

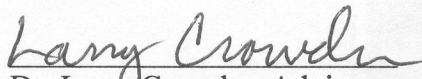
UNCHARTED WATERS: OPEN OCEAN CRITICAL HABITAT DESIGNATION
FOR PACIFIC LEATHERBACK SEA TURTLES (*DERMOCHELYS CORIACEA*)
UNDER THE ENDANGERED SPECIES ACT

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Abstract

On January 5th, 2010 the National Marine Fisheries Service (NMFS) issued proposed rules to designate additional critical habitat for leatherback sea turtles under the Endangered Species Act (ESA). This marked the first time that critical habitat has been attempted for endangered leatherback turtles (*Dermochelys coriacea*) in U.S. continental waters generating excitement and debate amongst sea turtle conservationists, fishermen, and government agency representatives about how to effectively allocate this space to balance multiple objectives. NMFS' ruling was in response to a petition by several conservation groups seeking to revise the designation to include an area in the Pacific Ocean off of California to reduce leatherback interactions with California and Oregon's drift gillnet fishery.

Given that Pacific leatherback sea turtles confront numerous threats to recovery and critical habitat protections only apply to federal agency actions and not private citizens, is critical habitat designation an adequate policy tool to address sea turtle declines? I investigate this question by analyzing the existing regulatory structure for leatherback conservation and by examining the reasoning behind critical habitat designation under the ESA in the context of sea turtle recovery threats. The scope of critical habitat designation is narrow and achieving conservation aims is further complicated by the migratory nature of sea turtles. I argue that the legal protections offered by critical habitat areas are an important step towards increased recovery efforts for leatherback turtles but they are limited, without additional protections in the waters and internationally, to addressing threats that are not outweighed by economic costs of designation.

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I. Introduction

The effectiveness of critical habitat designation is a highly debated aspect of the Endangered Species Act (ESA), the premier law for wildlife conservation. The National Marine Fisheries Service's (NMFS) recent ruling to designate critical habitat for leatherback sea turtles (*Dermochelys coriacea*) in Pacific Ocean waters has received both praise and concern from the sea turtle conservation community about the adequacy of these proposed areas. The conservation benefits of designation are only as good as the extent to which major threats to species recovery are addressed through the ruling process.

II. Critical Habitat Designation in Law and Practice

Critical habitat designation is one of the most underused provisions of the ESA and this is unfortunate because it is the only provision that establishes a clear regulatory link between habitat protection and recovery.¹ Although most of the ESA's regulatory provisions focus on individual and species effects and the regulation of harm, critical habitat requires the identification of all lands, waters, and air space necessary to recover endangered species. In reality, the regulating agencies, NMFS and the U.S. Fish and Wildlife Service (USFWS), have systematically refused to designate critical habitat areas. As of January 2000, just 10 percent of listed species had critical habitat.² Due to conservation lawsuits, the rate increased significantly to 37 percent by August 2005. Nonetheless, the essential recovery habitats have still not been identified for the vast majority of species. Although the ESA identifies the importance of habitat protection, the language directing the designation of critical habitat is ambiguous, allowing the value of designation to be questioned and providing exceptions for the regulating agencies to prohibit designation.

¹ Suckling, Kieran F., and Martin Taylor. "Critical Habitat Recovery." *The Endangered Species Act at Thirty: Renewing the Conservation Promise*. Ed. Dale D. Goble, J. Michael Scott, and Frank W. Davis. Vol. 1. Washington, DC: Island Press, 2006. 89.

² Center for Biological Diversity. 2004. ESA listing Petition database. Tucson, Arizona.

Congress passed the ESA in 1973 to achieve the dual goals of species conservation and species recovery in response to increasing public concern about species extinction in the face of economic growth and development. The ESA’s purpose includes “a means whereby the ecosystems which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such [species].”³ Therefore, the ESA has “three fundamental goals: to prevent extinction of imperiled species, to secure their eventual recovery, and to protect the ecosystems upon which those species depend.”⁴ The ESA reflects the congressional recognition of the benefits of species conservation, in place of development for “esthetic, ecological, educational, historical, and scientific value to the Nation and its people.”⁵ It explicitly defines “conservation” as “using all methods necessary to bring a species back from threatened or endangered status.”⁶

The ESA has several main protections for at risk species. These include: listing and designation under Section 4, prohibitions against “taking” listed species under Section 9 and any federal agency activity that could jeopardize or adversely modify a listed species’ habitat under Section 7 of the Act. There is also a citizen provision suit under Section 11 of the ESA to allow “any person” to enforce the Act through a lawsuit. However, there are many exceptions to these listing and prohibition requirements.

A. Critical Habitat under the ESA

Congress recognized the inseparable link between species recovery and habitat

³ 16 U.S.C. §1531 (b).

⁴ Suckling Kieran F., and Martin Taylor. “Critical Habitat and Recovery.” *The Endangered Species Act at Thirty: Renewing the Conservation Commitment*. Ed. Dale D. Goble, J. Michael Scott, and Frank W. Davis. Vol. 2. Washington, DC: Island Press, 2006. 75.

⁵ *Ibid*, *supra* note 3, § 1531 (a) (3).

⁶ *Ibid*, *supra* note 3, § 1532 (3).

protection in its enactment of the ESA. Designation of critical habitat aimed to shift the focus from species to the habitat upon which they depend to advance greater conservation efforts.

1. Section 4: Listing and Determination

Section 4 outlines the listing process under the ESA. A species must be listed under the ESA to be substantially protected by the Act. The Secretary of Commerce is responsible for listing marine species, which the Secretary has delegated to NMFS, and the Secretary of the Interior is responsible for all other species, which falls to the FWS. To be listed, a species must be at risk of extinction in all or most of its range, or likely to become so in the foreseeable future.⁷

The ESA mandates the Secretaries to consider five criteria when determining listing, including “the present or threatened destruction, modification, or curtailment of the species’ habitat or range.”⁸ The five considering considerations must be evaluated “solely on the basis of the best scientific and commercial data available.”⁹ Economic considerations are prohibited from the listing process. The courts and regulating agencies offer careful consideration of these criteria and rely on realistic conservation efforts in their deliberations.

Section 4 requires the designation of critical habitat at the time of listing and allows for later revisions. Critical habitat is defined as a specific area that has biological and physical features that are “essential to the conservation of the species and which may require special management considerations or protection.”¹⁰ The original Act does include this definition or habitat requirement. Congress added these features in 1978, plus the critical habitat designation

⁷ U.S.C. § 1522 (6), (20), (2005).

⁸ Ibid § 1533 (a) (1) (A).

⁹ U.S.C. § 1533 (b) (1) (A).

¹⁰ U.S.C. § 1532 (5) (a).

procedures allowing consideration of economic impact. While these amendments provided clearer definitions and identified a procedural process, it also gave the Secretary “greater latitude rather than a stronger mandate.”¹¹

In 1982, the agencies promulgated a regulation to specify what the Secretary should focus on when determining critical habitat areas.¹² The regulation states the Secretary should focus on requirements such as space for typical behavior, and nutritional and physiological requirements. Critical habitat identification is limited to “primary constituent elements (PCEs)”, which are “principle biological or physical constituent elements within the defined area that are essential to the conservation of the species,” including feeding, spawning and nesting sites, and water quality.¹³

Despite NMFS and FWS’ creation of the PCEs concept, courts have found that the Agencies don’t always adhere to their own regulations. In 2000, the U.S. District Court for New Mexico ruled that the agencies must define PCEs with enough clarity to be meaningful under the ESA.¹⁴ Additionally, in 2003, the U.S. District Court for the Eastern District of California found that Agencies must clearly identify the PCEs and if no PCEs are known, the Agencies cannot designate critical habitat.¹⁵

Although the ESA requires critical habitat designation, the language of the Act allows for exclusions. The extent of these exceptions creates substantial debate and uncertainty in the recovery of endangered species. The Act states that the Secretary “shall” designate critical

¹¹ Patlis, J.M.. “Paying Tribute to Joseph Heller with the Endangered Species Act: When Critical Habitat Isn’t.” *Stanford Environmental Law Journal* 20 (2001): 136.

¹² 50 C.F.R. § 424.12 (b).

¹³ *Ibid.*

¹⁴ *Middle Rio Grande Conservancy Dist. v. Babbitt*, 206 F. Supp. 2d 1156, 1178 (D. N.M. 2000).

¹⁵ *Home Builders Ass’n of N. Cal. v. U.S. Fish & Wildlife Serv.*, 268 F. Supp. 2d 1197, 1210 (E.D. Cal. 2003).

habitat at the time of listing “to the maximum extent prudent and determinable.”¹⁶ Critical habitat must be based on the best scientific information available and take into account economic and other relevant impacts.¹⁷ The critical habitat requisite can be excluded if the benefits of exclusion outweigh the benefits of designation, provided that exclusion will not result in the extinction of the species.

Discretion for the designation process is based on the “prudent” and “determinable” definitions outlined by the regulating agencies in 1982. Designation is not prudent if habitat identification increases threat to the species or the designation would not be beneficial. If an agency finds that designation is not prudent, then critical habitat does not have to be designated. If designation is undeterminable due to lack of information or the needs of the species is not well understood, the Agencies can take up to an additional year to decide whether or not to designate critical habitat. However, the courts are clear that this exception is not guaranteed, and the reasoning for a not determinable determination must be defended.

The benchmark for determining that critical habitat designation will be unbeneficial to the species is unclear, yet it is FWS’ most common reason for not designating critical habitat.¹⁸ The agency has justified its non-designations based on the not prudent finding because other measures already exist in the area or the Section 7 consultation process provides adequate protections for the species.¹⁹ Courts maintain that a not prudent determination has to be amply supported by a reasonable analysis of facts and cannot be defended on the basis of the Section 7 jeopardy standard alone. Additionally, the court is clear that FWS cannot use the existence of

¹⁶ 16 U.S.C. § 1532 (5).

¹⁷ Ibid. § 1533 (b) (2).

¹⁸ Thompson, Josh. “Critical Habitat Under the Endangered Species Act: Designation, Re-designation, and Regulatory Duplication.” *Alaska Law Review* 58 (2007): 885, 891.

¹⁹ Hagen, Amy N. and Karen E. Hodges. “Resolving Critical Habitat Designation Failures: Reconciling Law, Policy, and Biology.” *Conservation Biology* 20 (2006): 401.

special management concerns to deny critical habitat designation.

