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Endangered and Threatened Species; Designation of Critical Habitat for the Southern Distinct Population Segment of Eulachon; Final Rule

**DEPARTMENT OF COMMERCE**

**National Oceanic and Atmospheric Administration**

**50 CFR Part 226**

**[Docket No. 101027536–1591–03]**

**RIN 0648–BA38**

## Endangered and Threatened Species; Designation of Critical Habitat for the Southern Distinct Population Segment of Eulachon

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

**ACTION:** Final rule.

**SUMMARY:** We, the National Marine Fisheries Service (NMFS), issue a final rule to designate critical habitat for the southern Distinct Population Segment (DPS) of Pacific eulachon (*Thaleichthys pacificus*), pursuant to section 4 of the Endangered Species Act (ESA). We designate 16 specific areas as critical habitat within the states of California, Oregon, and Washington. The designated areas are a combination of freshwater creeks and rivers and their associated estuaries, comprising approximately 539 km (335 mi) of habitat. The Tribal lands of four Indian Tribes are excluded from designation after evaluating the impacts of designation and benefits of exclusion associated with Tribal land ownership and management by the Tribes. No areas were excluded from designation based on economic impacts.

This final rule responds to and incorporates public comments received on the proposed rule and supporting documents, as well as peer reviewer comments received on our draft biological report and draft economic report.

**DATES:** This rule will take effect on December 19, 2011.

**ADDRESSES:** Reference materials regarding this rulemaking can be obtained via the Internet at: *http://www.nwr.noaa.gov* or by submitting a request to the Protected Resources Division, Northwest Region, National Marine Fisheries Service, 1201 NE Lloyd Blvd., Suite 1100, Portland, OR 97232.

**FOR FURTHER INFORMATION CONTACT:** Marc Romano, NMFS, Northwest Region, 503–231–2200, or Jim Simondet, NMFS, Southwest Region, 707–825–5171, or Dwayne Meadows, NMFS, Office of Protected Resources, 301–427–8403.

**SUPPLEMENTARY INFORMATION:**

### Background

On March 18, 2010, we listed the southern DPS of eulachon as threatened under the ESA (75 FR 13012). A proposed critical habitat rule for the southern DPS of eulachon was published in the **Federal Register** on January 5, 2011 (76 FR 515). The present rule describes the final critical habitat designation, including responses to public comments and peer reviewer comments, and supporting information on eulachon biology, distribution, and habitat use, and the methods used to develop the final designation.

We considered various alternatives to the critical habitat designation for the southern DPS of eulachon. The alternative of not designating critical habitat for the southern DPS of eulachon would impose no economic, national security, or other relevant impacts, but would not provide any conservation benefit to the species. This alternative was considered and rejected because such an approach does not meet the legal requirements of the ESA and would not provide for the conservation of the southern DPS of eulachon. The alternative of designating all potential critical habitat areas (*i.e.,* no areas excluded) also was considered and rejected because for some areas the benefits of exclusion from designation outweighed the benefits of inclusion.

An alternative to designating all potential critical habitat areas is the designation of critical habitat within a subset of these areas. Under section 4(b)(2) of the ESA, NMFS must consider the economic impact, impacts on national security, and any other relevant impact of specifying any particular area as critical habitat. The Secretary of Commerce (Secretary) has the discretion to exclude an area from designation as critical habitat if the benefits of exclusion (*i.e.,* the impacts that would be avoided if an area were excluded from the designation) outweigh the benefits of designation (*i.e.,* the conservation benefits to the southern DPS of eulachon if an area were designated), as long as exclusion of the area will not result in extinction of the species. We prepared an analysis describing our exercise of discretion, which is contained in our Final Section 4(b)(2) Report (NMFS, 2011a). Under this preferred alternative we have excluded Indian lands in California and Washington from designation as critical habitat. The total estimated economic impact of designating all specific areas (without any exclusions) is $512,000 (discounted at 7 percent) or $532,000 (discounted at 3 percent). However the total estimated economic impact of the preferred alternative would be approximately $487,300 (discounted at 7 percent) or $506,300 (discounted at 3 percent). We determined that the exclusion of Indian lands would not significantly impede the conservation of the southern DPS of eulachon nor result in extinction of the species. We selected this as the preferred alternative because it results in a critical habitat designation that supports the conservation of the southern DPS of eulachon while reducing other relevant impacts. This alternative also meets the requirements under the ESA and our joint NMFS–U.S. Fish and Wildlife Service (USFWS) regulations concerning critical habitat at 50 CFR 424.19.

Section 3 of the ESA (16 U.S.C. 1532(5)(A)) defines critical habitat as ''(i) the specific areas within the geographical area occupied by the species, at the time it is listed * * * 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 * * * upon a determination by the Secretary that such areas are essential for the conservation of the species.'' Section 3 of the ESA (16 U.S.C. 1532(3)) also defines the terms ''conserve,'' ''conserving,'' and ''conservation'' to 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.'' We may not designate critical habitat in areas outside of U. S. jurisdiction (50 CFR 424.12(h)). Section 4 of the ESA requires that, before designating critical habitat, we consider economic impacts, impacts on national security, and other relevant impacts of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of exclusion outweigh the benefits of designation, unless excluding an area from critical habitat will result in the extinction of the species concerned. Once critical habitat is designated, section 7(a)(2) of the ESA requires that each federal agency, in consultation with NMFS and with our assistance, ensure that any action it authorizes, funds, or carries out is not likely to result in the destruction or adverse modification of critical habitat. This requirement is additional to the

section 7 requirement that federal agencies ensure their actions do not jeopardize the continued existence of listed species.

**Eulachon Natural History**

Eulachon are an anadromous fish, meaning adults migrate from the ocean to spawn in freshwater creeks and rivers where their offspring hatch and migrate back to the ocean to forage until maturity. Although they spend 95 to 98 percent of their lives at sea (Hay and McCarter, 2000), current data only provides an incomplete picture concerning their saltwater existence. The species is endemic to the northeastern Pacific Ocean, ranging from northern California to the southeastern Bering Sea in Bristol Bay, Alaska (McAllister, 1963; Scott and Crossman, 1973; Willson *et al.,* 2006). This distribution coincides closely with the distribution of the coastal temperate rain forest ecosystem on the west coast of North America (with the exception of populations spawning west of Cook Inlet, Alaska).

In the portion of the species' range that lies south of the United States–Canada border, most eulachon production originates in the Columbia River basin. Within the Columbia River basin, the major and most consistent spawning runs return to the mainstem of the Columbia River and the Cowlitz River (Gustafson *et al.,* 2010). Spawning also occurs in other tributaries to the Columbia River, including the Grays, Elochoman, Kalama, Lewis, and Sandy Rivers (WDFW and ODFW, 2001). Historically, the only other large river basins in the contiguous United States where large, consistent spawning runs of eulachon have been documented are the Klamath River in northern California and the Umpqua River in Oregon. Eulachon have been found in numerous coastal rivers in northern California (including the Mad River and Redwood Creek), Oregon (including Tenmile Creek south of Yachats, OR) and Washington (including the Quinault and Elwha Rivers) (Emmett *et al.,* 1991; Willson *et al.,* 2006).

Major eulachon production areas in Canada are the Fraser and Nass rivers (Willson *et al.,* 2006). Numerous other river systems in central British Columbia and Alaska have consistent yearly runs of eulachon and historically supported significant levels of harvest (Willson *et al.,* 2006; Gustafson *et al.,* 2010). Many sources note that runs occasionally occur in other rivers and streams, although these tend to be sporadic, appearing in some years but not others, and appearing only rarely in some river systems (Hay and McCarter, 2000; Willson *et al.,* 2006).

*Early Life History and Maturation*

Eulachon eggs can vary considerably in size but typically are approximately 1 mm (0.04 in) in diameter and average about 43 mg (0.002 oz) in weight (Hay and McCarter, 2000). Eggs are enclosed in a double membrane; after fertilization in the water, the outer membrane breaks and turns inside out, creating a sticky stalk which acts to anchor the eggs to the substrate (Hart and McHugh, 1944; Hay and McCarter, 2000). Eulachon eggs hatch in 20 to 40 days with incubation time dependent on water temperature (Smith and Saalfeld, 1955; Langer *et al.,* 1977). Shortly after hatching, the larvae are carried downstream and dispersed by estuarine, tidal, and ocean currents. Larval eulachon may remain in low salinity, surface waters of estuaries for several weeks or longer (Hay and McCarter, 2000) before entering the ocean. Similar to salmon, juvenile eulachon are thought to imprint on the chemical signature/smell of their natal river basin. However, juvenile eulachon spend less time in freshwater environments than do juvenile salmon and researchers believe that this may cause returning eulachon to stray between spawning sites at higher rates than salmon (Hay and McCarter, 2000).

Once juvenile eulachon enter the ocean, they move from shallow nearshore areas to deeper areas over the continental shelf. Larvae and young juveniles become widely distributed in coastal waters, where they are typically found near the ocean bottom in waters 20 to 150 m deep (66 to 292 ft) (Hay and McCarter, 2000) and sometimes as deep as 182 m (597 ft) (Barraclough, 1964). There is currently little information available about eulachon movements in nearshore marine areas and the open ocean. However, eulachon occur as bycatch in the ocean shrimp (*Pandalus jordani*) fishery (Hay *et al.,* 1999; Olsen *et al.,* 2000; Northwest Fishery Science Center (NWFSC), 2008; Hannah and Jones, 2009), indicating that the distribution of these two species may overlap in the ocean.

*Spawning Behavior*

Eulachon typically spend several years in salt water before returning to fresh water as a ''run'' to spawn from late winter through early summer. Eulachon are semelparous, meaning that they spawn once and then die (Gustafson *et al.,* 2010; Hay *et al.,* 2002). Spawning grounds are typically in the lower reaches of larger rivers fed by snowmelt (Hay and McCarter, 2000). Willson *et al.* (2006) concluded that the age distribution of eulachon in a spawning run varies considerably, but typically consists of fish that are 2 to 5 years old. Eulachon eggs commonly adhere to sand (Langer *et al.,* 1977) or pea-sized gravel (Smith and Saalfeld, 1955), though eggs have been found on silt, gravel to cobble sized rock, and organic detritus (Smith and Saalfeld, 1955; Langer *et al.,* 1977; Lewis *et al.,* 2002). Eggs found in areas of silt or organic debris reportedly suffer much higher mortality than those found in sand or gravel (Langer *et al.,* 1977).

In many rivers, spawning is limited to the part of the river that is influenced by tides (Lewis *et al.,* 2002), but some exceptions exist. In the Berners Bay system of Alaska, the greatest abundance of eulachon are observed in tidally-influenced reaches, but some fish ascend well beyond the tidal influence (Willson *et al.,* 2006). In the Kemano River, Canada, water velocity greater than 0.4 meters/second begins to limit the upstream movements of eulachon (Lewis *et al.,* 2002).

Entry into the spawning rivers appears to be related to water temperature and the occurrence of high tides (Ricker *et al.,* 1954; Smith and Saalfeld, 1955; Spangler, 2002). Spawning generally occurs in January, February, and March in the Columbia River, the Klamath River, and the coastal rivers of Washington and Oregon, and April and May in the Fraser River (Gustafson *et al.,* 2010). Eulachon runs in central and northern British Columbia typically occur in late February and March or late March and early April. Attempts to characterize eulachon run timing are complicated by marked annual variation in timing. Willson *et al.* (2006) give several examples of spawning run timing varying by a month or more in rivers in British Columbia and Alaska. Climate change, especially as it affects ocean conditions, is considered a significant threat to eulachon and their habitats and may also be a factor in run timing (Gustafson *et al.,* 2010). Most rivers supporting spawning runs of eulachon are fed by extensive snowmelt or glacial runoff, so elevated temperatures and changes in snow pack and the timing and intensity of stream flows will likely impact eulachon run timing. There are already indications, perhaps in response to warming conditions and/or altered stream flow timing, that spawning runs are occurring earlier in several rivers within the range of the southern DPS (Moody, 2008).

Water temperature at the time of spawning varies across the range of the species. Although spawning generally occurs at temperatures from 4 to 7 °C (39

to 45 °F) in the Cowlitz River (Smith and Saalfeld, 1955), and at a mean temperature of 3.1 °C (37.6 °F) in the Kemano and Wahoo Rivers, peak eulachon runs occur at noticeably colder temperatures (between 0 and 2 °C [32 and 36 °F]) in the Nass River. The Nass River run is also earlier than the eulachon run that occurs in the Fraser River, which typically has warmer temperatures than the Nass River (Langer *et al.,* 1977).

*Prey*

Eulachon larvae and juveniles eat a variety of prey items, including phytoplankton, copepods, copepod eggs, mysids, barnacle larvae, and worm larvae (Barraclough, 1967; Barraclough and Fulton, 1967; Robinson *et al.,* 1968a, 1968b). Eulachon adults feed on zooplankton, chiefly eating crustaceans such as copepods and euphausiids (Hart, 1973; Scott and Crossman, 1973; Hay, 2002; Yang *et al.,* 2006), unidentified malacostracans (Sturdevant, 1999), and cumaceans (Smith and Saalfeld, 1955). Adults and juveniles commonly forage at moderate depths (20–150 m [66–292 ft]) in nearshore marine waters (Hay and McCarter, 2000). Eulachon adults do not feed during spawning (McHugh, 1939; Hart and McHugh, 1944).

**Summary of Comments Received and Responses**

We solicited public comment for a total of 60 days on the proposed designation of critical habitat for the southern DPS of eulachon. In addition, we held a public hearing on the proposal in Portland, Oregon on January 26, 2011 at which one member of the public provided oral testimony. This testimony was recorded and our responses to comments address substantive comments from that individual. We received written comments from eight commenters, and these are available online at: *http://www.regulations.gov/#!docketDetail;rpp=10;po=10;D=NOAA-NMFS-2011-0013.* Summaries of the substantive comments received, and our responses, are organized by category and provided below.

In December 2004, the Office of Management and Budget (OMB) issued a Final Information Quality Bulletin for Peer Review pursuant to the Information Quality Act (IQA). The Bulletin was published in the **Federal Register** on January 14, 2005 (70 FR 2664). The Bulletin established minimum peer review standards, a transparent process for public disclosure of peer review planning, and opportunities for public participation with regard to certain types of information disseminated by the Federal Government. The peer review requirements of the OMB Bulletin apply to influential or highly influential scientific information disseminated on or after June 16, 2005. Two documents supporting this final designation of critical habitat for the southern DPS of eulachon are considered influential scientific information and subject to peer review. In accordance with the OMB policies, we solicited technical review of the draft Biological Report (NMFS, 2010a) and the draft Economic Analysis (NMFS, 2010b). Each of these reports was reviewed by three independent experts selected from the academic and scientific communities.

There was substantial overlap between the comments from the peer reviewers and the substantive public comments. The comments were sufficiently similar that we have responded to the peer reviewer's comments through our general responses below. Revisions resulting from peer review and public comments have been made to the documents supporting this designation (*i.e.,* Biological Report, Economic Analysis, and Section 4(b)(2) Report) and the final versions of those documents can be found on our Web site at: *http://www.nwr.noaa.gov/Other-Marine-Species/Eulachon.cfm.*

*Physical or Biological Features Essential for Conservation*

*Comment 1:* One commenter suggested that nearshore and marine waters are essential as a migratory corridor for the passage of eulachon, and passage should be included as a feature in nearshore and marine waters.

*Response:* Eulachon migrate from their natal streams to marine waters of the continental shelf, and likely migrate throughout coastal waters until they return as adults to spawn. There are two difficulties with relying on a passage feature in the ocean for a species such as eulachon: (1) There is no information regarding the characteristics or conditions in coastal waters that would make a specific area suitable for passage, and (2) there is no evidence that eulachon use specific marine areas for migration. Regarding the first point, there is no information to indicate that eulachon rely on habitat features to guide migration, such as a particular type of current, temperature gradient, bathymetry, coastline, *etc.* Since there are no known characteristics of an area that would aid in delineation, one must consider whether there is some other evidence of a migration corridor or site, such as documented use for completing a portion of the life history. In the case of eulachon, there are no observations of eulachon migration that would allow us to infer the presence of migratory pathways in specific areas of the ocean. Absent information on the detailed characteristics that would allow delineation of a specific area, or information that eulachon actually use a defined area, we were unable to identify 'specific areas' in the ocean that contain migratory pathways.

Eulachon biology and habitat use differ from other species for which we have identified migratory pathways as an essential feature in marine waters. For example, green sturgeon (*Acipenser medirostris*) are primarily associated with bottom habitats in the ocean and travel along the coast in a migration corridor that is delimited by bathymetry (specifically, we identified the 60 fathom contour as the seaward extent of a green sturgeon migration feature) (74 FR 52300; October 9, 2009). Green sturgeon adherence to a migration corridor shoreward of this depth contour is documented through tagging studies and bycatch in fisheries (Erickson and Hightower, 2007). While we do have some limited information about areas where eulachon are present either through fisheries bycatch reports or fisheries-independent research, this information suggests only that eulachon are present in these areas. It does not shed light on a feature, such as a migratory pathway, that is essential to eulachon conservation. Additional contrasting examples include bull trout (*Salvelinus confluentus*) and Puget Sound Chinook (*Oncorhynchus tshawytscha*), which migrate in marine waters along the shoreline. Their critical habitat areas are delineated along a depth contour based on the penetration of light, which creates specific physical and biological conditions essential for their conservation. For Southern Resident killer whales (*Orcinus orca*) we also identified a passage feature in marine waters, among other features. The three specific areas designated as killer whale critical habitat in inland marine waters of Washington State contained all of the identified features. The one specific area primarily defined by the passage feature was the Strait of Juan de Fuca, a relatively narrow marine corridor through which killer whales pass on their migrations between coastal waters and inland waters.

*Comment 2:* One commenter believed that our reliance on evidence of spawning or spawning migration to designate critical habitat may be considered ''arbitrary,'' and they cited *Alliance for Wild Rockies* v. *Lyder,* 728 F. Supp. 1126, 1134 (D. Mont. 2010) in

support of their argument. The commenter stated that ''NMFS must consider other elements besides spawning when determining whether an area should be designated as critical habitat.''

*Response:* Eulachon are an anadromous species that spend 95–98 percent of their lives in the marine environment (Hay and McCarter, 2000). The best available scientific evidence suggests that adult eulachon are semelparous and enter freshwater and estuarine areas only to spawn, and after spawning the adult fish die (Hay *et al.,* 2002; Gustafson *et al.,* 2010). Eulachon eggs develop at or near the point they were spawned, and larval eulachon typically outmigrate via the same routes that adult spawners took to reach the spawning area. Because eulachon are semelparous and the best available evidence suggests that freshwater and estuarine areas are only used by eulachon for spawning activities (*i.e.* spawning migration, spawning, egg incubation and larval outmigration) we used spawning data to determine if essential features are present. Our approach was not the same as the approach used by the USFWS to designate critical habitat for the Canada lynx that is the subject of *Alliance for Wild Rockies* v. *Lyder.* The Canada lynx utilizes its habitat for a variety of life cycle activities beyond reproduction. There the USFWS used reproduction, one of several life functions, as the sole test to rule out the presence of essential features. In the *Alliance for Wild Rockies* decision, the court noted, ''[w]hile it is rational to conclude areas with evidence of reproduction contain the primary constituent elements and should be designated as critical habitat, the Service could not flip that logic and so it means that critical habitat only exists where there is evidence of reproduction.'' As a result, our reliance on evidence of spawning and spawning migration to identify critical habitat within freshwater and estuarine areas is not ''arbitrary'' according to the *Alliance for Wild Rockies* decision.

