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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 223

[Docket No. 090324348965501]

RIN 0648XO28

Listing Endangered and Threatened Species: Completion of a Review of the Status of the Oregon Coast Evolutionarily Significant Unit of Coho Salmon; Proposal to Promulgate Rule Classifying Species as Threatened

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

ACTION:
Proposed rule.

SUMMARY:
We, the National Marine Fisheries Service (NMFS), propose to affirm the Endangered Species Act (ESA) status for the Oregon Coast (OC) Evolutionarily Significant Unit (ESU) of coho salmon (Oncorhynchus kisutch) by promulgating a rule that will supersede our February 11, 2008, listing determination for this ESU. This proposal will also serve as our announcement of the outcome of a new review of the status of this ESU and request for public comment on the proposal to promulgate the OC coho salmon ESU listing determination. On February 11, 2008, we listed the OC coho salmon ESU as threatened, designated critical habitat, and issued final protective regulations under section the Endangered Species Act (ESA) (February 11, 2008). The ESA listing status of the OC coho salmon ESU has been controversial and has attracted litigation in the past. This listing determination is the result of a settlement agreement. This new listing determination will supersede our February 11, 2008, listing determination for this ESU. Our February 11, 2008, determination establishing protective regulations under the ESA and designating critical habitat for this ESU will remain in effect.

DATES:

Information and comments on this proposal must be received by [insert date 60 days after publication date]. A public hearing will be held promptly if any person so requests by [insert date 45 days after publication date]. Notice of the location and time of any such hearing will be published in the Federal Register not less than 15 days before the hearing is held.

ADDRESSES:

You may submit comments identified by 0648XO28 by any of the following methods:

&sbull;Electronic Submissions: Federal e-Rulemaking Portal: http://www.regulations.gov. Follow the instructions for submitting comments.

&sbull;Mail: Submit written comments to Chief, Protected Resources Division, Northwest Region, National Marine Fisheries Service, 1201 NE Lloyd Blvd., Suite 1100, Portland, OR 97232.

Instructions: All comments received are a part of the public record and will generally be posted to http://www.regulations.gov without change. All Personal Identifying Information (for example, name, address, etc.) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information. We will accept anonymous comments (enter N/A in the required fields if you wish to remain anonymous). Attachments to electronic comments will be accepted in Microsoft Word, Excel, WordPerfect, or Adobe PDF file formats only. Information about the OC coho salmon ESU can be obtained via the Internet at: http://www.nwr.noaa.gov/ or by submitting a request to the Assistant Regional Administrator, Protected Resources Division, Northwest Region, NMFS, 1201 NE Lloyd Blvd., Suite 1100, Portland, OR 97232.

FOR FURTHER INFORMATION CONTACT:

For further information regarding this proposal, contact Eric Murray, NMFS, Northwest Region, (503) 2312378; or Marta Nammack, NMFS, Office of Protected Resources, (301) 7131401.

SUPPLEMENTARY INFORMATION:

Previous Federal ESA Actions Related to Oregon Coast Coho Salmon

We first proposed to list the OC coho salmon ESU as threatened under the ESA in 1995 (60 FR 38011; July 25, 1995). Since then, we have completed several status reviews for this species, and its listing classification has changed between threatened and not warranted for listing a number of times. A complete history of this ESU's listing status can be found in our February 11, 2008, final rule (73 FR 7816), classifying this ESU as a threatened species.

To summarize that history, on July 25, 1995 we first proposed to list the ESU as threatened (60 FR 38011). We withdrew that proposal in response to the State of Oregon's proposed conservation measures as described in the Oregon Plan for Salmon and Watersheds (62 FR 24588; May 6, 1997). On June 1, 1998, the U.S. District Court for the District of Oregon found that our determination to not list the OC coho salmon ESU was arbitrary and capricious (Oregon Natural Resources Council v. Daley, 6 F. Supp. 2d 1139 (D. Or. 1998)). The Court ruled that our decision gave too much weight to conservation measures with an uncertain likelihood of implementation. On August 10, 1998, we issued a final rule listing the OC coho ESU as threatened (63 FR 42587). In 2001, the U.S. District Court in Eugene, Oregon, set aside the 1998 threatened listing of the OC coho salmon ESU (Alsea Valley Alliance v. Evans, 161 F. Supp. 2d 1154, (D. Or. 2001)). The Court ruled that our failure to include certain hatchery fish as part of the ESU was not consistent with the ESA. Subsequently, we announced that we would conduct an updated status review of 27 West Coast salmonid ESUs, including the OC coho salmon ESU (67 FR 6215, February 11, 2002; 67 FR 48601, July 25, 2002).

To aid us in these reviews, we convened a team of Federal scientists, known as a biological review team (BRT). For the OC coho salmon ESU, NMFS concluded that this ESU was not in danger of extinction, but was likely to become endangered in the foreseeable future. The BRT noted considerable scientific uncertainty regarding the future viability of this ESU given unknowns about ocean conditions for coho salmon survival (Good et al., 2005). They also stated that there is uncertainty about whether current freshwater habitats are of sufficient quality and quantity to support the then recent high abundance levels and sustain populations during future downturns in ocean conditions. Considering the BRT's scientific findings and our assessment of risks and benefits from artificial propagation programs included in the ESU, efforts being made to protect the species, and the five factors listed under section 4(a)(1) of the ESA, we proposed to list this ESU as threatened (69 FR 33102; June 14, 2004). In the June 2004 proposed rule, we noted that Oregon was initiating a comprehensive assessment of the viability of the OC coho salmon ESU and of the adequacy of actions under the Oregon Plan for Salmon and Watersheds for conserving OC coho salmon.

In January 2005, the State of Oregon released a draft OC coho salmon ESU assessment. This assessment concluded that the OC coho salmon ESU was viable and that measures under the Oregon Plan had stopped, if not reversed, the deterioration of OC coho salmon habitats. We published a notice of availability of Oregon's Draft Viability Assessment for public review and comment in the Federal Register (70 FR 6840; February 9, 2005) and noted that information presented in the draft and final assessments would be considered in making the final listing determination for the OC coho salmon ESU. We forwarded the public comments we received on Oregon's Draft Viability Assessment, as well as our technical reviews, for Oregon's consideration in developing its final assessment. On May 13, 2005, Oregon issued its final Oregon Coastal Coho Assessment. The final assessment included several changes intended to address concerns raised regarding the sufficiency and accuracy of the draft assessment. The final assessment concluded that: (1) The OC coho salmon ESU was viable under current conditions, and should be sustainable through a future period of adverse environmental conditions (including a prolonged period of poor ocean productivity); (2) given the assessed viability of the ESU, the quality and quantity of habitat was necessarily sufficient to support a viable ESU; and (3) the integration of laws, adaptive management programs, and monitoring efforts under the Oregon Plan for Salmon and Watersheds would maintain and improve environmental conditions and the viability of the ESU into the foreseeable future.

On June 28, 2005 (70 FR 37217), we announced a 6month extension of the final listing determination for the OC coho ESU, finding that there was substantial disagreement regarding the sufficiency or accuracy of the available data relevant to the listing determination. We solicited additional public comment and information. On January 19, 2006, we issued a final determination that listing the OC coho salmon ESU under the ESA was not warranted (71 FR 3033). As part of this determination, we withdrew the proposed ESA section 4(d) regulations and critical habitat designation for the ESU. In reaching our determination not to list the OC coho salmon ESU, we found that the BRT's slight majority opinion that the ESU is likely to become endangered and the conclusion of the Oregon Final Viability Assessment that the ESU was viable represented competing reasonable inferences from the available scientific information and considerable associated uncertainty. The difference of opinion centered on whether the ESU was at risk because of the threatened destruction, modification, or curtailment of its habitat or range. We conducted an analysis of current habitat status and likely future habitat trends (NMFS, 2005a) and found that: (1) The sufficiency of current habitat conditions was unknown; and (2) likely future habitat trends were mixed (i.e., some habitat elements were likely to improve, some were likely to decline, others were likely to remain in their current condition). We concluded that there was insufficient evidence to support the conclusion that the ESU was more likely than not to become an endangered species in the foreseeable future throughout all or a significant portion of its range.

Our decision not to list the OC coho salmon ESU was challenged by Trout Unlimited. On October 9, 2007, the U.S. District Court for the District of Oregon invalidated our January 2006 decision not to list the OC coho salmon ESU (Trout Unlimited v. Lohn, Civ. No. 0601493ST (D. Or., Oct. 9, 2007). The Court found that Oregon's viability assessment did not represent the best available science as required by the ESA, and that we improperly considered it in reaching our final listing decision.

In response to the Court's order and pursuant to deadlines established by the Court, we issued a final rule to list the OC coho salmon ESU as threatened, designate critical habitat, and establish protective regulations under section 4(d) of the ESA on February 11, 2008 (73 FR 7816). This decision was challenged by Douglas County, Oregon and others in Douglas County v. Balsiger (Civ. No. 0801547; D. Or. 2008). We reached a settlement with the litigants, by which we would again review the status of the OC coho salmon ESU. This proposal announces the results of that review.

ESA Statutory Provisions

The ESA defines an endangered species as one that is in danger of extinction throughout all or a significant portion of its range, and a threatened species as one that is likely to become an endangered species in the foreseeable future throughout all or a significant portion of its range (16 U.S.C. section 1532(6),(20)). Section 4(a)(1) of the ESA and NMFS' implementing regulations (50

CFR part 424) state that we must determine whether a species is endangered or threatened because of 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 educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; or (5) other natural or man-made factors affecting its continued existence. We are to make this determination based solely on the best available scientific and commercial information after conducting a review of the status of the species and taking into account any efforts being made by states or foreign governments to protect the species.

We are responsible for determining whether species, subspecies, or distinct population segments (DPSs) of Pacific salmon should be listed as threatened or endangered under the ESA. To identify the proper taxonomic unit for consideration in a salmon listing determination, we apply our Policy on Applying the Definition of Species under the ESA to Pacific Salmon (ESU Policy) (56 FR 58612; November 20, 1991). Under this policy, populations of salmon substantially reproductively isolated from other conspecific populations and representing an important component in the evolutionary legacy of the biological species are considered to be an ESU. In our listing determinations for Pacific salmon under the ESA, we have treated an ESU as constituting a DPS, and hence a species, under the ESA.

When considering protective efforts identified in conservation agreements, conservation plans, management plans, or similar documents (developed by Federal agencies, state and local governments, tribal governments, businesses, organizations, and individuals) that have not yet been implemented, or have been implemented but have not yet demonstrated effectiveness, we apply the NMFS--U.S. Fish and Wildlife Service Policy on Evaluating Conservation Efforts (PECE; 68 FR 15100; March 28, 2003). In past ESA listing determinations for the OC coho salmon ESU, we have applied the PECE policy when evaluating new conservation efforts. Most of these conservation efforts have been implemented for several years so it is now possible for us to consider the available information about their actual implementation and effectiveness. Where information on program effectiveness is not available, we will not attribute a conservation benefit to the OC coho salmon ESU as resulting from the program.

Species Life History

Coho salmon are a wide-ranging species of Pacific salmon, spawning and rearing in rivers and streams around the Pacific Rim from Monterey Bay in California north to Point Hope, Alaska; through the Aleutian Islands; and from the Anadyr River in Russia south to Korea and northern Hokkaido, Japan (Laufle et al., 1986). From central British Columbia south, the vast majority of coho salmon adults return to spawn as 3year-olds, having spent approximately 18 months in freshwater and 18 months in salt water (Gilbert, 1912; Pritchard ,1940; Sandercock, 1991). The primary exceptions to this pattern are jacks, sexually mature males that return to freshwater to spawn after only 5 to 7 months in the ocean. West Coast coho salmon juveniles typically leave freshwater in the spring (April to June) and re-enter freshwater from September to November when sexually mature. They spawn from November to December and occasionally into January (Sandercock, 1991). Coho salmon spawning habitat consists of small streams with stable gravels. Summer and winter freshwater habitats most preferred by young coho salmon consist of quiet areas with low flow, such as backwater pools, beaver ponds, and side channels (Reeves et al., 1989). Since coho salmon spend up to half of their lives in freshwater, the condition of that habitat can have a substantial influence on their survival. In particular, low gradient stream reaches on lower elevation land are important for winter survival of juvenile coho salmon (Stout et al., 2010).

The OC coho salmon ESU covers much of the Oregon coast, from Cape Blanco to the mouth of the Columbia River, an area with considerable physical diversity ranging from extensive sand dunes to rocky outcrops. With the exception of the Umpqua River, which extends through the Coast Range to drain the Cascade Mountains, rivers in this ESU have their headwaters in the Coast Range. Genetic data indicate that OC coho salmon north of Cape Blanco form a discrete group, although there is evidence of differentiation within this area. However, because there is no clear geographic pattern to the differentiation, NMFS has considered coho salmon occupying this area to be a single ESU with relatively high heterogeneity (Weitkamp et al., 1995).

