propose to kill any of the listed species being captured, but given the nature of the capture methods, some individuals would likely be killed.

Permit 18194

The Wild Fish Conservancy (WFC) is seeking a five-year permit to annually take juvenile PS Chinook salmon and juvenile and adult PS steelhead. The sampling would take place in selected stream channels and floodplain areas throughout the Stillaguamish River watershed in Washington State. The purpose of the study is to classify by water type approximately 25 miles of stream channel in selected sub-basins and floodplain areas of the Stillaguamish River with the intent of verifying and updating Washington Department of Natural Resources, Snohomish County, and United States Forest Service stream classifications and hydrological layers. This research would benefit the affected species by improving regulatory protection of sensitive aquatic habitats for ESA listed Chinook and steelhead, improving our knowledge of Chinook habitat use (and thereby informing various recovery strategies), and identifying significant habitat restoration opportunities. The WFC proposes to capture fish using beach seines, fyke nets, and minnow traps. Fish would be anesthetized, identified to species, measured to size class, have a tissue sample taken, and released. The researchers do not propose to kill any of the listed salmonids being captured, but a small number may die as an unintended result of the activities.

Permit 18331

The WFC is seeking a five-year permit to annually take juvenile PS Chinook salmon and PS steelhead in selected stream channels and floodplain areas throughout the Kitsap and Snoqualmie sub-basins in Washington State. The purpose of the study is to classify existing channels by water type and thereby validate and update Washington Department of Natural Resources, and affected county and city, stream classifications and hydrological layers. This research would benefit the affected species by filling data gaps regarding fish passage impediments (tidegates, culverts, etc.) and providing fish species composition and distribution—information needed to identify, prioritize, and implement restoration projects. The WFC proposes to capture fish using backpack electrofishing. Fish would be identified to species, have a tissue sample taken (only steelhead in the Kitsap sub-basin), and released. Once fish presence is established, either through visual observation or electrofishing, electrofishing would be discontinued. Surveyors would proceed upstream until a change in habitat parameters is encountered, where electrofishing would be continued. The researchers do not propose to kill any of the listed salmonids being captured, but a small number may die as an unintended result of the activities.

Permit 18405

The Oregon State University (OSU) is seeking a two-year permit to annually take juvenile LCR, PS, and UCR Chinook salmon; CR chum salmon; LCR coho salmon; and LCR, MCR, PS, SRB, and UCR steelhead. The OSU research may also cause them to take adult S eulachon—a species for which there are currently no ESA take prohibitions. The sampling would take place in multiple locations in the Puget Sound (Stillaguamish, Skykomish, Duwamish, and Nisqually watersheds), Washington coast (Sol Duc, Queets, Quinault, Chehalis, and Willapa watersheds), and Columbia River basin (Cowlitz, Klickitat, Yakima, Wenatchee, Spokane, and Palouse watersheds). The purpose of the study is to determine the taxonomic status of Pacific Northwest coastal populations of Speckled Dace based on genetic and morphological data. The genetic sequence data would be used to better understand the historical biogeography of coastal Speckled Dace, improve the understanding of how coastal streams contribute to local species diversity and endemism, and to compare coastal to inland Speckled Dace populations. The research would benefit the listed species by providing information on their distribution, but the main benefactor of this research would be speckled dace by providing taxonomical and distributional data for that species. The OSU proposes to capture fish using small seine nets, dip nets, and minnow traps. All non-target species and listed salmon and steelhead would immediately be released after capture. The researchers do not propose to kill any of the listed salmonids being captured, but a small number may die as an unintended result of the activities.

This notice is provided pursuant to section 10(c) of the ESA. NMFS will evaluate the applications, associated documents, and comments submitted to determine whether the applications meet the requirements of section 10(a) of the ESA and Federal regulations. The final permit decisions will not be made until after the end of the 30-day comment period. NMFS will publish notice of its final action in the **Federal Register**.

Dated: November 14, 2013.

Angela Somma,

Chief, Endangered Species Division, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 2013–27658 Filed 11–18–13; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[Docket No. 130926840–3840–01]

RIN 0648–XC898

Endangered and Threatened Wildlife; 90-Day Finding on a Petition To List 19 Species and 3 Subpopulations of Sharks as Threatened or Endangered Under the Endangered Species Act

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

ACTION: Notice of 90-day petition finding, request for information.

SUMMARY: We (NMFS) announce a 90-day finding on a petition to list 19 species and 3 subpopulations of sharks as threatened or endangered under the Endangered Species Act (ESA). We find that the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted for 9 species: *Centrophorus harrissoni, Isogomphodon oxyrhynchus, Mustelus fasciatus, Mustelus schmitti, Squatina aculeata, Squatina argentina, Squatina guggenheim, Squatina oculata,* and *Squatina squatina.* Therefore, we will conduct a status review of the nine species to determine if the petitioned action is warranted. To ensure that the status review is comprehensive, we are soliciting scientific and commercial information pertaining to these petitioned species from any interested party. We find that the petition does not present substantial scientific or commercial information indicating that the petitioned action may be warranted for 10 species and 3 subpopulations: *Carcharhinus borneensis, Carcharhinus hemiodon, Carcharias taurus* (Southwest Atlantic subpopulation), *Cetorhinus maximus* (North Pacific subpopulation), *Cetorhinus maximus* (Northeast Atlantic subpopulation), *Haploblepharus kistnasamyi, Hemitriakis leucoperiptera, Holohalaelurus favus, Holohalaelurus punctatus, Lamiopsis temmincki, Squatina formosa, Squatina punctata,* and *Triakis acutipinna.*

DATES: Information and comments on the subject action must be received by January 21, 2014.

ADDRESSES: You may submit comments, information, or data on this document, identified by the code NOAA–NMFS–2013–0519, by any of the following methods:

- *Electronic Submissions:* Submit all electronic comments via the Federal eRulemaking Portal. Go to *www.regulations.gov/#!docketDetail;D=NOAA-NMFS-2013-0159,* click the ''Comment Now!'' icon, complete the required fields, and enter or attach your comments.
- *Mail:* Submit written comments to Office of Protected Resources, NMFS, 1315 East-West Highway, Silver Spring, MD 20910.

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NMFS. All comments received are a part of the public record and will generally be posted for public viewing on *www.regulations.gov* without change. All personal identifying information (e.g., name, address, etc.), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. NMFS will accept anonymous comments (enter ''N/A'' in the required fields if you wish to remain anonymous), although submitting comments anonymously will prevent NMFS from contacting you if NMFS has difficulty retrieving your submission. Attachments to electronic comments will be accepted in Microsoft Word, Excel, or Adobe PDF file formats only.

Copies of the petition and related materials are available upon request from the Director, Office of Protected Resources, 1315 East West Highway, Silver Spring, MD 20910, or online at: *http://www.nmfs.noaa.gov/pr/species/petition81.htm.*

FOR FURTHER INFORMATION CONTACT: Maggie Miller, Office of Protected Resources, 301–427–8403.

SUPPLEMENTARY INFORMATION:

Background

On July 15, 2013, we received a petition from the WildEarth Guardians to list 81 marine species as threatened or endangered under the ESA and to designate critical habitat under the ESA. Copies of this petition are available from us (see **ADDRESSES**). This finding addresses the 19 species and 3 subpopulations of sharks identified as part of this petition. The 19 shark species and 3 subpopulations considered in this finding are: *Carcharhinus borneensis, Carcharhinus hemiodon, Carcharias taurus* (Southwest Atlantic Subpopulation), *Centrophorus harrissoni, Cetorhinus maximus* (North Pacific Subpopulation), *Cetorhinus maximus* (Northeast Atlantic Subpopulation), *Haploblepharus kistnasamyi, Hemitriakis leucoperiptera, Holohalaelurus favus, Holohalaelurus punctatus, Isogomphodon oxyrhynchus, Lamiopsis temmincki, Mustelus fasciatus, Mustelus schmitti, Squatina aculeata, Squatina argentina, Squatina formosa, Squatina guggenheim, Squatina oculata, Squatina punctata, Squatina squatina,* and *Triakis acutipinna.*

Section 4(b)(3)(A) of the ESA of 1973, as amended (U.S.C. 1531 *et seq.*), requires, to the maximum extent practicable, that within 90 days of receipt of a petition to list a species as threatened or endangered, the Secretary of Commerce make a finding on whether that petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted, and to promptly publish the finding in the **Federal Register** (16 U.S.C. 1533(b)(3)(A)). When we find that substantial scientific or commercial information in a petition indicates the petitioned action may be warranted (a ''positive 90-day finding''), we are required to promptly commence a review of the status of the species concerned, which includes conducting a comprehensive review of the best available scientific and commercial information. Within 12 months of receiving the petition, we must conclude the review with a finding as to whether, in fact, the petitioned action is warranted. Because the finding at the 12-month stage is based on a significantly more thorough review of the available information, a ''may be warranted'' finding at the 90-day stage does not prejudge the outcome of the status review.

Under the ESA, a listing determination may address a species, which is defined to also include subspecies and, for any vertebrate species, any DPS that interbreeds when mature (16 U.S.C. 1532(16)). A joint NMFS-U.S. Fish and Wildlife Service (USFWS) (jointly, ''the Services'') policy (DPS Policy) clarifies the agencies' interpretation of the phrase ''distinct population segment'' for the purposes of listing, delisting, and reclassifying a species under the ESA (61 FR 4722; February 7, 1996). A species, subspecies, or DPS is ''endangered'' if it is in danger of extinction throughout all or a significant portion of its range, and ''threatened'' if it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range (ESA sections 3(6) and 3(20), respectively, 16 U.S.C. 1532(6) and (20)). Pursuant to the ESA and our implementing regulations, we determine whether species are threatened or endangered based on any one or a combination of the following five section 4(a)(1) factors: The present or threatened destruction, modification, or curtailment of habitat or range; overutilization for commercial, recreational, scientific, or educational purposes; disease or predation; inadequacy of existing regulatory mechanisms; and any other natural or manmade factors affecting the species' existence (16 U.S.C. 1533(a)(1), 50 CFR 424.11(c)).

ESA-implementing regulations issued jointly by NMFS and USFWS (50 CFR 424.14(b)) define ''substantial information'' in the context of reviewing a petition to list, delist, or reclassify a species as the amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted. When evaluating whether substantial information is contained in a petition, we must consider whether the petition: (1) Clearly indicates the administrative measure recommended and gives the scientific and any common name of the species involved; (2) contains detailed narrative justification for the recommended measure, describing, based on available information, past and present numbers and distribution of the species involved and any threats faced by the species; (3) provides information regarding the status of the species over all or a significant portion of its range; and (4) is accompanied by the appropriate supporting documentation in the form of bibliographic references, reprints of pertinent publications, copies of reports or letters from authorities, and maps (50 CFR 424.14(b)(2)).

At the 90-day stage, we evaluate the petitioner's request based upon the information in the petition including its references, and the information readily available in our files. We do not conduct additional research, and we do not solicit information from parties outside the agency to help us in evaluating the petition. We will accept the petitioner's sources and characterizations of the information presented, if they appear to be based on accepted scientific principles, unless we have specific information in our files that indicates the petition's information is incorrect, unreliable, obsolete, or otherwise irrelevant to the requested action. Information that is susceptible to more

than one interpretation or that is contradicted by other available information will not be dismissed at the 90-day finding stage, so long as it is reliable and a reasonable person would conclude that it supports the petitioner's assertions. Conclusive information indicating the species may meet the ESA's requirements for listing is not required to make a positive 90-day finding. We will not conclude that a lack of specific information alone negates a positive 90-day finding, if a reasonable person would conclude that the unknown information itself suggests an extinction risk of concern for the species at issue.

