

DEPARTMENT OF COMMERCE**National Oceanic and Atmospheric Administration****50 CFR Part 226**

[Docket No. 101220626-0626-01]

RIN 0648-XA083

Endangered and Threatened Species: Designation of Critical Habitat for Threatened Lower Columbia River Coho Salmon and Puget Sound Steelhead

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

ACTION: Advance Notice of Proposed Rulemaking; request for information.

SUMMARY: We, the National Marine Fisheries Service (NMFS), will prepare critical habitat designation proposals for lower Columbia River (LCR) coho salmon (*Oncorhynchus kisutch*) and Puget Sound steelhead (*O. mykiss*) currently listed as threatened species under the Endangered Species Act (ESA). The areas under consideration include watersheds in the lower Columbia River basin in southwest Washington and northwest Oregon, as well as watersheds in Puget Sound and the Strait of Juan de Fuca in Washington. This advance notice of proposed rulemaking (ANPR) identifies issues for consideration and evaluation, and solicits comments regarding them as well as information about the areas and species under consideration.

DATES: Comments and information regarding the designation process and areas being considered for designation as critical habitat may be sent to us (*See ADDRESSES*), no later than 5 p.m. Pacific Time on March 11, 2011.

We have already scheduled public meetings to discuss and seek input on the approach to designating critical habitat for these species. The meeting times and locations are as follows:

26 January 2011, from 1:30–3:30 p.m. at the Doubletree Hotel, 1000 NE Multnomah Street, Portland, OR 97232; and

1 February 2011, from 10 a.m.–12:30 p.m. at the NOAA Campus, 7600 Sand Point Way NE, Building 9, Seattle, WA 98115. Please note—all attendees of the Seattle meeting will need to show photo identification in order to be permitted onto the NOAA campus.

Details regarding the meeting format and related information will be posted by January 25, 2011, on our Web site at

<http://www.nwr.noaa.gov/1salmon/salmesa/crithab/CHsite.htm>.

ADDRESSES: Comments may be sent to Chief, Protected Resources Division, NMFS, 525 NE Oregon Street—Suite 500, Portland, OR 97232. Comments may also be sent via facsimile (fax) to 503 230–5441 or submitted on the Internet via the Federal Rulemaking portal at <http://www.regulations.gov>. Follow the instructions for submitting comments.

Instructions: Comments will be posted for public viewing after the comment period has closed. All comments received are a part of the public record and will generally be posted to <http://www.regulations.gov> without change. NMFS may elect not to post comments that contain obscene or threatening content. All Personal Identifying Information (for example, name, address, *etc.*) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information.

NMFS will accept anonymous comments (enter N/A in the required fields, if you wish to remain anonymous). You may submit attachments to electronic comments in Microsoft Word, Excel, WordPerfect, or Adobe PDF file formats only.

FOR FURTHER INFORMATION CONTACT: Steve Stone, NMFS, Northwest Region, Portland, OR 503–231–2317; or Dwayne Meadows, NMFS, Office of Protected Resources, Silver Spring, MD 301–713–1401.

SUPPLEMENTARY INFORMATION:**Rulemaking Background**

We are responsible for determining whether species, subspecies, or distinct population segments (DPSs) are threatened or endangered and which areas of their habitat constitute critical habitat for them under the ESA (16 U.S.C. 1531 *et seq.*). To be considered for listing under the ESA, a group of organisms must constitute a “species,” which is defined in section 3 to include “any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.” The agency has determined that a group of Pacific salmon populations (including lower Columbia coho salmon) occupying a specific geographic area qualifies as a DPSs if it is substantially reproductively isolated and represents an important component in the evolutionary legacy of the biological species (56 FR 58612, November 20, 1991). A group of Pacific

steelhead populations qualifies as a DPS if it is markedly separate and significant to its taxon (61 FR 4722, February 7, 1996; 71 FR 834, January 5, 2006). In previous rulemaking we determined that LCR coho (70 FR 37160, June 28, 2005) and Puget Sound steelhead (72 FR 26722, May 11, 2007) are each distinct population segments that warrant protection as threatened species under the ESA. We also determined that critical habitat was not determinable at the time of those final listing decisions and announced that we would propose critical habitat in separate rulemaking. Since the time of listing, the recovery planning process has progressed for these two species, and additional new information is now available to better inform the designation process. In view of these developments, we consider it advisable to provide the public with an ANPR so that they are aware of the opportunity to provide us with comments and information that may be useful in making proposed critical habitat designations. Additional opportunities for public involvement include a comment period on any proposed designations and the opportunity for public hearings (*see* “Process and Schedule” below).

Critical Habitat

The ESA defines critical habitat under section 3(5)(A) 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 [of Commerce] that such areas are essential for the conservation of the species.”

Section 4(b)(2) of the ESA requires us to designate critical habitat for threatened and endangered species “on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impact, of specifying any particular area as critical habitat.” This section grants the Secretary of Commerce (Secretary) discretion to exclude any area from critical habitat if he determines “the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat.” The Secretary’s discretion is limited, as he may not exclude areas that “will result in the extinction of the species.”