Unlike some West Coast salmon ESUs, OC coho salmon have shown wide fluctuations in abundance and productivity during the last 50 years. Total spawning escapement of naturally produced OC coho held steady through the 1960s at between approximately 45,000 to 150,000 fish (Stout et al., 2010). Spawning abundance declined gradually through the 1970s and 1980s, with all time lows observed in the early 1990s. Preharvest abundance has fluctuated over time, but the overall trend from 1970 through 1999 was strongly negative. Both preharvest and spawning abundance increased from 2000 to 2003, with 50year highs in spawning abundance observed in 2002 and 2003. Those years also represented the highest preharvest abundance since 1976. With the exception of 2007, spawning abundance from 2001 through 2008 has been higher than any level since 1969, though preharvest abundance has been variable.

Previous Reviews and Biological Review Team Reports

Above we described the ESA listing history of OC coho salmon (Previous Federal ESA Actions Related to Oregon Coast Coho Salmon). For each of the status reviews, consistent with our general practice for other salmonid species, we convened a biological review team (BRT) composed of Federal scientists with expertise in salmon biology, genetics, fishery stock evaluation, marine ecology, or freshwater habitat assessment. The first BRT was convened in 1995 and produced a report detailing its findings (Weitkamp et al., 1995). During the first status review, the BRT found that spawning escapements for the OC coho salmon ESU had declined substantially during the 20th century and natural production was at 5 percent to 10 percent of production in the early 1900s. They noted that productivity and abundance showed clear long-term downward trends. Average spawner abundance had been relatively constant since the late 1970s, but preharvest abundance was declining. Average recruits per spawner were also declining and average spawner-to-spawner ratios were below replacement levels in the worst years. OC coho salmon populations in most major rivers were found to be heavily influenced by hatchery stocks, although some tributaries may have maintained native stocks. Widespread freshwater habitat degradation was noted as a risk factor by the 1995 BRT.

We conducted a second status review of this ESU in 1996. The BRT considered new data on ESU abundance and productivity as well as new analyses on ESU viability based on marine conditions and habitat quality (Nickelson and Lawson, 1998). For absolute abundance, the 1996 total average (5year geometric mean) spawner abundance of OC coho salmon (44,500) and corresponding ocean run size (72,000) were less than one-tenth of ocean run sizes estimated in the late 1800s and early 1900s, and only about one-third of 1950s ocean run sizes (Oregon Department of Fish and Wildlife, 1995). Long-term trend estimates through 1996 showed that for escapement, run size, and recruits per spawner, trends were negative. The BRT also noted concerns about the influence of hatchery fish and the quality and quantity of habitat available to this ESU.

In 1996, the BRT concluded that, assuming that current conditions continued into the future (and that proposed harvest and hatchery reforms were not implemented), the OC coho salmon ESU was not at significant short-term risk of extinction, but it was likely to become endangered in the foreseeable future. A minority disagreed, and felt that the ESU was not likely to become endangered. The BRT generally agreed that implementation of the harvest and hatchery reforms would have a positive effect on the ESU's status, but they were about evenly split as to whether the effects would be substantial enough to move the ESU out of the likely to become endangered category, because of uncertainty about the adequacy of freshwater habitat and trends in ocean survival.

In 2003, we initiated a coast-wide status review of Pacific salmon and steelhead including OC coho salmon. The 2003 BRT (Good et al., 2005) noted several improvements in the OC coho salmon's status as compared to the previous assessment in 1996. For example, adult spawners for this ESU in 2001 and 2002 exceeded the number observed for any year in the past several decades, and preharvest run size rivaled some of the high abundances observed in the 1970s (although well below historical levels), including increases in the formerly depressed northern part of the ESU. Hatchery reforms were increasingly being implemented, and the fraction of natural spawners that were first-generation hatchery fish was reduced in many areas, compared to highs in the early to mid1990s. On the other hand, the years of good returns just prior to 2003 were preceded by three years of low spawner escapements, the result of three consecutive years of recruitment failure, in which the natural spawners did not replace themselves, even in the absence of any directed harvest. These three years of recruitment failure were the only such instance observed in the entire time series considered. Whereas the increases in spawner escapement just prior to 2003 resulted in long-term trends in spawners that were generally positive, the long-term trends in productivity as of 2003 were still strongly negative.

For the 2003 conclusions, a majority of the BRT opinion was in the likely to become endangered category, with a substantial minority falling in the not likely to become endangered category. Although they considered the significantly higher returns in 2001 and 2002 to be encouraging, most BRT members felt that the factor responsible for the increases was more likely to be unusually favorable marine productivity conditions than improvement in freshwater productivity.

Current Review of the OC Coho Salmon ESU

During this new review for the OC coho salmon we convened a new BRT to assist us in carrying out the most recent status review for OC coho salmon. The BRT was composed of Federal scientists from our Northwest and Southwest Fisheries Science Centers and the USDA Forest Service. As part of their evaluation, the BRT considered ESU boundaries, membership of fish from hatchery programs within the ESU, ESU extinction risks, and threats facing this ESU. The BRT evaluated new data on ESU abundance, marine survival, ESU productivity, and spatial structure. They considered the work products of the Oregon/Northern California Coast Technical Recovery Team and information submitted by the public, state agencies, and other Federal agencies. They also considered threats to this ESU, trends in habitat complexity, and potential effects of global climate change.

New Information Available Since the Last OC Coho Salmon ESU Status Review

Since our status review of the OC coho salmon ESU in 2005 (Good et al., 2005), new information is available for consideration. Good et al. (2005) analyzed OC coho adult returns through 2003. We now have information on adult returns and marine survival rates through 2009. Also the marking of all hatchery-produced fish and increased monitoring on the spawning grounds have improved our ability to predict the effects of hatchery production on the long-term viability of the ESU.

In addition to the new biological data available, new analyses are available since the 2005 review. These analyses were produced by the Oregon/Northern California Coast Technical Recovery Team (http://www.nwfsc.noaa.gov/trt/oregonncal.cfm). This team is one of several technical recovery teams convened in the Pacific Northwest to help us develop recovery plans for ESA-listed salmon and steelhead. These teams are different from BRTs and focus on developing information on historical population structure and ESA technical products to support development of ESA recovery criteria. Technical recovery teams are comprised of Federal, state, and tribal biologists as well as scientists from private consulting firms and academia.

The Oregon/Northern California Coast Technical Recovery Team produced two reports, Identification of Historical Populations of Coho Salmon in the Oregon Coast Evolutionarily Significant Unit (Lawson et al., 2007) and Biological Recovery Criteria for the Oregon Coast Coho Salmon Evolutionarily Significant Unit (Wainwright et al., 2008), which were considered by the BRT in their assessment of this ESU's status. Lawson et al. (2007) identified 56 historic populations that function collectively to form the OC coho salmon ESU. Populations were identified as independent, potentially independent, and dependent. This ESU's long-term viability relies on the larger independent and potentially independent populations (Lawson et al., 2007). Dependent populations occupy smaller watersheds and rely on straying from neighboring independent populations to remain viable. Populations were grouped together to form five biogeographic strata-- North Coast, Mid-Coast, Lakes, Umpqua, and Mid-South Coast. Collectively, the five strata form the ESU as a whole.

Wainwright et al. (2008) used a decision support system to assess the viability of the OC coho salmon ESU and form the basis of recommended ESA recovery criteria for this ESU. The decision support system is based on the population structure identified by Lawson et al. (2007) and builds on concepts developed in that report. It is a computer-based tool that can analyze and compare numerous pieces of data (Turban and Aronson, 2001). The decision support system begins with evaluating a number of primary biological criteria that are defined in terms of logical (true/false) statements about biological processes essential to the persistence or sustainability of the OC coho salmon ESU. These biological criteria include population abundance, diversity, distribution, and habitat quantity and quality. Evaluating these primary criteria with respect to available observations results in a truth value in the range from -1 (false) to +1 (true). Intermediate values between these extremes reflect the degree of certainty of the statement given available knowledge, with a value of zero indicating complete uncertainty about whether the statement is true or false. These primary criteria are then combined logically with other criteria at the same geographic scale and then combined across geographic scales (population, strata, and ESU). The end result is an evaluation of the biological status of the ESU as a whole, with an indication of the degree of certainty of that evaluation (Wainwright et al., 2008). The model output describes the likelihood that the ESU is persistent and sustainable. The model predicts the likelihood that the ESU will persist (i.e., not go extinct) over a 100year time frame. This includes the ability to survive prolonged periods of adverse environmental conditions that may be expected to occur at least once during the 100year time frame. In the sustainability portion of the analysis, the model predicts the likelihood that the ESU will retain its genetic legacy and long-term adaptive potential into the foreseeable future (foreseeable future is not defined for this criterion), based on the stability of habitat conditions and other factors necessary for the full expression of life history diversity. A detailed description of the decision support system can be found in Wainwright et al. (2008) and the new BRT report (Stout et al., 2010).

ESU Boundaries and Hatchery Fish Membership

The BRT evaluated new information related to ESU boundaries, and found evidence that no ESU boundary changes are necessary (Stout et al., 2010). The basis for their conclusion is that the environmental and biogeographical information considered during the first coast-wide BRT review of coho salmon (Weitkamp et al., 1995) remains unchanged, and new tagging and genetic analysis published subsequent to the original ESU boundary designation continues to support the current ESU boundaries. The BRT also evaluated ESU membership of fish from hatchery programs since the last BRT review (Good et al., 2005). In doing so, they applied our Policy on the Consideration of Hatchery-Origin Fish in ESA Listing Determinations (70 FR 37204; June 28, 2005). The BRT noted that many hatchery programs within this ESU have been discontinued since the first review of coast-wide status of coho salmon (Weitkamp et al., 1995). They identified only three programsthe North Fork Nehalem, Trask (Tillamook basin) and Cow Creek (South Umpqua)that produce coho salmon within the boundaries of this ESU.

The North Fork Nehalem coho stocks are managed as an isolated harvest program. Natural-origin fish have not been intentionally incorporated into the brood stock since 1986 and only adipose fin clipped brood stock have been taken since the late 1990s. Because of this, the stock is considered to have substantial divergence from the native natural population and is not included in the OC coho salmon ESU. The Trask (Tillamook population) coho salmon stock is also managed as an isolated harvest program. Natural-origin fish have not been incorporated into the brood stock since 1996 when all returns were mass marked. Therefore, this stock is considered to have substantial divergence from the native natural population and, based on our Policy on the Consideration of Hatchery-Origin Fish in ESA Listing Determinations, is not included in the OC coho salmon ESU.

The Cow Creek stock (South Umpqua Population) is managed as an integrated program and is included as part of the ESU because the original brood stock was founded from the local natural-origin population and natural-origin coho salmon have been incorporated into the brood stock on a regular basis. This brood stock was founded in 1987 from natural-origin coho salmon returns to the base of Galesville Dam on Cow Creek, a tributary to the South Umpqua River. Subsequently, brood stock has continued to be collected from returns to the dam, with natural-origin coho salmon comprising 25 percent to 100 percent of the brood stock nearly every year since returning fish have been externally tagged. The Cow Creek stock is probably no more than moderately diverged from the local natural-origin coho salmon population in the South Umpqua River because of these brood stock practices and is therefore considered a part of this ESU.

BRT Extinction Risk Assessment

The BRT conducted an extinction risk assessment for the OC coho salmon ESU considering available information on trends in abundance and productivity, genetic diversity, population spatial structure, and marine survival rates. They also considered trends in freshwater habitat complexity and threats to this ESU, including possible effects from global climate change.

The BRT noted that spawning escapements in some recent years have been higher than the past 60 years. This is attributable to a combination of management actions and environmental conditions. In particular, harvest has been strongly curtailed since 1994, allowing more fish to return to the spawning grounds. Hatchery production has been reduced to a small fraction of the natural-origin production. Nickelson (2003) found that reduced hatchery production led directly to higher survival of naturally produced fish, and Buhle et al. (2009) found that the reduction in hatchery releases of Oregon coast coho salmon in the mid1990's resulted in increased natural coho salmon abundance. Ocean survival, as measured by smolt to adult survival of Oregon Production Index area hatchery fish, generally started improving for fish returning in 1999 (Stout et al., 2010). In combination, these factors have resulted in the highest spawning escapements since 1950, although total abundance before harvest peaked at the low end of what was observed in the 1970s (Stout et al., 2010).

