Designation of Critical Habitat for the Endangered Black Abalone

Draft ESA Section 4(b)(2) Report

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Background and Summary

This report contains the National Oceanic Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), Southwest Region's recommendations for the proposed designation of critical habitat under section 4 of the Endangered Species Act (ESA) for the endangered black abalone (*Haliotis cracherodii*), which we listed under the ESA on January 14, 2009 (74 FR 1937). This draft ESA section 4(b)(2) report was prepared in support of the proposed rule and describes the methods used, process followed, and conclusions reached for each step leading to the proposed critical habitat designation.

We considered various alternatives to the critical habitat designation for black abalone. The alternative of not designating critical habitat for black abalone would impose no economic, national security, or other relevant impacts, but would not provide any conservation benefit to the species. This alternative was considered and rejected because such an approach does not meet the legal requirements of the ESA and would not provide for the conservation of black abalone. The alternative of designating all of the areas considered for designation (i.e., no areas excluded) was also considered and rejected because, for one area, the economic benefits of exclusion outweighed the benefits of designation, and NMFS did not determine that exclusion of this area would significantly impede conservation of the species or result in extinction of the species. The total estimated annualized economic impact associated with the designation of all of the areas considered would be $595,900 to $158,967,500 (discounted at 7 percent) or $562,600 to $144,410,200 (discounted at 3 percent).

An alternative to designating critical habitat within all of the areas considered for designation is the designation of critical habitat within a subset of these areas. Under section 4(b)(2) of the ESA, NMFS must consider the economic impacts, impacts to national security, and other relevant impacts of designating any particular area as critical habitat. NMFS has the discretion to exclude an area from designation as critical habitat if the benefits of exclusion (i.e., the impacts that would be avoided if an area were excluded from the designation) outweigh the benefits of designation (i.e., the conservation benefits to black abalone if an area were designated), so long as exclusion of the area will not result in extinction of the species. Exclusion under section 4(b)(2) of the ESA of one or more of the areas considered for designation would reduce the total impacts of designation. The determination of which units and how many to exclude depends on NMFS' ESA section 4(b)(2) analysis, which is conducted for each area and described in detail in this report. Under this preferred alternative, NMFS proposes to exclude one out of the 20 areas considered. The total estimated economic impact associated with this preferred alternative is $582,500 to $155,851,400 (discounted at 7 percent) or $551,800 to $141,300,500 (discounted at 3 percent). NMFS determined that the exclusion of this one area would not significantly impede the conservation of black abalone nor result in extinction of the species. NMFS selected this as the preferred alternative because it results in a critical habitat designation that provides for the conservation of black abalone while reducing the economic impacts on entities. This alternative also meets the requirements under the ESA and our joint NMFS-U.S. Fish and Wildlife Service (USFWS) regulations concerning critical habitat.

I. Statute and Regulations

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

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]

"Critical Habitat" is specifically defined

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

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

"Conservation" is specifically defined

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

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

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

Certain military lands are precluded from designation

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

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

Specific information required for making designations

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

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

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) of the ESA (16 U.S.C. 1533(b)(1)(A)) requires the Secretary to first consider the impact of designation and permits the Secretary to exclude areas from designation under certain circumstances. Exclusion is not required for any areas:

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

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

Once critical habitat is designated, section 7(a)(2) of the ESA provides that federal agencies must ensure any actions they authorize, fund, or carry out are not likely to result in the destruction or adverse modification of designated critical habitat (16 U.S.C. 1536(a)(2)).

Section 7 of the ESA also requires federal agencies to ensure such actions do not jeopardize the continued existence of the listed species:

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

Authority to designate critical habitat is delegated to NMFS

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

Joint regulations govern designation

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

> 50 CFR § 424.12 Criteria for designating critical habitat.
>
> (b) In determining what areas are critical habitat, the Secretary shall consider those physical and biological features that are essential to the conservation of a given species and that may require special management considerations or protection. Such requirements include, but are not limited to, the following:
>
> (1) Space for individual and population growth, and for normal behavior;
> (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
> (3) Cover or shelter;
> (4) Sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and generally;
> (5) Habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.
>
> When considering the designation of critical habitat, the Secretary shall focus on the principal biological or physical constituent elements within the defined area that are essential to the conservation of the species. Known primary constituent elements shall be listed with the critical habitat description. Primary constituent elements may include, but are not limited to, the following: roost sites, nesting grounds, spawning sites, feeding sites, seasonal wetland or dryland, water quality or quantity, host species or plant pollinator, geological formation, vegetation type, tide, and specific soil types.
>
> (c) Each critical habitat will be defined by specific limits using reference points and lines as found on standard topographic maps of the area. Each area will be referenced to the State(s),

> county(ies), or other local governmental units within which all or part of the critical habitat is located. Unless otherwise indicated within the critical habitat descriptions, the names of the State(s) and county(ies) are provided for information only and do not constitute the boundaries of the area. Ephemeral reference points (e.g., trees, sand bars) shall not be used in defining critical habitat.
>
> (d) When several habitats, each satisfying the requirements for designation as critical habitat, are located in proximity to one another, an inclusive area may be designated as critical habitat.

The regulations confine designation to areas within United States jurisdiction:

> (h) Critical habitat shall not be designated within foreign countries or in other areas outside of United States jurisdiction (50 CFR § 424.12).

The regulations define "special management considerations or protection."

> (j) Special management considerations or protection means any methods or procedures useful in protecting physical and biological features of the environment for the conservation of listed species (50 CFR § 424.02).

Approach to designation

Based on this statutory and regulatory direction, our approach to designation included the following steps:

1. Identify specific areas eligible for critical habitat designation
   - Identify areas meeting the definition of critical habitat
   - Identify military areas ineligible for designation

2. Conduct an ESA section 4(b)(2) analysis:
   - Determine the impacts of designation
   - Determine the benefits of designation
   - Determine the benefits of exclusion
   - Determine whether benefits of exclusion of any particular area outweigh benefits of designation and recommend exclusions if appropriate

II. Identify Specific Areas Eligible for Critical Habitat Designation

Identify areas meeting the definition of critical habitat

Areas that meet the definition of critical habitat include specific areas: 1) within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and 2) outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation. To identify these specific areas, a critical habitat review team (CHRT) was convened. The CHRT consisted of seven Federal biologists from NMFS, the Monterey Bay National Marine Sanctuary, the National Park Service, Minerals Management Service, the Navy, and the U.S. Geological Survey. The CHRT members are

abalone and rocky intertidal experts, and most have direct field research experience with black abalone in California. The CHRT's analysis and conclusions regarding which specific areas meet the definition of critical habitat, and may therefore be eligible for designation, are documented in a separate draft Biological Report (*NMFS 2010a*).

Geographical area occupied by the species

Pursuant to section 3(5)(A) of the ESA, the first task was to determine "the geographical area occupied by the species at the time of listing." For the purposes of the ESA listing, the current range of black abalone was defined to extend from Crescent City (Del Norte County, California) to Cape San Lucas, Northern Baja California, Mexico. Because we cannot designate critical habitat in areas outside of the United States, the occupied geographical area under consideration for this designation was limited to Point Arena, California, to the U.S.-California/Mexico border, including all offshore islands. Some literature references state that the historical range extended north to Coos Bay (*Oldroyd 1927*, *Geiger 2000*), based on observations of black abalone in the bay in the 1930s (*Reimers 1975*). Reimers (*1975*), however, considered the presence of black abalone in Coos Bay to be questionable and possibly the result of a well-meaning but misguided attempt to introduce black abalone to the Oregon coast. Within California, the northernmost documented record of black abalone (based on museum specimens) is from Crescent City (*Geiger 2004*). Black abalone are considered rare north of San Francisco (*Morris et al. 1980*) and south of Punta Eugenia (*pers. comm. with Pete Raimondi, UCSC, cited in the Black Abalone Status Review Report 2009*). Black abalone typically inhabit coastal and offshore island rocky intertidal habitats but can occur to depths of six meters (*Leighton 2005*).

