Designation of Critical Habitat for Oregon Coast Coho

FINAL 4(b)(2) Report

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NATIONAL MARINE FISHERIES SERVICE
Northwest Region

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INTRODUCTION

Background

This report contains NOAA Fisheries, Northwest Region's recommendations for designating critical habitat under section 4 of the Endangered Species Act (ESA) for Oregon coast coho. It describes the methods used, process followed, and conclusions reached for each step leading to the recommendation.

We first listed Oregon coast coho on August 10, 1998 (63 FR 42587). We designated critical habitat in 2000 (65 FR 7764, February 16, 2000). In 2001 the U.S. District Court in Oregon set aside the 1998 threatened listing of the Oregon Coast coho ESU (Alsea Valley Alliance v. Evans, 161 F. Supp. 2d 1154, (D. Or. 2001)) (Alsea decision). In response to the Alsea ruling and several listing and delisting petitions, we announced that we would conduct an updated status review of 27 West Coast salmonid ESUs, including the Oregon Coast coho ESU (67 FR 6215, February 11, 2002; 67 FR 48601, July 25, 2002).

We first designated critical habitat for Oregon coast coho on February 16, 2000 (65 Fed. Reg. 7764), along with 18 other West Coast salmonids. Those designations were vacated by the District Court for the District of Columbia on April 30, 2002.[1] As a result of the court's ruling, we issued an advance notice of proposed rulemaking and began gathering information to make new critical habitat designations.

On June 14, 2004, we proposed to list the Oregon Coast coho ESU as a threatened species (69 FR 33102), along with proposals to maintain the listings or newly list 26 other salmon and steelhead ESUs. On December 14, 2004, we proposed designation of critical habitat for 13 ESUs of Pacific salmon and steelhead in the Pacific Northwest, including Oregon Coast coho (69 FR 74572). For Oregon coast coho, we proposed critical habitat in 72 of 80 occupied watersheds, contained in 13 subbasins, totaling approximately 6,665 stream miles along the Oregon Coast, south of the Columbia River and north of Cape Blanco (Oregon). Eight watersheds containing 134 stream miles were proposed for exclusion.

On September 2, 2005, we designated critical habitat for 12 of the listed ESUs in the Northwest Region, but not for Oregon coast coho, since the proposed listing was not yet final (70 FR 52630). On January 19, 2006, we issued a final determination that listing the Oregon Coast coho ESU was "not warranted" and withdrew the proposed ESA listing of Oregon Coast coho (71 Fed. Reg. 3033). In the same *Federal Register* Notice, we withdrew the proposed critical habitat designation for the ESU. On October 9, 2007, the U.S. District Court for the District of Oregon invalidated our January 2006 "not warranted" determination and withdrawal of the listing. The Court ordered us to issue a new decision on listing consistent with the ESA.

[1] Although the Oregon District Court's 2001 order vacating the Oregon coast coho listing also had the effect of vacating the 2000 critical habitat designation, that order had been stayed pending an appeal.

The ESA requires us to designate critical habitat at the time of listing. This Section 4(b)(2) report describes the Northwest Region's recommended critical habitat designation for Oregon coast coho, and draws upon the proposed designation for Oregon coast coho in 2004 and the final designations for the other ESUs in 2005.

In developing this recommendation, we reviewed the approach taken in the 2005 designations for the other salmonid ESUs and determined that the approach continues to be appropriate given the facts and circumstances of Oregon Coast coho. We also reviewed new information since 2005 regarding the conservation value of the watershed areas and the economic impacts of designation. The conservation values and economic impacts considered and weighed in this recommendation represent the best current information available. This report notes where there are changes from information and analysis contained in the draft Section 4(b)(2) report that accompanied the proposal to designate critical habitat for Oregon Coast coho.

Statutory and Regulatory Requirements

The recommendations contained in this report were formulated consistent with statutory requirements and agency regulations. This section reviews the relevant statutory and regulatory provisions that guided the Region's development of recommendations.

Findings and purposes of the Act emphasize habitat conservation

In section 1 of the ESA, "Findings," (16 U.S.C. 1531(a)(1)) Congress declared that:

> Various species of fish, wildlife and plants in the United States have been rendered extinct as a consequence of economic growth and development untempered by adequate concern and conservation.

Section 2 of the ESA sets forth the purposes of the Act, beginning with habitat protection:

> The purposes of this chapter are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection (a) of this section.

"Critical Habitat" is specifically defined

Section 3(5)(A) of the ESA (16 U.S.C. 1532 (5)) defines critical habitat in some detail.

> (5)(A) The term "critical habitat'' for a threatened or endangered species means –
>
> (i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 1533 of this title, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and

(ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 1533 of this title, upon a determination by the Secretary that such areas are essential for the conservation of the species.

(B) Critical habitat may be established for those species now listed as threatened or endangered species for which no critical habitat has heretofore been established as set forth in subparagraph (A) of this paragraph.

(C) Except in those circumstances determined by the Secretary, critical habitat shall not include the entire geographical area which can be occupied by the threatened or endangered species (emphasis added).

"Conservation" is specifically defined

Section 3(3) of the Act defines conservation (16 U.S.C. 1532(3)):

> (3) The terms "conserve", "conserving", and "conservation" mean to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary.

Certain military lands are precluded from designation

In 2003 Congress amended section 4(b)(1) of the ESA to limit the designation of land controlled by the Department of Defense (National Defense Authorization Act, P.L. No. 108-136):

> The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.

Specific deadlines limit the time and information available for making designations

Section 4(a)(3) requires NOAA Fisheries to make critical habitat designations concurrently with the listing determination, to the maximum extent prudent and determinable:

> (3) The Secretary, by regulation promulgated in accordance with subsection (b) of this section and to the maximum extent prudent and determinable -
>
> (A) shall, concurrently with making a determination under paragraph (1) that a species is an endangered species or a threatened species, designate any habitat of such species which is then considered to be critical habitat

The time for designating critical habitat may be extended pursuant to section 4(b)(6)(C), but not by more than one additional year:

(C) A final regulation designating critical habitat of an endangered species or a threatened species shall be published concurrently with the final regulation implementing the determination that such species is endangered or threatened, unless the Secretary deems that -

(i) it is essential to the conservation of such species that the regulation implementing such determination be promptly published; or

(ii) critical habitat of such species is not then determinable, in which case the Secretary, with respect to the proposed regulation to designate such habitat, may extend the one-year period specified in subparagraph (A) by not more than one additional year, but not later than the close of such additional year the Secretary must publish a final regulation, based on such data as may be available at that time, designating, to the maximum extent prudent, such habitat.

Impacts of designation must be considered and areas may be excluded

Specific areas that fall within the definition of critical habitat are not automatically designated as critical habitat. Section 4(b)(2) (16 U.S.C. 1533(b)(1)(A)) requires the Secretary to first consider the impact of designation and permits the Secretary to exclude areas from designation under certain circumstance. Exclusion is not required for any areas.

The Secretary shall designate critical habitat, and make revisions thereto, under subsection (a)(3) of this section on the basis of the best scientific data available and after taking into consideration the economic impact, the impact to national security and any other relevant impact, of specifying any particular area as critical habitat. The Secretary may exclude any area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned.

Federal agencies must ensure their actions are not likely to destroy or adversely modify critical habitat

Once critical habitat is designated, section 7(a)(2) provides that federal agencies must ensure any actions they authorize, fund or carry out are not likely to result in the destruction or adverse modification of designated critical habitat (16 U.S.C. 1536(a)(2)). Section 7 also requires federal agencies to ensure such actions do not jeopardize the continued existence of the listed species:

Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an "agency action") is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate

with affected States, to be critical, unless such agency has been granted an exemption for such action by the Committee pursuant to subsection (h) of this section. In fulfilling the requirements of this paragraph each agency shall use the best scientific and commercial data available.

Authority to designate critical habitat is delegated to NOAA Fisheries

The authority to designate critical habitat, including the authority to consider the impacts of designation, the authority to weigh those impacts against the benefit of designation, and the authority to exclude particular areas, has been delegated to the Assistant Administrator of the National Marine Fisheries Service. Department Organization Order 10-15 (5/24/04). NOAA Organization Handbook, Transmittal #34 (May 31, 1993).

Joint regulations govern designation

Joint regulations of the Services elaborate on those physical and biological features essential to conservation, and set criteria for the delineation of critical habitat.

50 CFR Sec. 424.12 Criteria for designating critical habitat.

(b) In determining what areas are critical habitat, the Secretary shall consider those physical and biological features that are essential to the conservation of a given species and that may require special management considerations or protection. Such requirements include, but are not limited to the following:
(1) Space for individual and population growth, and for normal behavior;
(2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
(3) Cover or shelter;
(4) Sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and generally;
(5) Habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

When considering the designation of critical habitat, the Secretary shall focus on the principal biological or physical constituent elements within the defined area that are essential to the conservation of the species. Known primary constituent elements shall be listed with the critical habitat description. Primary constituent elements may include, but are not limited to, the following: roost sites, nesting grounds, spawning sites, feeding sites, seasonal wetland or dryland, water quality or quantity, host species or plant pollinator, geological formation, vegetation type, tide, and specific soil types.
(c) Each critical habitat will be defined by specific limits using reference points and lines as found on standard topographic maps of the area. Each area will be referenced to the State(s), county(ies), or other local governmental units within which all or part of the critical habitat is located. Unless otherwise indicated within the critical habitat descriptions, the names of the State(s) and county(ies) are provided for information only and do not constitute the boundaries of the area.

Ephemeral reference points (e.g., trees, sand bars) shall not be used in defining critical habitat.

(d) When several habitats, each satisfying the requirements for designation as critical habitat, are located in proximity to one another, an inclusive area may be designated as critical habitat.

Regulations at 50 CFR Sec. 424.02 define "special management considerations or protection:"

(j) Special management considerations or protection means any methods or procedures useful in protecting physical and biological features of the environment for the conservation of listed species.

APPROACH TO DESIGNATING CRITICAL HABITAT

Statutory Context

One observer has noted that at different times in the history of the ESA, Congress has emphasized both the importance of habitat protection to species conservation and the importance of agency restraint in designating areas as "critical" habitat (Patlis 2001). Congress emphasized the importance of habitat in species conservation in several provisions of the ESA. The findings recognize that extinctions have resulted from economic growth and development. Among the purposes of the Act is providing "a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved." In determining whether a species is a threatened or endangered species, the Secretary is to consider the current or threatened destruction of its habitat. Federal agencies must ensure their actions are not likely to result in the destruction or adverse modification of designated critical habitat. Section 5 of the Act authorizes the Secretary of Interior to acquire land for species conservation and section 10 requires the development of "habitat conservation plans" for the issuance of incidental take permits.

At the same time, the ESA requires a degree of rigor in identifying areas that qualify as critical habitat. The definition of critical habitat specifies separate criteria for designating occupied areas and unoccupied areas. Occupied areas are critical habitat if they contain physical or biological features essential to the species' conservation, and those features may require special management considerations or protection. Unoccupied areas may be designated only upon a determination that the area itself is essential to conservation. (The House Merchant Marine Committee expressed its view "that the Secretary should be exceedingly circumspect in the designation of critical habitat outside of the presently occupied area of the species" (H.R. Rep. 95-1625).) Finally, the Services are not to designate all of the geographical area that can be occupied by the species, absent a determination that the entire area is essential to conservation.

In addition to the tension between an emphasis on the importance of habitat and a rigorous delineation of critical habitat, the ESA's provisions for designating critical habitat stand out from the listing provisions of the Act in requiring the Services to

consider factors in addition to species conservation. Before they may designate an area as critical habitat, the Services must consider the economic impact, impact to national security, and any other relevant impact of the designation. The Services have the discretion to exclude an area from designation if they determine the benefits of exclusion (that is, avoiding the impact that would result from designation), outweigh the benefits of designation (that is, the benefits to species conservation). The Services' discretion is limited in that they may not exclude an area from designation if exclusion will result in extinction of the species.

The Services must observe the details of the statutory definition of critical habitat; must use the best available science; must consider the impacts of the designation on economic, national security, and other relevant interests; and may weigh the benefit to species conservation resulting from designation against the benefits of exclusion. All of this must be done within specific statutory timeframes, based upon the best information available during those timeframes, and with public notice and participation. In designating critical habitat for Pacific salmon and steelhead, we sought an approach that adhered to these statutory requirements and ultimately exercised the agency's discretionary authority within the framework of agency and administration policy.

The approach we adopted in applying sections 3(5)(A) and 4(b)(2) involved these steps:

1. Identify specific areas meeting the definition of critical habitat

2. Conduct a Section 4(b)(2) analysis:
   - Determine the benefit of designation
   - Determine the impact of designation (and corresponding benefit of exclusion)
   - Determine whether benefits of exclusion outweigh benefits of designation
   - Determine whether the cumulative effect of the recommended exclusions will result in extinction of the species

Identify Specific Areas Meeting the Definition of Critical Habitat

In General

Areas that meet the definition of critical habitat include specific areas: 1) within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and 2) outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation. In a separate report, we have documented our conclusions regarding which specific areas meet the definition of critical habitat and are therefore eligible for designation (NMFS 2007a). Pursuant to section 3(5)(A), our first task was to determine "the geographical area occupied by the species at the time of listing." We developed extensive information regarding the stream reaches occupied by Oregon coast coho using data compiled by the Oregon Department of Fish and Wildlife, as the best available data. We collected and verified these data and produced distribution maps at a scale of 1:24,000, using standard

Geographic Information System (GIS) software. We also developed latitude-longitude identifiers for the end-points of each occupied stream reach. We submitted these maps to independent experts, including the Oregon Department of Fish and Wildlife and Indian tribes for verification, and to the public, for review and comment.