The BRT applied the decision support system of the Technical Recovery Team (Wainwright et al., 2008) to help assess viability and risk level for this ESU. The BRT made a change to the decision support system model and reran the model with data through 2008. This change was to use a different data set to determine the abundance level at which there are so few adult fish on the spawning grounds that they have trouble finding mates (which results in depensation or reduced spawning success). Depensation is thought to occur at spawner densities below four fish per mile (Wainwright et al., 2008). The Technical Recovery Team had used area-under-the-curve counts for the critical abundance criterion in the decision support system, while the BRT chose to use peak count data. Area-under-the-curve counts (which refers to the total numbers of fish returning over the entire adult run time) are almost always higher than peak counts because they include fish present on the spawning grounds over a longer period of time. Peak counts are simply the highest number of fish observed at any one time. The BRT concluded that peak abundance counts were more likely to capture the potential for depensation because the effect occurs for fish that are on the spawning grounds at the same time (that is, fish need to find mates that are on the spawning grounds at the same time they are).

The BRT's result using the decision support system was 0.09 for ESU persistence. A value of 1.0 would indicate complete confidence that the ESU will persist for the next 100 years, a value of -1.0 would indicate complete certainty of failure to persist, and a value of 0 would indicate no certainty of either persistence or extinction. The BRT therefore interpreted a value of 0.09 as indicating a low certainty of ESU persistence over the next 100 years. The decision support system result for ESU sustainability was 0.21, indicating a low-to-moderate certainty that the ESU is sustainable for the foreseeable future. These results reflect the model's measure of ESU sustainability and persistence under current conditions.

The overall ESU persistence and sustainability scores summarize a great deal of variability in population and stratum level information on viability. For example, although the overall persistence score was 0.09, the scores for individual populations ranged from -1 (Sixes River) to +0.99 (Tenmile Lakes), and approximately half (10/21) of the independent and potentially-independent populations had persistence scores greater than 0.25. The stratum level persistence scores were calculated as the median of the population scores. Only the Lakes stratum had a very high certainty of stratum persistence (0.94), followed by the Mid-South Coast (0.19). The Mid-Coast score for stratum persistence was slightly negative (-0.05). Population sustainability scores ranged from -1.0 in three populations to a high of 0.94 in Tenmile Lake. The stratum scores for sustainability were less variable. Again, the Lakes had the highest score (0.72). North Coast, Mid Coast, and Umpqua had scores indicating a low to moderate certainty of sustainability (0.21 to 0.29), while the Mid-South Coast scored somewhat higher for stratum sustainability (0.50).

The BRT's decision support system scores suggested a higher certainty of sustainability than persistence, a counter-intuitive result. (That is, one would expect a population that has a good chance of maintaining its genetic legacy and long-term adaptive potential for the foreseeable future to also have a good chance of not going extinct in 100 years. In addition, the BRT was concerned that the values for the population functionality criterion are strongly influenced by basin size, and all large populations scored 1.0 regardless of overall habitat quality within the basin. For example, for the largest river system in the ESU, the Umpqua River, all four populations had a functionality score of 1.0, even though the BRT had serious concerns about habitat conditions for these populations. For these and other reasons, the BRT considered other methods of assessing ESU viability and in particular, habitat conditions.

Introduction to Habitat Analysis

The BRT evaluated habitat conditions across the range of the OC coho salmon ESU in two new analyses. An analysis using newly available Landsat images (the Landsat Program is a series of Earth-observing satellite missions jointly managed by NASA and the U.S. Geological Survey) mapped patterns of forest disturbance over the ESU from 1986 to 2008, revealing different rates of disturbance across basins and strata. A second analysis addressed the question is stream habitat complexity improving? To answer this question, the BRT quantified stream habitat complexity over the past 10 years from in-stream habitat surveys and analyzed for trends.

Landsat Analysis

Recent public availability of Landsat imagery and the development of tools for analysis have made it possible to analyze disturbance patterns on a fine temporal and spatial scale, allowing a comprehensive, uniform picture of disturbance patterns that was heretofore unavailable. In an analysis conducted for the BRT, satellite annual vegetation maps of the OC salmon ESU from 1986 to 2008 were analyzed for patterns of disturbance. Disturbance in this analysis was removal of vegetative cover, primarily through timber harvest or fire. The scale of resolution of these analyses is approximately 100 meters (328 feet), so individual clear cuts and forest thinning operations were clearly detectable on an annual basis.

The BRT noted that disturbance was wide-spread over the ESU, and varied over space, time, and land ownership. Some river systems experienced higher disturbance than others, with 14 percent to 50 percent of individual basins disturbed since 1986. Rates of disturbance were relatively constant, but the most intense disturbance has moved from Federal (USDA Forest Service and USDI Bureau of Land Management) to private non-industrial lands, presumably in response to policy changes (i.e., implementation of the Northwest Forest Plan).

New Habitat Trend Analysis

The BRT's analysis indicates that the OC coho salmon ESU is in better condition, particularly in terms of total abundance, than it was during the previous status reviews. However, productivity in several recent years was remains below replacement, highlighting the long-standing concern for this ESU that freshwater habitat may not be sufficient to maintain the ESU at times when marine conditions are poor. The BRT noted that the criteria in the decision support system do not meaningfully evaluate freshwater habitat conditions for this ESU. To address this deficiency, the BRT undertook new analyses of habitat complexity across the freshwater habitat of this ESU.

The BRT relied on habitat monitoring data from the ODFW Habitat Monitoring Program. ODFW has been monitoring the wadeable stream (streams that would be shallow enough for an adult to wade across during survey efforts) portion of the freshwater rearing habitat for the OC coho salmon ESU over the past decade (1998 to present) collecting data during the summer low flow period (Anlauf et al., 2009). The goal of this program is to measure the status and trend of habitat conditions throughout the range of the ESU through variables related to the quality and quantity of aquatic habitat for coho salmon: stream morphology, substrate composition, instream roughness, riparian structure, and winter rearing capacity (Moore, 2008). The ODFW habitat survey design is based on 1st through 3rd order streams (USGS 1:100k and ODFW 1:24k). The sampling design is based on a generalized random-tessellation stratified survey (Stevens and Olsen,

2004) that selects potential sample sites from all candidate stream reaches in a spatially balanced manner. The full survey design incorporates a rotating panel of sampling sites; 25 percent of the sites are surveyed annually, 25 percent every 3 years, 25 percent every 9 years, and 25 percent new surveys each year. This provides a balanced way to monitor short-term and long-term trends and to evaluate new areas. Due to the availability of these data, the BRT was able to examine trends in habitat complexity over the past 11 years.

In addition, ODFW provided more information to the BRT on the status of aquatic habitats in the OC coho salmon ESU in the form of presentations, comments, and a publication (Anlauf et al., 2009). ODFW analyzed trends in individual stream habitat attributes, including wood volume, percent fine sediments and percent gravel. They analyzed these attributes separately as linear trends by year in the North Coast, Mid-Coast, Umpqua River, and Mid-South Coast strata. They also analyzed winter rearing capacity for juvenile coho salmon with their Habitat Limiting Factors Model (HLFM (version 7)), which integrates habitat attributes. This model emphasizes percent and complexity of pools, and amount of off-channel pools and beaver ponds. In the ODFW/Anlauf et al. (2009) HLFM analysis, ODFW used parametric statistical methods to produce a point estimate of habitat condition. They concluded that for the most part, at the ESU and strata scale, habitat for the OC coho salmon has not changed significantly in the last decade. They did find some small but significant trends. For instance the Mid-South Coast sttatum did show a positive increase in winter rearing capacity.

The BRT was concerned that the analysis of trends of individual habitat attributes presented by ODFW/Anlauf et al. (2009) does not capture interactions among the various habitat attributes and does not adequately represent habitat complexity. In addition, the HLFM analysis presented by ODFW/Anlauf et al. (2009) used monitoring data for sites that had been surveyed only once or twice. The BRT concluded that using sites that had been visited at least three times would enhance their ability to discern trends. To address these concerns, the BRT: (1) asked ODFW to re-run the HLFM using only data from sites that had been surveyed at least three times during the 1998--2008 period, and (2) used the ODFW habitat monitoring data in a model developed by the U.S. Forest Service Aquatic and Riparian Effectiveness Monitoring Program (AREMP) (Reeves et al., 2004; Reeves et al., 2006). For the re-running of the HLFM analysis, ODFW estimated both summer and winter rearing capacity (the ability to predict summer rearing capacity was a new function of the model not available at the time Anlauf et al. (2009) prepared their report). In the AREMP model, the BRT used the ODFW monitoring program's data for key wood pieces, residual pool depth and percent fine sediment to generate habitat complexity indicators for stream reaches within populations of the OC coho salmon. Using several models allowed the BRT to compare multiple estimates of stream habitat complexity.

The BRT anticipated that there may be spatial structure in trends of habitat complexity patterns over time due to biogeographic differences present at the scale of strata. For instance, habitat complexity in streams in the Umpqua River basin might be expected to change at a rate different from the streams in the North Coast Basin. This is because the Umpqua Basin is further south and drains part of the Cascade Mountains, while the North Coast streams are at the northern extent of this ESU's range and drain only the Oregon Coastal Mountains. There are biological, geological, hydrological, and precipitation pattern differences that affect stream habitat conditions in these basins. Differences in land-use practices will also affect changes in habitat complexity over large spatial scales. For example, the Tillamook State Forest has been recovering from a series of fires (the Tillamook Burn) that burned 355,000 acres (1437 square kilometers) between 1933 and 1951, and little timber harvest has occurred in that area. On the other hand, some areas of the South Coast have experienced ongoing industrial timber harvest over the past 20 years.

In contrast to the analytical method employed by ODFW/Anlauf et al. (2009), the BRT applied a Bayesian mixed regression model to estimate rate of change for habitat complexity scores at the stratum, population and site (habitat monitoring trend site) levels. In this analysis, the trends in both the AREMP and HLFM (second run of the model at the BRT's request) data were negative, indicating there is a high likelihood that habitat complexity has declined over the past decade. General patterns among the AREMP channel condition, the HLFM summer rearing capacity, and the HLFM winter rearing capacity were consistent. All three modeling results showed a moderate probability that habitat complexity has declined across the range of this ESU. The North Coast Stratum and Mid-South Coast Stratum showed the strongest and most consistent declines. For the Mid-Coast Stratum, the HLFM showed no trend in summer and winter juvenile rearing capacity, while the AREMP showed moderate decline in channel condition. The biggest difference between model results was observed in the Umpqua River stratum. The AREMP model showed no trend in channel condition, while the HLFM showed a strong decline in summer and winter juvenile rearing capacity. There was no consistent pattern in the differences between model results; in the Mid-Coast Stratum the AREMP showed declines while the HLFM did not. In the Umpqua River Stratum, the HLFM showed declines while the AREMP did not. There were no strong positive trends observed in any stratum. The BRT's analyses indicate that habitat complexity over the ESU has not improved over the past decade. At best, habitat complexity has been holding steady in some areas while declining in others.

Like the ODFW/ Anlauf et al. (2009) trend analysis of individual habitat attributes, the BRT's analyses found that habitat complexity across the ESU did not improve over the period of consideration (19982008) regardless of the habitat metric chosen for comparison. The ODFW/ Anlauf et al. (2009) trend analysis based on individual habitat attributes found no evidence of trends in the Umpqua River or Mid-Coast strata. In the BRT analyses, results from the AREMP channel complexity model do not show a trend up or down in the Umpqua River stratum. However, the HLFM summer and winter rearing capacity analyses (second run of the model conducted at the BRT's request) do show negative trends in the Umpqua River stratum. AREMP channel complexity and HLFM model results for the Mid-Coast Stratum are mixed, with no consistent indication of a trend in either direction.

In the ODFW/Anlauf et al. (2009) trend analysis of individual habitat attributes, all of the statistically significant trends in habitat complexity were observed in the North Coast and Mid-South Coast strata (Anlauf et al., 2009). The results for the North Coast Stratum showed a declining trend in sediment and wood volume, but an increase in gravel. The Mid-South Coast Stratum showed an increase in sediment but a decreasing trend in the proportion of gravel. Although the ODFW /Anlauf et al. (2009) analysis of individual habitat attributes showed that trends in gravel and sediment in the North Coast and Mid-South Coast strata are in opposite directions, the multivariate AREMP channel condition analysis performed by the BRT found that both North Coast and Mid-South Coast strata showed strong negative declines. While these results may seem contradictory, the observation that individual metrics (ODFW trend analysis) behave differently than integrated, multivariate indicators (AREMP and HFLM analysis) is a key point -- fish habitat is multidimensional, potentially declining even as components such as large wood or sediment increase at different spatial scales.