Physical or biological features essential to conservation

The CHRT determined the physical or biological habitat features essential to the conservation of black abalone based on their biology and life history, focusing on "primary constituent elements" (PCEs) as directed by our regulations. The CHRT considered the biology and life history of black abalone, and regulatory direction gleaned from the ESA and the joint USFWS/NMFS regulations, to identify the physical or biological features essential to species conservation. Based on the best available scientific information, the CHRT identified the following PCEs for black abalone (*NMFS 2010a*): Rocky substrates within suitable depths from mean higher high water to six meters depth, food resources, juvenile settlement habitat (containing crustose coralline algae and crevices or cryptic biogenic structure), suitable water quality, and natural/adequate nearshore circulation patterns to retain or disperse eggs and larvae.

"Specific Areas" within the occupied geographical area

To identify the specific areas within the geographical area occupied by the species, the CHRT first identified rocky intertidal habitats along the California coast and offshore islands, using Environmental Sensitivity Index maps developed for the California shoreline (http://response.restoration.noaa.gov/index.php, see "Environmental Sensitivity Index (ESI) Maps" under "Featured Software and Data Sets"). The CHRT then used the best available data from long-term monitoring studies, published references, and personal communication with experts to verify the presence of black abalone in each area. Finally, the CHRT verified that each area contained at least one PCE and that the PCE(s) may require special management

considerations or protection. More detailed information on the specific areas and their use by black abalone, the PCEs present within each area, and activities that may affect the PCEs such that special management considerations or protection may be required can be found in the proposed rule and the draft Biological Report (*NMFS 2010a*).

Rocky intertidal reefs along the California coast and offshore islands are discrete and separated by expanses of sandy habitat. Data are available to map and identify general areas of rocky habitat along the California coast and offshore islands. However, in order to protect the location of remaining black abalone populations, the CHRT did not identify each individual rocky intertidal reef as a specific area. Instead, the CHRT delineated 10 segments of the California coast as specific areas, based on features of the habitat and the location of survey sites where black abalone have been observed. To avoid disclosing the location of black abalone survey sites, the CHRT defined the boundaries of these specific areas by selecting the geographic location closest to the black abalone survey sites. The CHRT also delineated 10 offshore islands as specific areas, where black abalone have been observed. Thus, these 20 specific areas encompass rocky intertidal habitats where black abalone have been observed but also contain habitats (such as sandy beaches) that do not support black abalone. The actual areas that would be designated as critical habitat are the rocky intertidal habitats within each of the specific areas. The shoreward boundary would be defined by the mean higher high water (MHHW) line and the offshore boundary would be defined by the six meter depth contour.

The CHRT delineated and considered the following 20 specific areas containing rocky intertidal habitat along the California coast and offshore islands (from MHHW to six meters depth; Figures 1, 2, and 3):

(1) From Del Mar Landing Ecological Reserve to Bodega Head;
(2) From Bodega Head to Point Bonita;
(3) Farallon Islands;
(4) From the southern point at the mouth of San Francisco Bay to Moss Beach;
(5) From Moss Beach to just north of Pescadero State Beach;
(6) Año Nuevo Island;
(7) From just north of Pescadero State Beach to Natural Bridges State Beach;
(8) From Pacific Grove to Prewitt Creek;
(9) From Prewitt Creek to Cayucos;
(10) From Montaña de Oro State Park to just south of Government Point;
(11) Palos Verdes Peninsula from the Palos Verdes/Torrance border to Los Angeles Harbor;
(12) From Corona Del Mar State Beach to Dana Point;
(13) San Miguel Island;
(14) Santa Rosa Island;
(15) Santa Cruz Island;
(16) Anacapa Island;
(17) San Nicolas Island;
(18) Santa Barbara Island;
(19) Catalina Island; and
(20) San Clemente Island.

Special management considerations or protection

Agency regulations define "special management considerations or protection" to mean "any methods or procedures useful in protecting physical and biological features of the environment for the conservation of listed species." Based on the best available data, the draft Economic Analysis Report (*NMFS 2010b*), and their knowledge of the specific areas, the CHRT identified at least one threat within each specific area that may affect the PCE(s) such that special management considerations or protection may be required, as defined by our regulations. Major categories of habitat-related activities that may affect black abalone habitat include: (1) coastal development (e.g., residential and commercial construction, construction or expansion of stormwater outfalls); (2) in-water construction (e.g., coastal armoring, pier construction, jetty or harbor construction, pile driving); (3) sand replenishment or beach nourishment activities; (4) dredging and disposal of dredged material; (5) agricultural activities (e.g., irrigation, livestock farming, pesticide application); (6) National Pollutant Discharge Elimination System (NPDES) activities and activities generating non-point source pollution; (7) side-casting activities (e.g., the dumping of materials generated from road maintenance activities); (8) oil and chemical spills and clean-up activities; (9) mineral and petroleum exploration or extraction activities; (10) power generation operations involving water withdrawal from and discharge to marine coastal waters; (11) construction and operation of alternative energy hydrokinetic projects (tidal or wave energy projects); (12) construction and operation of desalination plants; (13) construction and operation of liquefied natural gas (LNG) projects; (14) vessel groundings; (15) non-native species introduction and management (from commercial shipping and aquaculture); (16) kelp harvesting activities; and (17) activities that lead to global climate change (e.g., fossil fuel combustion).

The draft Biological Report (*NMFS 2010a*) and draft Economic Analysis Report (*NMFS 2010b*) provide a description of the potential effects of each category of activities on the PCEs. For example, activities such as in-water construction, coastal development, dredging and disposal, side-casting, mineral and petroleum exploration and extraction, and sand replenishment may result in increased sedimentation, erosion, turbidity, or scouring in rocky intertidal habitats. The construction of proposed energy projects and desalination projects along the coast would result in increased in-water construction and coastal development. The operation of these energy projects and desalination projects may also increase local water temperatures with the discharge of heated effluent, or introduce elevated levels of certain metals or contaminants into the water. The discharge of contaminants from activities such as NPDES activities may affect water quality, food resources (by affecting the algal community), and settlement habitat (by affecting the ability of larvae to settle). Introduction of non-native species may also affect food resources and settlement habitat if species alter the natural algal communities. Shifts in water temperatures and sea level related to global climate change may also affect black abalone habitat. For example, coastal water temperatures may increase to levels above the optimal range for black abalone and sea level rise may alter the distribution of rocky intertidal habitats along the California coast.

Unoccupied areas

Section 3(5)(A)(ii) of the ESA authorizes the designation of “specific areas outside the geographical area occupied at the time [the species] is listed” if these areas are essential for the conservation of the species. Regulations at 50 CFR 424.12(e) emphasize that the agency “shall

designate as critical habitat areas outside the geographical area presently occupied by a species only when a designation limited to its present range would be inadequate to ensure the conservation of the species."