Relying on the biology and life history of Pacific salmon and steelhead, we determined the physical or biological habitat features essential to their conservation. We identified these features in an Advance Notice of Proposed Rulemaking (68 Fed. Reg. 55926, Sept. 29, 2003) and in the proposed critical habitat designation (69 Fed. Reg. 74572, Dec. 14, 2004). We solicited independent expert review, including review by state agencies and Indian tribes, and asked for public comment. Consistent with regulatory direction, we focused on primary constituent elements of habitat in identifying these features.

Similarly, we based our delineation of "specific areas" where these features are found on the biology and population structure of the species, and the characteristics of the habitat it occupies. To delineate specific areas, we used standard watershed units, as mapped by the U.S. Geological Survey, designated by fifth field hydrologic unit codes, or HUC5s (this report refers to these HUC5s as "watersheds"). The USGS maps watersheds as polygons, bounding a drainage area from ridge-top to ridge-top, encompassing streams, riparian areas and uplands. Within the boundaries of any watershed, there are stream reaches not occupied by the species. Land areas within the watershed boundaries are also generally not "occupied" by the species (though certain areas such as flood plains or side channels may be occupied at some times of some years). We used the watershed boundaries as a basis for aggregating occupied stream reaches, for purposes of delineating "specific" areas on which the physical or biological features are found.

A team of federal biologists then examined each habitat area within each watershed to determine whether the stream reaches occupied by the species contained the physical or biological features previously identified as essential to conservation. The team also determined whether, consistent with the regulatory definition of "special management considerations or protection" (50 C.F.R. 402.02 (j)), there were "any methods or procedures useful in protecting physical and biological features." The team drew upon the members' first-hand knowledge of the areas and the physical or biological features as well as their experience in section 7 consultations. We asked them to determine whether there were actions occurring in those areas that may threaten the features, such that there would be any methods or procedures useful in protecting the features. The team identified and documented such activities for each area in tables contained in their report, which was submitted to the Oregon Department of Fish and Wildlife and tribes for review and made available for public comment (NMFS 2007a).

Since critical habitat for Oregon coast coho was initially proposed in 2004, we reconvened the team prior to developing our current recommendation and asked them to review any new information, in addition to comments received from the Oregon Department of Fish and Wildlife and tribes. The team updated the lists of identified activities based on their final review of the best available scientific data as well as information provided by commenters.

Aside from occupied areas containing essential features that may require special management, the definition of critical habitat includes unoccupied areas if the Services determine that the area itself is essential for conservation. We asked the team whether there were any unoccupied areas within the historical range of Oregon coast coho that may be essential for conservation. The team indicated that there was insufficient information at the time to support a conclusion that currently occupied habitat is inadequate to support conservation of Oregon coast coho. The team nevertheless identified areas they believe may be determined essential through future recovery planning efforts. We anticipate that ongoing recovery planning processes will develop additional information about the species' need for these or other currently unoccupied areas.

Military Lands

There are no military lands covered by an Integrated Natural Resource Management Plan (INRMP) in the range of Oregon coast coho.

Conduct a Section 4(b)(2) Analysis

Background

Identifying "Particular" Areas

Section 3(5) defines critical habitat as "specific areas," while section 4(b)(2) requires the agency to consider certain factors before designating any "particular area." Depending on the biology of the species, the characteristics of its habitat, and the nature of the impacts of designation, "specific" areas might be different from, or the same as, "particular" areas. For this designation, we analyzed two types of "particular" areas. Where we considered economic impacts, and weighed the economic benefits of exclusion against the conservation benefits of designation, we used the same watershed-based delineation that we used for "specific" areas (the occupied stream reaches within a watershed). This delineation allowed us to use a framework that resembles cost-effectiveness for recommending economic exclusions, described further below. Where we considered impacts to Indian tribes, however, we instead used a delineation of "particular" areas based on ownership or control of the area. This delineation allowed us to compare and balance the benefits associated with land ownership and management.

Our approach to designation had to account for the fact that the two types of particular areas have overlapping boundaries (that is, ownership may span many watersheds and watersheds may have mixed ownership). The order in which we conducted the 4(b)(2) balancing became important because of this overlap. To ensure that we were not double-counting the benefits of exclusion, we first considered exclusion of particular areas based on tribal ownership and determined which areas to recommend for exclusion. We then considered economic exclusion of particular areas based on watersheds, with the economic impact for each watershed adjusted based on whether a given type of ownership had already been recommended for exclusion (if, for example, a watershed contained military areas that were recommended for exclusion, we subtracted the

economic impact associated with those areas from the total economic impact score for that watershed.)

Analyzing Co-Extensive Impacts

As described earlier, our 2000 designation of critical habitat for 19 ESUs of salmon and steelhead was vacated by court order following a challenge to the designations (*National Association of Homebuilders v. Evans*, No. 00-CV-2799 (D.D.C.)) (*NAHB*). In the 2000 designations we concluded there would be no impact from the designations, because we were only designating occupied areas. Federal agencies must ensure their actions are not likely to result in the destruction or adverse modification of critical habitat and are not likely to jeopardize the species' continue existence. In occupied habitat, we had reasoned that any action that adversely modifies critical habitat would also jeopardize the species, thus there would be no impact of designation beyond the impact already imposed by the listing and the accompanying jeopardy requirement.

While the case against us was pending, the Court of Appeals for the Tenth Circuit vacated the U.S. Fish and Wildlife Service's critical habitat designation for the southwestern willow flycatcher (*New Mexico Cattle Growers Association v. U.S. Fish and Wildlife Service*, 248 F.3d 1277 (10th Cir. 2001)) (*NMCA*). The Service had determined there would be no economic impact from the designation because the impacts associated with jeopardy determinations and adverse modification determinations were coextensive. The Tenth Circuit found the Service's approach rendered meaningless Congress's requirement that economic impacts be considered in the designation process. The Court concluded that, to give "effect to Congressional directive," the Service must analyze the full impacts of designation, regardless of whether those impacts are co-extensive with other impacts (such as the impact of the jeopardy requirement). Given the decision in the Tenth Circuit, and the similarity between the Fish and Wildlife Service's analysis and ours, we sought a voluntary remand of the designations, which the District Court granted.

In granting our motion for a voluntary remand, the district court in *NAHB* noted, "[f]rom this court's perspective the Tenth Circuit's opinion is well-reasoned and comports with the express statutory language of Congress, which specifically requires that an analysis of the economic impact of a critical habitat designation be undertaken." The court observed that "clearly, there is a problem with the current process underlying the critical habitat designation process." The court left it to the agency's "wisdom and institutional knowledge" to remedy the problem and noted "[p]resumably, when the agency conducts new rulemaking it will be in accord with procedures it views to be in accordance with the law."

In developing the proposed critical habitat designation for Oregon coast coho and the other salmon and steelhead ESUs, we first examined our extensive consultation record with these as well as other ESUs of salmon and steelhead. (For thoroughness, we examined the consultation record for other ESUs to see if it shed light on the issues.) That record includes consultations on habitat-modifying federal actions both where critical habitat has been designated and where it has not. We could not discern a

difference between the impacts of applying the jeopardy provision versus the adverse modification provision in occupied habitat. Given our inability to detect a measurable difference between the impacts of applying these two provisions, the only reasonable alternative seemed to be to follow the recommendation of the Tenth Circuit, approved by the *NAHB* court, which was to measure the entire impact of applying the adverse modification provision of section 7, regardless of whether applying the jeopardy provision would result in the identical impact.

Just prior to publication of our proposed designation, the Court of Appeals for the Ninth Circuit invalidated our regulatory definition of "adverse modification" of critical habitat. *Gifford Pinchot Task Force v. FWS*, 378 F. 3d 1059 (9th Cir. 2004)(*Gifford Pinchot).* The Court's decision did not address the regulatory definition of jeopardy. Shortly after that decision, a District Court in Washington, D.C., issued a decision involving the U.S. Fish and Wildlife Service's critical habitat designation for the piping plover. *Cape Hatteras Access Preservation Alliance v. Norton*, 344 F. Supp. 2d 1080 (D.D.C. 2004) (*Cape Hatteras).* In that decision the Court disagreed with the *NMCA* and *NAHB* Courts, reasoning that the impact of a regulation should be based on a comparison of the world with and without the action and citing guidance from the Office of Management and Budget in support of that proposition. The *Cape Hatteras* Court concluded that the problem with the Services' analysis of economic impacts resulted from its treatment of "adverse modification" and "jeopardy" as being functionally equivalent. The Court ordered the Fish and Wildlife Service "to clarify or modify its position [regarding functional equivalence] on remand," implying that the *Gifford Pinchot* Court's holding might have an effect on the agency's historical treatment of the jeopardy and adverse modification requirements as providing coextensive protections.

In the wake of the *Gifford Pinchot* decision, we are re-examining the regulatory definition of adverse modification but have not yet concluded this process. In the absence of a revised regulation we looked to our actual record of consultations as providing the best available information. Accordingly, we re-examined our record and our current section 7 guidance. We concluded that information available to the agency at the time of the 2005 critical habitat designations did not allow us to discern an existing difference nor accurately predict the difference between actions required to avoid jeopardy and those required to avoid adverse modification of critical habitat, where habitat-modifying actions are concerned. We concluded that our analysis of coextensive impacts could still nevertheless allow for a meaningful section 4(b)(2) analysis so long as we balance those coextensive impacts of designation against coextensive benefits of designation, and, in the case of considering economic exclusions, so long as we used a framework that accommodated a comparison of the relative benefits of designation and exclusion.

In making the present recommendation of critical habitat designation for Oregon coast coho, we again examined our consultation record since the 2004 proposed designation to see if we could discern a difference between actions required to avoid jeopardy and actions required to avoid adverse modification. Again we could not detect a difference.

Accordingly, we have used the same co-extensive approach in considering economic impacts of designating critical habitat for Oregon coast coho.

The *NMCA* Court's opinion, which we have followed here, addressed only section 4(b)(2)'s requirement that economic impacts be considered ("The statutory language is plain in requiring some kind of consideration of economic impact in the [critical habitat designation] phase"). The Court did not address how "other relevant impacts" were to be considered, nor did it address the benefits of designation. Because section 4(b)(2) requires a balancing of competing considerations, and because our record did not support a distinction between impacts resulting from application of the adverse modification provision versus the jeopardy provision, we have concluded that we must uniformly consider coextensive impacts and coextensive benefits. To do otherwise would distort the balancing test contemplated by section 4(b)(2).

We recognize that, in reality, excluding an area from designation will not likely avoid all of the impacts we considered, because the section 7 requirement regarding jeopardy still applies. Similarly, much of the section 7 benefit would still apply because the jeopardy requirement still applies. Nevertheless, for exclusions based on economic impacts, the analytical framework we continue to recommend provides a meaningful comparison of the relative benefits and impacts. For exclusions based on impacts to tribes, our balancing takes into account the difficulty of apportioning impacts between the two different prongs of the section 7 requirement.

Analytical Framework for Determining and Weighing Impacts and Benefits

Section 4(b)(2) provides that the Secretary shall consider certain impacts before designating critical habitat: "the Secretary shall designate critical habitat . . . on the basis of the best scientific data available and after taking into consideration the economic impact, impact to national security, and any other relevant impact of specifying any particular area as critical habitat" (emphasis added). In addition, section 4(b)(2) provides that the Secretary may exclude any area from critical habitat upon a determination that "the benefits of such exclusion outweigh the benefits of specifying such area as critical habitat."

The balancing test in section 4(b)(2) contemplates weighing benefits that are not directly comparable – the benefit to species conservation that comes from critical habitat designation balanced against the economic benefit, benefit to national security, or other relevant benefit that results if an area is excluded from designation. Section 4(b)(2) does not specify a method for the weighing process, nor do our regulations. Legislative history suggests that the consideration and weight given to impacts is within the Secretary's discretion (H.R. 95-1625), and section 4(b)(2) makes clear that the decision to exclude is itself discretionary even when benefits of exclusion outweigh benefits of designation.

To ensure consistency in the exercise of our regulatory authority, we first examined congressional and executive direction to discern principles that would apply across

various types of impacts. We then examined congressional and executive direction relative to economic impacts and impacts to Indian tribes – the two types of exclusions considered for Oregon coast coho.

Policy Direction Relevant to Balancing Conservation against other Interests Generally

Agencies are frequently required to balance benefits of regulations against impacts; Executive Order 12866 established this requirement for federal agency regulation and gives general guidance.

Executive Order 12866

Section 1. Statement of Regulatory Philosophy and Principles.

> (a) The Regulatory Philosophy.
> In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. Further, in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.
> (b) The Principles of Regulation.
> . . .
> (5) When an agency determines that a regulation is the best available method of achieving the regulatory objective, it shall design its regulations in the most cost-effective manner to achieve the regulatory objective. In doing so, each agency shall consider incentives for innovation, consistency, predictability, the costs of enforcement and compliance (to the government, regulated entities, and the public), flexibility, distributive impacts, and equity.

Endangered Species Act, Section 2 (16 U.S.C. 1531(a)(2))

> The purposes of this chapter are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved . . .

Policy on the Consideration of Hatchery-Origin Fish in Endangered Species Act Listing Determinations for Pacific Salmon and Steelhead (70 FR 37204; June 28, 2005)

> NMFS will apply this policy in support of the conservation of naturally-spawning salmon and the ecosystems upon which they depend, consistent with section 2 (b) of the ESA.

Letter from NOAA Administrator to Members of Congress – May 14, 2004

> At President Bush's direction, recovery of salmon is the major focus for NOAA in the Pacific Northwest, an objective widely shared in the region and the nation. . . . Much work remains to be done to expand the habitat to support future generations of naturally spawning populations.
> . . .
> The central tenet of the hatchery policy is the conservation of naturally-spawning salmon and the ecosystems upon which they depend.