*Comment 3:* One commenter stated that in making our decision on which specific areas qualified as critical habitat, we relied on ''extremely limited sampling'' and, for some rivers and creeks, only ''opportunistic sightings'' and the ''best professional judgment of agency and Tribal biologists familiar with the area.'' The commenter believes that this is ''insufficient to satisfy the requirements of the ESA and may make it more difficult to recover this DPS.''

*Response:* Section 4(b)(2) of the ESA requires the Secretary of Commerce to designate critical habitat ''on the basis of the best scientific data available.'' In the proposed rule, and supporting Biological Report (NMFS, 2011b), we outlined the evidence that we used to identify specific areas as critical habitat. We stated in the proposed rule that we ''relied on data from published literature, field observations (including river sampling with a variety of net types), opportunistic sightings, commercial and recreational harvest, and anecdotal information.'' This final rule incorporates the findings in the proposed rule and the Biological Report, as well as peer review of the Biological Report and the Economic Analysis (NMFS, 2011c) and public comments on the proposed rule. Taken together, this information represents the best available scientific data available to inform our critical habitat decision.

We relied on the most recent scientific information available to us to determine which areas were eligible for designation. For a limited number of creeks and rivers, opportunistic sightings are the only information that is available to identify the distribution of the essential features. Where the only available information was opportunistic sightings, we consulted agency and Tribal biologists familiar with the area to confirm the information and identify the extent of the essential features. Where such information was the only information available, and was confirmed by the best professional judgment of biologists knowledgeable about the species and the area, we consider it the ''best available scientific information,'' and adequate to inform our decisions. Our actions are thus in accordance with section 4(b)(2) of the ESA and our implementing regulations (50 CFR 424.12).

*Specific Areas Within the Geographical Area Occupied by the Species*

*Comment 4:* Two commenters agreed with our decision not to designate critical habitat in nearshore and offshore marine areas, and a third commenter recognized the problem in identifying critical habitat in these areas. In contrast, several commenters disagreed with our decision and some of these cited the availability of eulachon harvest and bycatch data as evidence of eulachon distribution in marine waters. One commenter questioned why we did not discuss in the proposed rule whether nearshore and marine waters may require special management considerations or protection. A separate commenter stated that there is a wide range of literature on the effects of trawling on seafloor habitat, and that the effects of trawling on eulachon foraging habitat need to be considered.

*Response:* Although some data are available on the ocean distribution of eulachon (from fisheries bycatch and fishery-independent surveys [summarized in Gustafson *et al.,* 2010]) we cannot identify specific marine foraging areas that meet the definition of critical habitat under the ESA. The ESA defines critical habitat as ''the specific areas within the geographical area occupied by the species, at the time it is listed on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection''. In the Pacific Ocean, we identified nearshore and offshore foraging habitat as an essential feature for the conservation of eulachon, and we determined that abundant forage species and suitable water quality are components of this habitat feature. Given the wide distribution of eulachon prey items, we could not associate them with ''specific areas'' within the marine environment occupied by eulachon. Moreover, these prey species move or drift great distances throughout the ocean and would be difficult to link to any ''specific'' areas as discussed in response to Comment 1. The concern is not that ''specific areas'' must be small, but rather in order to meet the definition of ''critical habitat'' under the ESA, they must be identifiable and connected to the essential feature found there. We could not discern such a linkage in marine areas occupied by eulachon. While we acknowledge that eulachon need foraging habitat in nearshore and offshore marine waters, we cannot identify any specific areas as required under section 3(5)(A) of the ESA.

Some activities (*e.g.* trawling), may occur in the marine environment that affect eulachon prey, such that the prey may require special management considerations or protections. However, the steps we follow in designating critical habitat include first identifying the essential features, then identifying the specific areas where those features occur, then considering whether the features in those areas may require special management consideration or protection. We did not discuss the second prong of the definition of critical habitat for marine foraging areas in the proposed rule because we did not identify any specific areas within the marine environment that meet the first prong of the definition of critical habitat (specific areas on which the features are found).

*Comment 5:* One commenter provided information documenting eulachon use of Redwood Creek, upstream of the area proposed.

*Response:* We proposed to designate approximately 6.1 km (3.8 mi) of critical habitat in Redwood Creek upstream to the confluence with Prairie Creek, based on reports from the California Department of Fish and Game (CDFG; Moyle *et al.,* 1995). However, the commenter provided a copy of a CDFG memorandum that describes an attempt by three experienced biologists familiar with eulachon who were purposely seeking to determine the upstream limit of eulachon spawning migration in Redwood Creek during April 1973. Eulachon were observed passing Tom McDonald Creek, a tributary located 19.4 km (12.5 mi) upstream from the mouth of Redwood Creek. The CDFG biologists also checked Redwood Creek for eulachon 6.4 km (4.0 mi) upstream of the confluence with Tom McDonald Creek but they did not find any eulachon at that location. This field observation documented fish at least as far upstream as Tom McDonald Creek and presents a credible observation of eulachon ascending Redwood Creek during the spawning run beyond the upstream limit that we proposed as critical habitat. As a result, we have extended critical habitat on Redwood Creek, upstream to the confluence with Tom McDonald Creek. Although the CDFG biologists speculated that eulachon ascended Redwood Creek beyond this point, we have no evidence to confirm that claim.

*Comment 6:* One commenter believed that eulachon may ascend beyond the specific areas identified and asserted that the upstream limits of critical habitat proposed for Ten Mile Creek, the Elochoman River, and the Kalama River appear to be established at points that were simply advantageous survey sites and not reflective of the species' actual distribution.

*Response:* The upstream limits of the proposed critical habitat were established using the best available information on eulachon distribution at the time of our proposed rule and informed by public and peer review. We relied on data from published literature, field observations (from a variety of agency and Tribal biologists), opportunistic sightings, commercial and recreational harvest, and anecdotal information. Information on eulachon distribution is limited for some creeks and rivers, particularly those that don't have a history of commercial or recreational harvest of eulachon. The upstream limit of proposed critical habitat for Ten Mile Creek, the Elochoman River, and the Kalama River were determined based on the most current information provided by ODFW for Ten Mile Creek and WDFW for the Elochoman and Kalama Rivers, which are the agencies responsible for eulachon management in the respective states. We do not know whether the information provided by the agencies was based on points that are advantageous survey sites. However, the commenter presents no credible information that would allow us to identify alternative end points of eulachon spawning areas.

*Comment 7:* One commenter questioned why the upstream limit of critical habitat on rivers where passage is blocked by hydropower dams is established at the point of blockage.

*Response:* We proposed as critical habitat four specific areas with an upstream limit that terminates at a passage barrier formed by a dam. Three of these dams are hydropower dams (Bonneville Dam on the Columbia River, Merwin Dam on the Lewis River, and Elwha Dam on the Elwha River) and one is a barrier dam for a salmon hatchery (Cowlitz River). Of the four dams, two were unlikely to have had eulachon above the dam site prior to dam construction due to natural barriers (Merwin and Elwha Dams); one may have had eulachon above the dam site before dam construction, but there is no evidence to support that conclusion (hatchery dam on the Cowlitz); and one has had confirmed eulachon presence upstream of the dam site both before and after construction (Bonneville Dam).

Both Merwin Dam and Elwha Dam were built in areas where the river is constrained, with high gradient and water velocities. Prior to dam construction these areas were likely a natural barrier for eulachon. In addition, we were unable to find information supporting eulachon presence above these dam sites prior to dam construction. We were unable to find any historical accounts of eulachon ascending the Cowlitz River beyond the site of the salmon hatchery barrier dam prior to dam construction in 1968, (Mark Larivie, personal communication, April 15, 2011). We did not propose critical habitat upstream of the Merwin Dam, Elwha Dam, or the Cowlitz River salmon hatchery dam because we could not find evidence that eulachon used these areas prior to dam construction.

There have been reports of adult eulachon ascending the Columbia River beyond the Bonneville Dam site, both before and after construction of the Bonneville Dam, with some runs large enough to support recreational harvest (OFC, 1953; Smith and Saalfeld, 1955; Stockley, 1981). Cascade Rapids (approximately 4 km [2.5 mi] upstream of the current Bonneville Dam site) was a natural barrier to eulachon migration in the Columbia River prior to the construction of Bonneville Dam (Oregon Fish Commission, 1953; Gustafson *et al.,* 2010). A ship lock constructed at Cascade Locks in 1896 allowed fish to circumvent the rapids and subsequently eulachon were reported as far upstream as Hood River, Oregon at river kilometer (RKm) 272 (river mile [RM] 169) (Smith and Saalfeld, 1955). Following completion of Bonneville Dam, both Cascade Rapids and Cascade Locks were submerged, removing the rapids as a passage barrier. Currently, passage for anadromous fish at Bonneville Dam is maintained via fish ladders, but it is highly unlikely that eulachon can ascend the ladders due to the high gradient and water velocities within. However, eulachon have been documented passing through the shipping locks at the dam (Oregon Fish Commission, 1953). Eulachon have been reported upstream of the dam in several years, including significant numbers in 1945 and 1953 (Oregon Fish Commission, 1953; Smith and Saalfeld, 1955) and more recently in 1988 (Johnsen *et al.,* 1988), 2003 (U.S. Army Corps of Engineers [USACE], 2003), and 2005 (Martinson *et al.,* 2010).

The area upstream of Bonneville Dam does not meet the definition of critical habitat because it does not contain the physical or biological features essential for conservation of eulachon. The physical and biological features essential for conservation of eulachon in freshwater and estuarine areas include: (1) Spawning and incubation sites with water flow, quality and temperature conditions and substrate supporting spawning and incubation; and (2) migration corridors free of obstruction and with water flow, quality and temperature conditions supporting larval and adult mobility, and with abundant prey items supporting larval feeding. Although they are separate features, spawning and incubation sites for eulachon cannot functionally exist without a migratory corridor to access them. In the proposed rule we acknowledged this relationship between the essential features when we stated that the migration corridor features are ''essential to [eulachon] conservation because they allow adult fish to swim upstream to reach spawning areas''. However, in the proposed rule we identified specific areas in freshwater and estuarine areas for designation as critical habitat ''which contain one or more of the essential physical or biological features'' without making it clear that spawning and incubation sites require a migration corridor to provide

access to the sites. The commenters' question allows us to further explain the functional relationship between the essential features.

Bonneville Dam is a major obstruction to eulachon passage. Eulachon access to the area upstream of Bonneville Dam is limited to opportunistic transport through the ship locks. Due to this passage barrier, the migration corridor essential feature in the Columbia River does not extend beyond Bonneville Dam. In order for the spawning and incubation site essential feature to exist upstream of Bonneville Dam, the migration corridor essential feature would have to extend upstream of Bonneville Dam as well. Due to the lack of a migration corridor to access the area upstream of Bonneville Dam, the spawning and incubation essential feature cannot exist upstream of the dam. Because neither the migration corridor nor spawning and incubation essential features occur upstream of Bonneville Dam, this area does not meet the ESA section 3(5)(A) definition of critical habitat.

*Comment 8:* One commenter did not agree with the use of the COLREGS line (or equivalent) to demarcate the downstream boundary of critical habitat for rivers that directly enter the ocean. The commenter believes that this boundary was established as a convenient management tool but does not make sense as an ecologically-based boundary. The commenter suggested that if freshwater delivery to the ocean is the key feature, then the boundary could be established at the edge of the river plume.

*Response:* As we stated previously, our regulations require that ''Each critical habitat will be defined by specific limits using reference points and lines as found on standard topographic maps of the area'' (50 CFR 424.12(c)). In order for critical habitat to be a useful tool for conservation and management of the species, Federal agencies that are proposing actions in the vicinity of critical habitat need to be able to identify where critical habitat occurs. An ephemeral boundary, such as the maximum extent of freshwater delivery into the marine environment from a creek or river, would be difficult to identify. The COLREGS lines (where defined) were chosen as the downstream extent of freshwater and estuarine critical habitat because they are a clearly defined federal standard which incorporates landmarks that are found on standard topographic maps to uniformly depict an area of transition between freshwater and marine areas.

*Comment 9:* One commenter stated that it was unclear if smaller secondary or tertiary streams within watersheds assessed in the proposed rule are included or excluded from critical habitat.

*Response:* We used watersheds containing stream reaches occupied by eulachon as a basis for conducting our analysis of economic impacts associated with critical habitat designation. However, the specific areas identified as critical habitat were limited to the portions of individual creeks and rivers that contain the physical and biological features essential for eulachon conservation. The specific areas that are being designated as critical habitat are listed in this final rule (including the accompanying maps) and will appear in part 226, title 50 of the Code of Federal Regulations. Secondary or tertiary streams within the watersheds used for the economic analysis are not designated as critical habitat unless they are specifically described in this rule and in part 226, title 50 of the Code of Federal Regulations.

*Comment 10:* One commenter proposed that two locations in Washington State (the Toutle River in the Cowlitz Basin and Skamokawa Creek in the Elochoman Basin) be included in the critical habitat designation.

*Response:* In our proposed rule we identified criteria to determine if a specific area contained either one of the essential features of freshwater spawning and incubation sites and freshwater and estuarine migration corridors (76 FR 515; January 5, 2011). These criteria are sites that contain: (1) Larval fish or pre-/post-spawn adults that have been positively identified and documented; or (2) commercial or recreational catches that have been documented over multiple years. Prior to publishing the proposed rule, we were unable to identify information that would satisfy these criteria for either the Toutle River or Skamokawa Creek.

In the proposed rule we acknowledged that many areas within the geographical area occupied by the southern DPS have not been surveyed to determine the extent of eulachon spawning and migration (76 FR 515; January 5, 2011). To address this information need we funded several eulachon monitoring studies and surveys currently being undertaken by ODFW, WDFW, the Cowlitz Indian Tribe, and the Yurok Indian Tribe. During April 2011 biologists from the Cowlitz Indian Tribe documented the presence of eulachon larvae in the Toutle River and Skamokawa Creek, confirming eulachon spawning in these two systems (Cowlitz Indian Tribe, 2011). This information satisfies the criteria we used in our proposed rule to identify specific areas where the essential physical and biological features occur. As a result, these specific areas meet the statutory definition of critical habitat and we have included them in this final rule. Additional information on these two areas can be found below.

*Comment 11:* One commenter questioned the proposed designation of the lower Elwha River as critical habitat on several points. First, the commenter noted that although eulachon have been captured in the lower Elwha River in small numbers, this may be consistent with straying. Second, the commenter asserted that there is a likely velocity barrier for eulachon located at approximately RKm 0.8 (RM 0.5). And finally, the commenter reasoned that once the Lower Elwha Tribal land is excluded from critical habitat designation, very little of the remaining river below the Elwha Dam that is accessible to eulachon would be eligible for designation as critical habitat.

*Response:* Eulachon were documented in the Elwha River in 2005, although anecdotal observations suggest that eulachon ''were a regular, predictable feature in the Elwha until the mid 1970s'' (Shaffer *et al.,* 2007, p. 80). Other Olympic Peninsula rivers draining into the Strait of Juan de Fuca have been extensively surveyed over many years for salmonid migrations; however, eulachon have not been observed in any of these other systems (Shaffer *et al.,* 2007; Peter Toppings, WDFW, 2011; Lower Elwha Tribe, 2011). Since 2005, eulachon in spawning condition have been observed nearly every year in the Elwha River by Lower Elwha Tribe Fishery Biologists (Lower Elwha Tribe, 2011). After only one year of catch data, Shaffer *et al.* (2007; p. 80) concluded that ''observations of eulachon in the Elwha lead us to surmise that the Elwha eulachon are likely a remnant stock of the Elwha River rather than stray.'' We believe that the consistent spawning returns to the Elwha River in subsequent years supports the conclusion of Shaffer *et al.* (2007) that eulachon in the Elwha River are a self-sustaining population and not stray fish from nearby rivers.

Mike McHenry (Fishery Biologist, Lower Elwha Tribe, personal communication April 4, 2011) has confirmed reports that eulachon have ascended the Elwha River to at least RKm 4.0 (RM 2.5). This would place eulachon well upstream of the potential velocity barrier at RKm 0.9 (RM 0.5) that the commenter believes may limit their upstream movement. Studies from the

Kemano River indicate that many eulachon are unable to maintain long-term position in the river at flow velocities greater than 0.3 m/s (1.0 ft/s; Lewis *et al.,* 2002). However, when water velocities were high in the mid-channel, eulachon travelled near the shore (Lewis *et al.,* 2002) where water velocities are likely lower. Research conducted in the lower Elwha River has shown that water velocities can be significantly lower nearshore and along the bottom of the river, when compared to the mid-channel (USGS, 2008). It is likely that eulachon ascend beyond RKm 0.8 (RM 0.5) in the Elwha River by migrating in the lower velocity water of the nearshore or river bottom.

The Lower Elwha Tribe controls over 1,000 acres of land in the lower Elwha River watershed that are eligible for exclusion from this critical habitat designation. From the mouth of the river, upstream to the Elwha Dam at RKm 7.6 (RM 4.7), the Lower Elwha Tribe lands include approximately 2.3 km (1.4 mi) of this area. This leaves approximately 5.3 km (3.3 mi) of river that does not overlap Tribal land and thus is not excluded from critical habitat. Although federal actions conducted on Lower Elwha Tribe land would not require section 7 consultation to determine the effects on critical habitat, federal activities on non-Tribal lands would.

*Special Management Considerations*

*Comment 12:* One commenter wanted to know why dams and water diversions were listed as an activity that may require special management considerations in Redwood Creek given that there are no dams or surface water diversions on Redwood Creek.

*Response:* Although summer seasonal dams have existed on the mainstem of Redwood Creek in the past, they have been removed and are no longer allowed. The commenter rightly points out that dams and water diversions are not activities in Redwood Creek that may require special management considerations and we have removed them from the list of special management considerations for Redwood Creek.

*Comment 13:* One commenter suggested that the construction and maintenance of the Redwood Creek Flood Control Project levees (that line the lower 5.5 km [3.4 miles] of Redwood Creek), should be considered in-water construction or alteration and listed as an activity that may require special management consideration.

*Response:* We agree and have updated our report to include this category of activity.

*Unoccupied Areas*

*Comment 14:* One commenter suggested that we should give greater consideration to the potential designation of unoccupied habitats. The commenter stated that NMFS ''must consider physical and biological features of historically occupied areas, not just presence and production, before determining that these areas are not essential for the conservation of the species.''

*Response:* Section 3(5)(A)(ii) of the ESA authorizes the Secretary of Commerce to designate ''specific areas outside the geographical area occupied at the time [the species] is listed'' if the Secretary determines that these areas are essential for the conservation of the species. Section 4(b)(2) of the ESA directs the Secretary to designate critical habitat ''on the basis of the best scientific data available'' Regulations at 50 CFR 424.12(e) emphasize that the agency ''shall designate as critical habitat areas outside the geographical area presently occupied by a species only when a designation limited to its present range would be inadequate to ensure the conservation of the species.''

The commenter states that NMFS must base its decision to designate critical habitat in unoccupied areas on whether those areas might contain the physical or biological features essential to the conservation of the species. However, the ESA's definition of critical habitat in unoccupied areas does not rely on the presence of physical or biological features, but on the determination that the area is essential for the conservation of the species. Our implementing regulations provide that we may only designate unoccupied areas if we determine that currently occupied areas are not adequate for conservation (50 CFR 424.12(e)). In the case of the southern DPS of eulachon, we are unable to make such a determination at this time. In the process of recovery planning we may determine that additional areas are necessary for conservation and revise the designation.

