

Revision of the Critical Habitat Designation for Southern Resident Killer Whales

Final ESA Section 4(b)(2) Report
(to accompany the Final Rule)

July 2021

NATIONAL MARINE FISHERIES SERVICE
West Coast Region

Executive Summary

This report contains the National Marine Fisheries Service (NMFS) West Coast Region's recommendations for the proposed revision of critical habitat pursuant to section 4 of the Endangered Species Act (ESA), for the Southern Resident killer whale Distinct Population Segment, which was listed under the ESA on November 18, 2005. This report documents our compliance with section 4(b)(2) of the ESA regarding the impacts of revising critical habitat for Southern Resident killer whales. The report also describes our process, methods, and conclusions for each step leading to this revision to Southern Resident killer whale critical habitat.

In developing the final rule to revise Southern Resident killer whale critical habitat, we identified six specific areas along the U.S. West Coast that are within the geographical area occupied by the whales and contain physical and biological features essential to the whales' conservation that may require special management considerations and protection. Our process for identifying these areas is documented in the Final Biological Report (NMFS 2021). We solicited information from the U.S. Department of Defense (DOD) (Navy, Army, and Air Force) regarding any lands or other geographical areas owned or controlled by the DOD, or designated for its use, that are subject to an integrated natural resources management plan (INRMPs) prepared under section 101 of the Sikes Act (16 U.S.C. 670a) and that overlap the critical habitat areas. Based on the information provided by the DOD, we did not identify any areas subject to INRMPs that were precluded from designation under section 4(a)(3)(B)(i) of the ESA.

Per the requirements of ESA section 4(b)(2), we considered the economic impact, impact to national security, and any other relevant impact (in this case, impacts to tribal sovereignty and self-governance) of designating any particular area as critical habitat. To inform our discretion to exclude particular areas from designation, we first evaluated the conservation benefits of designation and weighed the benefits of designation against the benefits of exclusion. We then evaluated whether any potential exclusions will result in extinction of the species before proposing them for exclusion.

We considered the economic impact of designating the six specific areas identified in the Final Economic Report (Industrial Economics [IEc] 2021). The Final Economic Report found that costs attributed to the revision of the Southern Resident killer whale critical habitat designation are largely administrative in nature and that a majority of those costs are borne by federal agencies that would be required to consult on their actions that may affect designated critical habitat under section 7 of the ESA (IEc 2021). The economic impacts to federal agencies and non-federal entities of designating each of the six particular areas are small (the largest annualized impacts are \$10,000 in Areas 1 and 2 combined), as is the economic impact of designating the entire area (\$80,000, annualized). The potential economic impacts borne by non-federal entities of designating all six areas are even smaller (total annualized impacts of \$9,000 over the next ten years), with one to eight non-federal entities expected to be affected. We considered several factors including the ESA's purpose as a means to conserve the ecosystems upon which listed species depend, the contribution of current and threatened destruction or adverse modification of the species' habitat in exacerbating the species' risk of extinction, the

high or very high conservation value of the six areas under consideration for critical habitat designation, and the small economic impact of designating the areas, and found that the economic benefit of excluding any of the areas does not outweigh the conservation benefit of designation. Therefore, none of the areas are excluded based on economic impacts.

We requested that the DOD identify areas and activities that overlap the critical habitat areas under review so that NMFS could consider exclusions from critical habitat based on the impacts to national security. We also considered information regarding potential national security impacts provided by the U.S. Coast Guard (Department of Homeland Security). Based on the information provided by the Navy on one area, the Quinault Range off the coast of Washington and a 10-km buffer around it, we considered this area for exclusion. Part of the Quinault Range overlaps with the Olympic Coast National Marine Sanctuary (OCNMS), where existing regulations limit activities that could adversely impact the marine environment (see 85 FR 72312; November 12, 2020). We weighed the benefits of designation for the conservation of the species against the benefits to national security of excluding the area from critical habitat designation, and we found that the benefits of exclusion outweighed the benefits of designation for the QRS site and a portion of the requested 10-km buffer. However, we reduced the extent of the 10-km buffer being excluded. We are not excluding a portion of the 10 km buffer area around the northeast corner of the QRS, extending along the East side of the QRS, where it overlaps with the OCNMS, as we concluded the benefits of designating critical habitat for the Southern Resident killer whales within this portion of the buffer are not outweighed by national security impacts of including that portion at this time. Specifically, we're not excluding the requested buffer where it overlaps with the OCNMS except for two areas at the northwest and southeast corners of the sanctuary boundary, respectively, where activity outside the sanctuary could impact habitat within the sanctuary for a distance of up to 10 kilometers (km) (i.e. exclusion does not extend beyond 10 km into the OCNMS). See Map, Appendix A Figure 4. We are therefore excluding the Navy's Quinault Range site and a 10-km buffer around it, except for a portion of the 10-km buffer where it overlaps with the OCNMS, from this revised designation of critical habitat for the Southern Resident killer whales. We determined that exclusion of this area would not lead to extinction of the species.

We did not identify any critical habitat areas that overlap with Indian lands, and preliminarily determined that there were no Indian lands subject to consideration for exclusion. However, our preliminary assessment found that a number of tribes have lands that may be in close proximity to the critical habitat areas, have usual and accustomed (U&A) fishing areas that overlap with the critical habitat areas, or may otherwise be affected. During development of the proposed rule, we contacted each of these tribes in 2018 to solicit information regarding potential overlap of the areas with Indian lands and any tribal activities that may be affected in areas other than tribal lands. In accordance with Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, we are continuing to consult and coordinate with potentially affected tribes throughout the rulemaking process, including electronic outreach and written letters to tribal chairs for comment on the proposed rule, setting up consultations as requested with two tribes, and we will continue coordination regarding the implementation of the final rule.

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List of Acronyms

DOD	Department of Defense
DPS	Distinct population segment
ESA	Endangered Species Act
INRMP	Integrated Natural Resource Plan
MMPA	Marine Mammal Protection Act
NAVSEA	Naval Sea System Command
NMFS	National Marine Fisheries Service
NSA	Naval Support Activity
NWTRC	Northwest Training Range Complex
NWTT	Northwest Training and Testing study area
OPAREA	Pacific Northwest Ocean Surface/Subsurface Operating Area
PBF	Physical or biological feature
PCE	Primary constituent element
QRS	Quinault Range Site
USCG	U.S. Coast Guard
U.S. FWS	U.S. Fish and Wildlife Service

I. Background

We, the National Marine Fisheries Service (NMFS), listed the Southern Resident killer whale Distinct Population Segment (DPS) as “endangered” under the Endangered Species Act (ESA) in 2005 (70 FR 69903; November 18, 2005) and designated critical habitat for the population in 2006 (71 FR 69054; November 29, 2006). The critical habitat designated in 2006 consists of three areas: (1) the Summer Core Area in Haro Strait and waters around the San Juan Islands, (2) Puget Sound Area, and (3) the Strait of Juan de Fuca Area, which together comprise approximately 2,560 square miles (6,630 sq km) of marine habitat (Figure 1). The final rule designating that critical habitat identified three habitat features essential to the conservation of the DPS, also known as primary constituent elements¹ (PCEs): (1) water quality to support growth and development; (2) prey species of sufficient quantity, quality, and availability to support individual growth, reproduction, and development, as well as overall population growth; and (3) passage conditions to allow for migration, resting, and foraging.

At the time of the 2006 designation, considerable data were available on the whales’ use of the inland waters of Washington, but very little information on the movements of Southern Resident killer whales off the U.S. West Coast existed. Areas of activity of all pods were virtually unknown during their absences from inland waters. In the 30 years prior to the 2006 designation, there had only been 28 sightings in outside waters (including confirmed and unconfirmed sightings off British Columbia, Washington, Oregon, and California) (Krahn *et al.* 2004). The majority of these sightings were opportunistic, with most occurring within 10 miles (16.1 km) of shore. The offshore range of the animals was also unknown. Since then, an active research effort has been conducted to identify the outer coastal and offshore distribution of Southern Residents.

On January 21, 2014, we received a petition from the Center for Biological Diversity to revise critical habitat, citing recent information on the whales’ habitat use along the U.S. West Coast (Center for Biological Diversity 2014). The Center for Biological Diversity requested that NMFS expand the existing critical habitat designation to include areas of the Pacific Ocean between Cape Flattery, Washington and Point Reyes, California, extending approximately 47 miles (76 km) offshore. This was based mainly on the extent of the whales’ movements from NMFS’ satellite tag data: tagged animals traveled as far south as Point Reyes and as far offshore as 47 miles. However, the petition stated that because NMFS was continuing to analyze data describing the Southern Residents’ use of coastal and offshore waters, the petitioner requested we “refine this proposal, as necessary, to include additional inhabited zones or to focus specifically on areas of concentrated use” (CBD 2014). The petition stated that each of the three PCEs (now referred to as “physical or biological features” or “essential features”) identified in the 2006 critical habitat designation are also essential features in the whales’ Pacific Ocean

¹ In 2006, joint U.S. Fish and Wildlife Service (U.S. FWS) and NMFS implemented changes to definitions used for critical habitat determinations (50 CFR 424.02, 81 FR 7414, February 11, 2016). This rule removed the term “primary constituent elements” (or PCEs) from the regulations, and replaced it with a clarified definition for the statutory term “physical or biological features” (or PBFs). When referring to the 2006 critical habitat designation, we will continue to reference PCEs as they are described in 71 FR 69054, November 29, 2006. However, the revised designation will reference the more current terminology, PBFs, as defined in 50 CFR 424.02.

habitat. In addition, the petitioner requested that we adopt a fourth essential habitat feature for both existing and new critical habitat areas “providing for in-water sound levels that: (1) do not exceed thresholds that inhibit communication or foraging activities, (2) do not result in temporary or permanent hearing loss to whales, and (3) do not result in abandonment of critical habitat areas.”



Figure 1. Southern Resident killer whale critical habitat in inland waters of Washington, designated in 2006. Areas less than 20 ft deep (relative to extreme high water) are not designated as critical habitat.

We published a 90-day finding on April 25, 2014 (79 FR 22933) that the petition contained substantial information indicating the petitioned action may be warranted. In the finding, we stated that we were initiating a review of the currently designated critical habitat to determine whether revision was warranted, and solicited information from the public to ensure a comprehensive review. Based upon a review of public comments and the available information, we issued a 12-month finding on February 24, 2015 (80 FR 9682) describing our intent to proceed with a revision to critical habitat. We published a proposed rule on September 19, 2019 (84 FR 49214) to designate marine waters between the 6.1 m (20 ft) depth contour and the 200-m

(656.2 ft) depth contour from the U.S. international border with Canada south to Point Sur, California, as Southern Resident killer whale critical habitat. We requested public comments through December 18, 2019.

The revision includes six new areas along the coasts of Washington, Oregon, and California, which include features essential to the conservation of Southern Resident killer whales; these areas range from the 6.1-m depth contour to 200-m depth contour in marine waters from the U.S. international border with Canada at the mouth of the Strait of Juan de Fuca south to Point Sur, California (see Figure 2; section III.C and our Final Biological Report (NMFS 2021) provides more information on how we selected these areas). The biological features we identified for the coastal areas are the same as those identified for the existing inland critical habitat areas. As described in and based on the analysis provided in our Final Biological Report, we are not identifying sound as a “physical or biological feature” for either the expanded designation of coastal areas or existing designated inland areas. Subsequent sections of this report will provide information about the process NMFS used to identify those new areas meeting the definition of Southern Resident killer whale critical habitat in coastal waters, and the process used to analyze the impacts of designating those areas in accordance with 4(b)(2) of the ESA. Additional information regarding Southern Resident killer whale natural history and status, determination of essential features, and identification of specific areas can be found in the Final Biological Report (NMFS 2021).



Figure 2. Specific areas of the Southern Resident killer whale critical habitat expansion. Existing critical habitat areas in inland waters of Washington are not shown (see Figure 1). The excluded area is not shown. See Figure 5 for a map of the designated critical habitat areas.

II. Statute and Regulations

We developed our recommendations consistent with statutory requirements and agency regulations, which are summarized below.

A. Findings and purposes of the Act emphasize habitat conservation

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

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

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

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

B. “Critical Habitat” is specifically defined

Section 3(5)(A) of the ESA (16 U.S.C. 1532 (5)) defines critical habitat as follows:

- (5)(A) The term “critical habitat” for a threatened or endangered species means –
 - (i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 1533 of this title, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and
 - (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 1533 of this title, upon a determination by the Secretary that such areas are essential for the conservation of the species.
- (B) Critical habitat may be established for those species now listed as threatened or endangered species for which no critical habitat has heretofore been established as set forth in subparagraph (A) of this paragraph.
- (C) Except in those circumstances determined by the Secretary, critical habitat shall not include the entire geographical area which can be occupied by the threatened or endangered species.

C. “Conservation” is specifically defined

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

- (3) The terms “conserve”, “conserving”, and “conservation” mean to use and the use of all methods and procedures which are necessary to bring any endangered species or

threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary...

D. Certain military lands are precluded from designation

In 2003 Congress amended section 4(a)(3)(B)(i) of the ESA to limit the designation of land controlled by the Department of Defense (DOD) (National Defense Authorization Act, P.L. No. 108-136):

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

Regulations at 50 CFR 424.12(h) provide that in determining whether an applicable benefit is provided by a “compliant or operational” plan, NMFS will consider:

- (1) The extent of the area and features present;
- (2) The type and frequency of use of the area by the species;
- (3) The relevant elements of the integrated natural resource management plan (INRMP) in terms of management objectives, activities covered, and best management practices, and the certainty that the relevant elements will be implemented; and
- (4) The degree to which the relevant elements of the INRMP will protect the habitat from the types of effects that would be addressed through a destruction-or-adverse-modification analysis.

E. Impacts of designation must be considered and areas may be excluded

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

(b)(2) The Secretary shall designate critical habitat, and make revisions thereto, under subsection (a)(3) of this section on the basis of the best scientific data available and after taking into consideration the economic impact, the impact to national security and any other relevant impact, of specifying any particular area as critical habitat. The Secretary may exclude any area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned.

F. Federal agencies must insure their actions are not likely to destroy or adversely modify critical habitat

The regulatory intent of critical habitat is realized through section 7(a)(2) of the Act. This section requires federal agencies to insure any actions they authorize, fund or carry out are not likely to result in the destruction or adverse modification of designated critical habitat (16 U.S.C. 1536(a)(2)). Section 7 also requires federal agencies to insure such actions are not likely to jeopardize the continued existence of the listed species:

(2) Each federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an “agency action”) is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical, unless such agency has been granted an exemption for such action by the Committee pursuant to subsection (h) of this section. In fulfilling the requirements of this paragraph each agency shall use the best scientific and commercial data available.

G. Authority to designate critical habitat is delegated to NMFS

The authority to designate critical habitat, including the authority to consider the impacts of designation, weigh the benefits of exclusion against the benefits of designation, and exclude particular areas, has been delegated to the Assistant Administrator of NMFS (Department Organization Order 10-15, December 12, 2011; NOAA Organizational Handbook, Transmittal #61, February 24, 2015).

H. Joint regulations govern designations

Joint regulations of the U.S. Fish and Wildlife Service (U.S. FWS) and NMFS in 50 CFR Part 424 govern the designation and revision of the critical habitats of listed species. Revisions to the joint regulations were published in February 2016. These regulations apply to all critical habitat designations proposed after March 14, 2016, including this revision to the Southern Resident killer whale critical habitat designation. Relevant regulations are excerpted below.²

50 CFR 424.02 Definitions.

Geographical area occupied by the species. An area that may generally be delineated around species' occurrences, as determined by the Secretary (i.e., range). Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (e.g., migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals).

² The proposed and final rules to revise critical habitat for Southern Resident killer whales follow previous ESA implementing regulations, as the most recent revisions to the implementing regulations, which became effective on September 26, 2019, only apply to classification and critical habitat rules for which a proposed rule was published after September 26, 2019 (see 84 FR 45020; August 27, 2019). The proposed rule for the revision to Southern Resident killer whale critical habitat (84 FR 49214) was published on September 19, 2019.

Physical or biological features. The features that support the life-history needs of the species, including but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic, or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity.

Special management considerations or protection. Methods or procedures useful in protecting the physical or biological features essential to the conservation of listed species.

50 CFR 424.12 Criteria for designating critical habitat.

(b) Where designation of critical habitat is prudent and determinable, the Secretary will identify specific areas within the geographical area occupied by the species at the time of listing and any specific areas outside the geographical area occupied by the species to be considered for designation as critical habitat.

(1) The Secretary will identify, at a scale determined by the Secretary to be appropriate, specific areas within the geographical area occupied by the species for consideration as critical habitat. The Secretary will:

- (i) Identify the geographical area occupied by the species at the time of listing.
- (ii) Identify physical and biological features essential to the conservation of the species at an appropriate level of specificity using the best available scientific data. This analysis will vary between species and may include consideration of the appropriate quality, quantity, and spatial and temporal arrangements of such features in the context of the life history, status, and conservation needs of the species.
- (iii) Determine the specific areas within the geographical area occupied by the species that contain the physical or biological features essential to the conservation of the species.
- (iv) Determine which of these features may require special management considerations or protection.

(2) The Secretary will identify, at a scale determined by the Secretary to be appropriate, specific areas outside the geographical area occupied by the species that are essential for its conservation, considering the life history, status, and conservation needs of the species based on the best available scientific data.

(g) Critical habitat shall not be designated within foreign countries or in other areas outside of United States jurisdiction.

I. Approach to designation

Based on this statutory and regulatory direction and our discretion on whether to exclude areas pursuant to section 4(b)(2), our approach to revising the critical habitat designation for Southern

Resident killer whales included the following steps (summarized here and discussed in detail below):

- Identify specific areas eligible for critical habitat designation
 - Identify areas meeting the definition of critical habitat
 - Identify military areas ineligible for designation
- Identify and consider impacts:
 - Determine the impacts of designation
- Determine whether any area should be excluded under section 4(b)(2) of the ESA:
 - Determine the benefits of designation
 - Balance benefits of designation against benefits of exclusion and recommend exclusions if appropriate
 - Determine whether the recommended exclusions will result in extinction of the species

III. Identify Specific Areas Eligible for Critical Habitat Designation

As noted above, areas meeting the ESA definition of critical habitat include specific areas: (1) within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation of the species, and those features may require special management considerations or protection; and (2) outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation of the species.

