DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Parts 223 and 224

[Docket No. 990303060–9060–01; I.D.022398C]

RIN 0648–AM54

Endangered and Threatened Species: Notice of Partial 6-Month Extension on Final Listing Determinations for Four Evolutionarily Significant Units (ESUs) of West Coast Chinook Salmon

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

ACTION: Proposed rule; partial extension of deadline for final determination.

SUMMARY: NMFS has determined that substantial scientific disagreements exist regarding the sufficiency and accuracy of data relevant to final listing determinations for the California Central Valley spring-run and Central Valley fall/late fall-run, Southern Oregon and California Coastal, and Snake River fall-run ESUs of chinook salmon.

By this publication, NMFS intends to extend the deadline for a final listing determination for these four ESUs for 6 months to collect and analyze specific additional information from co-managing agency scientists and other scientific experts on this species that will enable NMFS to make a final listing determination based on the best available scientific information. NMFS has also issued final listing determinations for Puget Sound chinook salmon, Lower Columbia River chinook salmon, Upper Willamette spring-run chinook salmon and Upper Columbia River spring-run chinook salmon which published elsewhere in the Rules and Regulations section of this **Federal Register** issue.

DATES: Comments must be received by April 23, 1999. The new deadline for final action on the four ESUs of west coast chinook salmon is extended from March 9, 1999, to September 9, 1999.

ADDRESSES: Written comments should be sent to Chief, Protected Resources Division, NMFS, Northwest Region, 525 NE Oregon Street, Suite 500, Portland, OR 97232-2737; or to Chief, Protected Resources Division, NMFS, Southwest Region, 501 West Ocean Blvd., Suite 4200, Long Beach, CA 90802-4213; or to Chief, Endangered Species Division, Office of Protected Resources, NMFS, 1315 East-West Highway, Silver Spring, MD 20910.

FOR FURTHER INFORMATION CONTACT: Garth Griffin, 503-231-2005, Craig Wingert, 310–980–4021, or Christopher Mobley, 301-713-1401.

SUPPLEMENTARY INFORMATION:

Background

Historically, chinook salmon inhabited most coastal streams in Washington, Oregon, and California, as well as many inland streams in these states and in Idaho. However, during this century, over 50 indigenous, naturally reproducing stocks of chinook salmon are believed to have been extirpated, and many more have been identified as being at moderate or high risk of extinction in numerous coastal and inland streams in Washington, Oregon, Idaho, and California (Nehlsen *et al.*, 1991; Higgins *et al.*, 1992).

The history of Endangered Species Act (ESA) listing petitions received regarding west coast chinook salmon is summarized in the proposed listings rule published on March 9, 1998 (63 FR 11482). The most recent and comprehensive petition was submitted by Oregon Natural Resources Council and Siskiyou Project Staff Ecologist Dr. Rich Nawa on February 1, 1995. In response to this petition, as well as to earlier petitions, NMFS collected and assessed the best available scientific and commercial data, including technical information compiled from the Pacific Salmon Biological Technical Committees (PSBTCs) and from interested parties in Washington, Oregon, Idaho, and California. The PSBTCs consisted primarily of scientists from Federal, state, and local resource agencies, Indian tribes, industries, universities, professional societies, and public interest groups possessing technical expertise relevant to chinook salmon and their habitats.

NMFS also established a Biological Review Team (BRT) that was composed of staff from NMFS' Northwest and Southwest Fisheries Science Centers and Southwest Regional Office, as well as a representative of the National Biological Survey. The BRT conducted a coastwide status review for west coast chinook salmon (Myers *et al.*, 1998) and identified 15 ESUs in the States of Washington, Oregon, Idaho, and California. These ESUs included two Snake River ESUs already listed under the ESA, one previously identified ESU (mid-Columbia River summer/fall run) for which no listing was proposed and one population (Sacramento River winter-run) that was listed as a ''distinct population segment'' prior to the formulation of the NMFS ESU policy. Based on the results of the BRT report and after considering other information and efforts being made to protect chinook salmon, NMFS proposed (1) Listing two ESUs as endangered; (2) listing five ESUs as threatened; and (3) redefining the Snake River fall-run chinook salmon ESU (previously listed as a threatened species under the ESA in 1992 (57 FR 14653)) to include fall chinook salmon populations in the Deschutes River, and listing the redefined ESU as a threatened species (63 FR 11482, March 9, 1998). NMFS also concluded that at the time four ESUs did not warrant protection under the ESA.