Policy Direction Relevant to Impacts to Indian Tribes

Secretarial Order # 3206 – American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act, Appendix

> Sec. 2. General Policy. (A) Goals. The goals of this Appendix are to provide a basis for administration of the Act in a manner that (1) recognizes common federal-tribal goals of conserving sensitive species (including candidate, proposed, and listed species) and the ecosystems upon which they depend . . .
> . . .
> 4) In keeping with the trust responsibility, shall consult with the affected Indian tribe(s) when considering the designation of critical habitat in an area that may impact tribal trust resources, tribally-owned fee lands, or the exercise of tribal rights. Critical habitat shall not be designated in such areas unless it is determined essential to conserve a listed species. In designating critical habitat, the Services shall evaluate and document the extent to which the conservation needs of the listed species can be achieved by limiting the designation to other lands.

From these expressions of congressional, executive and agency policy, we developed the following recommendations for the agency exercise of section 4(b)(2) discretion:

- Regarding exclusions based on **impacts to Indian tribes**, we recommend an approach that emphasizes respect for tribal sovereignty and self-governance while considering the degree of conservation benefit that may be lost if Indian lands are excluded.
- Regarding exclusions based on **economic impacts**, we recommend an approach that will efficiently reduce economic impacts and address inequities in the distribution of economic impacts, without impeding species conservation.

Determine benefits of designating each particular area

The principal benefit of designating critical habitat is that ESA section 7 requires every federal agency to ensure that any action it authorizes, funds or carries out is not likely to result in the destruction or adverse modification of designated critical habitat. This complements the Section 7 provision that federal agencies ensure their actions are not likely to jeopardize the continued existence of a listed species. Another possible benefit is that the designation of critical habitat can serve to educate the public regarding the

potential conservation value of an area. This may focus and contribute to conservation efforts by clearly delineating areas that are important to species conservation.

After establishing those specific areas that meet the definition of critical habitat, we asked the team of federal biologists to determine the relative conservation value of each specific area (high, medium or low)(NMFS 2007a). Their evaluation provided information allowing us to determine the benefit of designating each watershed in a way that would aid the 4(b)(2) balancing test. (Throughout this report we refer to HUC5s as watersheds. When referring to watersheds as salmon and steelhead critical habitat, we mean the occupied stream reaches within a watershed.) The higher the conservation value of a watershed, the greater the benefit of the section 7 protection.

The team first scored each watershed based on five factors related to the quantity and quality of the physical and biological features. For some of these factors the team relied on their consultation experience in considering the extent to which habitat protection or improvement could be achieved through section 7 consultation. The team next considered each area in relation to other areas and with respect to the population occupying that area. Based on a consideration of the raw scores for each area, and a consideration of that area's contribution in relation to other areas and in relation to the overall population structure of the ESU, the teams rated each watershed as having a "high," "medium," or "low" conservation value. The teams did not discount the conservation value of any area based on a presumption that the section 7 prohibition against jeopardy would protect the habitat regardless of whether it was designated as critical habitat (to ensure that coextensive benefits would be counted equitably against coextensive costs).

Areas rated "high" are likely to contribute the most to conservation of an ESU, while those rated "low" are likely to contribute least. A rating of "high" carries with it a judgment that this area contributes significantly to conservation. A rating of "low" does not mean an area has no conservation value (and therefore there would be no benefit of designation), nor does it mean there would be no impact on conservation of the ESU if the habitat were adversely modified. The benefit of designating a habitat area with a low conservation value will depend on the reasons the area received a "low" rating, on the conservation value of other habitat areas available to the ESU, and on whether nearby habitat areas are designated.

We recognized that the "benefit of designation" needed to take into account not only the team's conservation ratings but also the likelihood of a section 7 consultation occurring in that area and the degree to which a consultation would yield conservation benefits for the species. To address this concern, we developed a profile for a watershed that would have "low leverage" in the context of section 7. The "low leverage" profile included watersheds with: less than 25 percent of the land area in federal ownership, no hydropower dams, and no consultations likely to occur on instream work. We chose these attributes because federal lands, dams and instream work all have a high likelihood of consultation and a potential to significantly affect the physical and biological features of salmon and steelhead habitat. We treated this "low leverage" profile as diminishing

the benefit of designation somewhat but not completely, since the educational benefits of designation would still be more important the higher the conservation value of an area, and since we cannot predict with complete accuracy all of the section 7 consultations that are likely to occur in a particular area. We thus considered the "low leverage" profile to diminish the benefit of designation by one level (that is, a "high" would become a "medium," a "medium" would become a "low" and a "low" would become "very low" (NMFS 2007a). We asked the team of biologists whether watersheds with a low-leverage profile were in fact low leverage based on their experience applying section 7 in the area.

As discussed earlier, the scale we chose for the "specific area" referred to in section 3(5)(A) was occupied stream reaches within a watershed, delineated by the USGS as a HUC5. There were some complications with this delineation that required us to adapt the approach for some areas. In particular, a large stream or river might serve as a connectivity corridor to and from many watersheds, yet be imbedded itself in a watershed. In any given watershed through which it passes, the stream may have a few or several tributaries. This is illustrated by the map in Figure 1. In this example, a connectivity corridor is imbedded in the watershed designated as "07." The connectivity corridor serves the watersheds designated as "05" and "06." In addition, there is a tributary in "07." For connectivity corridors embedded in a watershed, we asked the teams of biologists to rate the conservation value of the watershed based on the tributary habitat. We assigned the connectivity corridor the rating of the highest-rated watershed for which it served as a connectivity corridor. This could result in a connectivity corridor with a high rating embedded in a habitat area with a low or medium rating.

The reason for this treatment of connectivity corridors is the role they play in the salmon's life cycle. Salmon and steelhead are anadromous – born in fresh water, migrating to salt water to feed and grow, and returning to fresh water to spawn. Without a connectivity corridor to and from the sea, salmon cannot complete their life cycle. It would be illogical to consider a spawning and rearing area as having a particular conservation value and not consider the associated connectivity corridor as having a similar conservation value.

Figure 1. Illustration of a connectivity corridor embedded within a watershed (HUC5).

Our use of two different and overlapping scales for "particular" areas required us to adjust our analysis when we considered areas that were delineated by land ownership or control rather than by watershed boundary. In weighing the benefit of designation for these areas, we considered the number of stream miles within the area and the conservation rating of those stream miles. We also considered the types of federal activities likely to occur in the future that would undergo section 7 consultation. Our assessment of the benefit of designation thus incorporated information on what section 7 opportunities would be lost over what amount of habitat if we excluded the area.

For the present recommendation for Oregon coast coho, we reconvened the team of biologists and asked them to review any new information available since the proposed designation. The results of that review are documented in a separate report (NMFS 2007a) and reflected in our recommendation for final critical habitat designation.

Determine benefits of exclusion and balance them against the benefits of designation

The balancing called for in section 4(b)(2) requires us to balance unlike values – conservation balanced against economic interests or against trust obligations to Indian tribes. The following sections describe the approach we took to balancing these different interests. Table 1 gives an overview of the discussion that follows:

Table 1. Overview of Section 4(b)(2) balancing framework for different types of interests

Particular Area	Benefit of Exclusion	Benefit of Designation	Policy Considerations	Conservation Trade-off
Watershed	Economic	- Based on conservation value of the watershed (as adjusted for "low leverage" areas)	Cost-Effective and Equitable Regulations	Net loss of conservation, but not if the loss will significantly impede conservation of the ESU overall
Indian Lands	Respect tribal sovereignty, ensure tribal participation in other conservation forums	- Conservation value of the affected watershed(s) is relevant - Types of activities likely to occur there are relevant	Respect for tribal sovereignty and self-governance Conservation trade-off (lose section 7 on Indian lands in exchange for tribal participation in conservation across all actions and areas)	May result in a net loss of conservation, but that is overcome by priority of tribal sovereignty and mitigated by tribal participation in conservation activities

Balancing benefits of designation against impacts to Indian tribes

Our balancing of the benefits of designation against the benefits of exclusion for Indian lands is described more fully in a separate document, reproduced at Appendix A. There are four tribes with Indian lands that overlap the critical habitat for Oregon coast coho. The number of stream miles is small individually and collectively – ranging from 0.34 miles to 1.18 miles and totaling 2.66 miles.

Throughout the course of preparing the proposed designation we consulted with Northwest Indian tribes to determine the impact of critical habitat designation on tribes. All Northwest tribes who expressed a view advised us that critical habitat designation would have a negative impact on tribal sovereignty and tribal self-governance. In particular with respect to Oregon coast coho, the Coquille Tribe submitted a comment urging exclusion of Indian lands. The longstanding and distinctive relationship between the federal and tribal Governments is defined by treaties, statutes, executive orders, judicial decisions, and agreements, which differentiate tribal governments from the other entities that deal with, or are affected by, the federal government. This relationship has given rise to a special federal trust responsibility involving the legal responsibilities and obligations of the United States toward Indian Tribes and the application of fiduciary standards of due care with respect to Indian lands, tribal trust resources, and the exercise

of tribal rights. Pursuant to these authorities lands have been retained by Indian Tribes or have been set aside for tribal use. These lands are managed by Indian Tribes in accordance with tribal goals and objectives within the framework of applicable treaties and laws.

Tribal governments have a unique status with respect to salmon and steelhead in the Pacific Northwest. In many cases they are co-managers of these resources. The co-manager relationship crosses tribal, federal, and state boundaries, and addresses all aspects of the species' life cycle. The positive working relationship between the tribes and local governmental managers of the resource can be seen in tribal participation in local watershed planning efforts. Tribal participation in local planning efforts contributes to the management and recovery of the listed species. Based on this background, we concluded that the designation of Indian lands would have a negative impact on the longstanding unique relationship between the affected tribes in the range of Oregon coast coho and the federal government. We considered these impacts to be relevant to the section 4(b)(2) consideration.

The principal benefit of designating critical habitat is section 7's requirement that federal agencies ensure their actions are not likely to result in adverse modification of that habitat. To understand the benefit of designating critical habitat on Indian lands, we considered the number of miles of stream and nearshore areas affected, the conservation value rating of those areas, and the types of activities occurring there that would be likely to undergo a section 7 consultation. Table 2 lists the ESUs and amount of habitat involved.

Table 2. Benefits of critical habitat designation on Indian lands – extent of habitat that would receive section 7 protections

Conservation Value	Number of Watersheds	Total Stream Miles of Eligible Habitat	Indian Lands	Percent
High	45	5,075	1.2	0.02
Medium	27	1,467	1.5	0.10
Low	8	110	0	0

The types of activities occurring in these areas that would be likely to undergo a section 7 consultation include activities associated with: mining, utilities, dredging, instream activities, development, National Pollutant Discharge Elimination System permits, and transportation (Appendix A).

The benefit of excluding these areas is that federal agencies acting on behalf of, funding, or issuing permits to the tribes would not need to reinitiate consultation on ongoing activities for which consultation has been completed. Reinitiation of consultation would

likely require some commitment of resources on the part of the affected tribe. Moreover, in a reinitiated consultation, or in any future consultation, tribes may be required to modify some of their activities to ensure the activities would not be likely to adversely modify the critical habitat. The benefits of excluding Indian lands from designation include the furtherance of established national policies, our federal trust obligations and our deference to the tribes in management of natural resources on their lands; and continued respect for tribal sovereignty over management of natural resources on Indian lands through established tribal natural resource programs.

In balancing the benefits of designating Indian lands in the range or Oregon coast coho versus the benefits of excluding it, we considered: the miles of habitat within the boundaries of Indian lands; the conservation value of that habitat; and the federal activities in those areas that would likely undergo section 7 consultation. We also considered the degree to which the tribes believe designation will affect their participation in regional management forums and their ability to manage their lands (Appendix A).

Based on our consideration, and given the following factors, we concluded that the benefits to tribal governments, with whom the federal government has a unique trust relationship, particularly with regard to land held by the federal government in trust for the tribes, outweigh the conservation benefits of designating the 2.7 miles of stream located on Indian lands. We considered the following factors in reaching this conclusion:

- the unique relationship between the federal government and Indian tribes in general and more specifically defined in the Pacific Northwest under *U.S. v. Washington* and *U.S. v. Oregon*;
- the unique status of lands held in trust by the federal government for the benefit of Indian tribes;
- the unique consideration to be given Indian lands under Secretarial Order 3206 ;
- the potential for critical habitat designation to have some impact on tribal participation in regional management forums;
- the potential for critical habitat designation to have some impact on tribal sovereignty and self-governance;
- our analysis of the type of activities likely to require a section 7 consultation; and
- the fact that Indian lands in the range of Oregon coast coho represent a fraction of a percent of all stream miles meeting the definition of critical habitat.

The Indian lands specifically recommended for exclusion are those defined in the Secretarial Order, including: 1) lands held in trust by the United States for the benefit of any Indian tribe, 2) land held in trust by the United States for any Indian Tribe or individual subject to restrictions by the United States against alienation, 3) fee lands, either within or outside the reservation boundaries, owned by the tribal government; and, 4) fee lands within the reservation boundaries owned by individual Indians.

Our consideration of whether these exclusions would result in extinction of Oregon coast coho is described in more detail later in this report.

Economics – Balancing benefits of designating particular watersheds against economic benefits

We balanced the benefits of designation against the economic benefits of exclusion using an approach described below. Appendix B shows how we applied of this approach to develop recommendations for exercise of the Secretary's discretion to exclude particular areas.

