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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Parts 223 and 224

[Docket No. 141219999-5132-01**]**

RIN 0648-XD680

Endangered and Threatened Wildlife; 90-day Finding on a Petition to List the Common Thresher Shark as Threatened or Endangered Under the Endangered Species Act

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

ACTION: Notice of 90-day petition finding, request for information, and initiation of status review.

SUMMARY: We, NMFS, announce the 90-day finding for a petition to list the common thresher shark (*Alopias vulpinus*) as either endangered or threatened under the U.S. Endangered Species Act (ESA) either worldwide or as one or more distinct population segments (DPSs) identified by the petitioners. We find that the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted for the species worldwide. We find that the petition fails to present substantial scientific or commercial information to support the identification of DPSs of the common thresher suggested by the petitioners, and, as such, we find that the petitioned action of listing one or more of these DPSs is not warranted. Accordingly, we will initiate a review of the status of the common thresher shark

at this time. To ensure that the status review is comprehensive, we are soliciting scientific and commercial information regarding this species.

DATES: Information and comments on the subject action must be received by [*insert date 60 days after date of publication in the FEDERAL REGISTER*].

ADDRESSES: You may submit comments, information, or data, identified by "NOAA-NMFS-2015-0025" by either of the following methods:

- Electronic Submissions: Submit all electronic public comments via the Federal eRulemaking Portal. Go to *www.regulations.gov/#!docketDetail;D=NOAA-NMFS-2015-0025*. Click the "Comment Now" icon, complete the required fields, and enter or attach your comments.
- Mail or hand-delivery: Office of Protected Resources, NMFS, 1315 East-West Highway, Silver Spring, MD 20910.

Instructions: You must submit comments by one of the above methods to ensure that we receive, document, and consider them. 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. All comments received are a part of the public record and will generally be posted for public viewing on http://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. We will accept anonymous comments (enter ''N/A'' in the required fields if you wish to remain anonymous). Attachments to electronic comments will be accepted in Microsoft Word, Excel, or Adobe PDF file formats only

FOR FURTHER INFORMATION CONTACT: Chelsey Young, NMFS, Office of Protected Resources (OPR), (301) 427-8491 or Marta Nammack, NMFS, OPR, (301) 427-8469.

SUPPLEMENTARY INFORMATION:

Background

On August 26, 2014, we received a petition from Friends of Animals requesting that we list the common thresher shark (*Alopias vulpinus*) as endangered or threatened under the ESA, or, in the alternative, delineate six distinct population segments (DPSs) of the common thresher shark, as described in the petition, and list them as endangered or threatened. Friends of Animals also requested that critical habitat be designated for this species in U.S. waters concurrent with final ESA listing.

The petitioner states that the common thresher shark merits listing as an endangered or threatened species under the ESA because of the following: (1) The species faces threats from historical and continued fishing for both commercial and recreational purposes; (2) life history characteristics and limited ability to recover from fishing pressure makes the species particularly vulnerable to overexploitation; and (3) there is a lack of regulations that specifically protect the common thresher shark.

ESA Statutory Provisions and Policy Considerations

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 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 and in our files 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) policy clarifies the agencies' interpretation of the phrase "distinct population segment" for the purposes of listing, delisting, and reclassifying a species under the ESA ("DPS Policy"; 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, the determination of whether a species is threatened or endangered shall be 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 ESA 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 the 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.

Species Description

Distribution

The common thresher shark (*Alopias vulpinus*) is a large highly migratory pelagic species of shark found throughout the world in temperate and tropical seas. In the North Atlantic, common thresher sharks occur from Newfoundland, Canada, to Cuba in the west and from Norway and the British Isles to the African coast in the east (Gervelis, 2013). Landings along the South Atlantic coast of the United States and in the Gulf of Mexico are rare. Common thresher sharks also occur along the Atlantic coast of South America from Venezuela to southern Argentina. In the eastern Atlantic, A. vulpinus ranges from the central coast of Norway south to, and including, the Mediterranean Sea and down the African coast to the Ivory Coast. They appear to be most abundant along the Iberian coastline, particularly during spring and fall. Specimens have also been recorded at Cape Province, South Africa (Goldman, 2009). In the Indian Ocean, A. vulpinus is found along the east coast of Somalia, and in waters adjacent to the Maldive Islands and Chagos archipelago. They are also present off Australia (Tasmania to central Western Australia), Sumatra, Pakistan, India, Sri Lanka, Oman, Kenya, the northwestern coast of Madagascar and South Africa. A few specimens have been taken from southwest of the Chagos archipelago, the Gulf of Aden, and northwest Red Sea. In the western Pacific Ocean, the range of A. vulpinus includes southern Japan, Korea, China, parts of Australia and New Zealand. They are also present around several Pacific Islands, including New Caledonia, Society Islands, Fanning Islands and Hawaii. In the Northeast Pacific Ocean, the geographic range of common thresher sharks extends from Goose Bay, British Columbia, Canada to the Baja Peninsula, Mexico and out to about 200 miles from the coast (Goldman, 2009). Additionally, they are found off Chile and records exist from Panama (Campagno, 1984).