The ODFW/Anlauf et al. (2009) HLFM model run showed an 8.9 percent annual increase in winter rearing capacity in the Mid-South Coast. The BRT's results (including the second running of the HLFM model by ODFW) showed that the Mid-South Coast Stratum had the most certain negative trends for AREMP channel condition and HLFM summer and winter rearing capacity analyses. Compared to the 8.9 percent estimated increase in winter capacity by ODFW/Anlauf et al. (2009) for the Mid-South Coast Stratum, the second run of the HLFM summer and winter rearing model estimated a summer capacity decline of 8 percent and a winter capacity decline of 3 percent.

There are several important differences between the BRT analyses and the ODFW/Anlauf et al. (2009) analyses. These differences are likely responsible for different conclusions. First, the habitat variables considered in the BRT analyses represented aggregate indices (winter rearing capacity score, summer rearing capacity score, or AREMP Channel Condition score). One portion of the ODFW/Anlauf et al. (2009) trend analysis examined trends only in measured individual habitat variables (wood volume, fine sediment, gravel), although the HLFM winter rearing capacity analysis produced an aggregate index. The second difference is that for the HLFM winter rearing capacity analysis, ODFW/ Anlauf et al. (2009) utilized the entire suite of sampled sites for wood volume, fine sediment and gravel, and the second run of the HLFM winter and summer rearing capacity analysis used a subset of sites sampled (only those sites that had been sampled 3 times). A third important difference is the model framework used. The BRT analysis was done using Bayesian methods as opposed to the parametric statistical methods employed by ODFW.

In summary, the BRT considered the quality of available freshwater habitat using revised data sets from ODFW. The BRT examined evidence of trends in complexity, with the understanding that an increasing trend would indicate that stream habitat was improving. The BRT found that, for the most part, stream complexity is decreasing. In addition, The BRT examined patterns of disturbance from Landsat images and found that timber harvest activities are continuing in the ESU, with intensity varying among basins. The BRT noted that legacy effects of splash damming, log drives, and stream cleaning activities still affect the amount and type of wood and gravel substrate available and, therefore, stream complexity across the ESU (Miller, 2009; Montgomery et al., 2003). Road densities remain high and affect stream quality through hydrologic effects like runoff and siltation and by providing access for human activities. Beaver (Castor canadensis) activities, which produce the most favorable coho salmon rearing habitat especially in lowland areas, appear to be reduced. Stream habitat restoration activities may be having a short-term positive effect in some areas, but the quantity of impaired habitat and the rate of continued disturbance outpace agencies' ability to conduct effective restoration.

BRT Extinction Risk Conclusions

In order to reach its final extinction risk conclusions, the BRT used a risk matrix as a method to organize and summarize the professional judgment of a panel of knowledgeable scientists with regard to extinction risk of the species. This approach is described in detail by Wainright and Kope (1999) and has been used for over 10 years in our Pacific salmonid and other marine species status reviews. In this risk matrix approach, the collective condition of individual populations is summarized at the ESU level according to four demographic risk criteria: abundance, growth rate/productivity, spatial structure/connectivity, and diversity. These viability criteria, outlined in McElhany et al. (2000), reflect concepts that are well founded in conservation biology and are generally applicable to a wide variety of species. These criteria describe demographic risks that individually and collectively provide strong indicators of extinction risk. The summary of demographic risks and other pertinent information obtained by this approach is then considered by the BRT in determining the species' overall level of extinction risk. This analysis process is described in detail in the BRT's report (Stout et al., 2010). The scoring for the risk criteria correspond to the following values: 1very low risk, 2low risk, 3moderate risk, 4high risk, 5very high risk.

After reviewing all relevant biological information for the species, each BRT member assigns a risk score to each of the four demographic criteria. The scores are tallied (means, modes, and range of scores), reviewed, and the range of perspectives discussed by the BRT before making its overall risk determination. To allow individuals to express uncertainty in determining the overall level of extinction risk facing the species, the BRT adopted the likelihood point method, often referred to as the FEMAT method because it is a variation of a method used by scientific teams evaluating options under the Northwest Forest Plan (FEMAT 1993). In this approach, each BRT member distributes ten likelihood points among the three species' extinction risk categories, reflecting their opinion of how likely that category correctly reflects the species true status. This method has been used in all status reviews for anadromous Pacific salmonids since 1999, as well as in reviews of Puget Sound rockfishes (Stout et al., 2001b), Pacific herring (Stout et al., 2001a; Gustafson et al., 2006), Pacific hake, walleye pollock, Pacific cod (Gustafson et al., 2000), eulachon (Gustafson et al., 2008) and black abalone (Butler et al., 2008).

For the OC coho salmon ESU, the BRT conducted both the risk matrix analysis and the overall extinction risk assessment under two different sets of assumptions. Case 1: The BRT evaluated extinction risk based on the demographic risk criteria (abundance, growth rate, spatial structure and diversity) currently exhibited by the species, assuming that the threats influencing ESU status would continue unchanged into the future. This case in effect assumes that all of the threats evaluated by the BRT are fully manifest in the current ESU status and will in aggregate neither worsen nor improve in the future. Case 2: The BRT also evaluated extinction risk based on the demographic risk criteria currently exhibited by the species, taking into account predicted changes to threats that were not yet manifest in the current demographic status of the ESU. In effect, this scenario asked the BRT to evaluate whether threats to the ESU would lessen, worsen, or remain constant compared to current conditions. Information gathered by the BRT about current and future threats was evaluated to help guide its risk voting under this scenario.

The risk matrix scores differed considerably for the two cases. When only current biological status was considered (Case 1), the median score for each demographic risk criterion was 2 (low risk) and the mean scores ranged from 2 to 2.47. Current abundance was rated as less of a risk factor than productivity, spatial structure, and diversity. When future conditions were taken into account (Case 2), median scores increased to 3 (moderate risk) for each factor, and mean scores ranged from 2.8 for abundance to 3.27 for productivity. BRT members also separately scored the overall risk associated with threats that they believed were not yet manifest in current demographic criteria (Case 2), and the median score for these threats was 4 (high risk).

The assessment of overall extinction risk for the OC coho salmon ESU also differed substantially depending on what was assumed about the future. When only current biological status was considered (Case 1), the overall assessment was closely split between low risk (49 percent of the likelihood points) and moderate risk (44 percent), with high risk receiving 7 percent of the likelihood points. The BRT's evaluation of risk under this scenario largely reflects the results of the decision support system, which the BRT interpreted as indicating considerable uncertainty about ESU status under current conditions. When the BRT evaluated risk while taking into account future changes to threats (Case 2), the assessment became more pessimistic with 25 percent of the likelihood points falling in low risk, 54 percent in moderate risk, and 21 percent in high risk. The increase in the proportion of the likelihood points in the moderate and high risk categories reflects the BRT's conclusions that, on balance, the threats facing OC coho salmon are likely to grow more severe in the future.

Under the assumption that current conditions continue into the future (Case 1), the BRT's primary concern was that current freshwater habitat conditions may not be able to sustain the ESU in the face of normal fluctuations in marine survival. The BRT noted that the legacy of past forest management practices combined with lowland agriculture and urban development has resulted in a situation in which the areas of highest intrinsic potential habitat capacity are now degraded. The BRT decision was also influenced by its new stream complexity trend analysis and its new Landsat-based forest disturbance analysis. The results of these analyses lend support to the conclusion that the effects of historic and on-going land management activities are still negatively influencing stream habitat complexity.

Like previous BRTs evaluating the status of OC coho salmon, the most recent BRT was also concerned about the long-term downward trend in productivity of this ESU. The BRT noted that natural spawning abundance and total (pre-harvest) adult abundance has increased markedly over the past decade due to a combination of improved ocean survival, lower harvest rates, and reduced hatchery production. However, the BRT was concerned that much of the increase in pre-harvest adult abundance could be attributed to increases in marine survival that are expected to fluctuate naturally, with a smaller proportion of the increase attributable to hatchery and harvest recovery actions (Buhle et al., 2009). The BRT noted that the reduction in risks from hatchery and harvest are expected to help buffer the ESU when marine survival returns to a lower level, likely resulting in improved status compared to the situation a decade ago. On balance, however, the BRT was uncertain about the ESU's ability to survive another prolonged period of low ocean survivals, and this translated into greater concern about the overall risk to the ESU under current conditions.

The BRT was more certain about overall risk status when taking into account predictable changes to the threats facing the population, with a clear majority of the likelihood points falling in the moderate or high risk categories. The BRT was particularly concerned that global climate change will lead to a long-term downward trend in both freshwater and marine coho salmon habitat compared to current conditions in this ESU. The BRT evaluated the available scientific information on the effects of predicted climate change on the freshwater and marine environments inhabited by OC coho salmon. Although there was considerable uncertainty about the magnitude of most effects, the BRT was concerned that most changes associated with climate change are expected to result in poorer habitat conditions for OC coho salmon than exist currently. Some members of the BRT noted that freshwater effects of climate change may not be as severe on the Oregon coast as in other parts of the Pacific Northwest, and the distribution of overall risk scores reflects this.

In addition to effects due to global climate change, the BRT was also concerned that freshwater habitat for the ESU would continue to degrade from current conditions due to local effects. The BRT noted that despite increased habitat protections on Federal lands with the implementation of the Northwest Forest Plan in the mid1990s (FEMAT, 1993), timber harvest activities have increased on private industrial lands. The BRT's new habitat analysis indicates that stream habitat complexity has decreased since 1998. Conversion of forests to urban uses was also a concern (e.g., Kline et al., 2001), particularly for the North Coast, mid-south Coast, and Umpqua. The BRT was also concerned that a lack of protection for beaver would result in downward trends for this important habitat forming species. Some BRT members felt that the data indicating that freshwater habitat conditions were likely to worsen from current levels in the future were equivocal, and the distribution of risk matrix and overall threats scores reflects this uncertainty.

The BRT did note some ongoing positive changes that are likely to become manifest in abundance trends for the ESU in the future. In particular, hatchery production continues to be reduced with the cessation of releases in the North Umpqua and Salmon River populations, and the BRT expects that the near-term ecological benefits from these reductions would result in improved survival for these populations in the future. In addition, the BRT expected that reductions in hatchery releases that have occurred over the past decade would continue to produce some positive effects on the survival of the ESU in the future, due to the time it may take for past genetic impacts to become attenuated. The BRT also concluded that stream habitat conditions on Federal land would ultimately improve in the future under the Northwest Forest Plan, even though their analysis indicated an apparent decrease in habitat quality over the last decade. The BRT concluded that, when future conditions are taken into account, the OC coho salmon ESU as a whole is at moderate risk of extinction. The BRT therefore did not need to explicitly address whether the ESU was at risk in only a significant portion of its range.

Consideration of ESA section 4(a)(1) Factors

The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range

Our previous Federal Register Notices and BRT reports (Weitkamp et al, 1995;

Good et al., 2005), as well as numerous other reports and assessments (ODFW, 1995; State of Oregon, 2005; State of Oregon 2007), have reviewed in detail the effects of historical and ongoing land management practices that have altered OC coho salmon habitat. The BRT reviewed the factors that have led to the current degraded condition of OC coho salmon habitat. We will briefly summarize this information here and direct readers to the BRT report (Stout et al., 2010) for more detail.

Historical and ongoing timber harvest and road building have reduced stream shade, increased fine sediment levels, reduced levels of instream large wood, and altered watershed hydrology. Historical splash damming removed stream roughness elements such as boulders and large wood and in some cases scoured streams to bedrock. Fish passage has been blocked in many streams by improperly designed culverts. Fish passage has been restricted in some estuary areas by tidegates.

Urbanization has resulted in loss of streamside vegetation and added impervious surfaces, which alter normal hydraulic processes. Agricultural activities have removed stream-side vegetation. Building of dikes and levees has disconnected streams from their floodplains and results in loss of natural stream sinuosity. Stormwater and agricultural runoff reaching streams is often contaminated by hydrocarbons, fertilizers, pesticides, and other contaminants. In the Umpqua River basin, diversion of water for agriculture reduces base stream flow and may result in higher summer stream temperatures.

Conversion of forest and agricultural land to urban and suburban development is likely to result in an increase in these effects in the future (Burnett et al., 2007). Loss of beavers from areas inhabited by the OC coho salmon has led to reduced stream habitat complexity and loss of freshwater wetlands. The BRT reports that the amount of tidal wetland habitat available to support coho salmon rearing has declined substantially relative to historical estimates across all of the biogeographic strata (Stout et al., 2010). Instream and off-channel gravel mining has removed natural stream substrates and altered floodplain function.

Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Historical harvest rates of OC coho salmon ranged from 60 percent to 90 percent from the 1960s into the 1980s (Stout et al., 2010). Modest harvest reductions were achieved in the late 1980s, but rates remained high until a crisis was perceived, and most directed coho salmon harvest was prohibited in 1994 (Stout et al., 2010). The Pacific Fishery Management Council adopted Amendment 13 to its Salmon Fishery Management Plan in 1998. This amendment was part of the Oregon Plan for Salmon and Watersheds and was designed to reduce harvest of OC coho salmon. Current harvest rates are based on parental spawner escapements and predicted marine survival and range from minimal harvest (0 to 8 percent) to 45 percent.

A few small freshwater fisheries on OC coho salmon have been allowed in recent years based on the provision in Amendment 13 that terminal fisheries can be allowed on strong populations as long as the overall exploitation rate for the ESU does not exceed the Amendment 13 allowable rate, and that escapement is not reduced below full seeding of the best available habitat. We have approved these fisheries with the condition that the methodologies used by the ODFW to predict population abundances and estimate full seeding levels are presented to the Pacific Fishery Management Council for review and approval.

While historical harvest management may have contributed to OC coho declines, the BRT concluded that the decreases in harvest mortalities described above have reduced this threat to the ESU and that further harvest reductions would not further reduce the risk to ESU persistence.

Disease or Predation

The ODFW (2005), in its assessment of OC coho salmon, asserted that disease is not an important consideration in the recovery of this ESU. However, the BRT noted that Nanophyetus salmincola (a parasitic trematode) may be a source of mortality for juvenile OC coho salmon. Jacobson (2008) reports that annual occurrence of N. salmincola in yearling coho salmon caught in ocean tows off the coast of Oregon were 62--78 percent. Yearling coho salmon had significantly higher intensities of infection and higher infection in natural-origin versus hatchery juveniles, presumably due to the greater exposure to metacercaria (encysted resting or maturing stage of trematode parasites) in natal streams. Occurrence and intensities in yearling coho salmon caught in September were significantly lower (21 percent) than in those caught in May or June in 3 of 4 years. This suggests parasite-associated host mortality during early ocean residence for yearling coho salmon. Pearcy (1992) hypothesized that ocean conditions (food and predators) are important to marine mortality, especially soon after juvenile coho salmon enter the ocean. This is the time period that Jacobson et al. (2008) observed the loss of highly infected juveniles. Jacobson hypothesized that high levels of infection may lead to behavioral changes in the fish and thus make the juveniles more susceptible to predation.

Cairns et al. (2006) investigated the influence of summer stream temperatures on black spot infestation of juvenile coho salmon in the West Fork of the Smith River, Oregon, a stream system occupied by OC coho salmon. Their studies show that although other environmental factors may affect the incidence of black spot, elevated water temperature is clearly associated with higher infestation rates in the West Fork Smith River stream network. This may be an important issue for coho salmon juveniles as many of the streams they inhabit are already close to lethal temperatures during the summer months, and, with the expectation of rising stream temperatures due to global climate change, increases in infection rates of juvenile coho by parasites may become an increasingly important stressor both for freshwater and marine survival (Stout et al., 2010).

Parasitism and disease were not considered important factors for decline in previous BRT reviews for OC coho salmon (Weitkamp et al., 1994; Good et al., 2005). However, some information considered by the BRT suggests that they may become more important as temperatures rise due to global climate change and may become important risks for juvenile fish in the early ocean-entry stage of the lifecycle.

The BRT identified several bird species and marine mammals that prey on OC coho salmon, but concluded that these predators are not a significant threat. Salmonids have co-evolved with predators and have survived and remained productive for thousands of years in spite of the large numbers of predators. Because of the abundance and visibility of marine mammal predators on the Oregon coast, and their interactions with fishermen and other users of coastal resources, there is a perception that reducing predation by harbor seals and California sea lions is important for the restoration of OC coho salmon (Smith et al., 1997). However, the BRT listed two sources (Botkin et al., 1995; IMST, 1998) that concluded that predation was a minor threat to the OC coho salmon ESU. Similarly, in their 2005 Oregon State Coho Assessment, the ODFW (State of Oregon, 2005) reported that natural predation by pinnipeds or seabirds has not been a significant cause in the decline of salmonid stocks at the ESU scale.

The BRT was more concerned about predation on OC coho salmon from introduced warm-water fishes such as smallmouth bass (Micropterus dolomieu) and largemouth bass (Micropterus salmoides). These predatory fish are especially abundant in the streams and lakes of the Lakes Stratum and the lower Umpqua River. The BRT concluded that predation and competition from exotic fishes, particularly in light of the warming water temperatures from global climate change, could seriously affect the lake and slow-water rearing life history of OC coho salmon by increasing predation.

The Inadequacy of Existing Regulatory Mechanisms

Existing regulations governing ocean and tributary coho salmon harvest have dramatically improved the ESU's likelihood of persistence. These regulations are unlikely to be weakened in the future because they have been developed and negotiated in a comprehensive process by the Pacific Fishery Management Council and the State of Oregon. Many hatchery practices that were detrimental to the long-term viability of this ESU have been discontinued. As the BRT notes in its report, some of the benefits of these management changes are being realized as improvements in ESU abundance. However, trends in freshwater habitat complexity throughout many areas of this ESU's range remain negative (Stout et al., 2010). We remain concerned that regulation of some habitat altering actions is insufficient to provide habitat conditions that support a viable ESU. In the Efforts Being Made to Protect the Species section of this document, we present our analysis of the current efforts to protect OC coho salmon freshwater and estuarine habitat.

Other Natural or Manmade Factors Affecting its Continued Existence

Ocean conditions in the Pacific Northwest exhibit patterns of recurring, decadal-scale variability (including the Pacific Decadal Oscillation and the El Nino Southern Oscillation), and correlations exist between these oceanic changes and salmon abundance in the Pacific Northwest (Stout et al., 2010). It is also generally accepted that for at least 2 decades, beginning about 1977, marine productivity conditions were unfavorable for the majority of salmon and steelhead populations in the Pacific Northwest, but this pattern broke in 1998, after which marine productivity has been quite variable (Stout et al., 2010). In considering these shifts in ocean conditions, the BRT was concerned about how prolonged periods of poor marine survival caused by unfavorable ocean conditions may affect the population viability parameters of abundance, productivity, spatial structure, and diversity. OC coho salmon have persisted through many favorable-unfavorable ocean/climate cycles in the past. However, in the past much of their freshwater habitat was in good condition, buffering the effects of ocean/climate variability on population abundance and productivity. It is uncertain how these populations will fare in periods of poor ocean survival when their freshwater, estuary, and nearshore marine habitats are degraded (Stout et al., 2010).

The potential effects of global climate change are also a concern for this species. The BRT noted that there is considerable uncertainty regarding the effects of climate change on OC coho salmon and their freshwater, marine, and estuarine habitat. Their assessment can be found in Appendix C of its report (Stout et al., 2010). Although the BRT used the best information available to predict the possible effects of climate change on this ESU, both the BRT and other authors (Roessig et al., 2004) note that aquatic ecosystems are complex and our understanding of their function is incomplete. Therefore, the BRT's analysis should be considered qualitative in nature and involves some uncertainty. A summary of the BRT's conclusions follows.

A shift to a warmer/drier climate in the Pacific Northwest is generally expected to have negative effects on salmon survival (Mote et al., 2003; Stout et al., 2010), and some effects have already been observed (ISAB 2007; Crozier et al., 2008; Mantua et al., 2009). Warmer/drier years associated with the warm phase of the El Nino Southern Oscillation or the Pacific Decadal Oscillation lead to below-average snowpack, streamflow, flooding, salmon survival, and forest growth, and above-average forest fire risk (Mote et al., 2003). Similar climate patterns predicted by climate-change models can be expected to have similar effects on salmon (Stout et al., 2010). A number of studies (Francis & Mantua, 2003; ISAB, 2007; Crozier et al., 2008; Mantua et al., 2009) have identified ways by which climate variation or trends influence salmon sustainability, including metabolic costs, disease resistance, shifts in seasonal timing of important life-history events (upstream migration, spawning, emergence, outmigration), changes in growth and development rates, changes in freshwater habitat structure, and changes in the structure of ecosystems on which salmon depend (especially in terms of food supply and predation risk). Salmon are affected throughout their life cycle, including freshwater, estuarine and marine habitats (Stout et al., 2010).

In freshwater habitats, increases in temperature (Mote et al., 2008), decreases in snowpack (Mote et al., 2003; Karl et al., 2009), and alterations in precipitation patterns (Mote et al., 2003) are expected to have direct effects on OC coho salmon freshwater habitat such as increasing stream temperature, altering stream flow patterns, and increasing flood frequency (ISAB, 2007). Indirect effects on freshwater salmon habitat may occur as a result of increased forest fires, decreased tree growth rates, and increased frequency of damaging insect outbreaks (such as the recent mountain pine beetle attacks) (Mote et al., 2003; Peterson et al., 2008; Karl et al., 2009). Climate change may also affect forest composition, which in turn would affect stream habitat across the range of this ESU, although these types of effects cannot be predicted with certainty (Stout et al., 2010).

In addition to potential effects in the freshwater portion of their habitat, changes in ocean conditions as a result of climate change are likely to have a substantial effect on OC coho salmon. Warming sea temperatures and changes in wind patterns may affect upwelling in the Pacific Ocean off the Northwest coast, and upwelling is a main determinant of marine food supply for juvenile salmon. Recent strong El Ninos and other anomalous conditions (such as occurred in summer 2005) may serve as indicators of potential impacts of climate change. In both cases, the spring transition was delayed, surface waters became anomalously warm, and nutrient levels were low, which had implications for the entire marine ecosystem including decreased salmon survival (Brodeur et al., 2005; Emmett et al., 2006; Schwing et al., 2006; Bograd et al., 2009).

Warming sea temperatures may also result in changes in zooplankton communities (Mackas et al., 2007) and northward range expansions of marine predators that may consume OC coho salmon. For instance, in recent years, large numbers of Humboldt squid (Dosidicus gigas) have been observed off the coast of Oregon. This potential predator of juvenile salmon is typically not found this far north and may represent a new source of predation on juvenile OC coho salmon.

Ocean acidification caused by climate change may also affect OC coho salmon by altering marine food webs. Increasing atmospheric carbon dioxide is absorbed by the surface layers of the ocean, leading to increased acidity and decreased concentration of carbonate in the ocean (Bindoff et al., 2007; Fabry et al., 2008). Reductions in carbonate have consequences for marine invertebrates, which use carbonate to produce calcite and aragonite shells; this could lead to substantial changes in marine foodwebs (Feely et al., 2004; Fabry et al., 2008).

As with freshwater and open ocean habitats, changes in estuary ecosystems as a result of climate change may also affect OC coho salmon. Rising sea levels, changes in freshwater inputs, and increases in water temperature could lead to shifts in species distributions, changes in community species composition, and changes in biological production (Stout et al., 2010). Warming in estuaries can also be expected to have similar effects on coho salmon as in other habitats: increased physiological stress and increased susceptibility to disease, parasites, and predation (Marine and Cech, 2004; Marcogliese, 2008).

Despite the uncertainties involved in predicting the effects of global climate change on the OC coho salmon ESU, the available information indicates that most impacts are likely to be negative. While individual effects at a particular life-history stage may be small, the cumulative effect of many small effects multiplied across life-history stages and across generations can result in large changes in salmon population dynamics (Stout et al., 2010). In its conclusion on the likely effects of climate change, the BRT expressed both positive and negative possible effects but stressed that when effects are considered collectively, their impact on ESU viability is likely to be negative despite the large uncertainties associated with individual effects.

Efforts Being Made to Protect the Species

Section 4(b)(1)(A) of the ESA requires the Secretary to take into account efforts being made to protect a species when evaluating a species' listing classification (50 CFR 424.11(f)). Because the BRT's extinction risk findings were influenced significantly by predictions about future freshwater and estuarine habitat conditions, we performed a comprehensive analysis of programs that provide protection to OC coho salmon habitat.

Forestry

State Forest Practices Act

Management of riparian areas on private forest lands within the range of OC coho salmon is regulated by the Oregon Forest Practices Act and Rules (Oregon Department of Forestry, 2005b). These rules require the establishment of riparian management areas (RMA) on certain streams that are within or adjacent to forestry operations. The RMA widths vary from 10 feet (3.05 meters) to 100 feet (30.48 meters) depending on the stream classification, with fish-bearing streams having wider RMA than streams that are not fish-bearing.

Logging generally is allowed within the RMA under the Forest Practice rules. The rules specify the types and amount of vegetation that must be retained for various types of streams, and land owners may choose general or site-specific vegetation retention prescriptions as detailed in Oregon Department of Forestry (2005b).