Finding

Within 1 year from the date of a proposed listing, section 4(b)(6) of the ESA requires NMFS to take one of three actions: (1) Finalize the proposed listing; (2) withdraw the proposed listing; or (3) extend the 1-year period for not more than 6 months pursuant to section 4(b)(6)(B)(i) of the ESA. Section 4(b)(6)(B)(i) of the ESA allows NMFS to extend the deadline for a final listing determination for not more than 6 months for the purpose of soliciting additional data. NMFS' ESA implementing regulations condition such an extension on the finding of ''substantial disagreement among scientists knowledgeable about the species concerned regarding the sufficiency or accuracy of the available data relevant to the determination.'' (50 CFR 424.17(a)(1)(iv)).

NMFS has analyzed new information and public comments received in response to the March 9, 1998, proposed rule. As a result of the new information and comments, NMFS has determined that substantial scientific disagreements exist regarding the sufficiency and accuracy of data relevant to final listing determinations for California's Central Valley spring-run and fall/late fall-run and for Southern Oregon and California Coastal and for Snake River fall-run chinook salmon ESUs (Memorandum from U. Varanasi and M. Tillman to W. Stelle and W. Hogarth, October 30, 1998). These scientific disagreements concern the consistency of analysis used to identify temporal runs of chinook salmon in the same basin, the data needed to determine the geographic boundaries of certain ESUs, and information related to the risk assessment for some chinook salmon ESUs. Therefore, NMFS extends the final listing determination deadline for these four ESUs for 6 months to collect and analyze these additional data.

Several efforts are underway that may resolve the scientific disagreements relevant to these ESUs. These efforts include (1) analysis of tissue samples of

Central Valley, Southern Oregon and California Coastal, and Upper Klamath and Trinity River spring- and fall-run chinook salmon that have been and will be collected this summer and fall by various parties, including the California Department of Fish and Game (CDFG) and NMFS, to help determine the genetic relationship between conspecific temporal runs of chinook salmon in these ESUs; (2) collection of Deschutes River fall-run chinook salmon samples by the Confederated Tribes of the Warm Springs Reservation (CTWSR) which will be genetically analyzed by the Washington Department of Fish and Wildlife and used by NMFS to determine the genetic makeup of these chinook salmon in relationship to the genetic structure of listed Snake River fall-run chinook salmon; and (3) analysis of additional genetic and abundance data regarding the ratio of hatchery-to-natural fall-run chinook salmon in California's Central Valley. A more detailed discussion of the areas of substantial scientific disagreement and of the efforts to resolve it follows.

Points of Substantial Scientific Disagreement

Knowledgeable scientists from state fish and wildlife agencies, tribes, the public, and some peer reviewers dispute the sufficiency and accuracy of data employed by NMFS in its proposed listing of west coast chinook salmon ESUs in California, Oregon, and Washington. The primary areas of dispute fell into two broad categories: issues relating to ESU definitions and issues relating to risk assessment. The following sections briefly discuss the types of data that are subject to disagreement within each category.

Issues Relating to ESU Definitions

Two points of scientific disagreement may affect chinook salmon ESU boundaries. One area of disagreement concerns NMFS' treatment of diverse life history forms within the individual ESUs, specifically the relationship between spring and fall chinook salmon in the same river basins. Comments received focused on NMFS' use of primarily genetic data in making its determination to combine spring and fall chinook salmon into a single ESU. Some commenters argued that not all relevant life history characteristics are apparent through an analysis of discrete genetic markers.