Physical Characteristics

The common thresher shark possesses an elongated upper caudal lobe almost equal to its body length, which is unique to this family. It has a moderately large eye, a broad head, short snout, narrow tipped pectoral fins, no grooves on the head above the gills, and lateral teeth without distinct cusplets. The origin of the pelvic fins is well behind the insertion of the first dorsal fin. While some of the above characteristics may be shared by other thresher shark species, diagnostic features separating this species from the other two thresher shark species (bigeye thresher, A.superciliosus, and pelagic thresher, A. pelagicus) are the presence of labial furrows, the origin of the second dorsal fin posterior to the end of the pelvic fin free rear tip, and the white color of the abdomen extending upward over the pectoral fin bases, and again rearward of the pelvic fins. In living specimens, dorsal coloration may vary from brown, blue slate, slate gray, blue gray, and dark lead to nearly black, with a metallic, often purplish, luster. The lower surface of the snout (forward of the nostrils) and pectoral fin bases are generally not white and may be the same color as the dorsal surface (Goldman, 2009).

Habitat

Surveys of the common thresher shark from our Southwest Fisheries Science Center (SWFSC) demonstrate habitat separation between juveniles and adults (PMFC, 2003; Smith et al., 2008). Juveniles occupy relatively shallow water over the continental shelf, while adults are found in deeper water, but rarely range beyond 200 miles (321.87 km) from the coast (PMFC, 2003; Smith et al., 2008). Both adults and juveniles are associated with highly biologically productive waters, found in regions of upwelling or intense mixing.

Feeding Ecology

Common thresher sharks feed at mid-trophic levels on small pelagic fish and squid. Given their more specialized diet compared to other local pelagic sharks, they are more likely to exert top-down effects on their prey, although this remains to be demonstrated. Based on studies at the SWFSC, the top six prey species, in order, are northern anchovy, Pacific sardine, Pacific hake, Pacific mackerel, jack mackerel, and market squid (Preti et al., 2001, 2004). Thresher sharks are unique, in that they use their tail in a whip-like fashion to disorient and incapacitate their prey (Oliver, 2013).

Life History

The life span of the common thresher shark is estimated between 15 and 50 years, although additional research to confirm this is necessary (Gervalis, 2013). Thresher sharks reach maturity at approximately 5 years of age and at around 166 cm fork length for both sexes. They grow approximately 30 cm per year for the first 5 years of their lives (Gervalis, 2013; Smith et al., 2008). Maximum size has been estimated for thresher sharks along the U.S. West Coast at 550 cm (Gervalis, 2013; Smith et al., 2008). Their mode of reproduction is aplacental ovoviviparous and oophagous, and a typical litter size is 2-4 pups, with gestation thought to be around 9 months (NMFS Common Thresher Shark Fact Sheet; PMFC, 2003; Smith et al., 2008). Pupping is thought to occur in the springtime, with mating thought to occur in the summer, and nursery grounds for pups are in shallow continental shelf waters 90 m deep or less (NMFS Common Thresher Shark Fact Sheet).

Analysis of DPS Information

The petition requests that we list the common thresher shark throughout its range, or list the species as six DPSs. The petitioner identifies six subpopulations that it believes may qualify

for listing: Eastern Central Pacific, Indo-West Pacific, Northwest and Western Central Atlantic, Southwest Atlantic, Mediterranean, and Northeast Atlantic. To meet the definition of a DPS, a population must be both discrete from other populations of the species and significant to the species as a whole (61 FR 4722; February 7, 1996).

The petition does not provide biological evidence to support the existence of the six "subpopulations" identified; however, the petition states that six subpopulations of the common thresher shark are discrete. The petition goes on to define this discreteness according to the second discreteness factor listed in the NMFS/USFWS joint DPS policy, where a population can be considered discrete if it "is delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the Act." The petitioner maintains that the "broad and varied spectrum of harvest control, habitat management, conservation status, and regulatory mechanisms" addressing the species may qualify different "subpopulations" as discrete under this discreteness factor, asserting that, "due to broad differences in regulation of their management and capture, the subpopulations of common thresher sharks should be considered sufficiently discrete for protection as DPSs under the ESA."