In addition, the commenter incorrectly states that we based our decision to not designate critical habitat in unoccupied areas ''on a lack of documentation of the presence of eulachon in those areas.'' Based on the best available science, we determined that nearly all of the historical and current presence and production of the southern DPS of eulachon comes from within the geographical area occupied at the time the species was listed (and particularly the Klamath, Umpqua, Columbia and Fraser Rivers). Sightings of southern DPS eulachon from creeks or rivers outside of the geographical area occupied by the species have been extremely infrequent, and have consisted of very few fish (Gustafson *et al.,* 2010). Due to such an overwhelming proportion of the historical and current abundance and production of the southern DPS of eulachon occurring within the geographical area occupied by the species, we could not determine that currently occupied areas are inadequate to conserve the species. We received no new information on this subject during the comment and peer review process of the Proposed Critical Habitat Designation (76 FR 515; January 5, 2011). Therefore, we are not designating any unoccupied areas as critical habitat for the DPS. This is an issue that we will continue to investigate during the recovery planning process and we will update the critical habitat designation if needed.

*Economic Impacts of Critical Habitat Designation*

*Comment 15:* One commenter put forth the argument that contemporary forest management activities have little impact on aquatic organisms such as eulachon. The commenter also believes that ''it is troubling that forest management is listed as the activity likely to have the second most section 7 actions as a result of the critical habitat designation.''

*Response:* In the proposed rule we identified a number of activities that may affect the physical and biological features essential to conservation of the southern DPS of eulachon (76 FR 515; January 5, 2011). One of the major types of activity was pollution and runoff from point and non-point sources including industrial activities, urbanization, grazing, agriculture, and forestry operations. Nearly all of the watersheds that contain specific areas proposed as critical habitat for eulachon have been or are still subject to forest management activities. While we acknowledge that modern forest practice rules have greatly reduced the impact of forest management activities on aquatic environments (Cafferata and Spittler, 1998), there is a large body of information demonstrating that such activities continue to require special management considerations to ensure they do not impair eulachon habitat. For example, Rashin *et al.* (2006) state that ''[t]imber harvest activities have the potential to increase sediment loading to streams from harvest site erosion and to cause direct physical disturbance of stream channels and riparian zones.'' Gomi *et al.* (2005) report that ''[f]orest management practices can increase fine

sediment supply though soil disturbance and accelerated landsliding.'' These authors go on to state ''[s]oil disturbance and sediment delivery to streams are commonly associated with construction of roads and landings, slash burning, and log skidding (Reid and Dunne, 1984; Christie and Fletcher, 1999; Jordan, 2001; Kreutzwiser *et al.,* 2001). The hydrologic and geomorphic effects of forest roads in particular have been the focus of many studies, given their demonstrated potential for negative impacts (Luce and Wemple, 2001).''

As part of our estimate of the potential economic impact of critical habitat designation for the southern DPS of eulachon we projected the future administrative costs of engaging in ESA section 7 consultations. In our Draft Economic Analysis (NMFS, 2010b), we provided a forecast of the annual number of future section 7 actions, organized by affected watershed and activity, that may require consultation with NMFS. Forest management was one of the ten broad activity groups that were identified that may require some form of section 7 consultation in the future. We have an extensive consultation history for other anadromous species (including West Coast salmon and steelhead) in the watersheds that we proposed as eulachon critical habitat. Estimates of the future annual number of section 7 actions related to eulachon were based on the average number of past actions that required consultation for these species in these watersheds between 2000 and 2009.

While forest management is the activity that we forecast to have the second-most section 7 actions as a result of eulachon critical habitat designation, it is important to keep the estimates in perspective. We chose the individual watersheds that encompass each stream reach proposed as eulachon critical habitat as our assessment area for economic impacts (specifically, we used 5th field hydrologic units as designated by the U.S. Geological Survey). The total land area included in our assessment area is approximately 9,500 $km^2$ (2.3 million acres). We estimate that forest management activities will result in approximately seven ESA section 7 consultations per year as a result of eulachon critical habitat designation, and of these, only one will require formal consultation. Given that forest management is one of the most dominant land uses across our assessment area, the estimated number of related consultations that may need to address eulachon critical habitat is comparatively small for an area so large.

*Comment 16:* One commenter believed designating ocean areas as critical habitat would have an adverse economic impact on shrimp fisheries off the Pacific Coast.

*Response:* We did not propose to designate critical habitat in marine waters because we were unable to identify specific areas in the marine environment that meet the definition of critical habitat under section 3(5)(A). Therefore we did not assess the economic impact of designating marine areas as critical habitat, including any economic impacts to ocean shrimp fisheries.

*Comment 17:* One commenter expressed concern that the designation of critical habitat in the Elwha River could lead to changes in the timing of the upcoming removal of the Elwha and Glines Canyon Dams. The commenter believes that any changes in the timing of dam removal could potentially have high associated costs that were not factored into NMFS' economic analysis.

*Response:* In 2010, we completed our consultation with the National Park Service on removal of the Elwha and Glines Canyon Dams and their effects on eulachon (NMFS, 2010c). Removal of the dams will result in the release of accumulated sediment that is likely to harm eulachon and their habitat. In our consultation we considered the direct effects to eulachon as well as the indirect effects that would result from habitat alteration. The Biological Opinion contains terms and conditions that require the Park Service to maintain consistent sediment loads during March through May to minimize impacts to spawning eulachon. Designation of critical habitat in the Elwha River will require reinitiation of consultation with the Park Service. It is possible that during the course of the consultation our analysis may lead to additional terms and conditions, but at this time there are none that we can reasonably anticipate (NMFS 2010c; Zach Hughes, NMFS, Washington State Habitat Office, personal communication, 9/12/2011). Our economic analysis therefore includes as a cost of designation only the added administrative cost of completing a new consultation.

*Indian Lands Exclusions*

*Comment 18:* One commenter believed that Tribal lands should not be excluded from critical habitat because doing so would diminish the conservation value of the designation. A separate commenter believed that Tribal lands should only be excluded if the affected Tribes agree to address eulachon protections in their conservation plans.

*Response:* Section 4(b)(2) of the ESA provides the Secretary with discretion to exclude areas from the designation of critical habitat if the Secretary determines that the benefits of exclusion outweigh the benefits of designation, and the Secretary finds that exclusion of the area will not result in extinction of the species. Tribal lands are managed by Indian Tribes in accordance with Tribal goals and objectives within the framework of applicable treaties and laws. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, outlines the policies and responsibilities of the Federal Government in matters affecting Tribal interests (recently confirmed by Presidential Memorandum; 74 FR 57879; November 9, 2009). In addition to Executive Order 13175, we have Department of Commerce policy direction, via Secretarial Order 3206, stating that Indian lands shall not be designated as critical habitat, 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.''

In our proposed rule, we determined that excluding Tribal lands from critical habitat designation would have the benefit of promoting federal policies regarding Tribal sovereignty and self-governance (*e.g.,* Executive Order 13175). In addition, we determined that exclusion of Tribal lands would have the benefit of promoting a positive working relationship between NMFS and the Tribes (in accordance with Secretarial Order 3206), with a very small reduction in the benefits of designation (primarily the loss of section 7 consultation to consider adverse modification of critical habitat). Although these specific areas have a high conservation value for eulachon, their extent is relatively small (approximately 5% of the total area designated). In the decision *Center for Biological Diversity,* v. *Norton,* 240 F. Supp. 2d 1090 (D. Ariz. 2003), the court held that a positive working relationship with Indian Tribes is a relevant impact that can be considered when weighing the relative benefits of a critical habitat designation.

The Tribes affected by this critical habitat designation have played and continue to play an active role in the conservation and management of this species. These Tribal governments are also co-managers of a variety of other freshwater and marine species and

resources throughout the region. The co-manager relationship crosses Tribal, Federal, and state boundaries, due to the migratory characteristics of these species. As we move forward with eulachon recovery planning, a positive working relationship with the Tribes will be crucial to the management and recovery of eulachon.

While it is possible that exclusion of Indian lands may result in a small reduction in the conservation benefits of the designation, the species is still protected under the jeopardy standard of ESA section 7, and activities that occur on non-Tribal lands near or adjacent to excluded Tribal lands will still be subject to section 7 consultation for adverse modification of critical habitat. In addition, there are several management plans that guide Tribal activities in the affected watersheds (*e.g.,* the Quinault Reservation Forest Management Plan, Elwha River Fish Restoration Plan, and the Lower Klamath River Sub-Basin Watershed Restoration Plan) and provide protection to eulachon habitat.

*Comment 19:* One commenter believed that we should not exclude lands covered by a Habitat Conservation Plan (HCP) unless the plan contains adequate protections for eulachon.

*Response:* We agree that adequate protections for eulachon within an existing HCP should be a requirement for any landowner seeking to have land excluded from critical habitat designation. There are two existing HCPs that overlap areas that were proposed as critical habitat for the southern DPS of eulachon; the Green Diamond Timber HCP (covering the company's operations in northern California, including portions of the Klamath River), and the Humboldt Bay Municipal Water District HCP (covering their operations in the Mad River, California). Neither of these HCPs address conservation of eulachon, and it is unclear what, if any, conservation benefits they might provide to eulachon. In addition, neither of the HCP holders requested that their lands be excluded from critical habitat. Therefore, we have decided not to exclude any land covered by these HCPs from this critical habitat designation.

**Summary of Revisions**

We evaluated the comments and new information received on the proposed rule to ensure that they represented the best scientific data available and made a number of changes to the critical habitat designations, including:

(1) We revised the number of specific areas included in our critical habitat designation based on comments received and new scientific information that became available following publication of the proposed rule. Specifically, we added Skamokawa Creek, and the Toutle River (both in Washington State) to the list of specific areas.

(2) We extended the upstream extent of critical habitat for three specific areas based on comments received and new scientific information. Critical habitat was extended on Redwood Creek, California, and the Elochoman and Kalama Rivers in Washington. In addition we revised the Lewis River specific area to include the East Fork of the Lewis River.

(3) We further explained and clarified the functional relationship between the spawning and incubation essential feature and the migration corridor essential feature based on comments received.

(4) We revised our economic analysis based on additions to the specific areas included in the critical habitat designation. Specifically, we added a new 5th field hydrologic unit to our analysis (HUC 1708000205: East Fork Lewis River).

(5) We have designated critical habitat in the Quinault River, Washington, and the Klamath River, California. These specific areas were excluded entirely from the proposed critical habitat rule. Upon further review, based on more complete information on land ownership, we determined that only the portions of these rivers that overlap with Indian lands are eligible for exclusion. Critical habitat does not include any Tribal lands of the Lower Elwha Tribe, Quinault Tribe, Resighini Rancheria, or Yurok Tribe.

**Methods and Criteria Used To Identify Critical Habitat**

In accordance with section 4(b)(2) of the ESA and our implementing regulations (50 CFR 424.12), this final rule is based on the best scientific information available concerning the southern DPS's present and historical range, habitat, and biology, as well as threats to its habitat. In preparing this rule, we reviewed and summarized current information on eulachon, including recent biological surveys and reports, peer-reviewed literature, NMFS status reviews for the southern DPS of eulachon (Gustafson *et al.,* 2010), the proposed rule to list eulachon (74 FR 10857; March 13, 2009), and the final listing determination for eulachon (75 FR 13012; March 18, 2010) and information provided during the comment process. All of the information gathered to create this final rule has been collated and analyzed in three supporting documents: The Eulachon Biological Report (NMFS, 2011b); the Eulachon Economic Analysis (NMFS, 2011c); and, the Eulachon Section 4(b)(2) Report (NMFS, 2011a).

We used this information to identify specific areas that qualify as critical habitat for the southern DPS. We followed a five-step process in order to identify these specific areas: (1) Determine the geographical area occupied by the species, (2) identify physical or biological habitat features essential to the conservation of the species, (3) delineate specific areas within the geographical area occupied by the species on which are found the physical or biological features, (4) determine whether the features in a specific area may require special management considerations or protections, and (5) determine whether any unoccupied areas are essential for conservation. Our evaluation and conclusions are described in detail in the following sections.

**Geographical Area Occupied by the Species**

As described in the proposed rule, the first step in designating critical habitat is to identify the geographical area occupied by the species at the time of listing. In our proposed critical habitat designation we interpreted the ''geographical area occupied'' in ESA section 3(3) as equivalent to the range of the species at the time of listing. In our March 2010 final ESA listing rule, and in the proposed critical habitat designation, we identified the range of the southern DPS of eulachon as extending from the Skeena River in British Columbia, Canada, to the Mad River in California (Gustafson *et al.,* 2010). We cannot designate areas outside U.S. jurisdiction as critical habitat (see above), thus, we limited our consideration of the range of the southern DPS of eulachon to the geographical area from the international border with Canada to the Mad River in California. We did not attempt to further refine our identification of the ''geographical area occupied by the species'' at the time of listing because of the process we followed in the subsequent steps of our designation. As explained more fully below, we identified freshwater spawning and incubation sites as a ''physical or biological feature essential to conservation'' of the species. In determining the ''specific areas'' that contain those sites, we confirmed that eulachon were documented using the sites for spawning. Thus our process of confirming that a specific area contains the essential features also allowed us to

confirm that the area was indeed occupied. Given the highly migratory nature of eulachon and limited marine sampling, we do not know how far offshore the southern DPS of eulachon are distributed and thus how far offshore the geographical area occupied by the species extends. We consider the marine extent of the geographical area occupied by the species as undeterminable at this time.

**Physical or Biological Features Essential for Conservation**

Joint NMFS–USFWS regulations at 50 CFR 424.12(b) state that in determining what areas are critical habitat, the agencies ''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.'' These physical and biological features include, but are not limited to: ''(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.''

Based on the best available scientific information, we developed a list of physical and biological features essential to the conservation of eulachon and relevant to determining whether occupied areas are consistent with the above regulations and the ESA section (3)(5)(A) definition of ''critical habitat.'' The physical or biological features essential to the conservation of the southern DPS fall into three major categories reflecting key life history phases of eulachon:

(1) Freshwater spawning and incubation sites with water flow, quality and temperature conditions and substrate supporting spawning and incubation, and with migratory access for adults and juveniles. These features are essential to conservation because without them the species cannot successfully spawn and produce offspring.

(2) Freshwater and estuarine migration corridors associated with spawning and incubation sites that are free of obstruction and with water flow, quality and temperature conditions supporting larval and adult mobility, and with abundant prey items supporting larval feeding after the yolk sac is depleted. These features are essential to conservation because they allow adult fish to swim upstream to reach spawning areas and they allow larval fish to proceed downstream and reach the ocean.

(3) Nearshore and offshore marine foraging habitat with water quality and available prey, supporting juveniles and adult survival. Eulachon prey on a wide variety of species including crustaceans such as copepods and euphausiids (Hay and McCarter, 2000; WDFW and ODFW, 2001), unidentified malacostracans (Sturdevant, 1999), cumaceans (Smith and Saalfeld, 1955) mysids, barnacle larvae, and worm larvae (WDFW and ODFW, 2001). These features are essential to conservation because they allow juvenile fish to survive, grow, and reach maturity, and they allow adult fish to survive and return to freshwater systems to spawn.

The components of the freshwater spawning and incubation sites include:

*Flow:* A flow regime (*i.e.,* the magnitude, frequency, duration, seasonality, and rate-of-change of freshwater discharge over time) that supports spawning, and survival of all life stages. Most spawning rivers experience a spring freshet characteristic of rivers draining large snow packs or glaciers (Hay and McCarter, 2000). In general, eulachon spawn at lower water levels before spring freshets (Lewis *et al.,* 2002). In the Kemano River, British Columbia, eulachon preferred water velocities from 0.1 to 0.7 m/s (Lewis *et al.,* 2002). Sufficient flow may also be needed to flush silt and debris from spawning substrate surfaces to prevent suffocation of developing eggs.

*Water Quality:* Water quality suitable for spawning and viability of all eulachon life stages. Sublethal concentrations of contaminants affect the survival of aquatic species by increasing stress, predisposing organisms to disease, delaying development, and disrupting physiological processes, including reproduction. Adult eulachon can take up and store pollutants from their spawning rivers, despite the fact that they do not feed in fresh water and remain there only a few weeks (Rogers *et al.,* 1990; WDFW and ODFW, 2001). Eulachon have also been shown to avoid polluted waters when possible (Smith and Saalfeld, 1955).

*Water Temperature:* Suitable water temperatures, within natural ranges, in eulachon spawning reaches. Water temperature between 4 °C and 10 °C (39 °F and 50 °F) in the Columbia River is preferred for spawning (WDFW and ODFW, 2001) although temperatures during spawning can be much colder in northern rivers (*e.g.,* 0 °C to 2 °C [32 °F to 36 °F] in the Nass River; Willson *et al.,* 2006). High water temperatures can lead to adult mortality and spawning failure (Blahm and McConnell, 1971).

*Substrate:* Spawning substrates for eulachon egg deposition and development. Spawning substrates typically consist of silt, sand, gravel, cobble, or detritus (Gustafson *et al.,* 2010). However, pea-sized gravel (Smith and Saalfeld, 1955) and coarse sand (Langer *et al.,* 1977) are the most commonly used. Water depth for spawning can range from 8 cm (3 in) to at least 7.6 m (25 ft) (Willson *et al.,* 2006).

The components of the freshwater and estuarine migration corridor essential feature include:

*Migratory Corridor:* Safe and unobstructed migratory pathways for eulachon adults to pass from the ocean through estuarine areas to riverine habitats in order to spawn, and for larval eulachon to access rearing habitats within the estuaries and juvenile and adults to access habitats in the ocean. Lower reaches of larger river systems (*e.g.,* the Columbia River) are used as migration routes to upriver or tributary spawning areas. Out-migrating larval eulachon are distributed throughout the water column in some rivers (*e.g.,* the Fraser River) but are more abundant in mid-water and bottom portions of the water column in others (*e.g.,* the Columbia River; Smith and Saalfeld, 1955; Howell *et al.,* 2001).

*Flow:* A flow regime (*i.e.,* the magnitude, frequency, duration, seasonality, and rate-of-change of freshwater discharge over time) that supports spawning migration of adults and outmigration of larval eulachon from spawning sites. Most eulachon spawning rivers experience a spring freshet (Hay and McCarter, 2000) that may influence the timing of spawning adult migration. In general, eulachon spawn at low water levels before spring freshets (Lewis *et al.,* 2002). In the Kemano River water velocity greater than 0.4 m/s (1.3 ft/s) begins to limit upstream movements (Lewis *et al.,* 2002).

*Water Quality:* Water quality suitable for survival and migration of spawning adults and larval eulachon. Adult eulachon can take up and store pollutants from their spawning rivers, despite the fact that they do not feed in fresh water and remain there only a few weeks (Rogers *et al.,* 1990; WDFW and ODFW, 2001). Eulachon avoid polluted waters when possible (Smith and Saalfeld, 1955).

*Water Temperature:* Water temperature suitable for survival and migration. Eulachon run timing may be

influenced by water temperature (Willson *et al.,* 2006), and high water temperatures can increase adult mortality (Blahm and McConnell, 1971). Given the range of temperatures in which eulachon spawn, Langer *et al.* (1977) suggested that the contrast between ocean and river temperatures might be more critical than absolute river or ocean temperatures.

*Food:* Prey resources to support larval eulachon survival. Eulachon larvae need abundant prey items (especially copepod larvae; Hart, 1973) when they begin exogenous feeding after the yolk sac is depleted. The eulachon yolk sac can be depleted between 6 and 21 days after hatching (Howell, 2001), and larvae may be retained in low salinity, surface waters of the natal estuary for several weeks or longer (Hay and McCarter, 2000), making this an important component in migratory corridor habitat.

The components of the nearshore and offshore marine foraging essential feature include:

*Food:* Prey items, in a concentration that supports foraging leading to adequate growth and reproductive development for juveniles and adults in the marine environment. Eulachon larvae and juveniles eat a variety of prey items, including phytoplankton, copepods, copepod eggs, mysids, barnacle larvae, and worm larvae (Barraclough, 1967; Barraclough and Fulton, 1967; Robinson *et al.,* 1968a, 1968b). Eulachon adults feed on zooplankton, chiefly eating crustaceans such as copepods and euphausiids (Hart, 1973; Scott and Crossman, 1973; Hay, 2002; Yang *et al.,* 2006), unidentified malacostracans (Sturdevant, 1999), and cumaceans (Smith and Saalfeld, 1955).