Economic analysis is also a strong justification for invoking the exception to critical habitat designation. Under the ESA provisions, an economic analysis is conducted in the determination process and if costs are too high, designation can be precluded. This is substantially different from the listing process which prohibits economic considerations from its analysis. The Agencies often exclude critical habitat for economic reasons since the ESA offers little direct guidance on critical habitat designation.²⁰

Even with the available critical habitat exclusions and hesitation of the Agencies to designate, some species have been issued critical habitat. Once an area has been designated critical habitat, the FWS or NMFS must inform the public through a formal rule and delineate the area on a map. Designation does not create a sanctuary or reserve, and does not offer absolute protections for the area. The proposed rule issued by the regulating agency is basically an official notification to federal agencies that their Section 7 consultation requirements apply in that location.²¹ Additionally, consultation only leads to protection when a federal agency action is verified to impact the designated area and therefore the listed species. The provision that directs the consultation process is outlined in Section 7 of the ESA.

2. Section 7: Consultation Process

Section 7 outlines the conservation responsibilities by the federal agencies under the ESA. Section 7(a)(1) mandates that all federal agencies advance the ESA's purposes by carrying out conservation programs for listed species.²² Section 7(a)(2) requires federal agencies to consult with the FWS or NMFS to ensure that their actions do not jeopardize the

²⁰ Thompson, Josh. *supra* note 18, at 889.

²¹ Proposed Critical Habitat – Sandy Point, St. Croix, U.S. Virgin Islands, 43 Fed. Reg. 12050, 12050 (Mar. 23, 1978).

²² 16 U.S.C. § 1536 (a)(1) (2008).

existence of listed species or adversely modify its critical habitat.²³ This consultation process is one of the strongest conservation measures in the ESA and it is also one of the most resource intensive.

There are clear definitions of what is meant by “jeopardize” a species and “adversely modify” habitat. An action is determined to jeopardize a species when it is expected to “directly or indirectly...reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.”²⁴ An action adversely modifies habitat when it is likely to result in a “direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining critical habitat.”²⁵ This definition includes PCEs.²⁶

If a federal action may jeopardize a species or adversely modify its habitat, the corresponding agency must consult with the regulating agency that manages the species. The consultation process is intricate and only concerns itself with the nature of the federal action and how it might affect the listed species. The three main components of consultation are: (1) screening the “action,” (2) biological assessment, (3) formal consultation. The federal agency must use the best scientific information available in deliberations that ultimately determine the length of the consultation process.

The federal agency “screens an ‘action’” by determining if the action is a “major

²³ Ibid. § 1536 (a)(2).

²⁴ 50 C.F.R. § 402.02 (2008).

²⁵ Ibid.

²⁶ Ibid.

construction activity” and what listed species are present in the area that may be directly or indirectly affected by the action. If the screening confirms that listed species may be harmed by a significant federal action, the process continues with the agency preparing a biological assessment or conducting an informal consultation to determine whether the action is likely to adversely affect listed species or habitat.²⁷ If the action is found to be affirmative, an agency must conduct a formal consultation with the regulating agency and the regulating agency must prepare a biological opinion. The biological opinion states how the agency action affects the listed species or its critical habitat in terms of a “no jeopardy” finding, “jeopardy with reasonable and prudent alternatives (RPAs),” or “jeopardy with no RPAs.” If the regulating agency determines a jeopardy or adverse modification finding, the biological opinion must include RPAs, if available.²⁸ RPAs must be consistent with the purposes of the action, within the scope of the agency’s legal authority, economically feasible, and preclude adverse modification and jeopardy.²⁹ While biological opinions serve an advisory function and it is up to the action agency to determine how to proceed with the advice, the agency must carry out an RPA before initiating the harmful activity.

Despite the importance of the Section 7 consultations, the ESA does not clearly define the process or terms like “jeopardy” and “adverse modification.” The regulating agencies are responsible for proposing rules that clarify definitions and offer guidance in consultations. But without direction from Congress, these key definitions are subject to political and economic pressure.

²⁷ 50 C.F.R. § 402.14 and (b) (2008).

²⁸ Ibid. § 402.14 (h).

²⁹ Ibid. § 402.14 (h)(3).

B. Does Critical Habitat Help Recover Listed Species?

Habitat loss and adverse modification are the leading causes of species endangerment in North America.³⁰ Therefore, critical habitat designations under the ESA should be an essential component of listed species recovery that is embraced by the implementing agencies. Yet the Department of Interior maintains that critical habitat designation is redundant to other protections in the ESA and that “in 30 years of implementing the ESA, the [Fish and Wildlife] Service has found that the designation of statutory critical habitat provides little additional protection to most listed species.”³¹ The Department of Interior cites no scientific studies to support its claim and its conclusion lacks empirical evidence because it is a legal theory, not a factual conclusion.

The agency’s argument relies primarily on the statutory ban against jeopardizing species’ existence or taking an endangered species. The ESA imposes a responsibility on all federal agencies, beginning with the consultation process, to ensure that their actions will not jeopardize a species or adversely modify its critical habitat.³² However, there doesn’t appear to be any case where a court found adverse modification of a critical habitat without finding jeopardy to a listed species. Jeopardy is the outer edge of allowable actions under the ESA. The Department of Interior has used this to make the argument that critical habitat does not provide additional protection not available through the jeopardy prohibition. This assertion has two main obstacles. First, the ESA has separate jeopardy and critical habitat standards. Second, the claim is contradictory to other portions of the ESA. The ESA defines critical habitat as all lands, water, and air “essential to the conservation of the species.”³³ “Conservation” is defined as all actions

³⁰ Kerr, J.T., and I. Deguise. Habitat loss and the limits to endangered species recovery. *Ecology Letters* 7 (2004): 1163-1169.

³¹ *Ibid*, *supra* note 1, at 76.

³² *Greenpeace v. NMFS*, 55 F. Supp. 2d 1248, 1259-60 (W.D. Wash. 1999).

³³ 16 U.S.C. § 1532 (5)(A).

necessary to recover and delist species.³⁴

In spite of the Department of Interior's assertion, critical habitat establishes a higher protective standard than is available to species without critical habitat. The higher standard prohibits federal agencies from undermining recovery when critical habitat is present. Although the "take" prohibition in Section 9 of the ESA has expansive reach, it is less protective than critical habitat because critical habitat protects species regardless of the presence of listed species once it is designated. The take provision only applies to actions that actually impact individual animals. Although habitat destruction can qualify as take in some instances, it does so only if it is likely to harm animals present at the location.³⁵ Though the ESA prohibits adverse modification of habitat, it does not prohibit take, it only regulates it.

Although critical habitat should be managed for recovery to be consistent with the ESA's goals, it is less clear how it is actually put into practice. It is incorrect to characterize critical habitat designation as a purely legal tool that acts within the Section 7 consultations process because this ignores the magnitude of the measure's on-the-ground effect. Several authors have correlated species recovery trends as reported by NMFS and USFWS with the presence and absence of critical habitat. In biennial reports to Congress spanning 1998-2002, NMFS and USFWS have ranked every listed species as declining, stable, improving, unknown, extinct, or extinct in the wild.

Taylor et al. (2003) reviewed all species with known scores in the biennial reports from 1995-6 (n = 701), 1997-8 (n = 803), and 1999-2000 (n = 915) while accounting for extinct and delisted species.³⁶ After controlling for the independent effects of recovery plans and length of

³⁴ 16 U.S.C. § 1532 (3).

³⁵ *Babbitt v. Sweet Home Chapt. Comms. for Ore.*, 515 U.S. 687 (1995).

³⁶ Taylor, Martin F. J., Kieran F. Suckling, Jeffrey J. Rachlinski. 2003. *The Effectiveness of the Endangered Species Act: A Quantitative Analysis*. *BioScience* 55 (4): 360-7.

listing time, they reported a statistically significant result in each report that species with critical habitat were twice as likely to be improving as species without critical habitat. This study and similar ones are limited in perspective since Congressional reports span only two years but the consistent correlation between species recovery and critical habitat strongly indicates a long-term trend.

For Pacific leatherback sea turtles who confront multiple threats from humans and the environment, critical habitat designation may not be a panacea for recovery but it could provide reliable and meaningful protections against harm for this dwindling population.

1. Background to the Proposed Leatherback Turtle Critical Habitat Revision

On October 2, 2007, the National Marine Fisheries Service (NMFS) received a petition from the Center for Biological Diversity, Oceana, and Turtle Island Restoration Network (“conservation groups”) to revise the leatherback sea turtle critical habitat designation.³⁷ The petitioners sought to modify the critical habitat designation to include foraging grounds and migratory corridors off of U.S. Pacific waters. The proposed area included waters currently managed under the authority of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act (MSA) to minimize leatherback interactions in the California/Oregon drift gillnet fishery. Under the current regulations implementing the Highly Migratory Species Fishery Management Plan, the use of large mesh drift gillnets is banned in this area from August 15th to November 15th.³⁸

After receiving the petition, NMFS was obligated to make a determination within one

³⁷ Center for Biological Diversity, Oceana, & Turtle Island Restoration Network. Petition to revise the Critical Habitat Designation for the Leatherback Sea Turtle (*Dermochelys coriacea*) under the Endangered Species Act. September 26, 2007. Available at: http://www.nmfs.noaa.gov/pr/pdfs/species/petition_leatherback_critical_habitat_pacific.pdf (Last accessed on 21 February 2010) (“petition”)

³⁸ 50 C.F.R. § 660.713.

year as to how they were going to proceed on the issue. In May 2009, after a year and a half of agency delays, the conservation groups filed a lawsuit under the Endangered Species Act (ESA) to assure a definitive timeline for findings on the critical habitat petition. Under the terms of the settlement, NMFS and the conservation groups agreed that the agency would make its decision by December 31, 2009. After extensive evaluation of the petition, NMFS issued a proposed rule to designate more than 70,000 square miles of critical habitat for endangered Pacific leatherback sea turtles in waters off of California, Oregon, and Washington. If adopted, this would be the first time critical habitat is designated for sea turtles in ocean waters off of the continental United States.