To make a 90-day finding on a petition to list a species, we evaluate whether the petition presents substantial scientific or commercial information indicating the subject species may be either threatened or endangered, as defined by the ESA. First, we evaluate whether the information presented in the petition, along with the information readily available in our files, indicates that the petitioned entity constitutes a ''species'' eligible for listing under the ESA. Next, we evaluate whether the information indicates that the species at issue faces extinction risk that is cause for concern; this may be indicated in information expressly discussing the species' status and trends, or in information describing impacts and threats to the species. We evaluate any information on specific demographic factors pertinent to evaluating extinction risk for the species at issue (e.g., population abundance and trends, productivity, spatial structure, age structure, sex ratio, diversity, current and historical range, habitat integrity or fragmentation), and the potential contribution of identified demographic risks to extinction risk for the species. We then evaluate the potential links between these demographic risks and the causative impacts and threats identified in section 4(a)(1).

Information presented on impacts or threats should be specific to the species and should reasonably suggest that one or more of these factors may be operative threats that act or have acted on the species to the point that it may warrant protection under the ESA. Broad statements about generalized threats to the species, or identification of factors that could negatively impact a species, do not constitute substantial information that listing may be warranted. We look for information indicating that not only is the particular species exposed to a factor, but that the species may be responding in a negative fashion; then we assess the potential significance of that negative response.

Many petitions identify risk classifications made by non-governmental organizations, such as the International Union for Conservation of Nature (IUCN), the American Fisheries Society, or NatureServe, as evidence of extinction risk for a species. Risk classifications by other organizations or made under other Federal or state statutes may be informative, but such classification alone may not provide the rationale for a positive 90-day finding under the ESA. For example, as explained by NatureServe, their assessments of a species' conservation status do ''not constitute a recommendation by NatureServe for listing under the U.S. Endangered Species Act'' because NatureServe assessments ''have different criteria, evidence requirements, purposes and taxonomic coverage than government lists of endangered and threatened species, and therefore these two types of lists should not be expected to coincide'' (*http://www.natureserve.org/prodServices/statusAssessment.jsp*). Thus, when a petition cites such classifications, we will evaluate the source of information that the classification is based upon in light of the standards on extinction risk and impacts or threats discussed above.

In this petition the petitioner relies almost exclusively on the risk classifications of the IUCN as the source of information on the status of each petitioned species. All of the petitioned species are listed as ''endangered'' or ''critically endangered'' on the IUCN Redlist and the petitioner notes this as an explicit consideration in offering petitions on these species. However, as mentioned above, species classifications under IUCN and the ESA are not equivalent, and data standards, criteria used to evaluate species, and treatment of uncertainty are also not necessarily the same. Thus, we instead consider the information on threats identified by the petitioners, as well as the data on which they are based, as they pertain to each petitioned species.

Analysis of the Petition

With the exception of the North Pacific subpopulation of basking shark (*Cetorhinus maximus*), the petitioned shark species and subpopulations are found exclusively in foreign waters. The introductory part of the shark section of the petition provides a general description of threats following the five ESA Section 4(a)(1) factors and is meant to apply to all of the petitioned species. This section discusses the following threats: Habitat destruction from trawling and human population growth, loss of coral reef habitat, overutilization by fisheries, disease, lack of adequate existing regulatory mechanisms, biological characteristics that increase susceptibility to threats, restricted ranges, climate change, and synergistic effects. The species-specific information section follows and provides information largely from the IUCN assessment for each species. This section includes fewer than three pages of unique material for over half of the petitioned species and provides information on the species' Convention on International Trade in Endangered Species (CITES) and IUCN status, range, and habitat information. Entries for only a few species provide species-specific population status or trend information. We consider this information separately in the ''Species-specific information'' section below.

General Information

The petition clearly indicates the administrative measure recommended and gives the scientific and any common name of the species involved. The petition also contains a narrative justification for the recommended measure and provides limited information on the species' and subpopulations' geographic distribution, habitat use, and threats. For a number of the species and subpopulations, the petitioner fails to provide any information on past and present numbers or population status. A synopsis of our analysis of the information provided in the petition and readily available in our files is provided below.

Based on the information presented in the petition, along with the information readily available in our files, we find that 20 of the 21 petitioned shark species constitute taxonomically valid species eligible for listing under the ESA.

The introductory threats discussion is general, with only occasional references to specific petitioned species and subpopulations with the threats later repeated in the species-specific section (discussed below). Some of the general threats discussion are not clearly or causally linked to the petitioned species (e.g., discussion of dead zones yet no identification that these occur in the petitioned species' ranges; discussion of the threat of climate change with a focus on coral reef habitat loss when only one petitioned species was identified as found on coral reef habitats (*Haploblepharus kistnasamyi*)). The petition also references worldwide human population growth as a threat for all of the petitioned species. However,

a rising human population by itself may not necessarily be a threat to a species, if, for instance, human activities are managed such that habitat is preserved or species are not over-exploited. Similarly, human-mediated threats can occur at a level that renders a species in danger of extinction in the absence of a growing human population. Thus, information that the population is growing, on its own, does not indicate that the growing human population is a threat.

The petition provides a discussion of disease as a threat, presenting it in terms of accumulations of mercury, persistent organic compounds, heavy metals and other pollutants in sharks. However, the studies that the petition references as support are based primarily on non-petitioned shark species in locations outside of the petitioned shark species' ranges. For example, in their discussion of the threat of mercury (Hg) accumulation, the petitioners cite Mull *et al.* (2012). This study focused solely on white sharks found in the Southern California Bight (SCB). The authors concluded that geographic location is a primary driver of the level of observed concentrations of contaminants in sharks, with those sharks found in contamination hot spots (such as the SCB and Mediterranean Sea) likely to have higher tissue concentrations of contaminants. According to the authors, ''Sharks from the SCB exhibited elevated muscle levels of total Hg, second only to adult Smooth Hammerheads, Gulper Sharks (*Centrophorus granulosus*), Longnose Spurdog (*Squalus blainvilii*), and Kitefin Sharks (*Dalatias licha*) from the Ionian Sea.'' Sharks from the SCB also exhibited concentrations of dichlorodiphenyltrichloroethane (DDT) and polychlorinated biphenyls (PCBs), much higher than those found elsewhere in the world. However, according to Mull *et al.* (2012), it is unclear if the high levels of contaminants in the white sharks are causing deleterious physiological effects or affecting survival or reproduction rates. We recently conducted an ESA status review of the Northeastern Pacific DPS of white sharks, and in our evaluation of threats from pollutants, we noted that no hepatic lesions or other visible effects have been observed in the DPS (Dewar *et al.,* 2013). Additionally, the status review report notes that ''[i]ndications that high tissue contaminant levels are not causing problems at a population level are the apparent increase in other predators that have similarly high contaminant levels including the coastal stock of bottlenose dolphins, California sea lions and harbor seals'' (Dewar *et al.,* 2013). Ultimately, we concluded that the impacts of pollution and disease are not significant threats to the Northeastern Pacific DPS of white sharks. As these white sharks, which likely have some of the highest levels of contaminants compared to sharks found elsewhere in the world, were not found to be threatened or endangered due to pollutants, it is reasonable to conclude that the petitioned species, which are not found in the SCB and thus likely to have lower levels of contaminants, are not at risk of extinction from these pollutants.

Likewise, the petitioner cites Lyle (1984; 1986) as evidence of threats to the petitioned species based on the accumulation of Hg; however, the paper examined shark species that utilize waters of the Northern Territory of Australia. None of the petitioned shark species are found in these waters. In addition, the Lyle papers made no mention of the effects of bioaccumulation on the survival or reproductive capacity of the examined shark species. Instead, the papers simply discuss the rate and level of Hg and selenium concentrations in sharks, with a focus on human consumption, not survival of shark species.

Finally, the petitioners reference Storelli *et al.* (2003) for evidence of threats to the petitioned species based on accumulations of PCBs and arsenic. The Storelli *et al.* (2003) paper examined hammerhead shark species (none of which were petitioned) in the Ionian Sea. The Ionian Sea, as mentioned above, is recognized as a geographical location with exceptionally high levels of Hg contamination due to urban, industrial, and natural source inputs (Storelli *et al.,* 2003; Mull *et al.,* 2012). Only three of the petitioned species (*Squatina aculeata, S. oculata,* and *S. squatina*) may have current ranges that extend into the Mediterranean Sea. However, Storelli *et al.* (2003), state ''[i]t is hypothesed [sic] that the large size of elasmobranch liver provides a greater ability to eliminate organic toxicants than in other fishes.'' While the paper mentions that ''the presence of PCBs and methylmercury, coupled with their synergistic activity, may make these organisms susceptible to long-term toxic effects'', it also states that in marine mammals selenium has a detoxifying effect against Hg intoxication when the molar ratio between the two metals is close to one, and the authors observed similar ratios in shark liver ''indicating that this particular mechanism may also be valid for sharks'' (Storelli *et al.,* 2003). With no information in our files, or provided by the petitioner, on baseline concentrations or rate of accumulation of pollutants in the petitioned shark species, or even conclusive evidence of negative effects of accumulation in terms of survival or reproductive capacity of the shark species from the referenced studies, we find that the petitioner has not provided substantial information that would lead a reasonable person to conclude that the threat of disease from pollutants (Hg, persistent organic compounds, heavy metals, and other pollutants) is contributing to the petitioned shark species' risk of extinction.

In the regulatory mechanisms discussion, the petitioner argues that there are no adequate regulatory mechanisms because the species are listed as endangered or critically endangered by IUCN, and none of the populations have increasing or even stable population trends. However, generalized evidence of declining populations *per se* is neither evidence of declines large enough to infer extinction risk that may meet the definition of either threatened or endangered under the ESA, nor evidence of inadequate regulatory mechanisms, since sustainable management regimes can have periods of declining populations.

The petition notes that only one species, with two petitioned subpopulations (*Cetorhinus maximus*), is listed on CITES Appendix II and references the limitations inherent in CITES listings from the coral section of the petition. According to Article II of CITES, species listed on Appendix II are those that are ''not necessarily now threatened with extinction but may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilization incompatible with their survival.'' Based on the CITES definitions and standards for listing species on Appendix II, the species' actual listing on Appendix II is not itself an inherent indication that these species may now warrant threatened or endangered status under the ESA. Species classifications under CITES and the ESA are not equivalent, and criteria used to evaluate species are not the same. The petitioner also makes generalized statements about shark finning bans and other measures of protections in this section, but does not provide any details or references. We do not consider these general and unsubstantiated statements as substantial information that listing may be warranted due to an inadequacy of regulatory mechanisms for all of the petitioned species. Where the petition provides species-specific information on

this threat, that information is considered in the individual species sections below. Likewise, biological characteristics, such as slow growth and reproductive rates, and/or range restrictions, do not automatically pose threats to all of the petitioned species. These biological and ecological factors are examined on a species-specific basis below, if information is available.

While the information in this introductory section is otherwise largely accurate and suggests concern for the status of sharks in general, the broad statements and generalizations of threats for all petitioned shark species and subpopulations do not constitute substantial information that listing may be warranted for any of the petitioned species or subpopulations. There is little information in this introductory section indicating that particular petitioned species may be responding in a negative fashion to any of the discussed threats. The few instances in the introductory section which specifically link threats to a particular petitioned species or subpopulation will be considered in our discussion of threats to that particular species or subpopulation.

The next part of the petition consists of individual species accounts for each of the 22 petitioned sharks. For many of the species and subpopulations, the information is extracted directly from the IUCN assessment, with the petitioner providing the assessment as an accompanying exhibit and a list of references cited by the IUCN assessment. Below we analyze this species-specific information in light of the standards of the ESA and our policies as described above.