Once critical habitat is designated, section 7 of the ESA requires Federal agencies to ensure they do not fund, authorize, or carry out any actions that will destroy or adversely modify that habitat. This requirement is in addition to the section 7 requirement that Federal agencies ensure their actions do not jeopardize the continued existence of listed species.

Issues for Consideration and Evaluation

We are currently gathering information prior to proposing critical habitat for LCR coho and Puget Sound steelhead. As noted above, sections 3 and 4(b) of the ESA suggest a number of questions the agency should consider when designating critical habitat:

- What areas were occupied by the species at the time of listing?
- What physical and biological features are essential to the species' conservation?
- Are those essential features ones that may require special management considerations or protection?
- Are there any areas outside those currently occupied that are "essential for conservation?"
- What are the benefits to the species of critical habitat designation?
- What economic, national security and other relevant impacts would result from a critical habitat designation?
- What is the appropriate geographic scale for weighing the benefits of exclusion and benefits of designation?
- Will the failure to designate any particular area as critical habitat result in the extinction of the species?

Answering these questions involves a variety of biological, economic, and policy considerations. In 2005 we completed final critical habitat designations for 19 DPSs of Pacific salmon and steelhead in California, Oregon, Washington, and Idaho (70 FR 52488, September 2, 2005; 70 FR 52630, September 2, 2005). Key elements of the 2005 rulemaking included precise mapping (using latitude/longitude coordinates) of designated habitats, a predominantly watershed-based assessment of the benefits and economic costs, and consideration of the impacts of designation on national security, Tribal relations, and efforts to sustain and promote habitat conservation plans under the ESA. Detailed maps and documentation supporting those designations are available at <http://www.nwr.noaa.gov/Salmon-Habitat/Critical-Habitat/> and <http://swr.nmfs.noaa.gov/salmon.htm>. These elements, updated as necessary to reflect best available information, will inform this current effort to develop

critical habitat proposals for LCR coho and Puget Sound steelhead.

Pacific Salmon and Steelhead Biology and Habitat Use

Pacific salmon and steelhead are anadromous fish, meaning adults migrate from the ocean to spawn in freshwater lakes and streams where their offspring hatch and rear prior to migrating back to the ocean to forage until maturity. The migration and spawning times vary considerably between and within species and populations (Groot and Margolis, 1991). At spawning, adults pair to lay and fertilize thousands of eggs in freshwater gravel nests or "redds" excavated by females. Depending on lake/stream temperatures, eggs incubate for several weeks to months before hatching as "alevins" (a larval life stage dependent on food stored in a yolk sac). Following yolk sac absorption, alevins emerge from the gravel as young juveniles called "fry" and begin actively feeding. Depending on the species and location, juveniles may spend from a few hours to several years in freshwater areas before migrating to the ocean. The physiological and behavioral changes required for the transition to salt water result in a distinct "smolt" stage in most species. On their journey, juveniles must migrate downstream through every riverine and estuarine corridor between their natal lake or stream and the ocean. For example, smolts from Idaho will travel as far as 900 miles (1,450 km) from their inland spawning grounds. En route to the ocean the juveniles may spend anywhere from a few days to several weeks in the estuary, depending on the species. The highly productive estuarine environment is an important feeding and acclimation area for juveniles preparing to enter marine waters.

Juveniles and subadults typically spend from one to five years foraging over thousands of miles in the North Pacific Ocean before returning to spawn. Some species, such as coho salmon, have precocious life history types (primarily male fish called "jacks") that mature and spawn after only several months in the ocean. Spawning migrations known as "runs" occur throughout the year, varying by species and location. Most adult fish return or "home" with great fidelity to spawn in their natal stream, although some do stray to non-natal streams. Salmon species die after spawning, while steelhead may return to the ocean and make repeat spawning migrations.

This complex life cycle gives rise to complex habitat needs, particularly during the freshwater phase (*see review*

by Spence *et al.*, 1996). Spawning gravels must be of a certain size and free of sediment to allow successful incubation of the eggs. Eggs also require cool, clean, and well-oxygenated waters for proper development. Juveniles need abundant food sources, including insects, crustaceans, and other small fish. They need places to hide from predators (mostly birds and bigger fish), such as under logs, root wads and boulders in the stream, and beneath overhanging vegetation. They also need places to seek refuge from periodic high flows (side channels and off channel areas) and from warm summer water temperatures (coldwater springs and deep pools). Returning adults generally do not feed in fresh water but instead rely on limited energy stores to migrate, mature, and spawn. Like juveniles, they also require cool water and places to rest and hide from predators. During all life stages salmon and steelhead require cool water that is free of contaminants. They also require migratory corridors with adequate passage conditions (timing, water quality, and water quantity) to allow access to the various habitats required to complete their life cycle.

The homing fidelity of salmon and steelhead has created a meta-population structure with discrete populations distributed among watersheds (McElhany *et al.*, 2000). Low levels of straying from natal streams result in regular genetic exchange among populations, creating genetic similarities among populations in adjacent watersheds. Maintenance of the meta-population structure requires a distribution of populations among watersheds where environmental risks (*e.g.*, from landslides or floods) are likely to vary. It also requires migratory connections among the watersheds to allow for periodic genetic exchange and alternate spawning sites in the case that natal streams are inaccessible due to natural events such as a drought or landslide.