III. The Petition: Background and Analysis

A. Leatherback Turtle Biology

The leatherback turtle is the last remaining member of the taxonomic family Dermochelyidae. All other existing turtles belong to the family Cheloniidae. Leatherbacks are the largest sea turtle, with a curved carapace length (CCL) often greater than 150 cm and front flippers that can span 270 cm.³⁹ Mature leatherbacks can be as long as six and a half feet (2 m) and weigh almost 2000 pounds (900 kg).⁴⁰ The leatherback's rubbery carapace is distinguishable from other sea turtles whose carapaces have bony plates covered with horny scutes. Adult leatherbacks have streamlined carapaces made of tough oil-saturated connective tissue with seven longitudinal ridges tapering to a posterior point. The leatherback's ribbed carapace and large flippers make this species uniquely equipped for long foraging and breeding migrations.

Leatherbacks have several physiological and behavioral traits that allow them to tolerate

³⁹ NMFS and USFWS. 1998. Recovery Plan for U.S. Pacific populations of the leatherback turtle (*Dermochelys coriacea*). National Marine Fisheries Service, Silver Spring, MD. 65 pp.

⁴⁰ NOAA Fisheries Office of Protected Resources. Leatherback Turtle – Species Description. Available at: <http://www.nmfs.noaa.gov/pr/species/turtles/leatherback.htm> (Last accessed on February 15, 2010)

cold water environments, unlike other chelonid species. These adaptations include a countercurrent circulatory system, a thick layer of insulating fat, and a large surface area to volume ratio, which allow leatherbacks to maintain a core body temperature that is greater than that of the surrounding water. Leatherbacks have the most extensive range of any living reptile and have been reported throughout the world's oceans.⁴¹ In a single year, leatherbacks have been known to swim over 10,000 km.⁴²

There are two varieties of leatherbacks that inhabit the Pacific. Western Pacific leatherbacks nest on the tropical black sand shores of Indonesia and trans-migrate the Pacific Ocean to the temperate U.S. West Coast where they forage seasonally on aggregations of gelatinous zooplankton. The Eastern Pacific leatherbacks are known to migrate south from Mexico, Costa Rica, and Nicaragua through the Galapagos to feeding sites throughout the southeast Pacific along South America's West Coast.

Leatherbacks are well-adapted for a diet mainly composed of cnidarians (jellyfish and siphonophores) and some tunicates (pyrosomas and salps). Unlike other sea turtles, this species has pointed tooth-like cusps and sharp edged jaws that are suitable for eating soft-bodied pelagic prey. Leatherbacks spend most of their time in the open ocean submerged and continually dive to forage. These turtles can dive over 1,200 meters deep⁴³ yet most recorded leatherback dives range between 50 and 84 meters.⁴⁴

⁴¹ R. Marquez. 1990. *Sea Turtles of the World*. An annotated and illustrated catalogue of the sea turtle species known to date. FAO Fisheries Synopsis No. 125, Vol. 11. Food and Agricultural Organization of the United Nations, Rome. 81 pp.

⁴² Scott R. Benson, Peter H. Dutton, Creusa Hitipew, Betuel Samber, Jacob Bakarbesy, and Denise Parker. 2007. *Post-Nesting Migrations of Leatherback Turtles (Dermochelys coriacea) from Jamursba-Medi, Bird's Head Peninsula, Indonesia*. *Chelonian Conservation Biology* 6 (1): 150.

⁴³ Ibid.

Along the Pacific coast, dense aggregations of jellyfish (scyphomedusae) occur in the summer and fall months from Central California to Northern Oregon.⁴⁵ Oceanographic retention zones and upwelling shadows in the neritic waters off of central California are particularly suitable areas for leatherback prey.⁴⁶ Leatherbacks are frequently observed feeding on *C.fuscescens*, *C. colorata*, and *Aurelia* species, which are commonly found in retention areas between Point Reyes and Monterey Bay in California.⁴⁷

B. Leatherback History under the ESA

FWS and NMFS jointly manage species listed under the ESA based on the species' habitat. For a species like sea turtles that use both the marine and terrestrial environments, both agencies oversee the species together. FWS is responsible for protection of leatherback turtles in their nesting habitats, while NMFS has jurisdiction for the species in the water.

The legal history of leatherback protection under the ESA has persisted for nearly forty years. In 1970, the species was listed under the precursor to the current Act.⁴⁸ In 1979, NMFS designated a small area in the Atlantic nesting grounds in the U.S. Virgin Islands as leatherback critical habitat.⁴⁹ NMFS' justification for this designation was "the survival and recovery of the leatherback depends on the maintenance of suitable and undisturbed nesting beaches and protection of waters adjacent to those beaches."⁵⁰ While this current critical habitat designation

⁴⁴ PFMC (Pacific Fisheries Management Council) and NMFS. 2006. Management of the drift gillnet fishery exempted fishing permit and/or regulatory amendment: Draft Environmental Assessment, Regulatory Impact Review, and Regulatory Analysis, 66.

⁴⁵ Scott R. Benson, Karin A. Forney, James T. Harvey, James V. Carretta, and Peter H. Dutton. 2007. *Abundance, distribution, and habitat of leatherback turtles (Dermochelys coriacea) off California, 1990-2003*. Fisheries Bulletin 105, 337-347.

⁴⁶ Ibid.

⁴⁷ Ibid.

⁴⁸ 35 F.R. 8,491 (June 2, 1970).

⁴⁹ 44 F.R. 17710, 17712 (March 23, 1979).

helps protect Atlantic leatherbacks, it does not directly aid in leatherback recovery in the Pacific.

In 1998, twenty-eight years after listing, NMFS issued a recovery plan for Pacific leatherback turtles consistent with Section 4(f) of the ESA.⁵¹ A recovery plan is “supposed to be a basic road map to recovery,” which outlines the “process that stops or reverses the decline of a species and neutralizes threats to its existence.”⁵² However, these plans “are for guidance purposes only” and do not have the force of law.⁵³

The 1998 recovery plan identified marine habitat protection as a high priority that must be addressed to prevent leatherback extinction.⁵⁴ The plan stated that “the waters off the west coast of the U.S. may represent some of the most important foraging habitat in the entire world for the leatherback turtles.”⁵⁵ It is well-established that the waters off of California and Oregon are essential foraging areas for one of the largest remaining Pacific leatherback nesting populations.⁵⁶ Since critical marine habitat has been identified, designation of these areas as critical habitat is consistent with NMFS’ duty to implement recovery plans and comply with the Section 4(f) mandate under the ESA.

In 2007, NMFS issued a five-year review of the Pacific leatherback population.⁵⁷ The

⁵⁰ Ibid.

⁵¹ NMFS. Endangered and Threatened Wildlife; Recovery Plans for Listed Sea Turtles, 63 Fed Reg. 28359 (May 22, 1998).

⁵² *Fund for Animals v. Babbitt*, 903 F. Supp. 96, 103 (D.D.C. 1995).

⁵³ 16 U.S.C. § 1533 (f).

⁵⁴ NMFS and FWS, *supra* note 37 at 63.

⁵⁵ NMFS and FWS, *supra* note 37 at 16.

⁵⁶ Benson et al., *supra* note 42 at 346.

ESA requires a review of recovery plans at least every five years to ensure accurate listing status and identification of a current recovery priority number. The recovery priority number is derived from a comprehensive analysis of recovery criteria and it is used to rank recovery tasks for listed species. The 2007 review established Pacific leatherback recovery as priority “#1” representing “a high magnitude of threat, a high recovery potential, and the presence of conflict with economic activities.”⁵⁸ It also remarked that despite nine years after the recovery plan identified an immediate need of conservation efforts, a management plan to sustain Pacific leatherbacks was incomplete.

C. The Pacific Leatherback Conservation Area

In addition to its recovery plan, NMFS also determined through rulemaking under the ESA and Magnuson-Stevens Fishery Conservation and Management Act (MSA) that leatherback foraging habitat off of California and Oregon needs special protection.⁵⁹ Since the proposed critical habitat area revision overlies this previously established conservation area, it is appropriate to discuss the creation of this area.

In March 2000, the Center for Biological Diversity and Turtle Island Restoration Network sued NMFS for ESA and Marine Mammal Protection Act (MMPA) violations related to the California/Oregon drift-net fishery, including excessive takes of leatherback turtles. NMFS issued a new biological opinion for the drift-net fishery in response to the suit. The agency found that the projected take of leatherback turtles from the drift-net fishery would jeopardize the species because any additional leatherback mortalities from the Western Pacific nesting

⁵⁷ NMFS and FWS. Leatherback Sea Turtle (*Dermochelys coriacea*) Five-Year Review: Summary and Evaluation 3 (2007). Available at: http://www.nmfs.noaa.gov/pr/pdfs/species/leatherback_5yearreview.pdf (last visited March 2, 2010)

⁵⁸ *Ibid* at 3.

⁵⁹ 16 U.S.C. § 1801 *et seq.*

population corresponded to jeopardy.

In compliance with Section 7(b) of the ESA, NMFS proposed a seasonal fishery closure as a reasonable and prudent alternative that would avoid leatherback jeopardy. NMFS ultimately issued an interim rule that implemented the closure from August 15th to November 15th each year and extended from Point Sur (26.4°18.5'N) in California to the Oregon coast (45°N).⁶⁰ Since the closure has been in effect, there have been no observed leatherback takes in the fishery. This suggests that the closure effectively protects leatherbacks in an important foraging habitat.

In April 2004, NMFS promulgated regulations under the MSA implementing the fishery management plan for highly migratory species on the west coast.⁶¹ Through these regulations, NMFS included the existing leatherback closure into the fishery management plan and established the closure as the Pacific Leatherback Conservation Area. This same area was petitioned to be designated as critical habitat as indicated in Figure 1.

D. The Petition to Revise Leatherback Critical Habitat

On September 26, 2007, the Center for Biological Diversity, Oceana, and Turtle Island Restoration Network (“petitioners”) petitioned NMFS to revise leatherback critical habitat to include habitat for the Pacific population.⁶² The petition sought to revise the designation because the leatherback sea turtle already has critical habitat for the Atlantic population in the U.S. Virgin Islands. While the species are not listed as distinct populations, the populations inhabit different oceans and do not mix. Therefore, the critical habitat in the Atlantic does not protect the Pacific population. The petitioners argued that the Pacific population was rapidly declining and needed critical habitat to prevent extinction. They proposed designating the

⁶⁰ 50 C.F.R. § 660.713(c)(1).