As summarized below (and discussed more fully in our Final Biological Report; NMFS 2021), we identified six new specific areas that meet the definition of critical habitat for this DPS. The new areas range from the 6.1-m depth contour to 200-m depth contour in marine waters from the U.S. international border with Canada at the mouth of the Strait of Juan de Fuca, south to Point Sur, California (see Figure 2). The analysis and conclusions regarding how these specific areas meet the definition of critical habitat, and may therefore be eligible for designation, is documented in a separate Final Biological Report (NMFS 2021); below we provide a summary. We are not revising the currently designated Southern Resident killer whale critical habitat areas in inland waters of Washington.

A. Geographical area occupied by the species

Pursuant to section 3(5)(A), our first task was to determine “the geographical area occupied by the species at the time of listing.” Southern Resident killer whale summer inland habitat use was previously described in the 2006 Southern Resident killer whale critical habitat designation (71 FR 69054; November 29, 2006). Few data on Southern Resident distribution and habitat use of coastal and offshore areas in the Pacific Ocean were available at the time of the 2006 designation. While it was known that the whales occupied these waters for a portion of the year, at the time, only 28 sightings of Southern Residents in coastal waters (including confirmed and unconfirmed sightings off British Columbia, Washington, Oregon, and California) were

available to describe their coastal range (Krahn *et al.* 2004, NMFS 2006). In the 2006 designation, these coastal areas were considered to be within the geographical area occupied by the species, but the lack of data precluded the agency from designating specific areas within the coastal range as critical habitat.

Since the 2006 designation, considerable effort has been made to better understand the range and movements of Southern Resident killer whales once they leave inland waters. Data now show that while in the early fall, Southern Residents, particularly J pod, can be found in Puget Sound (Hanson & Emmons 2010; Whale Museum unpubl. data), by late fall all three pods are seen less frequently in inland waters. Land- and vessel-based opportunistic and survey-based visual sightings, satellite tracking, and passive acoustic research have provided an updated estimate of the whales' coastal range that extends from the Monterey Bay area in California, north to Chatham Strait in southeast Alaska (Figure 3). The range of Southern Residents includes coastal and inland waters of British Columbia, Canada, but critical habitat cannot be designated in areas outside of U.S. jurisdiction (50 CFR 424.12(h)). Therefore, although the Southern Residents' range includes coastal and inland waters of Canada, we are not considering these coastal areas for designation.

Some Alaskan waters are considered to be within the geographic area occupied by Southern Resident killer whales, but we are not considering expanding critical habitat to Alaskan waters at this time because there is insufficient information about the whales' distribution, behavior, and habitat use in these areas. For example, there has been only one sighting of Southern Residents in Southeast Alaska, in Chatham Strait in 2007. While we can infer that some of the physical and biological features, such as prey, are present to support the whales, we do not have sufficient data to adequately describe Southern Resident use of habitat features in this area or identify specific areas with those features.

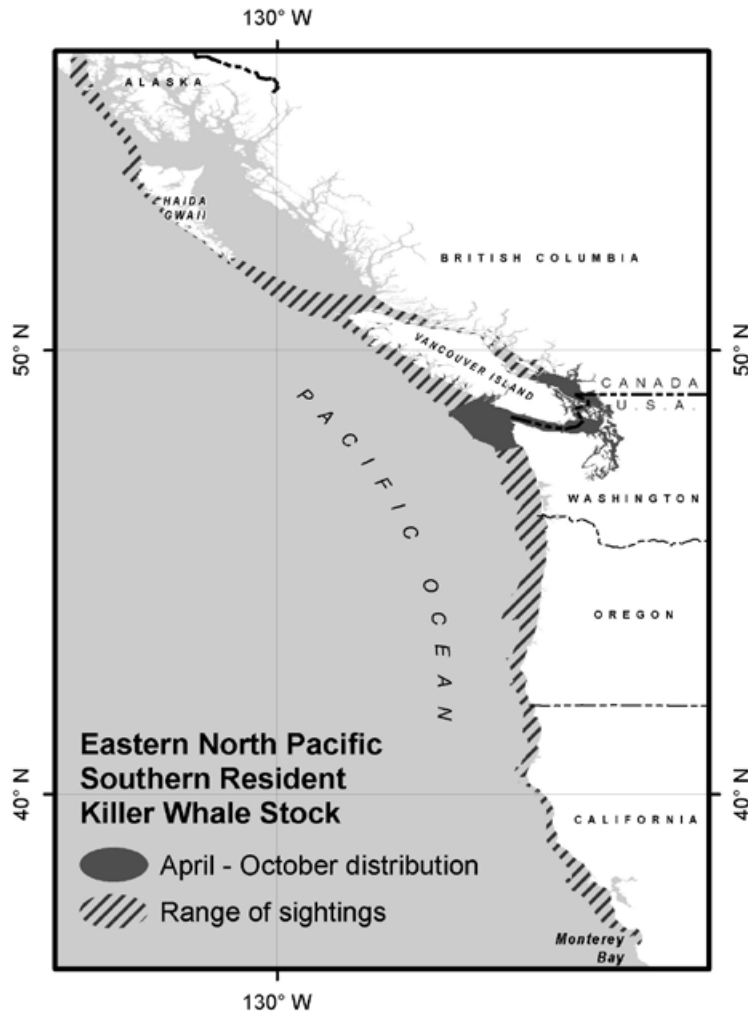


Figure 3. Geographical range of Southern Resident killer whales, as described in the 2019 stock assessment report (Carretta et al. 2020). The range extends from southeast Alaska to the Monterey Bay area in California.

B. Physical or biological features essential to conservation

We determined the physical or biological features essential to the conservation of Southern Resident killer whales based on their biology and life history (NMFS 2021). Based on the best available scientific information, we identified specific biological and physical features essential for the conservation of Southern Resident killer whales to include the following:

- 1) Water quality to support growth and development;
- 2) Prey species of sufficient quantity, quality and availability to support individual growth, reproduction and development, as well as overall population growth; and
- 3) Passage conditions to allow for migration, resting, and foraging.

Full descriptions of the essential features can be found in the Final Biological Report (NMFS 2021). The biological features we identified for the coastal areas are the same as those identified for the currently designated inland critical habitat areas. As described in and based on the analysis provided in our Final Biological Report, we are not identifying sound as a “physical or

biological feature” for either the new designation of coastal areas or currently designated inland areas.

C. “Specific areas” within the occupied geographical area

To be eligible for designation as critical habitat under the ESA’s definition of occupied areas and implementing regulations (50 CFR 424.02), each specific area must contain at least one essential feature that may require special management considerations or protection. The ESA and implementing regulations provide the agency discretion to determine the scale at which specific areas are identified (50 CFR 424.12). We evaluated the best available information from Southern Resident killer whale sightings, satellite tracking, acoustic recorders, and prey sampling, as well as information on the habitat features (e.g., distribution of salmon in Pacific Ocean waters) to understand Southern Resident killer whales’ coastal habitat use patterns and determine where the identified physical and biological features (water quality, prey, passage) exist. Based on this analysis, we identified six coastal areas as including all three of the essential features for Southern Resident killer whales. The six areas encompass most of the whales’ U.S. coastal range, and they vary in size. We selected boundaries between areas to reflect the spatial scale of the whales’ movements and behavioral changes (e.g., where tagged whales were primarily traveling versus observed foraging), as well as to align with some existing fishery management boundaries. *See* Final Biological Report (NMFS 2021).

As noted in section I, the Center for Biological Diversity petitioned us to designate critical habitat between Cape Flattery, Washington and Point Reyes, California, extending 47 miles (76 km) offshore, based on the maximum extent of the whales’ movements from satellite tag data. The petition requested that we refine the areas, as necessary, to include additional occupied areas or to focus specifically on areas of concentrated use. To delineate specific areas, we relied on the satellite tag data but also incorporated other information, and as a result, our specific areas differ in their boundaries from the petitioner’s request.

Beginning at the westernmost extent of the currently designated Strait of Juan de Fuca critical habitat area, the new areas ranges from the 6.1-m depth contour to the 200-m depth contour in marine waters from the U.S. international border with Canada south to Point Sur, California (Figure 2), which is just south of the southernmost sightings of Southern Resident killer whales in the Monterey Bay area. On January 27, 2008, Southern Residents were sighted off Cypress Point, Carmel Bay, just south of Monterey Bay, traveling south (N. Black, Monterey Bay Whale Watch, Orca Network sightings archives). Given uncertainty in the exact extent of the whales’ southward movements, we elected to delineate the southern boundary of the specific area just south of the last sighting by approximately 20 mi (32.2 km) and align the boundary with the existing salmon management area boundary at Point Sur, California (Pacific Fishery Management Council 2016). *See* Final Biological Report (NMFS 2021).

The inshore (eastern) boundaries of the specific areas were delineated as a contiguous line along the coast at 6.1 m (20 ft) in depth relative to the mean high water line, which is based on available data and consistent with the 2006 critical habitat designation in inland waters (although the inshore boundary of the coastal critical habitat is delineated relative to the mean high water line instead of extreme high water). The offshore (western) boundary of the areas is the 200-m (656.2-ft) isobath, which was selected because movement data from satellite-tagged Southern

Resident killer whales indicate that most coastal locations were in water depths of 200 m or less (96.5%) and within 34 km (21.1 mi) from shore (95%) (Hanson *et al.* 2017). Additionally, the limited information available on the distribution of salmon in offshore waters indicates Southern Resident killer whale prey (an essential feature of the habitat) is present in waters of 200 m or less. Areas 1 and 2 share the same latitudinal (northern and southern) boundaries but are separated longitudinally at the 50-m (164.0-ft) isobath, such that Area 1 ranges from 6.1-50 m depth while Area 2 ranges from 50-200 m depth, due to differences in frequency of occurrence, movement patterns, and prey sampling, between nearshore and further offshore areas. Particularly, the 50-m isobath was selected to distinguish the areas because the majority (42 of 52, or 76.4%) of prey samples from observed Southern Resident killer whale predation events in these two areas were collected in water depths of 50 m or less, and just over half of the satellite tag locations in these two areas (54%) were in water depths of 50 m or less (Hanson *et al.* 2017, Hanson *et al.* 2021). *See also* Final Biological Report (NMFS 2021).

To identify the latitudinal boundaries between the specific areas, we initially considered some of the coastal salmon management area boundaries as defined in the Pacific Salmon Fishery Management Plan and used for the management of salmon harvest (Chinook and Coho specifically) (*see* Figure 25 in Appendix B to the Final Biological Report, NMFS 2021). Although the areas of highest Southern Resident killer whale occurrence, as indicated by a duration-of-occurrence model from satellite tag data (Hanson *et al.* 2017), did not precisely match the salmon management areas, they generally align with the available information on salmonid and other fish species that may be prey to Southern Residents. For example, the whales' highest use areas occurred in the North of Falcon fishery management area between Cape Falcon, Oregon and the Canadian border, and relatively high use occurred within the Klamath Management Zone. Similar to inland waters, we assume that Southern Resident killer whales respond to regional and seasonal abundance of salmon, particularly Chinook runs. We then adjusted some of the boundaries to better reflect what we know about the whales' use of the areas (e.g., areas where foraging has been observed and/or prey samples collected, versus areas whales are considered mainly to be traveling through). We selected Cape Meares, Oregon as the southern boundary of Areas 1 and 2 instead of Cape Falcon just to the north, because the Cape Meares boundary encompassed all but one of the observed predation events and prey sample locations off the Washington and Oregon coasts. We selected Cape Mendocino, California as the boundary between Areas 4 and 5 instead of Horse Mountain just to the south because the three predation events observed in California occurred off the Eel River just north of Cape Mendocino, and that boundary better demarcated the southern extent of a higher-use area based on the duration-of-occurrence model of satellite-tagged whale movements (Hanson *et al.* 2017). Further information regarding Southern Resident killer whale distribution is described in the Final Biological Report (NMFS 2021).

The three specific areas of inland waters within the geographic range occupied by the species identified in the 2006 critical habitat designation are carried forward unchanged by this critical habitat revision.

D. Special management considerations or protection

An occupied specific area may be designated as critical habitat if it contains essential features that “may require special management considerations or protection.” Joint NMFS and U.S. FWS

regulations define “special management considerations or protection” to mean “methods or procedures useful in protecting the physical or biological features essential to the conservation of listed species” (50 CFR 424.02). In determining whether an area has essential features that may require special management considerations or protection, the Services do not base their decision on whether management is currently in place or whether that management is adequate.

We identified a number of activities that may affect the essential features using NMFS’ ESA section 7 consultation history since 2006 (when existing critical habitat was designated), and additional scientific and commercial information regarding potential impacts to these features that has become available since the original designation. We grouped these activities into activity types as follows: (1) salmon fisheries and bycatch; (2) salmon hatcheries; (3) offshore aquaculture/mariculture; (4) alternative energy development; (5) oil spills and response; (6) military activities; (7) vessel traffic; (8) dredging and dredge material disposal; (9) oil and gas exploration and production; (10) mineral mining (including sand and gravel mining); (11) geologic surveys (including seismic surveys); and (12) activities occurring adjacent to or upstream of critical habitat that may affect essential features, labeled “upstream activities” (including activities contributing to point-source water pollution, power plant operations, liquefied natural gas terminals, desalinization plants). These activities have the potential to affect one or more of the essential features by altering or reducing the quantity, quality, or the availability of the features essential to the conservation of Southern Resident killer whales, and NMFS concludes that the features, therefore, may require special management consideration or protection. The Final Biological Report (NMFS 2021) and the Final Economic Report (IEC 2021) provide a description of the potential effects of each category of activities on the essential features.

E. Unoccupied areas

The ESA section 3(5)(A)(ii) definition of critical habitat includes unoccupied areas, which are defined as “specific areas outside the geographical area occupied by the species at the time it is listed” if such areas are essential for the conservation of the species. At this time, we have not identified any unoccupied areas that are essential for Southern Residents’ conservation and are not designating any unoccupied areas.

F. Military areas ineligible for designation

As described above, amendments to the ESA preclude the Secretary from designating military lands as critical habitat if those lands are subject to an INRMP under the Sikes Act and the Secretary certifies in writing that the plan provides a benefit to the listed species (section 4(a)(3), National Defense Authorization Act, Public Law. No. 108-136). NMFS contacted the DOD (Army, Navy, and Air Force) in May 2018 to help identify military lands that may overlap with areas under consideration for critical habitat. In response, the Navy identified two military installations adjacent to these areas, both of which have INRMPs in place for land-based installation activities (U.S. Navy 2013, U.S. Navy 2016, U.S. Navy 2018a, U.S. Navy 2018b).

The first installation, Pacific Beach Annex, Naval Station Everett, Washington, is located in the town of Pacific Beach, Grays Harbor County, Washington and is adjacent to critical habitat Area 1. It is approximately 30 miles north of Aberdeen and Hoquiam, Washington. Pacific Beach

Annex is entirely an upland property; the Navy does not own or have easement on the beach or on the submerged lands immediately west of the facility and there are no nearshore assets such as docks or piers extending into the water, and the only nearshore assets are decommissioned hydrophone cables. Southern Resident killer whales are not specifically mentioned in the Pacific Beach Annex INRMP, but upland habitat management activities are identified to improve quality of adjacent waters by conducting regular visual inspections and cleaning of the entire storm drain system, creating swales along the top of the bluff to capture runoff, installation of erosion control fabric, and planting native vegetation where ground disturbance occurs. Best management practices are in place at the installation to prevent and control soil erosion related to construction or other uses of natural resources to avoid and minimize impacts to the nearshore environment (U.S. Navy 2018b). There are no streams on the Pacific Beach property, so no occurrence of salmon (U.S. Navy 2016).

The second installation, Naval Support Activity (NSA) Monterey, California, is located adjacent to critical habitat Area 6 and provides primary support to the Naval Postgraduate School, Navy Research Lab, and the Fleet Numerical Meteorology and Oceanography Center. NSA Monterey includes several separate properties on upland and coastal lands including an area called the Dune/Research Area. Per agreement with the Navy, the Dune/Research Area is managed by the city of Monterey for public recreation but most of the property is committed to a restored dune ecosystem. Conservation objectives for habitat and wildlife resources of the dune ecosystem are identified in the INRMP. There is also an easement that connects the Point Sur facility to the coastal zone and the near shore environment, but the Navy is not responsible for any maintenance of the easement. Southern Resident killer whales are not specifically addressed in the NSA Monterey INRMP, but measures are in place regarding how to handle and report sick, injured, or dead marine mammals. Best management practices are in place at the installation to prevent and control soil erosion related to construction or other uses of natural resources to avoid and minimize impacts to the nearshore environment (U.S. Navy 2018b). The INRMP identifies coho salmon (central California coast evolutionarily significant unit) as possibly present in the Scott Creek drainage in the Naval Industrial Reserve Ordnance Plant (NIROP) Santa Cruz area, and steelhead trout (south-central California coast DPS and central California coast DPS) as possibly present in the Monterey Area Properties, Point Sur Facility, and NIROP Santa Cruz area (U.S. Navy 2013).

The Navy stated that activities at these two installations are not expected to impact the essential features of Southern Resident killer whale critical habitat, and because no installation activities occur in the nearshore environment, they do not anticipate any impacts to the installations' mission as a result of a critical habitat designation (U.S. Navy 2018b). However, the Navy's Quinault Range Site (QRS) includes a 10 mi² (25.9 km²) surf zone on the beach below the Pacific Beach Annex and an expansive sea area beyond the coastline, and activities there may be affected by the critical habitat designation. The Navy requested exclusion of the QRS from the designation under ESA section 4(b)(2) due to national security impacts, as discussed below in section V.B.2.

Based on the INRMPs' maps and descriptions of the installations and use/activities that occur there, these two shore-based military areas covered by INRMPs do not overlap with the revised

critical habitat areas, and thus the critical habitat areas are not “subject to” INRMPs or ineligible for designation because of the INRMPs³.

IV. Identify and Consider Impacts of Designation

Section 4(b)(2) of the ESA requires us to use the best scientific information available in designating critical habitat. It also requires that before we designate any “particular area,” we must consider the economic impact, national security impact, and any other relevant impact.