The CHRT identified potential unoccupied areas to consider for designation. These areas represent segments of the California and Oregon coast that contain rocky intertidal habitats that historically supported black abalone and that may support black abalone populations in the future. The CHRT identified the following unoccupied areas:

(1) From Cape Arago State Park, Oregon, to Del Mar Landing Ecological Reserve, California;
(2) From just south of Government Point to Point Dume State Beach, California; and
(3) From Cardiff State Beach in Encinitas, California, to Cabrillo National Monument, California.

In each of these areas, black abalone have not been observed in surveys in the past 5 years. In the area from Cape Arago, Oregon, to the Del Mar Landing Ecological Reserve, California, four museum specimens of black abalone were noted at two survey sites (*Geiger 2004*), one specimen was noted at another site where red abalone are considered common (*Thompson 1920*), and no data on black abalone were available for the other sites. No black abalone were observed during rocky intertidal surveys conducted in the 1970s and 1980s at several sites within this area (*pers. comm. with J. DeMartini, Humboldt State University, on February 11, 2010*). In the area from just south of Government Point to Point Dume State Beach in California, black abalone were reported as rare at one site (*Morin and Harrington 1979*), but have never been observed at the other survey sites. In the area from Cardiff State Beach to Cabrillo National Monument in California, black abalone were noted to be historically present at a few sites (*Zedler 1976* and *1978*) and rare at one site (*California State Water Resources Control Board 1979*).

At this time, the CHRT concluded that the three unoccupied areas *may be essential* for conservation, but that there is currently insufficient data to conclude that any of the areas *are essential* for conservation. Therefore, the three presently unoccupied areas were not considered in further analyses. We solicit comments from the public regarding the historical, current, and potential condition of the habitat and of black abalone populations within the unoccupied areas identified above and the importance of these areas to conservation of the species.

Military areas ineligible for designation

Recent amendments to the ESA preclude the Secretary from designating military lands as critical habitat if those lands are subject to an Integrated Natural Resource Management Plan (INRMP) under the Sikes Act and the Secretary certifies in writing that the plan benefits the listed species (section 4(a)(3)(B) of the ESA). The INRMPs provide guidelines, goals, and objectives for species management in an effort to recover, improve, or restore natural resources while ensuring continued support of the military mission. NMFS contacted the Department of Defense (DOD) and requested information on all INRMPs for DOD facilities that overlap with the specific areas being considered for designation and that might provide benefits to black abalone. In response to this request, the DOD identified four installations owned or controlled by the U.S. Navy for which INRMPs have been prepared and that may occur within the specific areas being

considered by NMFS for designation as black abalone critical habitat. These installations include:

(1) San Clemente Island;
(2) San Nicolas Island;
(3) Naval Weapons Station Seal Beach; and
(4) Naval Base Ventura County (Point Mugu and Port Hueneme).

NMFS determined that the Naval Weapons Station Seal Beach and Naval Base Ventura County installations do not overlap with the specific areas being considered for designation. Thus, these installations were not considered in further analyses. NMFS determined that the San Clemente Island and San Nicolas Island installations do occur within the specific areas being considered for designation. Because black abalone were not listed under the ESA when the current INRMPs were developed, the INRMPs do not include specific protections for black abalone, although they do include protections for other rocky intertidal species that may also benefit black abalone. The Navy is currently revising the INRMPs for these two installations and will include specific management actions and conservation benefits for black abalone. Recommended management actions being considered by the Navy for inclusion in the revised INRMPs include:

(1) Conducting presence/absence surveys and developing annual abalone monitoring protocols where suitable habitat exists. On San Nicolas Island, survey sites would include those established and surveyed by Dr. Glenn VanBlaricom since the 1970s (*VanBlaricom et al. 2009*). On San Clemente Island, the island would be surveyed and annual monitoring sites established.
(2) Supporting establishment of rocky intertidal monitoring sites on San Nicolas Island and San Clemente Island to provide complementary data sets documenting trends of key rocky intertidal species assemblages.
(3) Developing educational materials for personnel and visitors to the San Nicolas Island and San Clemente Island to inform them of black abalone issues and their role in helping to preserve the species.
(4) Continuing to support appropriate closures at the islands. Closures of the south side of the islands to recreational activities would continue to limit access to the largest known black abalone populations on San Nicolas Island and limit access to a large intertidal area on San Clemente Island.
(5) Continuing to review all military activities to ensure compliance with the ESA and avoid or minimize impacts to black abalone. Historical monitoring data sets would be integrated into San Nicolas Island databases and a San Clemente Island database would be created to inform management.
(6) Continuing to participate with Federal and State recovery planning and other efforts to help establish stable black abalone populations.

NMFS has determined that because the existing INRMPs do not provide adequate benefits to black abalone and the revised INRMPs have not yet been finalized, the specific areas cannot be considered ineligible for designation at this time. Thus, San Nicolas Island and San Clemente Island remain eligible for designation. NMFS plans to work with the Navy to revise the INRMPs to include management actions and conservation benefits for black abalone, such as the

Navy's recommended management actions listed above. Once the INRMPs have been revised to include management actions that benefit black abalone and are finalized, the areas would be considered ineligible for designation as critical habitat. NMFS has provided comments to the Navy on the June 2010 draft INRMP for San Nicolas Island. The Navy plans to finalize the revised San Nicolas Island INRMP in Fall 2010. The Navy has not set a projected completion date for the San Clemente Island INRMP.

III. Conduct a Section 4(b)(2) Analysis

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 may designate any "particular" area, we must consider the economic impact, impact on national security, and any other relevant impact. Once impacts are determined, the agency is to weigh the benefits of excluding any particular area (that is, the economic, national security, or other impacts that would be avoided) against the benefits of designating it (that is, the conservation benefits to the species). If the agency concludes that the benefits of exclusion outweigh the benefits of designation, it has discretion to exclude, so long as exclusion will not result in extinction of the species.

Identify "particular" areas

The first step in conducting the ESA section 4(b)(2) analysis is to identify the "particular areas" to be analyzed. The "particular areas" considered for exclusion differed based on the impacts identified. Where we considered economic impacts and weighed the economic benefits of exclusion against the conservation benefits of designation, we used the same biologically-based "specific areas" that the CHRT had identified under section 3(5)(A). Delineating the "particular areas" as the same units as the "specific areas" allowed us to most effectively consider the conservation value of the different areas when balancing the conservation benefits of designation against the economic benefits of designation. We also considered exclusions based on impacts on national security and other relevant impacts. Delineating particular areas based on impacts on national security or impacts on tribes was based on land ownership or control (e.g., land controlled by the DOD within which national security impacts may exist, or Indian lands).

Determine the impacts of the designation

The primary impact of a critical habitat designation stems from the requirement under section 7(a)(2) of the ESA that Federal agencies insure 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) of the ESA contains the overlapping requirement that Federal agencies must also insure their actions are not likely to jeopardize the species' continued existence. The true impact of designation is the extent to which Federal agencies modify their actions to insure their actions are not likely to destroy or adversely modify the critical habitat of the species, beyond any modifications they would make because of the listing and the jeopardy provision. Additional impacts of designation include state and local protections that may be triggered as a result of the designation and educating the public about the importance of each area for species conservation. Thus, the impacts of the designation include conservation impacts for black abalone and its habitat, economic impacts, impacts on national security, and other relevant impacts that may result from the designation and the application of ESA section 7(a)(2).