⁶¹ 69 F.R. 18453 (April 7, 2004).

⁶² *Ibid*, *supra* note 37.

Pacific Leatherback Conservation Area as critical habitat because the area is a major foraging ground which leatherbacks depend on for survival.⁶³

The petition argues that additional critical habitat for leatherbacks is both prudent and determinable under the ESA. The designation is prudent because the petition argues that it would benefit species recovery. However, linking leatherback recovery and critical habitat designation is not straightforward and it is difficult to prove the petition's prudent argument given limited scientific understanding on leatherbacks and their foraging behavior along the West Coast. The petition states that the designation is determinable because there is adequate information analyzing impacts to designation and the needs of the species are sufficiently understood to identify critical habitat areas. The petition refers to NMFS' leatherback recovery plan and scientific studies as evidence of the critical need for long-term protection of leatherback foraging grounds.⁶⁴

The petitioners cite NMFS' leatherback management and scientific data because these documents show that the area contains physical and biological features necessary for leatherback conservation. Furthermore, when leatherbacks migrate across the Pacific Ocean to the West coast to forage they exploit convergence zones and upwelling areas that attract seasonal jellyfish aggregations, the leatherbacks' main prey.⁶⁵ This productive area extends beyond the proposed critical habitat area and leatherbacks have been recorded as far north as Alaska, studies indicate that most turtles stay further south.⁶⁶ The petitioners argue that this research proves that leatherbacks depend on this area for feeding, thereby warranting designation.

⁶³ Ibid.

⁶⁴ Ibid.

⁶⁵ Benson et al. *supra* note 45, at 14.

⁶⁶ McMahon, C.R. and G.C. Hays. *Thermal niche, large-scale movements and implications of climate change for a critically endangered marine vertebrate*. *Global Change Biology* 12 (2006): 1330, 1336.

The petitioners further show that the proposed area requires special management consideration and NMFS' creation of the Leatherback Conservation Area supports this finding. The petitioners claim that the current management is insufficient because it only limits drift gillnet fishing threats and does not address other primary threats "from other fisheries, ocean debris ingestion, vessel strikes, oil spills, coastal development, and changing ocean conditions from global warming and ocean acidification."⁶⁷ NMFS' Leatherback Recovery Plan is cited in the petition because it identifies long-term protection of important habitat as a primary priority and the petitioners maintain that critical habitat designation is the only action to meet NMFS' goals. Alternative measures, such as the Pacific Leatherback Conservation Area, fall short of comprehensively mitigating leatherback conservation threats.

The Pacific Leatherback Conservation Area is impacted by pollution and marine debris which affects leatherback foraging capacity. For example, turtles become entangled in discarded fishing lines and can ingest floating plastic bags, mistaken for jellyfish, which block digestion and cause starvation. The petition claims that critical habitat designation could "prevent further degradation and maintain the healthy waters for the survival and recovery of the leatherback."⁶⁸ However, the petitioners did not explain how critical habitat designation would truly achieve these goals, although they are not required to do so. On December 28, 2007, NMFS announced that the petition may be granted and agreed to further examine the request.

IV. Evaluating the Usefulness of Open Ocean Critical Habitat for Leatherback Turtles

NMFS confronts distinctive challenges in designating critical habitat for marine species. Of the currently listed 1,320 listed species found partially or entirely in the U.S. or its waters, 69 are marine species and managed by NOAA's Office of Protected Resources.⁶⁹ The fact that

⁶⁷ Ibid, *supra* note 37, at 33.

⁶⁸ Ibid, *supra* note 37, at 31.

substantially more terrestrial species are listed compared to marine species has been interpreted as support for marine species being more resistant to extinction but it is more likely reflective of data deficiency for marine ecosystems. Furthermore, extensive regulatory history and case law on terrestrial conservation problems do not necessarily inform marine protection problems. It is easier to see how human activities, such as pollution and development, directly affect terrestrial species' habitat while the association in the marine environment is much more ambiguous.

The challenges in the marine conservation are amplified in the open ocean since not a lot is understood about this environment in terms of species' needs and human impacts. The lack of scientific information makes proving that the open ocean environment is "essential to the conservation of the species" particularly difficult. It is not surprising that out of the 16 marine species which have designated critical habitat, none are located in the open ocean.⁷⁰ Yet as concern over the health of oceans grows and recovery of endangered marine species is slow, the value of critical habitat needs to be considered.

For the Pacific leatherback turtle, critical habitat designation is especially complicated because the only areas the turtles use within U.S. jurisdiction are in the open ocean. To be clear, the U.S. can only designate critical habitat in U.S. waters. While the Pacific leatherback migrates across the Pacific Ocean, the only time they spend in U.S. waters is in the open ocean since they do not nest on our beaches. Most marine species listed under the ESA, including the Atlantic leatherback, spends some part of their life cycle on or near U.S. shores to breed, deliver their young, or feed. These endeavors usually require the species to remain in a reachable area, allowing scientists to research their behavior there.

⁶⁹"Species Information." NOAA Fisheries Office of Protected Resources. <http://www.nmfs.noaa.gov/pr/species/> and U.S. FWS Species Reports. "Summary of Listed Species and Recovery Plans." http://ecos.fws.gov/tess_public/Boxscore.do (Last accessed on March 28, 2010)

⁷⁰ "Critical Habitat." NOAA Fisheries Office of Protected Resources. <http://www.nmfs.noaa.gov/pr/species/criticalhabitat.htm> (Last accessed on March 27, 2010)

NMFS has considered open ocean designation for two marine species that have critical habitat, the Northern right whale (*Eubalaena glacialis*) and the Southern resident killer whale (*Orcinus orca*).⁷¹ Rather than designating open ocean habitat for these species, NMFS chose areas that were shallow, protected and close to shore. NMFS acknowledged in its final notice to designate killer whale critical habitat that it recognizes the importance of offshore habitat but it could not “assess the value” of them at the time of designation.⁷²

NMFS is in the unique situation of having to designate open ocean areas, if any critical habitat is going to be authorized for the species. There must be enough scientific evidence to illustrate that designating open ocean critical habitat is prudent and determinable, and to show that the conservation benefits are not outweighed by the designation’s costs.⁷³

A. Identifying Open Ocean Critical Habitat

The process that NMFS uses to designate critical habitat under the statutory guidelines is a two-step procedure. First, NMFS identifies specific areas eligible for critical habitat designation. Then, NMFS conducts the Section 4(b)(2) analysis by determining the impacts of designation, the benefits of designation versus exclusion, whether the benefits of exclusion outweigh the benefits of designation, and whether exclusion will result in the extinction of the listed species.

1. Meeting the Criteria for Critical Habitat

Identifying the specific open ocean areas that a species depends on for habitat is extremely difficult. The available information for marine species like Pacific leatherback turtles

⁷¹ Designation Critical Habitat: Northern Right Whale, 59 Fed. Reg. 28,793 (June 3, 1994) and Revision of Critical Habitat: Northern Right Whale, 71 Fed. Reg. 38,277 (July 6, 2006). Designation Critical Habitat: Southern Resident Killer Whale, 71 Fed. Reg. 69,054 (Nov. 29, 2006).

⁷² Ibid.

⁷³ 50 C.F.R. § 424.12 (2007).

is primarily based on incidental catch, strandings, and direct observations. Furthermore, the data on leatherback turtle activities, locations, and ecological requirements in the ocean is limited, let alone how humans impact these factors.

The petitioners relied on several scientific studies, NMFS' recovery plan and creation of the Pacific Leatherback Conservation Area to demonstrate the proposed area has physical and biological features essential to the Pacific Leatherback population's survival. The petition depended heavily on a recent study spanning 13 years which provides information on leatherback abundance, distribution and habitat off of California.⁷⁴ This research was the first to gather this data and scientists admitted that poor weather conditions and lack of water clarity limited the ability to identify submerged turtles.⁷⁵

The petition claimed that the PCEs for the proposed area should include: "those habitat components that are essential for primarily biological needs, of feeding, resting, and migrating, and include all marine waters, along with associated marine aquatic flora and fauna of the water column, and the underlying benthic community."⁷⁶ Despite the vagueness and striking ambition of this goal, the petitioners upheld that these PCEs are consistent with other marine species' critical habitat, such as the Steller sea lion and spectacled eider.⁷⁷ The petition relied on the well-known fact that the marine waters off of California and Oregon are uniquely productive. NMFS did not dispute this claim in their analyses but explained the need for more information to adequately identify areas essential to Pacific leatherback survival.

In their Biological Report, the Critical Habitat Review Team (CHRT) recognized that

⁷⁴ Benson et al., *supra* note 45.

⁷⁵ *Ibid.*

⁷⁶ *Ibid*, *supra* note 37, at 32.

⁷⁷ *Ibid.*

the northeastern Pacific Ocean is a highly variable environment, with some permanent features, but mostly seasonal changes in productivity.⁷⁸ The primary driver of primary productivity off the U.S. West Coast is wind-driven coastal upwelling. As nutrient-rich waters rise to the surface, phytoplankton blooms occur and are transported offshore. The peak time of sea turtle sightings from July to September in neritic waters corresponds to the period when intermittent cessation of upwelling causes sea surface temperatures to increase to their warmest annual levels. While leatherbacks are a pelagic species, the CHRT maintain that this species aggregates in productive coastal areas to forage on preferred prey, scyphomedusae.⁷⁹ Although the leatherbacks' range extends throughout the Pacific, occupation of the California Current is highly seasonal. The CHRT cite recent and ongoing telemetry work documenting trans-Pacific migrations between the western Pacific and the California Current, it is difficult to identify specific migratory corridors. The fact that migratory routes of leatherbacks are not entirely known complicates the critical designation process because NMFS is bound by the ESA's provision in Section 3(5)(A) to designate areas essential for species conservation.