A. Identify “particular” areas

Section 3(5)(A) of the ESA defines critical habitat as “specific areas,” while section 4(b)(2) of the ESA requires the agency to consider certain factors before designating any “particular area.” We analyzed two types of “particular areas.” Where we considered economic impacts, we used the same six biologically based “specific areas” off the coasts of Washington, Oregon, and California we had identified under ESA section 3(5)(A). This approach allowed us to most effectively consider the conservation value of the different areas when balancing conservation benefit of designation against economic benefits of exclusion. Where we considered impacts on national security and impacts on tribes, we based the “particular areas” on land ownership or control (e.g., land controlled by the DOD within which national security impacts may exist, or Indian lands). This delineation allowed us to compare and balance the benefits associated with land ownership and management.

B. Determine impacts of designation

The primary impact of a critical habitat designation stems from the requirement under section 7(a)(2) of the ESA that federal agencies ensure that 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 associated requirement that federal agencies must also ensure their actions are not likely to jeopardize the species’ (in this case the DPS’s) continued existence. The true impact of this 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 DPS, beyond any modifications they would make because of the DPS’s listing and the jeopardy provision, and the associated increase in consultation costs. 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, consistent with the joint NMFS and U.S. FWS regulations (50 CFR 424.19) and policy (81 FR 7226; February 11, 2016), we assessed the incremental change in federal agency actions as a result of the revision to the Southern Resident killer whale critical habitat designation and the adverse modification prohibition, beyond the

³ While the INRMPs do not specifically address killer whale habitat management, we believe the INRMPs do provide a benefit to killer whales and the physical and biological features identified for this designation by, for example, employing best management practices to control soil erosion and minimize contributions from point- and non-point sources of pollution to avoid water quality impacts to coastal streams and the nearshore marine environment.

changes predicted to occur as a result of listing and the jeopardy provision. We examined what the state of the world would be with and without the designation of coastal critical habitat for Southern Resident killer whales. The “without critical habitat” scenario represents the baseline for the analysis. It includes process requirements and habitat protections already afforded Southern Resident killer whales under their federal listing or under other federal, state, and local regulations. The “with critical habitat” scenario describes the incremental impacts associated specifically with the new designation of coastal critical habitat for Southern Resident killer whales. The primary impacts of critical habitat designation we identified were: (1) the economic costs associated with additional administrative effort of including a coastal critical habitat analysis in section 7 consultations for Southern Resident killer whales, (2) impacts to national security, and (3) the possible harm to our working relationship with Indian tribes and possible overlap with tribal lands or impacts to tribal U&A areas.

We discuss these impacts in more detail in the following sections devoted to each type of impact.

B.1. Economic impacts

The Final Economic Report prepared by Industrial Economics, Incorporated (IEc) sought to determine the impacts on economic activities due to the designation of critical habitat, above and beyond—or incremental to—those “baseline” impacts due to existing required or voluntary conservation efforts being undertaken due to other federal, state, and local regulations or guidelines (IEc 2021). Incremental impacts may include the direct costs associated with additional effort for section 7 consultations (including consultations that otherwise would have been limited to jeopardy issues, reinitiated consultations, or new consultations occurring specifically because of the designation) as well as the direct costs associated with conservation efforts or project modifications that would not have been required under the jeopardy standard. Additionally, incremental impacts may include indirect impacts resulting from reaction to the potential designation of critical habitat and triggering of additional requirements under state or local laws intended to protect sensitive habitat.

To quantify the economic impact of designation, IEc (2021) employed the following steps:

1. Identify the baseline of economic activity and the statutes and regulations that constrain that activity in the absence of the critical habitat designation in the additional areas being designated;
2. Identify the types of activities that are likely to be affected by critical habitat designation;
3. Project the projects and activities identified in Step 2 over space and time based on the best available information on planned projects, permitting schedules, or average annual levels of activity;
4. Estimate the costs of administrative effort and, where applicable, conservation efforts or project modifications recommended for the activity to comply with the ESA’s critical habitat provisions;
5. Apply well-accepted discounting methods to calculate the present value cost in each year of the analysis and sum over time to calculate the total present value and annualized impacts; and
6. Aggregate the costs at the particular area level. (Impacts are reported at the particular area level; particular areas for the analysis are the same as the six specific areas.)

The first step in the analysis was to identify the baseline level of protection already afforded Southern Resident killer whales in the additional areas being designated as critical habitat. The baseline for this analysis is the existing state of regulation prior to the revision of critical habitat, including the listing of the species under the ESA (and protections under ESA sections 7, 9, and 10); ESA protections for listed salmon given that salmon are included as part of the prey essential feature of critical habitat for the whales; protections due to other co-occurring ESA listings and critical habitat designations, such as those for the Southern DPS of North American green sturgeon (74 FR 52300, October 9, 2009) and the leatherback sea turtle (77 FR 4170, January 26, 2012); and other federal, state and local laws and guidelines, such as the Marine Mammal Protection Act, Clean Water Act, and state environmental quality laws (IEc 2021).

In step 2, the NMFS West Coast Region's record of section 7 consultations and NMFS' experience and professional judgment in conducting section 7 consultations were used to identify federal activities that occur within the areas being designated as Southern Resident killer whale critical habitat and that may affect the critical habitat features. Activities occurring adjacent to or upstream of those areas that may affect the water quality and prey availability essential features within the critical habitat areas were also identified. These activities included salmon fisheries and incidental bycatch, salmon hatcheries, offshore aquaculture/mariculture, alternative energy development, oil spills and response, military activities, vessel traffic, dredging and dredge material disposal, oil and gas exploration and production, geologic surveys (including seismic surveys), activities contributing to point-source water pollution, power plant operations, liquefied natural gas terminals, and desalinization plants. The Final Economic Report assumes that future occurrences of these activities within or affecting critical habitat for the whales will result in consultation. The identification of these activities and the associated threats are further discussed in the Final Biological Report (NMFS 2021) and the Final Economic Report (IEc 2021).

In steps 3 and 4, the incremental administrative costs of including analysis of Southern Resident killer whale coastal critical habitat in future section 7 consultations were estimated. The occurrence of the projects and activities identified in step 2 and the estimated number and type of consultations were projected over space and time using the best available information on planned projects, permitting schedules, or average annual level of activities from NMFS' consultation history for 2006-2016, and other information sources (*e.g.*, U.S. Army Corps of Engineers permit and project data, and interviews with federal action agencies). The administrative costs of a given consultation vary depending on the type (*i.e.*, informal, formal, programmatic) and specifics of the project, and it may not be possible to predict the level of effort required for each future consultation. The analysis accordingly employed estimated average incremental administrative costs per consultation, which were based on the expected amount of time spent considering adverse modification as part of future section 7 consultations.

As described in Chapter 2 of the Final Economic Report (IEc 2021), there are no particular projects or activities for which NMFS considers it likely that section 7 consultation on coastal critical habitat for the killer whales would result in different conservation recommendations than section 7 consultation *without* coastal critical habitat. We regularly consult on the types of activities relevant to this analysis to consider the potential for jeopardy to the listed killer whales, their listed prey, and other listed species with overlapping ranges, as well as to consider the

potential for adverse modification to the critical habitat of other listed species, and we make conservation recommendations accordingly. This includes considerations of critical habitat for other listed species which have similar essential features as Southern Resident killer whale critical habitat. For example, the Southern DPS of North American green sturgeon, for which the essential features within nearshore coastal marine critical habitat include, among others, a migratory corridor within marine habitat and water quality with acceptably low levels of contaminants. We anticipate that it is most likely that these baseline conservation recommendations would involve measures that would avoid adverse modification of Southern Resident killer whale critical habitat because they directly or indirectly address impacts to the essential features of the whales' critical habitat (water quality, prey, and passage), so consideration of these features is already incorporated into consultations.

In steps 5 and 6, well-accepted discounting methods were used to calculate the present value cost in each year of the analysis, summed over time to calculate the total present value and annualized impact, and then aggregated at the particular area level. As noted above, for the economic analysis, "particular areas" were defined to be equivalent to the six "specific areas" occupied by Southern Resident killer whales off the coasts of Washington, Oregon, and California, as outlined in section III.C. However, due to the difficulty in determining precise locations of future consultations occurring in Areas 1 and 2 off the coast of Washington, the Final Economic Report presents economic impacts collectively for these two areas. Areas 1 and 2 are separated by a depth contour, not a latitude or fixed distance from shore. We may know that a previous project occurred or future projects are likely to occur off the Washington coast (so Area 1 or 2), but without specific location info (i.e., latitude and longitude, or latitude with distance from shore or depth, or just depth), we cannot place it definitively into Area 1 versus Area 2.

Additionally, administrative costs of consultations on upstream activities (including freshwater or nearshore activities outside of critical habitat) were not assigned to a particular critical habitat area as this would require information relating the particular locations of upstream activities with the downstream effects on particular critical habitat areas. For example, activities contributing to point-source pollution could impact multiple areas depending on the extent of discharge. Accordingly, the incremental economic impacts associated with consultations on upstream activities do not reflect the economic impact of designating any given area, but rather the expanded critical habitat as a whole (*see* the Final Economic Report, IEc 2021).

The Final Economic Report (IEc 2021) estimates the total present value of the quantified incremental impacts to be approximately \$710,000 over the next ten years, assuming a seven percent discount rate (Table 1). Total annualized impacts are estimated to be \$80,000. The evaluation of costs associated with each particular area is complicated by the fact that many activities and consultations span more than one area, and because costs to Areas 1 and 2 could not be estimated separately. However, annualized impacts from projects occurring in only one area (or two in the case of Areas 1 and 2) ranged from \$1,300 for Area 6 to \$10,000 for Areas 1/2 (Table 1). Over 40 percent of estimated impacts occur upstream of critical habitat areas (Table 1). The largest share of estimated present value economic impacts are associated with dredging and in-water construction and "other" activities (Table 2) (*see* IEc 2021 for more details).

Table 1. Summary of economic impacts by area over the next ten years, 2020-2029, and annualized (2020 dollars, 7% discount rate).

Critical Habitat Area	Total Present Value Impacts (2020 dollars)	Annualized Impacts (2020 dollars)
1/2	\$91,000	\$10,000
3	\$87,000	\$9,900
4	\$22,000	\$2,500
5	\$14,000	\$1,600
6	\$11,000	\$1,300
1/2, 3	\$23,000	\$2,700
1/2, 3, 4, 5	\$7,200	\$820
4, 5, 6	\$16,000	\$1,800
All units	\$71,000	\$8,100
Unknown units	\$62,000	\$7,000
Upstream (outside critical habitat)	\$300,000	\$34,000
Total	\$710,000	\$80,000
Notes:		
1. Due to the difficulty in determining precise locations of future consultations occurring in critical habitat areas 1 and 2, the analysis presents economic impacts collectively for these two areas. Additionally, some consultations cover projects or activities that span multiple areas or all areas; thus, this table includes rows for groupings of areas that collectively trigger the consultations associated with the estimated costs.		
2. Estimates are rounded to two significant digits.		

Table 2. Summary of economic impacts by activity type (for 2020-2029, 2020 dollars, 7% discount rate).

Critical Habitat Area(s)	Fisheries	Renewable Energy Development	Military	Dredging and In-water Construction	Hatchery Operations	Seismic Surveying	Other ¹
1/2	\$1,700	\$1,700	\$0	\$79,000	\$0	\$0	\$8,800
3	\$0	\$9,000	\$1,700	\$56,000	\$0	\$3,600	\$16,000
4	\$0	\$0	\$0	\$22,000	\$0	\$0	\$0
5	\$0	\$0	\$0	\$14,000	\$0	\$0	\$0
6	\$0	\$1,700	\$0	\$9,700	\$0	\$0	\$0
1/2, 3	N/A	N/A	N/A	N/A	N/A	N/A	\$23,000
1/2, 3, 4, 5	N/A	N/A	\$7,200	N/A	N/A	N/A	N/A
4, 5, 6	\$13,000	N/A	N/A	N/A	N/A	N/A	\$3,500
All units	\$40,000	N/A	N/A	N/A	N/A	N/A	\$31,000
Unknown units	\$11,000	N/A	N/A	N/A	N/A	N/A	\$51,000
Upstream (outside critical habitat)	\$0	\$0	\$0	\$140,000	\$3,600	\$0	\$160,000
Total	\$65,000	\$12,000	\$9,000	\$320,000	\$3,600	\$3,600	\$300,000
Notes: <ol style="list-style-type: none"> 1. Due to the difficulty in determining precise locations of future consultations occurring in critical habitat areas 1 and 2, this analysis presents economic impacts collectively for these two areas. Additionally, some consultations cover projects or activities that span multiple areas or all areas; thus, this table includes rows for groupings of areas that collectively trigger the consultations associated with the estimated costs. 2. A “N/A” indicates “not applicable” because the activity does not result in consultations at the spatial scale of the groupings of units described in the first column. This is different than a “\$0” entry, which simply indicates that no costs for the activity are associated with the specified unit. 3. The “Other” category includes consultations on activities such as scientific research, resource management plans, transportation projects, and water quality standards. 4. All estimates are rounded to two significant digits. 							

These impacts are largely associated with the administrative costs borne by NMFS and other federal agencies. However, a subset of future consultations, particularly those involving alternative energy development, geologic surveys, and dredging and in-water construction-related projects permitted by the Army Corps of Engineers may involve third parties that may be small entities, including small businesses or governments. The Final Economic Report assumes all third parties involved in these consultations are small entities, and that third parties pay for the development of a Biological Assessment. Based on this, total annualized impacts to small entities are estimated to be \$9,000 over the next ten years (IEc 2021, 7% discount rate).

B.2. Impacts to national security

During preparations for the proposed revision to Southern Resident killer whale critical habitat, we provided the Department of Defense (DOD) (Navy, Army, and Air Force) with information regarding the areas under consideration for Southern Resident killer whale critical habitat, and

requested they identify areas they own or control which may overlap with the areas under consideration. We also asked them to identify any impacts to national security that might arise from the proposed designation of critical habitat.

The Air Force and Navy provided responses to our letter (U.S. Air Force 2018, U.S. Navy 2018a, U.S. Navy 2018b). The Air Force stated that it had not identified any significant concerns with the proposed revision of Southern Resident killer whale critical habitat to include coastal waters along the U.S. West Coast. The Navy provided an initial response that was superseded by a revised response. Additionally, on May 29, 2019, the Navy provided information related to national security impacts during the pre-publication inter-agency review process for the proposal, conducted in accordance with Executive Order 12866.

The Navy's November 2018 response stated that the Navy conducts training and testing activities, collectively referred to as "military readiness activities," within the coastal areas being considered for designation as critical habitat. Specifically, military readiness activities occur in the offshore Pacific Northwest Ocean Surface/Subsurface Operating Area (OPAREA), Warning Area 237 (W-237), and the Olympic A and B Military Operation Areas (MOA), which are all considered at-sea components of the Northwest Training Range Complex (NWTRC), as well as in the Quinault Range Site (QRS), which is a component of the Keyport Range Complex. The Navy refers to all the at-sea areas used for training and testing as the Northwest Training and Testing (NWTT) study area (Figure 4). The Navy believed there would be national security impacts where specific coastal areas 1 and 2 proposed for designation overlap with the QRS, and requested exclusion of this area, including the associated surf zone off the coast of Pacific Beach, Washington, from the critical habitat designation. During the inter-agency review process, the Navy also requested exclusion of a 10-km buffer around the QRS, citing national security impacts.

Training and testing activities in the NWTT include the use of sonar and explosives, among other activities. Under the previous Marine Mammal Protection Act (MMPA) regulations for the Navy's activities issued by NMFS for the years 2015-2020 (80 FR 73555, November 24, 2015; 50 CFR 218 Subpart O) and ESA consultation on the NWTT training activities (NMFS 2015), there was no use of explosives within 50 nautical miles (nm) from shore. With the exception of a small number of explosive mine countermeasure and neutralization testing activities, the current regulations (effective November 2020 through November 2027) include mitigation that limits the Navy from conducting training and testing with explosives less than 50 nm from shore (85 FR 72312, November 12, 2020; NMFS 2020). Testing activities proposed in the QRS (overlapping with critical habitat) include the use of explosives. The 2020 MMPA rule and ESA consultation do not prohibit sonar use within 50 nm of shore for both training and testing activities, thus overlapping in part with the coastal critical habitat.

The Navy identified concerns that designation of critical habitat within the QRS has the potential to impact the effectiveness of ongoing and future testing activities if additional mitigation requirements result in a need to halt, reduce in scope, or geographically/seasonally constrain testing activities to prevent adverse effects or modification of critical habitat. During the pre-publication inter-agency review process for this proposed rule, the Navy also requested exclusion of a 10-km (6.2 mi) buffer around the QRS. The Navy stated that they used site-specific

oceanographic conditions and the best available science establishing fish injury thresholds (Popper *et al.* 2014) to determine that sound and energy levels from the largest explosives that could be used in the QRS may cause injuries to fish (i.e., prey species) out to 10 km beyond the boundary of the QRS. If the QRS alone were excluded (without the buffer), the largest explosives in the QRS may affect the prey feature within proposed critical habitat (in the buffer area). The Navy concluded that there would be impacts to their ability to test and field new systems and platforms thus impacting national security if NMFS required additional mitigation that resulted in the Navy having to halt, reduce in scope, or geographically/seasonally constrain testing activities to prevent adverse effects or adverse modification of critical habitat.