*Water Quality:* Water quality suitable for adequate growth and reproductive development. The water quality requirements for eulachon in marine habitats are largely unknown, but they would likely include adequate dissolved oxygen levels, adequate temperature, and lack of contaminants (such as pesticides, organochlorines, elevated levels of heavy metals) that may disrupt behavior, growth, and viability of eulachon and their prey.

**Specific Areas Within the Geographical Area Occupied by the Species**

After determining the geographical area occupied by the southern DPS of eulachon, and identifying the physical and biological features essential to their conservation, we next identified the specific areas that meet the statutory definition of critical habitat. Critical habitat is defined in Section 3(5)(A)(i) of the ESA as the ''specific areas within the geographical area occupied by the species * * * on which are found those physical and biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection''. All of the essential physical and biological features we identified for freshwater and estuarine habitat occur within either spawning and incubation areas, or migratory corridors. In order to identify specific areas where the essential features occur, we developed criteria to determine if an area contained either spawning and incubation sites, or a migratory corridor. These criteria are areas that contain: (1) Larval fish or pre-/post-spawn adults that have been positively identified and documented; or (2) commercial or recreational eulachon fishery that has been documented over multiple years. There are 42 creeks and rivers with known or possible eulachon spawning within the U.S. range of the southern DPS of eulachon (Gustafson *et al.,* 2010; NMFS, 2011b). Of these, we identified 16 that meet at least one of the criteria for the presence of the physical or biological features essential for eulachon conservation. We then determined the distribution of the essential features within these creeks or rivers. We relied on evidence of adult and larval eulachon presence to delineate the extent of the specific areas where the spawning and incubation sites and migration corridors are found.

We used the most recent scientific information available to us (including data from published literature, field observations, opportunistic sightings, commercial and recreational harvest, and anecdotal information) to determine the presence and distribution of the essential features within the creeks and rivers with known or possible presence of eulachon. For a limited number of areas, opportunistic sightings are the only information that is available to identify the presence and distribution of the essential features. Where the only available information was opportunistic sightings, we consulted agency and Tribal biologists familiar with the area to confirm the information and identify the presence and extent of the essential features. For these areas we consider this the ''best available scientific information,'' necessary to inform our decisions.

The 16 specific freshwater and estuarine areas which contain one or more of the essential physical or biological features are described below and summarized in Table 1, which appears at the end of the Special Management Considerations section. The Eulachon Biological Report (NMFS, 2011b) provides more detailed information on each specific area, including a description of the essential physical and biological features, special management considerations or protection that may be needed, and the presence and distribution of the southern DPS of eulachon.

(1) *Mad River, CA:* The Mad River is located in northwestern California. It flows for approximately 150 km (95 mi) in a roughly northwest direction through Trinity and Humboldt Counties, draining a 1,290 $km^2$ (497 $mi^2$) basin into the Pacific Ocean near McKinleyville, California. The river's headwaters are in the Coast Range mountains near South Kelsey Ridge.

Eulachon consistently spawned in large numbers in the Mad River as recently as the 1960s and 1970s (Moyle *et al.,* 1995; Moyle, 2002; Gustafson *et al.,* 2010). However, in recent years eulachon numbers have declined, and they are now considered rare (Sweetnam *et al.,* 2001). Based on observations by the California Department of Fish and Game (CDFG), spawning occurs as far upstream as the confluence with the North Fork of the Mad River (CDFG, 2009). The river below this point contains overlapping spawning and incubation sites and migration corridor features.

(2) *Redwood Creek, CA:* Redwood Creek is located entirely in Humboldt County, in northwestern California. The basin is approximately 105 km (65 mi) long, and drains approximately 738 $km^2$ (285 $mi^2$), most of which is forested and mountainous terrain (Cannata *et al.,* 2006).

Eulachon have been reported from Redwood Creek by a variety of sources (Young, 1984; Ridenhour and Hofstra, 1994; Moyle *et al.,* 1995; Larson and Belchik, 1998), and runs large enough to be noted in available local newspaper accounts occurred in 1963 and 1967. Eulachon returns to Redwood Creek have declined drastically in recent years, and they are now considered rare (Sweetnam *et al.,* 2001). CDFG reported that during the early 1970s eulachon regularly spawned between the ocean and the mouth of Prairie Creek (the first major tributary on Redwood Creek; Moyle *et al.,* 1995). During April 1973, a spawning run of eulachon were observed passing Tom McDonald Creek (CDFG, 1973), a tributary located approximately 19.7 km (12.2 miles) upstream from the mouth of Redwood Creek, indicating that this area contains the essential features of spawning and incubation, and a migration corridor. Spawning also occurred in the lower 0.5

km (0.3 mi) of Prairie Creek (Moyle *et al.,* 1995), sporadically up to the 1970s.

The lower reach of Redwood Creek alternates between an open estuary and a closed coastal lagoon depending on the season. During early summer a sand bar typically forms across the river mouth creating a lagoon. Rains during the fall typically clear the sand bar away and open up the river mouth to the ocean (Cannata *et al.,* 2006).

(3) *Klamath River, CA:* The Klamath River basin drains approximately 25,100 km$^2$ (9,690 mi$^2$) in southern Oregon and northern California, making it the second largest river in California (after the Sacramento River). Historically, the Klamath River has been a major producer of anadromous fish, and once was the third most productive salmon and steelhead fishery in the continental United States, prior to recent significant declines (Powers *et al.,* 2005).

Historically, large aggregations of eulachon consistently spawned in the Klamath River (Fry, 1979; Moyle *et al.,* 1995; Larson and Belchik, 1998; Moyle, 2002; Hamilton *et al.,* 2005), and a commercial fishery occurred there in 1963 (Odemar, 1964). During the spawning run, fish were regularly caught from the mouth of the river upstream to Brooks Riffle, near the confluence with Omogar Creek (Larson and Belchik, 1998), indicating that this area contains the spawning and incubation, and migration corridor essential features.

The only reported commercial catch of eulachon in Northern California occurred in 1963 when a combined total of 25 metric tons (56,000 lbs) was landed from the Klamath River, the Mad River, and Redwood Creek (Odemar, 1964). Since 1963, the run size has declined to the point that only a few individual fish have been caught in recent years. According to accounts of Yurok Tribal elders, the last noticeable runs of eulachon were observed in the Klamath River in 1988 and 1989 by Tribal fishers (Larson and Belchik, 1998). However, in January 2007, and again in February 2011, a small number of eulachon were reportedly caught by Tribal fishers on the Klamath River (Yurok Tribe, 2008; McCovey, 2011). Larson and Belchik (1998) report that eulachon have not been of commercial importance in the Klamath in recent years and are unstudied as to their current run strengths.

Approximately 68 km (42 mi) of the lower Klamath River is bordered by the Yurok Indian Reservation. The lower Klamath River is listed as a National Wild and Scenic River from the mouth, upstream to just below Iron Gate Dam, for a total of 460 km (286 mi). Of these, 19 km (12 mi) are designated Wild, 39 km (24 mi) are designated Scenic, and 402 km (250 mi) are designated Recreational.

(4) *Umpqua River/Winchester Bay, OR:* The Umpqua River Basin consists of a 10,925 km$^2$ (4,220 mi$^2$) drainage area comprised of the main Umpqua River, the North Umpqua River, the South Umpqua River, and associated tributary streams (Snyder *et al.,* 2006). The Umpqua River drains a varied landscape, from steep-sloped uplands, to low gradient broad floodplains. Upstream, the Umpqua River collects water from tributaries as far east as the Cascade Mountains.

Historically, a large and consistent run of eulachon returned to the Umpqua River, and both recreational and commercial fisheries occurred. The Umpqua River eulachon sport fishery was active for many years during the 1970s and 1980s, with the majority of fishing activity centered near the town of Scottsburg. A commercial fishery also harvested eulachon during that time. Approximately 1,800 to 2,300 kg (4,000 to 5,000 lbs) of eulachon were landed by two commercial fishermen in the Umpqua River during 31 days of drift gill net fishing from late December 1966 to mid-March 1967 (OFC, 1970). Numbers of fish returning to the Umpqua seem to have declined in the 1980s and do not appear to have rebounded to previous levels. Johnson *et al.* (1986) list eulachon as occurring in trace amounts in their trawl and beach-seine samples from April 1977 to January 1986. Williams (2009) reported on the results of seine collections conducted during March to November from 1995 to 2003 in Winchester Bay estuary on the Lower Umpqua River, which confirmed the presence of eulachon in four of the years in which sampling occurred.

Eulachon have been documented in the lower Umpqua River during spawning, from the mouth upstream to the confluence of Mill Creek, just below Scottsburg (Williams, 2009). This indicates that the area downstream from this confluence contains the spawning and incubation, and migration corridor essential features.

(5) *Tenmile Creek, OR:* The Tenmile Creek watershed lies entirely within Lane County, Oregon and encompasses approximately 60 km$^2$ (23 mi$^2$) on the central Oregon Coast (Johnson, 1999). The watershed is in a unique location, between the Cummins Creek and Rock Creek wilderness areas, which are protected from development.

Eulachon are regularly caught in salmonid smolt traps operated in the lower reaches of Tenmile Creek by ODFW. During previous sampling efforts, 80–90 percent of the eulachon captured in the traps were spawned out and several fish were found dead (Williams, 2009). Given the timing of the sampling (February to May), it is very likely that spawning occurs regularly in Tenmile Creek. It is not known how far adult eulachon ascend the creek to spawn, but the location of the ODFW trap (just upstream of the Highway 101 bridge) is the confirmed upstream extent of adult eulachon in spawning condition, and we conclude that the specific area containing spawning and incubation sites extends upstream at least to this point (ODFW, 2009).

(6) *Sandy River, OR:* The Sandy River and its tributaries drain 1,316 km$^2$ (508 mi$^2$). Most of the headwaters of the Sandy River are within Clackamas County, while the lower mainstem of the river lies within Multnomah County. The Sandy River originates from glaciers on Mount Hood and flows for 90 km (56 mi) to join the Columbia River near the City of Troutdale (Sandy River Basin Watershed Council, 1999). The segment of the Sandy River from Dodge Park to Dabney State Park was designated as a National Wild and Scenic River in October 1988.

Large commercial and recreational fisheries have occurred in the Sandy River in the past. The most recent commercial harvest in the Sandy River was in 2003 and resulted in a catch of 10,400 kg (23,000 lbs) (Joint Columbia River Management Staff [JCRMS], 2009). During spawning, eulachon extent in the Sandy River is typically upstream to the confluence with Gordon Creek (Anderson, 2009), indicating that this area contains the spawning and incubation, and migration corridor essential features.

(7) *Lower Columbia River, OR and WA:* The lower Columbia River and its tributaries support the largest known spawning run of eulachon. The mainstem of the lower Columbia River provides spawning and incubation sites, and a large migratory corridor to spawning areas in the tributaries. Major tributaries of the Columbia River that have supported eulachon runs in the past include the Grays, Elochoman, Cowlitz, Kalama and Lewis Rivers in Washington and the Sandy River in Oregon (WDFW and ODFW, 2001; Gustafson *et al.,* 2010; the Columbia River tributaries in Washington State are discussed below as separate specific areas).

Although direct estimates of adult spawning stock abundance in the Columbia River are unavailable, records of commercial fishery landings begin in

1888 and continue as a nearly uninterrupted data set to 2010 (Gustafson *et al.,* 2010). A large recreational dipnet fishery, for which catch records have not been maintained, has taken place concurrent with the commercial fishery (WDFW and ODFW, 2001). However, the dipnet fishery took place almost entirely within the tributaries. During spawning, adult eulachon are found in the lower Columbia River from the mouth of the river to immediately downstream of Bonneville Dam (WDFW and ODFW, 2008), indicating that the area contains the essential feature of migration corridors. Eulachon eggs have been collected, and spawning presumed, from river km 56 (river mi 35) to river km 117 (river mi 73) (Romano *et al.,* 2002) indicating that this area contains the spawning and incubation essential feature. However, due to the limited range of the study, the entire range of eulachon spawning in the mainstem of the Columbia River remains unknown (Romano *et al.,* 2002). As noted above in response to Comment 7, eulachon have historically been reported as far upstream as Hood River but have rarely passed Bonneville Dam since its completion in 1937.

The Columbia River, estimated to have historically represented half of the species' abundance, experienced a sudden decline in its commercial eulachon fishery landings in 1993–1994 (WDFW and ODFW, 2001; JCRMS, 2009). Commercial catch levels were consistently high (usually greater than 500 metric tons [550 tons] and often greater than 1,000 metric tons [1,100 tons]) for the three quarters of a century from about 1915 to 1992. In 1993, catches declined greatly to 233 metric tons (257 tons) and to an average of less than 40 metric tons (44 tons) between 1994 and 2000. From 2001 to 2004, the catches increased to an average of 266 metric tons (293 tons), before falling to an average of less than 5 metric tons (5.5 tons) from 2005 to 2008. Some of this pattern is due to fishery restrictions put in place in response to the apparent sharp declines in the species abundance. Persistent low returns and landings of eulachon in the Columbia River from 1993 to 2000 prompted the states of Oregon and Washington to adopt a Joint State Eulachon Management Plan in 2001 that provides for restricted harvest management when parental run strength, juvenile production, and ocean productivity forecast a poor return (WDFW and ODFW, 2001). Despite a brief period of improved returns in 2001–2003, the returns and associated commercial landings declined to the very low levels observed in the mid-1990s (JCRMS, 2009), and the fishery operated at the most conservative level allowed in the Joint State Eulachon Management Plan from 2005 to 2010 (JCRMS, 2009). All commercial and recreational fisheries for eulachon were closed in Oregon and Washington for 2011.

(8) *Grays River, WA:* The Grays River watershed is located in Pacific and Wahkiakum counties, in Washington State. The Grays River is a tributary of the Columbia River, which it enters near the town of Oneida, Washington. The Grays River watershed encompasses 322 $km^2$ (124 $mi^2$) (May and Geist, 2007).

From 1980 to 1989 the annual commercial harvest of eulachon in the Grays River varied from 0 to 16 metric tons (0 to 35,000 lbs.). No commercial harvest has been recorded for the Grays River from 1990 to the present, but larval sampling has confirmed successful spawning in recent years (JCRMS, 2009). During spawning, eulachon typically ascend the river as far as the covered bridge near the unincorporated town of Grays River, WA (Anderson, 2009), indicating that this area contains the spawning and incubation, and migration corridor essential features.

(9) *Skamokawa Creek, WA:* Skamokawa Creek is a tributary of the Columbia River located in southwest Washington. Skamokawa Creek drains a relatively small (161 $km^2$ [63 $mi^2$]) watershed that lies entirely within Wahkiakum County.

During April 2011, biologists from the Cowlitz Indian Tribe documented the presence of eulachon larvae in Skamokawa Creek, confirming eulachon spawning in this system (Cowlitz Indian Tribe, 2011). These biologists used a systematic sampling protocol to determine that the bridge crossing at Petersen was the likely upstream limit of spawning. We consider this recent information as the best available indicating that this area contains the spawning and incubation, and migration corridor essential features for eulachon.

(10) *Elochoman River, WA:* The Elochoman River is a tributary of the Columbia River in southwest Washington and it originates in the Willapa Hills. The watershed lies within Lewis, Cowlitz, and Wahkiakum counties and flows generally south to the Columbia River. The Elochoman watershed area is approximately 261 $km^2$ (101 $mi^2$) (Lower Columbia Fish Recovery Board [LCFRB], 2004a).

Eulachon spawn occasionally in the Elochoman River, although there is no history of commercial or recreational harvest of eulachon for the Elochoman River. Sampling of outmigrating larval eulachon by WDFW has confirmed spawning in the river 7 times in the last 15 years (JCRMS, 2011), most recently in 2011 (Chris Wagemann, WDFW, personal communication, 4/18/2011). In the past, WDFW has observed spawning eulachon in the Elochoman River as far the Washington State Highway 4 bridge crossing (Anderson, 2009). However, in April 2011, biologists from the Cowlitz Indian Tribe documented the presence of larval eulachon in the Elochoman River to the Monroe Drive bridge crossing (Cowlitz Tribe, 2011), indicating that a more extensive area contains the spawning and incubation, and migration corridor essential features. If eulachon ascend the river beyond this point, the water intake dam at the old Beaver Creek Hatchery (located on the Elochoman River at river km 11.5 [river mi 7.1]) may be a barrier to any further upstream migration of eulachon (Wade, 2002).

(11) *Cowlitz River, WA:* The Cowlitz River flows from its source on the west slope of the Cascade Mountains through the towns of Kelso and Longview, Washington, and empties into the Columbia River about 109 km (68 mi) upstream from the Pacific Ocean. The Cowlitz River drains approximately 6,400 $km^2$ (2,480 $mi^2$) over a distance of 243 km (151 mi) (Dammers *et al.,* 2002). Principal tributaries to the Cowlitz River include the Coweeman, Toutle, Tilton, and Cispus Rivers.

The Cowlitz River is likely the most productive and important spawning river for eulachon within the Columbia River system (Wydoski and Whitney, 2003). Spawning adults typically move upstream about 26 km (16 mi) to the town of Castle Rock, WA or beyond to the confluence with the Toutle River. Adults are regularly sighted from the mouth of the river to 55 km (34 mi) upstream (near the town of Toledo, WA). Eulachon are occasionally sighted as far as 80 km (50 mi) upstream, to the barrier dam at the Cowlitz Salmon Hatchery (WDFW and ODFW, 2008; Anderson, 2009), indicating that this area contains the spawning and incubation, and migration corridor essential features.

The Cowlitz River currently has 3 major hydroelectric dams and several small-scale hydropower and sediment retention structures located on tributaries within the Cowlitz Basin. Mayfield Dam is located at river km 84 (river mi 52) and is a complete barrier to upstream migration of anadromous fishes (LCFRB, 2004b) (although the salmon hatchery barrier dam at river km 80 (river mi 50) may also be a complete barrier to eulachon).

(12) *Toutle River, WA:* The Toutle River is a tributary of the Cowlitz River, and it occurs in portions of Lewis, Cowlitz, and Skamania Counties in southwestern Washington State. The Toutle River is one of the major tributaries of the lower Cowlitz River and their confluence occurs 32 km (20 mi) upstream of the mouth of the Cowlitz River, just north of the town of Castle Rock, Washington. The basin encompasses approximately 1,329 km$^2$ (513 mi$^2$) of mostly forested land. The Toutle River drains the north and west sides of Mount St. Helens and elevations in the watershed range from near sea level at the mouth to 2,550 m (8,365 ft) at the summit of Mount St. Helens. The watershed contains three main drainages: The North Fork Toutle, the South Fork Toutle, and the Green River. Most of the North and South Fork were impacted severely by the 1980 eruption of Mount St. Helens and the resulting massive debris torrents and mudflows (LCFRB, 2004b).

During April 2011, biologists from the Cowlitz Indian Tribe documented the presence of eulachon larvae in the Toutle River, confirming eulachon spawning in this system (Craig Olds, Cowlitz Indian Tribe, personal communication, April 22, 2011). In the past, spawned out eulachon adults have been collected in the Cowlitz River near the mouth of the Toutle River. But the recent surveys provide the first evidence of spawning in the Toutle River. The Cowlitz Tribe biologists captured eulachon larvae in the Toutle River up to the bridge crossing at Tower Road, which is 10.5 km (6.6 mi) upstream from the confluence with the Cowlitz River. We consider this recent information as the best available indicating that this area contains the spawning and incubation, and migration corridor essential features for eulachon.