CDFG, U.S. Fish and Wildlife Service, Hoopa Valley Tribal Council (HVTC), Yurok Tribal Fisheries Program (YTFP), and several of the peer-reviewers, as well as a number of local government agencies, conservation groups, and private citizens, all felt that in a number of cases where spring- and fall-run chinook salmon were included in the same ESU, separate ESUs should have been established. These recommendations were supported with information on ecological differences in spring and fall-run spawning and juvenile rearing habitat. Furthermore, it was argued that separation in spawning time and location provided a significant amount of reproductive isolation, even in those systems where dams had restricted access to historical spring-run spawning habitat. Several of the commenters highlighted these ecological and life history differences in those ESUs where genetic data were limited or lacking. Furthermore, the commenters stated that the lumping of spring and fall runs in the Klamath River ESU and in coastal ESUs was inconsistent with the recognition of separate fall- and spring-run ESUs in California's Central Valley and the upper Columbia River Basin.

However, another point of disagreement concerns whether there is significant reproductive isolation between spring and fall chinook salmon to warrant their designation as separate ESUs. One peer reviewer indicated that the genetic differences observed between the Central Valley fall/late fall- and Central Valley spring-run ESU were not compelling enough to justify their separation into two ESUs. NMFS will receive new samples of spring and fall chinook salmon from CDFG and CTWSR at the conclusion of the run year early in 1999 and will need time to analyze these additional data.

The relationship between different chinook salmon temporal runs within the same geographic areas varies by region. For example, in Puget Sound and in the Columbia River, considerable information is available on the relationship between spring- and fall-run populations. The two runs are well differentiated by both genetic and life history traits in the upper Columbia and Snake Rivers, whereas the same characters show only modest differences between runs in Puget Sound. These patterns are well established and are not likely to change if additional information were gathered.

The relationship of different temporal runs in some other areas, especially those south of Cape Blanco, Oregon, are much less clear. NMFS had limited genetic information on the relationship between spring and fall runs in California's Central Valley and in the Klamath River Basin. The only allozyme information available for spring-run chinook salmon in both of these regions is from hatchery broodstocks. Furthermore, available information suggests that these ''spring-run'' broodstocks have undergone significant hybridization with fall-run chinook salmon returning to the Feather River Hatchery in the Central Valley. In the Upper Klamath and Trinity River ESU, there was no genetic information available for naturally-spawning populations. NMFS concluded that the case for separating the spring and fall runs in this ESU on an ecologic and life-history basis alone was not as compelling as was the case in the Central Valley. However, NMFS will review this decision if new genetic information on naturally-spawning spring-run populations becomes available to NMFS.

Another scientific disagreement concerning California's Central Valley spring-run chinook salmon ESU concerns the origins of some spring-run chinook salmon populations. Disagreements have arisen concerning the origin of the recently increasing number of spring-run chinook salmon in Butte Creek, a tributary of the Sacramento River. The California Department of Water Resources and CDFG presented genetic information which indicates that the spring-run chinook salmon population in Butte Creek is not the result of Feather River Hatchery stray chinook salmon, as NMFS suggested might be the case. New DNA data suggests that Butte Creek spring-run chinook salmon may be more closely related to spring-run fish in Deer and Mill Creeks than to fall or late-fall run stocks. NMFS was unable to positively ascertain the origin of spring-run chinook salmon in Butte Creek at the time of the proposed listing and is curently analyzing new genetic samples of Butte Creek spring-run chinook salmon provided by CDFG so that it can more accurately address questions concerning ESU configurations and abundance within the Central Valley.

Scientific disagreement was also raised by the Oregon Department of Fish and Wildlife (ODFW), CDFG, and a number of other commenters who disputed the geographic boundaries of the Southern Oregon and California Coastal chinook salmon ESU. Comments focused on two issues: (1) Splitting the ESU just south of the Klamath River; and (2) revising the southern boundary to the Russian River or north of the Russian River. Genetic data presented in the status review indicate that within this ESU there are two somewhat distinct subgroups (the first group includes populations from Cape Blanco to the Klamath River Basin, inclusive, and the second group includes populations south of the Klamath

River). These commenters argued that the genetic distance separating these groups is comparable to the distance between other ESUs recognized by NMFS (e.g., between Upper Columbia summer and fall-run and Snake River fall-run ESUs, and Oregon Coast and Washington Coast ESUs). Furthermore, these commenters argued that there are considerable ecological differences between the northern and southern populations within this large ESU. These geological and environmental differences had been used by NMFS, in part, to separate coho salmon and steelhead from this large geographic area into two separate ESUs. ODFW further contended that the depressed status of chinook salmon in the southern portion of this ESU was dramatically different from that found in the northern part, and that the causal factor(s) for this difference may be related to environmental and management differences between the regions of this ESU.