The CHRT hypothesized that leatherbacks are primarily moving through offshore areas to get to dense aggregations of scyphomedusae, and the boundary between foraging habitat and offshore areas may vary seasonally and inter-annually with altering oceanographic conditions. Although jellyfish blooms are seasonally and regionally known, their fine-scale local distribution is patchy and variable with the environment. Regardless, leatherbacks must consume a massive amount of jellyfish, an estimated 20-30 percent of their body weight compared to cheloniids, which eat approximately 2-3 percent of their body weight.⁸⁰ Leatherbacks likely select

⁷⁸ NMFS. Revision of Critical Habitat for Leatherback Sea turtles. Biological Report. November 2009. p. 9. Available at: http://www.nmfs.noaa.gov/pr/pdfs/species/leatherback_biologicalreport-opt.pdf (Last accessed on March 10, 2010)

⁷⁹ Ibid at 10.

C.fuscescens as prey over other scyphomedusae species in neritic central California waters because this species is comparatively larger and more nutritious. The CHRT considered areas as primary foraging habitat if they contain great amounts of *C.fuscescens*, and secondary or tertiary foraging habitat if they contain other species.

Using this information, the CHRT identified two PCEs for Pacific leatherbacks off the West Coast: occurrence of prey species, and migratory pathway conditions to “allow for safe and timely passage and access to/from/within high use foraging areas.”⁸¹ When evaluating the second

PCE, migratory conditions or passage, the CHRT considered the types of activities that could affect or impede a leatherback turtle’s passage. The CHRT determined that only long-term or permanent structures that alter habitat would be considered to potentially affect passage.⁸² Given this conclusion, fishing gear and vessel traffic were not considered as potential threats to Pacific leatherback migration for the purposes of critical habitat designation.

Several of the petitioners have disputed the absence of fishing gear as an impact to the migratory PCE. They claim that fishing gear threats were a component of the original petition and the reasoning behind the creation of the Pacific Leatherback Conservation Area, which was the area petitioned for critical habitat designation. As evidence, some petitioners have used the North American green sturgeon (*Acipenser medirostris*) critical habitat designation as support for their claim.⁸³ Like the Pacific leatherback critical habitat designation, migratory passage and prey were identified as PCEs for the southern distinct population of the North American green sturgeon but fishing impacts were considered an impact to migration. There are two main

⁸⁰ Ibid at 12, citing Davenport and Balazs, 1991.

⁸¹ Ibid at 13.

⁸² 50 C.F.R. §226.207 (2010).

⁸³ Ben Enticknap, personal communication.

problems with comparing these two designations. First, North American green sturgeon's mainly feed on benthic invertebrates whose survival is directly affected by bottom trawls. Therefore, the prey PCE is negatively impacted by this fishing gear type. Second, North American green sturgeon migrations are well-defined and migration is directly affected by the presence of fishing gear because interference with those pathways impedes survival of the species. The same reasoning does not apply to Pacific leatherbacks because individual turtles have different migratory paths and the presence of fishing gear does not necessarily hinder movement between foraging areas.

Water quality “to support normal growth, development, viability, and health” was considered as a third PCE for Pacific leatherbacks.⁸⁴ It included bioaccumulation of contaminants and pollutants in prey and subsequently in leatherbacks. This PCE option was ultimately rejected due to lack of understanding on how water quality affects jellyfish species. The CHRT also argued that prey condition, distribution, diversity, and abundance under the first PCE would encompass water quality considerations regarding bioaccumulation. Additionally, direct consumption and contact with contaminants and pollutants is included in a direct effects analysis for the listed species.

Figure 1 illustrates the areas that the CHRT chose to represent their best estimate of where turtles transition from migrating to foraging or where prey abundances or composition change. The specific areas numbered one through eight within the geographical area occupied by Pacific leatherbacks were identified based on the presence of leatherbacks and the inclusion of at least one PCE that may require special management considerations or protection. The data that was reviewed for this analysis is shown in Figure 2.

⁸⁴ Ibid at 324.

In response to these proposed boundaries, two public hearings were held in February in California and representative fishermen and conservationists were displeased with the size and location of the designation.⁸⁵ Conservationists argued that the areas were too small and fishermen thought the areas were too large. The reaction to the public hearings and the large expected volume of public comments in response to the revised critical habitat ruling suggest that the designated boundary lines may be shifted or altered in future rulings.⁸⁶ The implication of revising the proposed critical habitat areas could mean tweaking the size of the areas or a significant overhaul of the proposal and this is largely determined by the substance of the public comments. The public comment period closes on April 23rd and NMFS is expected to publish its final determination in the Fall of 2010.

⁸⁵ Sara McNulty, personal communication.

⁸⁶ Ibid.

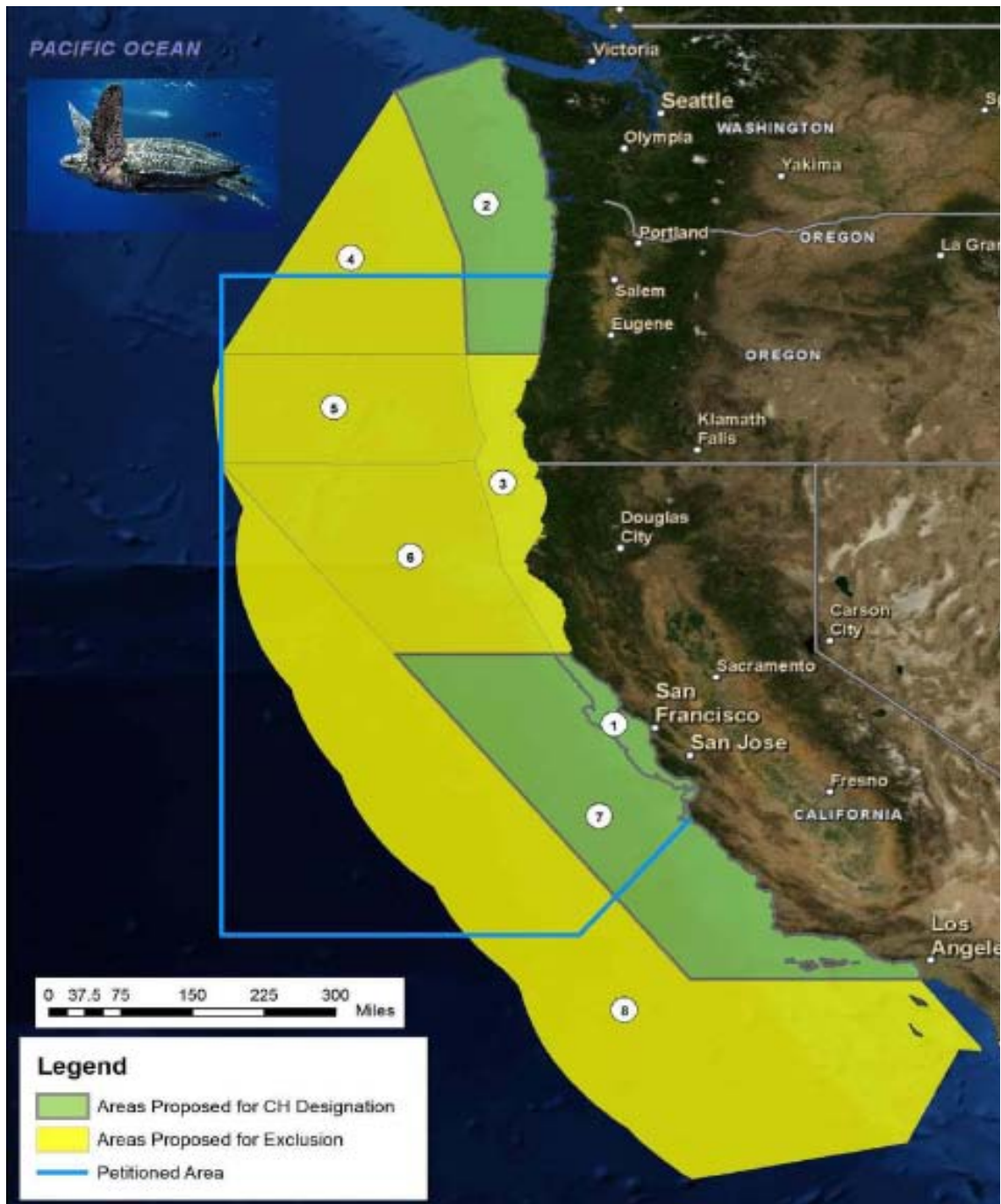


Figure 1: Proposed Areas for Critical Habitat Designation and Exclusion⁸⁷

⁸⁷ NMFS. Map of Petitioned Area and Excluded Areas. Available at: http://www.nmfs.noaa.gov/pr/pdfs/species/leatherback_criticalhabitat_petitioned_map.pdf (Last accessed on March 13, 2010)

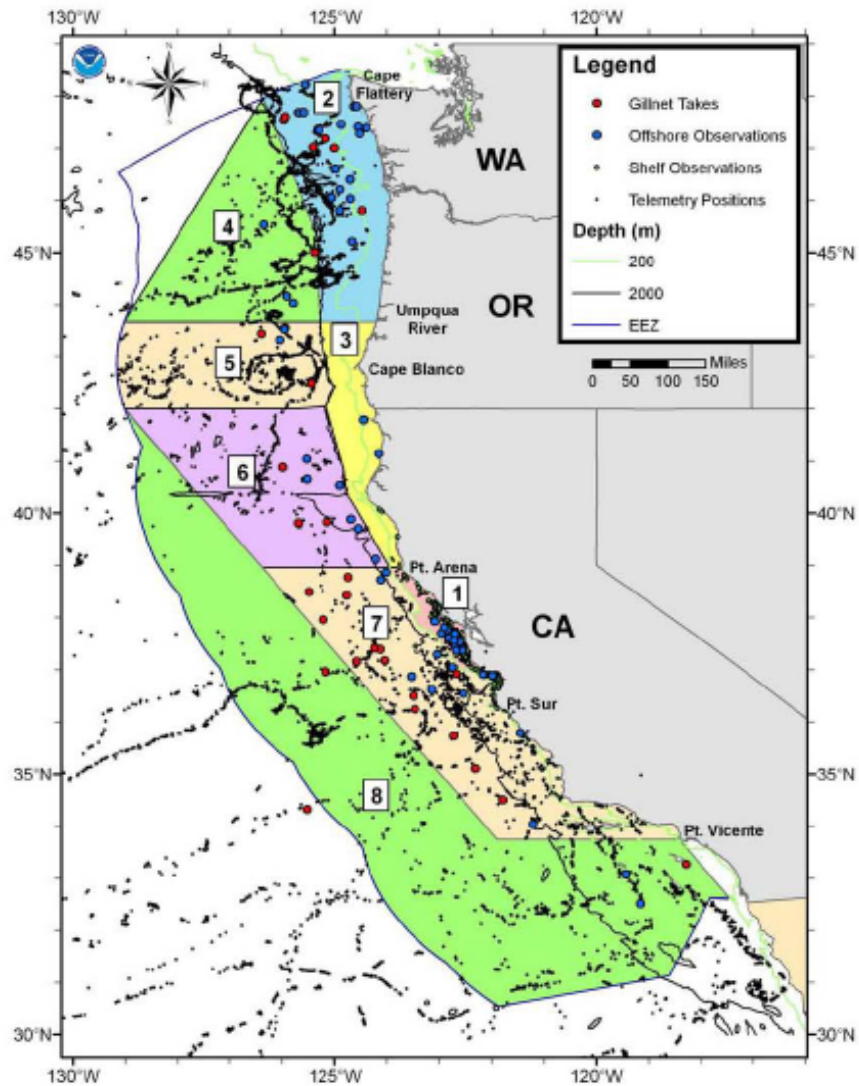


Figure 2: Specific Areas Reviewed for Possible Critical Habitat Designation for the Pacific Leatherback Turtle⁸⁸