Species Descriptions and Information

Carcharhinus borneensis, commonly referred to as the Borneo shark, is an inshore coastal shark that appears to be found exclusively off Sarawak, Malaysia on Borneo. It is a small shark, with an observed maximum size of 87 cm (Department of Fisheries Malaysia, 2006). Prior to 1937, it was only known from five confirmed specimens (four of which were collected from Borneo, and one from China) (Compagno, 2009; White *et al.,* 2010). As such, the life history and ecology of this species is largely unknown (Compagno, 2009; White *et al.,* 2010).

The petition states that the species is very rare, and specifically identifies commercial overutilization as a threat based solely on the general statement in the IUCN assessment that identifies Borneo as an area heavily exploited by artisanal and commercial fisheries (Compagno, 2009). No references were included as support for this statement, and neither the petitioner nor the IUCN assessment provides any information on catch statistics or operations of Borneo fisheries. Instead, the assertion that fishing activities have detrimentally affected the species seems based solely on the species' rarity in historical records. However, there could be a number of other reasons for the species' absence in fishing records, such as: The species' range does not coincide with fishery operations or survey areas; the fishing gear employed is not effective at catching the species; the species may have been caught but was released if it was not of commercial value; its life history is unknown, so it is possible that this species may migrate to other areas during fishing seasons; etc. In other words, a species that is persistently rare in the historical records does not necessarily mean that it has declined or is in danger of extinction. In fact, in this case, recent surveys in the region have actually found the species in ''substantial numbers'' near Mukah in Sarawak (White *et al.,* 2010). The 2006 Malaysia National Plan of Action (NPOA) for sharks supports this finding, noting that *C. borneensis* was the third most abundant species landed in Mukah, comprising around 9 percent of the shark landings (Department of Fisheries Malaysia, 2006). This new information from our files, not considered in the IUCN assessment (which relied on information prior to 2006), suggests that the Borneo shark is more common than previously thought.

The petitioner also contends that there is a complete lack of protections for the species. We do not necessarily consider a lack of species-specific protections as a threat to the species or even problematic in all cases. For example, management measures that regulate other species or fisheries operations may indirectly help to minimize threats to the petitioned species and may be adequate to prevent it from being at risk of extinction. Again, we look for substantial information indicating that not only is the particular species exposed to a factor, but that the species may be responding in a negative fashion; then we assess the potential significance of that negative response. According to the Malaysia NPOA, sharks are not targeted by fishermen but are caught as bycatch with other commercially important species (Department of Fisheries Malaysia, 2006). In fact, shark and ray landings constitute only around 2.2 percent of the total marine landings of the demersal fishery that operates within Malaysian waters (Department of Fisheries Malaysia, 2006). In Mukah, *C. borneensis* is primarily landed in coastal gillnets. In terms of fisheries regulations, Malaysia has a number of fishing gear, method, and area restrictions that have been in place to control the exploitation of fishery resources. For example, there is currently a complete ban on fishing methods that are destructive to fish resources and their environment, such as dynamite, pair trawling, and push nets (Department of Fisheries Malaysia, 2006). The *pukat pari,* a drift gill net with a mesh size larger than 25.4 cm that was used to catch large sized sharks and rays, has been banned since 1990 (Department of Fisheries Malaysia, 2006). As the Malaysia NPOA notes, these nationwide bans on fishing gear and methods have helped reduce the exploitation of adult shark and ray species and provided some conservation benefits to the breeding stocks.

Little information is known about the life history and biology of *C. borneensis.* It was previously considered to be a rare species, with the assumption that its absence in records was due to historical overutilization of the species; however, recent information suggests otherwise. In fact, the species is substantially more abundant than previously thought, indicating that it is either experiencing an increasing population trend or that prior sampling of the species was inadequate. The species is now commonly landed in part of its range. We, therefore, find no evidence that would suggest that the threat of overutilization or inadequate regulatory measures is putting this species at an increased extinction risk and conclude that the species-specific information presented in the petition does not constitute substantial information that listing may be warranted for *C. borneensis.*

Carcharhinus hemiodon, commonly referred to as the Pondicherry shark, is a rarely observed shark thought to occur inshore on continental and insular shelves (Compagno *et al.,* 2003). The petitioner, citing the IUCN assessment (Compagno *et al.,* 2003), notes that the species could possibly be extinct, as the last record of the shark was in 1979 in India ''despite detailed surveys in Borneo, Philippines, and Indonesia.'' However, more recent surveys in India's economic exclusive zone (EEZ), conducted from 1984–2006, have identified the species as being present in these waters. The petition also states that the species is represented by ''fewer than twenty specimens in museum collections, most of which were captured before 1900.'' However, it was also recorded for the first time in Malaysian waters during shark surveys

conducted from 1999 to 2004 (Department of Fisheries Malaysia, 2006), suggesting the range of the shark may be wider than previously assumed. Prior to 1990, *C. hemiodon* was reported as common in the Guandong Province and Fujian Province in China, but was not recorded during market and interview surveys conducted in these shark-fishing provinces from 2006 to 2008 (Lam and de Mitcheson, 2010).

Similar to *C. borneensis,* the petition attributes the rarity of this species to commercial overutilization, although it acknowledges that the population trend, past and present abundance of the species, and the basic biology and life history of the species are unknown. As mentioned previously, rarity does not necessarily mean that a species is threatened or in danger of extinction. The condition of being rare is an important factor to consider when evaluating a species' risk of extinction; however, it does not by itself indicate the likelihood of extinction of that species, nor does the condition of being rare constitute substantial information that listing under the ESA may be warranted. We look for information indicating that the species is exposed to a threat, but also that the species may be responding in a negative fashion to that threat. While we acknowledge that fishing has and is occurring in areas where this species has been documented, the petitioner does not provide any information indicating that this species was (or is) targeted or caught as bycatch in these fisheries in numbers that would lead a reasonable person to conclude that it has declined or that listing may be warranted. In fact, the IUCN assessment even acknowledges that ''market surveys have failed to locate it'' (Compagno *et al.* 2003). In addition, the petition claims that there are no conservation measures in place for the species, yet this species is currently listed under Schedule I of India's Wildlife Protection Act (1972), which provides it absolute protection in India's waters (John and Varghese, 2009). The petitioner has failed to provide any information that indicates current regulatory measures are a threat to the species.

Finally, the range of this shark species is poorly known. As such, the rare occurrence of the shark in historical records may simply be a reflection of limited sampling efforts in the assumed range of the shark. As mentioned above, new survey data have in fact recorded the shark in waters where previously it was not known to occur. The IUCN assessment also notes that the species has been recorded from a number of ''widely-separated'' sites, suggesting that this species may exhibit migratory behavior and may not be limited to certain locations. In conclusion, we find that the species-specific information presented in the petition does not constitute substantial information that listing may be warranted for *C. hemiodon.*

Centrophorus harrissoni, commonly referred to as Harrison's dogfish, is a demersal shark found on the upper to middle continental slope off eastern Australia, and on seamounts and ridges north of New Zealand (Pogonoski and Pollard, 2003). The petitioner relies on the IUCN assessment (Pogonoski and Pollard, 2003) for its information, noting that the population size of this species is unknown but the trend is decreasing. The IUCN assessment states that the major threats to the species are from demersal trawling (by Australia's South East Trawl Fishery (SETF)) and droplining (by the New South Wales fisheries) along the continental slope. The shark is commercially valuable and sold for its flesh and liver oil (Graham *et al.,* 2001; Pogonoski and Pollard, 2003). The petition contends that overutilization for commercial purposes has contributed to the decline of the species and currently remains a threat to its existence. According to Graham *et al.* (2001), the demersal trawl-fishery on the upper continental slope off New South Wales (NSW) began in 1968 but rapidly expanded between 1975 and 1980 following exploratory trawling conducted by the NSW government's fisheries research vessel, *Kapala.* By the early 1980s, more than 100 trawlers were landing around 15,000 mt of fish per year, with the majority of fish caught on the upper continental slope. Although sharks were never targeted, some species were fairly abundant, with the larger species, including the dogfish sharks, retained as bycatch. By the late 1980s, there were substantial declines in catch rates of certain fish species, and in 1992, total allowable catches and transferrable quotas were introduced into the fisheries operating in the region. However, no such management measures were created for sharks, which Graham *et al.* (2001) attributes to their low abundance and economic value. In an effort to determine the relative change in shark abundance, Graham *et al.* (2001) examined the Kapala exploratory trawl data from 1976–1977 and data from stratified surveys from 1996–1997 (conducted by the same vessel and gear using equivalent methodology). The surveys were conducted on the upper continental slope trawl grounds, between 200 and 650 m depths, off central and southern NSW. Results showed that 13 of the 15 examined shark species or species groups saw substantial declines, including Harrison's dogfish (Graham *et al.,* 2001). In three of the 1976 surveys, Harrisson's dogfish were lumped with little gulper sharks (*C. uyato*) and so were analyzed as a group. These species were fairly abundant across all depths on all grounds, with an average catch rate estimated at 126 kg/h (Graham *et al.,* 2001). These species also represented around 9, 18, and 32 percent of the total fish catches in the NSW trawl areas off Sydney, Ulladulla, and Eden, respectively. By 1996–1997, the two species represented less than 1 percent of the total catch weight from these areas, with an average catch rate of 0.4 kg/h. This translates to a decline of more than 99 percent between 1976–77 and 1996–1997 (Graham *et al.,* 2001). Given that the 1976–77 survey was conducted when the demersal trawl fishery was just beginning, Graham *et al.* (2001) attributes the subsequent decline in Harrison's dogfish primarily to the fishing activities of the SETF. The authors, and the petitioner, also note that the species' low fecundity (thought to produce only one to two pups every 1 to 2 years) and assumed late maturity have likely hindered its ability to recover from this decline.

In terms of current regulatory measures, the petition notes that there have been some measures implemented that limit the catch of *C. harrissoni* in the SETF and require fishermen to land *Centrophorus* carcasses with their livers, but argues that these regulations are inadequate to protect the species from extinction. Instead, the petitioner states that catch should be completely prohibited for a species that has exhibited such drastic population declines.

Based on the best available information, we find that the threat of overutilization by fisheries, inadequate existing regulatory mechanisms, and other natural factors may be impacting Harrison's dogfish populations to a degree that raises concerns of a risk of extinction, with evidence of severe population declines throughout the species' observed range. We conclude that the petition presents substantial scientific information indicating that the petitioned action of listing *C. harrissoni* as threatened or endangered may be warranted.

Haploblepharus kistnasamyi is a rare shark species, known only from three adult specimens, and is thought to be endemic to South Africa (Human, 2009a). These known specimens have all occurred inshore, from the intertidal zone to 30 m depth, and within a small

area (less than 100 km^2) surrounding Durban, KwaZulu-Natal (Human, 2009a). The species was previously assumed to be a form of *Haploblepharus edwardsii,* but in 2006 was named as a new species based on morphological differences (Human, 2009a). The petition acknowledges that the population size, trend, and life history of the species are virtually unknown.

The petition identifies habitat degradation, overutilization (as bycatch in fisheries), and inadequacy of existing regulatory mechanisms as the main threats to the species' continued existence, and relies primarily on the information within the IUCN assessment (Human, 2009a) for its support. The petition, quoting the IUCN assessment, states that Durban is experiencing increasing industrialization and contends that the resultant industrial waste output, pollution, and land development activities are degrading the only known habitat of *H. kistnasamyi* to the point where its continued existence is at risk. The petitioner also notes that the sharks' restricted range leaves it vulnerable to these localized activities and stochastic events. However, neither the IUCN assessment nor the petition provides any supporting information (or references) for these statements, such as information on the level of development in the area, the amount of waste or pollutants entering the waters surrounding Durban (or water quality data), or evidence that the shark species is responding in a negative fashion to this threat. Likewise, the petitioner states that bycatch is a threat to the species and cites the IUCN assessment, which notes that the area around Durban is heavily fished, especially by the prawn fisheries, but provides no additional information, references, or data on this fishery. Without further information on these fisheries, such as their areas of operation, gear and methods, or data on catch and bycatch, it is unclear how the petitioner came to the conclusion that these fisheries are negatively affecting the abundance of *H. kistnasamyi,* especially in light of the significant unknowns surrounding the life history of *H. kistnasamyi.* In fact, there have recently been questions regarding the exact range of this species, as the IUCN assessment states that possible juveniles of the species have been recorded, but not yet verified, from the Eastern Cape to west of Mossel Bay, both also in South Africa. If these juveniles are identified as *H. kistnasamyi,* then this would provide evidence that the species is not as restricted in its range as previously thought, and especially highlights the need for more sampling and data to understand the species' life history and ecology.