LCR Coho Salmon Life History and Conservation Status

The LCR coho DPS includes all naturally spawned populations of coho in the Columbia River and its tributaries in Washington and Oregon, from the mouth of the Columbia River upstream to and including the Big White Salmon and Hood Rivers, and including the lower Willamette River up to Willamette Falls, Oregon, as well as coho from twenty-five artificial propagation programs located in numerous watersheds throughout the range of the DPS (70 FR 37160; June 28, 2005).

Coho populations in this DPS display one of two major life history types based on when and where adults migrate from the Pacific Ocean to spawn in fresh water. Early returning coho (Type S) typically forage in marine waters south of the Columbia River and return beginning in mid-August, while late returning coho (Type N) generally forage to the north and return to the Columbia River from late September through December (Oregon Department of Fish and Wildlife (ODFW), 2010). It is thought that early returning coho migrate to headwater areas and late returning fish migrate to the lower reaches of larger rivers or into smaller streams and creeks along the Columbia River. Although there is some level of reproductive isolation and ecological specialization between early and late types, there is some uncertainty regarding the importance of these differences. Some tributaries historically supported spawning by both run types.

Mature coho of both types typically enter fresh water to spawn from late summer to late autumn. Spawning typically occurs between November and January. Migration and spawning timing of specific local populations may be mediated by factors such as latitude, migration distance, flows, water temperature, maturity, or migration obstacles. Coho generally occupy intermediate positions in tributaries, typically further upstream than chum salmon or fall-run Chinook salmon, but often downstream of steelhead or spring-run Chinook salmon (Beamesderfer *et al.*, 2010). Typical coho spawning habitat includes pea to orange-size spawning gravel in small, relatively low-gradient tributaries (ODFW, 2010). Egg incubation can take from 45 to 140 days, depending on water temperature, with longer incubation in colder water. Fry may thus emerge from early spring to early summer. Juveniles prefer complex instream structure (primarily large and small woody debris) and shaded streams with tree-lined banks for rearing; they often overwinter in off-channel alcoves and beaver ponds (where available) (ODFW, 2010). Freshwater rearing lasts until the following spring when the juveniles undergo physiological changes (smoltification) and migrate to salt water. Juvenile coho are present in the Columbia River estuary from March to August (Washington Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan, 2010). Coho grow relatively quickly in the ocean, reaching up to six kilograms after about 16 months of ocean rearing. Most coho are sexually mature at age three, except for

a small percentage of males (jacks) who return to natal waters after only a few months of ocean residency. All coho die after spawning.

The LCR coho DPS is comprised of 24 populations distributed among three ecological zones or “strata”—the Coast, Cascade, and Gorge strata (Myers *et al.*, 2006). McElhany *et al.* (2007) assessed the viability of LCR coho populations and determined that only one—the Clackamas River—is approaching viability. They also observed that, with the exception of the Clackamas and Sandy populations, it is likely that most of the wild LCR coho populations were effectively extirpated in the 1990s and that no viable populations appear to exist in either the Coast or Gorge stratum. Although recently there is evidence of some natural production in this DPS, the majority of populations remain dominated by hatchery origin spawners, and there is little data to indicate they would naturally persist in the long term (NMFS, 2003). Approximately 40 percent of historical habitat is currently inaccessible, which restricts the number of areas that might support natural production, and further increases the DPS’s vulnerability to environmental variability and catastrophic events (NMFS, 2003). The extreme loss of naturally spawning populations, the low abundance of extant populations, diminished diversity, and fragmentation and isolation of the remaining naturally produced fish confer considerable risks to LCR coho.

Major habitat factors limiting recovery in fresh water include floodplain connectivity and function, channel structure and complexity, riparian areas and large woody debris recruitment, stream substrate, stream flow, and water quality (Pacific Coast Salmon Restoration Funds, 2007). In addition to impacts of the Federal Columbia River Hydropower System (especially Bonneville Dam on the mainstem Columbia River), numerous other populations are affected by upstream and tributary dams in the White Salmon, Hood, Lewis, Cowlitz, Sandy, and Clackamas basins although many of those effects are being addressed as a result of recent Federal Energy Regulatory Commission re-licensing and associated ESA consultations. For example, the removal of Marmot and Little Sandy dams in the Sandy River basin has improved passage for the coho population into the upper watershed, and the removal of Condit Dam by 2011 is expected to support restoration of the White Salmon River portion of the Washington Upper Gorge coho population.

The ocean survival of juvenile LCR coho can be affected by estuary factors such as changes in food availability and the presence of contaminants. Characteristics of the Columbia River plume are also thought to be significant to LCR coho migrants during transition to the ocean phase of their lifecycle, because yearling migrants appear to use the plume as habitat, in contrast to other species whose sub-yearling juveniles stay closer to shore (Fresh *et al.*, 2005). Predation and growth during the first marine summer appear to be important components determining coho brood-year strength (Beamish *et al.*, 2001).