In a separate report we document our estimate of the economic impacts of designating each of the particular areas found to meet the definition of critical habitat (NMFS 2007b). The first step was to identify the baseline conditions – the legal and regulatory constraints on economic activity that are independent of critical habitat designation, for example Clean Water Act requirements. Coextensive impacts of the section 7 jeopardy requirement were not considered part of the baseline. Next, from the consultation record, we identified federal activities that might affect habitat and that might result in a section 7 consultation. (We did not consider federal actions, such as the approval of a fishery, that might affect the species directly but not affect its habitat.) We identified 13 types of activities and the modifications each type of activity was likely to undergo as a result of section 7 consultation. We developed an expected direct cost for each type of action and projected the likely occurrence of each type of project in each watershed, using existing spatial databases (for example., the U.S. Army Corps of Engineers 404(d) permit database). Finally, we aggregated the costs from the various types of actions and estimated an annual impact, taking into account the probability of consultation occurring and the likely rate of occurrence of that project type.

The economic analysis makes certain simplifying assumptions that may cause costs in some categories to be overstated. For example, except for costs associated with federal lands and a judicial restriction on pesticide application, costs are assigned to all activities within the geographic boundary of the watershed, even though not all federal activities in the watershed will lead to a section 7 consultation. The analysis also makes assumptions about the likely impact of modifications to hydropower projects, when in fact many of the projects included in the analysis may not require modifications. This could not be determined without further analysis, which time did not permit. As discussed previously, the analysis also overestimates costs because it includes costs that would be incurred as a result of applying the jeopardy requirement of section 7. Nevertheless, the analysis is based on the best information available within the time constraints, and it provides a reasonable basis for comparing cost impacts among different areas to inform the designation process.

The analysis also estimated how much of the economic impacts would have a local effect versus a regional or national effect. This was accomplished by identifying which of the activity types were likely to have local economic effects (such as instream activities) and which were likely to have broader effects (such as hydropower or federal lands activities). By estimating the number of people within each watershed, the analysis also allowed for a consideration of per capita costs in each. Because there were habitat areas where we wanted the option to consider connectivity corridors separately from the tributaries (such as a high-value connectivity corridor through an otherwise low-value

habitat area), we also identified which types of activities were most likely to have tributary impacts and which were most likely to have connectivity corridor impacts. This allowed us to estimate the separate impact of designating just the tributaries (and therefore the separate benefit of excluding just the tributaries).

The economic analysis presents the costs as a point estimate for each habitat area, generally representing the mid-point of the range of costs. The economic analysis used two different discount rates to predict future costs (7 and 3 percent). In conducting our 4(b)(2) analysis we focused on the estimates that used the 7 percent rate. We also tested our methods against the estimates using the 3 percent rate and found the results would not change.

Ideally the balancing of any benefits, particularly economic benefits, would involve first translating the benefits on both sides of the balance into a common metric. Executive branch guidance from the Office of Management and Budget suggests that benefits should first be monetized – converted into dollars. Benefits that cannot be monetized should be quantified (for example, numbers of fish saved.) Where benefits can neither be monetized nor quantified, agencies are to describe the expected benefits (OMB 2003).

It may be possible to monetize benefits of critical habitat designation for a threatened or endangered species in terms of willingness-to-pay (OMB 2003). However, we are not aware of any available data at the scale of our designation (by watershed, across more than 600 watersheds) that would support such an analysis for salmon and steelhead. The recent court order, short statutory timeframes, geographic scale of the designations under consideration, and the statute's requirement to use best "available" information suggest such a costly and time-consuming approach is not currently available. In addition, section 4(b)(2) requires analysis of impacts other than economic impacts that are equally difficult to monetize, such as benefits to national security of excluding areas from critical habitat. In the case of salmon and steelhead designations, impacts to Northwest tribes or to our program to promote voluntary conservation agreements are "other relevant" impacts that also may be difficult to monetize.

An alternative approach, approved by OMB, is to conduct a cost-effectiveness analysis. A cost-effectiveness analysis ideally first involves quantifying benefits, for example, percent reduction in extinction risk, percent increase in productivity, or increase in numbers of fish. Given the state of the science, it would be difficult to quantify the benefits reliably. There are models for estimating numbers of salmon that might be produced from a watershed under different sets of environmental conditions (for example, Ecosystem Diagnosis and Treatment (Mobrand 1999)). While such models give quantified results, the accuracy of the quantified projections is uncertain because of the lack of data both on the relationships between environmental conditions and numbers of fish, and the actual conditions of habitat in a given area. This leads to a heavy reliance on expert opinion for estimating habitat condition and the expected response of fish to changing environmental conditions in a specific location. Moreover, applying such models at the scale required for salmon and steelhead would take more time than the statute allows.

Although it is difficult to monetize or quantify benefits of critical habitat designation, it is possible to differentiate among habitat areas based on their relative contribution to conservation. For example, habitat areas can be rated as having a high, medium or low conservation value. Like the models discussed above, such a rating is based on best professional judgment. The simpler output (a qualitative ordinal ranking), however, may better reflect the state of the science for the geographic scale considered here than a quantified output, and can be done more easily within the statutory timeframes and with available information. The qualitative ordinal evaluations can then be combined with estimates of the economic costs of critical habitat designation in a framework that resembles cost-effectiveness and arguably moves the designation toward a more efficient outcome. Individual habitat areas are assessed using both their biological evaluation and economic cost, so that areas with high conservation value and lower economic cost have a higher priority for designation and areas with a low conservation value and higher economic cost have a higher priority for exclusion.

In determining whether the economic benefit of excluding a habitat area might outweigh the benefit to the species of designation, we considered the following factors: 1) the policy goal of exercising our discretion to further conservation of listed species; 2) the policy goal of adopting regulations that minimize total economic impacts and disparate economic impacts; 3) the recognition that because we are considering coextensive impacts, the dollar benefits of exclusion are likely overstated, 4) the difficulty of balancing dissimilar values (dollars versus benefits to species conservation); and 5) the limited time frame in which to make decisions. Consideration of these factors led us to a an approach in which we gave priority to excluding habitat areas with a relatively lower benefit of designation and a relatively higher economic impact.

The circumstances of most of the listed ESUs addressed in the 2004 proposed rule seemed well suited to this approach. Pacific salmon and steelhead are wide-ranging species and occupy numerous habitat areas with thousands of stream miles. Most of these areas contain "physical or biological features" we have identified as "essential to conservation" of the ESUs. Not all these areas, however, are of equal importance to conserving an ESU, as evidenced by the biological teams' rating of different areas as high, medium or low. It is therefore possible to construct different scenarios for achieving conservation, which might have more or less certainty of achieving conservation, and more or less economic impact.

To give effect to our policy goals we decided on a two-step approach. In the first step we identified all areas eligible for exclusion. Eligibility was determined based on a dollar impact. In the second step we asked the biological teams to consider whether excluding any of the eligible areas, either alone or in combination with other eligible areas, would significantly impede conservation. For the first step, we sought criteria that would result in a list of eligible areas with a meaningful cost savings. At the same time, because of the time limitations, we did not want to develop a list that would then require extensive modification as a result of applying biological judgment in the second step.

We also sought criteria that would account for the fact that recovery planning processes are not yet complete. The timeframes associated with the designation process necessarily lead to decisions regarding designation of critical habitat in advance of recovery planning. This is a factor for the agency to consider in deciding whether to exclude any areas.

To better determine the most appropriate criteria, we first constructed alternative scenarios for the initial exclusion step. In one scenario we did not exclude any areas. This scenario would provide the maximum benefit of designation to the species, and a useful point of comparison for the economic benefit possible from other scenarios. In another scenario we simply considered as eligible for exclusion all habitat areas with a low- or medium-value rating. In a third scenario we developed dollar thresholds for low- and medium-value areas likely to result in meaningful economic reductions, but that would not in most cases automatically make all the low- and medium-value habitat areas eligible for exclusion.

In addition to overall economic impact, we were concerned about equitable allocation of impacts. Per capita local impacts tended to be higher in less developed areas where there are fewer people. To carry out the policy objective of an equitable distribution of the regulatory burden, we also included criteria in the third scenario making areas eligible for exclusion based on per capita impact. In none of the scenarios did we consider habitat areas for exclusion if they had a high-value. Based on the rating process used by the biological teams, we judged that exclusion of any of the high-value areas would significantly impede conservation.

In developing criteria for the third scenario, we chose dollar thresholds that we anticipated would lead most directly to a more cost-effective scenario, recognizing that the question of whether the economic benefit of excluding any particular area outweighs the benefit of designating that area can only be answered in the context of the overall designation – the conservation impact of excluding any particular area may depend on which other areas are being excluded, and therefore the benefit of designation may depend on what else is being designated.

In developing the present recommendation for Oregon coast coho we reviewed this two-step approach and found that it remains appropriate for application to Oregon coast coho. The following discussion describes how the dollar thresholds were chosen for the proposed designation in 2004. For the final designation for Oregon coast coho, we have adjusted both the thresholds and the estimated economic impacts for inflation. The basis for the adjustments to impacts is described in a separate economics report (NMFS 2007b). We also adjusted the dollar thresholds to account for inflation. The 4(b)(2) analysis balances the benefits of exclusion against the benefits of inclusion. The benefits of inclusion stem from the incremental benefits of habitat protection and conservation of Oregon Coast coho. Because these benefits accrue to the public at large, we have adjusted the thresholds, which in part reflect these benefits, by a consumer price index (CPI: West urban; All items, Series CUUR0400SA0, CUUS0400SA0). We chose July

2005 as the base month for the adjustment, and October 2007 as the endpoint. The change in the consumer price index for this period was 7.7 percent.

As criteria for identifying habitat areas eligible for proposed exclusion, we selected a threshold for total impacts of $85,000 and per capita impacts greater than $100 for low-value areas. For medium-value areas, we selected a threshold of $300,000 and per capita impacts greater than $500. These numbers have been adjusted for inflation in this final recommendation to $91,556 and $323,138 respectively. These numbers do not represent an objective judgment that, for example, a low-value area is worth no more than a given dollar amount. The statute directs us to balance dissimilar interests with a limited amount of time (and therefore information). It emphasizes the discretionary nature of the decision to exclude. Moreover, while our approach follows the Tenth Circuit's direction to consider coextensive economic impacts, we nevertheless must acknowledge that all of the cost estimates are likely higher than the true cost of a critical habitat designation. Finally, the cost estimates developed by our economic analysis do not result in a distribution with obvious break points that would lead to a logical division between "high," "medium," and "low" costs that might correspond to high, medium and low conservation value. Given these factors, a judgment that any particular dollar threshold is objectively "right," would be neither necessary nor possible. Rather, what economic impact is "high" and therefore might outweigh the benefit of designating a medium- or low-value habitat area is a matter of discretion and depends on the policy context. The policy context in which we carry out this task led us to select dollar thresholds that would likely lead to a more cost-effective designation in a limited amount of time with a relatively simple process. We did not receive any comments from peer reviewers or the public regarding our choice of dollar thresholds or the two-step process we used to first identify areas eligible for exclusion and then determine whether to recommend exclusion.

As described previously, during the course of developing a final rule we also considered whether there were some cases in which the biological teams' ratings of conservation value might need to be adjusted to take into account the likelihood of a consultation and the degree of habitat modification likely as a result of potential federal actions. To address this concern, we identified a profile for a watershed that would have "low leverage" based on the fact that a section 7 consultation in that watershed would be unlikely to occur or, if it did occur, it would yield few conservation benefits. We used this profile to identify potential low leverage watersheds and then verified with the biological teams that the areas identified did indeed have low section 7 leverage. We then adjusted downward by one level the conservation rating for these low leverage watersheds. The result was that some watersheds previously given a low conservation value now had a "very low" conservation value. To balance the benefit of designating these watersheds against the economic benefit of excluding them, we adopted an additional dollar threshold of $1000, as a figure that represented a very low economic impact. (We did not develop a profile for a high leverage watershed and adjust conservation ratings upward because of the second step in our economic exclusion process, in which the biological teams advised whether exclusion would significantly impede conservation. Our selection of dollar thresholds was intended to create an efficient process and not because of a judgment about absolute equivalence between a

certain dollar amount and a certain amount of conservation. We concluded that this second step protected against excluding a watershed if exclusion would significantly impede conservation, making upward adjustments unnecessary.)

Table 3 illustrates the results of each scenario (L=Low and M=Medium). Where a habitat area contains tributaries with one rating and a connectivity corridor with another rating, the impacts are separated and attributed accordingly. For example, if a habitat area has a low-value tributary rating and a high-value connectivity corridor, the economic impact of designating the high-value connectivity corridor is represented in the "high" category and the impact of designating the tributaries is represented in the "low" category. The cumulative potential economic impact of designating habitat areas within watersheds is presented for the low conservation value, medium conservation value, high conservation value, and all habitat areas. The reduction in potential economic impact is then presented for each of the three scenarios. Economic impacts reflect those for watersheds and connectivity corridors.

Table 3: Comparison of alternative scenarios for excluding certain areas from critical habitat designation under ESA section 4(b)(2).

		Potential Reduction in Maximum Economic Impact *(reduction in annual economic impact of section 7 consultations)*		
Conservation value of watersheds	**Maximum economic impact**	**Scenario 1**	**Scenario 2**	**Scenario 3**
L = low value *M = medium value* *H = high value*	*Annual economic impact of section 7 consultations*	*No areas eligible for exclusion*	*All low-value(L) and medium-value (M) areas eligible for exclusion. For L and M areas with high-value (H) migration/ connectivity corridors, only tributaries are eligible for exclusion.*	*All low-value (L) areas with an economic impact > $85,000/yea or >$100/year/personr, and all medium-value (M) areas with an economic impact of $300,000/year or > $500/year/person, are eligible for exclusion*
L	**$2,200,701**	**$0**	**-$2,200,701**	**-$2,125,554**
M	**$8,258,260**	**$0**	**-$8,258,260**	**$0**
H	**$11,720,231**	**$0**	**$0**	**$0**

Scenario 1 illustrates the total estimated economic impact of applying section 7 requirements to habitat-modifying actions in all of the habitat areas for Oregon coast coho. Scenario 2 illustrates the estimated potential reduction in economic impact if all of the low- and medium-value habitat areas are excluded, and Scenario 3 illustrates the estimated potential reduction in economic impact if low- and medium-value habitat areas above a particular dollar threshold are excluded. The cost reductions shown are only potential reductions. Until the second step of the analysis is completed, it is not possible to determine the final estimated reduction that scenario would yield. In considering the scenarios, we kept in mind that both the costs and reductions to cost are likely overstated because the jeopardy requirement of section 7 still applies. Nevertheless, examining alternatives gives a useful picture of the relative outcomes of different scenarios.