The second geographic boundary issue that was presented by reviewers was the boundary of the southern border of the Southern Oregon and California Coastal ESU. Several citations were given to substantiate claims that self-sustaining chinook salmon populations do not presently, and did not historically, exist in river basins south of the Russian River or in San Francisco Bay. Additionally, some commenters contended that chinook salmon native to the Russian River are extinct, and that the historical abundance of the population was never very large and may have been intermittent. Part of the rationale for not dividing the Southern Oregon and California Coastal ESU was based on the absence of biological information on populations in the southern portion of the ESU. Although genetic information was available for these southern stocks, the differences observed were not consistent with the genetic differences used to distinguish other ESUs.

Information on the historical distribution of chinook salmon south of the Mattole River is very limited. Historical records from the turn of the century indicate that the southernmost population was in the Ventura River. The only extant coastal populations south of the Mattole River are a fall-run population(s) in the Ten-Mile River (Mendocino County) and possibly the Russian River. CDFG and other reviewers concluded that the native run in the Russian River was extirpated early in this century, and genetic information and hatchery transfer records indicate that the current population is composed of a myriad of introduced stocks. Chinook salmon have also been observed spawning in the Guadalupe River (south San Francisco Bay) and have been recently observed in several other tributaries in San Francisco Bay (Coyote Creek), San Pablo Bay (Sonoma Creek, Napa River), and Suisun Bay (Walnut Creek) (SOE, 1996), but NMFS was unable to resolve the origin of these populations.

Regarding the Snake River fall-run chinook salmon ESU, ODFW, CTWSR, the Columbia River Inter-Tribal Fish Commission (CRITFC), and other reviewers disagreed with the inclusion of the Deschutes River fall-run chinook salmon in this ESU. They argued that the Deschutes River and Snake River Basins are ecologically distinct. Furthermore, the geographic distance between these basins would preclude any significant genetic exchange, especially if one considers the historical spawning distribution of the Snake River chinook salmon. A number of scenarios were suggested that might explain the genetic similarity between the Deschutes River and Snake River fall-run populations. One scenario presented by ODFW suggested that, after the loss of the majority of their historical spawning habitat, the remaining Snake River fall-run populations no longer represent the genetic characteristics of the historical ESU. They stressed that the existing allozyme information NMFS analyzed was acquired after the Columbia River Basin had undergone considerable alterations (mainstem dam construction) and many of the native populations had been extirpated. An alternative view is that because the genetic differences between all ocean-type chinook salmon above the Dalles Dam are relatively small, the clustering of populations is subject to uncertainty and possible bias, depending on the procedures used. The commenters also suggested that the marine coded-wire tag recovery information for the Deschutes River fall-run populations may be biased due to the limited number of tags recovered and the limited number of brood years that were tagged. CTWSR asserted that an ocean-type summer-run existed (and may still exist) in the Deschutes River, and this would evolutionarily link the Deschutes River ocean-type fish more with ocean-type fish in the Upper Columbia summer/fall-run ESU, which (unlike the Snake River fall-run ESU) also includes summer-run populations.

Some reviewers suggested that all ocean-type chinook salmon above the historical location of Celilo Falls should be considered a single ESU. The most commonly suggested alternative ESU configuration was for a separate ESU that would include the Deschutes River, and the now extinct populations that once spawned in the John Day, Umatilla, and Walla Walla Rivers.

Considerable uncertainty exists regarding the Snake River fall-run chinook salmon ESU configuration, and none of the alternatives considered (including the configuration in the proposed rule) for these chinook salmon populations can be convincingly substantiated by the existing scientific evidence.