Recovery planning for coho and other ESA-listed salmon and steelhead in the Lower Columbia River is underway, and a proposed recovery plan is expected to be available for public comment by June 2011. Three “management unit” plans, or plans addressing geographic areas smaller than the entire range of the DPS, have been completed: (1) A Washington Lower Columbia management unit plan overseen and coordinated by the Lower Columbia Fish Recovery Board (LCFRB); (2) a White Salmon management unit plan overseen by us and addressing the White Salmon River basin in Washington; and (3) an Oregon Lower Columbia management unit plan led by the ODFW with participation by the Oregon Governor’s Natural Resources Office, NMFS, and the Oregon Lower Columbia River Stakeholder Team. The LCFRB developed the Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan in 2004 (LCFRB, 2004), and we approved it as an interim regional recovery plan in February 2006; in 2010, LCFRB completed a revised plan (LCFRB, 2010). A plan for the Oregon management unit was completed in August 2010 (ODFW, 2010), and a draft plan has been completed for the White Salmon management unit (NMFS, 2010). These plans are all consistent with work by the Willamette/Lower Columbia Technical Recovery Team, which was formed by us to assess the population structure and develop viability criteria for listed LCR salmon and steelhead (see McElhany *et al.*, 2003; McElhany *et al.*, 2006; Myers *et al.*, 2006; and McElhany *et al.*, 2007). Because the ESA requires recovery plans to address the entire listed entity, we are currently synthesizing these management unit plans into a single plan that will also address interdependencies and issues of regional scope, and ensure that the entire salmon life cycle and all threats are addressed. We will review and incorporate information from all of

these plans in preparing a critical habitat designation for LCR coho.

Critical habitat is currently designated for three DPSs of salmon and steelhead that use lower Columbia watersheds for spawning and rearing: LCR Chinook salmon, LCR steelhead, and Columbia River chum salmon (70 FR 52630; September 2, 2005). In addition, several listed DPSs that spawn outside this range (e.g., Snake River fall Chinook salmon) have rearing and migration areas designated as critical habitat in areas occupied by LCR coho in the Columbia River and estuary. These existing designations have extensive overlap with areas under consideration as critical habitat for LCR coho, and it is likely that the essential physical and biological features will likewise be similar. In the section below titled Physical and Biological Features Essential for Conservation we describe those features.

Puget Sound Steelhead Life History and Conservation Status

Steelhead populations can be divided into two basic reproductive ecotypes, based on the state of sexual maturity at the time of river entry (summer or winter) and duration of spawning migration (Burgner *et al.*, 1992). The Puget Sound DPS includes all naturally spawned anadromous winter-run and summer-run steelhead populations in streams in the river basins of the Strait of Juan de Fuca, Puget Sound, and Hood Canal, Washington, bounded to the west by the Elwha River (inclusive) and to the north by the Nooksack River and Dakota Creek (inclusive), as well as the Green River natural and Hamma Hamma winter-run steelhead hatchery stocks. Non-anadromous “resident” *O. mykiss* occur within the range of Puget Sound steelhead but are not part of the DPS due to marked differences in physical, physiological, ecological, and behavioral characteristics (71 FR 15666; March 29, 2006).

Stream-maturing steelhead, also called summer-run steelhead, enter fresh water at an early stage of maturation, usually from May to October. These summer-run fish migrate to headwater areas and hold for several months before spawning in the spring. Ocean-maturing steelhead, also called winter-run steelhead, enter fresh water from December to April at an advanced stage of maturation and spawn from March through June (Hard *et al.*, 2007). While there is some temporal overlap in spawn timing between these forms, in basins where both winter- and summer-run steelhead are present, summer-run steelhead spawn farther upstream, often above a partially impassable barrier. In

many cases it appears that the summer migration timing evolved to access areas above falls or cascades that present velocity barriers to migration during high winter flow months, but are passable during low summer flows. Winter-run steelhead are predominant in Puget Sound, in part because there are relatively few basins in the Puget Sound DPS with the geomorphological and hydrological characteristics necessary to establish the summer-run life history. Summer-run steelhead stocks within this DPS are all small and occupy limited habitat.

Steelhead eggs incubate from one to four months (depending on water temperature) before hatching, generally between February and June. After emerging from the gravel, fry commonly occupy the margins of streams and side channels, seeking cover to make them less vulnerable to predation (Washington Department of Fish and Wildlife (WDFW), 2008). Juvenile steelhead forage for one to four years before emigrating to sea as smolts. Smoltification and seaward migration occur principally from April to mid-May. The nearshore migration pattern of Puget Sound steelhead is not well understood, but it is generally thought that smolts move quickly offshore, bypassing the extended estuary transition stage which many other salmonids need (Hartt and Dell, 1986).

Steelhead oceanic migration patterns are also poorly understood. Evidence from tagging and genetic studies indicates that Puget Sound steelhead travel to the central North Pacific Ocean (French *et al.*, 1975; Hartt and Dell, 1986; Burgner *et al.*, 1992). Puget Sound steelhead feed in the ocean for one to three years before returning to their natal stream to spawn. They typically spend two years in the ocean, although, notably, Deer Creek summer-run steelhead spend only a single year in the ocean before spawning. In contrast with other species of Pacific salmonids, steelhead are iteroparous, capable of repeat spawning. While winter steelhead spawn shortly after returning to fresh water, adult summer steelhead rely on “holding habitat”—typically cool, deep pools—for up to 10 months prior to spawning (WDFW, 2008). Adults tend to spawn in moderate to high-gradient sections of streams. In contrast to semelparous Pacific salmon, steelhead females do not guard their redds, or nests, but return to the ocean following spawning (Burgner *et al.*, 1992). Spawned-out fish that return to the sea are referred to as “kelts.”