As stated previously, broad statements about generalized threats or identification of factors that could negatively impact a species do not constitute substantial information that listing may be warranted. In addition, the condition of being rare is an important factor to consider when evaluating a species' risk of extinction; however, it does not by itself indicate the likelihood of extinction of that species, nor does the condition of being rare constitute substantial information that listing under the ESA may be warranted. The fact that the species is considered rare could also be an invalid characterization of the species due to limited sampling. Because of these uncertainties, we look for substantial information within the petition and within our own files indicating that not only is the particular species exposed to a certain factor, but that the species may be responding in a negative fashion, and then we assess the potential significance of that negative response. We had no information on *H. kistnasamyi* or threats to the species in our own files. After evaluation of the species-specific information presented in the petition, we find that the petition does not present substantial scientific or commercial information indicating that listing may be warranted for *H. kistnasamyi.*

Hemitriakis leucoperiptera, commonly referred to as the whitefin topeshark, is an inshore tropical shark from Philippine waters. It is known only from two free-swimming individuals and, as such, there is little to no information regarding its life history, range, or population numbers. No other information is provided in the petition or available to us regarding past or present numbers or status of this species. Additionally, according to the IUCN assessment (Compagno, 2005), there have been no confirmed records of the species' occurrence in over 50 years, indicating that the species may no longer be found in the wild. The purpose of the ESA is to conserve species that are in danger of or threatened with extinction. The definition of an endangered species is ''any species which *is* in danger of extinction throughout all or a significant portion of its range'' (Section 3(6)). Species that are already extinct are not protected by the ESA. A review of the best available scientific information provided by the petitioner suggests that *H. leucoperiptera* may no longer exist in the wild and may already be extinct. Given this available information, as well as the previous discussion about the deficiencies of the general threats information, we conclude that the petition does not present substantial information indicating that *H. leucoperiptera* may warrant listing as endangered or threatened under the ESA.

Holohalaelurus favus, commonly referred to as the honeycomb izak or natal izak, is found within a restricted range along the east African coast, from Durban, KwaZulu-Natal, South Africa north to southern Mozambique. The petitioner, citing the IUCN assessment (Human, 2009b) notes that very little information is known about the habitat, ecology, population size and status of the shark, nor is this information available in our files. In the late 1960s and early 1970s, *H. favus* was commonly caught and recorded from fishing trawls (Human, 2009b). However, by the mid-1970s, it had seemingly disappeared; no longer showing up in trawl catches (Human, 2009b). The cause of the disappearance is unknown. Furthermore, a number of extensive surveys that have been conducted in the known range of *H. favus,* including biodiversity research cruises in 2002 and 2003, a survey cruise off Mozambique in 2007, and other more recent biodiversity trawl surveys, have failed to capture any specimens of the species (Human, 2009b), indicating that the species may no longer be found in the wild.

The purpose of the ESA is to conserve species that are in danger of or threatened with extinction. The definition of an endangered species is ''any species which *is* in danger of extinction throughout all or a significant portion of its range'' (Section 3(6)). Species that are already extinct are not protected by the ESA. A review of the best available scientific information provided by the petitioner suggests that *H. favus* may no longer exist in the wild and may already be extinct. Given this available information, as well as the previous discussion about the deficiencies of the general threats information, we conclude that the petition does not present substantial information indicating that *H. favus* may warrant listing as endangered or threatened under the ESA.

Holohalaelurus punctatus, commonly referred to as the whitespotted izak or African spotted catshark, is endemic to the southwestern Indian Ocean. It may be found in depths of around 220–420 m off the coasts of KwaZulu-Natal, South Africa, southern Mozambique, and Madagascar. The petitioner, citing the IUCN assessment (Human, 2009c),

notes that very little information is known about the life history of the species and the population status throughout its range. Historically, the species was commonly caught by commercial and research bottom trawls off South Africa and Mozambique in the late 1960s and early 1970s. However, similar to *H. favus,* catch of the species abruptly declined. The cause of this decline in catch is unknown. Only a single specimen has been collected since 1972, despite recent biodiversity trawl surveys that have been conducted off Mozambique (Human, 2009c). However, the IUCN assessment notes that the species also occurs off Madagascar and its population status and structure in this part of its range is unknown (Human, 2009c). It also states that given the species' presumed depth range, it may be protected from local Madagascar fishermen, with the deep waters off Madagascar thus serving as a possible refuge for this species. However, due to a ''complete lack of information from this part of its range'' the IUCN assessment concluded that the species could not be assessed in Madagascar (Human, 2009c). Even with this substantial lack of information on the species, including its basic life history, population size, structure, status, and likely range, the petitioner contends that the species is in danger of extinction from threats of inadequate regulatory measures (due to a lack of conservation measures for the species) and threats that have yet to be identified.

As stated previously, we do not necessarily consider a lack of species-specific protections as a threat to the species. For example, management measures that regulate other species or fisheries operations may indirectly help to minimize threats to the petitioned species and may be adequate to prevent its extinction. The petition has not provided any information that would lead a reasonable person to assume the abrupt decline in catch was due to a lack of adequate regulatory measures, nor do we have that information in our files. Additionally, the IUCN assessment, cited by the petitioner, highlights the uncertainty surrounding the cause of the observed reduction in catches of the shark off Mozambique when it states ''[i]t is not known whether the reduced population numbers are due to fisheries pressure, habitat loss, pollution, or an as yet unidentified threat.'' The petition uses this statement as support that listing may be warranted for the entire species. However, the information provided by the IUCN assessment indicates that the population of *H. punctatus* found in waters off Madagascar may possibly be stable and protected, suggesting this population is not currently at risk of extinction. In addition, broad statements about generalized threats or identification of factors that could negatively impact a species do not constitute substantial information that listing may be warranted. Thus, after evaluation of the species-specific information presented in the petition, we find that the petition does not present substantial scientific or commercial information indicating that listing may be warranted for *H. punctatus.*

Isogomphodon oxyrhynchus, commonly referred to as the daggernose shark, is found in the western Atlantic, ranging from the Caribbean (Trinidad, Guyana, Suriname, and French Guiana) to northern Brazil and possibly in waters off central Brazil (Lessa *et al.,* 2006). The shark occurs in highly turbid, inshore waters, preferring indented coasts with shallow banks, muddy bottoms, and mangrove forests (Lessa *et al.,* 2006). It has been caught in depths of 4–40 m off northern Brazil and is thought to spend most of its life cycle within its range, as no long distance movements have been observed (Lessa *et al.,* 2006). Annual rate of population increase, natural mortality, average reproductive age, and longevity are unknown (Lessa *et al.,* 2006). The species is believed to reach maturity at 6–7 years for females, and 5–6 years for males, with maximum observed sizes of 160 cm total length (TL) and 144 cm TL, respectively (Lessa *et al.,* 2000). Average litter sizes range from 3 to 8 pups, with a gestation time of 12 months and an unknown but possible biennial reproductive periodicity (Lessa *et al.,* 2006).

The shark is primarily caught as bycatch in artisanal floating gillnet fisheries in northern Brazil (Lessa *et al.,* 2006). It is also taken in small numbers by artisanal fishermen in Venezuela, Trinidad, Guyana, Suriname, and French Guiana; however, data are currently lacking for these areas (Lessa *et al.,* 2006). According to a study referenced by the IUCN assessment (Lessa *et al.,* 2006), the population off northern Brazil is thought to be decreasing at a rate of 18.4 percent per year, with substantial declines (>90 percent) over the past 10 years. From November 1983 to February 1985, a survey conducted off northern Brazil showed the species represented around 10 percent of the floating gillnet elasmobranch catch (Lessa, 1986), while a later survey (Stride *et al.,* 1992) reported a catch per unit effort (CPUE) of 71 kg/km/h for the species. Unfortunately, we were unable to review these studies, as they are not in our files and were not provided by the petitioner.

The petitioner asserts that the daggernose shark's continued existence is threatened by the synergistic effects of habitat destruction, overutilization for commercial purposes, inadequate regulatory measures, and the species' biological characteristics. In terms of threats to the species' habitat, the petitioner notes that population growth and subsequent coastal development within the range of the species is degrading the species' habitat and leading to increased pollutants in the coastal waters. The petitioner provides general information about population density within Latin America and the growth of the global population. However, information that the population is growing, on its own, does not indicate that the growing human population is a threat to the species. The petition continues by discussing some potential negative effects from this growth for coastal ecosystems, including increased inputs of nutrients and chemical wastes from run-off pollution, increased sedimentation, deforestation, and the physical destruction of coastal shorelines. While we acknowledge that these may be potential effects of a growing human population, we look to see if the species is directly exposed to and responding in a negative fashion to any of these factors. The petitioner does not provide any information to indicate the species is exposed or negatively responding to any of the identified factors, nor do we have that information in our files. For example, the petition mentions the increasing number of dead zones worldwide but does not provide any evidence that these dead zones occur in areas within the daggernose shark's range, or information on the species' likely response to hypoxic conditions. The petition provides no information on water quality within the daggernose shark's range, or the species' response to factors such as increased sedimentation or nutrients. The petition notes that the daggernose shark occurs in mangrove systems within its range, and cites the destruction of these mangroves as a threat to the species. We reviewed the citation that the petition used as support for this statement (FAO, 2007) but found no evidence that would suggest this is a significant threat to the species' continued existence in its range. The FAO (2007) study examined the status and trends of the world's mangrove areas, including those likely to be within the daggernose shark's

range. For each country with mangrove areas, the study provided the annual change in mangrove area for three time periods: 1980–1990, 1990–2000, and 2000–2005. In Brazil, the study found that the annual change in mangrove area was −0.3 percent, −0.1 percent, and 0 percent for the three periods, but that the majority of this loss was along the southern coast, an area that is outside of the daggernose shark range. For French Guiana, the change was 0 percent for all three periods and the FAO (2007) notes that ''no serious threats seem to pressure the mangroves'' there. For Trinidad, the change was −0.4 percent, −0.2 percent, and 0 percent. For Guyana, the change was −1 percent, −0.3 percent, and 0 percent, with activities that include afforestation and reforestation currently being undertaken (FAO, 2007). In Suriname, the change was noted as ''not significant,'' with mangroves protected in multiple-use management areas (FAO, 2007). Given the above information, which indicates very little loss of mangrove forests within the daggernose shark range, we do not find the petitioner's assertion of mangrove destruction to be a significant threat to the species' continued existence.

The petitioner also contends that overutilization for commercial purposes is placing the species at an increased risk of extinction. Specifically, the petitioner notes that the daggernose shark is caught as bycatch in artisanal floating gillnets in northern Brazil, and repeats the information about CPUE from the Stride *et al.* (1992) survey and the observed decreases in the northern Brazil population as support that the species is being overutilized. The petitioner provides general information about bycatch and the dangers facing shark populations. The petition makes the assumption that fishing pressures are similar throughout all of the species' range and, therefore, similar declines are likely, but provides no information on effort or catch elsewhere. The petition also asserts that the species' biological characteristics, such as slow intrinsic population growth and high natural mortality (neither of which have been estimated) have resulted in a population that cannot rebound from this fishing pressure. The petition also provides general information on the use and trade of shark meat and fins, including import and export data from the countries in the daggernose shark's range. These trade data are for all shark species and products and do not show the relative importance of the daggernose shark in trade. As Compagno (1984b) notes, the daggernose shark meat is ''occasionally marketed but not considered a prime food fish,'' and the species' fins are not valued in the international fin trade (Lessa *et al.,* 2006).