Although the Oregon Forest Practices Act and the Forest Practice rules generally have become more protective of riparian and aquatic habitats over time, significant concerns remain over their ability to fully protect water quality and salmon habitat (Everest and Reeves, 2007; ODF, 2005b; IMST, 1999). In particular, disagreements continue over: (1) whether the widths of RMAs are sufficient to fully protect riparian functions and stream habitats; (2) whether operations allowed within RMAs will degrade stream habitats; (3) operations on high-risk landslide sites; and (4) watershed-scale effects. Based on the available information, we are unable to conclude that the Oregon Forest Practices Act adequately protects OC coho habitat in all circumstances. On some streams, forestry operations conducted in compliance with this act are likely to reduce stream shade, slow the recruitment of large woody debris, and add fine sediments. Since there are no limitations on cumulative watershed effects, road density on private forest lands, which is high throughout the range of this ESU, is unlikely to decrease.

State Forest Programs

Approximately 567,000 acres (2295 square kilometers) of forest land within the range of OC coho salmon are managed by the Oregon Board of Forestry (Oregon Department of Forestry, 2005). These lands are divided between Common School Fund lands and Board of Forestry Lands. Most of the Common School Fund lands are located in the Elliot State Forest, and most of the Board of Forestry Lands are located in the Clatsop and Tillamook State Forests. There are also small scattered tracts of both Common School Fund lands and Board of Forestry Lands throughout the range of OC coho salmon. The majority of these lands are managed under the Northwest Oregon Forest Management Plan and the Elliot Forest Management Plan.

These plans are described in detail in Oregon Department of Forestry (2001and 2006). Each plan defines a set of desired riparian conditions, landscape management strategies, aquatic and riparian strategies, guidelines for implementing these strategies, and an adaptive management framework. The plans contain a stream classification system for determining applicable management standards for each stream size/type. More specific protective measures for salmon and riparian areas on the Elliot State Forest can be found in the Elliot State Forest Draft Habitat Conservation Plan (Oregon Department of Forestry, 2008). The Oregon Department of Forestry began pursuing an ESA section 10 habitat conservation plan for the Northwest Oregon State Forests, but has not completed the plan.

Specific standards for forest management within riparian zones are described in the Elliot State Forest Draft Habitat Conservation Plan (Oregon Department of Forestry, 2008). For fish-bearing streams, three management zones exist, the stream bank zone (0--25 feet), inner riparian management zone (25--100 feet) and the outer riparian management zone (100--160 feet). Standards for the stream bank management zone are the most restrictive with no harvest of trees allowed, no use of ground based equipment, and full suspension of logs that are yarded through this zone. The management of forestry activities becomes more permissive as the distance from the stream increases.

We have yet to reach an agreement with Oregon Department of Forestry on completing a Habitat Conservation Plan for the Elliot Forest Habitat Conservation Plan. On July 19, 2009, we notified Oregon Department of Forestry that we are unable to conclude the strategies would meet the conservation needs of our trust resources and provide for the survival and recovery of Oregon Coast (OC) coho salmon. (Letter from Kim Kratz, NMFS to Jim Young, Oregon Department of Forestry, dated July 19, 2009). We identified concerns over stream shade, woody debris recruitment, and certain other issues that needed be resolved before the Habitat Conservation Plan can be approved. On July 27, 2009, the Oregon Department of Forestry responded, stating that the proposed protective measures will provide a high level of protection for Oregon's fish and wildlife species and a low level of risk (Letter from Jim Young, Oregon Department of Forestry, to Kim Kratz, NMFS, dated July 27, 2009). There is still significant disagreement over whether the proposed protective measures are sufficient to conserve OC coho salmon and their habitat. We remain in negotiations with Oregon Department of Forestry over the plan, but it is uncertain how the outstanding disagreements will be resolved. For purposes of this assessment, we are unable to conclude that the state forest management plans will provide for OC coho salmon habitat that is capable of supporting populations that are viable during both good and poor marine conditions. It is likely that some OC coho salmon habitat on state forests will be maintained in its current degraded state, some habitat will be further degraded, and habitat in areas that are not being harvested will recover.

Northwest Forest Plan

Since 1994, land management on Forest Service and Bureau of Land Management (BLM) lands in Western Oregon has been guided by the Federal Northwest Forest Plan (USDA and USDI, 1994). The aquatic conservation strategy contained in this plan includes elements such as designation of riparian management zones, activity-specific management standards, watershed assessment, watershed restoration, and identification of key watersheds (USDA and USDI, 1994). In the short term, this strategy was designed to halt watershed degradation and in the long-term, to provide for a system of healthy, functioning watersheds with good-quality aquatic habitat (FEMAT, 1993). A detailed explanation of the aquatic conservation strategy and its expected benefits to OC coho salmon and their habitat can be found in FEMAT (1993), USDA and USDI (1994), and Oregon State BLM and U.S. Forest Service, Region 6 (2005).

When compared to other aquatic conservation strategies and forest practice rules, the Northwest Forest Plan has large riparian management zones (1 to 2 site potential tree heights) and relatively protective activity-specific management standards (USDA and USDI, 1994). For instance, on fish-bearing streams, the riparian management zone extends approximately 300 feet (91.44 meters) on each side of the stream. Although some timber harvest or pre-commercial thinning could occur in riparian management zones, a comprehensive analysis process known as watershed assessment is required first (USDA and USDI, 1994). Most riparian functions such as maintenance of water temperature, control of sediment, and maintenance of stream banks, will be addressed under this plan (FEMAT, 1993; Everest and Reeves, 2007), although Federal land management agencies have considerable discretion to develop individual forest management actions with varying levels of impacts under the plan. Additional protection for ESA-listed species comes from the ESA requirement for federal land-management agencies to ensure that their actions are not likely to jeopardize listed species or destroy or adversely modify their critical habitats and to evaluate their actions under the National Environmental Policy Act. Unlike many state forest practice rules, the Northwest Forest Plan addresses riparian management at the watershed scale with specific emphasis on maintaining ecosystem functions over the long term (Everest and Reeves, 2007). The plan also goes beyond establishing the absolute minimum set of practices that would meet stated riparian management goals and the concept that goals could be met by implementing yet another set of best management practices (Everest and Reeves, 2007).

Large improvements in watershed condition were not expected immediately after this plan's implementation because many watersheds were extensively degraded and natural systems recover at a slow rate (FEMAT, 1993). Researchers began evaluating how watershed condition had changed after 10 years of plan implementation. Gallo et al. (2005) evaluated 250 watersheds within the area covered by the Northwest Forest Plan during two time periods (1990--1996 and 1998--2003) and found slight improvements in watershed condition between the two periods. Fifty-seven percent of the watersheds had higher condition scores in the second time period than in the first time period. They also found that growth rate of trees exceeded losses to harvest and wildfire, and nine times as many roads were decommissioned as were constructed. Reeves et al. (2006) found that watershed condition scores (a method of evaluating the physical characteristics of a watershed likely to facilitate the development of good habitat for native or desirable fish species) improved in 161 of 250 watersheds evaluated, remained the same in 18, and decreased in 71 watersheds. The authors note wildfires burned large portions of many of the watersheds where condition scores had decreased.

These authors conclude that, in general, the condition of watersheds covered by the Northwest Forest Plan has improved, and primary reasons for the improvement include the increase in number of large trees in riparian areas, a decrease in the extent of clear-cutting in riparian zones, and a reduction in the amount of road-building. Additionally, litigation also curtailed forest management activities in many salmon-bearing watersheds during a substantial part of the evaluation period. However, the authors also caution that it is currently unknown if the observed improvements in watershed condition will translate into longer-term improvements in aquatic ecosystems across the broad landscape covered by the plan. The BRT's analysis of stream habitat complexity trends indicates that the observed improvements in watershed condition have yet to be fully realized in actual stream habitat conditions (Stout et al., 2010). After considering the available information, the BRT also concluded that stream habitat conditions on Federal land would ultimately improve in the future under the Northwest Forest Plan, even though its analysis indicated an apparent decrease in habitat quality over the last decade (Stout et al., 2010).

When fully implemented, we also consider the Northwest Forest Plan sufficient to provide for OC coho salmon habitat needs on Federal lands that can contribute to viable populations of OC coho salmon in the future. However, uncertainty exists about the future of aquatic conservation strategies on Federal lands in the Pacific Northwest. The Forest Service has attempted to revise the aquatic conservation strategy for management of its land several times over the last few years but has encountered legal challenges each time. In 2007, the BLM proposed to adopt a new aquatic conservation strategy as part of the Western Oregon Resources Plan (USDI BLM, 2007). On January 11, 2008, NMFS notified the BLM of several concerns about the proposed revisions. NMFS indicated that the plan does not contain a coherent and cohesive conservation strategy for anadromous fish and their habitat in any of the action alternatives and the riparian management scenario proposed in the preferred alternative would not adequately maintain and restore the riparian and aquatic habitat conditions and processes that are critical to the conservation of anadromous fish (letter from D. Robert Lohn to Edward Shepard, July 11, 2008). The BLM made some changes in response to these comments and later decided to withdraw the proposed plan entirely. Although the Northwest Forest Plan aquatic conservation strategy is the current standard for protection of fish habitat on Federal lands in Oregon, there is some possibility that a less protective plan will be adopted in the future. NMFS is not aware of any effort to strengthen the Northwest Forest Plan's aquatic conservation strategy since its adoption in 1994.

Agriculture

Agricultural Water Quality Program

For agricultural lands, riparian management is governed by agricultural water quality management plans under Oregon Senate Bill 1010 and later area rules. Under these rules, water quality management plans must be developed for streams that are listed as water quality limited under the Federal Clean Water Act. Water quality management plans may also be developed in response to other Federal or state laws such as the Coastal Zone Management Act, Groundwater Management Act, or Safe Drinking Water Act. Within the range of OC coho salmon, water quality management plans have been developed for the Yamhill, North Coast, Mid-Coast, Curry County, and Inland Rogue River basins (Oregon Department of Agriculture, 2005). Once plans are completed, Oregon Administrative Rules (OAR 603095) are promulgated to provide an enforceable backstop for addressing water pollution from agricultural activities and rural lands.

Specific rules for riparian management vary by basin and are summarized in Oregon Department of Agriculture (2005). The rules are general and open to interpretation. For instance, language similar to the following from the mid-coast plan is found in the other plans [Riparian] vegetation must be sufficient to provide the following riparian functions: shade, streambank integrity during stream flows following a 25year storm event, and filtration of nutrients and sediment. Although this type of language identifies the important functions riparian vegetation may provide, there are no measurable standards or specific requirements in any of the riparian rules. This leaves uncertainty for landowners and makes enforcement of these rules difficult. This is reflected in the number of enforcement actions taken from 1998--2004. The Oregon Department of Agriculture reported that nine complaints were made within the range of OC coho salmon during this time period. This resulted in three water quality advisory sessions with the Department of Agriculture, one letter of warning, and no letters of non-compliance or civil penalties (Oregon Department of Agriculture, 2005).

In the past, the Oregon Department of Agriculture enforced the rules only when members of the public made complaints. Since the program does not specify what type of vegetation riparian areas should contain, it is hard for the public to know if and when the rules are being violated. Consequently, complaints were rare. Recent administrative changes now allow staff from the Department of Agriculture to investigate possible violations without complaints from the public. At this point, it is uncertain how many investigations will be initiated by the Department of Agriculture. In the past, the Department has relied on a cooperative approach with landowners, and repeated violations were necessary for enforcement action to take place. With the adoption of the Oregon Plan for Salmon and Watersheds and outreach by the Department of Agriculture, awareness about salmon habitat on agricultural lands has increased. Still, uncertainties exist about how the rules will affect the quality and trend of stream habitat conditions on agricultural lands throughout the range of OC coho salmon.

The riparian rules also exempt levees, dikes, and livestock crossing areas. In some agricultural lands, this may result in only a small portion of a riparian area being excluded from the rules. In other areas, extensive levees or dikes may constrain a stream's floodplain and prevent the development of a healthy riparian plant community and the resulting improvements in instream habitat complexity.

Confined Animal Feeding Operation Program

The Oregon Department of Agriculture issues permits for confined animal feeding operations commonly known as feedlots. This permitting program began in the early 1980s to prevent animal wastes from contaminating groundwater and surface water. The Federal Clean Water Act also requires permitting of confined feedlots in some situations. For many years, the State of Oregon chose not to issue Clean

Water Act permits (under the National Pollutant Discharge Elimination System) for confined animal feeding operation wastes because it deemed the state-issued permits to be more restrictive. The state permit program prohibits the discharge of animal wastes to surface waters, while Clean Water Act permits allow such discharges to surface water during large storm events. In 2001, the Oregon State Legislature ordered the Department of Agriculture to begin issuing permits under the Federal Clean Water Act.