The petition does not propose any boundaries for the six suggested DPSs, nor does the petition describe in any detail the ways in which different management relating to international governmental boundaries may delineate the species into boundaries aligning with the six suggested DPSs. Specific gaps in management or intergovernmental boundaries are not described as they relate to any of the six proposed DPSs. We were also unable to find information to define the six subpopulations as discrete on biological grounds. In our files, only

a single preliminary study was available to suggest population structure of the common thresher shark. This study examined mitochondrial control region DNA, which demonstrated significant population structure between most pairwise comparisons, but the sample sizes were extremely low, and thus the results could not be interpreted with confidence. The data support separate Atlantic vs. Pacific populations (or at least female philopatry) (Trejo, 2005). However, based on the preliminary nature of these data, and low sample size throughout the study, these results cannot be relied upon to divide the common thresher shark into the six subpopulations proposed by the petition.

Based on information in the petition and readily available in our files, we were unable to find evidence to support the discreteness of any of the six DPSs proposed. Because of this, arguments made by the petitioner describing the potential significance of any suggested DPS are irrelevant. Thus, we conclude that the petition provides insufficient evidence to identify any DPSs of the common thresher shark at this time.

Analysis of Petition and Information Readily Available in NMFS Files

The following sections contain information found in the petition and readily available in our files to determine whether a reasonable person would conclude that an endangered or threatened listing may be warranted as a result of any of the factors listed under section 4(a)(1) of the ESA.

Common Thresher Shark Status and Trends

The petition does not provide a population abundance estimate for common thresher sharks, but points to its "vulnerable" status on the IUCN Red List, and quotes extensively from the Encyclopedia of Life, an online collaborative database intended for documenting information

on all species of life. The petition asserts that a global decline of common thresher sharks has been caused mainly by commercial and recreational fishing (both direct harvest and bycatch), particularly during the 1970s and early 1980s. The petition references high commercial catch rates for common threshers along the U.S. West Coast during the 1980s, and declines in catch by the mid-1990s, indicative of overexploitation (Goldman et al., 2009). In the Northwest and Western Central Atlantic, the petition cites the Encyclopedia of Life for asserting 50-80 percent declines in common thresher shark abundance occurring from 1986-2005. The petition describes likely declines of common thresher sharks in the Mediterranean due to high fishing pressure. In the Northeast Atlantic, the petition describes variable landings prior to 2000 and a decline in landings since 2002 (ICES, 2006). Finally, the petition points to increased interest in recreational fishing of the common thresher shark, with the potential for high post-release mortality. The petition does not provide information on estimates of abundance across the range of the species.

Although historical overfishing of the common thresher shark led to serious declines in population abundance, particularly during the 1980s, regulations since the early 1990s have contributed to trends of rebuilding of the species over the past two decades in some portions of its range, particularly in the Eastern Pacific Ocean (PFMC, 2011; NMFS Common Thresher Shark Fact Sheet). However, in other portions of the species' global range, declines due to overutilization (bycatch, recreation, and directed catch) may be ongoing, leading to declines in abundance. The threat of commercial fishing is discussed in more detail below (see "Overutilization").

The last IUCN assessment of the common thresher shark was completed in 2009 and since then several estimates of global and subpopulation trends and status have been made. Perhaps most heavily studied have been common thresher sharks in the Eastern Pacific Ocean, where the shark has historically been most heavily fished. Commercial fishing of thresher sharks in the U.S. was eliminated by gill net regulations by 1990, and within a decade, the population began to slowly rebuild to just below 50 percent of the initial subpopulation size (Camhi et al., 2007). A preliminary examination of trends in the catch-per-unit-effort and total catch of common thresher sharks in this region is consistent with earlier conclusions that the population is increasing from its decline in the late 1980s and early 1990s (PMFC, 2011). Efforts to conduct a full stock assessment have been initiated by NMFS. Based on preliminary stock assessment results, there appears to be an initial period of decline from 1981 to 1986, followed by a gradual recovery of the stock. The index is highly variable after 2000, which is possibly due to regulatory and operational changes in the fishery (SWFSC, unpublished data).