Scenario 1 would maximize the goal of achieving conservation. However, it would not serve the other goal of efficiently reducing the cost of conservation. Scenario 2 furthers the goal of reducing economic impacts, but without any sensitivity to the fact that for some habitat areas the cost is relatively small so the incremental benefit of excluding that area is small (making it problematic to conclude that the benefit of exclusion outweighs the benefit of designation). Scenario 2 is also not sensitive to the fact that for most ESUs, eliminating all low- and medium-value habitat areas is likely to significantly impede conservation. While the second step of the test (application of biological judgment) would address this concern, it would not do so in an efficient way – that is, it would not efficiently lead to the low-cost areas being favored for designation and the high cost areas favored for exclusion. For Scenario 2, it is unlikely that all of the potential reductions would be retained through the second step. The end result also may not be economically efficient unless there are additional iterative steps that allow for consideration of economic impacts within the context of the goal of achieving conservation.

In contrast, Scenario 3 is sensitive to the fact that excluding some low and medium areas will save less than excluding other low and medium areas. It is also sensitive to the fact that excluding all low and medium areas in all ESUs would not result in an efficient second step of the process. Based on these considerations, for the proposed rule, and the final 2005 rule for ESUs other than Oregon coast coho, we adopted the two-step test, first applying the economic criteria described for Scenario 3 to develop a set of recommended exclusions. In the second step of the process, we asked the biological team whether excluding any of the habitat areas identified in the first step would significantly impede conservation. The team considered this question in the context of the exclusions being contemplated for Indian lands; all of the areas eligible for exclusion based on economic impacts; and the information they had developed in providing the initial conservation ratings. Where the team concluded that exclusion would significantly impede conservation, we have not recommended exclusion.

We note that other approaches could be taken to economic exclusions and other policy considerations could be applied to reach a different result. For example, in the first step, different dollar thresholds could be selected, including a dollar threshold above which high-value areas would be considered for exclusion. Or in the second step, policy-makers might favor other goals over conservation.

For the present recommendation for Oregon coast coho, we re-examined the two-step approach we had previously employed, our record for Oregon coast coho, and new information available since the proposal. We concluded that the approach we used in the 2005 designations was still valid for application to Oregon coast coho. The tables in Appendix B show the results of applying this approach. They indicate all of those watersheds determined eligible for exclusion in the first step of the process. The footnotes identify where the second step of the process resulted in a watershed that was eligible for exclusion not being excluded.

Determine whether the cumulative effect of the recommended exclusions will result in extinction of the species

Section 4(b)(2) does not allow the agency to exclude areas if exclusion will result in extinction of the species. Since we have not recommended excluding any habitat areas based on economic impacts if the exclusion would significantly impede conservation, we have determined for each ESU that the exclusion of the areas we recommend based on economic impacts will not significantly impede conservation. In the next section we discuss how we considered the economic exclusions in combination with the other types of exclusions to make this required finding for each ESU.

AREAS RECOMMENDED FOR EXCLUSION

There are 6,665 occupied stream miles meeting the definition of critical habitat for this ESU. These are grouped into habitat areas in 80 watersheds within the spawning range of this ESU (for ease of reference these watersheds have been organized into 13 subbasins). Of the watersheds within the ESU boundaries, 10 received a low rating, 28 received a medium rating, and 42 received a high rating of conservation value to the ESU (NMFS 2007a). There are no connectivity corridors outside the spawning range of the ESU. Figure B.1 shows a map of Oregon coast watersheds occupied by the ESU and eligible for designation.

Recovery Planning Status

The Oregon and Northern California Coasts TRT have identified 21 independent populations and 35 dependent populations of Oregon Coast coho salmon (Lawson et al. 2007). The independent populations include: the Necanicum River, Nehalem River, Tillamook Bay, Nestucca River, Salmon River, Siletz River, Yaquina River, Beaver Creek, Alsea River, Siuslaw River, Siltcoos River (lake), Tahkenitch Creek (lake), Lower Umpqua River, Middle Umpqua River, North Umpqua River, South Umpqua River, Tenmile Creek (lake), Coos Bay, Coquille River, Floras Creek, and Sixes River populations. Recovery planning will likely emphasize the need for a geographical distribution of viable populations across the range of the ESU (Ruckelshaus et al. 2002, McElhany et al. 2003). The TRT divided the ESU into five biogeographic groups because these units represent both biological diversity (genetic and ecological) and geographic variation. The TRT noted that, given the dominant influence of the ocean on the Oregon Coast climate, ecological conditions are relatively uniform throughout the ESU. The Umpqua River basin is an exception, with inland areas being drier and experiencing more extreme temperatures than the coastal areas. Ecological differences

within the ESU relate to the effects of local topography on rainfall, and of local geology on vegetation composition and slope stability. The State of Oregon's Fish and Wildlife Commission adopted the Oregon Department of Fish and Wildlife's Oregon Coast Coho Conservation Plan in March 2007. The Biological Team considered the TRT products in rating each watershed. We anticipate that, as ESA recovery planning proceeds, we will have better information and may revise our recommendations regarding critical habitat designation.

Military and Indian Lands

There are no lands controlled by the military or designated for its use and covered by an INRMP within the spawning range of Oregon Coast coho. There are four Indian reservations within the spawning range of this ESU. Within the boundaries of these reservations there are approximately 2.8 stream miles, or about 0.04 percent of the total stream miles occupied by this ESU. As described in Appendix A, we have determined that the benefits of excluding the habitat areas on these Indian lands outweigh the benefits of designating them.

Consideration of Economic Impacts and Recommendations for Exclusions

The Table in Appendix B shows the estimated total and per capita local economic impacts for each of the habitat areas. Where an area contains both a connectivity corridor and tributary habitat, the table shows the impacts of designating each.

There are eight low conservation value habitat areas, none of which contain a connectivity corridor. The economic impact for five of the eight low-value areas exceeded the Scenario 3 criteria, making these areas eligible for exclusion. We recommend that all five of these areas be excluded because exclusion will not significantly impede conservation.

There are 27 areas with a medium rating, four containing a high-value connectivity corridor and three containing a medium-value connectivity corridor. Ten of these medium-value areas exceeded the Scenario 3 exclusion criteria, but we are not recommending any of these for exclusion because exclusion will significantly impede conservation of Oregon coast coho. The basis for this conclusion is described in the footnotes in the Table in Appendix B with respect to each of these watersheds. Most of these potential exclusions are in the Umpqua River drainage, which the team of federal biologists considered ecologically unique and important to conservation of Oregon coast coho.

The map in Figure B.2 shows those habitat areas being recommended for exclusion based on economic impacts. They include 84 total stream miles, representing one percent of the total stream miles occupied by Oregon coast coho, in areas rated as having a low conservation value. The reduction in estimated economic impact is approximately 9.6 percent of the economic impact that would occur if all habitat areas were designated.

We have concluded that exclusion of any of these areas alone, or of all areas in combination, would not significantly impede conservation of the Oregon Coast coho

ESU. The habitat areas being recommended for designation as critical habitat include approximately 6,565 stream miles occupied by this ESU. These habitat areas are well distributed within and among the 21 independent populations and 35 dependent populations identified by the TRT. The recommended critical habitat designation for the Oregon Coast coho ESU will complement recovery planning efforts aimed at conserving the geographic distribution and diversity of these populations in this ESU.

Table 4. Summary of Exclusions for Oregon Coast Coho Salmon

Conservation Value	Number of Watersheds	Total Stream Miles of Eligible Habitat	Stream Miles Excluded From Designation	
			Indian Lands	Economic
High	45	5,075	1.2	0
Medium	27	1,467	1.5	0
Low	8	110	0	84

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69 FR 74572; 12/14/2004; http://www.nwr.noaa.gov/Publications/FR-Notices/2004/upload/69FR74572.pdf	Endangered and Threatened Species; Designation of Critical Habitat for 13 Evolutionarily Significant Units of Pacific Salmon (Oncorhynchus spp.) and Steelhead (O. mykiss) in Washington, Oregon, and Idaho; Proposed Rule
70 FR 37160; June 18, 2005; http://www.nwr.noaa.gov/reference/frn/2005/70FR37160.pdf	Endangered and Threatened Species: Final Listing Determinations for 16 ESUs of West Coast Salmon, and Final 4(d) Protective Regulations for Threatened Salmonid ESUs
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70 FR 52630, 09/02/2005; http://www.nwr.noaa.gov/Publications/FR-Notices/2005/upload/70FR52630Pre.pdf	Endangered and Threatened Species; Designation of Critical Habitat for 12 Evolutionarily Significant Units of West Coast Salmon and Steelhead in Washington, Oregon, and Idaho
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APPENDIX A: INDIAN LANDS MEMO
APPENDIX B: ECONOMIC EXCLUSION TABLES AND MAPS

Appendix A: Indian Lands Memo

December 20, 2007

MEMORANDUM

To: PRD File

From: Donna Darm, Assistant Regional Administrator, PRD

cc: Kirsten Erickson, NOAA General Counsel, NW

Subject: Analysis of the Benefits of Designating versus the Benefits of Excluding Indian Lands from Critical Habitat for Oregon Coast Coho

This analysis was prepared to inform the agency's exercise of discretion under Section 4(b)(2) of the Endangered Species Act (ESA), which allows the Secretary to exclude any particular are from critical habitat designation if the benefits of exclusion outweigh the benefits of designation, so long as exclusion will not result in extinction of the listed species. The analysis first examines the benefits of designating Indian lands for Oregon coast coho, then examines the benefits of excluding lands of four Indian tribes. The analysis concludes that the benefits of exclusion outweigh the benefits of designation because excluding Indian lands benefits the federal government's policy of promoting respect for tribal sovereignty and self-governance and the critical habitat area on Indian lands is a tiny proportion of total critical habitat for this species. The analysis further concludes that excluding this small amount of habitat will not result in extinction or Oregon coast coho. Based on this conclusion, we recommend the agency exercise its discretion under ESA section 4(b)(2) to exclude Indian lands from designation for Oregon coast coho. To aid the reader, the following Table of Contents outlines the organization of this memo:

<u>Background</u>
The Northwest Region is recommending critical habitat designations for Oregon coast coho. There are four Indian tribes whose lands intersect with defined critical habitat of this species. Table 1 shows the tribes and the number of stream miles associated with that tribe's lands. The attached maps show the location and size of the Indian lands.

Table 1. Tribes with lands intersecting critical habitat areas

Confederated Tribes of Siletz Indians	0.69 miles
Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw	0.34 miles
Coquille Indian Tribe	1.18 miles
Cow Creek Band of Umpqua Tribe of Indians	0.45 miles

Section 7(a)(2) of the ESA requires federal agencies to ensure that any actions they authorize, fund or carry out are not likely to result in the destruction or adverse

modification of designated critical habitat. (Section 7(a)(2) also requires federal agencies to ensure such actions do not jeopardize the continued existence of the listed species. Section 3(5)(A) defines critical habitat, but areas meeting the definition are not automatically designated. Section 4(b)(2) establishes the process the agency is to use in designating critical habitat. It requires us to designate critical habitat for threatened and endangered species "on the basis of the best scientific data available and after taking into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat." This section grants the Secretary of Commerce discretion to exclude any area from critical habitat if he determines "the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat." The Secretary's discretion is limited, as he may not exclude areas if it "will result in the extinction of the species."

Unique Federal Relationship with Indian Tribes

Executive Order 13175 reiterates the unique relationship between the federal and tribal governments: *The United States has a unique relationship with Indian tribal governments as set forth in the Constitution of the United States, treaties, statutes, Executive Orders, and court decisions*. The nature of the relationship has been discussed from the earliest court cases (see *Worcester v. Georgia*). In his seminal work, Felix Cohen[1] points out that, while treaties with Indian tribes "are accorded the same dignity as that given to treaties with foreign nations," they differ in at least two important respects. "Through the application of special canons of construction, Indian treaties are construed in favor of the Indians. Further, the courts will not find that Indian treaties have been abrogated by later treaties or legislation unless there is a clear and specific showing in the later enactment that abrogation was intended" (Cohen, p. 63).

This description supports points that will be made later in this memo regarding the purpose of Indian lands as reserves for tribal governments. The reservations are both secure homelands for the tribes, as well as bases for their economic stability. The title to the land is held by the United States for the sole beneficial use of the tribes and their members. These are not federal lands reserved for public use, but rather "Indian lands" reserved for use by tribal governments (and individual tribal members). Discussion regarding the future status of Indian lands should be consistent with these purposes.

Unique Status of "Indian Country" and Indian Lands

Before addressing specific characteristics of Indian Land, it is helpful to look at the legal status of the areas within which they are found, i.e., "Indian Country." Indian Country is defined in 18 U.S.C. § 1151:

> *(a) all lands within the limits of any reservation under the jurisdiction of the United States Government, not withstanding the issuance of any patent, and including rights-of-way running through the reservation,*

[1] *Felix S. Cohen's Handbook of Federal Indian Law, 1982 Edition*, Rennard Strickland, et al, editors. Michie Bobbs-Merrill (1982).