In determining the impacts of designation, we predicted the incremental change in Federal agency actions as a result of critical habitat designation and the adverse modification provision, beyond the changes predicted to occur as a result of the listing and the jeopardy provision (i.e., the coextensive impact). In recent critical habitat designations for salmon and steelhead and for Southern Resident killer whales, the "coextensive" impact of designation was considered in accordance with a Tenth Circuit Court decision *(New Mexico Cattle Growers Association v. U.S. Fish and Wildlife Service, 248 F.3d 1277 (10th Cir. 2001)) (NMCA).* The USFWS had determined there would be no economic impact from the designation because the impacts associated with jeopardy determinations and adverse modification determinations were co-extensive, due to the similarity in the jeopardy and adverse modification definitions. The Tenth Circuit found the USFWS's approach rendered meaningless Congress's requirement that economic impacts be considered in the designation process. The Court concluded that, to give "effect to Congressional directive," the USFWS must analyze the full impacts of designation, regardless of whether those impacts are coextensive with other impacts (such as the impact of the jeopardy provision). The "coextensive" impact of designation considers the predicted change in the Federal agency action resulting from the critical habitat designation and the adverse modification provision (whereby the action's effect on the PCEs of the species' habitat and value of the habitat is analyzed), even if the same change would result from application of the listing and the jeopardy provision (whereby the action's effect on the species itself and individual members of the species is analyzed).

Shortly after the NMCA decision, however, the Court of Appeals for the Fifth Circuit (*Sierra Club v. U.S. Fish and Wildlife Service*, 243 F.3d 434 (5th Cir. 2001) (*Sierra Club*)) and the Court of Appeals for the Ninth Circuit (*Gifford Pinchot Task Force v. FWS*, 378 F. 3d 1059 (9th Cir. 2004); hereafter, *Gifford Pinchot*) invalidated the regulatory definition of "adverse modification" of critical habitat provided in the joint USFWS/NMFS regulations. The Court's decision did not address the regulatory definition of jeopardy. Shortly following that decision, a District Court in Washington, D.C. issued a decision involving the USFWS's critical habitat designation for the piping plover (*Cape Hatteras Access Preservation Alliance v. Norton*, 344 F. Supp. 2d 1080 (D.D.C. 2004); hereafter, *Cape Hatteras*). In that decision the Court reasoned that the impact of a regulation should be based on a comparison of the world with and without the action, citing guidance from the Office of Management and Budget in support of that proposition. The *Cape Hatteras* Court concluded that the problem with the USFWS's analysis of economic impacts resulted from its treatment of "adverse modification" and "jeopardy" as being functionally equivalent. The Court ordered the USFWS "to clarify or modify its position [regarding functional equivalence] on remand," implying that the *Gifford Pinchot* Court's holding might have an effect on the agency's historical treatment of the jeopardy and adverse modification requirements as providing coextensive protections.

In this analysis of the impacts of the designation, we attempted to estimate and analyze the incremental impacts beyond those that would result from the listing and jeopardy provision, consistent with the *Cape Hatteras* decision. Uncertainties exist, however, with regard to future management actions associated with black abalone critical habitat, because of the short consultation history for black abalone and overlap with protections provided under the listing and other existing Federal, State, and local regulations. Due to these uncertainties, it was

difficult to exclude potential impacts that may already occur under the baseline (i.e., protections already afforded black abalone under its listing or under other Federal, State, and local regulations). Thus, the analysis included some impacts that would have occurred under the baseline regardless of the critical habitat designation. As such, the consideration of impacts cannot be characterized as exclusively incremental impacts of the critical habitat designation. Instead, the impacts of the designation are more correctly characterized as black abalone impacts.

Once we determined the impacts of the designation, we then determined the benefits of designation and the benefits of exclusion based on the impacts of the designation. The benefits of designation include the conservation impacts for black abalone and its habitat that result from the critical habitat designation and the application of ESA section 7(a)(2). The benefits of exclusion include the economic impacts, impacts on national security, and other relevant impacts (e.g., impacts on Indian lands) of the designation that would be avoided if a particular area were excluded from the critical habitat designation. The following sections describe how we determined the benefits of designation and the benefits of exclusion and how these benefits were weighed, as required under section 4(b)(2) of the ESA, to identify particular areas that may be eligible for exclusion from the designation. We also summarize the results of this weighing process and determinations on the areas that may be eligible for exclusion.

Determine the benefits of designation

The primary benefit of the critical habitat designation is the protection afforded under section 7 of the ESA, requiring all Federal agencies to insure their actions are not likely to destroy or adversely modify designated critical habitat. This is in addition to the requirement that all Federal agencies insure their actions are not likely to jeopardize the continued existence of the species. In addition, the designation may provide education and outreach benefits by informing the public about areas and features important to species conservation. By delineating areas of high conservation value, the designation may help focus and contribute to conservation efforts for black abalone and their habitats.

The designation of critical habitat has been found to benefit the status and recovery of ESA-listed species. Recent reports by the USFWS indicated that species with critical habitat were more likely to have increased and less likely to have declined than species without critical habitat (*Taylor et al. 2005*). In addition, species with critical habitat were also more likely to have a recovery plan and to have these plans implemented, compared to species without critical habitat (*Harvey et al. 2002*; *Lundquist et al. 2002*). These benefits may result from the unique, species-specific protections afforded by critical habitat (e.g., enhanced habitat protection, increased public awareness and education of important habitats) that are more comprehensive than other existing regulations (*Hagen and Hodges 2006*).

The benefits of designation are not directly comparable to the benefits of exclusion for the purposes of weighing the benefits under section 4(b)(2) of the ESA. Ideally, the benefits of designation and benefits of exclusion should be monetized in order to directly compare and weigh them. With sufficient information, it may be possible to monetize the benefits of designation by first quantifying the benefits expected from an ESA section 7 consultation and translating that into dollars. We are not aware, however, of any available data to monetize the

benefits of designation (e.g., estimates of the monetary value of the PCEs within areas designated as critical habitat, or of the monetary value of education and outreach benefits). As an alternative approach, we determined the benefits of designation based on the CHRT's biological analysis of the specific areas. We used the CHRT's conservation value ratings (High, Medium, and Low) to represent the qualitative conservation benefits of designation for each of the specific areas considered for designation. In evaluating the conservation value of each specific area, the CHRT focused on the habitat features present in each area, the habitat functions provided by each area, and the importance of protecting the habitat for the overall conservation of the species. The CHRT considered a number of factors to determine the conservation value of each specific area, including: (a) the present condition of the primary constituent elements or PCEs; (b) the level at which the habitat supports recruitment of early life stages, based on the level of recruitment observed at survey sites within the area; and (c) the level at which the habitat supports long-term survival of juvenile and adult black abalone, based on trends in the abundance and size frequencies of black abalone populations observed at survey sites within the area. These conservation value ratings represent the estimated conservation impact for black abalone and its habitat if the area were designated as critical habitat, and thus were used to represent the benefit of designation. The draft Biological Report (*NMFS 2010a*) provides detailed information on the CHRT's biological analysis and evaluation of each specific area.