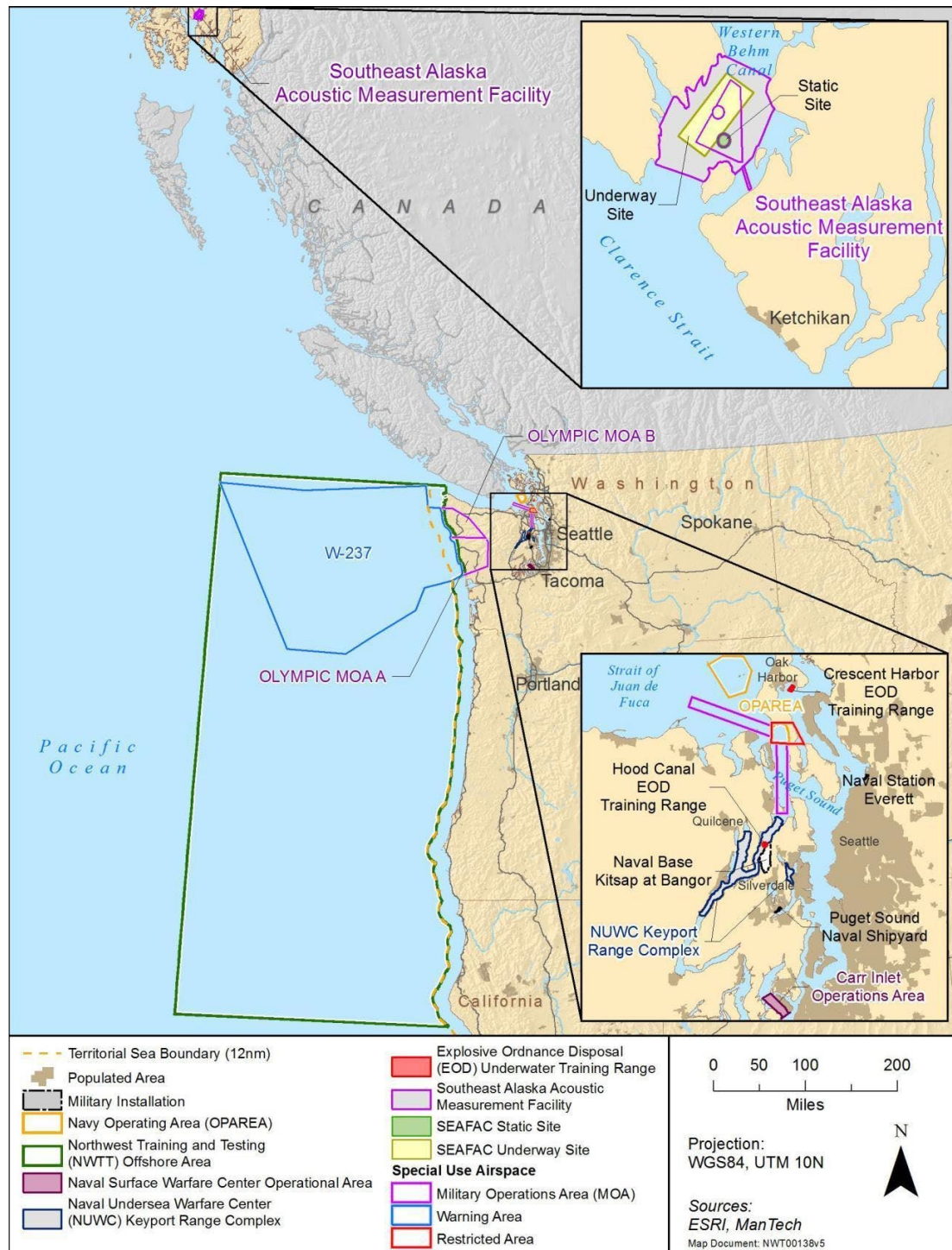


Figure 4. Map of the Northwest Training and Testing (NWTT) study area (U.S. Navy 2015).

The U.S. Coast Guard (USCG; Department of Homeland Security) also provided information on potential impacts to national security and maritime safety. In their comments on our 90-day finding on the petition to revise critical habitat, the USCG stated that expanded critical habitat might impair their ability to safely conduct defense readiness and additional missions if the

designation results in restrictions to the ability of USCG maritime assets to transit, deploy, train, and/or conduct gunnery exercises within the critical habitat areas (U.S. Coast Guard 2014). These additional missions include emergency response, search and rescue, law enforcement, conservation activities, and training operations. With respect to gunnery exercises, the USCG comments noted that USCG Section/Station/Maritime Force Protection Unit boats are limited to going a maximum of 10 to 50 miles offshore depending on vessel type, and requiring them to go over 50 miles would be unsafe and provide unrealistic training/gunnery scenarios to effectively become proficient with meeting mission objectives. In general, USCG Sector/Station assets conduct gunnery exercises with small arms and ammunition, pistols, and up to .50 caliber machine guns. Major afloat cutters conduct exercises with small arms and ammunition in addition to more sophisticated systems (i.e., 25 mm, 57 mm, and 76 mm guns, close-in weapon systems), but rarely conduct exercises in the areas under consideration for critical habitat, with the exception of the NWTRC.

Although we have not conducted a section 7 analysis on a particular proposed action and we are not predetermining any future ESA conclusions now, as a general matter, and based on the information currently available, we consider it unlikely that the USCG's routine operations in support of emergency response, homeland security, law enforcement, and conservation affect the essential features of Southern Resident killer whale critical habitat, and as such, we do not expect designation of critical habitat will have a national security impact on these activities. Separately, we considered the USCG's concerns regarding potential national security impacts to their defense readiness activities to be generally overlapping with those of the Navy, given the similarities in some of the USCG's activities (i.e., gunnery exercises involving small- and large-caliber projectiles, similar to the Navy's surface-to-surface gunnery exercises) and area of operations (i.e., generally the NWTRC). The Navy has only expressed concerns about national security impacts to testing activities conducted in the QRS, including underwater explosions associated with mine countermeasure and neutralization testing activities. The USCG does not use these types of explosives in their defense readiness activities, and thus we consider it unlikely that the USCG would have national security concerns beyond those conveyed by the Navy.

We assessed several factors to evaluate the potential impacts of designating critical habitat within the QRS and a 10-km buffer around it, such as the size and percentage of the total area of the QRS and buffer that would be designated absent exclusion; the importance of the area to the Navy mission and military readiness; the likelihood that Navy activities would destroy or adversely modify critical habitat and that NMFS would require project modification to avoid adverse effects or modification of critical habitat (and thus potentially impact the effectiveness of the Navy's training and testing activities); the level of protection provided to one or more essential features by existing DOD safeguards (e.g., management or protection already in place); and the likelihood that other federal actions may occur in the site that would no longer be subject to the critical habitat provision if the particular area were excluded from the designation. Our assessment of the impacts is discussed in a memorandum to the file, reproduced here as Appendix A, and is discussed further in a later section of this report (section V.B.2). Overall, given the Navy's substantial and specific concerns regarding the potential impact of a critical habitat designation on their unique testing and training activities that occur within the QRS and the potential delay in critical missions in order to complete adverse modification analyses, we

determined that the benefits of excluding the QRS and a portion of a 10-km buffer around the site due to national security impacts outweigh the benefits of designating this portion of areas 1 and 2 as critical habitat for Southern Resident killer whales.

B.3. Other relevant impacts – impacts to 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 federal government. This relationship has given rise to a special federal trust responsibility involving the legal responsibilities and obligations of the United States toward Indian tribes and 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 (E.O.) 13175, Consultation and Coordination with Indian Tribal Governments, outlines the responsibilities of the federal government in matters affecting tribal interests.

There is a broad array of activities on Indian lands that may trigger ESA section 7 consultations. Indian lands are those defined in the Secretarial Order “American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act” (June 5, 1997), including: (1) lands held in trust by the United States for the benefit of any Indian tribe; (2) land held in trust by the United States for any Indian tribe or individual subject to restrictions by the United States against alienation; (3) fee lands, either within or outside the reservation boundaries, owned by the tribal government; and (4) fee lands within the reservation boundaries owned by individual Indians.

For this revision of the critical habitat designation for Southern Resident killer whales, we reviewed maps and did not identify any areas of the coastal critical habitat that overlap with Indian lands, since the shoreward extent of the areas under consideration for designation is 6.1 m (20 ft) water depth. Based on this, we preliminarily found that there were no Indian lands subject to consideration for possible exclusion. However, our preliminary assessment indicated that the following federally recognized tribes (83 FR 4235, January 30, 2018) have lands that may be in close proximity to areas under consideration for designation as critical habitat for Southern Resident killer whales, have usual and accustomed (U&A) fishing areas that overlap with critical habitat areas, or may otherwise be affected by this designation of coastal critical habitat for Southern Resident killer whales: Confederated Tribes of the Chehalis Reservation, Hoh Indian Tribe, Makah Indian Tribe, Quileute Tribe, Quinault Indian Nation, and Shoalwater Bay Indian Tribe in Washington; Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians, Confederated Tribes of the Siletz Indians, and Coquille Indian Tribe in Oregon; and Cher-Ae Heights Indian Community of the Trinidad Rancheria, Hoopa Valley Tribe, Karuk Tribe, Big Valley Band of Pomo Indians, Tolowa Dee-Ni’ Nation, Wiyot Tribe, and Yurok Tribe in California. We also identified the non-federally recognized Wintu Tribe of Northern California as a tribal entity that may be affected by critical habitat designation.

We contacted each of these tribes to solicit comments on whether there were any Indian lands that may overlap with areas proposed for designation that may warrant exclusion from critical habitat for Southern Resident killer whales. We also sought information from these tribes concerning other tribal activities that may be affected in areas other than tribal lands (e.g., tribal fisheries in usual and accustomed coastal marine areas).

We received responses from two tribes in Washington and California. The tribes were primarily concerned with the potential impact of the critical habitat designation on tribal fisheries, particularly within U&A fishing areas located in coastal marine waters. As described in the Final Economic Report (IEc 2021), while it is possible that the critical habitat designation could result in recommendations for changes in fishery management, we consider this unlikely. We expect the critical habitat designation to have minimal effects on fisheries, given the existing consideration of fisheries' impacts on Southern Resident killer whales and their prey (including ESA-listed salmon) in ESA section 7 consultations in the jeopardy analysis and the implementation of management strategies and actions for the conservation and recovery of these species (IEc 2021). However, we are continuing to consult and coordinate with potentially affected tribes throughout the rulemaking process, including electronic outreach and written letters to tribal chairs for comment on the proposed rule, setting up consultations as requested with two tribes, and we will continue coordination regarding the implementation of the final rule.

V. Exclusion of Areas under Section 4(b)(2) of the ESA

As stated previously, the Secretary may exclude an area from designation if he determines the benefits of exclusion outweigh the benefits of designation based on the best available scientific and commercial information. This discretion is limited, however, in that the Secretary may not exclude an area from designation if exclusion will result in the extinction of the species (ESA section 4(b)(2)).

We decided to exercise our discretion to conduct an exclusion analysis and balance the benefits of designation against the benefits of exclusion. Benefits of designation are those conservation benefits to the species, while benefits of exclusion result from avoiding the impacts of designation identified above. The remainder of this report describes the benefits of designation, then further considers and weighs the benefits of designation and exclusion based on economic and national security impacts. (As discussed above, we preliminarily found that there were no Indian lands subject to consideration for possible exclusion). We discuss the legal and policy context that informs our balancing for each type of impact, describe the results of the weighing process, and recommend exclusions accordingly. We employed a qualitative cost-benefit analysis, as described in OMB Circular A-4.

A. Determine the benefits of designation

The primary benefit of designation is the protection afforded under section 7 of the ESA, requiring all federal agencies to ensure their actions are not likely to destroy or adversely modify designated critical habitat. This is in addition to the requirement that all federal agencies ensure their actions are not likely to jeopardize the continued existence of the species. Also, identifying the geographic location of critical habitat facilitates implementation of section 7(a)(1) of the

ESA by identifying areas where Federal agencies can focus their conservation programs and use their authorities to further the purposes of the ESA.

The revision to the critical habitat designation is also expected to provide benefits by informing the entities engaged in section 7 consultations and the general public about the status of Southern Resident killer whales, including the coastal areas and features (or habitat) important to whales' conservation. The introduction of this information provides potential for increased education and awareness. Potential benefits from this educational awareness may be attained if parties engage in activities to benefit Southern Resident killer whales or their essential features that they were made aware of through the critical habitat designation process.

In addition to the protections described above, Chapter 4 of the Final Economic Report (IEc 2021) discusses other forms of benefits that may be attributed to the conservation and recovery of Southern Resident killer whales (although not specifically attributed to the designation of critical habitat), including use benefits (e.g., for wildlife viewing), non-use or passive use benefits (e.g., existence, option, and bequest values), and ancillary ecosystem service benefits (e.g., water quality improvements and enhanced habitat conditions for other marine and coastal species). Some species, including Southern Resident killer whales, also have significant spiritual and cultural value to particular communities, such as tribes. Such values are generally not expressed in monetary terms. More information about these types of benefits and values may be found in Chapter 4 of the Final Economic Report (IEc 2021).

As discussed earlier in this report, the ESA focuses on habitat as a fundamental tool in recovery of a species. By identifying the essential features that are described in the ESA as “essential to the conservation” of the species, we are in turn identifying those features without which conservation of the species would not be possible. The revision to the designation of Southern Resident killer whale critical habitat incorporates habitat within the whales' coastal range containing features that are essential for conservation (i.e., survival and recovery). Thus, by designating critical habitat and preventing adverse modification throughout these areas, we seek to provide for the long-term conservation and recovery of Southern Resident killer whales. However, it is difficult to assess the expected benefit that critical habitat is likely to have on recovery of the species. This is in part because we are unable to isolate and quantify the effect that the designation would have on recovery separate from all other ongoing or planned conservation efforts for Southern Resident killer whales. Additionally, it is difficult to accurately predict the future harm to the habitat that would have otherwise been realized without the protections associated with critical habitat. As described in the Final Economic Report, absent information on the incremental change in killer whale populations or recovery potential associated with a critical habitat designation, we are unable to apply the available literature to quantify or monetize associated incremental use and non-use economic benefits. This literature demonstrates, however, that the killer whales have value to people nationally and serve as an economic engine regionally (IEc 2021).

The benefits described here are not directly comparable to the costs of designation for purposes of conducting the section 4(b)(2) analysis described below. Ideally, benefits and costs should be compared on equal terms in the same units; however, there is insufficient information regarding the extent of the benefits and the associated values to monetize all of these benefits. Because we could not quantify or monetize all of the benefits of revising the critical habitat designation for

Southern Resident killer whales discussed above, we qualitatively described the conservation value of the areas to the DPS.

As discussed in a memorandum to the file, reproduced here as Appendix B, we considered categories of information to characterize Southern Resident killer whales' relative use of the particular areas and the importance of physical and biological features in the areas. However, gaps in or limitations of existing data made an evaluation across all of the areas using any sort of quantitative scoring system challenging. For example, the proportion of prey samples collected from each area might be used to characterize the areas' relative importance for foraging, where a higher proportion of samples might indicate greater foraging or prey resources. However, nearly all (93%) of the prey samples were collected during field efforts directed by the locations of satellite-tagged whales, and satellite-tagged whales did not go into Area 6, so this metric would underestimate the conservation value of Area 6. (Predation has been observed but not sampled in Area 6; Black *et al.* 2001.) Any spatial bias in NMFS' and partners' ability to conduct on-water response in particular locations to collect prey samples would also limit the usefulness of this factor for comparing relative importance of the critical habitat areas. Another potential metric we considered was the proportion of confirmed opportunistic sightings of Southern Resident killer whales observed in the area, or number of sightings per unit area. However, while opportunistic sightings data provide information on when and where whales occur along the coast, they are less useful for informing a relative ranking of the whales' use of the specific areas due to their spatial bias (e.g., sightings may be influenced by locations of population centers or whale watching operations). Therefore, we determined that the most appropriate approach was to qualitatively assess the conservation value of each area using the available data, mindful of the spatial and temporal gaps and potential biases and consistent with OMB Circular A-4.

Based on the available information on the whales' use of the areas (and considering gaps in information), and the physical and biological features essential to the whales' conservation, we considered the conservation value of each coastal area to be *high*. However, we considered the value of Areas 1 and 2 to be *very high* relative to the other coastal areas, given the whales' particularly high use of portions of the areas, as indicated by models of satellite tag data (they are the only coastal critical habitat areas with usage in some locations that is more than two and three standard deviations above the mean), acoustic data indicating higher rates of detections than would be expected based on monitoring effort (Hanson et al. 2013), the documented use by all three pods, year-round use of the areas, and observations of foraging with a substantial number of prey samples collected.

B. Weighing benefits of designation against benefits of exclusion and recommend exclusions if appropriate

The balancing test in section 4(b)(2) contemplates weighing benefits that are not directly comparable—the benefit to species conservation that comes from critical habitat designation weighed against the economic benefit, national security benefit, or other relevant benefit that results if an area is excluded from designation. As described above, we do not have data to monetize the conservation benefits of revising the designation of critical habitat for Southern Resident killer whales. Similarly, we do not have information to monetize benefits of exclusion to national security. Section 4(b)(2) does not specify a method for the weighing process, nor do

our regulations. We have broad discretion as to what factors to consider as benefits of inclusion and benefits of exclusion, and what weight to assign to each factor—nothing in the ESA, its implementing regulations, or our 4(b)(2) policy limits this discretion (50 CFR 424.19; 81 FR 7226; February 11, 2016).

B.1. Weighing economic impacts

The Final Economic Report (IEc 2021) concluded that costs attributed to the revision of the Southern Resident killer whale critical habitat designation are largely administrative in nature and that a majority of those costs are borne by federal agencies. Only a small cost of consultation (total annualized impacts of \$9,000, discounted at 7 percent) are estimated to be borne by a small number (1-8) of non-federal entities (*see* the Final Economic Report, IEc 2021).

In accordance with section 4(b)(2) of the ESA, its implementing regulations (50 CFR 424.19) and our Policy Regarding Implementation of Section 4(b)(2) of the ESA (81 FR 7226; February 11, 2016), to evaluate the exclusion of areas based on probable economic impacts we considered the nature of those impacts, and not a particular threshold. Additionally, we considered the following factors:

- Section 2 of the ESA provides that a purpose of the act is “to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved.”
- In listing Southern Resident killer whales under the ESA, we concluded that the current and threatened destruction or adverse modification of the species’ habitat is likely contributing to fluctuations in abundance and exacerbating the risk of extinction naturally faced by a small population (70 FR 69903, November 18, 2005). We identified contaminants, vessel traffic, and changes in prey availability as factors that have modified the whales’ habitat and considered them to be threats to the species.
- As described above, the six particular areas under consideration for critical habitat designation at this time are all of high or very high conservation value (*see* section V.A “Determine the Benefits of Designation” and Appendix B).
- The economic impacts to federal agencies and non-federal entities of designating each of the six particular areas are small (the largest annualized impacts are \$10,000 in Areas 1 and 2 combined), as is the annualized economic impact of designating the entire area (\$80,000). The potential economic impacts borne by non-federal entities of designating all six areas are even smaller (total annualized impacts of \$9,000, discounted at 7 percent), with one to eight non-federal entities expected to be affected. This reflects approximately six consultations per year that may involve non-federal entities, for example businesses engaged in coastal and in-water construction activities, renewable energy developments, or seismic surveys.