(13) *Kalama River, WA:* The Kalama River basin is a 531 km$^2$ (205 mi$^2$) watershed extending from the southwest slopes of Mount St. Helens to the Columbia River (LCFRB, 2004e). The headwaters of the Kalama River begin in Skamania County, WA, but the majority of the 72 km (45 mi) of river flows within Cowlitz County. At river km 16 (river mi 10), a concrete barrier dam and fish ladder prevent upstream movement of all anadromous fishes with the exception of summer steelhead and spring Chinook salmon (LCFRB, 2004c).

The extent of spawning within the Kalama River is from the confluence with the Columbia River to the confluence with Indian Creek (Cowlitz Indian Tribe, 2011), indicating that this area contains the spawning and incubation, and migration corridor essential features. Although the last commercial harvest of eulachon in the Kalama River occurred in 1993, sampling for larval eulachon has confirmed spawning in the Kalama River as recently as 2011 (Cowlitz Indian Tribe, 2011).

(14) *Lewis River, WA:* The Lewis River enters the Columbia River 104 km (87 mi) upstream from the mouth of the Columbia River, a few kilometers north of the town of Ridgefield, Washington. The majority of the 1,893 km$^2$ (731 mi$^2$) watershed lies within Clark, Cowlitz and Skamania Counties (LCFRB, 2004d). Although generally not considered as large a eulachon run as the Cowlitz River, the Lewis River has produced very large runs periodically. Nearly half of the total commercial eulachon catch for the Columbia River Basin in 2002 and 2003 came from the Lewis River. Larval eulachon have been caught in the Lewis River during sampling efforts by WDFW and the Cowlitz Indian Tribe, (JCRMS, 2009; Cowlitz Indian Tribe, 2011). During spawning, eulachon typically move upstream in the Lewis River about 16 km (10 mi; to Eagle Island), but they have been observed upstream to the Merwin Dam (WDFW and ODFW, 2008; Anderson, 2009). Larval eulachon have also been caught in the East Fork of the Lewis River, up to the confluence with Mason Creek, 9.2 km (5.7 mi) from the confluence with the mainstem of the Lewis River (Cowlitz Indian Tribe, 2011). The capture of larval eulachon in the mainstem and east fork of the Lewis River indicates that these areas contain the spawning and incubation, and migration corridor essential features.

Merwin Dam, completed in 1931, is 240 feet high and currently presents a passage barrier to all anadromous fish, including eulachon (LCFRB, 2004d). We are unable to find information to determine whether eulachon ascended the river beyond river km 31.4 (river mi 19.5) prior to construction of the dam. However, Merwin Dam was built in an area where the Lewis River became constricted, with increased gradient and higher water velocities. Prior to dam construction this area was likely a natural passage barrier for eulachon. For this reason, the area upstream of the current Merwin Dam site was not considered for inclusion as critical habitat.

(15) *Quinault River, WA:* The headwaters of the Quinault River originate in the Olympic Mountains within Olympic National Park. The river then crosses into the Quinault Indian Reservation where it flows into Lake Quinault. Downstream of the lake, the Quinault River remains within the Quinault Indian Reservation for another 53 km (33 mi) to the Pacific Ocean. The total watershed area is 1,190 km$^2$ (460 mi$^2$) (Smith and Caldwell, 2001).

Although there is currently no monitoring for eulachon in the Quinault River, WDFW and ODFW (2001) reported that eulachon ''were noted in large abundance in the Quinault'' River in 1993. A noticeable number of eulachon make an appearance in the Quinault River, and to a lesser extent the Queets River, at 5 to 6 year intervals and were last observed in the Quinault River in the winter of 2004–2005 (Quinault Indian Nation, 2008). There is very little information on eulachon spawning distribution in the Quinault River, but Tribal fishermen targeting eulachon typically catch fish in the lower three miles of the river (Quinault Indian Nation, 2008). It is reasonable to conclude that this area contains the spawning and incubation, and migration corridor essential features.

Although eulachon are currently only occasionally recorded in the Quinault River, during the late 19th and early 20th century eulachon were regularly caught by members of the Quinault Indian Tribe (Willoughby, 1889; Olson, 1936). Fish were typically taken in the ocean surf but often ascended the river for several miles (Olson, 1936). Olson (1936) reported that there was usually a large run of eulachon in the Quinault River every three or four years, and the run timing varied, usually occurring between January and April. The Washington Department of Fisheries annual report for 1960 (Starlund, 1960) listed commercial eulachon landings in the Quinault River in 1936, 1940, 1953, 1958 and 1960. The commercial catches ranged from a low of 61 kg (135 lbs.) in 1960, to a high of 42,449 kg (93,387 lbs.) in 1953.

Nearly half of the watershed lies within Olympic National Park, under the jurisdiction of the National Park Service, while the Quinault Indian reservation comprises about one third (32 percent) of the watershed, including most of the area downstream of Lake Quinault (Quinault Indian Nation and U.S. Forest Service, 1999). The U.S. Forest Service manages 13 percent of the watershed, and private landholdings comprise only 4 percent of the lands in the watershed (Smith and Caldwell, 2001).

(16) *Elwha River, WA:* The Elwha River mainstem is approximately 72 km (45 mi) long, and it drains 831 km$^2$ (321 mi$^2$) of the Olympic Peninsula. A majority of the drainage (83 percent) is within Olympic National Park (Elwha-Dungeness Planning Unit, 2005). The historical condition of the river has been

altered by two major hydroelectric developments: The Elwha Dam and the Glines Canyon Dam (located just upstream of the Elwha Dam).

In 2005, eulachon were observed in the Elwha River for the first time since the 1970s (Shaffer *et al.,* 2007). Since 2005, adult eulachon have been captured in the Elwha River every year (2006–2010) (Lower Elwha Tribe, 2010). Several of the fish captured in 2005 were ripe (egg-extruding) females, indicating that eulachon likely spawn in the Elwha River (Shaffer *et al.,* 2007). The Elwha Dam serves as a complete barrier to upstream fish migration, and thus it is reasonable to assume that the spawning and incubation, and migration corridor essential features only extend to that point in the Elwha River. It is not known if eulachon ascended the Elwha River beyond the present site of the Elwha Dam prior to construction. However, the dam was built in an area where the Elwha River became constricted, with increased gradient and higher water velocities. Prior to dam construction this area was likely a natural passage barrier for eulachon. For this reason, the area upstream of the current Elwha Dam site was not considered for inclusion as critical habitat. As part of a comprehensive restoration of the watershed's ecosystem and its fisheries, the Elwha and Glines Canyon dams were acquired by the Federal Government in 2000 and their removal began in September 2011.

*All Areas:* We delineated each specific area as extending from the mouth of the river or creek (or its associated estuary when applicable) upstream to a fixed location. We delineated the upstream extent based on evidence of eulachon spawning or presence, or the presence of an impassable barrier. The boundary at the mouth of each specific area that flows directly into marine waters was defined by the demarcation lines which delineate ''those waters upon which mariners shall comply with the International Regulations for Preventing Collisions at Sea, 1972 (72 COLREGS) and those waters upon which mariners shall comply with the Inland Navigation Rules'' (33 CFR 80.01). For those specific areas that do not have a COLREGS line delineated, the boundary at the mouth of those specific areas was defined as a line drawn from the northernmost seaward extremity of the mouth of the creek or river to the southernmost seaward extremity of the mouth (with the exception of the boundary at the mouth of the Elwha River, which was defined as a line drawn from the easternmost seaward extremity of the mouth of the river to the westernmost seaward extremity of the mouth). Our regulations state that ''[e]ach critical habitat will be defined by specific limits using reference points and lines as found on standard topographic maps of the area'' (50 CFR 424.12 (c)). The COLREGS lines (where defined) were chosen as the downstream extent of freshwater and estuarine critical habitat because they are a clearly defined federal standard, separating marine and inland waters, which incorporates landmarks that are found on standard topographic maps.

**Occupied Areas Not Designated at This Time**

In the Pacific Ocean, we identified nearshore and offshore foraging sites as an essential habitat feature for the conservation of eulachon, and we determined that abundant forage species and suitable water quality are specific components of this habitat feature. However, we were unable to identify any specific areas in marine waters that meet the definition of critical habitat under section 3(5)(A)(i) of the ESA. Given the unknown, but potentially wide, distribution of eulachon prey items, we could not identify ''specific areas'' where either component of the essential features is found within marine areas believed to be occupied by eulachon. Moreover, prey species move or drift great distances throughout the ocean and would be difficult to link to any ''specific'' areas.

**Special Management Considerations**

Physical or biological features meet the definition of critical habitat if they ''may require special management considerations or protection.'' Joint NMFS and USFWS regulations at 50 CFR 424.02(j) define ''special management considerations or protection'' to mean ''any methods or procedures useful in protecting physical and biological features of the environment for the conservation of listed species.'' We identified a number of activities that may affect the physical and biological features essential to the southern DPS of eulachon such that special management considerations or protection may be required. Major categories of such activities include: (1) Dams and water diversions; (2) dredging and disposal of dredged material; (3) in-water construction or alterations; (4) pollution and runoff from point and non-point sources; (5) tidal, wind, or wave energy projects; (6) port and shipping terminals; and (7) habitat restoration projects. All of these activities may have an effect on one or more of the essential physical and biological features via their alteration of one or more of the following: Stream hydrology; water level and flow; water temperature; dissolved oxygen; erosion and sediment input/transport; physical habitat structure; vegetation; soils; nutrients and chemicals; fish passage; and estuarine/marine prey resources.

In the following paragraphs, we describe the potential effects of certain activities on essential physical or biological features, and we summarize the occurrence of these activities in the specific areas in Table 1 below (examples of activities that may require special management considerations for each of the specific areas are listed in the Eulachon Biological Report (NMFS, 2011b)). This is not an exhaustive list of potential effects, but rather a description of the primary concerns and potential effects that we are aware of at this time and that should be considered in the analysis of these activities under section 7 of the ESA.

(1) *Dams and Water Diversions:* Physical structures associated with dams and water diversions may impede or delay passage of eulachon. The operation of dams and water diversions may also affect water flow, water quality parameters, substrate quality, and depth, and further compromise the ability of adult eulachon to reproduce successfully. Optimum flow and temperature requirements for spawning and incubation are unclear, but effects on water flow and associated effects on water quality (*e.g.,* water temperature) and substrate composition may affect adult spawning activity, egg viability, and larval growth, development, and survival. Many uncertainties remain about how large-scale hydropower development (*e.g.,* the Federal Columbia River Power System) affects eulachon habitat.

(2) *Dredging:* Dredging activities, which include the disposal of dredged material, may affect depth, sediment quality, water quality, and prey resources for eulachon. Dredging and the in-river disposal of dredged material may remove, and/or alter the composition of, substrate materials at the dredge site, as well as bury them at the disposal site (potentially altering the quality of substrate for use as a spawning site). In addition, dredging operations and disposal of dredged materials may result in the re-suspension and spread of contaminated sediments, which may adversely affect eulachon migration and spawning, as well as larval growth and development. The effects of dredging and disposal activities on critical habitat would depend on factors such as the location, seasonality, scale, frequency, and duration of these activities.

(3) *In-water Construction or Alterations:* This category consists of a broad range of activities associated with in-water structures or activities that alter habitat within rivers, estuaries, and coastal marine waters. The primary concerns are with activities that may affect water quality, water flow, sediment quality, substrate composition, or migratory corridors. Activities that may affect water quality include the installation of in-water structures (such as pilings) with protective coatings containing chemicals that may leach into the water. Activities that affect flow, sediment quality and substrate composition include those that result in increased erosion and sedimentation (such as road maintenance and construction, bridge construction, construction of levees and other flood control devices, construction or repair of breakwaters, docks, piers, pilings, bulkheads, and boat ramps) and those that directly alter substrates (such as sand and gravel mining or gravel augmentation). Activities that may affect migratory corridors include the construction of in-water structures, such as docks, piers, pilings, and ramps.

(4) *Pollution and Runoff:* The discharge of pollutants and runoff from point and non-point sources (including but not limited to: Industrial discharges, urbanization, grazing, agriculture, road surfaces, road construction, and forestry operations) may adversely affect the water quality, sediment quality, and substrate composition of eulachon critical habitat. Exposure to contaminants may disrupt eulachon spawning migration patterns, and high concentrations may be lethal to young fish (Smith and Saalfeld, 1955). Excessive runoff may increase turbidity and alter the quality of spawning substrates.

(5) *Tidal, Wind, or Wave Energy Projects:* Tidal, wind, or wave energy projects generally require energy generating equipment and supporting structures to be anchored on the bottom. However, there are a wide range of designs currently being tested and potential impacts of individual projects will vary depending on the type of unit being deployed. Projects are typically proposed for location in coastal marine waters or coastal estuaries. Some designs may result in physical structures that impede or delay passage of eulachon. In addition, construction and maintenance of these energy projects may require in-water construction or alterations, which would include the potential effects described above.

(6) *Port and Shipping Terminals:* The operation of port and shipping terminals poses the risk of leaks, spills, or pipeline breakage and may affect water quality. Vessel ballast water management (including the introduction of competitors or parasites) may also affect water quality. In addition, activities associated with the construction, operation, and maintenance of port and shipping terminals may affect water quality, sediment quality, and prey resources for larval eulachon. For example, dredging operations and in-water and shoreline construction activities associated with the construction and operation of port and shipping terminals may result in increased erosion and sedimentation, increased turbidity, and the re-suspension of contaminated sediments.

(7) *Habitat Restoration Projects:* Habitat restoration activities are efforts undertaken to improve habitat, and can include the installation of fish passage structures and fish screens, in-stream barrier modification, bank stabilization, installation of instream structures (*e.g.,* engineered log jams), placement of gravel, planting of riparian vegetation, and many other habitat-related activities. Although the primary purpose of these activities is to improve natural habitats for the benefit of native species, these activities nonetheless modify the habitat and need to be evaluated to ensure that they do not adversely affect the habitat features essential to eulachon. While habitat restoration activities would be encouraged as long as they promote the conservation of the species, project modifications in the form of spatial and temporal restrictions may be required as a result of this designation.

**Unoccupied Areas**

Section 3(5)(A)(ii) of the ESA authorizes the designation of ''specific areas outside the geographical area occupied at the time [the species] is listed'' if these areas are essential for the conservation of the species. Regulations at 50 CFR 424.12(e) emphasize that the agency ''shall designate as critical habitat areas outside the geographical area presently occupied by a species only when a designation limited to its present range would be inadequate to ensure the conservation of the species.''

Nearly all of the documented historical and current presence and production of the southern DPS of eulachon comes from within the geographical area occupied by the southern DPS at the time of listing, and no new information on this subject was received during the comment and peer review process of the Proposed Critical Habitat Designation (76 FR 515; January 5, 2011). Sightings of southern DPS eulachon from creeks or rivers outside of this area have been extremely infrequent, and have consisted of very few fish (Gustafson *et al.,* 2010). Therefore, we are not considering any unoccupied areas as critical habitat for the DPS.

TABLE 1—SUMMARY OF OCCUPIED SPECIFIC AREAS THAT CONTAIN THE PHYSICAL OR BIOLOGICAL FEATURES ESSENTIAL TO THE CONSERVATION OF THE SOUTHERN DPS OF EULACHON

[The river miles containing the essential physical and biological features present, and activities that may affect the essential features and necessitate the need for special management considerations or protection within each area are listed. DAM = dams and water diversions; DR = dredging and disposal of dredged material; CON = in-water construction or alterations, including channel modifications/diking; POLL = pollution and runoff from point and non-point sources; ENER = tidal energy or wave energy projects; PORT = operation of port and shipping terminals; REST = habitat restoration projects.]

| Specific area | River kilometers/ miles | Physical or biological features | Activities |
|---|---|---|---|
| (1) Mad River, CA | 21.0/13.0 | Migration, Spawning | DAM, CON, POLL |
| (2) Redwood Creek, CA | 19.7/12.2 | Migration, Spawning | CON, POLL |
| (3) Klamath River, CA | 17.2/10.7 | Migration, Spawning | DAM, DR, CON, POLL |
| (4) Umpqua River, OR | 39.0/24.2 | Migration, Spawning | DAM, DR, POLL |
| (5) Tenmile Creek, OR | 0.4/0.2 | Migration, Spawning | CON, POLL |
| (6) Sandy River, OR | 20.0/12.4 | Migration, Spawning | DAM, CON, POLL |
| (7) Columbia River, OR and WA | 230.5/143.2 | Migration, Spawning | DAM, DR, CON, POLL, ENER, PORT, REST |
| (8) Skamokawa Creek | 7.8/4.8 | Migration, Spawning | CON, POLL |

TABLE 1—SUMMARY OF OCCUPIED SPECIFIC AREAS THAT CONTAIN THE PHYSICAL OR BIOLOGICAL FEATURES ESSENTIAL TO THE CONSERVATION OF THE SOUTHERN DPS OF EULACHON—Continued

[The river miles containing the essential physical and biological features present, and activities that may affect the essential features and necessitate the need for special management considerations or protection within each area are listed. DAM = dams and water diversions; DR = dredging and disposal of dredged material; CON = in-water construction or alterations, including channel modifications/diking; POLL = pollution and runoff from point and non-point sources; ENER = tidal energy or wave energy projects; PORT = operation of port and shipping terminals; REST = habitat restoration projects.]

| Specific area | River kilometers/ miles | Physical or biological features | Activities |
|---|---|---|---|
| (9) Grays River, WA | 17.9/11.1 | Migration, Spawning | DAM, DR, CON, POLL |
| (10) Elochoman River, WA | 8.4/5.2 | Migration, Spawning | CON, POLL |
| (11) Cowlitz River, WA | 80.8/50.2 | Migration, Spawning | DAM, DR, CON, POLL, PORT, REST |
| (12) Toutle River | 10.5/6.6 | Migration, Spawning | DAM, CON, POLL |
| (13) Kalama River, WA | 12.6/7.8 | Migration, Spawning | DAM, CON, POLL |
| (14) Lewis River, WA | 31.1/19.3 | Migration, Spawning | DAM, CON, POLL |
| East Fork, Lewis River, WA | 9.2/5.7 | Migration, Spawning | CON, POLL |
| (15) Quinault River, WA | 4.8/3.0 | Migration, Spawning | CON, POLL |
| (16) Elwha River, WA | 7.6/4.7 | Migration, Spawning | DAM, CON, POLL, REST |

**Military Lands**

The ESA was amended by the National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108–136) to address the designation of military lands as critical habitat. ESA section 4(a)(3)(B)(i) states: ''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.'' Department of Defense lands do not overlap with, nor are adjacent to, any areas that we proposed for designation as critical habitat for the southern DPS so there are no known potential areas that would be removed from this final designation under ESA Section 4(a)(3)(B)(i).

**Application of ESA Section 4(b)(2)**

The foregoing discussion describes the specific areas that fall within the ESA section 3(5) definition of critical habitat and are eligible for designation as critical habitat. Specific areas eligible for designation are not automatically designated as critical habitat. Section 4(b)(2) of the ESA requires the Secretary to first consider the economic impact, impact on national security, and any other relevant impact of designation. The Secretary has the discretion to exclude an area from designation if he determines the benefits of exclusion (that is, avoiding the impact that would result from designation) outweigh the benefits of designation based upon the best scientific and commercial data available. In adopting this provision, Congress explained that, ''[t]he consideration and weight given to any particular impact is completely within the Secretary's discretion.'' H. R. Rep. No. 95–1625, at 16–17 (1978). The Secretary may not exclude an area from designation if exclusion will result in the extinction of the species. Because the authority to exclude is discretionary, exclusion is not required for any area.