Benefits of exclusion based on economic impacts and proposed exclusions

The economic benefits of exclusion are the economic impacts that would be avoided by excluding particular areas from the designation. To determine these economic impacts, we first asked the CHRT to identify activities within each specific area that may affect black abalone and its critical habitat. The 17 categories of activities identified by the CHRT are listed in the "Special management considerations or protection" section of this report. We then considered the range of modifications NMFS might seek in these activities to avoid destroying or adversely modifying black abalone critical habitat. Where possible, we focused on changes beyond those that may be required under the jeopardy provision. Because of the limited consultation history, we relied on information from other section 7 consultations and the CHRT's expertise to determine the types of activities and potential range of changes. For each potential impact, we tried to provide information on whether the impact is more closely associated with adverse modification or with jeopardy, to distinguish the impacts of applying the jeopardy provision versus the adverse modification provision.

While the statute and our agency guidance directs us to identify activities that may affect the habitat features important to black abalone conservation within a specific area in order to determine its eligibility for designation, not all of these activities may be affected by the critical habitat designation (i.e., subject to a section 7 consultation) and sustain an economic impact. It is only those activities with a federal nexus that would sustain an economic impact as a result of the designation. Within the set of activities identified by the CHRT, we were only able to estimate economic impacts for a subset because of: (a) the limited consultation history; (b) uncertainty in the types of modification that would be required; (c) uncertainty in the number and locations of activities based on currently available data; and (d) the lack of available cost data. The draft Economic Analysis Report (*NMFS 2010b*) analyzes the potential economic impacts to the following categories of activities: (1) coastal development; (2) in-water construction; (3)

sand replenishment or beach nourishment activities; (4) agricultural activities (e.g., irrigation); (5) NPDES activities and activities generating non-point source pollution; (6) side-casting; (7) oil and chemical spills and clean-up activities; (8) power generation operations involving water withdrawal from and discharge to marine coastal waters; (9) construction and operation of alternative energy hydrokinetic projects (tidal or wave energy projects); and (10) construction and operation of desalination plants. The following activities were discussed qualitatively: dredging and disposal of dredged material; agricultural pesticide application and livestock farming; mineral and petroleum exploration or extraction; construction and operation of LNG projects; vessel groundings; non-native species introduction and management; kelp harvesting; and activities that lead to global climate change. The economic impacts of the designation on these activities could not be quantified due to uncertainty regarding whether a federal nexus exists (i.e., for kelp harvesting and activities that lead to global climate change) and uncertainty regarding the potential economic impacts, for the reasons described above.

Because of the limited consultation history for black abalone and uncertainty about specific management actions likely to be required under a consultation, there was a great degree of uncertainty in the estimated economic impacts for some specific areas. Several factors were considered in developing the estimated economic impacts, including the level of economic activity within each area, the level of baseline protection afforded to black abalone by existing regulations for each economic activity within each area, and the estimated economic impact (in dollars) associated with each activity type. The baseline included the protections afforded to black abalone by the listing and jeopardy provision, as well as existing protections under other Federal, state, and local laws and regulations. Estimates of the economic impacts for each activity type were based on project modifications that might be required during consultation to avoid the destruction or adverse modification of critical habitat. However, as noted previously, we were not able to isolate the impacts resulting solely from critical habitat and, thus, the estimated economic impacts may include economic impacts resulting from the baseline. The draft Economic Analysis Report (*NMFS 2010b*) describes in detail the activities identified that may be affected by the critical habitat designation, the potential range of changes NMFS might seek in those activities, and the estimated economic impacts that might result from those changes.

We had sufficient information to monetize the economic benefits of exclusion, but were not able to monetize the conservation benefits of designation. Thus, to weigh the benefits of designation against the economic benefits of exclusion, we compared the conservation value ratings with economic impact ratings that were based on the mean annualized economic cost estimates (discounted at 7%; see draft Economic Analysis Report (*NMFS 2010b*) for additional details) for each specific area (Table 1 and Figures 1, 2, and 3). To develop the economic impact ratings, we examined the mean annualized economic impacts (discounted at 7 percent) across all of the specific areas. We then divided the economic impacts into four economic impact rating categories corresponding to "Low" ($0 to $100,000), "Medium" (greater than $100,000 to $500,000), "High" (greater than $500,000 to $10 million), and "Very High" (greater than $10 million) economic impact ratings. The four economic impact rating categories were determined by visually inspecting the economic impact values and identifying natural breakpoints in the economic impacts data where the estimated economic impacts experienced a large increase. We then compared these economic impact ratings (representing the benefits of exclusion) with the

conservation value ratings (representing the benefits of designation) and applied the following decision rules to identify areas eligible for exclusion based on economic impacts:

(1) Areas with a conservation value rating of "High" were eligible for exclusion if the mean annualized economic impact estimate exceeded $10 million (i.e., the economic impact rating was "Very High");
(2) Areas with a conservation value rating of "Medium" were eligible for exclusion if the mean annualized economic impact estimate exceeded $500,000 (i.e., the economic impact rating was at least a "High"); and
(3) Areas with a conservation value rating of "Low" were eligible for exclusion if the mean annualized economic impact estimate exceeded $100,000 (i.e., the economic impact rating was at least a "Medium").

These dollar thresholds should not be interpreted as estimates of the dollar value of High, Medium, or Low conservation value areas. Under the ESA, we are to weigh dissimilar impacts given limited time and information. The statute emphasizes that the decision to exclude is discretionary. Thus, the level at which the economic benefits of exclusion outweigh the conservation benefits of designation is a matter of discretion and depends on the policy context. For critical habitat, the ESA directs us to consider exclusions to avoid high economic impacts, but also requires that the areas designated as critical habitat are sufficient to support the conservation of the species and to avoid extinction. In this policy context, we developed decision rules with dollar thresholds representing the levels at which we believe the economic benefit of exclusion associated with a specific area would outweigh the conservation benefits of designation. These dollar thresholds and decision rules provided a relatively simple process to identify, in a limited amount of time, specific areas warranting consideration for exclusion based on economic impacts.

Based on this analysis, two areas were identified preliminarily as eligible for exclusion (Table 1). These areas were:

(1) Specific area 10, from Montaña de Oro State Park to just south of Government Point; and
(2) Specific area 12, from Corona Del Mar State Beach to Dana Point.

We presented the two areas to the CHRT to help us further characterize the benefits of designation by determining whether excluding any of these areas would significantly impede conservation of black abalone. If exclusion of an area would significantly impede conservation, then the benefits of exclusion would likely not outweigh the benefits of designation for that area. The CHRT considered this question in the context of all of the areas eligible for exclusion as well as the information they had developed in providing the conservation value ratings. If the CHRT determined that exclusion of an area would significantly impede conservation of black abalone, the conservation benefits of designation were increased one level in the weighing process. This necessitated the creation of a "Very High" conservation value rating category, for areas that had an initial conservation value of "High."

The CHRT determined, and we concur, that exclusion of specific area 12 (from Corona Del Mar State Beach to Dana Point) would not significantly impede conservation of black abalone (Table

1) and that the economic benefit of exclusion for this area outweighs the conservation benefit of designation. The CHRT based their determinations on the best available data regarding the present condition of the habitat and black abalone populations in the area. The CHRT gave the area a "Low" conservation value, because the current habitat conditions are of lower quality compared to other areas along the coast. While rocky intertidal habitat of good quality occurs within the area, these habitats are patchy and may be affected by sand scour due to the presence of many sandy beaches. In addition, the rocky habitat within the area consists of narrow benches and fewer crevices compared to other areas and has been degraded by the establishment of sandcastle worm (*Phragmatopoma californica*) colonies. There is also little to no coralline algae to provide adequate larval settlement habitat. Low densities of black abalone were observed at a few sites in the area in the 1970s and 1980s. However, no recruitment has been observed and black abalone have been absent from the area except for one black abalone found in January 2010.[1] For these reasons, the CHRT concluded that excluding specific area 12 (from Corona Del Mar State Beach to Dana Point) from the designation would not significantly impede the conservation of black abalone. The high estimated economic impact for this area was primarily due to impacts associated with construction and operation of a proposed desalination plant, which made up about 93% of the mean annualized economic impact estimate of $1,563,500 for this area. The estimated economic impacts to the desalination plant were based on the costs for using alternate methods of brine disposal (i.e., injection wells).