> *(b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a State, and*
>
> *(c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.*

As Cohen points out: "The Indian country statute is thus of general importance in defining the special territory where Indians are governed primarily by tribal and federal law rather than state law" (Cohen, p 28). "Indian lands" are defined in the Secretarial Order as "any lands title to which is either 1) held in trust by the United States for the benefit of any Indian tribe or individual, or 2) held by any Indian tribe or individual subject to restrictions by the United States against alienation." Additionally, it is a stated principle of the Secretarial Order that Indian lands "are not subject to the controls or restrictions set forth in federal public land laws. Indian lands are not federal public land or part of the public domain, but are rather retained by tribes or set aside for tribal use pursuant to treaties, statutes, court orders, executive orders, judicial decision, or agreements. Accordingly, Indian tribes manage Indian lands in accordance with tribal goals and objectives, within the framework of applicable laws." The above supports the conclusions of Sandi Zellmar's discussion in "Indian Lands as Critical Habitat for Indian Nations and Endangered Species: Tribal Survival and Sovereignty Come First":[2]

> Thus, the trust responsibility arises not only from the nature of the relationship between tribes and the United States, but also from the massive transfer of lands from Indian Nations to the federal government and the retention and protection of a critical—though diminished—land base, as reflected in treaties. Just as sovereignty is at the very core of the trust responsibility, the tribal land base, retained by the tribes through treaties, is a critical component of sovereignty for most tribes.

<u>Executive Policy Guides Treatment of Indian Lands in Designating Critical Habitat</u>
In addition to Executive Order 13175, we have Department of Commerce direction, via the Secretarial Order, stating that Indian lands shall not be designated, nor areas where the "tribal trust resources … or the exercise of tribal rights" will be impacted, unless such lands or areas are determined "essential to conserve a listed species." In such cases we "shall evaluate and document the extent to which the conservation needs of the listed species can be achieved by designating only other lands." The Secretarial Order is consistent with the long-standing policies of the federal government regarding relationships with, and responsibilities to, Indian tribes. The Secretarial Order direction was developed in consultation with tribal governments, in recognition of their sovereign status and management authority. The Order's purpose, in part, is to help ensure the tribes do not bear a disproportionate conservation burden.

This direction recognized the unique status of Indian lands. In the words of the Secretarial Order, "Indian lands are not federal public lands or part of the public domain,

[2] Zellmar, Sandi B., South Dakota Law Review *[43 S.D.L. Rev. 381] (1998)*

and are not subject to federal public land laws." They were retained by tribes or were set aside for tribal use pursuant to treaties, statutes, judicial decisions, executive orders or agreements. These lands are managed by Indian tribes in accordance with tribal goals and objectives, within the framework of applicable laws. (For a description of the federal government's relationship and responsibility regarding Indian lands and trust resources, see *United States v. Mitchell* (463 U.S. 206 (1983)).

The Relationship between the Federal and Tribal Governments is Unique and Longstanding

The federal government has long recognized the unique status of Indian tribes. The U.S. Constitution recognized tribal status via the "Indian commerce clause." Additionally, treaties are identified as being part of the "supreme law of the land." In addition to Constitutional recognition, there have been a number of executive branch expressions of the relationships[3] between the federal and tribal governments. Examples of executive direction include:

• **Presidential Memorandum of April 28, 1994**—directs executive departments and agencies to "assess the impact of federal government plans, projects, programs, and activities on tribal resources to assure that tribal government rights and concerns are considered during … [their] development."

• **Executive Order 13175 – Consultation and Coordination With Indian Tribal Governments (November 6, 2000)—**directs departments and agencies to "encourage Indian tribes to develop their own policies to achieve program objectives;" "where possible, defer to Indian tribes to establish standards;" "in determining whether to establish federal standards, consult with tribal officials as to the need for federal standards and any alternatives that would limit the scope of federal standards or otherwise preserve the prerogatives and authority of Indian tribes."

• **Department of Commerce—American Indian and Alaska Native Policy (March 30, 1995)—** includes the following "Policy Principles":
- Recognition of, and commitment to, "a government-to-government relationship with … Tribal governments." (First Principle)
- Recognition that "the tribal right to self-government flows from the inherent sovereignty of tribes and nations and that Federally recognized tribes have a unique and direct relationship with the Federal government." (First Principle)
- Recognition trust responsibility and commitment to "consult and work with tribal governments prior to implementing any actions when developing legislation regulations, and/or policies that will affect tribal governments, their development efforts, and their land and resources" (Third Principle)
- "Pledges to honor the Constitutional protections to Indian Commerce" by recognizing that tribes, as sovereign governments, "are responsible for the welfare

[3] Rather than conduct an exhaustive historical review of executive (or judicial, for that matter) direction this memo discusses the most recent examples. For more detail on the history of federal-Indian relations see *Cohen* and *Getches.*

and rights of their members and the right to regulate commerce within their reservation boundaries." (Fourth Principle)
- Confirmation that the Department "will consult and work with tribal governments before making decisions or implementing policy, rules or programs that may affect tribes to ensure tribal rights and concerns are addressed." (Fifth Principle)
- Recognition "that as a sovereign government" tribes are "responsible for the welfare and rights" of their membership and have "the right to regulate commerce within [their] boundaries." (Fifth Principle)
- Commitment to identify and take "appropriate steps to remove any impediments to working directly and effectively with tribal governments." This includes applying the requirements of applicable executive orders (e.g., 13175 on intergovernmental partnerships (see above) and 12866 Regulatory Planning and Reviews) and legislative (e.g., Regulatory Flexibility Act) requirements "to design solutions and tailor Federal programs, when appropriate, to address specific or unique needs of tribal communities." (Sixth Principle)

• **SECRETARIAL ORDER**--***American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act.*** The secretaries of commerce and of the interior jointly issued the Secretarial Order in June 1997. The stated purpose of the Order is the clarification of "the responsibilities of the component agencies, bureaus and offices" of the Department "when actions taken under authority of the [Endangered Species] Act and associated implementing regulations affect, or may affect, Indian lands, tribal trust resources or the exercise of … tribal rights." The opening section continues by saying the Departments will strive "to ensure that Indian tribes do not bear a disproportionate burden for the conservation of listed species, so as to avoid or minimize the potential for conflict and confrontation." Several sections of the Secretarial Order refer to, or specifically address critical habitat. The following is from Appendix Section 3(B):

- *(2) Recognize the right of Indian tribes to participate fully in the listing process by providing timely notification to, soliciting information and comments from, and utilizing the expertise of, Indian tribes whose exercise of tribal rights or tribal trust resources could be affected by a particular listing. This process shall apply to proposed and final rules to… (ii) designate critical habitat.*
- *(3) Recognize the contribution to be made by affected Indian tribes, throughout the process and prior to finalization and close of the public comment period, in the review of proposals to designate critical habitat and evaluate economic impacts of such proposals with implications for tribal trust resources or the exercise of tribal rights. The Services shall notify affected Indian tribes and the BIA, and solicit information on, but not limited to, tribal cultural values, reserved hunting, fishing, gathering, and other Indian rights or tribal economic development, for use in: (i) the preparation of economic analyses involving impacts on tribal communities; and (ii) the preparation of "balancing tests" to determine appropriate exclusions from critical habitat and in the review of*

comments or petitions concerning critical habitat that may adversely affect the rights or resources of Indian tribes.

- *(4) In keeping with the trust responsibility,* [the Services] *shall consult with the affected Indian tribe(s) when considering the designation of critical habitat in an area that may impact tribal trust resources, tribally-owned fee lands, or the exercise of tribal rights. Critical habitat shall not be designated in such areas unless it is determined essential to conserve a listed species. In designating critical habitat, the Services shall evaluate and document the extent to which the conservation needs of the listed species can be achieved by limiting the designation to other lands.*
- *(6) Having first provided the affected Indian tribe(s) the opportunity to actively review and comment… provide affected Indian tribe(s) with a written explanation whenever a final decision on any of the following activities conflicts with comments provided by an affected Indian tribe: … (ii) designate critical habitat.*

In summary, as articulated in the February 16, 2000 FRN (65 FR 7764-7787, February 16, 2000) designating critical habitat:

- *…there is a unique and distinctive relationship between the United States and Indian tribes (as defined by the U.S. Constitution, treaties, statutes, executive orders, judicial decisions, and agreements), which differentiate tribes from the other entities that have a relationship with, or are affected by, actions of the federal government.*
- *This relationship has given rise to a special federal trust responsibility involving the legal responsibilities and obligations of the United States toward Indian tribes and the application of fiduciary standards of due care with respect to Indian lands, tribal trust resources, and the exercise of tribal rights.*
- *Pursuant to the treaties, statutes, judicial decisions, executive orders and other agreements that define the relationship between the United States and tribes, lands have been retained by Indian tribes or have been set aside for tribal use. These lands are managed by Indian tribes in accordance with tribal goals and objectives, within the framework of applicable laws.*

Benefits of Designation

The principal benefit of designating critical habitat is that ESA section 7 requires every federal agency to ensure that any action it authorizes, funds or carries out is not likely to result in the destruction or adverse modification of the designated critical habitat. This complements the Section 7 provision that federal agencies ensure their actions are not likely to jeopardize the continued existence of a listed species. Another possible benefit is that the designation of critical habitat can serve to educate the public regarding the potential conservation value of an area. This may focus and contribute to conservation efforts by clearly delineating areas that are important to species conservation.

In developing the critical habitat designation for these ESUs, we first established those areas that meet the definition of critical habitat. We identified critical habitat areas as the occupied stream reaches within a watershed, as designated by the U.S. Geological Survey. We asked teams of federal biologists to determine the relative conservation

value of each area for each species (high, medium or low). Their evaluation provided information allowing us to determine the benefit of designating any particular watershed in a way that would aid the 4(b)(2) balancing test. The higher the conservation value of an area, the greater the benefit of the section 7 protection.

Table 2 shows the habitat that would be affected by a designation on Indian lands. The benefits of designation depend upon the extent of the habitat under consideration, its conservation value, and the types of federal activities in that area likely to undergo section 7 consultation.

Table 2: Number of critical habitat stream miles intersecting with Indian lands

Conservation Value	Number of Watersheds	Total Stream Miles of Eligible Habitat	Indian Lands	Percent
High	45	5,075	1.2	0.02
Medium	27	1,467	1.5	0.10
Low	8	110	0	0

The activities occurring in these areas that would be likely to undergo a section 7 consultation include several transportation projects, of permits for instream work, minor NPDES permits, and dredging. Given the tiny percentage of critical habitat on Indian lands, we anticipate there would be very few federal actions undergoing a section 7 consultation.

Benefits of Exclusion

Exclusion of Indian lands would further federal government policies to promote tribal sovereignty and self-governance:

- The Secretarial Order states that Indian lands will not be designated as critical habitat unless they are essential for conservation, i.e., after the Secretary determines that the designation of all other non-Indian land is insufficient to conserve the species.

- The exclusion is consistent with the April 28, 1994 executive memorandum and executive order 13175.

- The exclusion is consistent with past Federal Register-published secretarial determinations (65 FR 7764-7787, February 16, 2000).

- The exclusion is consistent with the recognition of the sovereignty of tribal governments and their jurisdiction over Indian and (where documented) non-Indian lands.

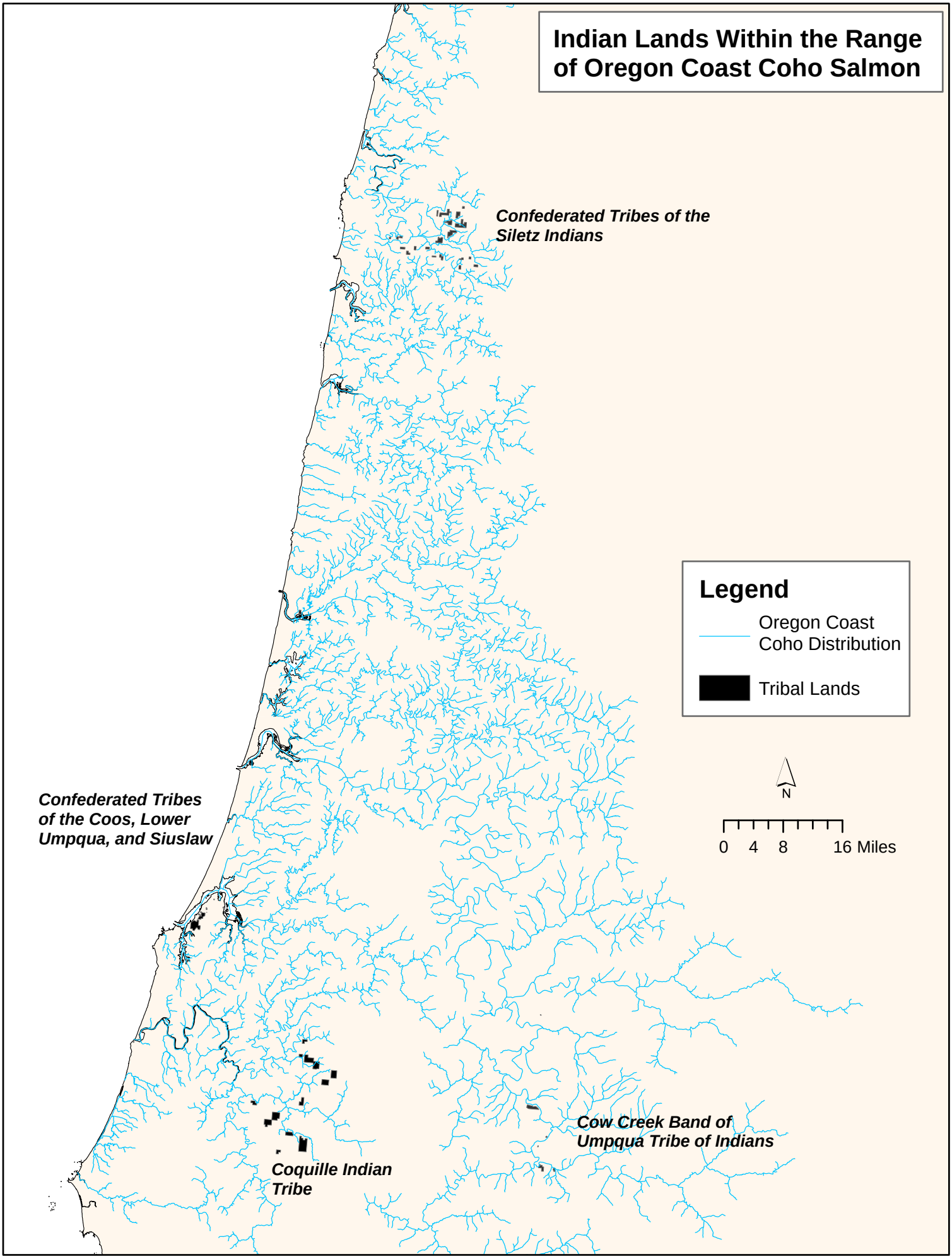
- The exclusion is consistent with departmental/agency trust responsibility in that it supports an essential purpose of the Indian lands, including economic security; it recognizes tribal primacy regarding the management of tribal lands; and it complies with direction/statements found in the Secretarial Order and EO 13175.