However, given the substantial declines that have been observed in the population (>90 percent) and ongoing declines off northern Brazil, the fact that the species is recorded in artisanal catch throughout its restricted range and, although not targeted, does enter the market, and coupled with its known life history traits which increase its susceptibility to depletion (such as low reproductive rate), we find that the petition presents substantial scientific or commercial information indicating that *I. oxyrhynchus* may be threatened due to overutilization and that listing may be warranted.

Lamiopsis temmincki, commonly referred to as the broadfin shark, is known to occur in the Indian Ocean and Western Pacific, off India, Pakistan, Myanmar, Indonesia, eastern Malaysia, and China. According to Compagno (1984b), it is unknown whether its distribution is sporadic or continuous. It is a continental, inshore shark, and was once common on the west coast of India (Bombay region) but is now found only in low numbers throughout its range. However, according to the IUCN assessment (White *et al.,* 2009), the species ''is taken regularly (but in low numbers) by local fishermen in India (Bombay), Pakistan (Karachi), Sarawak and Kalimantan (Indonesia),'' with its meat used for human consumption, fins traded, and livers used for vitamin oil. Information from our own files also indicates that the species is commonly taken in fisheries operating within its range. In Mukah (Sarawak, Malaysia), *L. temmincki* was the 10th most landed shark from July 2003 to August 2004 (Department of Fisheries Malaysia, 2006). However, we do not have information on population abundance (historical or current) or catch information (numbers or trends), nor are these data provided in the petition. Without this type of information on historical or current abundance or population trends, it is difficult to assess whether the population is at a risk of extinction that may warrant listing.

The petition contends that the species is threatened by destruction of habitat, overutilization by fisheries, inadequate regulatory measures, and synergistic effects, but provides very little to no information or data to support these statements. For example, the petition does not provide any references related to habitat destruction or degradation, just to state that it is ''prolific'' throughout most of the species' range and represents a significant threat. It is unclear on what information the petition (or the IUCN assessment) bases this assertion. Likewise, the petition makes general assumptions regarding the species' extinction risk from the other threats it identifies, such as its life history traits and the lack of species-specific protections, but provides no evidence or information that shows the species is responding in a negative fashion to these threats. We do not consider general assumptions and assertions made by the petitioner as substantial information that listing may be warranted. As such, we find that the petition does not present substantial scientific or commercial information indicating that listing may be warranted for *L. temmincki.*

Mustelus fasciatus, commonly referred to as the striped smooth-hound, is endemic to the Southwest Atlantic, found on the inner continental shelf from south Brazil to Argentina (estimated 1,500 km of coastline) (Hozbor *et al.,* 2004). In southern Brazil, gravid females occur at depths greater than 20 m (up to 250 m deep) but migrate to shallower, inshore waters in the spring to give birth (Hozbor *et al.,* 2004). Neonates and small juveniles will remain in these shallow waters, using them as nursery grounds. Little other life history information is known for this species.

The petition identifies overutilization for commercial purposes and inadequate regulatory mechanisms as threats to the species. According to the IUCN assessment (Hozbor *et al.,* 2004), fishing is intense in the coastal nursery areas of southern Brazil, with evidence the species is caught as bycatch in the shrimp and multi-species fisheries (Haimovici and Mendonca, 1996). These fisheries, which operate using trawl, gillnet, and beach seine gear, catch gravid females during their seasonal inshore migration and juveniles all year-round. In the 1980s, neonates were frequently caught in large numbers (10–100 per gillnet set) off the beach in the summer, but in 2003 their occurrence was characterized as sporadic (Hozbor *et al.,* 2004). In 2002, the state government of Rio Grande do Sul (Brazil) classified *M. fasciatus* as a species threatened with extinction (Hozbor *et al.,* 2004). Farther south, in Uruguay, *M. fasciatus* is caught as bycatch in industrial and artisanal fisheries. According to Hozbor *et al.* (2004), the biomass of *M. fasciatus* in the coastal region of the Bonaerensean District (northern Argentina and Uruguay) decreased by 96 percent between 1994 and 1999, as measured by trawl surveys.

In terms of regulatory measures, the petition indicates that existing regulatory mechanisms are inadequate and have failed to protect the species from both targeted and bycatch mortality. It highlights Brazil's trawl fishing regulation, which prohibits trawling at distances less than 3 nautical miles (5.56 km) from the shore (which would be in depths of less than around 10 m). However, the petition and IUCN assessment contend that enforcement of the law is difficult and that trawling continues to occur in these nursery areas (Hozbor *et al.,* 2004). In addition, gillnetting, which has historically been the primary method to catch neonates within these inshore areas, remains unregulated (Hozbor *et al.,* 2004). Thus, the petition suggests that it is the largely unregulated overutilization of the species that has put the species in danger of extinction.

Given the occurrence of the species in fisheries catch and bycatch data, evidence of substantial declines in biomass (96 percent) and observed decreases in abundance in some areas, as well as information indicating current regulations may be inadequate to protect the species from overutilization, we find that the petition presents substantial scientific or commercial information indicating that listing may be warranted for *M. fasciatus.*

Mustelus schmitti, commonly referred to as the narrownose smooth-hound, is endemic to the southwest Atlantic, and is found in waters off of southwest Brazil, Argentina, and Uruguay (between latitudes 22° S and 48° S) (Massa *et al.,* 2006). It is found in coastal waters to depths of 140 m. A large population is known to migrate seasonally, wintering off southern Brazil and moving south to spend summers off Uruguay and/or Argentina (Massa *et al.,* 2006). There was also a smaller, local population that was known to breed in south Brazil during the spring, but is now thought to be extirpated (Massa *et al.,* 2006).

The petition identifies overutilization and the inadequacy of existing regulatory mechanisms as threats to the species' continued existence. The petition notes that the species experiences heavy fishing pressure throughout its entire range, including in its nursery grounds. In south Brazil, the wintering population is targeted and also caught as a component of the mixed-species fishery. Based on bottom trawl CPUE data, the winter migrant population of south Brazil has decreased by 85 percent between 1985 and 1997 (Massa *et al.,* 2006). The small resident population, that was once common in waters of south Brazil, has apparently disappeared. A summer shore fishery survey, conducted in 2003, failed to record any members of the local population, despite the once common occurrence of neonates in beach seines and bottom trawls in the 1980s (Massa *et al.,* 2006). The IUCN assessment (Massa *et al.,* 2006) attributes this disappearance to intense and continual fishing efforts in the inshore pupping and nursery grounds.

In Argentina, *M. schmitti* is a commercially important species (Chiaramonte, 1998), mainly caught in the multi-species trawl fishery, and its demand in the market has increased (Massa *et al.,* 2006). From 1992 to 1996, total declared landings of the species in Argentina more than doubled, from 5,047.6 mt to 10,271.3 mt (Chiaramonte, 1998). From 1993 to 1996, a survey that examined shark species in 454 Patagonian coastal fishery trawls found *M. schmitti* to be the most frequently caught species (found in 28 percent of the trawls) and it was recorded within all trawling areas (Molen *et al.,* 1998). However, between 1998 and 2002, national Argentinian landings of the species decreased by 30 percent (Massa *et al.,* 2006, citing unpublished data). In Uruguay, the species is taken as bycatch in industrial and artisanal fisheries. Estimated annual capture of both *M. schmitti* and *M. fasciatus* was 900 mt from 2000–2002 (although *M. schmitti* was the main species in the catch; (Massa *et al.,* 2006)). Between 1998 and 2002, biomass of the species decreased by 22 percent in the main fishing areas off Uruguay and Argentina (Massa *et al.,* 2006, citing unpublished data).

In terms of fishery regulations, the petition contends that the only current conservation measure in place for the species is a permitted maximum catch, established by the Argentine fisheries authority, but argues that catch should be set at zero to ensure the species' survival.

Declines of 20 to 30 percent in biomass and landings do not necessarily indicate that a population is at risk of extinction or that catch must be prohibited (especially without additional information regarding the population size or maximum sustainable yield). However, based on the above information provided which shows the species is commercially important, taken in substantial numbers in fisheries within its range, including in nursery grounds and pupping areas, and has experienced large declines (85 percent) in parts of its range, with a potential extirpation of a local population, we find overutilization for commercial purposes may be a threat to the species' current existence. As such, we find that the petition presents substantial scientific or commercial information indicating that listing may be warranted for *M. schmitti.*

The petition requests that we list three species of angel sharks that have similar ranges and are found in coastal and outer continental shelf sediment habitats in the Mediterranean Sea and eastern Atlantic. These three species are *Squatina aculeata, S. oculata,* and *S. squatina.* Angel sharks are bottom dwellers, preferring to spend most of their time buried in the sand or mud. *Squatina squatina* can be found from close inshore (5 m) to at least 150 m in depth (Morey *et al.,* 2006). *S. aculeata* can be found in depths of 30 to 500 m, and *S. oculata* occurs in depths of over 20 to 500 m (Morey *et al.,* 2007a; 2007b). The historical range of *S. squatina* extended along the eastern Atlantic, from Scandinavia to Mauritania and the Canary Islands, and included the Mediterranean and Black seas. The historical range of *S. aculeata* extended from the Mediterranean Sea (western and central basins) to the eastern Atlantic, from Morocco to Namibia, and the historical range of *S. oculata* extended throughout the Mediterranean and in the eastern Atlantic, from southern Portugal to Namibia. Many of the life history traits of these angel sharks are unknown, including the age at maturity, reproductive periodicity, productivity, and natural mortality. *Squatina aculeata* is thought to mature around 124 cm, with maximum size achieved at around 188 cm (Morey *et al.,* 2007a). *Squatina oculata* sizes at maturity range from 71 to 100 cm, with maximum size of 160 cm, and *S. squatina* mature at sizes of 80 to 169 cm (depending on sex), with a maximum size of up to 244 cm (Morey *et al.,* 2006; 2007b).

The petition identifies bottom trawling, human population growth, overutilization, inadequacy of existing regulatory measures, and isolation of populations as potential threats to the existence of these species. The petition notes that identifying angel sharks down to species is difficult and so many of the fishing records identify catch only to the genus level. In the Mediterranean, historical records from the late 1800s to early 1900s show a decline in the number of angel sharks caught in tuna traps that were operating in Baratti (Northern Tyrrhenian Sea) (Morey *et al.,* 2006; 2007a; 2007b). From 1898 to 1905, catches of angel sharks averaged 134 sharks per year, but from 1914–1933, this average declined to only 15 sharks per year (Morey *et al.,* 2006; 2007a; 2007b). As these years coincided with

the beginning of trawling activity in the area, the IUCN assessments (Morey *et al.,* 2006; 2007a; 2007b) attribute the decline in catch specifically to trawl fishing, noting that angel sharks, which dwell near or on the bottom, are especially susceptible to this type of fishing activity.