The Puget Sound steelhead DPS includes more than 50 stocks of summer- and winter-run fish (WDFW,

2002). Hatchery steelhead production in Puget Sound is widespread and focused primarily on the propagation of winter-run fish derived from a stock of domesticated, mixed-origin steelhead (the Chambers Creek Hatchery stock) originally native to a small Puget Sound stream that is now extirpated from the wild. Hatchery summer-run steelhead are also produced in Puget Sound; these fish are derived from the Skamania River in the Columbia River Basin.

Habitat utilization by steelhead in the Puget Sound area has been dramatically affected by large dams and other manmade barriers in a number of drainages, including the Nooksack, Skagit, White, Nisqually, Skokomish, and Elwha river basins. In addition to limiting habitat accessibility, dams affect habitat quality through changes in river hydrology, altered temperature profile, reduced downstream gravel recruitment, and the reduced recruitment of large woody debris. In some rivers, such as the Elwha River, increased water temperatures have decreased disease resistance in salmonids (NMFS, 2008). The Elwha River dams are scheduled to be removed beginning in September 2011, allowing steelhead and salmon to access dozens of miles of historical habitat upstream.

Many upper tributaries in the Puget Sound region have been affected by poor forestry practices, while many of the lower reaches of rivers and their tributaries have been altered by agriculture and urban development. Urbanization has caused direct loss of riparian vegetation and soils, significantly altered hydrologic and erosional rates and processes (e.g., by creating impermeable surfaces such as roads, buildings, parking lots, sidewalks *etc.*), and polluted waterways with stormwater and point-source discharges. The loss of wetland and riparian habitat has dramatically changed the hydrology of many streams, with increases in flood frequency and peak flow during storm events and decreases in groundwater driven summer flows (Moscrip and Montgomery, 1997; Booth *et al.*, 2002; May *et al.*, 2003). River braiding and sinuosity have been reduced through the construction of dikes, hardening of banks with riprap, and channelization of the mainstem. Constriction of river flows, particularly during high flow events, increases the likelihood of gravel scour and the dislocation of rearing juveniles. The loss of side-channel habitats has also reduced important areas for spawning, juvenile rearing, and overwintering habitats. Estuarine areas have been dredged and filled, resulting in the loss of important juvenile rearing areas. In addition to being a factor that

contributed to the present decline of Puget Sound steelhead populations, the continued destruction and modification of steelhead habitat is the principal factor limiting the viability of the Puget Sound steelhead DPS into the foreseeable future. Because of their limited distribution in upper tributaries, summer-run steelhead may be at higher risk than winter-run steelhead from habitat degradation in larger, more complex watersheds.

Recovery planning in Puget Sound is proceeding as a collaborative effort between NMFS and numerous Tribal, State, and local governments and interested stakeholders. The Puget Sound Partnership is the entity responsible for working with us to recover the listed Puget Sound Chinook salmon DPS, and the Hood Canal Coordinating Council is the regional board implementing the recovery plan for the Hood Canal summer chum salmon DPS. There is a good deal of overlap between the geographical area occupied by Puget Sound steelhead and these two salmon DPSs, both of which had critical habitat designated on September 2, 2005 (70 FR 52630). A technical recovery team (TRT) was convened in 2008 to identify the historically independent spawning populations of steelhead within, and viability criteria for, the Puget Sound steelhead DPS. The TRT is nearing completion of the population identification work and expects to finalize viability criteria for this DPS by early 2011. Upon completion of the technical work from the TRT, we will develop a recovery plan for Puget Sound steelhead and will work directly with the two regional boards to augment implementation plans to include measures to recover Puget Sound steelhead. In preparing the critical habitat designation for Puget Sound steelhead, we will review and incorporate as appropriate the information from these regional recovery plans as well as the ongoing population work by the TRT and existing salmon critical habitat designations.

Areas Occupied by the Species at the Time of Listing

Due to their anadromous, highly migratory life cycle and the presence of multiple year classes or "cohorts," fish from each DPS were widely distributed at the time of listing and continue to be. For example, the eggs from one cohort were incubating in stream gravel while older cohorts were rearing in an estuary and still others were foraging in the North Pacific Ocean. Thus, the geographic area occupied is a vast and

diverse array of habitats occupied simultaneously by various cohorts and life stages. Our ESA regulations relevant to describing a "geographical area" and "specific areas" state 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). These regulations require that we also identify the State(s), county(ies), or other local governmental units within which all or part of the critical habitat is located. However, the regulations note that such political units typically would not constitute the boundaries of critical habitat. In addition, the regulations state that ephemeral reference points (*e.g.*, trees, sand bars) shall not be used in defining critical habitat. Distribution information for Pacific salmon and steelhead is available in three general formats: (1) Maps and databases identifying specific river segments (*i.e.*, data mapped as line segments); (2) maps and databases identifying entire watersheds (*i.e.*, data mapped as polygons); and (3) textual descriptions. During the information-gathering phase, we are seeking information in all available formats.