2. Benefits of Exclusion: The Economic Costs of Designation

In addition to the difference in scientific understanding of the habitat needs of terrestrial and marine species, the way that humans use, impact, and control marine habitat differs from that on land. This distinction is important because while humans use land in a variety of ways controlled through private, state, and federal institutions, there is a definite lack of private rights

⁸⁸ Ibid, *supra* note 78, at 17.

to use and control the open ocean.⁸⁹ Although states exercise control up to three miles out in marine waters, federal law supersedes this jurisdiction. For ESA purposes, when a species is listed, it becomes the federal government's responsibility to manage the species' conservation. Therefore, many activities in the open ocean can be classified as federal activities.

Since NMFS identified an open ocean area that met the definition of "critical habitat," the CHRT conducted a Section 4(b)(2) analysis to determine whether the benefits of excluding an area outweigh the benefits of designation.⁹⁰ The Secretary can decline to designate critical habitat if the benefits of exclusion outweigh the benefits of designation, unless exclusion will result in the extinction of the species. The benefits to exclusion can include economic, national security, and other relevant impacts. The economic cost considered is the "probable economic impact of the critical habitat designation upon proposed or ongoing activities."⁹¹ The economic cost of designation can easily outweigh the benefits of designation, especially when the benefits are uncertain or difficult to quantify.

For the purposes of the Section 4(b)(2) analysis, the CHRT could not directly compare the benefits to the costs of designation since that would require monetizing the benefits expected from the ESA Section 7 consultations for the considered areas.⁹² As an alternative approach, the CHRT calculated overall conservation ratings for each area to represent the qualitative conservation benefit of designation. In their evaluations, the CHRT assessed how leatherbacks use each area, the frequency and extent of that use, and the quality and quantity of prey species

⁸⁹ Sara McNulty, personal communication.

⁹⁰ Ibid.

⁹¹ 50 C.F.R. § 424.19 (2005).

⁹² NMFS. Designation of Critical Habitat for the Leatherback Sea Turtle. Endangered Species Act Section 4(b)(2) Report. December 2009. p. 16. Available at: http://www.nmfs.noaa.gov/pr/pdfs/species/leatherback_esa4b2.pdf (Last accessed on March 3, 2010)

within each area. After reviewing the best available information, the CHRT assigned relative importance scores of 1, 2, or 3 (3 representing the highest importance) to each area for each of the two PCEs. Scores were then summed and used to determine an overall conservation rating of “very low”, “low”, “medium”, or “high” for each specific area.

The CHRT acknowledged that the benefit of designation should ideally consider the specific and unique benefits from Section 7 consultations on critical habitat. The team initially attempted to quantify this benefit based on threats to the PCEs and activities in each area. Furthermore, they attempted to determine the specific modifications (e.g. management measures) that were likely to be made to activities in each area and the likelihood that those activities would be modified by critical habitat designation. This approach was based on the fact that the conservation benefit to the species from critical habitat designation would be added to the benefit already gained through Section 7 jeopardy consultations to listed species. A similar approach was used in the southern resident killer whale critical habitat designation to modify conservation value ratings and anticipate changes to federal actions due to Section 7 consultations.

Ultimately, this method was rejected because of the difficulties in determining the likelihood that activities would be modified and the difficulty in determining what specific management practices might be altered to protect the PCEs, particularly jellyfish.⁹³ Although the CHRT could not quantify the likelihood of project modifications, it was agreed that the potential benefits from Section 7 consultations could be recognized on the basis that the greater number of federal activities in an area increased the potential overall benefit from management of those activities. In total, eight federal activities were identified as having the potential to affect one or both PCEs in the specific areas: National Pollution Discharge Elimination System (NPDES), agricultural runoff, oil spills, power plants, aquaculture, desalination plants, tidal energy or wave

⁹³ NMFS. *supra* note 92, at 17.

energy projects, and liquid natural gas projects.⁹⁴

To determine the benefits of excluding particular areas from designation, the CHRT estimated the potential costs associated with the designation of each area. First, the baseline level of protection granted to leatherbacks from existing federal and state regulations were accounted for. Then, the baseline cost estimates were calculated relying heavily on the economic reports for the southern resident killer whale, green sturgeon, salmon and steelhead critical habitat designations. Given the limited amount of direct information on the types of modifications through adverse modification consultation on leatherback critical habitat and the lack of direction from the ESA, this approach was how the CHRT used the best information available to guide their decision making.

To comply with the *Cape Hatteras* ruling⁹⁵ the CHRT estimated and analyzed the incremental costs of designation by area and activity, beyond the impacts from baseline protections and the listing and jeopardy provisions. Using the incremental scores, the CHRT monetized the estimates of the economic impacts of critical habitat designation by determining cost projections for each activity. Costs were then annualized for each activity and modified by the incremental score to estimate the costs for project modifications due to critical habitat designation in each area. Using this approach, low, medium and high costs were estimated based on different spatial considerations for the activities and the likelihood of changes to those activities.

Since the conservation benefit of designation of a particular area is not directly comparable to the economic benefit resulting from the exclusion of that area, the economic cost estimates were qualitatively scaled similarly to the conservation value ratings. To do this,

⁹⁴ Ibid at 18.

⁹⁵ *Cape Hatteras Access Preservation Alliance v. Norton*, 344 F. Supp. 2d 1080 (D.D.C. 2004).

economic thresholds were created and each area was given an economic rating based on its median annualized cost. Figure 3 illustrates the median annual costs and ratings by area.

Areas	Median Annualized Cost (\$)	# Activities that may Affect PCEs	Economic Rating	Conservation Value Rating	Eligible for Exclusion based on Economic Impacts?
7	6,820,450*	8	Medium	Medium	No
1	3,581,850*	6	Medium	High	No
3	2,739,800*	5	Medium	Very Low	Yes
2	1,345,950*	3	Medium	High	No
4	46,650	1**	Low	Medium	Yes
5	46,650	1**	Low	Medium	Yes
6	46,650	1**	Low	Low	Yes
8	46,650*	3	Low	Low	Yes

Figure 3: Summary of Economic Impacts Comparison and Resulting Eligibility for Exclusion, *Cost estimates for LNG and aquaculture were not available and excluded from the calculation, **oil spill is the only activity⁹⁶

Areas were eligible for exclusion if oil spills were the only activity affecting the PCEs, regardless of the ratings, if the economic rating was above a “high” or “medium” conservation rating, and if the economic rating was equal or above a “low” or “very low” conservation rating. The ESA Section 4(b)(2) report emphasized that under the Act the CHRT is required to weigh dissimilar impacts given limited time and information. The statute is clear that the decision to exclude an area is ultimately at the regulating agency’s discretion.

Based on this analysis, areas 3, 4, 5, 6 and 8 were excluded from critical habitat recommendation based on economic impacts outweighing conservation benefits. Given area 4 and 5’s “medium” conservation value rating, the CHRT gave these areas special consideration to

⁹⁶ Ibid, *supra* note 92, at 21.

ensure that excluding these locations would not significantly affect Pacific leatherback recovery. Since oil spills were the only activity affecting PCEs in these areas and the likelihood of those events occurring and the extent of those spills is very small, the CHRT reasoned that these areas were not essential to Pacific leatherback conservation.

The CHRT's final recommendation was designating an approximately 70,600 square miles of marine habitat within state waters and the U.S. EEZ off of California, Oregon and Washington for Pacific leatherback critical habitat.

B. What Conservation Benefits Would Ocean Critical Habitat Provide?

Determining the conservation benefit of critical habitat is the most important aspect of the designation process. Since the benefits of designation could not be fully realized in comparison to the economic benefits of not designating, the revision of Pacific leatherback critical habitat is complicated and subject to agency interpretation. NMFS upholds that the benefit of designation “depends on the inherent conservation value of the area, the seriousness of the threats to that conservation value, and the extent to which an ESA Section 7 consultation ... will address those threats.”⁹⁷ This analysis is reduced to determining whether a threat is better mitigated through the jeopardy or adverse modification standard and identifying the inherent conservation value of an area.

1. Baseline Protections

Evaluating the existing baseline protections for a listed species is essential in determining the overall conservation benefit of critical habitat designation and what additional protections it would provide. Because the species is already protected from federal activities leading to jeopardy upon designation, conservation threats must be analyzed to determine what threatens the species and what threatens the habitat. For the Pacific leatherback population, fisheries

⁹⁷ Designation for Critical Habitat for the Southern Resident killer whale, 71 Fed. Reg. 69,054, 69,065 (Nov. 26, 2006).

bycatch threats are better addressed through the Section 7 consultation process because fisheries do not target their prey or significantly modify their habitat. However, pollution may reduce prey abundance and weaken the conservation value of Pacific leatherback habitat.