The first step in conducting an ESA section 4(b)(2) analysis is to identify the ''particular areas'' to be analyzed. Section 3(5) of the ESA 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 biologically based ''specific'' areas we had identified under section 3(5)(A). Specifically, these areas were the occupied freshwater and estuarine areas that contain the physical and biological features essential to the conservation of the southern DPS of eulachon. Because upslope and upstream activities may impact critical habitat, we chose to use the watershed (specifically, individual 5th field hydrologic units as designated by the U.S. Geological Survey) as our assessment area for economic impacts (see the Eulachon Economic Analysis Report [NMFS, 2011c] for definition of the 5th field hydrologic units and more information). Where we considered impacts on Indian lands, however, we instead used a delineation of ''particular'' areas based on ownership or control of the area. Specifically, these particular areas consisted of occupied freshwater and estuarine areas that overlap with Indian lands. (We defined Indian lands in accordance with our past practice, as described in the Eulachon Section 4(b)(2) Report [NMFS, 2011a].) This approach allowed us to consider impacts and benefits associated with Tribal land ownership and management by Indian Tribes.

*Benefits of Designation*

The primary benefit of designation is the protection afforded under the ESA section 7 requirement that all federal agencies ensure their actions are not likely to destroy or adversely modify designated critical habitat. This type of benefit is sometimes referred to as an incremental benefit because the protections afforded to the species from critical habitat designation are in addition to the requirement that all federal agencies ensure their actions are not likely to jeopardize the continued existence of the species. In addition, the designation may enhance the conservation of habitat by informing the public about areas and features important to species conservation. This may help focus and contribute to conservation efforts for eulachon and their habitats.

With sufficient information, it may be possible to monetize these benefits of designation by first quantifying the benefits expected from an ESA section 7 consultation and translating that into dollars. We are not aware, however, of any available data to monetize the benefits of designation (*e.g.,* estimates of

the monetary value of the physical and biological features within specific areas that meet the definition of critical habitat, or of the monetary value of general benefits such as education and outreach). In an alternative approach that we have commonly used in the past, we qualitatively assessed the benefit of designation for each of the specific areas identified as meeting the definition of critical habitat for the southern DPS. Our qualitative consideration began with an evaluation of the conservation value of each area. We considered a number of factors to determine the conservation value of an area, including the quantity and quality of physical or biological features, the relationship of the area to other areas within the DPS, and the significance to the DPS of the population occupying that area.

To evaluate the quantity and quality of features of the specific areas, we considered existing information on the consistency of spawning in each area, the typical size of runs in the area, and the amount of habitat available to and used by eulachon in the area. We found that eulachon habitat and habitat use varies widely among the areas, and may vary within the same area across different years. It is difficult to identify differences between the areas that could be driving variation in run size and frequency, and variation in habitat use. Eulachon spawn in systems as large as the Columbia River (the largest river in the Pacific Northwest), and as small as Tenmile Creek (a watershed of approximately 60 $km^2$ [23 $mi^2$]). While some rivers consistently produce large spawning runs of eulachon (*e.g.,* the Columbia and Cowlitz Rivers), spawning can be sporadic in others (*e.g.* Grays, Kalama, Sandy, and Quinault Rivers). Still other areas, either currently or in the past, produce small yet consistent runs of eulachon (*e.g.,* Tenmile Creek and Elwha River).

Another factor we considered in evaluating the conservation value of the specific areas is the geographic distribution of the areas. Nearly the entire production of eulachon in the conterminous United States originates in the 16 specific areas we have identified. These specific areas are widely distributed across the geographic extent of the DPS. Compared to salmon, steelhead, and other anadromous fishes, these relatively small areas historically produced a very large biomass of eulachon. The loss of any one of these areas could potentially leave a large gap in the spawning distribution of the DPS, and the loss to eulachon production could represent a significant impact on the ability of the southern DPS to survive and recover. Utilizing a diversity of stream/estuary sizes across a wide geographic area can be a useful strategy to buffer the species against localized environmental catastrophes (such as the Mount St. Helens eruption of May 18, 1980). For the above reasons, we conclude that all of the specific areas that we identified have a high conservation value.

There are many federal activities that occur within the specific areas that could impact the conservation value of these areas. Regardless of designation, federal agencies are required under section 7 of the ESA to ensure these activities are not likely to jeopardize the continued existence of the southern DPS of eulachon. For the specific areas designated as critical habitat, federal agencies are additionally required to ensure their actions are not likely to adversely modify the critical habitat. In order to conduct our economic analysis we grouped the potential federal activities that may be subject to this additional protection into several broad categories: Dams, water supply, agriculture, transportation, forest management, mining, in-water construction and restoration, water quality management/monitoring, and other activities. (The Eulachon Economic Analysis [NMFS, 2011c] includes a detailed description of the industry sectors associated with these activities).

The benefit of designating a particular area depends upon 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. Based on past consultations for other migratory fish species, we estimated that a total of 39 actions would require section 7 consultation annually within the particular areas designated as eulachon critical habitat (NMFS, 2011c). The most common activity type subject to consultation would be in-stream work (estimated 13.3 consultations annually), followed by transportation projects (estimated 6.9 consultations annually) and forest management (estimated 6.7 consultations annually). A complete list of the estimated annual actions, divided by particular area, is included in the Eulachon Economic Analysis (NMFS, 2011c). These activities have the potential to adversely affect water quality, sediment quality, substrate composition, or migratory corridors for eulachon. Consultation would yield conservation benefits for the species by preventing or ameliorating such habitat effects.

*Impacts of Designation*

Section 4(b)(2) of the ESA provides that the Secretary shall consider ''the economic impact, impact to national security, and any other relevant impact of specifying any particular area as critical habitat.'' The primary impact of a critical habitat designation stems from the requirement under section 7(a)(2) of the ESA that federal agencies ensure their actions are not likely to result in the destruction or adverse modification of critical habitat. Determining this impact is complicated by the fact that section 7(a)(2) contains the overlapping requirement that federal agencies must ensure their actions are not likely to jeopardize the species' continued existence. The true impact of designation is the extent to which federal agencies modify their actions to ensure their actions are not likely to destroy or adversely modify the critical habitat of the species, beyond any modifications they would make because of listing and the jeopardy requirement. Additional impacts of designation include state and local protections that may be triggered as a result of the designation.

In determining the impacts of designation, we predicted the incremental change in federal agency actions as a result of critical habitat designation and the adverse modification prohibition, beyond the changes predicted to occur as a result of listing and the jeopardy provision. In critical habitat designations for salmon and steelhead (70 FR 52630; September 2, 2005) we considered the ''coextensive'' impact of designation, in accordance with a Tenth Circuit Court decision (*New Mexico Cattle Growers Association* v. *U.S. Fish and Wildlife Service,* 248 F.3d 1277 (10th Cir. 2001)). More recently, however, several courts (including the 9th Circuit Court of Appeals in *Arizona Cattlegrowers* v. *Salazar,* 606 F.3d 1160 (9th Cir. 2010); *Homebuilders Association of Northern California* v. *U.S. Fish and Wildlife,* 616 F.3d 983 (9th Cir. 2010)) have approved an approach that examines only the incremental impact of designation (see also: *Cape Hatteras Access Preservation Alliance* v. *Norton,* 344 F. Supp. 2d 1080 (D.D.C. 2004)). In more recent critical habitat designations, both NMFS and the USFWS have considered the incremental impact of critical habitat designation (for example, NMFS' designation of critical habitat for the Southern DPS of green sturgeon (74 FR 52300; October 9, 2009); U.S. Fish and Wildlife's designation of critical habitat for the Oregon chub (75 FR 11031; March 10, 2010)). Consistent with this

more recent practice, we estimated the incremental impacts of designation, beyond the impacts that would result from the listing and jeopardy provision.

To determine the impact of designation, we examined what the state of the world would be with and without the designation of critical habitat for eulachon. The ''without critical habitat'' scenario represents the baseline for the analysis. It includes process requirements and habitat protections already afforded eulachon under its federal listing or under other Federal, state, and local regulations. Such regulations include protections afforded eulachon habitat from other co-occurring ESA listings and critical habitat designations, such as for Pacific salmon and steelhead (70 FR 52630; September 2, 2005), North American green sturgeon (74 FR 52300; October 9, 2009), and bull trout (75 FR 63898; October 18, 2010) (see the Eulachon Economic Analysis (NMFS, 2011c) for examples of protections for other species that would benefit eulachon). The ''with critical habitat'' scenario describes the incremental impacts associated specifically with the designation of critical habitat for eulachon. The primary impacts of critical habitat designation we found were: (1) The additional administrative effort of including a eulachon critical habitat analysis in section 7 consultations, (2) the project modifications required solely to avoid destruction or adverse modification of eulachon critical habitat, and (3) the perception of Indian Tribes that designation of Indian lands is an unwarranted intrusion into Tribal sovereignty and self-governance.

*Economic Impacts*

To quantify the economic impact of designation, we employed the following three steps:

(1) Define the geographic study area for the analysis, and identify the units of analysis (the ''particular areas''). In this case, we defined 5th field hydrologic units that encompass occupied stream reaches as the study area.

(2) Identify potentially affected economic activities and determine how management costs may increase due to the designation of eulachon critical habitat, both in terms of project administration and project modification.

(3) Estimate the economic impacts associated with these changes in management.

We estimated a total annualized incremental administrative cost of approximately $512,000 for designating the 16 specific areas as eulachon critical habitat. The greatest costs are associated with water supply, mining, and forest management activities (see NMFS, 2011c for more details). The lower Mad River and Columbia River—Hayden Island 5th field hydrologic units have the largest estimated annual impacts ($63,500 and $32,200), due to mining activities and water supply activities, respectively (NMFS, 2011c). For 5th field hydrologic units other than the lower Mad River and Columbia River—Hayden Island, we estimate the incremental impacts of critical habitat designation would be less than $31,000/year.

For the second category of impacts, we identified three areas where critical habitat designation for eulachon might result in modifications to activities beyond those already resulting from the ESA listing of eulachon. Although we could not quantify the economic impacts, we anticipate these costs would be small, for the reasons described below.

(1) *Disposal of dredge material in the Lower Columbia River.* Eulachon spawning habitat has the potential to be modified by the disposal of dredge material in the Lower Columbia River, particularly if material is disposed in shallow water. If we conclude that disposing of dredge material in shallow water could destroy or adversely modify critical habitat, the USACE or the party seeking disposal may need to find alternative disposal sites, thereby incurring additional project costs. Because disposal of dredge material in shallow water is already quite limited in the Lower Columbia River and its cost is already relatively high, requiring another disposal method may have minimal added costs.

(2) *Elwha River Dam removal.* Removal of the Elwha and Glines Canyon dams on the Elwha River began in September 2011. Because protections are already in place (as a result of an ESA section 7 consultation) to reduce the impact of the project on salmonid habitat, consideration of eulachon critical habitat is unlikely to result in recommendations to change the project.

(3) *Mayfield Dam flow regime.* As outlined in the eulachon final listing determination (75 FR 13012; March 18, 2010), dams and water diversions are moderate threats to eulachon in the Columbia River Basin. To benefit salmon and steelhead species, Tacoma Power Company currently follows a flow regime for Mayfield Dam on the Cowlitz River. If we conclude the existing flow regime could destroy or adversely modify eulachon critical habitat, Tacoma Power Company may need to change the timing or amount of water releases. This could change the timing of energy production, with an associated decrease in revenue from energy sales. We would expect any such decreases to be small because the effect would be to change the timing of energy production and not the total amount of energy produced.

Without conducting a complete analysis on a specific project, it is difficult to evaluate the extent to which NMFS might recommend changes in any of these activities to avoid destroying or adversely modifying critical habitat. Any changes required solely to avoid destroying or adversely modifying critical habitat would be an impact of designation.

*Impacts to National Security*

Department of Defense lands or related activities do not overlap with, nor are adjacent to, any areas that we proposed for designation as critical habitat for the southern DPS. Thus, we did not identify any direct impacts to national security for any of the specific areas that we have designated as critical habitat.

*Other Relevant Impacts—Impacts to Tribal Sovereignty and Self-Governance*

We identified three rivers with areas under consideration for critical habitat designation that overlap with Indian lands—the Elwha and Quinault Rivers in Washington, and the Klamath River in California (eulachon do not ascend into the Oregon portion of the Klamath River). The federally-recognized Tribes (74 FR 40218; August 11, 2009) potentially affected are the Lower Elwha Tribe, the Quinault Tribe, the Yurok Tribe, and the Resighini Rancheria. In addition to the economic impacts described above, designating these Tribes' Indian lands would have an impact on federal policies promoting Tribal sovereignty and self-governance. 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 U.S. 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 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. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, outlines the policies and the responsibilities of the Federal Government in matters affecting Tribal interests (recently confirmed by Presidential Memorandum; 74 FR 57879; November 9, 2009). In addition to Executive Order 13175, we have Department of Commerce policy direction, via Secretarial Order 3206, stating that Indian lands shall not be designated as critical habitat, 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.''

Designation would also have impacts to NMFS' relationship with the affected Tribes. In the decision *Center for Biological Diversity,* v. *Norton,* 240 F. Supp. 2d 1090 (D. Ariz. 2003), the court held that a positive working relationship with Indian Tribes is a relevant impact that can be considered when weighing the relative benefits of a critical habitat designation. We contacted the governments of each of the potentially affected Tribes to determine what impact a critical habitat designation on Indian lands would have on the working relationship between NMFS and the Tribes. All four advised us via e-mail that they would view critical habitat designation on their lands as an unwanted intrusion, which would have a negative impact on Tribal sovereignty and self-governance and on the relationship between the Tribe and the agency. This response was consistent with responses NMFS has received from Indian Tribes in past designations (for example, the designation of critical habitat for 12 ESUs of West Coast salmon and steelhead (70 FR 52630; September 2, 2005)).

*Other Relevant Impacts—Impacts to Landowners With Contractual Commitments to Conservation*

Conservation agreements with non-federal landowners (*e.g.,* HCPs) enhance species conservation by extending species' protections beyond those available through section 7 consultations. We have encouraged non-federal landowners to enter into conservation agreements, based on a view that we can achieve greater species' conservation on non-federal land through such partnerships than we can through coercive methods (61 FR 63854; December 2, 1996).

Section 10(a)(1)(B) of the ESA authorizes us to issue to non-federal entities a permit for the incidental take of endangered and threatened species. This permit allows a non-federal landowner to proceed with an activity that is legal in all other respects, but that results in the incidental taking of a listed species (*i.e.,* take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity). The ESA specifies that an application for an incidental take permit must be accompanied by a conservation plan, and specifies the content of such a plan. The purpose of such an HCP is to describe and ensure that the effects of the permitted action on covered species are adequately minimized and mitigated, and that the action does not appreciably reduce the likelihood of the survival and recovery of the species.

In previous critical habitat designations, we have exercised discretion to exclude some (but not all) lands covered by an HCP from designation (*e.g.,* for Pacific salmon (70 FR 52630; September 2, 2005)), after concluding that benefits of exclusion outweighed the benefits of designation. For lands covered by an HCP, the benefits of designation typically arise from section 7 protections as well as enhanced public awareness. The benefits of exclusion generally include relieving regulatory burdens on existing conservation partners, maintaining good working relationships with them (thus enhancing implementation of existing HCPs), and encouraging the development of new partnerships.

There are two landowners with conservation agreements that overlap areas we are designating as critical habitat for the southern DPS of eulachon; the Green Diamond Timber Company (covering the company's operations in northern California, including portions of the Klamath River), and the Humboldt Bay Municipal Water District (covering their operations in the Mad River, California).

*Balancing Benefits of Designation Against Benefits of Exclusion*

A final ESA section 4(b)(2) report (NMFS 2011a) describes in detail our approach to weighing the benefit of designation against the benefit of exclusion. The results of our analysis contained in this report are summarized below.

*Economic Exclusions*

As described above, the economic benefits of excluding particular areas are small, totaling about $512,000. For each particular area, estimated economic impacts range from $13,600 to $63,500. We consider all 16 particular areas meeting the definition of critical habitat to have a high conservation value and a high benefit of designation. When we listed eulachon as a threatened species we cited, among other reasons, the present or threatened destruction, modification, or curtailment of its habitat. Identified threats to eulachon habitat include climate-induced change to freshwater habitats; dams and water diversions (particularly in the Columbia and Klamath Rivers); and degraded water quality. Designating these areas as critical habitat enhances our ability to address some of these threats through section 7 consultations and through public outreach and education. We concluded that the economic benefits of excluding each particular area do not outweigh the conservation benefits of designating each particular area as critical habitat, given the following considerations: (1) The economic impact of designating all areas is small (not more than $63,500 for any particular area); (2) eulachon are likely to become endangered in the foreseeable future; (3) threats to freshwater habitat were a primary concern leading to our decision to list the species as threatened; (4) there are a limited number of spawning areas available throughout the coast-wide range of eulachon; (5) the conservation value of each area is high; and (6) designation enhances the ability of a section 7 consultation to protect the habitat through the identification of areas of particular concern and through the added protection of the adverse modification provision.

**HCP Exclusions**

The conservation benefits of designating lands covered by an HCP are the same as the benefits of designating other lands, which are public notice and the protection that arises from the ESA section 7 requirement that Federal agencies ensure their actions do not adversely modify that habitat. Where an HCP covers the species in question, or a species with similar distribution and habitat needs, these benefits might be reduced somewhat because the landowner is already aware of the importance of the habitat, and because the HCP might already protect the habitat beyond the section 7 requirements.

In the case of eulachon there are two HCPs that overlap with the proposed critical habitat in the Klamath and Mad Rivers. We estimate that annually, 0.3 forest management actions in the

Klamath River, and 0.2 water supply actions in the Mad River, will require ESA section 7 consultations as a result of this critical habitat designation. We rated these areas as having a high conservation value. The primary benefit of designation is thus the protection afforded these high conservation areas in a section 7 consultation.

Regarding the benefits of excluding these areas, we have considered two primary impacts of designating critical habitat on lands covered by an HCP. The first is the additional cost incurred in an ESA section 7 consultation, either an administrative cost or the cost of having to change the action to avoid adverse modification of the habitat. In this case the administrative costs are small for each specific area, and even smaller for the lands covered by the HCPs, which represent only a portion of two specific areas. The second potential impact of designation is the effect on our relationship with the landowner. In past designations, some landowners have indicated that they welcome designation, while others have opposed designation and expressed the view that designation will harm their relationship with us and affect implementation of the HCP. In the latter case, the benefit of exclusion may therefore be a conservation benefit to the species. In the present designation, we contacted both HCP holders. Neither requested that their lands be excluded from critical habitat or otherwise indicated that a designation of eulachon critical habitat on their land would affect our relationship or their implementation of the HCP. Given that fact, we determined that our working relationship with the HCP holders would not be significantly impacted by this critical habitat designation, thus the benefit of exclusion based on effects to a relationship do not outweigh the benefits of designation.

*Indian Lands Exclusions*

The eulachon critical habitat Section 4(b)(2) report (NMFS, 2011a) details our consideration of excluding Indian lands in this critical habitat designation. The discussion here summarizes that consideration.

The designation of critical habitat for eulachon on Indian lands would have an impact on federal policies promoting Tribal sovereignty and self-governance. It would also have an impact on the relationship between NMFS and each of the Tribes because of their perception that designation is an intrusion on Tribal sovereignty and self-governance. The benefit of excluding Indian lands would be to avoid these impacts.

Balanced against these benefits of exclusion, a benefit of designating the Indian lands would be to achieve the added protection from ESA section 7's critical habitat provisions for these specific areas, all of which have been determined to have a high conservation value. The benefit of designating a particular area depends on the likelihood of section 7 consultation occurring in the area and the degree to which consultation would yield conservation benefits for the species. This protection would apply to all federal activities, which we expect would include dam operations, water supply, forest management, instream construction, mining, agriculture, water quality, transportation projects, and habitat restoration. As described above, ESA section 7 consultations for Federal actions on Indian lands would still need to consider whether the action jeopardized the continued existence of the species, and Federal actions on non-Indian lands may still need to consider designated critical habitat elsewhere in the watershed, thus some of the benefits of a section 7 consultation could still apply even if the Indian lands were excluded.