The CHRT determined, and we concur, that exclusion of specific area 10 (from Montaña de Oro State Park to just south of Government Point) would significantly impede conservation of black abalone (Table 1). The CHRT gave the area a "High" conservation value in their biological evaluation. Historically, black abalone were considered common at several sites within the area. The populations have since suffered declines due to withering syndrome, but continue to persist at several sites. Although the habitat has changed since the decline in abalone (e.g., sea urchins and encrusting invertebrates have moved in to some crevice habitats), the habitat remains of high quality. The CHRT also emphasized the importance of this area in maintaining connectivity between black abalone populations on the north-central California coast and the southern California coast. Therefore, the CHRT determined, and we concur, that the conservation value of this area should be raised by one level (i.e., from High to Very High). In addition, the estimated economic impact for this area is likely overestimated. The very high estimated economic impact for this area was primarily due to costs associated with the Diablo Canyon Nuclear Power Plant (DCNPP), which made up about 46% of the low annualized economic impact estimate and 99% of the mean and high annualized economic impact estimate for the area. These estimated economic impacts were based on the costs required to retrofit the DCNPP with a closed cooling system. However, there may be less costly actions that could be taken to avoid or minimize effects on black abalone habitat, such as restoring habitat in other areas around the DCNPP and conducting biological monitoring of black abalone and its habitat. Thus, we determined that the economic benefits of exclusion do not outweigh the conservation benefits of designation for specific area 12 for the following reasons: (a) the area has a Very High conservation value to black abalone and exclusion of the area would significantly impede conservation of the species; and (b) the very high estimated economic impacts are likely

[1] The Ocean Institute found one abalone in a tide pool in January 2010 and took a photograph of the individual. Most experts who examined the photograph identified the abalone as a black abalone. However, we have been unable to relocate and confirm that the individual is a black abalone.

overestimated. We solicit comments from the public regarding the estimate of economic impacts to the DCNPP, the effects of the DCNPP on black abalone and its habitat, and the potential modifications that may be required to address these effects (including the feasibility and estimated costs of such modifications). If information obtained during the public comment period suggests that the very high estimated economic impact for retrofitting the DCNPP is a realistic impact of the designation, we will re-examine our analysis regarding this area and consider other approaches that may allow exclusion of a particular area within this specific area.

In summary, we propose to exclude specific area 12 (from Corona Del Mar State Beach to Dana Point) from the critical habitat designation. Based on the best scientific and commercial data currently available, we have determined that exclusion of this area will not impede the conservation of black abalone, nor will it result in the extinction of the species.

Benefits of exclusion based on national security

The benefits of exclusion based on national security are the impacts on national security that would be avoided by excluding particular areas from the designation. NMFS contacted representatives of the DOD to request information on potential national security impacts that may result from the designation of particular areas as critical habitat for black abalone. In response to this request, representatives of the DOD identified the following particular areas owned or controlled by the U.S. Navy and requested exclusion of these areas from the designation based on potential national security impacts:

(1) Naval Auxiliary Landing Field (NALF) San Clemente Island;
(2) Outlying Landing Field (OLF) San Nicolas Island;
(3) Naval Support Detachment Monterey;
(4) Naval Weapons Station Seal Beach; and
(5) Naval Base Ventura County (Point Mugu and Port Hueneme).

NMFS determined that the Naval Support Detachment Monterey, Naval Weapons Station Seal Beach, and Naval Base Ventura County do not occur within the specific areas being considered for designation (also see "Military areas ineligible for designation" under Section II),. Thus, these areas were not included in further analyses. The NALF San Clemente Island and OLF San Nicolas Island do occur within the specific areas being considered for designation and were analyzed for potential exclusion under section 4(b)(2) of the ESA.

The Navy did not provide information about the activities occurring within the OLF San Nicolas Island, but did provide information regarding activities conducted within the NALF San Clemente Island that may be affected by the designation of critical habitat for black abalone. Briefly, the San Clemente Island Range Complex (SCI Range Complex) contains 83 land, sea, surface, subsurface, and littoral ranges that support warfare training areas for Naval Special Warfare, Amphibious Warfare, Strike Warfare, Undersea Warfare, Air Warfare, Mine Warfare, Electronic Warfare, and Surface Warfare. These warfare training areas occur in or within close proximity of the nearshore waters of San Clemente Island and provide maritime training for SEAL (Sea, Air, and Land) Teams and Special Boat Teams. Activities conducted within these training areas include: live fire operations (e.g., small arms, over-the-beach land detonations, underwater explosives training, surface-to-surface gunnery, air-to-surface bombing, anti-surface

missile training); SEAL platoon assault training (e.g., land and underwater demolitions, nearshore hydrographic reconnaissance, parachute drops, combat rubber raiding craft transit, reinforced inflatable boat operations, SEAL delivery vehicle operations, nearshore/foreshore obstacle clearance, standoff weapons employment, beach feasibility reconnaissance, swimmer harbor penetration, and very shallow water mine countermeasures training); and basic demolition and over-the-beach, tactical training operations (e.g., small arms, demolitions of up to 300 pounds, tactical over-the-beach littoral insertions and extractions, pyrotechnics and flares, immediate action drills, and Special Reconnaissance activities). Of special note, the SCI Range Complex contains the only maritime over-the-beach live-fire location on the U.S. West Coast. The training supported by the SCI Range Complex is critical to national defense, particularly for Naval Special Warfare basic, intermediate, and advanced training.

The information provided by the Navy gives an overview of the activities conducted within the NALF San Clemente Island that are critical to military readiness and national security. However, more specific information is needed regarding which of these activities may affect black abalone habitat (i.e., rocky intertidal habitat within MHHW to six meters depth), how these activities may be affected by the critical habitat designation, and how these effects may result in impacts on national security. NMFS requests additional information from the Navy identifying and describing in detail the activities that may occur in or that may affect the areas being considered for designation (i.e., rocky habitat) and thus trigger consultation under section 7 of the ESA. This information is necessary to assess whether the areas warrant exclusion from the designation based on national security impacts.

At this time, NMFS does not propose to exclude the NALF San Clemente Island or OLF San Nicolas Island from the designation based on national security impacts, but will continue to coordinate with the Navy to assess the potential national security impacts. Additional information is also solicited from the public regarding the potential national security impacts of this designation. After assessing any additional information provided by the DOD as well as by the public, a final determination will be made in the final critical habitat designation. As stated above (see "Military areas ineligible for designation" in Section II), the Navy's facilities on San Clemente Island and San Nicolas Island are covered by INRMPs that are currently being revised to address black abalone conservation. If these INRMPs are finalized and determined to provide benefits to black abalone, as described under section 4(a)(3)(B) of the ESA, then the areas would be ineligible for designation and a determination on whether the areas warrant exclusion under section 4(b)(2) of the ESA based on national security impacts would no longer be necessary.