Baseline protections for listed species extend beyond the ESA. Other environmental laws directly or indirectly protect Pacific leatherbacks, such as the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the Marine Mammal Protection Act (MMPA), and the Clean Water Act (CWA), to name a few. These acts will be considered to determine what conservation benefits critical habitat designation provides in addition to these existing protection measures.

a. The Magnuson-Stevens Fishery Conservation & Management Act

The MSA is the principal law governing marine fisheries management in federal waters. The law was first enacted in 1976 and directs NMFS to manage and promote conservation of fisheries. Recent amendments have focused on rebuilding overfished stocks, protecting essential fish habitat, and reducing bycatch.⁹⁸

The MSA has provided the Pacific leatherback population with great protection benefits through the creation of the Pacific Leatherback Conservation Area.⁹⁹ Although the action resulted from an ESA consultation of a fisheries management plan, NMFS derived its authority to create the Conservation Area through the MSA. NMFS promulgates regulations under the MSA in accordance with other conservation acts like the MMPA and ESA to protect listed species. The regulations often result from a reasonable and prudent alternative to a jeopardy finding under a Section 7 consultation biological opinion for fishery management plans. Examples of these regulations include: “general catch restrictions” for sea turtle incidental takes,

⁹⁸ Magnuson-Stevens Fishery Conservation and Management Act Reauthorized. Available at: <http://www.nmfs.noaa.gov/msa2007/details.html> (Last accessed on April 24, 2010)

⁹⁹ 50 C.F.R. § 660.713 (2007).

observer program requirements, and the creation of the Pacific Leatherback Conservation Area.

In creating the Conservation Area, NMFS took direct action to stop gill net takes, which are the most persistent and worrisome threat to the Pacific Leatherback population. The Conservation Area provides Pacific Leatherbacks with a significant conservation benefit by essentially stopping recording takes. Although the MSA could offer habitat protection through stricter gear loss and pollution requirements, its current benefit to Pacific leatherbacks is reducing take via fishery regulations.

b. The Marine Mammal Protection Act

The MMPA protects all marine mammals, regardless of population status, in U.S. waters and from citizen action suits in the open ocean.¹⁰⁰ The MMPA creates a moratorium on marine mammal takes, with limited exceptions for scientific research, aboriginal subsistence hunting, and unintentional takes by commercial fisheries.¹⁰¹ Though sea turtles are not marine mammals, they confront similar threats and benefit from similar protection measures. Therefore, regulations on fishing gear and take restrictions under the MMPA also help sea turtles because of habitat overlaps and similar human impacts.

The MMPA contributes to data collection on Pacific leatherback distribution and take amounts. One of the main objectives of the MMPA is to minimize marine mammal bycatch from fisheries through NMFS' observer program. NMFS established this program to gather information on species interactions with fishing gear and takings. While the MSA gives NMFS the authority to require observers onboard federal commercial fishing vessels, the MMPA authorizes NMFS to require observers on federal and non-federal commercial fishing vessels, depending on the marine mammal fishing interactions. Though observer's main concern is the

¹⁰⁰ 50 C.F.R. § 216.1 (2005).

¹⁰¹ 16 U.S.C. § 1371.101 (2005).

presence of marine mammals, the MMPA allows monitoring of sea turtle interactions as a secondary concern. The MMPA does not mitigate Pacific leatherback threats but the observing requirement does allow for monitoring that is only otherwise available through the ESA.

c. The Clean Water Act

The Federal Water Pollution Control Act Amendments of 1972, commonly known as the Clean Water Act, is the premier law regulating water pollution.¹⁰² The CWA's broad and ambitious goal is to "restore and maintain the chemical, physical, and biological integrity of our nation's waters ... to support the protection and propagation of fish, shellfish, and wildlife and recreation in and out of water."¹⁰³ Section 303(d) of the Act requires states to identify and list waters that do not meet water quality standards, determine the pollutants causing the problem, and what pollutant levels are necessary to meet the standard. The CWA regulates numerous water pollutants, including pH, which leads to ocean acidification when imbalanced in marine waters.

Both the petition and NMFS target global warming and ocean acidification as threats to Pacific leatherback populations, but addressing these concerns through the Clean Water Act is not effective at this point. The CWA is designed to reduce debris that enter the ocean through waterways but this has proved to be a difficult challenge. While the Clean Water Act has potential, it does not offer much conservation benefit to Pacific leatherbacks due to scientific, political, and management issues.

As baseline protections, the MSA and MMPA directly or indirectly mitigate fishery threats that impact Pacific leatherbacks. All three laws could possibly protect Pacific leatherback open ocean habitat, but their reach is limited at this time. Therefore, there is an opportunity for

¹⁰² 33 U.S.C. § 1251 *et seq.* (2008).

¹⁰³ CWA § 101(a)(2), 33 U.S.C. § 1251(a) (2008).

critical habitat designation to help the Pacific leatherback population by mitigating pollution threats and preserving the intrinsic conservation value of open ocean habitat.

2. The Benefits of Critical Habitat Designation

NMFS has affirmed that critical habitat designation provides primary and ancillary benefits to listed species.¹⁰⁴ The primary benefits are prohibiting adverse modification of habitat in the Section 7 consultation process, the recognition of areas and features important to the species, and education and outreach. The ancillary benefits are more unclear but have been described as incidental economic benefits, through eco-tourism for example, improved ecosystem health and reduced habitat pollution.

The petitioners aimed to prove the benefits of designation based on NMFS' statements on sea turtle conservation management. The petition highlights the green and hawksbill turtle critical habitat designation notice because NMFS identifies five reasons why designation is generally beneficial to turtles.¹⁰⁵ The benefits include educational benefits, helping focus conservation and management efforts, and three related to Section 7 of the ESA: designation "provides a clear indication to Federal agencies regarding when Section 7 consultation is required, ... assists in determining which activities conducted outside of designated area are subject to section 7, ... and in planning future actions."¹⁰⁶ Although the green and hawksbill critical habitat designation protects nesting sites and not open ocean area, the petitioners maintained that the benefits still applied to Pacific leatherbacks.

However, the differences in land and ocean protections should not be undermined. Education and outreach protects beaches in a way that does not transfer easily to the ocean

¹⁰⁴ NMFS, Designation of Critical Habitat for Southern Resident Killer Whale, 71 Fed. Reg. 69,054, 69,064 (Nov. 29, 2006).

¹⁰⁵ Designated Critical Habitat: Green and Hawksbill Sea Turtles, 63 Fed. Reg. 46693, 46696 (Sept. 2, 1998).

¹⁰⁶ Ibid at 46, 696-97.

environment. People are generally more aware of how their actions on land affect the terrestrial environment because the linkages are clear. It is less clear how those same actions impact the ocean. Demonstrating the educational benefits of critical habitat designation in the open ocean is difficult because while it is simple to understand how harvesting turtles for their shells would jeopardize the population, the connection between carbon dioxide emissions and ocean acidification is more convoluted. It just may just be easier for people to understand sea turtle conservation through identification of a particular beach or inlet, then informing people through designation that the open ocean off of California and Oregon is critical to Pacific leatherbacks.

The ancillary benefits to open ocean critical habitat designation may be substantial, but the technology and public demand to curb pollution is lacking. It is unclear that designating open ocean critical habitat would help prevent ocean pollution. Particularly since water quality was rejected as a PCE. More information is needed on how water quality affects leatherback prey species for NMFS to have sufficient evidence to make a bold policy move on ocean pollution and subsequent accumulation in Pacific leatherbacks.

V. Policy Recommendations

Despite the reasoning of the petition, NMFS must adhere to the critical habitat designation procedure and rules outlined in the ESA.¹⁰⁷ The agency is confronted with a short time frame to arrive at a decision that achieves conservation aims and meets the ESA's statutory requirements. Even in the proposed rule to revise Pacific leatherback habitat, NMFS solicited public comments on issues with sparse data or limited understanding such as the effect of ocean acidification on leatherback prey. Given the agency's constraints, NMFS has made a momentous step towards greater protections for Pacific leatherback turtles. I will offer suggestions on two aspects of the current proposal that could be amended to strengthen leatherback sea turtle

¹⁰⁷ Sara McNulty, personal communication.

recovery in the Pacific.

A. Addressing Leatherback Entanglements and Mortalities from Fishing Gear

The threat that commercial fishing gear poses to Pacific leatherbacks in the proposed critical habitat areas is substantial. NMFS states in their proposed ruling that direct take of protected species is better addressed through the ESA's jeopardy standard under the Section 7 consultations. I agree with the procedural logic of this argument but it seems that the migratory passage PCE is violated by the presence of seasonal fishing gear. The evidence to support the impact of fisheries bycatch on leatherback population declines is well-established. NMFS' own 1998 recovery plan for Pacific leatherback turtles cites that turtles were incidentally caught in drift gillnets and longlines off of the West Coast and Hawaii. Furthermore, according to the Pacific Fishery Management Council and NMFS, 23 leatherbacks were observed taken in the California/Oregon drift gillnet fishery between 1990 and 2001.¹⁰⁸ Of the 23 taken, 16 leatherbacks dies from their entanglements, constituting a 70% mortality rate.

Given that Pacific leatherback bycatch is documented and substantial, the presence of fishing gear certainly affects leatherback migration and impedes safe passage to foraging grounds in the West Coast, even if fishing gear is temporary and not a permanent or long-term structure. Even though critical habitat designation is an important conservation tool, fishing gear has the potential to negatively affect Pacific leatherback recovery, missing the point of, and undermining the latent success of designated habitat. It seems that gillnets might be more harmful to leatherback survival than oil rigs and this distinction was not recognized in NMFS' current proposal. Although the extent to which turtles can detect or are attracted to fishing gear is unknown, there are management options to address this threat.

I agree with NMFS that critical habitat designation is not the most effective method to

¹⁰⁸ Ibid, *supra* note 39.

address fisheries bycatch. I suggest that the agency work closely with the fishery management councils to explore an innovative management alternative called individual bycatch caps (IBCs), to incentivize fishermen to avoid sea turtle interactions. This approach was first described in an advance notice of proposed rulemaking regarding Atlantic Highly Migratory Species.¹⁰⁹ IBCs are described as a way to manage “total allowable amount of interaction” with bycatch, defined as both non-target and protected species in a fishery.¹¹⁰ The “total allowable amount of interaction” can be distributed to individuals, collectives, or on a regional basis. As described in the advance notice, the advantages to this management measure include: increased individual responsibility for fisheries interactions, increased ability for individuals to continue fishing while avoiding bycatch, and more regionally applicable consequences of interactions if bycatch caps are applied on a regional basis.