Another benefit of designation would be to educate the public about the importance of these Indian lands to eulachon conservation. Because these are not public or private lands, and because the Tribes themselves are keenly aware of the importance of their lands to eulachon conservation, we consider the education benefit of designating these Indian lands to be low.

*Quinault Indian Nation Lands.* Although the lands of the Quinault Indian Nation encompass most of the area occupied by eulachon in the Quinault River, activities that occur on non-Indian lands would still require ESA section 7 consultation to consider adverse modification of critical habitat. The Quinault Tribe has completed a Forest Management Plan (FMP), on which the USFWS prepared a programmatic biological opinion. The FMP takes into account significant restrictions on in-water construction activities imposed by the State of Washington (USFWS, 2003; Washington State Law, Chapter 77.55). Project modifications included in the biological opinion for the FMP include requirements that in-water or near-stream activities may only be conducted during specific timeframes outlined in the FMP, construction of new roads is to be minimized ''to the maximum extent practicable,'' and construction of fill roads is allowable only when absolutely necessary. These project modifications would likely benefit eulachon habitat as well by limiting runoff which can adversely affect water quality, sediment quality, and substrate composition.

Exclusion of the portion of the Quinault River that runs through Tribal lands would have the benefit of promoting federal policies regarding Tribal sovereignty and self-governance (*e.g.,* Executive Order 13175). It would also have the benefit of promoting a positive relationship between NMFS and the Tribe (in accordance with Secretarial Order 3206), with a very small reduction in the benefits of designation (primarily the loss of section 7 consultation to consider adverse modification of critical habitat on 4.8 km (3 mi) of stream habitat). The current FMP provides some protection for eulachon habitat and will provide a structure for future coordination and communication between the Quinault Tribe, USFWS, and NMFS. For these reasons, we conclude that the benefits of exclusion outweigh the benefits of designation.

*Lower Elwha Tribal Lands.* Indian lands of the Lower Elwha Tribe overlap with approximately 2.3 km (1.4 mi), or 29 percent, of the areas occupied by eulachon in the Elwha River. As explained above, federal agencies would still need to consult on the effects of their actions on areas designated as critical habitat elsewhere in the basin. Exclusion of the portion of the lower Elwha River that runs through Tribal lands would have the benefit of promoting federal policies regarding Tribal sovereignty and self-governance (*e.g.,* Executive Order 13175). It would also have the benefit of promoting a positive relationship between NMFS and the Tribe (in accordance with Secretarial Order 3206), with a very small reduction in the benefits of designation (*i.e.,* primarily, the loss of section 7 consultation to consider adverse modification of critical habitat). For these reasons, we conclude that the benefits of exclusion outweigh the benefits of designation.

*Resighini Rancheria Lands.* Indian lands of the Resighini Rancheria overlap with approximately 0.5 km (0.3 mi), or 3 percent, of the areas occupied by eulachon in the Klamath River. Exclusion of these Rancheria lands would have the benefit of promoting federal policies regarding Tribal sovereignty and self-governance. It would also foster a positive relationship between NMFS and the Tribe, with a very small reduction in the benefits of designation (primarily the loss of ESA section 7 consultation to consider adverse modification of critical habitat).

For these reasons, we conclude that the benefits of exclusion outweigh the benefits of designation.

*Yurok Tribal Lands.* The boundaries of the Yurok Indian Reservation encompass the entire 17.5 km (10.9 mi) of the areas occupied by eulachon in the Klamath River. However, land ownership within the reservation boundary includes a mixture of Federal, state, Tribal, and private ownerships. Exclusion from critical habitat designation would only apply to Indian lands. Federal agencies would still need to consult on the effects of their actions on areas designated as critical habitat elsewhere in the basin.

As managers of the Klamath River fisheries and their resources, the Tribe oversees and protects fish and fish habitat through various land and water management practices, plans, and cooperative efforts. Tribal forest practices and land management are guided by a Forest Management Plan (FMP), a primary objective of which is to protect and enhance Tribal trust fisheries. The Tribe has an established water quality control plan on the Reservation (Yurok Tribe, 2004) with standards that have been approved by the Environmental Protection Agency (EPA). In conjunction with Federal, state, and private partners, the Yurok Tribe has initiated a large-scale, coordinated watershed restoration effort in the Lower Klamath sub-basin to protect and improve instream, intertidal, and floodplain habitats that support viable, self-sustaining populations of native fishes. More recently, the Yurok Tribe fisheries program has started monitoring eulachon to determine their current abundance and distribution in the Klamath River.

Exclusion of Yurok Tribal lands in the Klamath River basin from critical habitat designation would have the benefit of promoting federal policies regarding Tribal sovereignty and self-governance. It would also have the benefit of promoting a positive relationship between NMFS and the Tribe. The current forest management and water quality control plans provide some protection for eulachon habitat and will provide a structure for future coordination and communication between the Yurok Tribe and NMFS. For these reasons, we conclude that the benefits of exclusion outweigh the benefits of designation.

*All Indian lands.* Although economic impacts were not considered in our decision to exclude Indian lands from critical habitat designation, designation of these lands would have economic impacts, and exclusion would therefore have economic benefits. It is difficult to quantify those impacts (and corresponding benefits) for Indian lands on the Elwha River and the Klamath River because Tribal lands do not encompass the entire area that is being considered for designation for these two rivers. Some types of actions on non-Indian lands in these watersheds could affect areas that are not excluded from designation. Therefore, an ESA section 7 consultation for non-Indian lands would still need to consider the effects on critical habitat. Administrative costs of designation would still be incurred, along with any costs associated with project modifications. The Quinault Tribe's lands encompass nearly the entire watershed of the specific area identified as critical habitat on the Quinault River, thus exclusion would relieve nearly all of the administrative costs of considering effects of actions on the specific area. We estimated a total annualized incremental administrative cost of approximately $512,000 for designating all 16 specific areas as eulachon critical habitat. The exclusion of Indian Lands from critical habitat designation would decrease the total annualized incremental administrative cost by at least $24,700. With Indian Lands excluded, the total annualized incremental administrative cost of designating eulachon critical habitat would be no greater than $487,300.

**Extinction Risk Due to Exclusions**

Section 4(b)(2) of the ESA limits our discretion to exclude areas from designation if exclusion will result in extinction of the species. The overwhelming majority of production for the southern DPS of eulachon occurs in the Columbia River (and tributaries) and the Fraser River in Canada (Gustafson *et al.,* 2010). While abundance estimates are not available for the three rivers (Quinault, Elwha, and Klamath) that overlap Indian lands, the runs on these rivers are believed to be very small (Gustafson *et al.,* 2010) and likely contribute only a small fraction to the total DPS abundance. Because the overall percentage of critical habitat on Indian lands is small and the likelihood that eulachon production on these lands represents a very small percent of the total annual production for the DPS, we conclude that exclusion will not result in extinction of the southern DPS of eulachon.

**Critical Habitat Designation**

We are designating approximately 539 km (335 mi) of riverine and estuarine habitat in California, Oregon, and Washington within the geographical area occupied by the southern DPS of eulachon. The designated critical habitat areas contain one or more of the physical or biological features essential to the conservation of the species that may require special management considerations or protection. We are excluding from designation all lands of the Lower Elwha Tribe, Quinault Tribe, Yurok Tribe and Reshigini Rancheria, upon a determination that the benefits of exclusion outweigh the benefits of designation (NMFS, 2011a). We conclude that the exclusion of these areas will not result in the extinction of the southern DPS because the overall percentage of critical habitat on Indian lands is so small (approximately 5% of the total are designated), and it is likely that eulachon production on these lands represents a very small percent of the total annual production for the DPS. We have not identified any unoccupied areas that are essential to conservation, and thus we have not designated any unoccupied areas as critical habitat at this time.

**Lateral Extent of Critical Habitat**

We describe the lateral extent of critical habitat as the width of the stream channel defined by the ordinary high water line, as defined by the USACE in 33 CFR 329.11. The ordinary high water line on non-tidal rivers is defined as ''the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas'' (33 CFR 329.11(a)(1)). In areas for which the ordinary high-water line has not been defined pursuant to 33 CFR 329.11, we define the width of the stream channel by its bankfull elevation. Bankfull elevation is the level at which water begins to leave the channel and move into the floodplain (Rosgen, 1996) and is reached at a discharge which generally has a recurrence interval of 1 to 2 years on the annual flood series (Leopold *et al.,* 1992).

As discussed in previous critical habitat designations for Pacific salmon and steelhead (70 FR 52630; September 2, 2005) and North American green sturgeon (74 FR 52300; October 9, 2009), the quality of aquatic and estuarine habitats within stream channels and bays and estuaries is intrinsically related to the adjacent riparian zones and floodplain, to surrounding wetlands and uplands, and to non-fish-bearing streams above occupied stream reaches.

Human activities that occur outside of designated critical habitat can destroy or adversely modify the essential physical and biological features within these areas. In addition, human activities occurring within and adjacent to reaches upstream or downstream of designated stream reaches or estuaries can also destroy or adversely modify the essential physical and biological features of these areas. This designation will help to ensure that federal agencies are aware of these important habitat linkages.

**Effects of Critical Habitat Designation**

Section 7(a)(2) of the ESA requires federal agencies to insure that any action authorized, funded, or carried out by the agency (agency action) does not jeopardize the continued existence of any threatened or endangered species or destroy or adversely modify designated critical habitat. When a species is listed or critical habitat is designated, federal agencies must consult with NMFS on any agency actions to be conducted in an area where the species is present and that may affect the species or its critical habitat. During consultation, we evaluate the agency action to determine whether the action may adversely affect listed species or critical habitat and issue our findings in a biological opinion or concurrence letter. If we conclude in the biological opinion that the agency action would likely result in the destruction or adverse modification of critical habitat, we would also recommend any reasonable and prudent alternatives to the action. Reasonable and prudent alternatives (defined in 50 CFR 402.02) are alternative actions identified during formal consultation that can be implemented in a manner consistent with the intended purpose of the action, that are consistent with the scope of the federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that would avoid the destruction or adverse modification of critical habitat.

Regulations at 50 CFR 402.16 require federal agencies that have retained discretionary involvement or control over an action, or where such discretionary involvement or control is authorized by law, to reinitiate consultation on previously reviewed actions in instances where: (1) Critical habitat is subsequently designated; or (2) new information or changes to the action may result in effects to critical habitat not previously considered in the biological opinion. Consequently, some federal agencies may request re-initiation of a consultation or conference with us on actions for which formal consultation has been completed, if those actions may affect designated critical habitat.

Activities subject to the ESA section 7 consultation process include activities on federal lands and activities on private or state lands requiring a permit from a federal agency (*e.g.,* a Clean Water Act, Section 404 dredge or fill permit from USACE) or some other federal action, including funding (*e.g.,* Federal Highway Administration funding for transportation projects). ESA section 7 consultation is not required for federal actions that do not affect listed species or critical habitat and for actions on non-Federal and private lands that are not federally funded, authorized, or carried out.

**Activities That May Be Affected**

ESA section 4(b)(8) requires in any final regulation to designate critical habitat an evaluation and brief description of those activities (whether public or private) that may adversely modify such habitat or that may be affected by such designation. A wide variety of activities may affect the designated critical habitat and may be subject to the ESA section 7 consultation process when carried out, funded, or authorized by a federal agency. These include water and land management actions of federal agencies (*e.g.,* U.S. Forest Service (USFS), Bureau of Land Management (BLM), USACE, U.S. Bureau of Reclamation (BOR), Natural Resource Conservation Service (NRCS), National Park Service (NPS), Bureau of Indian Affairs (BIA), the Federal Energy Regulatory Commission (FERC), and the Nuclear Regulatory Commission (NRC)) and related or similar federally-regulated projects and activities on federal lands, including hydropower sites licensed by the FERC; nuclear power sites licensed by the NRC; dams built or operated by the USACE or BOR; timber sales and other vegetation management activities conducted by the USFS, BLM and BIA; irrigation diversions authorized by the USFS and BLM; and road building and maintenance activities authorized by the USFS, BLM, NPS, and BIA. Other actions of concern include dredging and filling, mining, diking, and bank stabilization activities authorized or conducted by the USACE, habitat modifications authorized by the Federal Emergency Management Agency, and approval of water quality standards and pesticide labeling and use restrictions administered by the EPA.

Private entities may also be affected by this critical habitat designation if a federal permit is required, if federal funding is received, or the entity is involved in or receives benefits from a federal project. For example, private entities may have special use permits to convey water or build access roads across federal land; they may require federal permits to construct irrigation withdrawal facilities, or build or repair docks; they may obtain water from federally funded and operated irrigation projects; or they may apply pesticides that are only available with federal agency approval. These activities will need to be evaluated with respect to their potential to destroy or adversely modify critical habitat for eulachon. Changes to some activities, such as the operations of dams and dredging activities, may be necessary to minimize or avoid destruction or adverse modification of designated critical habitat. Transportation and utilities sectors may need to modify the placement of culverts, bridges, and utility conveyances (*e.g.,* water, sewer, and power lines) to avoid barriers to fish migration. Developments (*e.g.,* marinas, residential, or industrial facilities) occurring in or near streams, estuaries, or marine waters designated as critical habitat that require federal authorization or funding may need to be altered or built in a manner to ensure that critical habitat is not destroyed or adversely modified as a result of the construction or subsequent operation of the facility. Questions regarding whether specific activities will constitute destruction or adverse modification of critical habitat should be directed to NMFS (see **ADDRESSES** and **FOR FURTHER INFORMATION CONTACT**).

**Information Quality Act and Peer Review**

The data and analyses supporting this action have undergone a pre-dissemination review and have been determined to be in compliance with applicable information quality guidelines implementing the Information Quality Act (IQA) (Section 515 of Pub. L. 106–554). In December 2004, the Office of Management and Budget (OMB) issued a Final Information Quality Bulletin for Peer Review pursuant to the IQA. The Bulletin was published in the **Federal Register** on January 14, 2005 (70 FR 2664). The Bulletin established minimum peer review standards, a transparent process for public disclosure of peer review planning, and opportunities for public participation with regard to certain types of information disseminated by the Federal Government. The peer review requirements of the OMB Bulletin apply to influential or highly influential scientific information disseminated on

or after June 16, 2005. Two documents supporting this designation of critical habitat for the southern DPS of eulachon are considered influential scientific information and subject to peer review. These documents are the Eulachon Biological Report (NMFS, 2011b) and Eulachon Economic Analysis (NMFS, 2011c). We distributed drafts of the Biological Report and Economic Analysis for independent peer review and have addressed comments received in developing the final drafts of the two reports. Both documents are available on our Web site at *http://www.nwr.noaa.gov/,* or upon request (see **ADDRESSES**).

**Classification**

*Regulatory Flexibility Act (5 U.S.C. 601 et seq.)*

Under the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.,* as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency publishes a notice of rulemaking it must prepare and make available for public comment a regulatory flexibility analysis describing the effects of the rule on small entities (*i.e.,* small businesses, small organizations, and small government jurisdictions). We have prepared a final regulatory flexibility analysis (FRFA), which is part of the Economic Analysis (NMFS, 2011c). The FRFA incorporates the Initial Regulatory Flexibility Analysis (IRFA), which was part of the draft economic analysis that accompanied the proposed rule to designate critical habitat. The FRFA also incorporates comments received on the IRFA and on the economic impacts of the rule generally. The results of the IRFA are summarized below.

A statement of the need for and objectives of this final rule is provided earlier in the preamble and is not repeated here. This final rule will not impose any recordkeeping or reporting requirements.

At the present time, little information exists regarding the cost structure and operational procedures and strategies in the sectors that may be directly affected by the critical habitat designation. In addition, given the short consultation history for eulachon, there is significant uncertainty regarding the activities that may trigger an ESA section 7 consultation or how those activities may be modified as a result of consultation. In order to estimate the number and activity type of future ESA section 7 consultations for eulachon, we relied on the past consultation history for other anadromous fish species in watersheds being designated as critical habitat. While this provides a reasonable estimate of future activities that may require section 7 consultation, differences in life history between eulachon and other listed anadromous fish species will likely result in differences in the number and type of activities that trigger consultation for eulachon. With these limitations in mind, we considered which of the potential economic impacts we analyzed might affect small entities. These estimates should not be considered exact estimates of the impacts of potential critical habitat to individual businesses.

The impacts to small businesses were assessed for the following eight broad categories of activities: Dams and water supply, agriculture and grazing, transportation, forest management, mining, in-water construction and restoration, water quality management/monitoring (and other activities resulting in non-point pollution), and other activities. Small entities were defined by the Small Business Administration size standards for each activity type. The majority (approximately 97 percent) of entities affected within each specific area would be considered a small entity. A total of approximately 607 small businesses involved in the activities listed above would most likely be affected by the critical habitat designation. Total annualized impacts to small entities are conservatively assumed to be $510,000, or approximately 99.6 percent of total incremental impacts anticipated as a result of this rule.

We estimated the annualized costs associated with section 7 consultations incurred per small business under two different scenarios. These scenarios are intended to provide a measure of the range of potential impacts to small entities given the level of uncertainty referred to above. Under the first scenario the analysis estimated the number of small entities located within areas affected by this critical habitat designation (approximately 607), and assumes that incremental impacts are distributed evenly across all entities in each affected industry. Under this scenario, a small entity may bear costs up to $3,372, representing between < 0.01 and 0.10 percent of average revenues (depending on the industry). Under the second scenario, the analysis assumes the costs of each anticipated future consultation are borne by a distinct small business most likely to be involved in a section 7 consultation (approximately 39 entities). Under this scenario, each small entity may bear costs of between $1,900 and $158,200, representing between 0.01 and 4.57 percent of average annual revenues, depending on the industry.

In accordance with the requirements of the RFA (as amended by SBREFA of 1996) this analysis considered various alternatives to the critical habitat designation for the southern DPS. The alternative of not designating critical habitat for the southern DPS of eulachon was considered and rejected because such an approach does not meet the legal requirements of the ESA and would not provide for the conservation of the southern DPS of eulachon. A second alternative of designating all potential critical habitat areas (*i.e.,* no areas excluded) also was considered and rejected because for some areas the benefits of exclusion from designation outweighed the benefits of inclusion (NMFS, 2011a).

As an alternative to designating all potential critical habitat areas, NMFS considered the alternative of designating critical habitat within a subset of these areas (preferred alternative). Under section 4(b)(2) of the ESA, NMFS must consider the economic impact, impacts on national security, and any other relevant impact of specifying any particular area as critical habitat. The Secretary has the discretion to exclude an area from designation as critical habitat if the benefits of exclusion (*i.e.,* the impacts that would be avoided if an area were excluded from the designation) outweigh the benefits of designation (*i.e.,* the conservation benefits to the southern DPS of eulachon if an area were designated), as long as exclusion of the area will not result in extinction of the species. We prepared an analysis describing our exercise of discretion, which is contained in our Final Section 4(b)(2) Report (NMFS, 2011a). Under this preferred alternative we have excluded Indian lands in California and Washington from designation as critical habitat. This preferred alternative reduces the number of small businesses potentially affected from 607 to approximately 591, and the total potential annualized economic impact to small businesses would be reduced from $510,000 to approximately $485,300.

*Executive Order 12866*

This rule has been determined to be not significant under E.O. 12866.

