amended by adding the phrase "Umpqua River cutthroat trout (*Oncorhynchus clarki*);" immediately after the phrase "Sacramento River winter-run chinook salmon (*Oncorhynchus tshawytscha*);".

[FR Doc. 94-16577 Filed 7-5-94; 2:47 pm]

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