For these reasons, we conclude that the economic benefit of excluding any of the particular areas does not outweigh the conservation benefit of designation. Therefore, none of the areas are excluded based on economic impacts.

B.2. Weighing impacts to national security

Our consideration of national security is described in detail in a memorandum to the file, reproduced here as Appendix A, and summarized here. We consulted with the DOD regarding the activities taking place at sites managed by the DOD and the potential impact of designating critical habitat at these sites. We also considered information provided by the USCG.

As discussed above, the U.S. Air Force (AF) stated: “At this time the AF has not identified any significant concerns with the proposed addition of Southern Resident killer whale critical habitat to coastal waters along the U.S. West Coast as depicted on the provided map (WA, OR, N.CA)” (U.S. Air Force 2018).

The Navy stated that the Navy believes there would be national security impacts where critical habitat areas 1 and 2 overlap the Quinault Range Site (QRS), including its associated surf zone off the coast of Pacific Beach, Washington, and a 10-km buffer around the QRS, and requested exclusion of this particular area. The Navy provided information on the activities that take place in the QRS, and identified national security concerns regarding potential impacts to its national mission (resulting in a need to halt, reduce in scope, or geographically/seasonally constrain testing activities to prevent adverse effects or modification of critical habitat) and ongoing and future Navy testing activities if critical habitat were designated there (U.S. Navy 2018b).

We weighed the conservation benefits of designation to Southern Resident killer whales against the national security benefits of exclusion, initially for the Navy’s QRS, and later during the pre-publication inter-agency review period, the combined areas of the QRS and a 10-km buffer around it. We considered various factors relevant to assessing the benefits of exclusion including:

1. The size of the DOD site, the percentage of the DOD site that would be designated (because only a portion of the DOD site is within critical habitat), and the percentage of the critical habitat area(s) that overlaps with the DOD site (because the DOD site overlaps with only a portion of the critical habitat areas);
2. The importance of the site to the Navy mission and military readiness (e.g., frequency/intensity of use, complexity of Navy actions within it, and significance and uniqueness of the site to the overall Navy mission);
3. The likelihood of an ESA section 7 consultation with the DOD in this site;
4. The likelihood that DOD activities would destroy or adversely modify critical habitat, based on the DOD’s activities at the site, and that NMFS would require project modifications to reduce or avoid these impacts;
5. The level of protection provided to one or more essential feature by existing DOD safeguards (e.g., management or protection already in place); and
6. The likelihood that other federal actions may occur in the site that would no longer be subject to the critical habitat provision if the particular area were excluded from the designation.

Dependent on available information, each of these factors may weigh either in favor of exclusion of the area or in favor of designation of the area. We give great weight to the national security and defense missions (81 FR 7226; February 11, 2016). We weighed this information against

the benefits of designating the site, which was based on the conservation value rating for the specific area(s) overlapping the DOD site, as well as more specific information regarding Southern Resident killer whale use of the DOD site.

Based on our initial analysis (see Appendix A), in our proposed rule we recommended excluding the QRS and a 10-km buffer around it from the critical habitat designation. The total area recommended for exclusion in the proposed rule was approximately 1,687.9 mi² (4,371.5 km²) or 9.7% of potential coastal critical habitat areas 1–6, or about a quarter of areas 1 and 2 combined. In summary, many of the specific areas' values (educational, non-use, and conservation), can and are still protected via other measures (the MMPA, section 9 of the ESA, other critical habitat designations) and other regulations or restrictions associated with ensuring water quality and sustainable fish resources. Also, the highest use areas for foraging by Southern Residents are just south of the QRS, only a small portion of the highest use areas are within the 10-km buffer around the QRS, and most of their time is spent in areas outside the QRS and the buffer (*see* Appendix A and Hanson et al. 2017). Therefore, though areas 1 and 2 are of very high conservation value because of high use by the whales in most of the areas, the proposed excluded area (the QRS and buffer) does not, in and of itself, represent a high use area. On the military impacts side, The Navy identifies the QRS as a unique area (unique and varied depth, bathymetric conditions required for testing, and location close to Navy support facilities in Washington) that has high use supporting training activities important for the maintenance and deployment of military forces, with an estimated 260 testing activities proposed to occur annually in the QRS in 2020 and into the foreseeable future. Although the main impact to the Navy of critical habitat designation in the QRS would be one or two ESA section 7 adverse modification analyses that are not expected to require modifications to the activities distinct from those required via the jeopardy analysis, those analyses are complex and would demand the diversion of staff, additional personnel time (administrative costs), and could potentially delay training, affecting worldwide military readiness. Therefore, we initially proposed excluding the QRS area and 10-km buffer around the site from critical habitat designation.

After reviewing public comments on the proposed rule and requesting additional information from the Navy, we reconsidered the potential benefits of exclusion for the portions of the 10-km buffer that overlap with the Olympic Coast National Marine Sanctuary (OCNMS). In reviewing the justification for the buffer, we found sufficient justification for this requested exclusion with the exception of a portion of the 10 km buffer area around the northeast corner of the QRS, extending along the East side of the QRS, where it overlaps with the OCNMS (Appendix A). This area was not excluded from the designation because the Navy does not currently conduct explosives in this northeast corner of the QRS, extending along the East side of the QRS, or currently plan to do so; therefore, potential impacts to Southern Resident killer whale critical habitat will not extend into the OCNMS in this area at this time. Furthermore, not excluding this portion of the buffer creates a corridor of critical habitat between the coastline and the eastern boundary of the QRS for most of the length of the QRS exclusion, which supports whale passage between high-use areas to the north and south of the QRS exclusion. Therefore, we found that the benefits of excluding (i.e. to avoid any national security impacts) a portion of the 10-km buffer where it overlaps with the OCNMS would not outweigh the conservation benefits of designating this area as critical habitat, except for two areas at the northwest and southeast corners of the sanctuary boundary, respectively, where activity outside the sanctuary could

impact habitat within the sanctuary for a distance of up to 10 km (*see* Appendix A Figure 4 Map).

Based on our final analysis, and as documented in Appendix A, we recommend excluding from critical habitat designation the QRS and a 10-km buffer around it, except a portion of the 10-km buffer where it overlaps with the OCNMS. Overall, given the Navy's substantial and specific concerns regarding the potential impact of a critical habitat designation on their unique testing and training activities that occur within the QRS and the potential delay in critical missions in order to complete adverse modification analyses, we determined that the benefits of excluding the QRS and a portion of the 10-km buffer due to national security impacts outweigh the benefits of designating this portion of areas 1 and 2 as critical habitat for Southern Resident killer whales. The change in portion of the buffer excluded represents a reduction in the size of the area being excluded from critical habitat—from a proposed exclusion of about 1,687.9 mi² (4,371.5 km²) or 9.7% of potential proposed coastal critical habitat to 1,400.4 mi² (3,627 km²) or 8.1% for the QRS and associated, reduced buffer. This final excluded area comprises 24.4% and 22.7% of areas 1 and 2 each, respectively, but mainly not in portions of areas 1 and 2 that are high use.

VI. Determine whether exclusions will result in extinction of the species

Section 4(b)(2) of the ESA limits our discretion to exclude areas from designation if exclusion will result in extinction of the species. We have not recommended excluding any habitat areas based on economic impacts or impacts to Indian tribes, and recommended excluding one particular area based on national security impacts, the Quinault Range site and a portion of a 10-km buffer around it, where it overlaps with critical habitat Areas 1 and 2 off the coast of Washington. The area we recommended excluding encompasses 1,400.4 mi² (3,627 km²), and represents 8.1% of the total area under consideration for Southern Resident killer whale critical habitat along the U.S. West Coast. The area represents 7.0% of total critical habitat (currently designated critical habitat in inland waters of Washington plus the six areas under consideration for coastal critical habitat). The exclusion does represent a larger portion of the two specific critical habitat areas off the coast of Washington (around 23-24 percent of each of these two coastal areas), which are considered high-use and important foraging areas for Southern Resident killer whales. But, the highest use areas for foraging are just south of the QRS, and only a small portion of the highest use areas are within the 10-km buffer or the QRS.

Based on our best scientific judgment and acknowledging the small size of this area relative to the total area under consideration for critical habitat designation, and other safeguards that are in place (e.g., protections already afforded Southern Resident killer whales under their listing and other regulatory mechanisms), we conclude that exclusion of the Quinault Range and a 10-km buffer around a portion of the site will not result in the extinction of the species.

VII. Designation map

The below map depicts the areas of new designation of coastal critical habitat for Southern Resident killer whales, as well as the existing critical habitat in inland waters of Washington (Figure 5). The particular area along the coast being excluded from the designation under ESA section 4(b)(2) (the Quinault Range site and a portion of a 10-km buffer around it) is identified. For a more detailed map of the excluded area, *see* Appendix A Figure 4.

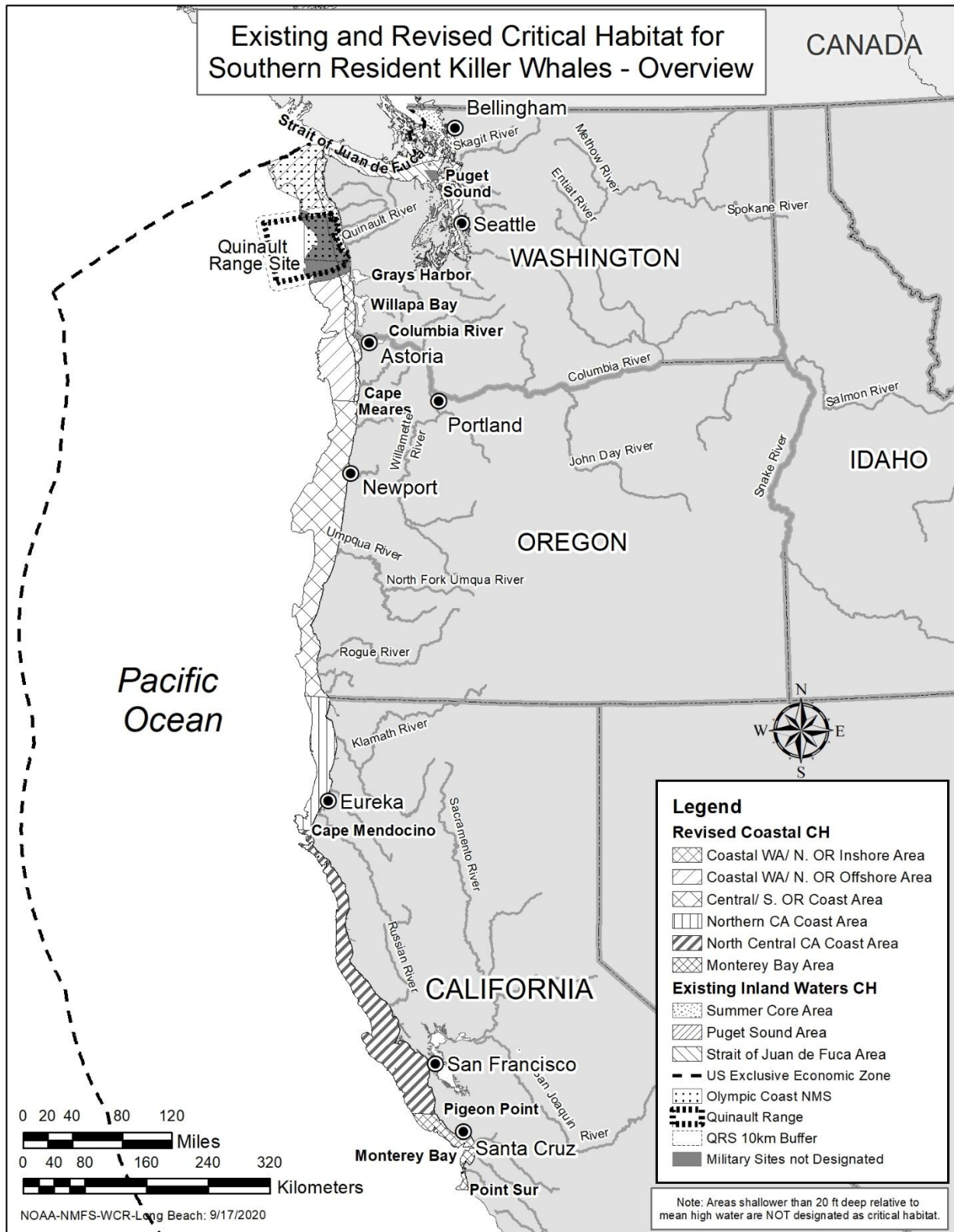


Figure 5. Previously designated Southern Resident killer whale critical habitat in inland waters of Washington and newly designated areas along the U.S. West Coast.

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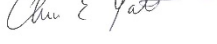
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Appendix A - Considerations for Department of Defense Lands and Impacts on National Security

MEMORANDUM

April 23, 2021

TO: PRD File

FROM: Chris Yates 
Assistant Regional Administrator
Protected Resources Division, West Coast Region

SUBJECT: Revising the Designation of Critical Habitat for the Endangered Southern Resident Killer Whale Distinct Population Segment—Considerations for Department of Defense Lands and Impacts on National Security

As required under section 4(b)(2) of the federal Endangered Species Act (ESA), NMFS considered the impacts on national security in the development of the revision to the critical habitat designation for endangered Southern Resident killer whales. This memorandum summarizes NMFS' consideration of the impacts on national security and determination on areas eligible for exclusion from designation based on impacts on national security.

Background

Section 3(5)(A) defines critical habitat as “the specific areas within the geographical area occupied by the species, ... on which are found those physical or biological features essential for conservation and specific areas outside the geographical area occupied if the area is essential to the conservation of the species.” Section 4(b)(2) of the ESA provides that the Secretary shall designate critical habitat “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” (emphasis added). The Secretary has discretion to exclude an area from critical habitat if the benefits of exclusion outweigh the benefits of designation, so long as the failure to designate such area as critical habitat will not result in the extinction of the species.

On May 23, 2018, NMFS contacted the Department of Defense (DOD) (Navy, Army, and Air Force) by letter with information regarding the areas under consideration for the revision to Southern Resident killer whale critical habitat. The letter requested each organization to identify areas that it owns or controls that may overlap with the areas under consideration. For those areas of overlap, NMFS requested additional information regarding whether that area was subject to an Integrated National Resources Management Plan⁴ (INRMP), and/or if the organization requested that NMFS consider the area for exclusion from critical habitat based on the impacts to national security. To assist in determining the impacts to national security, NMFS requested that the organization clearly outline the activities that take place on the site, how those

⁴ In 2003, Congress amended the ESA to provide that “[t]he 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.” We used information provided by the DOD in response to this section of our request to evaluate whether any areas were precluded from designation. As discussed in our draft section 4(b)(2) report, we concluded that the two shore-based military areas covered by INRMPs identified by the Navy do not overlap the areas under consideration for Southern Resident killer whale critical habitat. Thus, the areas are not “subject to” INRMPs and are eligible for designation.

activities might impact the essential features of critical habitat, and the potential impacts on the activity if critical habitat was to be designated within the area.

The Air Force and Navy provided responses to our letter. The Air Force stated that it had not identified any significant concerns with the proposed addition of Southern Resident killer whale critical habitat to coastal waters along the U.S. West Coast (U.S. Air Force 2018). The Navy provided a response letter dated August 24, 2018, and, following an October 10, 2018, conference call between Navy and NMFS staff, provided a revised response letter dated November 26, 2018, that superseded its previous response (U.S. Navy 2018a, 2018b). Additionally, on May 29, 2019, the Navy provided information related to national security impacts during the pre-publication inter-agency review process for this proposal, conducted in accordance with Executive Order 12866.

The Navy's November 2018 response stated that the Navy conducts training and testing activities, collectively referred to as "military readiness activities," within the coastal areas being considered for critical habitat. Specifically, the Navy explained that naval military training and testing activities occur in the offshore Pacific Northwest Ocean Surface/Subsurface Operating Area (OPAREA), Warning Area 237 (W-237), and the Olympic A and B Military Operation Areas (MOA), which are all considered at-sea components of the Northwest Training Range Complex (NWTRC), as well as in the Quinault Range Site (QRS), which is a component of the Keyport Range Complex. For National Environmental Policy Act purposes, the Navy refers to all the at-sea areas used for training and testing as the Northwest Training and Testing (NWTT) study area (Figure 1). The Navy asserted that it believes there would be national security impacts where critical habitat areas 1 and 2 overlap the QRS, and requested exclusion of this area, including the associated surf zone off the coast of Pacific Beach, Washington, from the critical habitat designation. During the inter-agency review process, the Navy also requested exclusion of a 10-km buffer around the QRS due to national security impacts.

Training and testing activities in the NWTT include the use of sonar and explosives, among other activities. Under the previous Marine Mammal Protection Act (MMPA) regulations for the Navy's activities issued by NMFS for the years 2015-2020 (80 FR 73555, November 24, 2015; 50 CFR 218 Subpart O) and ESA consultation on the NWTT training activities (NMFS 2015), there was no use of explosives within 50 nautical miles (nm) from shore. With the exception of a small number of explosive mine countermeasure and neutralization testing activities, the current regulations (effective November 2020 through November 2027) include mitigation that limits the Navy from conducting training and testing with explosives less than 50 nm from shore (85 FR 72312, November 12, 2020; NMFS 2020). Testing activities proposed in the QRS (overlapping with critical habitat) include the use of explosives. The 2020 MMPA rule and ESA consultation do not prohibit sonar use within 50 nm of shore for both training and testing activities, thus overlapping in part with the proposed coastal critical habitat.