*Executive Order 13211*

On May 18, 2001, the President issued an executive order on regulations that significantly affect energy supply, distribution, and use. E.O. 13211 requires agencies to prepare Statements of Energy Effects when undertaking any

action that promulgates or is expected to lead to the promulgation of a final rule or regulation that (1) is a significant regulatory action under E.O. 12866 and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy.

We have considered the potential impacts of this action on the supply, distribution, or use of energy and find the designation of critical habitat will not have impacts that exceed the thresholds identified above (NMFS, 2011a).

*Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)*

In accordance with the Unfunded Mandates Reform Act, NMFS makes the following findings:

(a) This final rule will not produce a federal mandate. In general, a federal mandate is a provision in legislation, statute or regulation that would impose an enforceable duty upon state, local, Tribal governments, or the private sector and includes both ''federal intergovernmental mandates'' and ''federal private sector mandates.'' These terms are defined in 2 U.S.C. 658(5)–(7). ''Federal intergovernmental mandate'' includes a regulation that ''would impose an enforceable duty upon State, local, or Tribal governments'' with two exceptions. It excludes ''a condition of federal assistance.'' It also excludes ''a duty arising from participation in a voluntary federal program,'' unless the regulation ''relates to a then-existing federal program under which $500,000,000 or more is provided annually to state, local, and Tribal governments under entitlement authority,'' if the provision would ''increase the stringency of conditions of assistance'' or ''place caps upon, or otherwise decrease, the Federal Government's responsibility to provide funding'' and the state, local, or Tribal governments ''lack authority'' to adjust accordingly. (At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement.)

''Federal private sector mandate'' includes a regulation that ''would impose an enforceable duty upon the private sector, except (i) a condition of federal assistance; or (ii) a duty arising from participation in a voluntary federal program.'' The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the ESA, the only regulatory effect is that federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-federal entities which receive federal funding, assistance, permits or otherwise require approval or authorization from a federal agency for an action may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the federal agency. Furthermore, to the extent that non-federal entities are indirectly impacted because they receive federal assistance or participate in a voluntary federal aid program, the Unfunded Mandates Reform Act would not apply; nor would critical habitat shift the costs of the large entitlement programs listed above to state governments.

(b) Due to the existing protection afforded to the critical habitat from existing critical habitat designations for salmon and steelhead (70 FR 52630; September 2, 2005), Southern DPS of green sturgeon (74 FR 52300; October 9, 2009), and/or bull trout (70 FR 56212; September 26, 2005), we do not anticipate that this final rule will significantly or uniquely affect small governments. As such, a Small Government Agency Plan is not required.

*Takings*

Under Executive Order 12630, federal agencies must consider the effects of their actions on constitutionally protected private property rights and avoid unnecessary takings of property. A taking of property includes actions that result in physical invasion or occupancy of private property, and regulations imposed on private property that substantially affect its value or use. In accordance with E.O. 12630, this final rule does not have significant takings implications. A takings implication assessment is not required. The designation of critical habitat affects only federal agency actions. We do not expect the critical habitat designation to impose additional burdens on land use or affect property values. Additionally, the critical habitat designation does not preclude the development of Habitat Conservation Plans and issuance of incidental take permits for non-federal actions. Owners of areas included within the critical habitat designation will continue to have the opportunity to use their property in ways consistent with the survival of the southern DPS of eulachon.

*Coastal Zone Management Act*

Section 307(c)(1) of the Federal Coastal Zone Management Act of 1972 (16 U.S.C. 1456) requires that all federal activities that affect the land or water use or natural resource of the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. We have determined that this designation of critical habitat is consistent to the maximum extent practicable with the enforceable policies of approved Coastal Zone Management Programs of California, Oregon, and Washington.

*Federalism*

In accordance with Executive Order 13132, we determined that this final rule does not have significant federalism effects and that a federalism assessment is not required. In keeping with Department of Commerce policies, we will continue to coordinate with appropriate state resource agencies in California, Oregon, and Washington regarding this critical habitat designation. The designation may have some benefit to state and local resource agencies in that the areas and habitat features essential to the conservation of the southern DPS of eulachon are specifically identified. It may also assist local governments in long-range planning (rather than waiting for case-by-case ESA section 7 consultations to occur).

*Civil Justice Reform*

The Department of Commerce has determined that this final rule does not unduly burden the judicial system and meets the requirements of sections 3(a) and 3(b)(2) of Executive Order 12988. We are designating critical habitat in accordance with the provisions of the ESA. This final rule uses standard property descriptions and identifies the essential features within the designated areas to assist the public in understanding the habitat needs of the southern DPS of eulachon.

*Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)*

This final rule does not contain new or revised information collection requirements for which Office of Management and Budget (OMB) approval is required under the Paperwork Reduction Act. This rule will not impose recordkeeping or reporting requirements on state or local governments, individuals, businesses, or organizations. Notwithstanding any other provision of the law, no person is

required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

*National Environmental Policy Act of 1969 (NEPA)*

We have determined that an environmental analysis as provided for under NEPA is not required for critical habitat designations made pursuant to the ESA. See *Douglas County* v. *Babbitt,* 48 F.3d 1495 (9th Cir. 1995), cert. denied, 116 S.Ct. 698 (1996).

*Government-to-Government Relationship With Tribes*

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, outlines the responsibilities of the Federal Government in matters affecting Tribal interests. If NMFS issues a regulation with Tribal implications (defined as having a substantial direct effect on one or more Indian Tribes, on the relationship between the Federal Government and Indian Tribes, or on the distribution of power and responsibilities between the Federal Government and Indian Tribes) we must consult with those governments or the Federal Government must provide funds necessary to pay direct compliance costs incurred by Tribal governments.

Pursuant to Executive Order 13175 and Secretarial Order 3206, we consulted with the affected Indian Tribes 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. All of the Tribes we consulted expressed concern about the intrusion into Tribal sovereignty that critical habitat designation represents. The Secretarial Order defines Indian lands as ''any lands title to which is either: (1) Held in trust by the United States for the benefit of any Indian Tribe or (2) held by an Indian Tribe or individual subject to restrictions by the United States against alienation.'' Our conversations with the Tribes indicate that they view the designation of Indian lands as an unwanted intrusion into Tribal self-governance, compromising the government-to-government relationship that is essential to achieving our mutual goal of conserving eulachon and other anadromous species.

For the general reasons described in the Other Relevant Impacts—Impacts to Tribal Sovereignty and Self-Governance section above, the ESA section 4(b)(2) analysis has led us to exclude all Indian lands from designation as critical habitat for the southern DPS of eulachon.

**References Cited**

A complete list of all references cited in this rulemaking can be found on our Web site at *http://www.nwr.noaa.gov/* and is available upon request from the NMFS office in Portland, Oregon (see **ADDRESSES.**)

**List of Subjects in 50 CFR Part 226**

Endangered and threatened species.

Dated: October 12, 2011.

**Samuel D. Rauch III,**

*Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.*

For the reasons set out in the preamble, part 226, title 50 of the Code of Federal Regulations is amended to read as follows:

## PART 226—DESIGNATED CRITICAL HABITAT

■ 1. The authority citation of part 226 continues to read as follows:

**Authority:** 16 U.S.C. 1533.

■ 2. Add § 226.222, to read as follows:

**§ 226.222 Critical habitat for the southern Distinct Population Segment of eulachon (Thaleichthys pacificus).**

Critical habitat is designated for the southern Distinct Population Segment of eulachon (southern DPS) as described in this section. The textual descriptions of critical habitat in this section are the definitive source for determining the critical habitat boundaries. The overview maps are provided for general guidance only and not as a definitive source for determining critical habitat boundaries. In freshwater areas, critical habitat includes the stream channel and a lateral extent as defined by the ordinary high-water line (33 CFR 329.11). In areas where the ordinary high-water line has not been defined, the lateral extent will be defined by the bankfull elevation. Bankfull elevation is the level at which water begins to leave the channel and move into the floodplain and is reached at a discharge which generally has a recurrence interval of 1 to 2 years on the annual flood series. In estuarine areas, critical habitat includes tidally influenced areas as defined by the elevation of mean higher high water.

(a) *Critical habitat boundaries.* Critical habitat is designated to include the following areas in California, Oregon, and Washington:

(1) Mad River, California. From the mouth of the Mad River (40°57′37″ N./124°7′36″ W.) upstream to the confluence with the North Fork Mad River (40°52′32″ N./123°59′30″ W.).

(2) Redwood Creek, California. From the mouth of Redwood Creek (41°17′35″ N./124°5′30″ W.) upstream to the confluence with Tom McDonald Creek (41°12′25″ N./124°0′39″ W.).

(3) Klamath River, California. From the mouth of the Klamath River (41°32′52″ N./124°4′58″ W.) upstream to the confluence with Omogar Creek (41°29′13″ N./123°57′39″ W.)

(4) Umpqua River, Oregon. From the mouth of the Umpqua River (43°40′7″ N./124°13′6″ W.) upstream to the confluence with Mill Creek (43°39′20″ N./123°52′35″ W.).

(5) Tenmile Creek, Oregon. From the mouth of Tenmile Creek (44°13′34″ N./124°6′45″ W.) upstream to the Highway 101 bridge crossing (44°13′27″ N./124°6′35″ W.).

(6) Sandy River, Oregon. From the confluence with the Columbia River upstream to the confluence with Gordon Creek (45°29′45″ N./122°16′41″ W.).

(7) Columbia River, Oregon and Washington. From the mouth of the Columbia River (46°14′48″ N./124°4′33″ W.) upstream to Bonneville Dam (45°38′40″ N./121°56′28″ W.).

(8) Grays River, Washington. From the confluence with the Columbia River upstream to Covered Bridge Road (46°21′18″ N./123°34′52″ W.).

(9) Skamokawa Creek, Washington. From the confluence with the Columbia River upstream to Peterson Road Bridge (46°18′52″ N./123°27′10″ W.).

(10) Elochoman River, Washington. From the confluence with the Columbia River upstream to Monroe Road bridge crossing (46°13′33″ N./123°21′34″ W.).

(11) Cowlitz River, Washington. From the confluence with the Columbia River upstream to the Cowlitz Salmon Hatchery barrier dam (46°30′45″ N./122°38′0″ W.).

(12) Toutle River, Washington. From the confluence with the Cowlitz River upstream to Tower Road Bridge (46°20′4″ N./122°50′26″ W.).

(13) Kalama River, Washington. From the confluence with the Columbia River upstream to the confluence with Indian Creek (46°2′22″ N./122°46′7″ W.).

(14) Lewis River, Washington. Lewis River mainstem, from the confluence with the Columbia River upstream to Merwin Dam (45°57′24″ N./122°33′22″ W.); East Fork of the Lewis River, from the confluence with the mainstem of the Lewis River upstream to the confluence with Mason Creek (45°50′13″ N./122°38′37″ W.).

(15) Quinault River, Washington. From the mouth of the Quinault River (47°20′58″ N./124°18′2″ W.) upstream to 47°19′58″ N./124°15′1″ W.

(16) Elwha River, Washington. From the mouth of the Elwha River (48°8′51″ N./123°34′1″ W.) upstream to Elwha Dam (48°5′42″ N./123°33′22″ W.).

(b) Physical or biological features essential for conservation. The physical or biological features essential for conservation of the southern DPS of eulachon are:

(1) Freshwater spawning and incubation sites with water flow, quality and temperature conditions and substrate supporting spawning and incubation.

(2) Freshwater and estuarine migration corridors free of obstruction and with water flow, quality and temperature conditions supporting larval and adult mobility, and with abundant prey items supporting larval feeding after the yolk sac is depleted.

(3) Nearshore and offshore marine foraging habitat with water quality and available prey, supporting juveniles and adult survival.

(c) Indian lands. Critical habitat does not include any Indian lands of the following Federally-recognized Tribes in the States of California, Oregon, and Washington:

(1) Lower Elwha Tribe, Washington;

(2) Quinault Tribe, Washington;

(3) Yurok Tribe, California; and

(4) Resighini Rancheria, California.

(d) Maps of critical habitat for the southern DPS of eulachon follow:

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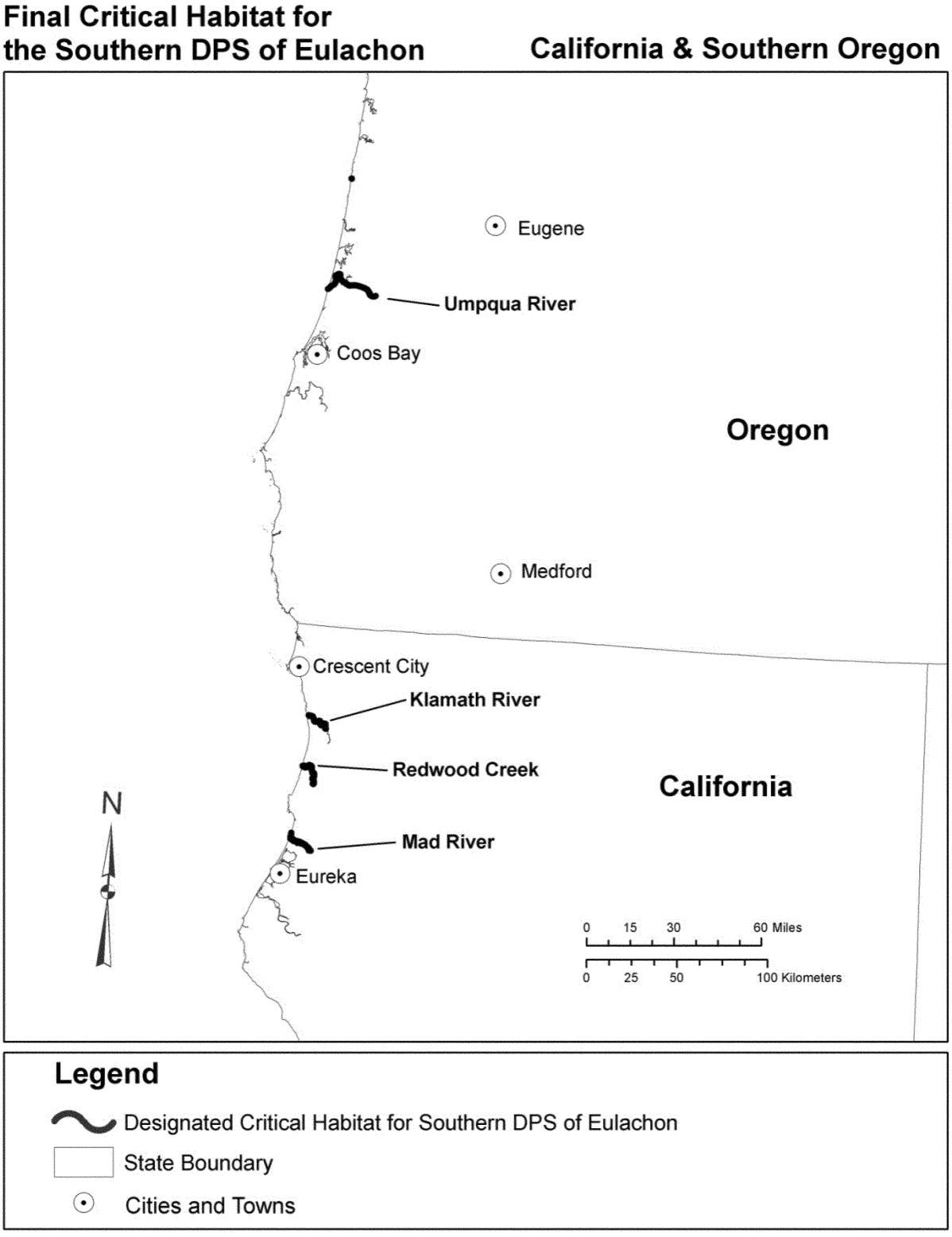
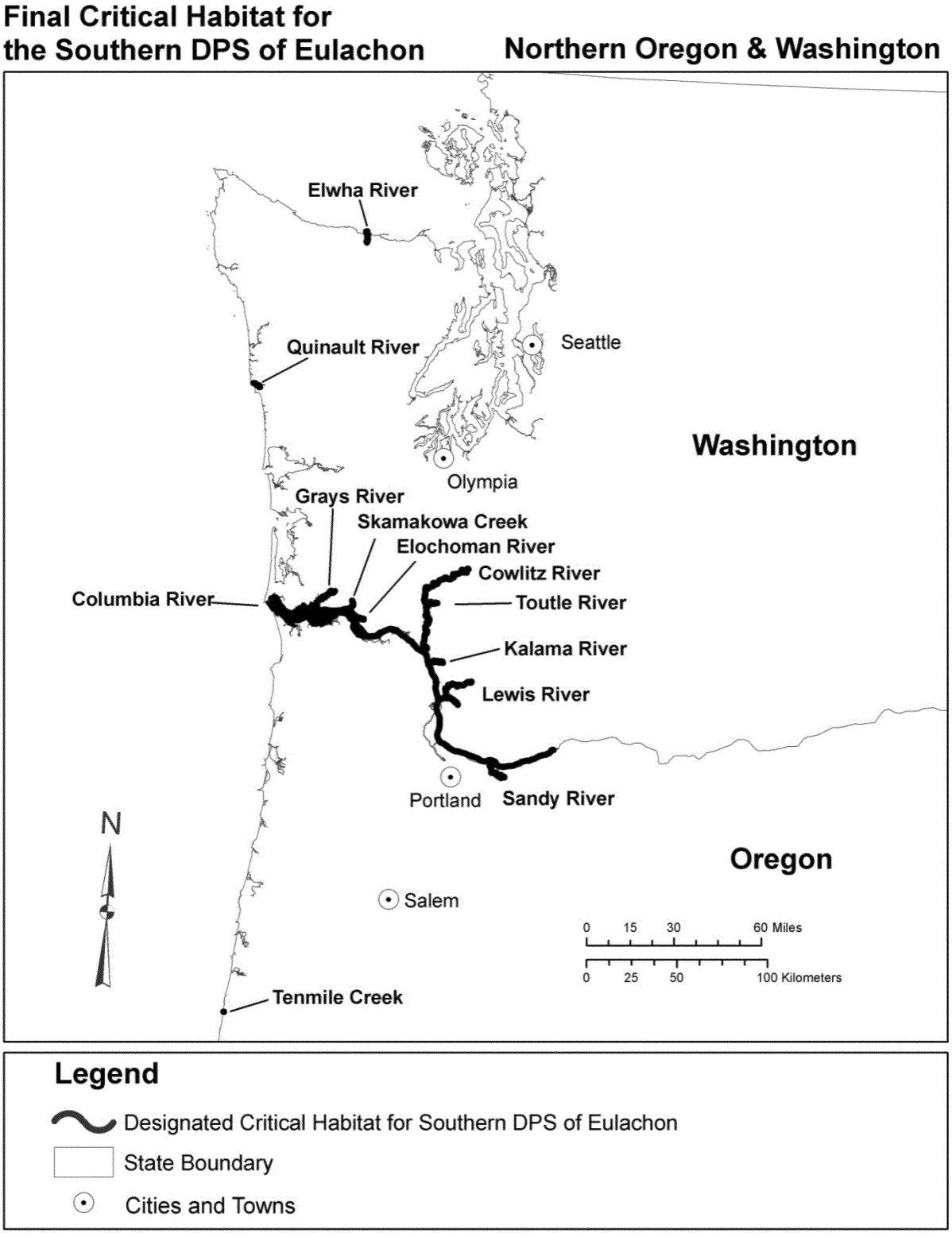

Final Critical Habitat for the Southern DPS of Eulachon
California & Southern Oregon
Eugene
Umpqua River
Coos Bay
Oregon
Medford
Crescent City
Klamath River
Redwood Creek
California
Mad River
Eureka
N
0 15 30 60 Miles
0 25 50 100 Kilometers
Legend
Designated Critical Habitat for Southern DPS of Eulachon
State Boundary
Cities and Towns

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