Benefits of exclusion for Indian lands

The only other relevant impacts of the designation identified were potential impacts on Indian lands. The benefits of exclusion for Indian lands are the impacts on Indian lands that would be avoided if particular areas were excluded from the designation. A broad array of activities on Indian lands may trigger ESA section 7 consultations and be affected by the designation of critical habitat. The longstanding and distinctive relationship between the Federal and tribal governments is defined by treaties, statutes, executive orders, judicial decisions, and agreements, which differentiate tribal governments from the other entities that deal with, or are affected by, the Federal government. This relationship has given rise to a special Federal trust responsibility involving the legal responsibilities and obligations of the United States toward Indian Tribes and

the application of fiduciary standards of due care with respect to Indian lands, tribal trust resources, and the exercise of tribal rights. Pursuant to these authorities lands have been retained by Indian Tribes or have been set aside for tribal use. These lands are managed by Indian Tribes in accordance with tribal goals and objectives within the framework of applicable treaties and laws. E.O. 13175 (Consultation and Coordination with Indian Tribal Governments) outlines the responsibilities of the Federal Government in matters affecting tribal interests.

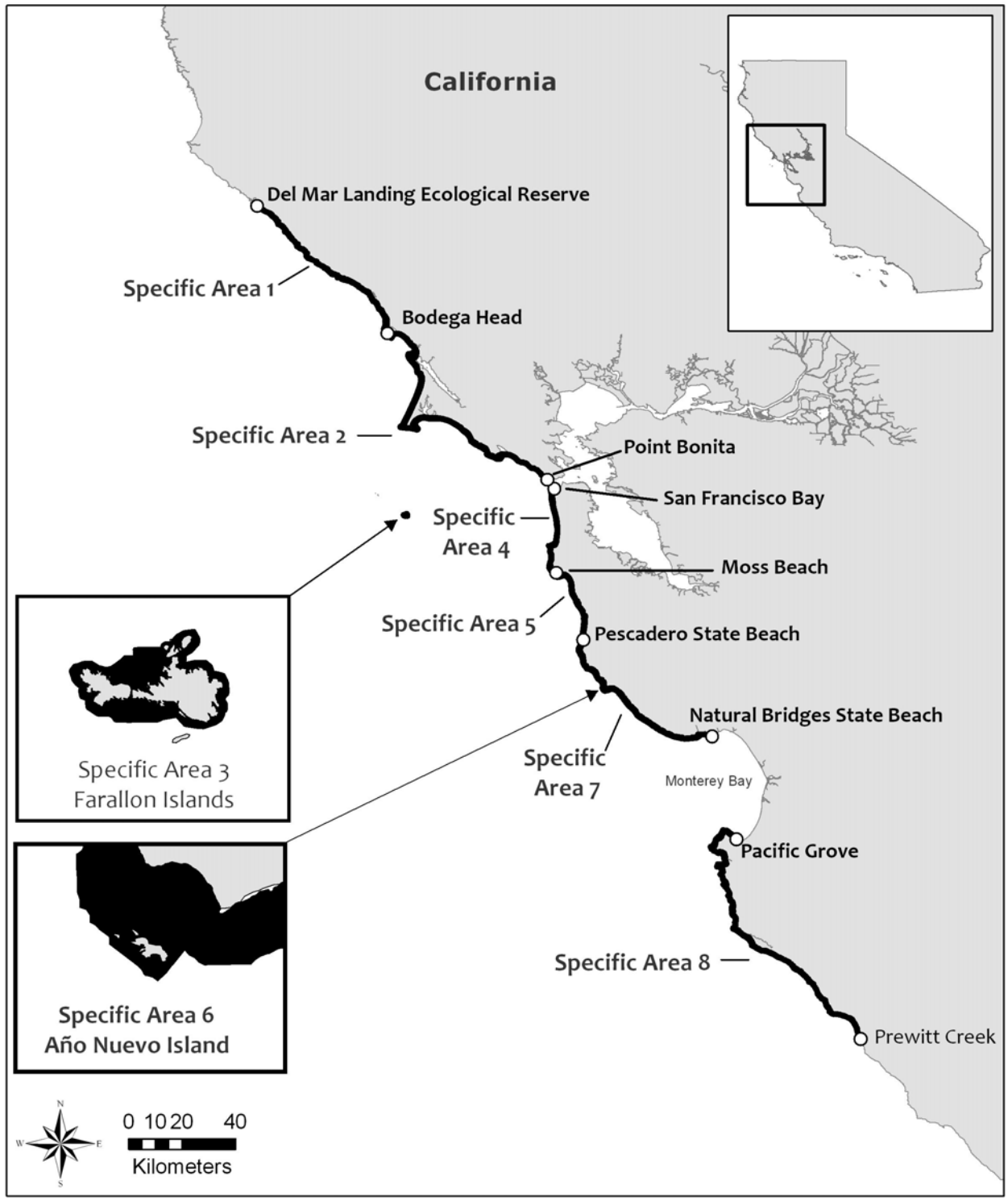
For this proposed critical habitat designation for black abalone, we reviewed maps indicating that none of the specific areas under consideration for designation as critical habitat overlap with Indian lands. Therefore, no areas were considered for exclusion based on impacts on Indian lands. We solicit information from the public regarding any Indian lands that may overlap with and may warrant exclusion from critical habitat for black abalone. 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), and include: (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. Should any Indian lands be identified within the specific areas considered and proposed for designation as black abalone critical habitat, they will be considered for exclusion under section 4(b)(2) of the ESA if the tribe or tribes request exclusion. We request that the following information be provided to inform our ESA section 4(b)(2) analysis: (1) a map and description of the Indian lands (e.g., location, latitude and longitude coordinates to define the boundaries, extent into waterways); (2) a description of tribal activities that may be affected within the area; (3) a description of past, ongoing, or future conservation measures conducted by the tribes that may protect black abalone habitat within the area; and (4) a point of contact.

IV. Tables and Figures

Table 1. Comparison of conservation value (CV) ratings (VH = Very High; H=High; M=Medium; L=Low) and economic impact estimates (the low, mid, and high economic estimates, discounted at 7%, are shown) for specific areas occupied by black abalone. Preliminary eligibility for exclusion was determined based on the decision rules described in Section III, "Exclusions based on economic impacts." For each area eligible for exclusion (highlighted in bold text), the CHRT determined whether exclusion of the area will significantly impede conservation. If so, the CV was increased by one level, resulting in the final CV shown on the table. The final CV was used in the analysis to determine whether or not to propose exclusion of the specific area.