Issues Related to Risk Assessment

Risk assessment involves the collection and analysis of data on the abundance and status of west coast chinook salmon and the threats presented by various human activities and natural occurrences. In its ''Factors for Decline'' report for west coast chinook salmon, NMFS identified the principal threats to chinook as past and present harvest and hatchery practices, habitat loss, fragmentation, and degradation, as well as adverse ocean conditions (NMFS, 1998).

With respect to abundance data, several commenters argued that NMFS lacked sufficient and accurate data to estimate current chinook salmon abundance. These commenters argued that NMFS failed to accurately estimate the number and effects of hatchery fish spawning in the wild, and that NMFS' analysis upwardly biased its assessment of the risks facing chinook salmon in those instances.

The Association of California Water Agencies and other resources agencies disagreed with NMFS' conclusion that a considerable portion of the naturally-spawning population in the Central Valley were hatchery strays. They argued that in the absence of definitive information regarding the proportion of strays spawning naturally that NMFS could not adequately define risks. Additionally, they argued that if hatchery and natural populations were indistinguishable (due to the use of broodstocks from within the ESU) and hatcheries are needed to mitigate lost habitat, then hatchery abundance should be included in the risk determination. Furthermore, one estimate of the hatchery stray rate (20 percent) is much lower than that found in other ESUs that were not recommended for listing.

NMFS considered several different estimates of hatchery contribution to naturally spawning chinook salmon populations in the Central Valley. The estimates of stray rates varied from 20 to over 50 percent. Additionally, NMFS inferred the status of naturally-spawning populations by comparing the

abundance trends for populations that were near hatchery release sites relative to those more distantly situated. Recent information indicates that stray rates for many basins, especially those in the San Joaquin River Basin, are well in excess of 50 percent, but may be quite low for selected basins in the upper Sacramento River. Additional spawner survey, smolt sampling, and coded-wire-tag recovery data have been received from CDFG, the water resource agencies, and other comanagers. This information begins to fill an important void in NMFS' understanding of the relationship between hatchery and spawning fish. There are still a number of major basins for which there is limited, dated information on spawner strays. NMFS and CDFG staff are currently collecting additional information and data to help resolve these substantial scientific disagreements.

In the case of Central Valley spring-run chinook salmon, spawner abundance in Butte Creek increased from less than a hundred to several thousand in a few years; the 1998 abundance estimate for the Butte Creek spring run is approximately 19,000 spawners. This increase was so abrupt that it caused some speculation that it was not due to natural production. Furthermore, water from the Feather River had been diverted into Butte Creek to improve flows, and it was suggested that this may have attracted Feather River Hatchery fish. If these fish are included in the total abundance estimate for the Central Valley spring-run chinook salmon ESU, it represents a several fold increase in total spring-run chinook salmon abundance and this new information may affect NMFS' determination. NMFS was unable to positively ascertain the origin of spring-run chinook salmon in Butte Creek at the time of the proposed listing, and our recently collected genetic samples have yet to be fully analyzed.

Prospects for Resolving Existing Disagreements

Several efforts are underway that may resolve scientific disagreement regarding the sufficiency and accuracy of data relevant to these listings. Currently, NMFS is obtaining genetic samples from naturally-spawning spring- and fall-run populations in the Central Valley and the upper Klamath and Trinity River Basins. Furthermore, a number of co-managing agencies (U.S. Forest Service, CDFG, the Natural Resources Conservation Service, HVTC, and YTFP) in the Upper Klamath and Trinity Rivers and Southern Oregon and Coastal California ESUs have collected samples for microsatellite DNA analysis from both spring and fall runs. These samples would be very useful in determining the relationship between conspecific temporal chinook salmon runs within an ESU, as currently defined, and would provide a wider geographic context for the DNA data that were utilized in determining the configuration of the California chinook salmon stocks. Additionally, DNA information has been made available from California State agencies for an additional naturally-spawning spring run in California's Central Valley (Butte Creek). Over the next few months the analysis of this genetic information will be completed at the Bodega Bay Marine Laboratory and Hopkins Marine Station Laboratory (DNA samples) and by NMFS (allozyme samples). The results will provide a more complete picture of the genetic relationship between conspecific temporal runs and may significantly alter the configuration of the proposed ESUs.