The petition notes that this bottom trawling activity has continued to increase in both intensity and efficiency on the Mediterranean shelf and slope over the last 50 years, and, as such, is a threat to the angel shark species existence. The petition states that the three species are now rare or absent from most of the northern Mediterranean coastline (Morey *et al.,* 2006; 2007a; 2007b), as evidenced by species-specific catch data from two major trawl surveys that were conducted in the north Mediterranean: the Mediterranean International Trawl Survey (MEDITS) and the Italian National Project. During the MEDITS program (1995–1999), tows were made in depths of 10–800 m along the north Mediterranean coastline, from west Morocco to the Aegean Sea. Out of the 9,095 tows, *S. squatina* appeared in two, *S. aculeata* appeared in one, and *S. oculata* was not present in any of the tows (Morey *et al.,* 2006; 2007a; 2007b). Biomass estimates were only provided for *S. squatina,* with total biomass estimated to be 14 mt throughout the survey area, equating to about 1,400 sharks (Morey *et al.,* 2006). The Italian National Project survey (1985–1998) did not report any catches of *S. aculeata* or *S. oculata* from the 9,281 hauls conducted in the northern Mediterranean (Morey *et al.,* 2007a; 2007b). *S. squatina* were caught in only 0.41 percent of the hauls (Morey *et al.,* 2006).

Squatina aculeata is now considered to be absent from the Black Sea and rare in the eastern part of the Mediterranean (Morey *et al.,* 2007a). *Squatina squatina* has also become rare within its range, with evidence of possible local extirpations. For example, it was once recorded in trawl surveys in the Adriatic Sea (in 1948), but the MEDIT surveys conducted in 1998 found no evidence of the species in this area (Morey *et al.,* 2006). In addition, the last reported landing of the species in the northeast Atlantic was in 1998 (compiled from landings records dated 1978 to 2002 for all International Council for the Exploration of the Sea areas), and is now considered extinct in the North Sea (Morey *et al.,* 2006).

Off the Balearic Islands (Spain), *Squatina* sharks were fairly common until the mid-1980s, with records from a lobster gillnet fishery that show angel sharks (likely *S. aculeata* or *S. oculata*) caught on a daily basis (Morey *et al.,* 2007a; 2007b). However, since the mid-1990s, there have been no records of *Squatina* sharks around the Balearic Islands, despite a bottom trawl fishing survey that was conducted at depths where the sharks should be present (between 46 and 1800 m) (Morey *et al.,* 2007a; 2007b). The petition points to evidence that *Squatina* sharks were once targeted and caught by a special net called an 'escaterea' in these waters (Morey *et al.,* 2007a), but reports from fishermen indicate that all species of *Squatina* have undergone dramatic declines over the last 20 years and are likely extirpated from the area (Morey *et al.,* 2006; 2007a; 2007b).

Off the coast of West Africa, these angel shark species are primarily taken as bycatch in industrial demersal trawl fisheries and inshore bottom set gillnets. The IUCN assessments (Morey *et al.,* 2007a; 2007b) provide Portuguese landings data from a fleet fishing in Moroccan and Mauritanian waters that showed landings of the three species peaking in 1990 at 35 t and then decreasing by 95 percent to 1.7 t in 1998, when the fishery subsequently closed. However, the IUCN assessments caution that the level of fishing effort associated with these data is unknown. Citing various personal communications, the IUCN assessments also note that the *Squatina* sharks were common in these waters in the 1970s and 1980s, frequently caught by lines and gillnets; however, according to both artisanal fishermen and observers of the industrial demersal trawl fleets, the species has been depleted and is now only very rarely observed. Morey *et al.,* (2007a) and (2007b) also mention research surveys that were conducted along the coast of West Africa and previously reported catches of *Squatina* species, but noted that no specimens have been captured since 1998 for *S. aculeata* and since 2002 for *S. oculata.*

The petition identifies existing regulations that aim to protect these three species from further declines, but contends that these current regulations are either insufficient or ineffective to protect the existing populations of the three species from extinction. For example, the petition notes that *Squatina* sharks are protected from fishing within six Balearic Islands marine reserves, but suggests that local extirpation of the species are likely in this part of the *Squatina* range, and, therefore, the regulation is not effective in minimizing extinction risk to the existing populations. In 2012, *S. aculeata* was added to Spain's List of Wild Species under Special Protection, which essentially prohibits the capture or trade of the species by Spanish citizens (Morey *et al.,* 2007a). *Squatina squatina* is listed as a prohibited species by the European Union. This listing prohibits EU and third country vessels from fishing for, transporting, or landing the species in EU waters (Morey *et al.,* 2006). Likewise, *S. squatina* is also protected from fishing activities within three nautical miles of English coastal baselines by the UK Wildlife and Countryside Act (Morey *et al.,* 2006). However, as the petition notes, these regulations provide protections for these species in only parts of their ranges, including in some areas where the species are no longer found (northern Mediterranean, northeast Atlantic).

Based on the above information provided by the petition, which shows that these three species were once common and frequently taken in various fisheries but have now noticeably declined in abundance throughout their ranges, with evidence of possible local extirpations, we find that the threats of overutilization and inadequate regulatory measures as described above may be putting the species at an increased risk of extinction. As such, we find that the petition presents substantial scientific or commercial information indicating that listing may be warranted for *S. aculeata, S. oculata,* and *S. squatina.*

The petition also requests that we list three species of angel sharks that are endemic to the southwest Atlantic: *Squatina argentina, S. punctata,* and *S. guggenheim.* According to the IUCN assessments (Vooren and Chiaramonte, 2006; Chiaramonte and Vooren, 2007; IUCN SSG, 2007), there is some controversy regarding the taxonomy of these southwest Atlantic *Squatina* species. In one study, for example, the authors analyzed mitochondrial DNA and indicated that there are only three species of *Squatina* in southern Brazil: *S. argentina, S. guggenheim,* and *S. occulta* (Furtado-Neto and Carr, 2002). In another study (Vooren and Silva, 1991), *S. punctata* was characterized as being the same species as *S. guggenheim.* Based on the information provided in the petition, species-specific data are available for both *S. argentina,* whose validity as a species and occurrence is ''generally agreed upon'' (Vooren and Chiaramonte, 2006), and *S. guggenheim,* whose nomenclature and taxonomy are questionable, but whose occurrence and information on its abundance are represented in the available fisheries data. Although the petition requests us to list *S. punctata,* it provides no specific-specific population or

abundance data, or evidence of its occurrence. The only species-specific information for *S. punctata* provided in the petition corresponds to some life history data from Vooren and Silva (1991), the paper in which the authors synonymize *S. punctata* with *S. guggenheim,* so it is unclear whether this information actually corresponds to *S. punctata* or *S. guggenheim.*

In terms of threats, the petition identifies overutilization of *S. punctata* and provides general angel shark landing statistics and information on CPUE declines. However, Vooren and Chiaramonte (2006) and Chiaramonte and Vooren (2007) note that the landing statistics in southern Brazil (referenced in the petition) refer to *S. guggenheim, S. occulta,* and *S. argentina* combined, but make no mention of *S. punctata.* The petition notes that the sharp decline in landings is ''attributed to recruitment overfishing due to the bottom gillnet fishery;'' however, the citations it uses, which are also referenced by Vooren and Chiaramonte (2006) and Chiaramonte and Vooren (2007), specifically refer to the decline in abundance of *S. argentina* and *S. guggenheim* on the outer shelf of Brazil, not *S. punctata.* The petition also cites declines in angel shark catch in Argentine waters, but the IUCN assessments (Vooren and Chiaramonte, 2006; Chiaramonte and Vooren, 2007; IUCN SSG, 2007) note that the majority of these landings consist almost entirely of *S. guggenheim.* In Uruguay, the IUCN assessments (Vooren and Chiaramonte, 2006; Chiaramonte and Vooren, 2007; IUCN SSG, 2007), citing a personal communication, state that species-specific statistics are not known, but that the largest catches most likely correspond to *S. guggenheim* and *S. argentina.* Given the available information provided by the petitioner, we do not find that the petition has presented substantial evidence that *S. punctata* is a taxonomically valid species for listing.

We will now evaluate the petition's request to list the other two angel shark species in the southwest Atlantic, *S. argentina* and *S. guggenheim. Squatina argentina* is a bottom-dwelling species that occurs from 32° S in Rio Grande, southern Brazil, to 43° S, in northern Patagonia, Argentina (Vooren and Chiaramonte, 2006). It is found offshore, on the shelf and upper continental slope in depths of 120 to 320 m, but has occasionally been observed in 50 m depths (Vooren and Chiaramonte, 2006). It has an estimated maximum size of 138 cm TL (Vooren and Chiaramonte, 2006). *S*quatina *guggenheim* is a smaller angel shark species (maximum size is ~92 cm total length, TL), and occurs from 24° S, in Rio de Janeiro, southern Brazil, to 43° S, northern Patagonia, Argentina) (Chiaramonte and Vooren, 2007). It is also a bottom-dweller and is found at depths of 10 to 80 m in Brazil and from the coast to 150 m in Argentinian waters (Chiaramonte and Vooren, 2007).

The petition identifies overutilization as a threat to the continued existence of both species. These angel sharks are both targeted and caught as bycatch in fisheries operating from southern Brazil to Uruguay. Landing statistics from southern Brazil are combined for *S. argentina, S. guggenheim,* and *S. occulta* as they are hard to distinguish. They show variable catches throughout the years, with peaks of around 2,000 mt for the species assemblage in 1986–1989 and 1993 and then a decrease in catch to around 900 mt in 2003 (Vooren and Chiaramonte, 2006; Chiaramonte and Vooren, 2007). No data are cited in the petition or available in our files since 2003. From 1984 to 2002, CPUE of these angel sharks in otter and pair trawls on the continental shelf declined by around 85 percent (Vooren and Chiaramonte, 2006; Chiaramonte and Vooren, 2007). Research trawl surveys conducted on the outer shelf of southern Brazil in 1986/97 and 2001/02 also found significant declines in angel shark abundance, with *S. guggenheim* and *S. argentina* estimated to be at 15 percent of their original abundance levels (Vooren and Chiaramonte, 2006; Chiaramonte and Vooren, 2007). The petition references the IUCN assessments (Vooren and Chiaramonte, 2006; Chiaramonte and Vooren, 2007) which attribute these decreases to recruitment overfishing specifically by a bottom gillnet fishery that began in 1990 and continues to operate on the outer continental shelf, targeting and taking large numbers of *Squatina* sharks. In addition to being targeted catch, the petition notes that S. *argentina* is also caught (and retained) in significant numbers as bycatch in the trawl and gillnet fishery for monkfish (*Lophius gastrophysus*), which operates on the shelf edge and upper slope (Vooren and Chiaramonte, 2006). In 2001, the estimated bycatch of *S. argentina* in the monkfish gillnet fishery was 1.052 sharks per 100 nets, which equates to a total of 8,689 individuals (Vooren and Chiaramonte, 2006). Vooren and Chiaramonte (2006) note that *S. argentina* was ''one of the most retained bycatch species'' in the monkfish gillnet fishery.

In Argentina, angel shark landings have been decreasing since reaching maximum levels in 1998, with landings almost entirely consisting of *S. guggenheim* (Vooren and Chiaramonte, 2006; Chiaramonte and Vooren, 2007). Citing a study from 1982, Chiaramonte and Vooren (2007) state that annual biomass for angel sharks on the Buenos Aires coast (in 1981/82) was estimated to be around 4,050 mt, with total captures of *Squatina* sharks wavering around 1,000 mt between 1979 and 1984. However, by the 1990s, landings had increased to over 4,000 mt, with maximum landings recorded in 1997 and 1998. Chiaramonte and Vooren (2007) and Vooren and Chaiaramonte (2006) note that these landings consisted almost entirely of *S. guggenheim* (and that *S. argentina* is rare in commercial landings data); however, Molen (1998), citing an anonymous reference, stated that landings of *S. argentina* were 4,300 mt in 1997. In addition, a bottom trawl survey conducted between 1993 and 1996 found *S. argentina* to be of medium frequency in Patagonian coastal trawl fisheries, showing up as bycatch in 15.4 percent of the 454 trawls (Molen, 1998). Therefore, it appears that both *S. argentina* and *S. guggenheim* may have been present and fairly abundant in the late 1990s in Argentine waters. In 1998, the gillnet fleet of Puerto Quequen considered angel sharks to be the second most important fish in their catch (Chiaramonte and Vooren, 2007). Landings of these angel sharks have since decreased from the 1997/98 peak levels, dropping to 3,550 mt in 2003 (Chiaramonte and Vooren, 2007). The petition indicates that the overall negative trend in these landings data (from 1998 to 2003) is also reflected in the 58 percent decline in CPUE of the angel shark that was calculated for the coastal bottom trawl fleet in Argentina (Chiaramonte and Vooren, 2007).