We will seek the best scientific information available to make the designations as precise as practicable. The sources that we have reviewed to date indicate that fish distribution data is now generally available in an electronic format for geographic information systems (GIS) at a scale of 1 to 24,000 or greater resolution. At this scale we believe it is possible to discern most occupied stream reaches that may contain physical or biological features essential to the species' conservation. These GIS data allow us to accurately delineate the endpoints of designated stream reaches using latitude/longitude coordinates. These data are available from the fish and wildlife agencies of Oregon and Washington and are based on both empirical data (*i.e.*, fish observations) and the professional judgment of fishery biologists. Federal, State, and Tribal fisheries scientists have reviewed the resultant datasets and modified them from time to time as new fish distribution information becomes available. As in previous designations, we consider these electronic, GIS-based datasets to be the best available information to identify areas occupied by the species at the time of listing as well as determining what is currently occupied. We seek input as to the suitability of this information to identify areas, as well as the applicability of any other information sources suggested by commenters.

Offshore marine areas are occupied by salmon and steelhead, but it can be difficult to link essential physical or biological features (*e.g.*, prey) to any "specific areas" we might delineate. This notice seeks comments on approaches or information relevant to making this determination for LCR coho and Puget Sound steelhead.

Physical and Biological Features Essential for Conservation

Joint NMFS/U.S. Fish and Wildlife Service (FWS) regulations for listing endangered and threatened species and designating critical habitat at section 50 CFR 424.12(b) state that the agency "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" (hereafter also referred to as "Essential Features"). Pursuant to the regulations, such requirements include, but are not limited to the following: (1) Space for individual and population growth, and for normal behavior; (2) Food, water, air, light, minerals, or other nutritional or physiological requirements; (3) Cover or shelter; (4) Sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and generally; or (5) Habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species. These regulations go on to emphasize that the agency shall focus on essential features within the specific areas considered for designation. These features "may include, but are not limited to, the following: spawning sites, feeding sites, seasonal wetland or dryland, water quality or quantity, geological formation, vegetation type, tide, and specific soil types."

There is a robust body of scientific literature addressing salmonid life history and habitat characteristics (*e.g.*, see Everest *et al.*, 1985; Bell, 1986; Groot and Margolis, 1991; Forest Ecosystem Management Assessment Team, 1993; Spence *et al.*, 1996). Also, we now have considerable knowledge gained from nearly two decades of experience with thousands of ESA section 7 consultations on listed salmonids to identify these essential features. In our 2005 designations for 19 DPSs of Pacific salmon and steelhead in California, Oregon, Washington, and Idaho (70 FR 52488, September 2, 2005; 70 FR 52630, September 2, 2005), we noted that essential features for salmon and steelhead include sites essential to support one or more life stages of a population necessary to the

conservation of the DPS. These sites in turn contain generic features that contribute to their conservation value for the DPS. Our long experience analyzing human actions that affect these sites and features supports our conclusion that they continue to be relevant to all populations of listed Pacific salmon and steelhead, including LCR coho and Puget Sound steelhead. The specific types of sites and their generic features include:

- (1) Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development;
- (2) Freshwater rearing sites with: (i) Water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; (ii) Water quality and forage supporting juvenile development; and (iii) Natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
- (3) Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival;
- (4) Estuarine areas free of obstruction and excessive predation with: (i) Water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; (ii) Natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels; and (iii) Juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.
- (5) Nearshore marine areas free of obstruction and excessive predation with: (i) Water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and (ii) Natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.
- (6) Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.

In our experience, the conservation value of a site depends on (1) the importance of the populations associated with a site to the DPS's conservation, and (2) the contribution of that site to the conservation of the

population either through demonstrated or potential productivity of the area. We are seeking comments and information regarding these essential features and their applicability and location relative to LCR coho and Puget Sound steelhead, as well as how the essential features factor into determining the conservation value of a site.

Special Management Considerations or Protection

Coupled with the identification of essential features, during the information-gathering phase we seek input on whether the above essential features may require special management considerations or protection. For example, numerous special management considerations relate to fish passage conditions, including methods and procedures aimed at maintaining sufficient water flows and preventing or minimizing impacts from manmade barriers such as dams and culverts. Similarly, essential natural cover elements, such as shade and large wood, involve a variety of land management considerations. We seek comment on and will document the special management considerations and protection associated with the essential features and expect to relate these to the factors affecting the species and/or critical habitat during rulemaking.

Areas Outside the Geographical Area Occupied by the Species

Section 3(5)(A)(ii) of the ESA defines critical habitat to include specific areas outside the geographical area occupied by the species only if the Secretary determines them to be essential for the conservation of the species. Section 3(3) of the ESA defines conservation as "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 Act are no longer necessary." Our ESA regulations at 424.12(e) state 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." We are seeking information on the adequacy of the occupied habitat to support conservation of LCR coho and Puget Sound steelhead, and whether areas that are unoccupied might be "essential for conservation."