Unit	Specific Area	Initial CV	Low Econ. Estimate (7%)	Mid Econ. Estimate (7%)	High Econ. Estimate (7%)	Eligible for Exclusion	Would exclusion significantly impede conservation	Final CV	Proposed for exclusion?
1	Del Mar Landing Ecological Reserve to Bodega Head	H	$3,300	$183,250	$363,200	NO	N/A	H	NO
2	Bodega Head to Point Bonita	H	$15,100	$250,000	$484,900	NO	N/A	H	NO
3	Farallon Islands	H	$0	$219,550	$439,100	NO	N/A	H	NO
4	Southernmost point at mouth of San Francisco Bay to Moss Beach	M	$37,000	$304,250	$571,500	NO	N/A	M	NO
5	Moss Beach to just north of Pescadero State Beach	M	$10,300	$22,100	$33,900	NO	N/A	M	NO
6	Año Nuevo Island	H	$0	$0	$0	NO	N/A	H	NO
7	Just north of Pescadero State Beach to Natural Bridges State Beach	H	$253,300	$907,000	$1,560,700	NO	N/A	H	NO
8	Pacific Grove to Prewitt Creek	H	$8,300	$808,550	$1,608,800	NO	N/A	H	NO
9	Prewitt Creek to Cayucos	H	$5,000	$129,250	$253,500	NO	N/A	H	NO
10	**Montaña de Oro to just south of Government Point**	**H**	**$54,800**	**$75,587,600**	**$151,120,400**	**YES**	**YES**	**VH**	**NO**
11	Palos Verdes Peninsula	M	$40,000	$113,450	$186,900	NO	N/A	M	NO
12	**Corona Del Mar State Beach to Dana Point**	**L**	**$10,900**	**$1,563,500**	**$3,116,100**	**YES**	**NO**	**L**	**YES**
13	San Miguel Island	H	$0	$0	$0	NO	N/A	H	NO
14	Santa Rosa Island	H	$0	$0	$0	NO	N/A	H	NO
15	Santa Cruz Island	H	$0	$13,450	$26,900	NO	N/A	H	NO
16	Anacapa Island	H	$0	$28,950	$57,900	NO	N/A	H	NO
17	San Nicolas Island	H	$1,350	$6,100	$10,850	NO	N/A	H	NO
18	Santa Barbara Island	M	$0	$0	$0	NO	N/A	M	NO
19	Catalina Island	H	$23,100	$141,350	$259,600	NO	N/A	H	NO
20	San Clemente Island	H	$1,350	$3,300	$5,250	NO	N/A	H	NO

Figure 1. Map depicting each specific area delineated on the North California coast and the final conservation value ratings (as listed in Table 1).



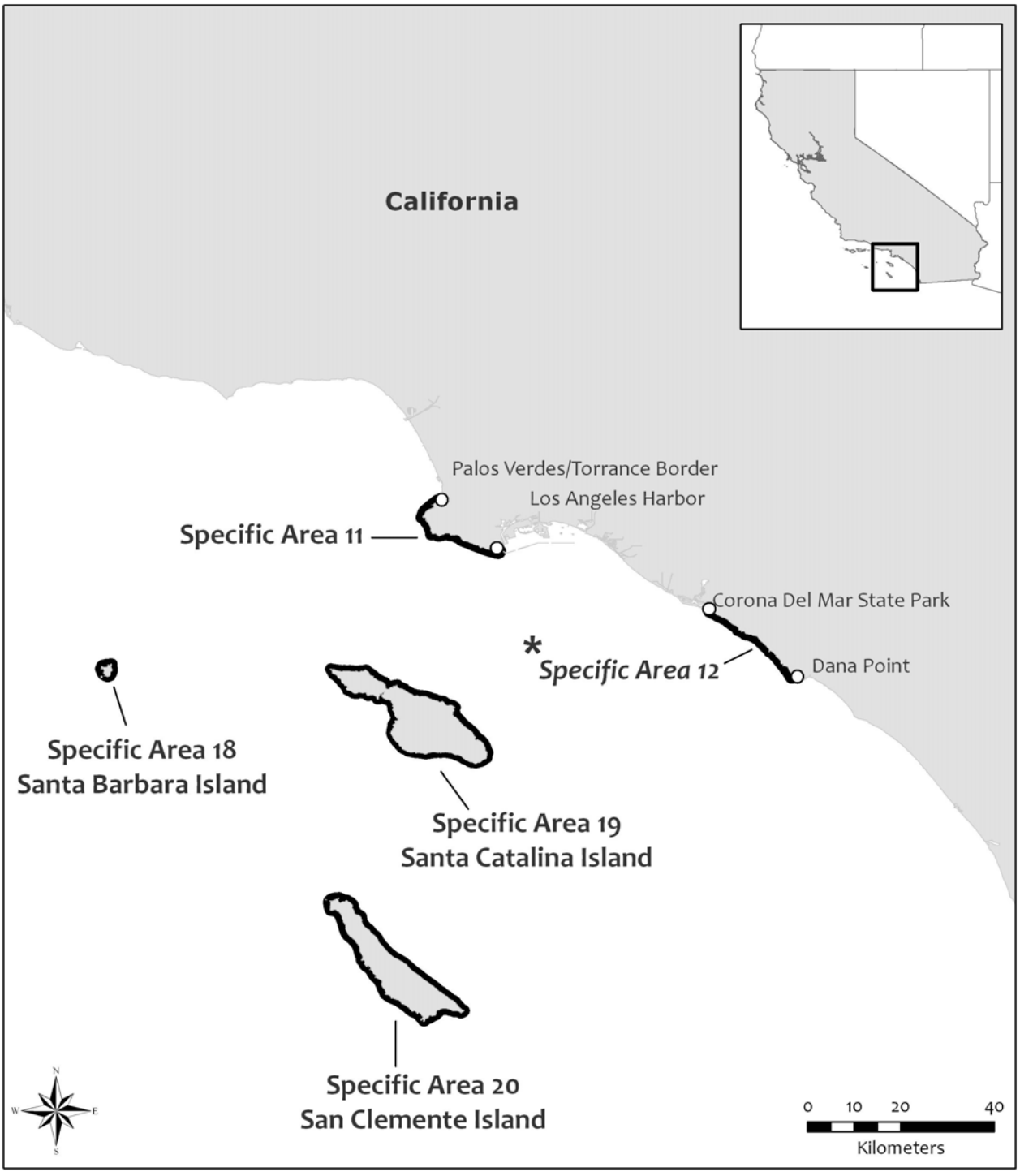
Legend
Specific Area Boundary Marker
Specific Areas Considered (from MHHW to 6 M Depth)
California

SPA #	Location	Conservation Rating
Specific Area 1	Del Mar Landing CA to Bodega Head CA	High
Specific Area 2	Bodega Head CA to Point Bonita CA	High
Specific Area 3	Farallon Islands CA	High
Specific Area 4	South of San Francisco Bay CA to Moss Beach CA	Medium
Specific Area 5	Moss Beach CA to Just North of Pescadero State Beach CA	Medium
Specific Area 6	Año Nuevo Island CA	High
Specific Area 7	North of Pescadaro Beach CA to Natural Bridges State Beach CA	High
Specific Area 8	Pacific Grove CA to Prewitt Creek CA	High

Figure 2. Map depicting each specific area delineated on the Central California coast and the final conservation value ratings (as listed in Table 1).

SPA #	Location	Conservation Rating
Specific Area 9	Prewitt Creek CA to Cayucos CA	High
Specific Area 10	Montaña De Oro State Park CA to Just South of Government Point CA	Very High
Specific Area 13	San Miguel Island CA	High
Specific Area 14	Santa Rosa Island CA	High
Specific Area 15	Santa Cruz Island CA	High
Specific Area 16	Anacapa Island CA	High
Specific Area 17	San Nicholas Island CA	High

Figure 3. Map depicting each specific area delineated on the South California coast and the final conservation value ratings (as listed in Table 1).



SPA #	Location	Conservation Rating
Specific Area 11	Palos Verdes/Torrance Border CA to Los Angeles Harbor CA	Medium
Specific Area 12	Corona Del Mar State Park CA to Dana Point CA	Low
Specific Area 18	Santa Barbara Island CA	Medium
Specific Area 19	Catalina Island CA	High
Specific Area 20	San Clemente Island CA	High

* Eligible for exclusion based on economic impacts

V. References

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