- The exclusion supports and affirms the federal-tribal co-manager partnership crucial to the conservation and recovery of the species.

Conclusion

Based on the foregoing analysis, I conclude that the benefits of excluding the identified Indian lands outweigh the benefits of designating those lands because excluding Indian lands benefits the federal government's policy of promoting respect for tribal sovereignty and self-governance and critical habitat on Indian lands represents such a small proportion of total critical habitat. Also, because the percentage of critical habitat on Indian lands is so small, I conclude that exclusion will not result in extinction of Oregon coast coho.

Map Attached


Indian Lands Within the Range of Oregon Coast Coho Salmon
Confederated Tribes of the Siletz Indians
Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw
Coquille Indian Tribe
Cow Creek Band of Umpqua Tribe of Indians
Legend
Oregon Coast Coho Distribution
Tribal Lands
N
0 4 8 16 Miles

Appendix B. Economic Exclusion Tables and Maps

Economic Exclusions Table for Oregon Coast Coho ESU. Conservation-value ratings, economic impacts, and exclusions for fifth-field watersheds occupied by the Oregon Coast Coho Evolutionarily Significant Unit (ESU). The conservation value rating for a watershed reflects the benefit of designation for the entire watershed, or in cases where the watershed includes a connectivity corridor serving other occupied watersheds, the rating reflects the benefit of designating the tributaries only. The rating for the connectivity corridor reflects the conservation benefit of designating rearing and migration habitat. Economic impacts are reported as the total annual cost of Endangered Species Act section 7 consultations (in U.S. dollars ($) per year), and as the per capita annual cost of consultations (in U.S. dollars ($) per year per person). The economic impact of tributaries represents the annual total cost for a watershed less the cost associated with the connectivity corridor(s). Local economic impacts reflect the costs associated with activities geographically confined in scope, and unlikely to have regional impacts or impacts beyond the subject watershed.

Occupied Areas			Conservation Value Ratings			Annual Total, Tributary-only, and Local per capita Economic Impacts				ESA Section 4(b)(2) Consideration of Watersheds for Exclusion from Designation as Critical Habitat			
Subbasin Name	Watershed Identification Code	Watershed Name	Benefit of designating watershed	Benefit of designating connectivity corridor *	Low Leverage**	Annual Total Impact	Annual Tributary Impact	Annual Local Impact per capita	Annual Local Tributary Impact per capita	Entire Watershed Eligible for Exclusion	Tributaries-only Eligible for Exclusion	Area Excluded	Reduction in Economic Impact from Exclusions
NECANICUM	1710020101	Necanicum River	M			$183,496	$159,179	$10.84	$8.84	--	--	None	--
NEHALEM	1710020201	Upper Nehalem River	H			$131,252	$90,389	$21.47	$10.24	--	--	None	--
NEHALEM	1710020202	Middle Nehalem River	H	H		$17,397	$15,871	$26.89	$24.53	--	--	None	--
NEHALEM	1710020203	Lower Nehalem River	H	H		$57,143	$41,860	$65.32	$44.95	--	--	None	--
NEHALEM	1710020204	Salmonberry River	L			$3,888	$3,888	$0.00	$0.00	--	--	None	--
NEHALEM	1710020205	North Fork Of Nehalem River	H			$56,079	$54,554	$126.31	$122.87	--	--	None	--
NEHALEM	1710020206	Lower Nehalem River/Cook Creek	H	H		$9,302	$7,776	$4.56	$3.81	--	--	None	--
WILSON/TRASK/NESTUCCA	1710020301	Little Nestucca River	M			$175,739	$175,739	$10.23	$10.23	--	--	None	--
WILSON/TRASK/NESTUCCA	1710020302	Nestucca River	H			$812,884	$786,378	$11.58	$2.63	--	--	None	--
WILSON/TRASK/NESTUCCA	1710020303	Tillamook River	H			$35,133	$33,608	$7.74	$6.86	--	--	None	--
WILSON/TRASK/NESTUCCA	1710020304	Trask River	H			$238,038	$177,434	$25.94	$18.04	--	--	None	--
WILSON/TRASK/NESTUCCA	1710020305	Wilson River	H			$37,820	$19,605	$18.10	$3.18	--	--	None	--
WILSON/TRASK/NESTUCCA	1710020306	Kilchis River	H			$23,038	$23,038	$11.61	$11.61	--	--	None	--
WILSON/TRASK/NESTUCCA	1710020307	Miami River	H			$20,404	$0	$99.53	$0.00	--	--	None	--
WILSON/TRASK/NESTUCCA	1710020308	Tillamook Bay	H	H		$37,665	$7,776	$4.73	$2.65	--	--	None	--
WILSON/TRASK/NESTUCCA	1710020309	Spring Creek/Sand Lake/Neskowin Creek Fron	M			$157,189	$151,087	$5.91	$4.25	--	--	None	--
SILETZ/YAQUINA	1710020401	Upper Yaquina River	H			$15,242	$15,242	$0.00	$0.00	--	--	None	--
SILETZ/YAQUINA	1710020402	Big Elk Creek	M			$210,651	$210,651	$0.00	$0.00	--	--	None	--
SILETZ/YAQUINA	1710020403	Lower Yaquina River	H	H		$227,478	$183,640	$24.19	$19.66	--	--	None	--
SILETZ/YAQUINA	1710020405	Middle Siletz River	M			$0	$0	$0.00	$0.00	--	--	None	--
SILETZ/YAQUINA	1710020406	Rock Creek/Siletz River	M			$8,363	$8,363	$0.00	$0.00	--	--	None	--
SILETZ/YAQUINA	1710020407	Lower Siletz River	H	H		$243,095	$220,303	$10.19	$5.18	--	--	None	--
SILETZ/YAQUINA	1710020408	Salmon River/Siletz/Yaquina Bay	M			$131,156	$128,105	$2.39	$1.34	--	--	None	--
SILETZ/YAQUINA	1710020409	Devils Lake/Moolack Frontal	M			$100,794	$91,640	$2.89	$2.42	--	--	None	--
ALSEA	1710020501	Upper Alsea River	M			$383,642	$382,117	$9.14	$6.57	Yes	--	None [a]	--
ALSEA	1710020502	Five Rivers/Lobster Creek	H			$469,313	$467,788	$8.07	$0.00	--	--	None	--
ALSEA	1710020503	Drift Creek	H			$260,338	$260,338	$0.00	$0.00	--	--	None	--
ALSEA	1710020504	Lower Alsea River	H	H		$869,861	$537,517	$91.70	$6.07	--	--	None	--
ALSEA	1710020505	Beaver Creek/Waldport Bay	H			$86,335	$86,335	$2.66	$2.66	--	--	None	--
ALSEA	1710020506	Yachats River	M			$159,619	$159,619	$0.00	$0.00	--	--	None	--
ALSEA	1710020507	Cummins Creek/Tenmile Creek/Mercer Lake F	M			$360,428	$357,377	$2.09	$0.00	Yes	--	None [b]	--
ALSEA	1710020508	Big Creek/Vingie Creek	L			$47,520	$47,520	$0.00	$0.00	--	--	None	--
SIUSLAW	1710020601	Upper Siuslaw River	H	H		$445,159	$407,347	$100.82	$44.38	--	--	None	--
SIUSLAW	1710020602	Wolf Creek	M			$124,868	$124,868	$0.00	$0.00	--	--	None	--
SIUSLAW	1710020603	Wildcat Creek	M			$106,896	$106,896	$0.00	$0.00	--	--	None	--
SIUSLAW	1710020604	Lake Creek	H	H		$269,958	$269,958	$14.38	$14.38	--	--	None	--
SIUSLAW	1710020605	Deadwood Creek	H			$222,773	$222,773	$0.00	$0.00	--	--	None	--
SIUSLAW	1710020606	Indian Creek/Lake Creek	H			$203,601	$203,601	$0.00	$0.00	--	--	None	--
SIUSLAW	1710020607	North Fork Siuslaw River	H			$249,183	$249,183	$0.00	$0.00	--	--	None	--
SIUSLAW	1710020608	Lower Siuslaw River	H	H		$502,503	$472,946	$3.97	$1.12	--	--	None	--
SIUSLAW	1710020701	Waohink River/Siltcoos River/Tahkenitch Lake	H			$612,003	$571,140	$128.98	$110.07	--	--	None	--
NORTH UMPQUA	1710030106	Boulder Creek	L			$23,739	$23,739	$0.00	$0.00	--	--	None	--
NORTH UMPQUA	1710030107	Middle North Umpqua	M	M		$765,848	$765,848	$0.00	$0.00	Yes	--	None [c]	--
NORTH UMPQUA	1710030108	Steamboat Creek	L			$689,307	$689,307	$0.00	$0.00	Yes	--	Entire watershed	$689,307
NORTH UMPQUA	1710030109	Canton Creek	L			$218,526	$218,526	$0.00	$0.00	Yes	--	Entire watershed	$218,526
NORTH UMPQUA	1710030110	Rock Creek/North Umpqua River	M			$179,040	$177,514	$44.87	$0.00	--	--	None	--
NORTH UMPQUA	1710030111	Little River	M			$645,229	$643,703	$39.76	$38.52	Yes	--	None [d]	--
NORTH UMPQUA	1710030112	Lower North Umpqua River	H	H		$383,211	$347,552	$21.82	$19.53	--	--	None	--
SOUTH UMPQUA	1710030201	Upper South Umpqua River	L			$485,099	$485,099	$0.00	$0.00	Yes	--	Entire watershed	$485,099
SOUTH UMPQUA	1710030202	Jackson Creek	M			$609,923	$609,923	$0.00	$0.00	Yes	--	None [e]	--
SOUTH UMPQUA	1710030203	Middle South Umpqua River	M	M		$612,419	$600,526	$0.00	$0.00	Yes	--	None [e]	--
SOUTH UMPQUA	1710030204	Elk Creek/South Umpqua	M			$323,418	$321,892	$11.22	$0.00	Yes	--	None [f]	--
SOUTH UMPQUA	1710030205	South Umpqua River	M	M		$465,961	$461,384	$23.16	$21.73	Yes	--	None [f]	--
SOUTH UMPQUA	1710030207	Middle Cow Creek	H			$384,024	$366,029	$31.13	$28.77	--	--	None	--
SOUTH UMPQUA	1710030208	West Fork Cow Creek	H			$187,280	$187,280	$0.00	$0.00	--	--	None	--
SOUTH UMPQUA	1710030209	Lower Cow Creek	M	H		$307,127	$299,499	$16.61	$13.50	--	--	None	--
SOUTH UMPQUA	1710030210	Middle South Umpqua River	M	H		$188,018	$172,762	$26.14	$23.54	--	--	None	--
SOUTH UMPQUA	1710030211	Myrtle Creek	H			$296,130	$293,079	$20.24	$19.55	--	--	None	--
SOUTH UMPQUA	1710030212	Ollala Creek/Lookingglass	M			$338,302	$338,302	$49.28	$49.28	Yes	--	None [g]	--
SOUTH UMPQUA	1710030213	Lower South Umpqua River	M	H		$530,841	$423,272	$12.06	$9.45	--	Yes	None [g]	--
UMPQUA	1710030301	Upper Umpqua River	M	H		$505,086	$505,086	$38.18	$38.18	--	Yes	None [h]	--
UMPQUA	1710030302	Calapooya Creek	H			$172,790	$168,213	$23.23	$22.16	--	--	None	--

UMPQUA	1710030303	Elk Creek	H			$446,466	$434,261	$30.97	$28.37	--	--	None	--
UMPQUA	1710030304	Middle Umpqua River	H	H		$237,124	$237,124	$101.71	$101.71	--	--	None	--
UMPQUA	1710030305	Lake Creek	L			$187,876	$164,090	$0.00	$0.00	Yes	--	Entire watershed	$187,876
UMPQUA	1710030306	Upper Smith River	H			$383,156	$383,156	$0.00	$0.00	--	--	None	--
UMPQUA	1710030307	Lower Smith River	H	H		$667,692	$633,870	$71.66	$0.00	--	--	None	--
UMPQUA	1710030308	Lower Umpqua River	H	H		$227,739	$220,111	$18.51	$17.14	--	--	None	--
COOS	1710030401	South Fork Coos	H			$179,703	$179,703	$0.00	$0.00	--	--	None	--
COOS	1710030402	Millicoma River	H			$0	$0	$0.00	$0.00	--	--	None	--
COOS	1710030403	Lakeside Frontal	H			$107,074	$104,023	$17.64	$16.49	--	--	None	--
COOS	1710030404	Coos Bay	H	H		$808,101	$354,464	$16.46	$4.99	--	--	None	--
COQUILLE	1710030501	Lower South Fork Coquille	L			$544,746	$544,746	$0.00	$0.00	Yes	--	Entire watershed	$544,746
COQUILLE	1710030502	Middle Fork Coquille	M			$468,905	$465,854	$5.44	$3.05	Yes	--	None [i]	--
COQUILLE	1710030503	Middle Main Coquille	H	H		$138,572	$133,995	$23.33	$22.18	--	--	None	--
COQUILLE	1710030504	East Fork Coquille	H			$321,560	$321,560	$0.00	$0.00	--	--	None	--
COQUILLE	1710030505	North Fork Coquille	H	H		$321,682	$298,227	$78.29	$54.19	--	--	None	--
COQUILLE	1710030506	Lower Coquille	H	H		$222,066	$151,646	$16.28	$10.36	--	--	None	--
SIXES	1710030603	Sixes River	M			$215,304	$215,304	$317.41	$317.41	--	--	None	--
SIXES	1710030604	New River Frontal	H			$82,863	$81,337	$20.83	$20.33	--	--	None	--

Maximum economic impact if all areas were designated as critical habitat	$22,179,192
Total reduction in economic impact of exclusions	$2,125,554
Total economic impact of areas designated for critical habitat	$19,533,405
Percent reduction in economic impact due to economic exclusions	9.6%
Percent reduction in miles designated as critical habitat due to economic exclusions	1.3%

Footnotes:

* Blanks for the conservation value of connectivity corridors indicate that a watershed does not include a rearing and migration corridor serving occupied watersheds upstream (i.e., there are no occupied upstream watersheds).