Determining Economic and Other Relevant Impacts

Section 4(b)(2) of the ESA requires the Secretary to consider the "economic impact, national security and any other relevant impact," of designating a particular area as critical habitat. During the information-gathering phase, we seek information regarding the economic, national security, or other relevant impact of designating an area as critical habitat. In keeping with the guidance provided by the Office of Management and Budget (2000, 2003), we seek information that would allow us to monetize these effects to the extent possible, as well as information on qualitative impacts to economic values. We are also seeking information on any other impacts of designating critical habitat.

Determining the Benefit of Designation

Section 4(b)(2) of the ESA grants the Secretary discretion to exclude a particular area if the benefits of exclusion outweigh the benefits of designation. Accordingly, during the information-gathering phase, we are seeking input on the benefit of designating areas as critical habitat. In particular, we seek information on the conservation value of potential critical habitat based on the quality and quantity of the essential feature(s) and on the difficulty of restoring the quality and quantity where those features have been limited or degraded. Federal agencies, States, Tribes and others have already compiled a great deal of information on the historic and present importance of different areas to salmonid conservation. Some general types of information include stream habitat inventories, juvenile and spawning fish surveys, redd and dam counts, angler harvest records, and tagged fish recoveries. In some cases it may not be known whether an area was historically productive. Areas might also be considered to have a high potential if they possess characteristics of other highly productive areas.

As noted earlier in this notice, our determination of an area's conservation value will consider the plans, analyses and recommendations provided by recovery planning teams and boards. We also seek input on the best methods for evaluating the conservation value of potential critical habitat areas. We are interested in information relevant to monetizing the conservation value of an area, or to ranking the conservation benefits in an ordinal manner if full monetization is not possible. Finally, we are seeking input on information relevant to determining if excluding an

area from designation will result in the extinction of the species.

The Appropriate Geographic Scale for Weighing the Benefits of Exclusion and Benefits of Designation

There are hundreds of miles of rivers and streams presently occupied by LCR coho and Puget Sound steelhead. To manage the task of designating particular areas of habitat, streams and rivers need to be grouped in a manner that allows for meaningful analysis. Salmon and steelhead populations tend to divide along watershed boundaries and these have now been mapped across the species' range at a fine scale by various State and Federal agencies (e.g., U.S. Department of Agriculture, 2010). We once again intend to use watersheds as a unit of analysis, although in some cases it is useful to consider habitat units at a finer scale than the watershed, for example where an economic impact or a conservation benefit can be isolated to a stream or river segment. We seek input on this approach or suggestions on other ways to isolate impacts of designation at a different scale than the watershed.

Process and Schedule

As described in current agency regulations (50 CFR 424.16), we anticipate that the proposed rule (or separate proposed rules for each DPS) will contain text detailing the proposal, a summary of the data used and its relationship to the proposal, a summary of factors affecting the species and/or critical habitat, citations of pertinent information sources, a map of the critical habitat, an economic report, and an explanation of a 4(b)(2) process and any areas proposed for exclusion. To the maximum extent practicable, the proposal will also include a brief description and evaluation of those activities (whether public or private) that, in the opinion of the Secretary, if undertaken, may adversely modify the critical habitat, or may be affected by the designation. Products to be made available to the public at the proposed rule stage also includes access to maps depicting the areas proposed for designation and relevant agency biological and economic analyses supporting the rulemaking. We also will provide the requisite comment period and opportunity for public hearings on the proposed rule.

In addition to publication in the **Federal Register**, we will provide the critical habitat proposal to, and invite comments from, affected States and counties (and equivalent jurisdictions) and scientific organizations as well as any Federal agencies, Tribal

governments, local authorities, or private individuals or organizations known to be affected by the proposed rule. We will also consider the requirements of the Office of Management and Budget's (OMB) Final Information Quality Bulletin for Peer Review (Bulletin). The Bulletin was published in the **Federal Register** on January 14, 2005 (70 FR 2664), and went into effect on June 16, 2005. The primary purpose of the Bulletin is to improve the quality and credibility of scientific information disseminated by the Federal government by requiring peer review of "influential scientific information" and "highly influential scientific information" prior to public dissemination. Influential scientific information is defined as "information the agency reasonably can determine will have or does have a clear and substantial impact on important public policies or private sector decisions." The Bulletin provides agencies broad discretion in determining the appropriate process and level of peer review. Stricter standards were established for the peer review of "highly influential scientific assessments," defined as information whose "dissemination could have a potential impact of more than \$500 million in any one year on either the public or private sector or that the dissemination is novel, controversial, or precedent-setting, or has significant interagency interest." The draft biological report and draft economic analysis report supporting any proposed critical habitat designations for LCR coho and Puget Sound steelhead may be considered influential scientific information and subject to peer review. If so, then these reports will be distributed to three independent peer reviewers for review on or before the publication date of a proposed rule. Also, the peer reviewer comments will be compiled into a peer review report to be made available to the public at the time the critical habitat designations are finalized for these DPSs.