Appendix A – Considerations for National Security Exclusions

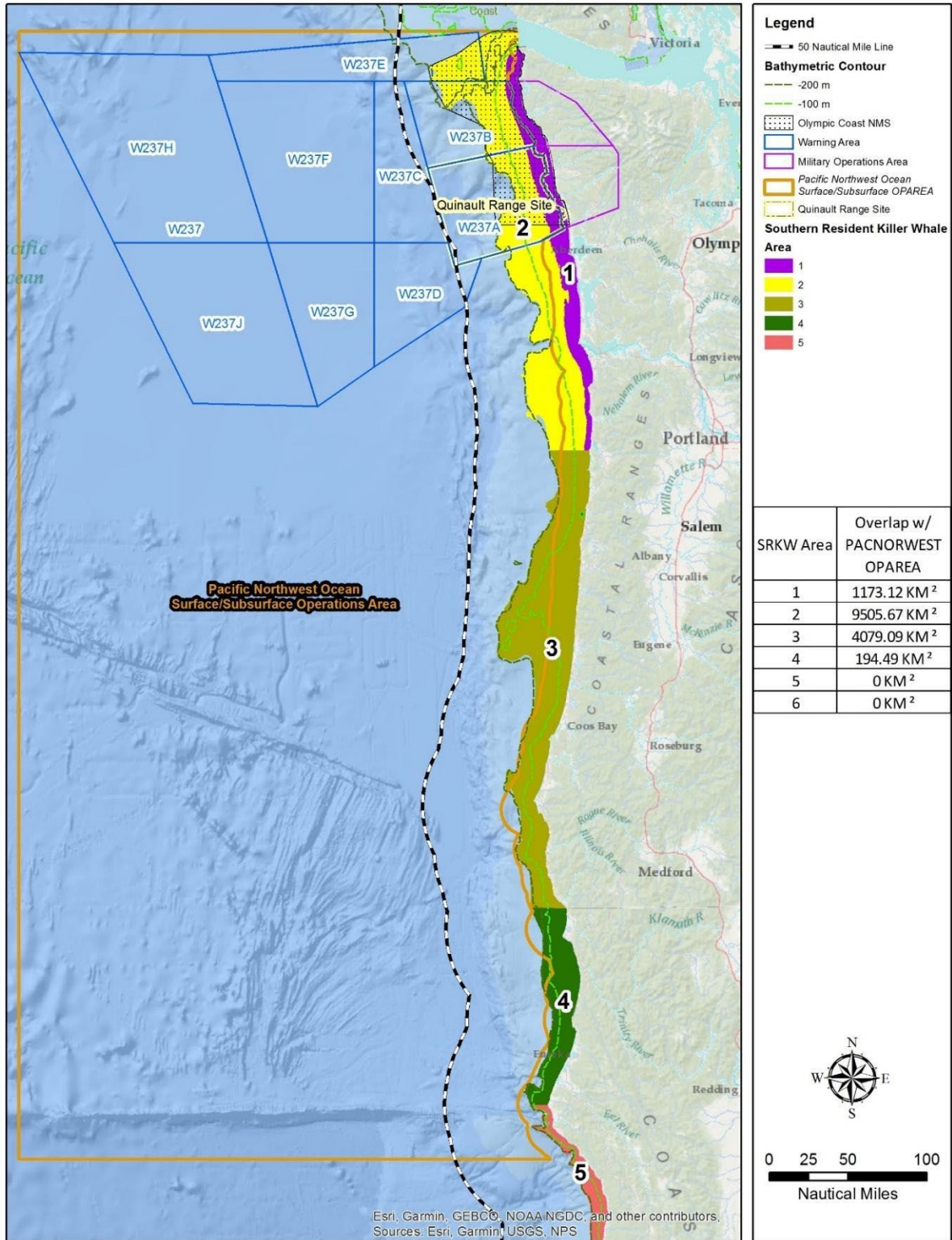


Figure 1. Overlap of Southern Resident killer whale proposed critical habitat areas with the Navy’s Northwest Training Range Complex (Pacific Northwest Operations Area and Quinault Range Site). Source: Navy (2018b).

The Navy provided information on testing activities proposed in the QRS beyond 2020 and into the foreseeable future, and identified national security concerns regarding potential impacts to their national mission and ongoing and future Navy testing activities if critical habitat were designated there (U.S. Navy 2018b). The Navy also provided a justification for their request to exclude a 10-km buffer around the QRS. These activities and Navy justification for a 10-km buffer are discussed in detail below (*see* section **Assessment of Quinault Range Site (QRS)**).

The U.S. Coast Guard (USCG; Department of Homeland Security) also provided information on potential impacts to national security and maritime safety. In its comments on our 90-day finding on the petition to revise critical habitat, the USCG stated that expanded critical habitat might impair its ability to safely conduct defense readiness and additional missions if the designation results in restrictions to the ability of USCG maritime assets to transit, deploy, train, and/or conduct gunnery exercises within the critical habitat areas (U.S. Coast Guard 2014). These additional missions include emergency response, search and rescue, law enforcement, conservation activities, and training operations. With respect to gunnery exercises, it noted that USCG Section/Station/Maritime Force Protection Unit boats are limited to going a maximum of 10 to 50 miles offshore depending on vessel type, and requiring them to go over 50 miles would be unsafe and provide unrealistic training/gunnery scenarios to effectively become proficient with meeting mission objectives. In general, USCG Sector/Station assets conduct gunnery exercises with small arms and ammunition, pistols, and up to .50 caliber machine guns. Major afloat cutters conduct exercises with small arms and ammunition in addition to more sophisticated systems (i.e., 25 mm, 57 mm, and 76 mm guns, close-in weapon systems), but rarely conduct exercises in the areas under consideration for critical habitat, with the exception of the NWTRC.

Although we have not conducted a section 7 analysis on a particular proposed action and we are not predetermining any future ESA conclusion now, as a general matter, and based on the information currently available, we consider it unlikely that the USCG’s routine operations in support of emergency response, homeland security, law enforcement, and conservation affect the essential features of Southern Resident killer whale critical habitat, and as such, we do not expect designation of critical habitat will have a national security impact on these activities. Separately, we consider the USCG’s concerns regarding potential national security impacts to their defense readiness activities to be generally overlapping with those of the Navy, given the similarities in some of the USCG’s activities (i.e., gunnery exercises involving small- and large-caliber projectiles, similar to the Navy’s surface-to-surface gunnery exercises) and area of operations (i.e., generally the NWTRC). The Navy has only expressed concerns about national security impacts to testing activities conducted in the QRS, including underwater explosions associated with mine countermeasure and neutralization testing activities. The USCG does not use these types of explosives in their defense readiness activities, and thus we consider it unlikely that the USCG would have national security concerns beyond those conveyed by the Navy.

Below we summarize the DOD’s description of the area (primarily related to the Navy in this case), activities, and potential national security impacts, describe what is known about Southern

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Resident killer whale use of the area that was requested for exclusion (the QRS and a 10-km buffer around it), and discuss other information to support our recommendation as to whether such national security impacts outweigh the benefits of designating the site as critical habitat. We based our recommendations on an evaluation of national security impacts using the following factors:

1. The size of the DOD site, the percentage of the DOD site that would be designated (because only a portion of the DOD site is within critical habitat), and the percentage of the proposed specific areas that overlap with the DOD site (because the DOD site overlaps with only a portion of the critical habitat areas).
2. The importance of the site to the Navy mission and military readiness (e.g., frequency/intensity of use, complexity of Navy actions within it, and significance and uniqueness of the site to the overall Navy mission).
3. The likelihood of an ESA section 7 consultation with all Defense Departments utilizing this site.
4. The likelihood that DOD activities would destroy or adversely modify critical habitat; based on the DOD's activities at the site, and that NMFS would require project modifications to reduce or avoid these impacts.
5. The level of protection provided to one or more essential feature by existing DOD safeguards (e.g., management or protection already in place).
6. The likelihood that other federal actions may occur in the site that would no longer be subject to the critical habitat provision if the particular area were excluded from the designation.

Dependent on available information, each of these factors may weigh either in favor of exclusion of the area or in favor of designation of the area. We give great weight to the national security and defense missions (81 FR 7226; February 11, 2016). We weighed this information against the benefits of designating the site, which was based on the conservation value rating for the specific area(s) overlapping the DOD site, as well as more specific information regarding Southern Resident killer whale use of the DOD site.

Assessment of Quinault Range Site (QRS)

This section reviews the impacts to national security (based on the list above) and the specific information regarding Southern Resident killer whale use of areas, in order to weigh impacts to national security against the benefits of designating that area. This analysis is for the proposed critical habitat designation and we later describe a modification for the final rule based on public comment (see in “Recommendations” section “Update from proposed rule”).

Description of DOD area and overlap with specific critical habitat areas: The Navy characterizes the QRS as a defined area of sea space off the coast of Washington that underlies, and thus is largely defined by, the boundaries of the special use airspace above it (known as W-237A). The range encompasses air, surface (approx. 1,839.8 nm² [6,310.3 km²]), and subsurface space (with variable depths up to 6,000 ft [1,828.9 m]). In addition to the area defined by W-237A, the QRS also includes a surf zone extending north to south 5 nm (9.3 km) along the eastern boundary of W-237A, extending approximately 3 nm (5.6 km) to shore to the mean lower low water line, and encompassing 1 mile (1.6 km) of shoreline at Pacific Beach, Washington. The Navy states that

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the QRS is sited to take advantage of unique and varied depth, bathymetric conditions required for testing, and proximity to Navy support facilities in Washington.

During the pre-publication inter-agency review process for the proposed rule, the Navy also requested exclusion of a 10-km (6.2 mi) buffer around the QRS. The Navy stated that it used site-specific oceanographic conditions and the best available science establishing fish injury thresholds (Popper *et al.* 2014) to determine that sound and energy levels from the largest explosives that could be used in the QRS may cause injuries to fish (i.e., prey species) out to 10 km beyond the boundary of the QRS. If the QRS alone were excluded (without the buffer), the largest explosives in the QRS may affect the prey feature within proposed critical habitat (in the buffer area). The Navy argued that there would be national security impacts if NMFS required additional mitigation that resulted in the Navy having to halt, reduce in scope, or geographically/seasonally constrain testing activities to prevent adverse effects or adverse modification of critical habitat.

The eastern portion of the QRS and the 10-km buffer overlap with two specific areas being considered for Southern Resident critical habitat: Areas 1 and 2 (Figure 2). Using a GIS shapefile of the QRS provided by the Navy, we calculated the areas of overlap (Table 1). The total overlap with proposed critical habitat represents 42.8% of the QRS and the 10-km buffer. The overlap represents 38.6% of Area 1 and 24.5% of Area 2, and 27.9% of the Areas 1 and 2 combined. In total, the QRS and 10-km buffer overlap with 9.7% of the area being considered for Southern Resident killer whale coastal critical habitat (Areas 1-6).

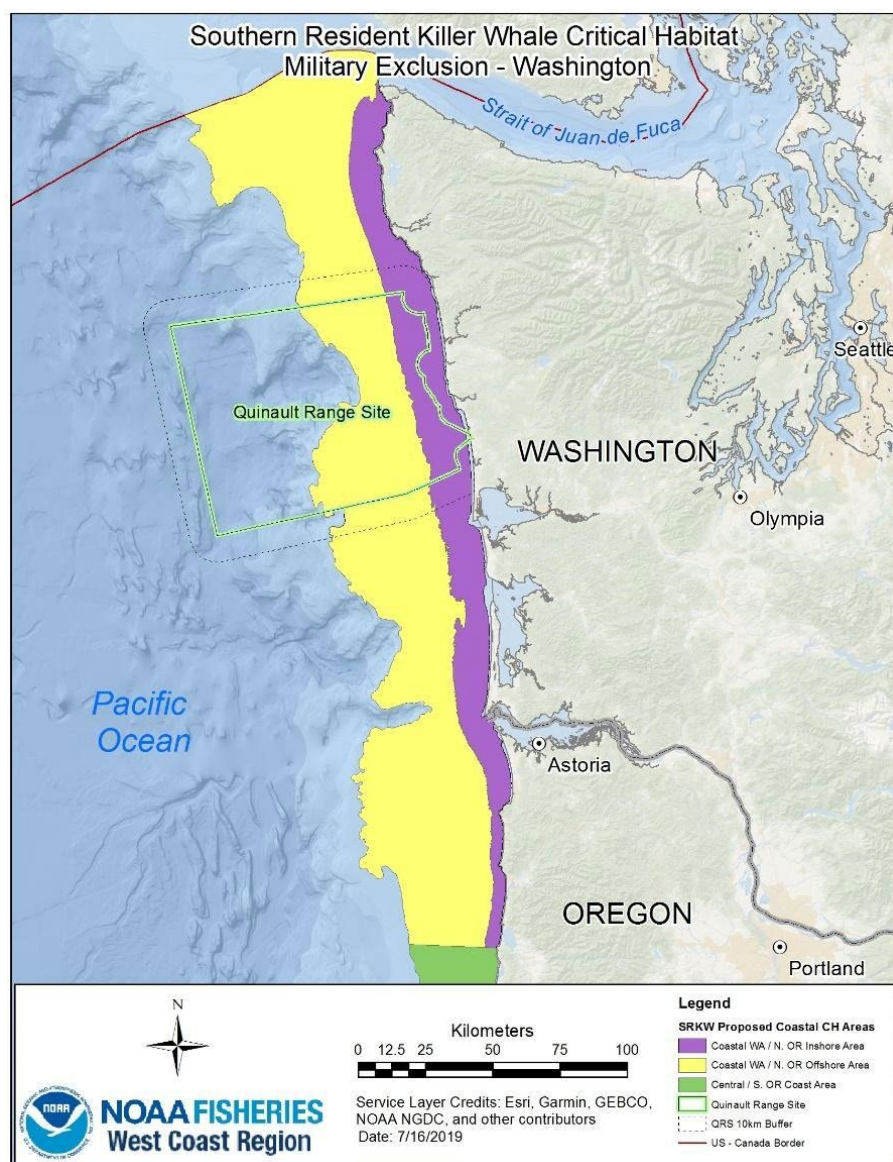


Figure 2. Map of the Quinault Range Site and 10-km buffer around it, requested by the Navy for exclusion from Southern Resident killer whale critical habitat. The site overlaps with proposed critical habitat Areas 1 and 2 off the Washington coast.

Table 1. Area and overlap calculations for the Quinault Range Site (QRS) (including the 10-km buffer around the QRS) and critical habitat (CH) areas for proposed critical habitat.

Location or Calculation of Interest	Area or Percent Overlap
CH Area 1	1,441.9 mi ² (3,734.6 km ²)
CH Area 2	4,617.2 mi ² (11,958.6 km ²)
CH Areas 1-6	17,314.8mi ² (44,845.4 km ²)
CH currently designated in inland waters	2,559.9 mi ² (6,630 km ²)
QRS + 10-km buffer (water only, not including area of buffer extending over land)	3,941.0 mi ² (10,207.19 km ²)
QRS + 10-km buffer overlap with CH Area 1	556.2 mi ² (1,440.7 km ²)
QRS + 10-km buffer overlap with CH Area 2	1,131.6 mi ² (2,930.9 km ²)

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Location or Calculation of Interest	Area or Percent Overlap
Percent of QRS + 10-km buffer in Area 1	14.1%
Percent of QRS + 10-km buffer in Area 2	28.7%
Percent of QRS + 10-km buffer in CH (Areas 1 & 2)	42.8%
Percent of Area 1 in QRS + 10-km buffer	38.6%
Percent of Area 2 in QRS + 10-km buffer	24.5%
Percent of CH (Areas 1-6) in QRS + 10-km buffer	9.7%
Percent of CH (inland waters + coastal Areas 1-6) in QRS + 10-km buffer	8.5%

Activities in the DOD area and importance of the area to the Navy mission and military readiness: The Navy states that the QRS is used by the Naval Sea System Command (NAVSEA), a research, development, test, and evaluation organization whose mission is to design, build, deliver, and maintain ships and combat systems, ensuring everything operates safely and reliably. The QRS is part of the Naval Undersea Warfare Center Keyport Range Complex, which includes testing areas within Puget Sound and Hood Canal. NMFS excluded military areas within Puget Sound, including the Puget Sound portions of the Keyport Range Complex, from the 2006 Southern Resident killer whale critical habitat designation based on national security impacts (71 FR 69054; November 29, 2006).

The Navy stated that NAVSEA’s activities proposed in the QRS beyond 2020 and into the foreseeable future include, but are not limited to:

- Testing involving explosives (e.g., mine countermeasure and neutralization testing);
- Testing involving sonar and other transducers (e.g., at-sea sonar testing, anti-submarine warfare testing, acoustic and oceanographic research, acoustic component testing, countermeasure testing, torpedo testing, mine detection and classification testing, unmanned underwater vehicle testing, undersea warfare testing, etc.); and
- Testing involving vehicle movement, but no explosives or sonar/other transducer use (e.g., unmanned surface vehicle system testing, unmanned aerial system testing, etc.).

Specific activity types and the estimated annual number of events are described in Table 2. The frequency and intensity of use of the area is high, with over 260 testing and research events estimated to take place there annually. In addition to numerous other activities, mine warfare activities are proposed in the QRS. The Navy stated that this capability is vital to the NAVSEA mission.

Table 2. NAVSEA testing requirements within the QRS beyond 2020 and into the foreseeable future in areas under consideration for Southern Resident killer whale critical habitat. Source: U.S. Navy (2018b).