In Uruguay, species-specific statistics are unavailable, but the petition notes that angel sharks are taken as bycatch in industrial and artisanal fisheries. Total *Squatina* shark captures have been estimated at 300 to 400 mt per year since 1997, with the majority likely *S. guggenheim* and *S. argentina* (based on personal communications provided to Chiaramonte and Vooren (2007) and Vooren and Chiaramonte (2006)).

The petition also identifies inadequate regulatory measures and the species' low reproductive potential as threats to the continued existence of both species. The petition, citing the IUCN assessments, states that there are currently no regulations to manage the angel shark fishery that operates on the continental shelf off southern Brazil. However, a management plan for the gillnet monkfish fishery, which takes

substantial numbers of *S. argentina* as bycatch, was approved in 2005 and thus may help to minimize the threat of overutilization to the species in this area (Vooren and Chiaramonte, 2006). The petition also notes that Argentina has set the maximum permitted catch for angel sharks at 4,000 mt (down from 6,000 mt in the years 1995 to 1999), a quota that appears to be similar to the peak landings of the *Squatina* species during the 1990s. However, with declining trends evident in the landings and CPUE of angel sharks, this management measure may not be adequate to protect the species from threats such as overutilization. In addition, the petition asserts that the low reproductive potential of both species makes them especially slow to recover from overutilization and depletion, and thus poses an additional threat to the species' existence. For example, the petition states that pregnant females of *S. guggenheim* are known to abort embryos upon capture in fishing gear, thus further decreasing their reproductive potential even if released alive (Chiaramonte and Vooren, 2007).

After a review of the species-specific information provided in the petition, which shows that *S. argentina* and *S. guggenheim* have and continue to be targeted and taken in various fisheries, with limited regulation of these fisheries and evidence of significant population declines for both species in part of their range, we find that the threats of overutilization and inadequate regulatory measures as described above may be putting the two angel shark species at an increased risk of extinction. As such, we find that the petition presents substantial scientific or commercial information indicating that listing may be warranted for *S. argentina* and *S. guggenheim.*

Squatina formosa, commonly referred to as the Taiwan angel shark, occurs in the northwest Pacific Ocean and East China Sea and is primarily found in waters around northern Taiwan and the East Taiwan Strait (Walsh and Ebert, 2009). It is found on the continental shelf, in depths of around 100–300 m, with a maximum recorded size of 150 cm TL (Walsh and Ebert, 2009). There are no life history details for this species or information on its population size. Although it is found in local Taiwanese fish markets, there have been no catch records of this species (possibly due to the difficulty in distinguishing the species from other angel sharks in the area) (Walsh and Ebert, 2009).

Although the petition contends that the extensive bottom trawling occurring within the range of *S. formosa* has led to overutilization of the species to the point where the species is threatened with extinction, the petition provides no information on catch numbers, population status, or abundance trends for the species. Instead, the petition refers to other angel shark species in different parts of the world that have undergone population declines from intense fishing pressure, and uses this information as a surrogate for evidence of threats to *S. formosa.* While we agree that extensive fishing is occurring within the range of *S. formosa,* the petition has not provided any information on the level of directed fishing or level of bycatch of this particular shark. The petition only notes that there are no catch records of the species but that it is present in the market place. The petition also argues that the triennial reproductive cycle and small litter sizes makes several species of angel sharks more vulnerable to depletion, but specific reproductive information for *S. formosa* is not currently known (although it is likely similar to other angel shark species). We do not find that the available information is substantial information indicating that overutilization is a threat to this species such that listing may be warranted.

The petition also contends that there are no conservation measures in place for the species, but states that there are some areas of Chinese waters that are protected from trawling activities. The petition does not provide any additional information on these regulations except to note that these areas may or may not be within *S. formosa'*s range and may not be effectively enforced and therefore ''provide no certain protection'' for the species. It is unclear how the petitioner came to such a conclusion. The petition specifically identifies bottom trawling as a threat to the species, so if this activity were prohibited within certain areas of the species' range, this threat would be decreased and provide some protection to the species.

The petition fails to provide any information on the species' abundance, life history, status, or trends throughout all or a significant portion of the species' range, nor do we have any information in our files. The petition provides no evidence that the species is or has been in decline. The petition provides only general statements and assumptions regarding threats to the species but does not provide evidence to suggest these threats are acting upon the species to the point where it may meet the definition of threatened or endangered. As such, we find that the petition does not provide substantial evidence that listing may be warranted for *S. formosa.*

Triakis acutipinna, commonly referred to as the sharpfin houndshark, is found only in the tropical, continental waters off Manabi Province, Ecuador. Little is known about the species' life history, habitat, or ecology. It was first recorded 40 years ago, in waters off Isla de La Plata, and has since been identified in artisanal coastal gillnet fishery landings from the coastal fishing port of Daniel López, Ecuador. However, its occurrence is rare and it is unknown whether the species is taken in other artisanal inshore fisheries. The petition states that the current population size is estimated to be less than 2,500 individuals, based on very few records, and cites the IUCN assessment (Compagno *et al.,* 2009); however, it is unclear how this number was calculated. Neither the IUCN assessment nor the petition provides any references to population size data, records of abundance or occurrence, or information on how the population total was calculated. It appears that the size of the species is only known from two documented adult specimens, a male of 90 cm and a female of 102 cm (Compagno *et al.,* 2009). All other life history parameters are unknown.

The petition acknowledges that little is known about the species and its occurrence in fisheries catch, but contends that the species is landed and perhaps targeted and thus fishing pressure is likely causing a decline and is a threat to its continued existence. In 2004, Ecuador banned directed fishing for sharks in all of its waters; therefore, it is illegal to target the species. Although fishermen can catch sharks as bycatch, information provided in the petition indicates that the species is only rarely caught as bycatch, and has only been observed in landings from the artisanal coastal gillnet fishery in the fishing port of Daniel López (Compagno *et al.,* 2009). As such, we do not find that the available information indicates that overutilization is a threat to the species. In addition, the petition states that regulatory measures are inadequate to protect the species from extinction because trade in shark fins is still allowed, which will ''ensure that the sharpfin houndshark will continue to be a utilized bycatch species.'' However, the petitioner provides no evidence that sharpfin houndshark fins even enter (or are valued in) the shark fin trade. It also states that the meat of sharpfin houndsharks has a higher value than most other species, but does not provide a reference for the statement or any further information that would support the claim that the sharpfin houndshark

is valued in trade, nor do we have that type of information on its trade in our files.

Although the sharpfin houndshark may be a rare species, the petition has not provided any evidence to indicate that the species is currently in decline or that there are any threats that are acting upon the species to the point where it may meet the definition of threatened or endangered. As such, we find that the petition does not provide substantial evidence that listing may be warranted for *T. acutipinna.*

Species-Specific Information for Requested DPSs

This petition also requests that we identify three subpopulations of shark species as DPSs and subsequently list these subpopulations as threatened or endangered under the ESA. In evaluating this request, we must first consider whether the petition provides substantial information that the requested populations may qualify as DPSs under the discreteness and significance criteria of our joint DPS Policy (as noted above in the ''Background'' section). If we find that the petition presents substantial information that the requested populations may qualify as DPSs, we must then determine whether the petitioner provides substantial information that listing may be warranted for those DPSs. Our analyses and conclusions regarding the information presented by the petitioner and available in our files for these petitioned subpopulations are provided below.

Carcharias taurus, commonly referred to as the sandtiger shark, is found in all warm and temperate seas, except the eastern Pacific. They occur in the surf zone, in shallow bays and around coral and rocky reefs, but are also found in depths as great as 191 m on the outer continental shelf (Compagno, 1984a). The petitioner requests that we list the Southwest Atlantic subpopulation of sandtiger shark as threatened or endangered, arguing that it satisfies both the ''discreteness'' and ''significance'' requirements under our DPS policy, and thus qualifies as a DPS.

The petition contends that the Southwest Atlantic subpopulation of sandtiger shark is discrete based on physical, physiological, behavioral, and morphological factors. In terms of physical barriers, the petition states that the population rarely occurs in deep water (greater than 200 m depth; Compagno, 1984a) and uses this as evidence that the species does not mix with the sandtiger sharks found elsewhere. However, the petitioner provides no other information, such as tagging studies, to support its claim of isolation. Additionally, this depth barrier does not explain why mixing would not occur between the Southwest Atlantic population and those sharks found in the Caribbean as well as the Northwest Atlantic.

The petition also states that the Southwest Atlantic population is behaviorally unique because it is more migratory than other *C. taurus* populations, yet does not mix with these other populations, and cites Sardowsky (1970) and Compagno (2001) as support. These references are also used as support for the petitioner's claim that the Southwest Atlantic subpopulation is a 'closed group,' with dentition that differs from all other subpopulations. However, it is unclear how the petitioner came to these conclusions based on the results of these studies. The study by Sardowsky (1970) examined the dentition of specimens of *C. taurus* caught in waters off Cananéia, Brazil, and compared their dental characteristics to sandtigers from other regions. Based on these comparisons, the authors concluded that the sandtiger sharks found off the coast of southern Brazil are not taxonomically distinct from sandtigers found elsewhere in the world. Sardowsky (1970) also states that the northwest Atlantic population and Brazilian populations are not isolated from each other and share some dental character combinations. The Compagno (2001) reference mentions that the sandtiger shark is strongly migratory in certain parts of its range, and lists populations found off Australia, the east coast of the USA, and the east coast of South Africa as sharing this behavior. Lucifora *et al.* (2002) notes that this migratory behavior is likely linked to reproduction and also observed it in sandtigers in the Southwest Atlantic. In fact, the reproductive migration patterns of the Southwest Atlantic sandtigers were noted as similar to those of sandtigers in the northwest Atlantic (Lucifora *et al.,* 2002). Although the petition contends that the Southwest Atlantic sandtiger population has ''its own unique maturation age and size'', Lucifora *et al.* (2002) states that the estimates of maturity size for sandtigers found off Brazil (females = 218–235 cm TL and males = 193 cm TL) are comparable to those for sandtigers off the east coast of the USA (females = 220–229 cm TL; males = 190–195 cm TL), South Africa (females = 220 cm TL; males = 202–220 cm TL), and Australia (females = 220 cm TL). Thus, the available information in our files and provided by the petitioner suggests the Southwest Atlantic population of *C. taurus* shares many of its biological and life history characteristics with populations of *C. taurus* found elsewhere. We therefore find that petitioner has not provided substantial information to indicate that the Southwest Atlantic population of *C. taurus* may qualify as a discrete population based on physical, physiological, behavioral, or morphological factors.

Citing the same information it provided for the discreteness factor discussed above, the petitioner asserts that the Southwest Atlantic population segment is significant to the taxon. However, based on our above analysis, we do not find that the petitioner has provided substantial information that this specific population has biological or ecological significance to the taxon. The available information does not indicate that the population exists in an unusual or unique ecological setting, or that loss of the population would result in a significant gap in the range of the taxon, or that it differs markedly from other populations of the species in its genetic characteristics.

In conclusion, we find that the petitioner has failed to provide substantial information that the Southwest Atlantic population of sandtiger sharks may qualify as a DPS under the discreteness and significance criteria of our joint DPS Policy. As such, we deny the petitioner's request to list the Southwest Atlantic subpopulation of *C. taurus* as threatened or endangered because the available information in our files and provided by the petitioner suggests it is not a ''species'' eligible for listing under the ESA.