** Watersheds identified as "low leverage" (see report text for a description) were excluded from designation if the CHART determined that exclusion would not significantly impede conservation and the watershed was either (1) a low conservation value >$1,000 in total annual impact, or (2) a high or medium conservation value that exceeded the economic threshold associated with the next lower conservation value rating (e.g., a medium conservation value watershed with low leverage was treated as a low conservation value in this economic exclusion exercise). The CHART did not identify any low leverage watersheds in the range of this ESU.

[a] CHART concluded that excluding this watershed would significantly impede conservation, noting that the NW Forest Plan identified a Tier 1 key watershed in this HUC5, ODFW has identified core areas for coho in this HUC5, and the presence of large and contiguous reaches of high intrinsic potential that comprise 50% of the occupied areas in this HUC5.

[b] CHART concluded that excluding this watershed would significantly impede conservation, noting that the NW Forest Plan identified approximately half of this HUC5 as a Tier 1 key watershed and most of this HUC5 has been classified as an Aquatic Diversity Area by the Oregon Chapter of the American Fisheries Society. This area is also the focus of important habitat restoration work.

[c] CHART concluded that excluding this watershed would significantly impede conservation, noting that the upper Umqua River is ecologically unique and is the only Cascade drainage within the range of this ESU. The CHART also noted that this watershed contains important summer rearing (cold water) habitat for coho salmon, the NW Forest Plan identified three Tier 1 key watersheds in this HUC5, upper portions of it have been classified as Aquatic Diversity Areas by the Oregon Chapter of the American Fisheries Society . Also, the exclusion of adjacent low conservation watersheds increases the significance of excluding this particular HUC5.

[d] CHART concluded that excluding this watershed would significantly impede conservation, noting that the upper Umqua River is ecologically unique and is the only Cascade drainage within the range of this ESU. The CHART also noted that this watershed contains the majority of tributary spawning habitat for the North Umpqua coho population and the the exclusion of adjacent low conservation watersheds increases the significance of excluding this particular HUC5.

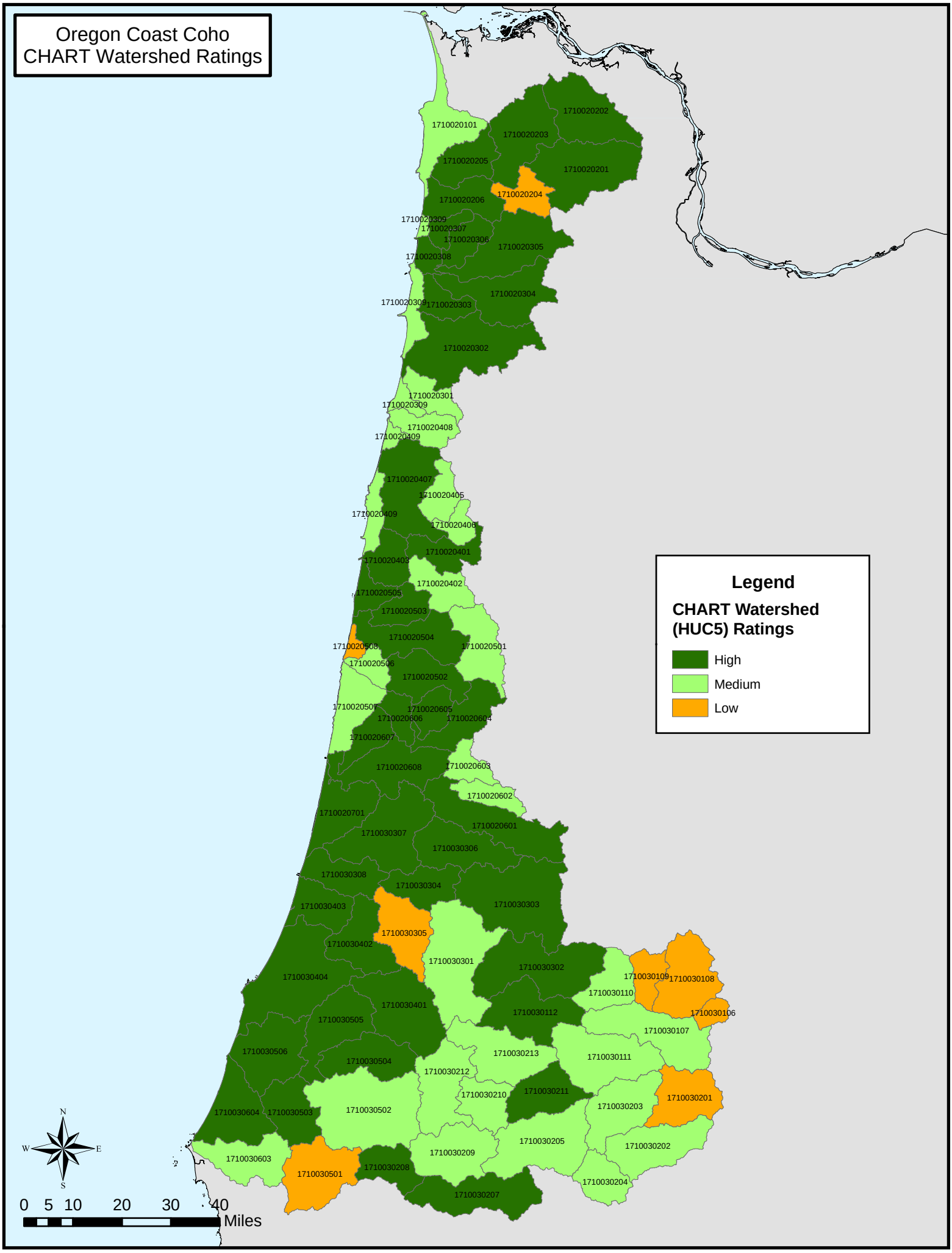
[e] CHART concluded that excluding this watershed would significantly impede conservation, noting that the upper Umqua River is ecologically unique and is the only Cascade drainage within the range of this ESU. Given its location this HUC5 is important for maintaining diversity of the South Umpqua population (historically a productive population) and the Umpqua major population group as a whole. The CHART also noted that this HUC5 is part of one of the largest Tier 1 key watersheds identified in the NW Forest Plan and that upper portions of it have been classified as Aquatic Diversity Areas by the Oregon Chapter of the American Fisheries Society . Also, the exclusion of an upstream low conservation watershed increases the significance of excluding this particular HUC5.

[f] CHART concluded that excluding this watershed would significantly impede conservation, noting that the upper Umqua River is ecologically unique and is the only Cascade drainage within the range of this ESU. Given its location this HUC5 is important for maintaining diversity of the South Umpqua population (historically a productive population) and the Umpqua major population group as a whole. The CHART also noted that this HUC5 is part of one of the largest Tier 1 key watersheds identified in the NW Forest Plan and that the exclusion of an upstream low conservation watershed increases the significance of excluding this particular HUC5.

[g] CHART concluded that excluding this watershed would significantly impede conservation, noting that this HUC5 is important for maintaining diversity of the South Umpqua population (historically a productive population) and the Umpqua major population group as a whole. The CHART also noted that this HUC5 has large and contiguous reaches of high intrinsic potential and that the exclusion of an upstream low conservation watershed increases the significance of excluding this particular HUC5.

[h] CHART concluded that excluding this watershed would significantly impede conservation, noting that this HUC5 is important for maintaining diversity of the Umpqua major population group as a whole. The CHART also noted that this HUC5 contains important rearing habitat for three Umpqua populations (South, North and Middle Umpqua) and that the exclusion of upstream low conservation watersheds increases the significance of excluding this particular HUC5.

[i] CHART concluded that excluding this watershed would significantly impede conservation, noting that this HUC5 has a relatively high juvenile occupancy rate for the Coquille population, approximately 2/3 of the occupied reaches have been identified by ODFW as core areas for coho, and that the exclusion of an adjacent low conservation watershed increases the significance of excluding this particular HUC5.


Oregon Coast Coho
CHART Watershed Ratings
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1710020203
1710020205
1710020201
1710020204
1710020206
1710020309
1710020307
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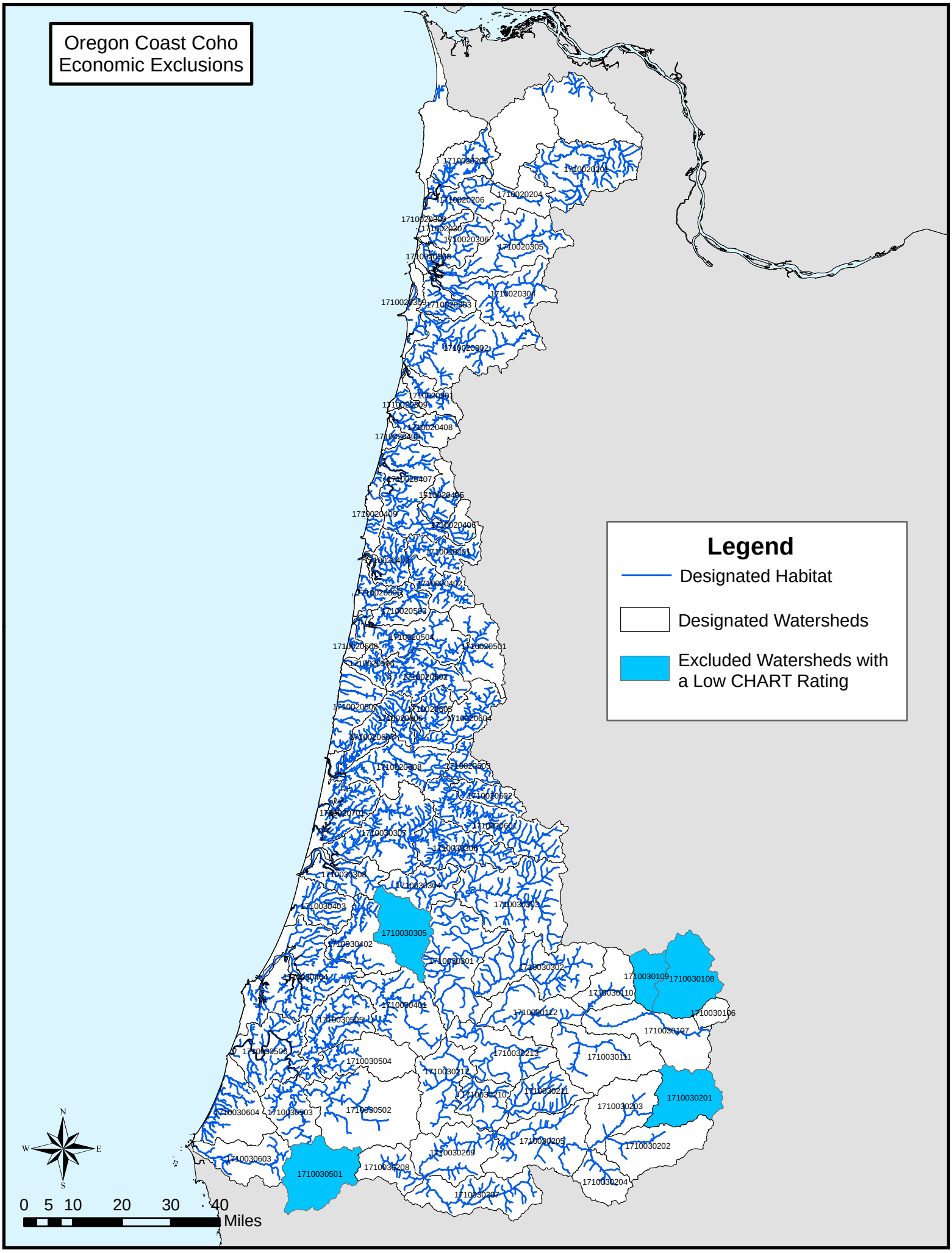
1710030202
1710030603
1710030209
1710030501
1710030208
1710030204
1710030207
Legend
CHART Watershed (HUC5) Ratings
High
Medium
Low
N
W
E
S
0 5 10 20 30 40
Miles


Oregon Coast Coho
Economic Exclusions
Legend
Designated Habitat
Designated Watersheds
Excluded Watersheds with a Low CHART Rating
1710030305
1710030109
1710030108
1710030106
1710030201
1710030501
N
W
E
S
0 5 10 20 30 40
Miles