NAVSEA Activities in the QRS	Activity Description	Estimated Annual # of Events
Anti-Submarine Warfare Testing	Ships and their supporting platforms (rotary-wing aircraft and unmanned aerial systems) detect, localize, and prosecute submarines.	44
At-Sea Sonar Testing	At-sea testing to ensure systems are fully functional in an open ocean environment.	5
Countermeasure Testing	Countermeasure testing involves the testing of systems that will detect, localize, and track incoming weapons, including marine vessel targets.	14

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NAVSEA Activities in the QRS	Activity Description	Estimated Annual # of Events
	Countermeasures may be systems to obscure the vessel's location or systems to rapidly detect, track, and counter incoming threats. Testing includes surface ship torpedo defense systems and marine vessel stopping payloads.	
Torpedo (non-explosive) Testing	Air, surface, or submarine crews employ non- explosive torpedoes against targets, submarines, or surface vessels.	22
Mine Countermeasure and Neutralization Testing	Air, surface, and subsurface vessels neutralize threat mines and mine-like objects.	3
Mine Detection and Classification Testing	Air, surface, and subsurface vessels and systems detect and classify mines and mine-like objects. Vessels also assess their potential susceptibility to mines and mine-like objects.	2
Unmanned Aerial System Testing	Unmanned aircraft systems are remotely piloted or self-piloted (i.e., preprogrammed flight pattern) aircraft that include fixed-wing, rotary-wing, and other vertical takeoff vehicles. They can carry cameras, sensors, communications equipment, or other payloads.	2
Unmanned Surface Vehicle Testing	Unmanned surface vehicles are primarily autonomous systems designed to augment current and future platforms to help deter maritime threats. They employ a variety of sensors designed to extend the reach of manned ships.	4
Unmanned Underwater Vehicle Testing	Testing involves the production or upgrade of unmanned underwater vehicles. This may include testing of mission capabilities (e.g., mine detection), evaluating the basic functions of individual platforms, or conducting complex events with multiple vehicles.	38-39
Propulsion Testing	Ship is run at high speeds in various formations and at various depths.	8-10
Undersea Warfare Testing	Ships demonstrate capability of countermeasure systems and underwater surveillance, weapons engagement, and communications systems. This tests ships' ability to detect, track, and engage undersea targets.	9
Acoustic and Oceanographic Research	Research using active transmissions from sources deployed from ships, aircraft, and unmanned underwater vehicles. Research sources can be used as proxies for current and future Navy systems.	1
Non-Acoustic Component Testing	These tests involve non-acoustic sensors and communication systems. Non-acoustic sensors may also gather other forms of environmental data.	7-8
Radar and Other System Testing	Testing may include use of military or commercial radar, communication systems (or simulators), or high-energy lasers. Testing may occur aboard a ship or a helicopter against drones, small boats, or other targets.	54
Simulant Testing	The capability of surface ship defense systems to detect and protect against chemical and biological attacks are tested.	50

Types and frequency of consultation: Activities in the QRS that may require section 7 consultations beyond 2020 and into the foreseeable future are provided in Table 2. The Navy anticipates a minimum of one, possibly two ESA section 7 consultations over the next ten years for military readiness activities in the NWT study area. The Navy stated that due to the complexity and comprehensive nature of these readiness activities, each consultation involves the efforts of approximately two staff members each at NMFS and Navy headquarters. The

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Navy also noted that despite the statutory requirement to conclude ESA consultations within 135 days, the entire process (which includes early and informal coordination on all matters related to the proposed action and potential effects on Southern Resident killer whales and other ESA-protected species and critical habitats within the NWTTC study area) takes about 18 months.

National security concerns: The Navy expressed concern that designating critical habitat within the QRS or within a 10-km buffer of the QRS has the potential to impact the effectiveness of ongoing and future testing activities if additional mitigation requirements result in NAVSEA having to halt, reduce in scope, or geographically/seasonally constrain testing activities to prevent adverse effects or modification of critical habitat. In particular, the Navy stated that the capability to conduct the mine warfare activities proposed in the QRS is vital to the NAVSEA mission, and any additional restrictions imposed on testing in the QRS would impact the ability of NAVSEA to test and field new systems and platforms.

Southern Resident killer whale use of area: To weigh the benefits of designation, we reviewed the whales use of area. The QRS and the 10-km buffer around the QRS overlap with two areas being considered for Southern Resident killer whale critical habitat: Areas 1 and 2. As summarized in the Final Biological Report, Southern Resident killer whales have been documented using Areas 1 and 2 based on acoustic detections, sightings, and satellite tag data (NMFS 2021). We rated Areas 1 and 2 as having a very high conservation value given the whales' particularly high use of certain parts of Areas 1 and 2, as indicated by models of satellite tag data (portions of Areas 1 and 2 had usage more than three standard deviations above the mean, see Figure 3; Hanson *et al.* 2017), acoustic data indicating higher rates of detections than would be expected based on monitoring effort (Hanson *et al.* 2013), the documented use by all three pods, year-round use of the two areas, and high levels of foraging observed (*see* section V.A Determine the Benefits of Designation and Appendix B).

Hanson *et al.* (2017) evaluated movements and occurrence of Southern Residents relative to the Navy's NWTRC. As described above, although the QRS is a component of the Keyport Range Complex, the QRS underlies, and thus is largely defined by, the boundaries of W-237A within the NWTRC offshore OPAREA. The researchers' findings include:

- Around 10% of the NWTRC's Washington Coastal Warning Area (W-237) was used by satellite-tagged whales, and only the most shoreward portion of the range.
- Within W-237, satellite-tagged whales occurred only in three areas, from south to north: W-237A (which includes most of the QRS), W-237B, and W-237E. K and L pods occurred most commonly in W-237A, while J pod occurred only in W-237E.
- The areas used in W-237 represent 16.4% of the tagged whales' collective winter range (17.5% for K and L pods and 10.3% for J pod).
- K and L pod whales demonstrated frequent movements between W-237A, W-237B, and adjacent waters inshore of these areas.
- The tagged whales spent about 15% of their monitored time in W-237 (19.7% for K and L pods, and 3.1% for J pod).
- Approximately 10% of high-use cells (5x5 km cells, standard deviation >2 in the duration-of-occurrence model) were in the NWTRC, and all were associated with K/L pods.

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- The median visit duration to W-237 was estimated to be 13.3 hours (range 3.1-124.4 hours) with a median of 2.6 days between visits (range 0.4-24.2 days).

We were unable to update these findings for information specific to W-237A (Quinault Range Site) and the 10-km buffer, for this ESA section 4(b)(2) analysis.

The researchers' duration-of-occurrence model also indicated the highest-use cells were clustered south of the QRS in ocean waters off Grays Harbor, Willapa Bay, and the Columbia River (Figure 3). The southeastern portion of the 10-km buffer around the QRS overlaps a small number of these highest-use cells off Grays Harbor. The tagged whales likely traveled through the QRS to access their highest-use areas.

The whales have been observed foraging in Areas 1 and 2, including within the QRS.

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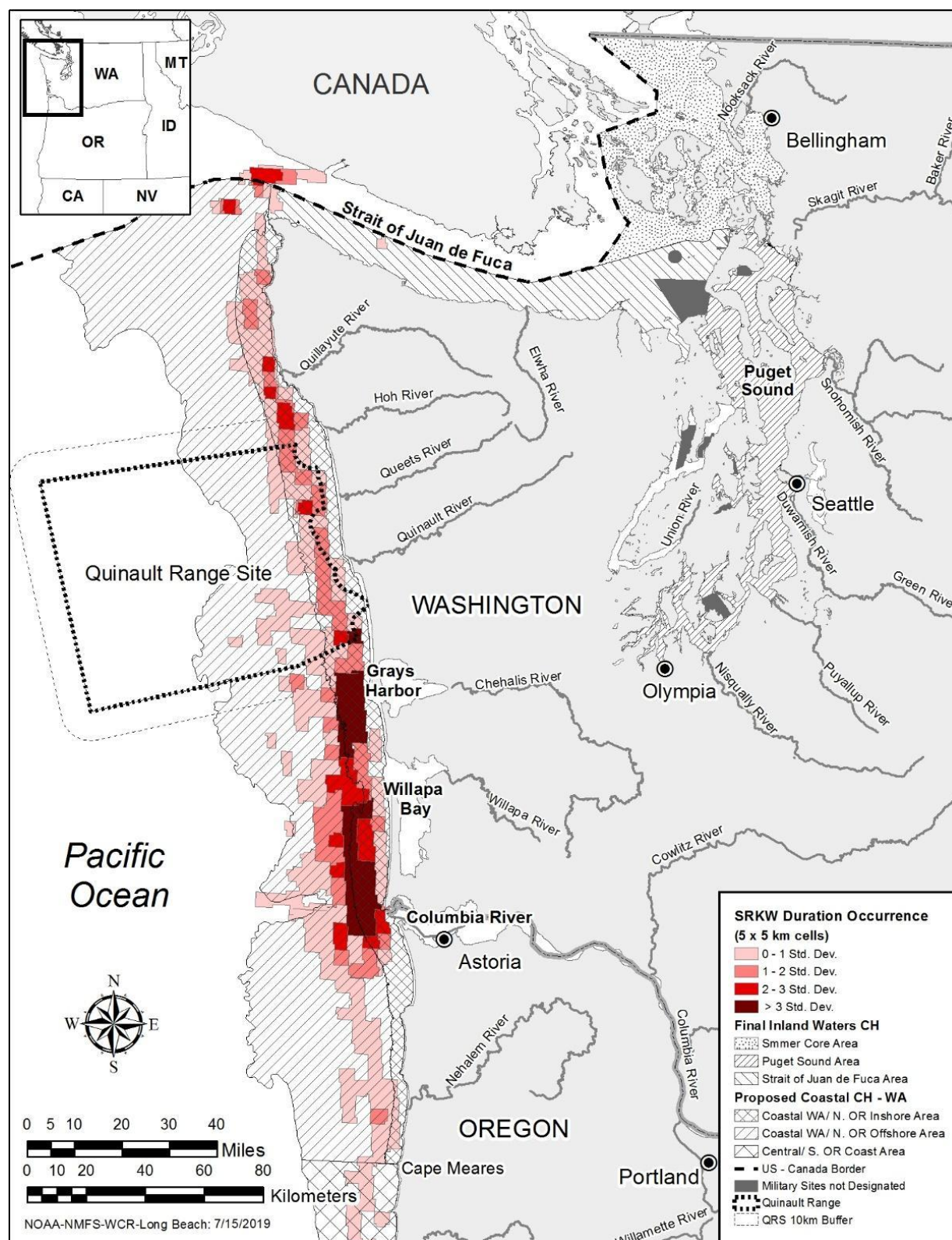


Figure 3. Output of a duration-of-occurrence model all for unique K and L pod satellite tag deployments (Hanson et al. 2017) overlaid with proposed critical habitat off the Washington coast and the area considered for exclusion.

Likelihood that Navy activities would destroy or adversely modify critical habitat: We have not conducted a formal analysis and cannot predict the outcome of a future consultation. However, we consider it unlikely that Navy activities in the QRS or a 10-km buffer around it would destroy or adversely modify Southern Resident killer whale critical habitat, and do not anticipate recommending additional conservation efforts or modifications to military activities as a result of a coastal critical habitat designation. Specifically, as discussed in the next section, we have worked with the Navy over time through the ESA section 7 consultation process and the Marine Mammal Protection Act (MMPA) authorization process to develop and implement measures that minimize and mitigate impacts from military activities on marine mammals, listed species, and their habitats. These existing measures may make the incremental protections offered by the designation of critical habitat less meaningful.

In addition, our consultation history suggests that the Navy's activities would be unlikely to destroy or adversely modify Southern Resident critical habitat. The Biological and Conference Opinion on the Navy's Northwest Training and Testing Activities, issued by NMFS on October 19, 2020, addresses activities within the QRS and analyzed the effects of the Navy's planned activities on Southern Resident killer whales as well as their prey. In the 2020 Biological Opinion on the Navy's training and testing activities in the NWTT, we concluded the effects of the proposed action would not appreciably diminish the value of Southern Resident killer whale inland designated critical habitat as a whole for the conservation of this species (NMFS 2020). The Biological Opinion also concluded that the extent of injury and mortality of Chinook salmon from explosions during training and testing in both inland and offshore waters was extremely low and not detectable above baseline conditions, and indirect effects to Southern Resident killer whales from explosion-related injury and mortality of Chinook were insignificant (NMFS 2020). While explosives may result in injury to Southern Resident killer prey species within designated inland and coastal critical habitat, we have no information to indicate that this stressor would have a measurable impact on the occurrence of prey species of sufficient condition, distribution, diversity, abundance and density necessary to support individual as well as population growth, reproduction, and development of this endangered DPS (NMFS 2020). As discussed in the consultation, the Navy has adopted certain mitigation measures within the QRS, including the portion of the QRS that overlaps with the Olympic Coast National Marine Sanctuary, to avoid or minimize adverse impacts on marine mammals and other marine resources in this area.

We also recently completed a Biological Opinion on the Navy's activities in the Hawaii-Southern California Training and Testing range, which include the use of sonar and explosives (similar to activities proposed in the QRS). The Biological Opinion explicitly considered the effects of sound, among other things, and found that the activities would not destroy or adversely modify the critical habitat of the main Hawaiian Islands insular false killer whale, another listed odontocete population (NMFS 2018).

Level of protection already provided by management, not in association with critical habitat: Baseline protections that support the conservation of Southern Resident killer whales in the areas being considered for critical habitat include provisions under the ESA and MMPA that protect the population from activities that may adversely affect the health of the population or its habitat.

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The Navy undergoes section 7 consultations under the ESA to ensure that its activities are not likely to jeopardize Southern Resident killer whales (and listed salmon, which are the whales' prey), as well as MMPA review and authorization for activities that may result in "take" of marine mammals. These reviews take into consideration how activities as a whole may affect Southern Resident killer whales, among other species, and address concerns associated with how these animals may be affected by activities that create noise and/or pollution in the marine environment. During ESA section 7 consultations and in support of MMPA protections, the Navy consults with NMFS to develop all possible and reasonable protective measures to minimize and avoid impacts to marine mammals and critical habitats. For example, per the current MMPA section 101(a)(5)(A) Letter of Authorization and regulations (50 CFR Part 218, Subpart O) governing the take of marine mammals incidental to the Navy's training and testing activities in the NWTT for the years 2015-2020, the Navy must employ mitigation measures, including lookouts and mitigation zones to minimize or avoid exposure to stressors. These measures are required, regardless of whether or where winter coastal waters critical habitat for Southern Resident killer whales is designated.

To meet requirements associated with understanding the impacts of these larger activities and to contribute to NMFS' conservation efforts to protect Southern Resident killer whales and their habitat, since 2004 the Navy has funding over \$4 million in research (average of approximately \$294,000 per year) in the offshore area, more than half of which directly supports Southern Resident killer whales, their prey, and their habitat (U.S. Navy 2018b).

Additional protections for Southern Resident killer whales essential habitat features may be achieved by other regulatory efforts that are aimed at protecting U.S. West Coast marine resources and the environment and may provide ancillary protections for the Southern Resident killer whale essential habitat features, such as regulations or restrictions associated with ensuring water quality and sustainable fish resources (e.g., in accordance with the Clean Water Act and the Magnuson-Stevens Fishery Conservation and Management Act). In addition, the QRS and the 10-km buffer around it largely coincide with the Olympic Coast National Marine Sanctuary, which provides some degree of protections for water quality and prey resources.

In December 2018, Washington's Governor Inslee announced his 2019-2021 operating, capital, and transportation budgets that include a combined \$1.1 billion in investments to build toward a thriving and resilient Southern Resident killer whale population. The budget proposal implements recommendations of the Governor's Southern Resident Killer Whale Task Force, and includes requiring the state to coordinate with the Navy in 2019 to work on reducing noise and disturbance from military exercises and Navy aircraft. The proposal also includes other policies, projects, and funding to increase enforcement of state and federal habitat protection laws, such as the Clean Water Act, and other investments to recover salmon, tackle climate change, and improve water quality (WA State Governor's Office 2018).

Likelihood critical habitat would be adversely modified by other activities with a federal nexus: Our ESA consultation history indicates that few, if any, non-DOD projects with a federal nexus occur solely within the particular area requested for exclusion, or affect the essential features only in the particular area. It is possible that new or additional non-DOD activities could occur there that could adversely modify the habitat, especially given the area's size. However, the area is largely within the boundaries of the Olympic Coast National Marine Sanctuary, and certain

activities are prohibited or not authorized within the Sanctuary, such as oil, gas, or mineral exploration, development, or production; discharging or depositing any material or other matter; drilling into, dredging, or otherwise altering the seabed, with some exceptions (15 CFR 922.152). This may limit the likelihood of other activities being proposed in the QRS or in the 10-km buffer around it. Additionally, as discussed in the Final Economic Report (IEc 2021), renewable energy (such as wind farms) in federal waters offshore of Washington has garnered little interest, and representatives from the federal Energy Regulatory Commission did not anticipate greater rates of activity there over the next ten years.

Recommendation

We conclude that the benefit to national security of excluding the QRS and a portion of the buffer outweighs the conservation benefit of designation, and recommend that this area be excluded from the critical habitat designation.

On the conservation value side of the ledger, critical habitat Areas 1 and 2 are identified as having very high value. However, the QRS and the 10-km buffer around it cover just over a quarter (27.9%) of these two areas combined, and many of the specific areas' values (educational, non-use, and conservation), both within and outside of the QRS and the 10-km buffer, can still be protected and are still protected via other measures, as discussed above, such as the MMPA, section 9 of the ESA, other critical habitat designations (e.g., salmon, green sturgeon), and other regulations or restrictions associated with ensuring water quality and sustainable fish resources. Areas 1 and 2 are rated as having very high conservation value based in part on the frequency of whale presence there, but the highest use areas for foraging are just south of the QRS, and only a small portion of the highest use areas are within the 10-km buffer around the QRS. The whales must transit the QRS and the buffer to reach those highest use areas, but highest use is mainly outside the QRS and the buffer (Figure 3). Additionally, the whales' use of the QRS and the buffer is not known to be unique; foraging has been observed in other portions of Areas 1 and 2 and in other specific areas of proposed coastal critical habitat. Based on these considerations, even though the specific Areas 1 and 2 have very high conservation values, because of high use by the whales in most of the areas, the area proposed for exclusion does not, in and of itself, represent a high use area.

On the military impacts side of the ledger, we defer to DOD expertise on the type and magnitude of these impacts. We give great weight to these impacts. Military impacts are national impacts and affect military readiness worldwide. The Navy identifies the QRS as a unique area (unique and varied depth, bathymetric conditions required for testing, and location close to Navy support facilities in Washington) that has high use supporting training activities important for the maintenance and deployment of military forces. An estimated 260 testing activities are proposed to occur annually in the QRS in 2020 and into the foreseeable future. The Navy also identified exclusion of a 10-km buffer around the QRS as necessary to avoid sound and energy levels that may cause injuries to Southern Resident killer whale prey and other fishes within critical habitat from the largest explosives that could be used in the QRS. A large portion (42.8%) of the QRS and the 10-km buffer around it is within proposed critical habitat. Although the main impact to the Navy of designating critical habitat in the QRS would be one or two ESA section 7 adverse modification analyses that are not expected to require modifications to the activities distinct from those required via the jeopardy analysis, those analyses are complex and would demand the

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diversion of staff, additional personnel time (administrative costs), and could potentially delay training, affecting worldwide military readiness.