IBCs function in a similar way to a catch share system, but instead of regulating targeted fish landings, the goal is to significantly reduce sea turtle and other protected species bycatch. Designing IBCs for protected species under the ESA presents unique but not unreasonable legal challenges. IBC planning needs to consider and comply with several ESA provisions, including Sections 4, 7, 9 and possibly 10. Limits on species interactions and mortality already established by NMFS in their biological opinions can be converted to a bycatch cap. Additionally, NMFS suggested in the Atlantic Highly Migratory Species advance notice that a limit on “total amount of allowable interactions” can be based on the incidental take statements issued through Section 7 consultation process. Additionally, individual quotas for all target and non-target species should be transferrable to maximize fishermen’s individual capacity to reduce bycatch while maintaining their target catch. This program has the potential to address the main threat to

¹⁰⁹ 74 F.R. 26183 (June 1, 2009).

¹¹⁰ Ibid.

Pacific leatherbacks and could strengthen recovery efforts provided by critical habitat designation.

B. Improving Protections of Migratory Pathways

The current NMFS proposal leaves a large portion of the petitioned area undesignated, separating the northern and southern foraging areas that leatherbacks could migrate through as they feed on drifting prey. The decision to exclude areas from critical habitat areas is discretionary on behalf of the regulating agency and the CHRT. The ESA mandates exclusion of proposed areas if the benefits of not designating outweighs the benefit of designation, provided that exclusion does not contribute to extinction of the listed species. However, the CHRT gave areas 4 and 5 “medium” conservation ratings, stating that the prey and passages PCEs applied in those areas. Given that Pacific leatherbacks have been documented in these areas (see Figure 2), these two areas should be designated critical habitat to strengthen the protections mandated by the ESA.

Designating areas 4 and 5 as critical habitat is in accordance with the CHRT’s decision rules and procedures and would help connect the proposed areas. The ESA works to “provide a means whereby the *ecosystems* upon which endangered and threatened species depend may be conserved... (emphasis added).”¹¹¹ Although oil spills are the only activities identified in these areas, the inadequate biological data on Pacific leatherbacks and their prey should motivate the CHRT to act under the precautionary principle. The reasoning for excluding the other areas from critical habitat designation was that the economic benefits of exclusion outweighed the conservation benefits of designation. Areas 4 and 5 were rejected despite a “medium” conservation value and the CHRT’s admitted lack of documented evidence due to inadequate monitoring of leatherbacks in the excluded areas. Turning complex and often insufficient data

¹¹¹ 16 U.S.C. § 1531(b).

into critical habitat designations is challenging and time consuming. Separating the Pacific leatherback foraging grounds does not seem consistent with the migratory passage PCE identified in the ESA Section 4(b)(2) analysis. In designating critical habitat there is the inherent outcome of establishing some habitat as essential to species recovery and other habitat inessential. The CHRT and NMFS could minimize this outcome by designating areas 4 and 5 as critical habitat.

The critically endangered Pacific leatherback sea turtle needs strong protections in this designated critical habitat to help its population recover and ultimately be delisted. Given the numerous threats facing these creatures, including, entanglements and mortality from fishing gear, pollution, and marine debris, NMFS should provide the best available protections from these activities. Critical habitat designation is not necessarily the most effective means of addressing these concerns in the open ocean but it is an important conservation tool to aid Pacific leatherback recovery.

VI. Conclusion

Critical habitat designation as a policy measure tends to be framed in terms of hype or hope regarding species recovery. For the diminished Pacific leatherback population, there is an urgent need to provide the strongest protections possible for this species. The question remains to what extent will critical habitat designation help recover Pacific leatherback turtles? Simply, there is no single U.S. government action through the ESA or any other law that can protect this species from collapse. The protections offered by critical habitat, although limited to federal actions, are significant and reliable. The Pacific Conservation Area as it is currently managed only addresses fishing threats and does not tackle other leatherback conservation threats such as water quality, marine debris, and environmental changes due to global warming.

It is unclear whether the ESA was ever meant to apply in the open ocean with the far-reaching impacts needed to recover Pacific leatherbacks. Since this species only forages

on the West Coast and does not nest there, designating critical habitat for Pacific leatherbacks requires identifying open ocean areas. Even after NMFS publishes its final critical habitat ruling, significant recovery for Pacific leatherback sea turtles will not occur without coordinated international efforts to address diffuse conservation problems. Due to the highly migratory nature of Pacific leatherbacks and inadequate available scientific information, this population will remain susceptible to decline unless direct actions are taken that account for non-immediate threats.

VII. Appendix

The following is a copy of comments that I submitted in response to NMFS' proposed rules on critical habitat designation for leatherback sea turtles. This letter was submitted on April 22nd, 2010.

Mr. David Cottingham
Chief, Marine Mammal and Sea Turtle Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

RE: RIN 0648-AX06, Endangered and Threatened Species: Proposed Rule to Revise the Critical Habitat Designation for the Endangered Leatherback Sea Turtle

Dear Mr. Cottingham,

I am a Duke University graduate student who is writing in response to the National Marine Fisheries Service's proposed rule and request for comments on designating approximately 70,600 square miles of new critical habitat in the Pacific Ocean for Leatherback (*Dermochelys coriacea*) sea turtles. My Master's thesis, entitled "*Uncharted Waters: Open Ocean Critical Habitat Designation for Pacific Leatherback Sea Turtles under the Endangered Species Act*" investigates the biological and legal protections that critical habitat offers as a policy tool. As someone who has been involved in sea turtle research and conservation, I

commend the decision by NMFS to increase protections for leatherback sea turtles in continental U.S. waters. There are two aspects of the current proposal that could be amended to ensure safe migrations and foraging conditions for leatherback sea turtles.

Account for Fishing Gear

NMFS should address the threat that commercial fishing gear poses to sea turtles in the critical habitat areas, particularly large mesh drift gillnets and longlines. In the proposed rule, NMFS has stated that the direct take of protected species is more appropriately considered under the jeopardy standard in the Endangered Species Act's Section 7 consultations. While I understand the procedural logic of this argument, I believe that the migratory passage Primary Constituent Element (PCE) is not met by the presence of seasonal fishing gear. There is substantial research to support the fact that fisheries bycatch is linked to leatherback population declines. NMFS' U.S. Pacific leatherback turtle recovery plan (1998) states that leatherbacks have been incidentally caught in driftnets off of California, Oregon, and Washington and caught in longlines off of California and Hawaii. Furthermore, according to the Pacific Fishery Management Council and NMFS' 2006 environmental assessment, between 1990 and 2001, 23 leatherbacks were observed taken in the California/Oregon drift gillnet fishery. Of the 23 taken, 16 leatherbacks died from their entanglements, constituting a 70% mortality rate.

Since leatherbacks are known to be caught in fishing gear, the temporary presence of gear surely affects leatherback migration and hinders passage to foraging grounds, even though fishing gear does not constitute a permanent or long-term structure. In NMFS' 2004 Biological Opinion in response to Highly Migratory Species management, leatherbacks were described as spending most of their time at sea submerged and undergoing continual diving, suggesting that maximum exploitation of the water column is critical for this species. Even though critical habitat designation is a beneficial conservation tool, fishing gear has the potential to negatively affect leatherbacks' survival and their population recovery, missing the point of, and undermining the potential success of designated habitat.

If critical habitat designation is not the correct means to undertake this issue, NMFS should work collectively and proactively with fishery management councils to ensure that effects of fishing gear are adequately addressed in Fishery Management Plans or Biological Opinions, as necessary. I am not proposing to get rid of gear in the entire designated area, since this is unrealistic and unfair to fishermen. But I do suggest exploring a new management tool called individual bycatch caps (IBCs), to provide incentives for fishermen to avoid sea turtle interactions. This option is described in advance notice 0648-AX85 on proposed rulemaking for Atlantic Highly Migratory Species under section IV, titled catch share programs. It describes IBCs as a way to manage "*total allowable amount of interaction*" with bycatch, defined as both non-target and protected species encountered during fishing. The "*total allowable amount of interaction*" can be distributed to individuals, groups, or on a regional basis. As described in the

advance notice, the advantages to this management approach include: increased individual responsibility for fisheries interactions, increased ability for individuals to continue fishing while avoiding bycatch, and more regionally applicable consequences of interactions if bycatch caps are applied on a regional basis.

This measure represents a significant change from how bycatch issues are currently managed because allowable bycatch limits are assigned to individuals, groups, or regions. Designing IBCs for protected species under the ESA will present unique but not unfeasible legal challenges. As NMFS has identified a limit on *total amount of allowable interactions* should be based on the incidental take statements issues through the Section 7 consultation process of the ESA. Additionally, individual quotas for all target and non-target species should be transferable to maximize fishermen's individual capacity to reduce bycatch interactions while maintaining their catch of target fish. This program is an important conservation measure that does not exist today and should not be overlooked.

Connect the Proposed Areas

The current proposal leaves a large portion of the petitioned area unprotected, separating the northern and southern feeding areas that leatherback turtles are likely to migrate through as they forage on drifting prey items. As the ESA Section 4 (b)(2) report for the leatherback sea turtles mentions, the decision to exclude an area from critical habitat designation under the ESA is discretionary. Areas 3, 4, 5, 6, and 8 were excluded from critical habitat designation because the economic benefits of exclusion outweighed the conservation benefits of designation. However, the Critical Habitat Review Team gave Areas 4 and 5 medium conservation ratings, stating that the prey and passage PCEs are present in these areas. Given the fact that leatherback presence has been documented in these areas, I think, at minimum, these two areas should be designated critical habitat to offer the protections mandated by the ESA.

The critically endangered Pacific leatherback sea turtle needs strong protections in this designated critical habitat to help its population recover and ultimately be delisted. Given the numerous threats facing these creatures, including, entanglements and mortality from fishing gear, pollution, and marine debris, NOAA should provide the best available protections from these activities. Addressing the issues outlined above could make significant strides towards leatherback sea turtle recovery to the point where listing under the Endangered Species Act is unnecessary.

Thank you for your consideration of these comments. I believe that creating this first-ever critical habitat in U.S. waters is a momentous step in the right direction. I look forward to NMFS' continued efforts to strengthen critical habitat protections for leatherbacks and other sea

turtle species. Please don't hesitate to contact me to further talk about my comments.

Regards,



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