The Department of Agriculture carries out an inspection program for confined animal feed operations. From 1998 to 2004, the Department carried out 1,013 inspections and investigated 82 complaints, resulting in the issuance of 92 notices of noncompliance, 175 notices of noncompliance with a plan of correction, and 8 civil penalties (ODA, 2005). It appears as if the Department of Agriculture maintains a fairly robust enforcement program for feedlot operations.

State Pesticide Programs

The Oregon Department of Agriculture's Pesticides Division regulates agricultural, residential, and commercial application of pesticides throughout the state. The U.S. Environmental Protection Agency has designated the Oregon Department of Agriculture to enforce the Federal Insecticide, Fungicide, and Rodenticide Act, as it pertains to pesticides. Oregon also has a Pesticide Control Act (passed in 1973), which, in part, allows the Department of Agriculture to further regulate pesticide use across the entire state or within a specific area (ODA, 2005). The Department of Agriculture regulates pesticide application by licensing certain applicators, requiring pesticides to be registered, and carrying out pesticide compliance monitoring.

Oregon House Bill 3602 required the Department of Agriculture to develop a Pesticide Use Reporting Program. Funding and staffing problems have delayed implementation of this program. The Department reports that this pesticide use reporting will not resume until 2013 (http://www.oregon.gov/ODA/PEST/purs_index.shtml&numsign;PURS_news). Other Federal and Oregon state laws may require some pesticide use reporting, but this information is not readily available to NMFS, and there is no current method to estimate the amount of pesticides being applied throughout the range of the OC coho salmon.

The Department of Agriculture pesticide program most likely helps reduce the amount of pesticides reaching surface water throughout the range of the OC coho salmon. The licensing program and compliance monitoring help to reduce the amount of pesticides that are applied in a manner that would adversely affect water quality. Unfortunately, we know that many pesticides still end up in surface waters of Oregon (Carpenter et al., 2008; NMFS, 2008). The state programs do not include any specific buffers for the application of pesticides. It is likely that the Federal pesticide registration and labeling program (as described below) may be more important in reducing the amount of pesticides reaching surface waters.

Federal Pesticide Labeling Program

Starting in 2001, a series of legal actions forced the U.S. Environmental Protection Agency to initiate ESA section 7 consultations with NMFS on its registration of pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act. As part of a negotiated settlement, the Environmental Protection Agency and NMFS agreed to complete consultation on 37 pesticides that may adversely affect listed salmonids and their critical habitat. This first consultation, completed in November 2008, evaluated three organophosphate pesticides: chlorpyrifos, diazinon, and malathion. In the biological opinion for this consultation, we concluded that the Environmental Protection Agency's proposed registration of the uses (as described by product labels) of all pesticides containing chlorpyrifos, diazinon, or malathion jeopardizes the continued existence of OC coho salmon and adversely modifies their designated critical habitat (NMFS, 2008).

Chlorpyrifos, diazinon, or malathion are toxic to salmonids and their prey at relatively low exposure rates (NMFS, 2008). These chemicals can cause several lethal and sublethal effects, including reduced growth (Allison and Hermanutz, 1977), interference with olfactory function (Scholz et al., 2000), and death from acute exposure (NMFS, 2008). In our biological opinion on their registration, we stated Given the life history of OC coho salmon, we expect the proposed uses of chlorpyrifos, diazinon, and malathion pesticide products that contaminate aquatic habitats may lead to both individual fitness level consequences and subsequent population level consequences, i.e., reductions in population viability. The widespread uses of these materials indicate substantial overlap with the populations that comprise the OC coho salmon. The risk to this species' survival and recovery from the stressors of the action is high. (NMFS, 2008) We also stated Chlorpyrifos, diazinon, and malathion are among the most common insecticides found in mixtures. Based on evidence of additive and synergistic effects of these compounds, we expect mortality of large numbers and types of aquatic insects, which are prey items for salmon, and concluded that the proposed action would adversely modify critical habitat for OC coho salmon. This biological opinion provides a reasonable and prudent alternative to the proposed action. This alternative includes adding labeling provisions that prohibit ground application of these chemicals within 500 feet (152.4 meters) of salmonid habitat, aerial application within 1,000 feet (304.8 meters) of salmonid habitat, and when wind speed is greater or equal to 10 miles per hour (16.1 kilometers per hour). This reasonable and prudent alternative has yet to be fully accepted by the Environmental Protection Agency.

Diazinon and chlorpyrifos are being phased out for some non-crop uses but will remain available for some commercial uses and agricultural use, so, the use of these chemicals may decrease slightly in the near future. Malathion is not being phased out in the foreseeable future. We will continue consultation on registration of the remaining pesticides, but since these three organo-phosphate pesticides are among the most toxic to salmon and their prey, it is reasonable to assume that the results of the future consultations will be equally or less restrictive.

Irrigation and Water Availability

The Oregon Water Resources Department has initiated a water right leasing program to mitigate loss of instream flow due to irrigation withdrawals. Water leases provide a mechanism for temporarily changing the type and place of use for a certificated water right to an instream use. In streams where low summer stream flow is a limiting factor for OC coho salmon, boosting instream flow would improve this habitat. In some cases, leased water can remain instream for a significant distance. In other cases, leased water only remains instream until it reaches the next water user because that water user's water right would be sufficiently large enough to allow them to divert all or a portion of the leased water. Consequently, the protection of instream water rights does not provide certain instream flow for fish and wildlife because virtually all of these existing rights for instream flow have priority dates after 1955 and are fairly junior to other water rights in most basins and therefore do not often affect water deliveries (INR, 2005). Due to these uncertainties, we must conclude that this program provides some local beneficial effects by boosting stream flow, but it is not likely to have population level positive effects in areas where low flow limits OC coho salmon production (i.e., Umpqua River Basin).

Agriculture Summary

Across all populations, agricultural lands occupy approximately 020 percent of lands adjacent to OC coho salmon habitat (Burnett et al., 2007). Much of this habitat is considered to have high intrinsic potential (low gradient stream reaches with historically high habitat complexity) but has been degraded by past management activities (Burnett et al., 2007). The state and Federal programs reviewed in this section are partially effective at protecting this habitat. Other programs including the Federal Clean Water Act section 404 and Division of State Lands permitting programs regulate additional activities, such as discharge of fill material in wetlands and water bodies that may occur on agricultural lands (these programs are reviewed in other sections of this Proposed Rule). When considered together, these programs provide a minimal level of protection for OC coho habitat on agricultural lands. Many of the agricultural actions that have the greatest potential to degrade coho habitat, such as management of animal waste, application of toxic pesticides, and discharge of fill material, have some protective measures in place that limit their adverse effects on aquatic habitat. However, deficiencies in these programs limit their effectiveness at protecting OC coho salmon habitat. In particular, the riparian rules of the water quality management program are vague and enforcement of this program is sporadic. The lack of clear criteria for riparian condition will continue to make the requirements of this program difficult to enforce. Levees and dikes can be maintained and left devoid of riparian vegetation regardless of their proximity to a stream. The lack of streamside buffers in the state's pesticide program likely results in water quality impacts from the application of pesticides. Although new requirements from ESA section 7 consultations on pesticide registration may afford more protection to OC coho salmon, these requirements will only apply if the OC coho salmon remains listed. Although a water leasing program is available, there is much uncertainty about how much these programs will actually boost instream flow. The available information leads us to conclude that it is likely that the quality of OC coho salmon habitat on private agricultural lands may improve slowly over time or remain in a degraded state. It is unlikely that, under the current programs, OC coho salmon habitat will recover to the point that it can produce viable populations during both good and poor marine conditions.

Federal Clean Water Act Fill and Removal Permitting

Several sections of the Federal Clean Water act, such as section 401 (water quality certification), section 402 (National Pollutant Discharge Elimination System), and section 404 (discharge of fill into waters of the United States), regulate activities that might degrade salmon habitat. Despite the existence and enforcement of this law, a significant percentage of stream reaches in the range of the Oregon Coast coho salmon do not meet current water quality standards. For instance, many of the populations of this ESU have degraded water quality identified as a secondary limiting factor (ODFW, 2007). Forty percent of the stream miles inhabited by OC salmon ESU are classified as temperature impaired (Stout et al., 2010). Although programs carried out under the Clean Water Act are well funded and enforcement of this law occurs, it is unlikely that programs are sufficient to protect salmon habitat in a condition that would provide for viable populations during good and poor marine conditions.

Gravel Mining

Gravel mining occurs in various areas throughout the freshwater range of OC coho salmon but is most common in the South Fork Umpqua, South Fork Coquille, Nehalem, Nestucca, Trask, Kilchis, Miami, and Wilson Rivers. The U.S. Army Corps of Engineers frequently issues permits under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for gravel mining in rivers in the southern extent of the OC coho salmon's range. Although gravel mining activities occur within rivers at the northern extent of this ESU's range, such as the Nehalem River, the Corps of Engineers does not always issue permits for these activities. Although the gravel mining occurring in the northern and southern portions of this ESU's range uses similar methods to collect the material, it is unclear why fewer permits are issued in the northern portion of this ESU's range. The Oregon Department of State Lands issues similar permits under both the Removal-Fill Law and the State Scenic Waterway Law.

Improperly managed gravel mining may adversely affect OC coho salmon habitat, particularly in systems where substrate recruitment patterns have been altered. River channel deepening through substrate removal may reduce the available important low velocity, shallow water rearing habitats. This type of habitat can be particularly important for juvenile coho salmon in lower river and estuary areas (Bottom and Jones, 1990; Dawley et al., 1986). McMahon and Holtby (1992) found coho smolts sought cover as they migrated through the estuary. Gravel mining can result in a deeper and less complex streambed which would not provide these refuge areas.

Gravel mining can also alter salmonid food webs by eliminating shallow water habitat, where food webs are based on substrate or emergent marsh vegetation and infauna (Bottom and Jones, 1990; Dawley et al., 1986). These food webs are more likely to directly support salmonid productivity than ones in large open channels (Bottom et al., 1984; Salo, 1991). For substrate-oriented macroinvertebrates, the highest abundance is produced by well-graded mixtures of gravel and cobble, with poorly-graded mixtures of sands and silts or boulders and bedrock producing the lowest abundance (Reiser, 1998). In particular, the significant taxonomic groups for salmonid food sources, including insects in the orders Ephemeroptera (mayflies), Plecoptera (stoneflies), and Trichopetera (caddisflies), show preferences for small to large-sized gravels rather than coarse or fine sands. Direct removal of aquatic vegetation or elimination of shallow water habitats will also reduce the abundance of vegetation-oriented macroinvertebrates easten by juvenile salmon such as ants (Formicidae) and grasshoppers (Caelifera).

Removal of riverbed substrates may also alter the relationship between sediment load and shear stress forces and increases bank and channel erosion. This disrupts channel form, and can also disrupt the processes of channel formation and habitat development (Lagasse et al., 1980; Waters, 1995). Operation of heavy equipment in the river channel or riparian areas can result in disturbance of vegetation, exposure of bare soil to erosive forces, and spills or releases of petroleum-based contaminants. Dredging and excavation activities have the potential to resuspend embedded contaminants or unearth buried contaminants adhered to sediment and soil particles.

Management and removal of stream substrates has been a concern in some rivers that provide habitat for OC coho salmon. On August 6, 2004, NMFS issued a jeopardy conference opinion under section 7 of the ESA on the issuance of a permit under section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act for gravel mining in the Umpqua River between rivermile 18 and 25 (NMFS, 2004). This action subsequently ceased, but gravel mining in the South Fork Umpqua River remains a concern. In 2005, we issued a draft conference opinion that concluded that proposed gravel mining in the South Fork Umpqua River was likely to jeopardize the continued existence of OC coho salmon and would result in the destruction or adverse modification of their critical habitat (letter from Michael Crouse, NMFS to Larry Evans, Corps of Engineers dated May 29, 2007). NMFS also recommended, under the Fish and Wildlife Coordination Act and Magnuson-Stevens Fishery Conservation and Management Act, that the permit for this proposed action be denied. Similarly, we recommended under the Magnuson-Stevens Fishery Conservation and Management Act, that the volume of gravel being removed from the Lower Umpqua River be limited and the method of removal restricted to a manner that will protect the geomorphology of the river (NMFS, 2006).

Although the Corps of Engineers and Department of State Lands carry out programs to regulate gravel mining, recent ESA and MSA consultations indicate that, in some cases, additional measures are needed to provide for OC coho salmon habitat capable of producing viable populations during good and poor marine conditions.