Presently, there are reports of chinook salmon (of unknown run size and origin) spawning in a number of tributaries to Suisun Bay, San Pablo Bay, and San Francisco Bay. New information is being gathered by NMFS to document the occurrence of spawning chinook salmon throughout San Francisco Bay and the lower Delta region.

Regarding the Snake River fall-run chinook salmon ESU, ODFW and CTWSR are currently collecting new genetic samples from fish spawning in the Deschutes River. Samples are being taken from above and below Sherars Falls to establish whether multiple populations exist within the Deschutes River. The CTWSR is also reviewing historical environmental data for the Deschutes and Snake River Basins. CTWSR and CRITFC will prepare a report of the results of their studies for NMFS to review by late spring 1999.

For California's Central Valley ESUs, NMFS will receive and analyze additional spring- and fall-run genetic samples as well as rigorously evaluate ecological characteristics to determine if further subdivision of these ESUs are warranted. Currently, NMFS is obtaining tissue samples for allozyme analysis from Butte Creek, Deer Creek, and possibly Mill Creek (the latter two sites contain what are generally thought to be the native spring runs). The inclusion of these samples in the NMFS allozyme database should help resolve the origin of the Butte Creek fish, and evaluate the reproductive isolation of conspecific temporal relationships between spring- and fall-run chinook salmon in the Sacramento and San Joaquin Rivers.

Determination

NMFS expects that information that has just become (or will soon become) available will, when fully analyzed, significantly help to resolve scientific uncertainties associated with ESU determinations and/or extinction risk analysis for the chinook salmon ESUs discussed earlier in this document. Four of these chinook salmon ESUs were proposed for listing in 1998: Central Valley spring- and fall/late fall-run, Southern Oregon and California Coastal, and Snake River fall-run chinook salmon. This information should also help clarify the ESU configuration and status of populations in the Upper Klamath and Trinity Rivers ESU (an ESU that was not proposed for listing), thus providing greater certainty and consistency in ESU determinations coastwide.

With respect to the other ESUs of chinook salmon that were proposed for listing on March 9, 1998 (Puget Sound, Lower Columbia River, Upper Willamette River, and Upper Columbia River spring-run), NMFS has made final listing determinations published elsewhere in the Rules and Regulations section of this **Federal Register** issue.

The scientific disagreements concerning data and analyses discussed earlier are substantial and may alter NMFS' assessment of the status of California's Central Valley spring-run and Central Valley fall/late fall-run, Southern Oregon and California Coastal, and Snake River fall chinook salmon ESUs. In light of these disagreements and the fact that more data are forthcoming on risk assessment and ESU boundaries, NMFS extends the final determination deadline for California's Central Valley spring-run and Central Valley fall/late fall-run, Southern Oregon and California Coastal, and Snake River fall-run chinook salmon ESUs for 6 months from the 1-year decision deadline, until September 9, 1999. During this period, NMFS will analyze new information aimed at resolving these disagreements. New information or analyses may indicate that changing the proposed status of one or more of these ESUs of west coast chinook salmon is warranted, and NMFS will either finalize, withdraw, or modify the proposed rule accordingly.

Request for Comments

In addition to collecting and analyzing data received, NMFS seeks additional comments on the information presented in this **Federal Register** document. Comments must be received by April 23, 1999.

References

A complete list of all references cited herein is available upon request (see **ADDRESSES**).

Authority: 16 U.S.C. 742a *et. seq.*; 16 U.S.C. 1361 *et seq.*; 16 U.S.C. 1531 *et seq.*; 16 U.S.C. 1531–1543; 16 U.S.C. 31 U.S.c. 9701.

Dated: March 15, 1999.

Andrew A. Rosenberg,

Deputy Assistant Administrator for Fisheries, National Marine Fisheries Service.

[FR Doc. 99–6816 Filed 3–23–99; 8:45 am]

BILLING CODE 3510–22–F