In accordance with the Secretarial Order on American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act, we will coordinate with Federally recognized American Indian Tribes on a Government-to-Government basis to determine how to make critical habitat assessments in areas that may impact Tribal trust resources. We will also coordinate with the U.S. Department of Defense (DOD) to determine if there are DOD sites subject to Integrated Natural Resource Management plans that benefit LCR coho or Puget Sound steelhead, or

if there are impacts on national security that might arise from designating any particular area as critical habitat.

We will review all information received during the comment period as well as any new information identified and comments submitted after publishing the proposed designations. If changes are warranted, we will document the bases for the revisions and include this rationale as part of the administrative record for these critical habitat designations.

Per current agency regulations at 50 CFR 424.18 and 424.19, the final designations will be published in a **Federal Register** notice (or in separate notices for each DPS) containing the complete text of the rule, a summary of the comments and recommendations received in response to the proposal (including input from public hearings and peer reviewers), summaries of the data on which the rule is based and the relationship of such data to the final rule, and a description of any conservation measures available under the rule. The final rule will: Summarize factors affecting the species; identify physical and biological features essential to the conservation of the species that may require special management considerations or protection; describe any significant activities that would either affect an area considered for designation as critical habitat or be likely to be affected by the designation; identify the probable economic and other relevant impacts of the designation upon proposed or ongoing activities; identify the areas where the benefits of exclusion outweigh the benefits of including such areas as critical habitat; and describe the boundaries and include a map of critical habitat. To the maximum extent practicable, the final rule will also include a brief description and evaluation of those activities (whether public or private) that might occur in the designated areas and which, in the opinion of the Secretary, may adversely modify critical habitat or be affected by such designation.

New information and public and peer reviewer comments may result in final designations for LCR coho and Puget Sound steelhead that differ from the proposals.

Information Solicited

Past critical habitat designations have generated considerable public interest. Therefore, we believe it is important to engage the public early in the rulemaking process. This ANPR is a key first step, and we encourage all interested parties to submit comments

regarding the issues raised in this notice.

In accordance with agency regulations at 50 CFR 424.13, we will consult as appropriate with affected States, interested persons and organizations, other affected Federal agencies. Data reviewed may include, but are not limited to, scientific or commercial publications, administrative reports, maps or other graphic materials, information received from experts, and comments from interested parties. Specific data needs include:

(1) Information (including fish surveys, dam counts, historical accounts, *etc.*)—as geographically specific as possible—on the past and current numbers and distribution of LCR coho and Puget Sound steelhead;

(2) Information describing the quality and extent of marine, estuarine, and freshwater habitats occupied by any life stage of LCR coho and Puget Sound steelhead;

(3) Within areas occupied by LCR coho and Puget Sound steelhead, we seek information regarding the physical and biological features that are essential to the conservation of the DPSs. Such essential features may include, but are not limited to those identified above under “Physical and Biological Features Essential for Conservation.”

(4) Any special management considerations or protection currently associated with essential physical and biological features within areas occupied by LCR coho and Puget Sound steelhead, such as a recorded easement or deed restriction, a State statute or comprehensive land use program; a Federal regulatory limitation or a legally-binding Federal land use plan; or a county ordinance or other binding local enactment;

(5) Whether there are any specific areas within the range of LCR coho and Puget Sound steelhead that should not be considered for critical habitat designation because they lack essential physical or biological features or may not require special management consideration or protections;

(6) Whether there are any specific areas outside the area occupied by LCR coho and Puget Sound steelhead that are essential for their conservation, and why;

(7) Whether there are any specific areas that should be considered for exclusion from critical habitat designation because the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat. Past examples include areas covered by an ESA Habitat Conservation Plan authorized by NMFS and areas where designation could result in impacts to national security or our comanager relationship with Indian Tribes;

(8) Any current or planned activities in the range of LCR coho and Puget Sound steelhead and their possible impacts on areas that may qualify as critical habitat;

(9) Any economic or other relevant impacts that may result from designating critical habitat, regardless of whether those impacts are attributable co-extensively to other causes, in particular those impacts affecting small entities;

(10) Potential peer reviewers for proposed critical habitat designations, including persons with biological and economic expertise relevant to the designations.

We seek the above information as soon as possible but by no later than March 11, 2011.

As described in a joint NMFS/FWS policy on ESA information standards published on July 1, 1994 (59 FR 34271), we will rely on the best and most comprehensive technical information available; gather and impartially evaluate information that disputes official positions; document our evaluation of information; use, retain, and reference primary and original sources of information; and conduct management-level review of documents to verify and assure the quality of the science used to make the critical habitat designations. We will review all comments and information resulting from this ANPR prior to making any proposed designations and will include such documents in the agency’s public record. The public may review information submitted by contacting us directly (*see ADDRESSES and FOR FURTHER INFORMATION CONTACT*) or via the Internet at <http://www.nwr.noaa.gov>. We will continue to meet with comanagers and other stakeholders to review this information as well as the overall designation process prior to any proposed critical habitat designation.

References

The complete citations for the references used in this document can be obtained by contacting us directly or via the Internet (*see ADDRESSES and FOR FURTHER INFORMATION CONTACT*).

Dated: January 4, 2011.

Eric C. Schwaab,

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