Cetorhinus maximus, commonly referred to as the basking shark, is the second largest shark species (reaching lengths of 10 m) and is circumglobal in distribution (Compagno, 2001), observed in boreal to tropical waters (Skomal *et al.,* 2009; Compagno, 2001). Seasonal changes in abundance have been noted for the species, as well as strong sexual segregation in parts of its range (NMFS, 2010). Tagging studies in the Atlantic have discovered that this species is capable of large, trans-oceanic, and trans-equatorial migrations, and may occasionally dive to meso-pelagic depths (200 to 1000 m) (Gore *et al.,* 2008; Skomal *et al.,* 2009). These sharks are filter-feeders and are commonly observed foraging at the surface on zooplankton (NMFS, 2010). The petitioner requests that we list both the North Pacific subpopulation as well as the Northeast Atlantic subpopulation of basking sharks as threatened or

endangered, asserting that these subpopulations satisfy both the ''discreteness'' and ''significance'' requirements under our DPS policy, and thus qualify as DPSs.

For both subpopulations, the petitioner claims that these populations are discrete because they are geographically isolated from other populations of the taxon. The petitioner cites a statement in the IUCN assessments (Fowler, 2009a; 2009b) which reads: ''[t]he different morphological characteristics of Basking Sharks in the Pacific and the north and south Atlantic oceans are not thought to indicate separate species (Compagno 1984), but are geographically isolated subpopulations.'' The petitioner uses this quote as the only source of information to support the claim of discreteness through geographic isolation. In addition, the petitioner uses the above statement as the only support to show that these two subpopulations are also significant to the species. According to the petitioner, the geographic isolation mentioned in the quote is evidence that loss of either subpopulation would result in a significant gap in the range of the taxon, and the morphological differences mentioned in the quote is evidence that the subpopulations are markedly different from other populations of the species based on genetic characteristics. However, the IUCN assessments from which this quote is taken (Fowler, 2009a; 2009b) do not provide any details regarding the different morphological characteristics, such as what they are or which populations exhibit these traits, or explain how these apparent differences indicate geographic isolation. In addition, we reviewed the information on *C. maximus* presented in Compagno (1984a) and found no discussion of morphological differences between the Pacific and the north and south Atlantic basking shark populations.

In our own files, we reviewed a paper by Hoelzel *et al.* (2006), which examined the global genetic diversity of basking sharks by comparing samples of *C. maximus* mitochondrial DNA (mtDNA) taken from the western North Atlantic, eastern North Atlantic, Mediterranean Sea, Indian Ocean and western Pacific. The results of this study showed that there is low genetic diversity in the global basking shark population and no significant genetic differentiation between ocean basins. The authors suggested that this lack of genetic structure in the global basking shark population is likely a result of a population bottleneck event that occurred within the Holocene epoch, but also suggested it could be explained by female mediated gene flow over the entire range of the species (Hoelzel *et al.,* 2006). The latter theory of worldwide panmixia of basking sharks has recently been supported by tagging studies conducted by Gore *et al.* (2008) and Skomal *et al.* (2009). These studies have revealed that basking sharks are capable of making trans-oceanic migrations (with an observed trans-atlantic distance of 9,589 km; Gore *et al.,* 2008) across dynamic oceanographic conditions, from boreal and temperate latitudes to tropical waters (Skomal *et al.,* 2009). As Skomal *et al.* (2009) notes, these new data raise ''the possibility that there may also be migratory connectivity of basking sharks on global spatial scales.''

Based on this information, we do not find evidence that indicates that the North Pacific or Northeast Atlantic subpopulations may qualify as discrete populations under our DPS policy based on physical, physiological, behavioral, or morphological factors, or may qualify as significant populations under our DPS policy based on differences in genetic characteristics. We also find that the petitioner has failed to provide substantial information that would indicate otherwise. As such, we deny the petitioner's request to list the North Pacific or Northeast Atlantic subpopulation of *C. maximus* as threatened or endangered because the available information in our files suggests these subpopulations are not ''species'' eligible for listing under the ESA.

Currently, the basking shark is a NMFS ''Species of Concern'', with a focus on the eastern North Pacific part of its range. ''Species of Concern'' are those species about which NMFS has some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the ESA. As noted on the basking shark ''Species of Concern'' fact sheet, ''[t]here is no aspect of the movements, behaviors, population size or structure, or life history that isn't data deficient for basking sharks in the eastern North Pacific'' (NMFS, 2010). There is a lack of information on habitat requirements for different life stages of basking sharks and there are still questions regarding key life history characteristics, including age at first reproduction, gestation period, littler size, and mating frequency. Population dynamics, structure, size, geographic range, and genetics are still largely unknown. Without this type of basic information, it is difficult to assess the potential threats to the species and how they may influence abundance and distribution of the species over long and short time scales. The basking shark will remain on our ''Species of Concern'' list until more data become available.

Petition Finding

After reviewing the information contained in the petition, as well as information readily available in our files, including the sections of the petition applicable to all of the petitioned species and subpopulations as well as the species-specific information, we conclude the petition in its entirety does not present substantial scientific or commercial information indicating the petitioned action may be warranted for 13 of the 22 species and subpopulations of sharks. These 13 species and subpopulations are: *Carcharhinus borneensis, Carcharhinus hemiodon, Carcharias taurus* (Southwest Atlantic subpopulation), *Cetorhinus maximus* (North Pacific subpopulation), *Cetorhinus maximus* (Northeast Atlantic subpopulation), *Haploblepharus kistnasamyi, Hemitriakis leucoperiptera, Holohalaelurus favus, Holohalaelurus punctatus, Lamiopsis temmincki, Squatina formosa, Squatina punctata,* and *Triakis acutipinna.* In contrast, as described above, we find that there is substantial scientific or commercial information indicating the petitioned action may be warranted for 9 of the 22 species and subpopulations of sharks and we hereby announce the initiation of a status review for each of these species to determine whether the petition action is warranted. These 9 species are: *Centrophorus harrissoni, Isogomphodon oxyrhynchus, Mustelus fasciatus, Mustelus schmitti, Squatina aculeata, Squatina argentina, Squatina guggenheim, Squatina oculata,* and *Squatina squatina.*

Information Solicited

To ensure that the status review is based on the best available scientific and commercial data, we are soliciting information relevant to whether the nine species we believe may be warranted for listing (*Centrophorus harrissoni, Isogomphodon oxyrhynchus, Mustelus fasciatus, Mustelus schmitti, Squatina aculeata, Squatina argentina, Squatina guggenheim, Squatina oculata,* and *Squatina squatina*) are threatened or endangered. Specifically, we are soliciting information, including unpublished information, in the following areas: (1) Historical and current distribution and abundance of each species throughout its range; (2) historical and current population trends; (3) life history information; (4)

data on trade of these species, including products such as fins, jaws, meat, and teeth; (5) historical and current data on catch, bycatch, retention, and discards in fisheries; (6) ongoing or planned efforts to protect and restore these species and their habitats; (7) any current or planned activities that may adversely impact these species; and (8) management, regulatory, and enforcement information. We request that all information be accompanied by: (1) Supporting documentation such as maps, bibliographic references, or reprints of pertinent publications; and (2) the submitter's name, address, and any association, institution, or business that the person represents.

References Cited

A complete list of references is available upon request to the Office of Protected Resources (see **ADDRESSES**).

Authority

The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: November 13, 2013.

Alan D. Risenhoover,

Director, Office of Sustainable Fisheries, performing the functions and duties of the Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

[FR Doc. 2013–27718 Filed 11–18–13; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XC968

New England and Mid-Atlantic Fishery Management Councils; Public Comment

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

ACTION: Notice; request for comments.

SUMMARY: The New England and Mid-Atlantic Fishery Management Councils seek public comment on a draft amendment to all the fishery management plans under their purview. The omnibus amendment would establish a standardized bycatch reporting methodology for each fishery management plan, as required by the Magnuson-Stevens Fishery Conservation and Management Act.

DATES: Comments must be received by December 19, 2013.

ADDRESSES: You may submit written comments by any of the following methods.

- *Email: nmfs.ner.draftSBRM@noaa.gov.* Include in the subject line ''Comments on draft SBRM.''
- *Mail:* John K. Bullard, Regional Administrator, NMFS, Northeast Regional Office, 55 Great Republic Drive, Gloucester, MA 01930. Mark the outside of the envelope ''Comments on draft SBRM.''
- *Fax:* (978) 281–9135.

Copies of the draft SBRM amendment may be obtained by contacting the NMFS Northeast Regional Office at the above address. The documents are also available via the internet at: *http://nero.noaa.gov/mediacenter/2013/09/draftsbrmamendment.html.*

FOR FURTHER INFORMATION CONTACT: Douglas Potts, Fishery Policy Analyst, (978) 281–9341.

SUPPLEMENTARY INFORMATION: Section 303(a)(11) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires each fishery management plan (FMP) to include provisions establishing ''a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery.'' The Councils and NMFS are considering an omnibus amendment to establish a standardized bycatch reporting methodology (SBRM) or modify existing SBRMs under every Northeast Region FMP. NMFS had previously implemented an omnibus SBRM amendment recommended by the Councils. That amendment was vacated by a Federal Court and remanded to NMFS and the Councils in order to develop and implement another SBRM amendment consistent with the Court's findings, see *Oceana* v. *Locke et al.* (No. 10–5299). The purpose of the amendment is to respond to the remand; particularly the appellate court's finding that the level of observer coverage was too dependent on the discretion of NMFS. This amendment also would explain the methods and processes by which bycatch is currently monitored and assessed for Northeast Region fisheries, determine whether these methods and processes need to be modified and/or supplemented, establish standards of precision for bycatch estimation for all Northeast Region fisheries and, thereby, to document the SBRM established for all fisheries managed through the FMPs of the Northeast Region. The scope of the omnibus amendment is limited to those fisheries prosecuted in the Federal waters of the Northeast Region and managed through an FMP developed by either the Mid-Atlantic or New England Council.

Alternatives under consideration in the omnibus SBRM amendment address bycatch reporting and monitoring mechanisms, analytical techniques, and allocation of at-sea fishery observers when funding limits the recommended level of observer coverage; establishment of a target level for precision of bycatch estimates; and requirements for reviewing and reporting on the efficacy of the SBRM. NMFS and the Councils will consider all comments received on the draft SBRM amendment and the alternatives for incorporation into the final document until the end of the comment period on December 19, 2013. The public will have several additional opportunities to comment on the SBRM. The final amendment will be considered for approval by the Councils at public meetings in early 2014. Once submitted to NMFS, the final SBRM Amendment will be made available for public review and comment, and regulations will be proposed for review and comment.

Authority: 16 U.S.C. 1801 *et seq.*

Dated: November 13, 2013.

Kelly Denit,

Acting Deputy Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 2013–27570 Filed 11–18–13; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF DEFENSE

Office of the Secretary

[Docket ID: DoD–2013–OS–0106]

Submission for OMB Review; Comment Request

ACTION: Notice.

SUMMARY: The Department of Defense has submitted to OMB for clearance, the following proposal for collection of information under the provisions of the Paperwork Reduction Act (44 U.S.C. Chapter 35).

DATES: Consideration will be given to all comments received by December 19, 2013.

FOR FURTHER INFORMATION CONTACT: Fred Licari, 571–372–0493.

SUPPLEMENTARY INFORMATION:

Title, Associated Form and OMB Number: DOD Loan Repayment Program (LRP); DD Form 2475; OMB Number 0704–0152.

Type of Request: Extension.

Number of Respondents: 22,391.

Responses per Respondent: 1.

Annual Responses: 22,391.