Based on the great weight afforded military impacts, the unique training in support of military readiness that occurs within the QRS, and the potential delay in critical missions in order to complete adverse modification analyses, we find the national security impacts tip the scale and outweigh the limited impact to conservation values in just over 1/4 of the identified critical habitat Areas 1 and 2 where those areas overlap with the QRS and a 10-km buffer around it (*see* “Update from proposed rule” below for a discussion of a modified buffer exclusion since the proposed rule).

While the Navy will not be required to consult under section 7 of the ESA for any activity in Table 2 that may affect the essential features of Southern Resident killer whale critical habitat within the excluded area, the Navy is still required to consult on any impact those activities have on Southern Resident killer whales or on their prey as a causal impact to the whales themselves.

Update from proposed rule: We received many comments from environmental groups, members of the public, and Washington State opposing the exclusion because it would allow the Navy to conduct activities such as sonar and testing of explosives in the excluded area without considering effects to critical habitat. Part of the QRS overlaps with the Olympic Coast National Marine Sanctuary (OCNMS) where certain activities are prohibited or not authorized with some exceptions (15 CFR 922.152). In response to the comments received, including from NOAA’s National Marine Sanctuary Program, we are maintaining the exclusion of the QRS site, but have modified exclusion of the buffer area.

We continue to find that the Navy has provided a reasonably specific justification to support the requested exclusion of the QRS, and consistent with our Section 4(b)(2) Policy (81 FR 7226; February 11, 2016), we gave great weight to these concerns when analyzing the benefits of exclusion. Our consideration of the multiple factors discussed, coupled with the potential delay in critical missions in order to complete adverse modification analyses, caused us to continue to find that the benefits of excluding the QRS due to national security impacts outweigh the benefits of designating this portion of Areas 1 and 2 as critical habitat for the Southern Residents. However, we are modifying our proposed exclusion of the buffer area. Specifically, we are not excluding a portion of the 10 km buffer area around the northeast corner of the QRS, extending along the East side of the QRS, where it overlaps with the OCNMS (*see* Figure 4). We are still excluding two buffer areas that overlap with the OCNMS at the northwest and southeast corners of the sanctuary boundary, respectively, where activity outside the sanctuary could impact habitat within the sanctuary for a distance of up to 10 km (*see* Appendix A Figure 4 Map).

Furthermore, the portion of the buffer that extends beyond 10 km into the OCNMS, which we are not excluding, comprises an area of very high conservation value to the whales. As described in Appendix B of this report, we considered the conservation value of Areas 1 and 2 to be very high relative to the other coastal areas, given the whales’ high use of portions of the areas particularly for foraging, the documented use by all three pods, and year-round use of the areas. Not excluding this portion of the buffer also creates a corridor of critical habitat between the coastline and the eastern boundary of the QRS for most of the length of the QRS exclusion,

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which supports whale passage between critical habitat areas to the north and south of the QRS exclusion. Given the very high conservation value of this area for the whales and high use in portions, in combination with the existing mitigation for Navy activities in the portion of the QRS that overlap with the OCNMS which reduce the potential impact of critical habitat designation on Navy activities, we concluded the benefits of designating critical habitat for Southern Resident killer whales within this portion of the buffer are not outweighed by national security impacts of including that portion.

The Navy noted that the current limitation on conducting underwater explosives in this portion of the QRS is based on mitigation measures the Navy proposed in its NWTT SEIS (September 2020) and associated ESA and MMPA compliance documentation, which preclude the use of all underwater explosives for training and testing within 50 nmi from shore, with the exception of mine countermeasures neutralization activities which occur in the QRS where it does not overlap with the OCNMS. The Navy concluded it was practicable to implement this restriction; however all Navy mitigation measures allow for deviations (in consultation with NMFS) if driven by new and immediate national security requirements. Further, the Navy reviews its mitigation measures annually and can modify those mitigation measures as driven by evolving military readiness requirements, also in consultation with NMFS. The Navy stated that because techniques and tactics needed for national security can rapidly evolve, it is possible that modifications to current activities and the development of new technologies will require testing in areas that may not be currently utilized for underwater explosives. The Navy does not currently conduct explosives in this northeast corner of the QRS, extending along the East side of the QRS, or currently plan to do so; therefore, potential impacts to Southern Resident killer whale critical habitat will not extend into the OCNMS in this area at this time.

We are not aware of any changes planned for the protections provided by the OCNMS. In accordance with the best available information we considered the existing regulatory framework when analyzing the benefits of exclusion and designation, and did not take into account that the regulations regarding the OCNMS could change in the future, as this would be speculative. If future changes to existing regulations or mitigation alter the benefits of exclusion or designation of Southern Resident killer whale critical habitat in this area, then this rule may also be subject to change.

With this reduction in extent of the 10 km buffer within OCNMS, the total area of exclusion in the final rule is 1,400.4 mi² (3,627 km²) or 8.1 percent of total coastal critical habitat, and 24.4 and 22.7 percent of areas 1 and 2 each, respectively (Table 3).

Table Error! Bookmark not defined.. Updated area and overlap calculations for the Quinault Range Site (QRS) exclusion and critical habitat (CH) areas based on modified exclusion of the buffer area (not excluding the portion of the 10-km buffer that extends beyond 10 km into the OCNMS).

Location or Calculation of Interest	Area or Percent Overlap
CH Area 1	1,437.9 mi ² (3,724.2 km ²)
CH Area 2	4,617.2 mi ² (11,958.6 km ²)
CH Areas 1-6	17,310.4 mi ² (44,834.0 km ²)
CH currently designated in inland waters	2,559.9 mi ² (6,630 km ²)
QRS + revised buffer* overlap with CH Area 1	351 mi ² (909 km ²)

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Location or Calculation of Interest	Area or Percent Overlap
QRS + revised buffer overlap with CH Area 2	1,049.4 mi ² (2,718 km ²)
Percent of Area 1 in QRS + revised buffer	24.4%
Percent of Area 2 in QRS + revised buffer	22.7%
Percent of CH (Areas 1-6) in QRS + revised buffer	8.1%
Percent of CH (inland waters + coastal Areas 1-6) in QRS + revised buffer	7.0%

*Revised buffer exclusion is the original 10-km buffer around the entire QRS but not including the portion of the 10-km buffer that extends beyond 10 km into where the buffer and the OCNMS overlap. Values are based on best available spatial data at the time of the final rule.

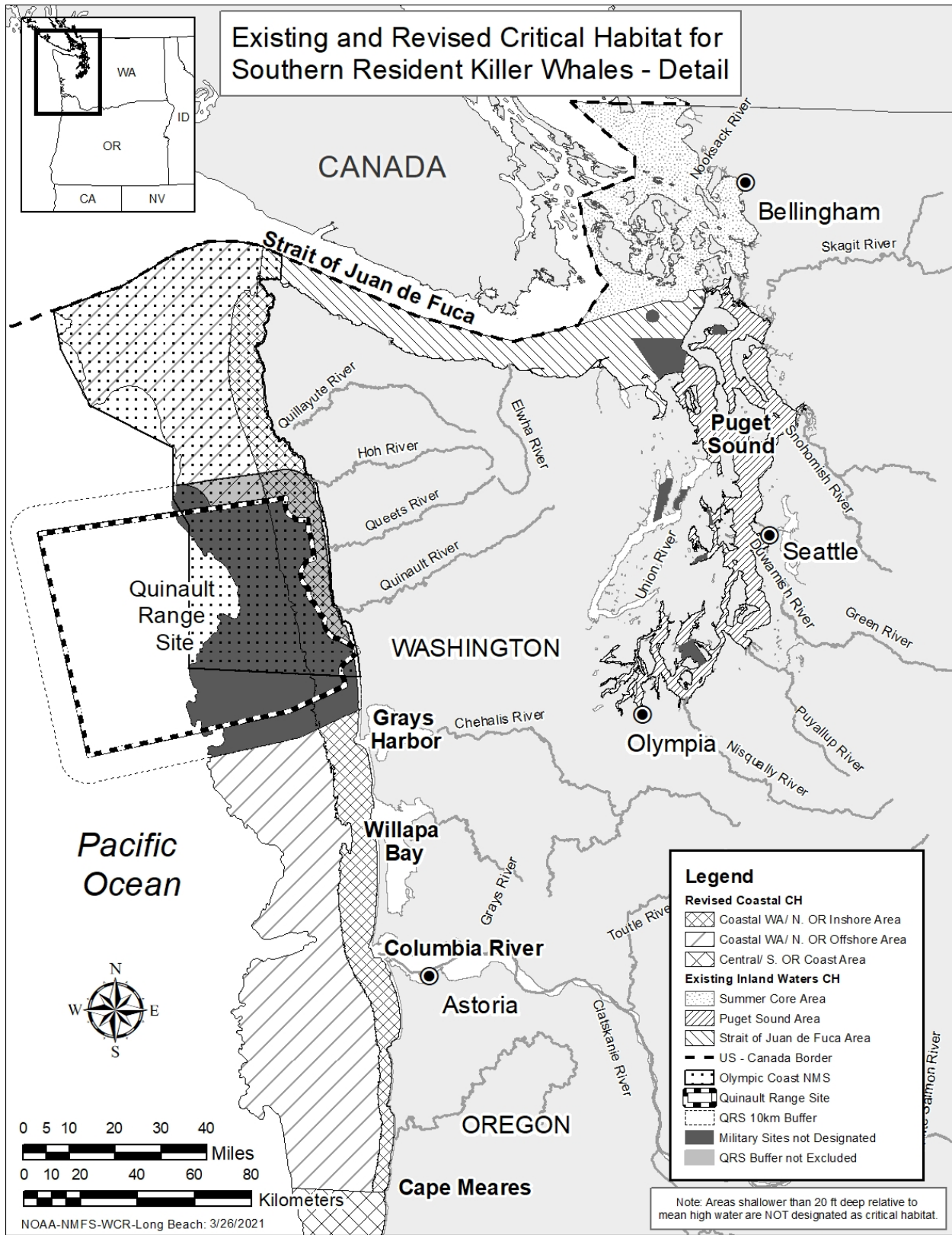


Figure 4. Detailed map of Military sites not designated as critical habitat. Includes map of the Quinault Range Site and 10-km buffer around it, requested by the Navy for exclusion from Southern Resident killer whale critical habitat, as well as the OCNMS and final excluded Military sites not excluding the portion of this buffer that extends beyond 10 km into the OCNMS. The excluded area overlaps with coastal critical habitat Areas 1 and 2 off the Washington coast.

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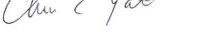
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Appendix B - Assessing the Conservation Value of Specific Areas to Aid in Evaluation of the Benefits of Designation

MEMORANDUM

April 23, 2021

TO: PRD File

FROM: Chris Yates 
Assistant Regional Administrator
Protected Resources Division, West Coast Region

SUBJECT: Revising the Designation of Critical Habitat for the Endangered Southern Resident Killer Whale Distinct Population Segment - Assessing the Conservation Value of Specific Areas to Aid in Evaluation of the Benefits of Designation

Section 4(b)(2) of the ESA provides that the Secretary shall consider “the economic impact, impact on national security, and any other relevant impact of specifying any particular area as critical habitat.” Once the impacts are determined, the agency has the discretion to weigh the benefits of excluding any particular area (that is, avoiding the economic, national security, and other costs) against the benefits of designating it (that is, the conservation benefits to the species). If the agency concludes that the benefits of the exclusion outweigh the benefits of designation, it has discretion to exclude (i.e., “may exclude”), so long as exclusion will not result in extinction of the species.

Ideally, the consideration and balancing of benefits would involve first translating all benefits into a common metric. Executive branch guidance from the Office of Management and Budget (Circular A-4) suggests that benefits should first be monetized (converted into dollars). Benefits that cannot be monetized should be quantified (for example, numbers of whales saved). Where benefits can neither be monetized nor quantified, agencies are to describe the expected benefits (OMB 2003). As discussed in Chapter 4 of the Final Economic Report, although available literature demonstrates that killer whales have value to people nationally and serve as an economic engine regionally, we are not able to monetize or quantify the conservation benefit of designating the particular areas as critical habitat (IEc 2021). Instead, and consistent with other agency critical habitat designations, we qualitatively assessed the conservation value to Southern Resident killer whales of the six specific areas along the U.S. West Coast that are under consideration for critical habitat designation.

NMFS has used a variety of approaches to conduct assessments of conservation value for other critical habitat designations and revisions. For example, for the Southern distinct population segment (DPS) of green sturgeon, NMFS and the critical habitat review team used a complex, multi-phase, semi-quantitative process with a “multi-factor scoring system” and an “alternate approach” to generate several sets of conservation value ratings for 40 specific areas (NMFS 2009). Alternatively, for other designations, such as for the Puget Sound/Georgia Basin DPSs of rockfish and Southern DPS of eulachon, the analysis has used a less complex qualitative consideration of various characteristics of the habitat and the animals’ use of the habitat (NMFS 2011, 2014).

We considered several categories of information to characterize Southern Resident killer whales’ relative use of the particular areas and the importance of physical and biological features in the

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areas. However, gaps in or limitations of existing data made an evaluation across all of the areas challenging. For example, we considered the following:

- *Number of essential features in each area.* As noted in the Final Biological Report (NMFS 2021), the primary essential feature varies by area, but each of the areas contains all three identified essential features, so this would not differentiate among the areas.
- *Number of pods using the area.* All three pods have been documented in coastal waters off Washington, and only K and L pods have been documented farther south. However, we do not consider this to represent a real difference in the conservation value of the areas, since all three pods are important for the conservation of the DPS.
- *The proportion of prey samples collected from each area.* This might be used to characterize the areas' relative importance for foraging, where a higher proportion of samples might indicate greater foraging or prey resources. However, nearly all (93%) of the prey samples were collected during field efforts directed by the locations of satellite-tagged whales, and satellite-tagged whales did not go into Area 6, so this metric would underestimate the conservation value of Area 6. (Predation has been observed but not sampled in Area 6; Black *et al.* 2001). Any spatial bias in NMFS' and partners' ability to conduct on-water response in particular locations to collect prey samples would also limit the usefulness of this factor for comparing relative importance of the critical habitat areas.
- *The proportion of confirmed opportunistic sightings of Southern Resident killer whales observed in the area, or number of sightings per unit area.* Appendix A of the Final Biological Report lists 49 confirmed sightings in the areas under consideration for coastal critical habitat (NMFS 2021). Opportunistic sightings data provide information on when and where whales occur along the coast, but they are less useful for informing a relative ranking of the whales' use of the specific areas due to their spatial bias (e.g., sightings may be influenced by locations of population centers or whale watching operations). Additionally, for over 40% of the sightings off the Washington coast, a precise location or depth was not available, so the sightings could not be assigned to Area 1 or 2 (which are separated at the 50-m depth contour). There was not sufficient information to support quantitative (e.g., probabilistic) assignment of these sightings to one area or the other, and excluding these sightings or double-counting them as a sighting for each area would have under- or over-weighted the importance or value of these areas, respectively.
- *Usage of the area based on models of movement data from satellite tags.* Hanson *et al.* (2017) developed two models (duration of occurrence and state-space models) to analyze the movements of satellite-tagged whales and identify areas of high use and travel corridors. These models provide useful information to characterize the tagged whales' use of coastal areas, but because the whales did not use Area 6, use of this metric would underestimate the value of Area 6 despite other indicators (sightings) that the whales use the area. Hanson *et al.* (2017) note that the reasons for the smaller range of satellite-tagged K- and L-pod whales compared to their opportunistic sighting range is unknown, but could be related to the small sample size of tagged whales, inter-annual variability

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(particularly because inter-annual differences in acoustic detection rates have previously been documented by Hanson *et al.* (2013)), or other factors.

- *Acoustic detections in each area (e.g., rate).* We have data from autonomous passive acoustic recorders deployed along the U.S. West Coast since 2006 (Hanson *et al.* 2017), but none of the recorders were located in Areas 4 or 6, so a metric using acoustic detections would underestimate the value of those areas. To compensate for this, we could assume that whales detected in Area 5 must have at least traveled through Area 4, but we cannot make the same assumption for Area 6. Additionally, based on the estimated 5-mi radius detection range, some recorders off the coast of Washington may be detecting whales in either Areas 1 or 2 (or both). This makes the acoustic data are less useful for differentiating the whales' usage between those two areas.
- *Months in which whales were documented in the area.* In Table 2 of the Final Biological Report (NMFS 2021), we listed the months in which Southern Resident killer whales were documented in each area based on sightings, acoustic detections, satellite tag locations, and the combined datasets. However, as described above, each of those datasets has limitations or gaps that limit their utility for assessing conservation value, particularly for Area 6.

Additionally, we were not able to identify a category of information to reflect the value an area can have as a passageway or connection between higher-use foraging areas. Whales may primarily travel through these areas, such that the areas appear to have relatively lower use. However, we have determined that unrestricted passage within and between critical habitat areas is essential for the whales' conservation, and areas that serve primarily as a connection to other areas are important to the whales' conservation. Low-use or low-traveled areas continue to offer essential features and may also provide unique opportunities for foraging as oceanic conditions vary seasonally or temporally.

Due to the data gaps and limitations described above, we chose not to develop a scoring system for assessing the relative conservation value of the six areas being considered for Southern Resident killer whale critical habitat. However, we qualitatively considered the data, mindful of the gaps and limitations. Similar to the 2006 Southern Resident killer whale critical habitat designation in Washington inland waters, we found that it was difficult to distinguish the value of any one of the six coastal areas: each of the areas supports an important aspect of the whales' physical and biological needs, and the conservation function of each area complements the conservation function of the others. Therefore designation of each particular area benefits the conservation function of the other areas.

Based on the available information on the whales' use of the areas (and gaps in information) and the physical and biological features essential to the whales' conservation, we consider the conservation value of each coastal area to be *high*. However, we consider the value of Areas 1 and 2 to be *very high* relative to the other coastal areas, given the whales' particularly high use of portions of the areas, as indicated by models of satellite tag data (portions of the areas, mainly between Grays Harbor and the mouth of the Columbia River, had usage more than three standard deviations above the mean: Hanson *et al.* 2017), acoustic data indicating higher rates of detections than would be expected based on monitoring effort (Hanson *et al.* 2013), the

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documented use by all three pods, year-round use of the areas, and high levels of foraging observed.

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