Habitat Restoration Programs

The Oregon Watershed Enhancement Board funds and facilitates habitat restoration projects throughout the range of the OC coho salmon. Many of these projects occur on private land and are planned with local stakeholder groups known as watershed councils. Biologists and restoration specialists from state, Federal and tribal agencies often assist in the planning and implementation of projects. Habitat restoration projects funded by the Oregon Watershed Enhancement Board include installation of fish screens, riparian planting, placement of large woody debris, road treatments to reduce sediment inputs to streams, wetland restoration, and removal of fish passage barriers (Oregon Watershed Enhancement Board, 2009). The web-based Oregon Watershed Restoration Inventory (http://www.oregon.gov/OWEB/MONITOR/OWRI_data.shtml) and the North Coast

Explorer (http://www.northcoastexplorer.info/) systems provide detailed information on restoration projects implemented within the range of OC coho salmon. We also maintain the Pacific Northwest Salmon Habitat Project Database (http://webapps.nwfsc.noaa.gov/pnshp) to track salmon habitat restoration projects. Douglas County provided information on several habitat restoration projects completed within the Umpqua River Basin. In addition to state and private efforts, the Forest Service and Bureau of Land Management carry out restoration projects on Federal lands (USDA and USDI, 2005).

The BRT conducted an analysis to determine if recent habitat restoration projects are being located to address habitat need. The results indicate that restoration projects in broad areas of the ESU are well matched to the needs of the specific basins, but in a few areas on the North Coast and most of the Umpqua River basin, the projects' match is marginal or worse, indicating a need for coordination between those doing habitat assessments and those designing and implementing restoration projects (Stout et al., 2010).

Beaver Management

Beavers were once widespread across Oregon. There is general agreement that beavers are a natural component of the aquatic ecosystem and beaver dams provide ideal habitat for overwintering coho salmon juveniles (ODFW, 1997). Currently, beavers in Oregon are classified as nuisance species, so there is no closed season or bag limit. They may be killed at any time they are encountered. Oregon also maintains a trapping season for beavers. The ODFW is currently investigating possible ways to protect beavers and their dams throughout the range of OC coho salmon. All of the current protective efforts are voluntary, and there is low certainty they will be fully implemented.

Proposed Determination

Section 4(b)(1) of the ESA requires that a 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 by any state or foreign nation to protect and conserve the species. We have reviewed the information received during the public comment period we announced at the beginning of this review process, the report of the BRT (Stout et al., 2010) and other information available on the biology and status of the OC coho salmon ESU. Based on this review, we conclude that there is no new information to indicate that the boundaries of this ESU should be revised or that the ESU membership of existing hatchery populations should be changed.

Ongoing efforts to protect OC coho salmon and their habitat, as described in the previous section, are likely to provide some benefit to this ESU. Considered collectively, however, these efforts do not comprehensively address the threats to the OC coho salmon ESU from ongoing and future land management activities and global climate change.

Based on the best scientific and commercial information available, including the

BRT report, we determine that the OC coho salmon ESU is not presently in danger of extinction, but is likely to become so in the foreseeable future throughout all of its range. Factors supporting a conclusion that this ESU is not presently in danger of extinction include: (1) although abundance has declined from historical levels, this ESU remains well distributed throughout its historical range from just south of the Columbia River to north of Cape Blanco, Oregon; (2) each one of the five strata comprising this ESU contains at least one relatively healthy population; (3) threats posed by overharvest and hatchery practices have largely been addressed; and (4) spawning escapement levels have improved considerably in recent years.

Factors supporting a conclusion that the DPS is likely to become in danger of extinction in the foreseeable future include: (1) although the results of the BRT's decision support system analysis indicate a low to moderate certainty that the ESU is sustainable, the results indicate a low certainty that the ESU will persist over the next 100 years; (2) habitat complexity in streams throughout the range of this ESU is either static or declining (Stout et al., 2010); (3) current protective efforts are insufficient to provide for freshwater habitat conditions capable of producing a viable ESU; and (4) global climate change is likely to result in further degradation of freshwater habitat conditions and poor marine survival. Therefore, we propose to retain the threatened listing for the OC coho salmon ESU by repromulgating the rule classifying the ESU as threatened. This proposed rule would supersede our 2008 rule listing the species as threatened.

Prohibitions and Protective Measures

Section 9 of the ESA prohibits the take of endangered species. The term take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (16 U.S.C. 1532(19). In the case of threatened species, ESA section 4(d) leaves it to the Secretary's discretion whether, and to what extent, to extend the section 9(a) take prohibitions to the species, and authorizes us to issue regulations it considers necessary and advisable for the conservation of the species. On February 11, 2008, we issued final protective regulations under section 4(d) of the ESA for the OC coho salmon ESU (73 FR 7816). The new information that we evaluated in this current review of the status of the OC coho ESU does not alter our determinations regarding those portions of our February 11, 2008 rule establishing ESA section 4(d) protections for the species. Accordingly, we do not proposed changing those protective regulations and they remain in effect.

Other Protective ESA Provisions

Section 7(a)(4) of the ESA requires that Federal agencies confer with NMFS on any actions likely to jeopardize the continued existence of a species proposed for listing and on actions likely to result in the destruction or adverse modification of proposed critical habitat. For listed species, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or conduct are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a proposed Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with NMFS or the FWS, as appropriate. Examples of Federal actions likely to affect salmon include authorized land management activities of the Forest Service and the BLM, as well as operation of hydroelectric and storage projects of the Bureau of Reclamation and the U.S. Army Corps of Engineers. Such activities include timber sales and harvest, permitting livestock grazing, hydroelectric power generation, and flood control. Federal actions, including the U.S. Army Corps of Engineers section 404 permitting activities under the Clean Water Act, permitting activities under the River and Harbors Act, Federal Energy Regulatory Commission licenses for non-Federal development and operation of hydropower, and Federal salmon hatcheries, may also require consultation. We have a long history of consultation with these agencies on the OC coho salmon ESU.

Sections 10(a)(1)(A) and 10(a)(1)(B) of the ESA provide NMFS with authority to grant exceptions to the ESA's take prohibitions. Section 10(a)(1)(A) scientific research and enhancement permits may be issued to entities (Federal and non-Federal) conducting research that involves a directed take of listed species. A directed take refers to the intentional take of listed species. We have issued section 10(a)(1)(A) research/enhancement permits for currently listed ESUs for a number of activities, including trapping and tagging, electroshocking to determine population presence and abundance, removal of fish from irrigation ditches, and collection of adult fish for artificial propagation programs. Section 10(a)(1)(B) incidental take permits may be issued to non-Federal entities performing activities that may incidentally take listed species. The types of activities potentially requiring a section 10(a)(1)(B) incidental take permit include the operation and release of artificially propagated fish by state or privately operated and funded hatcheries, state or academic research that may incidentally take listed species, the implementation of state fishing regulations, logging, road building, grazing, and diverting water into private lands. These Other Protective ESA Provisions of the February 11, 2008 rule remain in effect.

Critical Habitat

Section 4(a)(3) of the ESA requires that, to the extent practicable and determinable, critical habitat be designated concurrently with the listing of a species. Designation of critical habitat must be based on the best scientific data available and must take into consideration the economic, national security, and other relevant impacts of specifying any particular area as critical habitat.

On February 11, 2008, we designated critical habitat for the OC coho salmon ESU (73 FR 7816). The new information that we evaluated in this current review of the status of the OC coho ESU does not alter our determinations regarding those portions of our February 11, 2008 rule designating critical habitat for the species. Accordingly, we do not propose changing the critical habitat designation which remains in effect.

Peer Review

In December 2004, the Office of Management and Budget (OMB) issued a Final Information Quality Bulletin for Peer Review establishing minimum peer review standards, a transparent process for public disclosure of peer review planning, and opportunities for public participation. The OMB Bulletin, implemented under the Information Quality Act (Public Law 106--554), is intended to enhance the quality and credibility of the Federal government's scientific information, and applies to influential or highly influential scientific information disseminated on or after June 16, 2005. Pursuant to the OMB Bulletin, we are obtaining independent peer review of the draft BRT report; all peer reviewer comments will be considered prior to dissemination of the final report and publication of the final rule.

Public Comments Solicited

To ensure that the final action resulting from this proposed rule will be as accurate and effective as possible, and informed by the best available scientific and commercial information, NMFS is soliciting information, comments, and suggestions from the public, other governmental agencies, the scientific community, industry, and any other interested parties. Specifically, we are interested in information that we have not considered regarding: (1) assessment methods to determine this ESU's viability; (2) this ESU's abundance, productivity, spatial structure, or diversity; (3) efforts being made to protect this ESU or its habitat; (4) threats to this ESU; and (5) changes to the condition or quantity of this ESU's habitat.

References

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

Classification

National Environmental Policy Act

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), we have concluded that ESA listing actions are not subject to the environmental assessment requirements of the National Environmental Policy Act (See NOAA Administrative Order 2166).

Executive Order 12866, Regulatory Flexibility Act and Paperwork Reduction Act

As noted in the Conference Report on the 1982 amendments to the ESA, economic impacts cannot be considered when assessing the status of a species. Therefore, the economic analysis requirements of the Regulatory Flexibility Act are not applicable to the listing process. In addition, this proposed rule is exempt from review under Executive Order 12866. This proposed rule does not contain a collection-of-information requirement for the purposes of the Paperwork Reduction Act.

E.O. 13175, Consultation and Coordination with Indian Tribal Governments

E.O. 13175 requires that if NMFS issues a regulation that significantly or uniquely affects the communities of Indian tribal governments and imposes substantial direct compliance costs on those communities, NMFS must consult with those governments or the Federal Government must provide the funds necessary to pay the direct compliance costs incurred by the tribal governments. This proposed rule is unlikely to result in direct costs to Native American Tribes due to the following: (1) this ESU has been listed for 15 years, and in our experience, there have been few, if any, direct costs to Tribes, (2) section 7 of the ESA requires that Federal agencies consult with NMFS on the effects of actions they fund, authorize, or carry out; there is no requirement for Tribes to do so, and (3) there are no large reservations within the range of this ESU, so Federal actions that may affect Tribes occur infrequently. Accordingly, the requirements of section 5(b) of E.O. 13175 do not apply to this final rule. Nonetheless, we will continue to inform potentially affected tribal governments, solicit their input, and coordinate on future management actions.

Federalism

E.O. 13132 requires agencies to take into account any federalism impacts of regulations under development. It includes specific consultation directives for situations where a regulation will preempt state law, or impose substantial direct compliance costs on state and local governments (unless required by statute). We have determined that this proposed rule is a policy that does not have federalism implications. Consistent with the requirements of E.O. 13132, recognizing the intent of the Administration and Congress to provide continuing and meaningful dialogue on issues of mutual State and Federal interest, and in keeping with Department of Commerce policies, the Assistant Secretary for Legislative and Intergovermental Affairs will provide notice of this proposed rule and request comments from the State of Oregon.

List of Subjects in 50 CFR Part 223
Endangered and threatened species, Exports, Imports, Transportation.

Dated: May 18, 2010.

Eric Schwaab,

Assistant Administrator for Fisheries, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR part 223 is proposed to be amended as follows:

PART 223THREATENED MARINE AND ANADROMOUS SPECIES

1. The authority citation for part 223 continues to read as follows:

Authority:
16 U.S.C. 1531 1543; subpart B, 223.201202 also issued under 16 U.S.C. 1361 et seq.; 16 U.S.C. 5503(d) for 223.206(d)(9) et seq.

2. In 223.102, revise paragraph (c) (24) to read as follows:

223.102

Enumeration of threatened marine and anadromous species.

<GPOTABLE COLS="5" OPTS="L2,i1" CDEF="s8,16C,14C,20C,10C">

Species

Common name

Scientific name

Where Listed

Citation (s) for Listing Determinations

Citations (s) for Critical Habitat Designations

<ENT I="28">*

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<ENT I="22">(c) * * *

<ROW RUL="s,s,s,s,s"><ENT I="22">(24) Oregon Coast Coho
Oncorhynchus kisutch
U.S.A., OR, all naturally spawned populations of coho salmon in Oregon coastal streams south of the Columbia River and north of Cape Blanco, including the Cow Creek (ODFW stock &numsign;37) coho hatchery program
73 FR 7816; Feb 11, 2008; [Insert FR citation and date when published as a final rule]
73 FR 7816; Feb 11, 2008

<ENT I="28">*

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1Species includes taxonomic species, subspecies, distinct population segments (DPSs) (for a policy statement, see 61 FR 4722, February 7, 1996), and evolutionarily significant units (ESUs) (for a policy statement, see 56 FR 58612, November 20, 1991).

[FR Doc. 10????? Filed ????10; 8:45 am]BILLING CODE 351022S
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[FR Doc. 2010-12635 Filed 05/25/2010 at 8:45 am; Publication Date: 05/26/2010]