In the Northwest Atlantic, declines in relative abundance cited by the petitioner were derived from analyses of logbook data, reported in Cortés (2007). This study reported a 63 percent decline of thresher sharks (on the genus level) based on logbook data, occurring between 1986 and 2006 (Cortés, 2007). The observer index data from the same study shows an opposite trend in relative abundance, with a 28 percent increase of threshers in the Northwest Atlantic since 1992. Logbook data over the same period (1992-2006) showed a 50 percent decline in thresher sharks. The logbook dataset is the largest available for the western North Atlantic Ocean, but the observer dataset is generally more reliable in terms of consistent identification and reporting. According to observer data, relative abundance of thresher sharks (again, only at

the genus level) in the western North Atlantic Ocean appears to have stabilized or even be increasing since the late 1990s (Cortés, 2007). A more recent analysis using logbook data between 1996 and 2005 provides some supporting evidence that the abundance of thresher sharks has stabilized over this time period (Baum, 2010). However, the conflicting evidence between logbook and observer data showing opposite trends in thresher shark abundance cannot be fully resolved at this time. Data are not available in the petition or in our own files to assess the trend in population abundance in this region since 2006, or to assess the trend specific to the common thresher shark. Because the logbook data from this region shows consistent evidence of a significant and continued decline in thresher sharks, we must consider this information in our 90-day determination.

For the Northeast Atlantic, there are no population abundance estimates available, but data indicate that the species is taken in driftnets and gillnets. In the Mediterranean Sea, estimates show significant declines in thresher shark abundance during the past two decades, reflecting data up to 2006; according to historical data compiled using a generalized linear model, thresher sharks have declined between 96 and 99 percent in abundance and biomass in the Mediterranean Sea (Ferretti et al., 2008).

In other areas of the world, estimates of thresher shark abundance are limited. For the Indo-West Pacific, little information is currently available on common thresher sharks. Although pelagic fishing effort in this region is high, with reported increases in recent years, the common thresher shark is more characteristic of cooler waters, and further information needs to be collected on records and catches of the species in this region (IUCN assessment, 2009).

In conclusion, trends throughout the Eastern Pacific Ocean portion of the species' range suggest that the population there is rebuilding from historical overexploitation. However, across the rest of its global range, we find evidence suggesting that population abundance of common thresher sharks has continued to decline or, as in the Northwest Atlantic Ocean, may be stable at a diminished abundance. While data are still limited with respect to population size and trends, we find the petition and our files sufficient in presenting substantial information on common thresher shark abundance, trends, or status to indicate that the petitioned action may be warranted.

ESA Section 4(a)(1) Factors

The petition indicated three main categories of threats to the common thresher shark: Overutilization for commercial, recreational, scientific, or educational purposes; the inadequacy of existing regulatory mechanisms; and other natural or manmade factors affecting its continued existence. We discuss each of these below, as well as an additional evaluation of other 4(a)(1) factors based on information in the petition, and the information readily available in our files.

Present or Threatened Destruction, Modification or Curtailment of Habitat or Range

The petition does not list threats to habitat as impacting the common thresher shark. In our files, we were also unable to find evidence that destruction, modification, or curtailment of habitat or range were negatively impacting the species. Supporting this conclusion, in our files, we found evidence demonstrating that habitat pollution has not resulted in high concentrations of pollutants in the bodies of common thresher sharks. For example, Suk et al. (2009) demonstrated that the level of mercury measured in the muscle of individual thresher sharks was quite low (mean 0.13 ± 0.15 μg/g), with no traces of mercury detected in the liver. Mercury concentration

increased with shark size to a maximum of 0.7 μg/g for a 241 cm fork length (~ 425 lb) individual, still far lower than for other sharks examined in the study, including the shortfin mako and the sevengill shark (Suk et al., 2009). Although data are unavailable to assess the impact of these mercury levels on the health of the common thresher shark, low mercury levels exhibited by the common thresher shark likely relate to its tendency to feed on small schooling fish and cephalopods, at lower trophic levels than the prey consumed by other sharks studied.

In summary, the petition, references cited, and information in our files do not comprise substantial information indicating there is present or threatened destruction, modification, or curtailment of the common thresher shark's habitat or range such that listing may be warranted.

Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

The petition states that "historical and continued trends of fishing of this commercially and recreationally valuable shark remain a threat," listing commercial exploitation as the first threat of overutilization of the species. Historically, common thresher sharks were primarily caught in the drift gillnet fishery established off the West Coast of the United States, which targeted the species in the late 1970s. The fishery had shifted its focus to a swordfish fishery by the mid-1980s due to economic drivers, but also to protect pupping female thresher sharks (PFMC, 2003). Since that time, common thresher sharks have only been targeted secondarily or caught incidentally in the drift gillnet fishery there. West Coast commercial landings are down from 1,800 metric tons (mt) in the early 1980s to below 200 mt in 2008 and 2009 (PFMC, 2010). As stated above, based on preliminary stock assessment results, there appears to be an initial period of decline from 1981 to 1986, followed by a gradual rebuilding of the stock (NMFS SWFSC, unpublished data). Average annual landings since 2004 have been about 200 mt

(PFMC, 2011), well below an established sustainable and precautionary harvest level of 450 mt, and this level of landings has allowed the population to further rebuild. Regulations on commercial fishing operations (e.g., time and area closures) to protect gravid females during the pupping season (March through August), combined with a switch in the primary target of the driftnet fishery from thresher sharks to swordfish, have likely contributed to the rebuilding of the common thresher shark in the Eastern Pacific Ocean over the past 25 years (PMFC, 2003).

The petition states that in addition to broad commercial harvest of the species, direct catch related to the shark fin trade has resulted in population decline. No information connecting population declines as a result of this direct catch is provided in the petition. The petition states that common thresher shark fins are valuable due to their large size and longer fin needles. Evidence suggests that the three thresher shark species, collectively, may account for approximately 2.3 percent of the fins auctioned in Hong Kong, the world's largest fin-trading center (Clarke, 2006). This translates to 0.4 million to 3.9 million threshers that may enter the global fin trade each year (Clarke, 2006). However, information on the species-specific impact of this harvest on common thresher shark abundance is not provided by the petitioner, and is not available in our files. The bigeye thresher shark is of higher value and vulnerability to fishing than the common thresher shark (Cortez, 2010); however, the relative proportion of each thresher shark species comprising the shark-fin trade is not available in this genus-level assessment. Overall, evidence that common thresher sharks (and threshers in general) are highly valued for their fins and comprise a portion of the Hong Kong fin-trading auction suggests that this threat may impact the species.

Indirect catch is another category of overutilization identified by the petition, which states that post-release mortality may be high in the species. However, no information is provided in the petition to connect the effect of bycatch on population declines of the species. In our own files, we found evidence to support that adults and juveniles of common thresher shark are caught as bycatch in longline, purse seine and mid-water fisheries (IATTC, 2006). As stated in the petition, in the Northeast Atlantic Ocean prior to 2000, estimated landings fluctuated at 13-17 t, and in 2000-2001 they exceeded 100 t, after which they dropped to 4 t in 2002 and have not exceeded 7 t since (ICES, 2006). In the Mediterranean, there are no large-scale fisheries targeting pelagic sharks and rays, but these species are taken as bycatch in surface longline fisheries (Cahmi, 2009). In our files, we found evidence that, in the last two decades, common thresher sharks have declined between 96 and 99 percent in abundance and biomass in the Mediterranean Sea (Ferretti, 2008). Currently, there is no commercial fishery for common thresher sharks on the East Coast of the United States, but they are taken as bycatch on pelagic longlines and in gillnets; here, commercial bycatch landings averaged 19,958 kg (dressed weight) from 2003 to 2011, with landings peaking at 27,801 kg (dressed weight) in 2010 (NMFS, 2012; Gervalis et al., 2013). These landings may be linked to declines in the species across the Northwest Atlantic portion of its range; however, as discussed earlier, conflicting logbook and observer data decrease the certainty of these trends (Cortés, 2007; Baum, 2010). In the Southwest Atlantic Ocean, off the coast of Brazil, big eye thresher sharks represent almost 100 percent of thresher sharks caught, and only occasionally are common thresher sharks caught in the longline fishery (Amorin, 1998).

The petition identified recreational fishing as the fourth category of overutilization. In our files, we found evidence that common thresher sharks are valued by recreational sport fishermen throughout the species' U.S. East Coast and West Coast range, and those that are caught are generally landed; the common thresher shark is considered one of the better species for human consumption (Compagno, 2001). The species appears to be increasing in importance at shark tournaments in the Northeastern United States. As described in the petition, at one major tournament, common thresher shark numbers increased steadily such that the percent of total catch increased from 0.1 percent to 4.8 from 1965 to 1995 and jumped to 27.8 percent of the total catch in 2004 (Gervalis et al., 2013). Heberer (2010) identified the potential negative impact of recreational fishing on the survival of the common thresher shark by assessing post-release survivorship of sharks captured using the caudal-fin-based techniques used by most recreational fishermen. Since common thresher sharks use their elongate upper caudal lobe to immobilize prey before it is consumed, the majority of thresher sharks captured in the recreational fishery are hooked in the caudal fin and hauled-in backwards (Heberer, 2010). The common thresher is an obligate ram ventilator that requires forward motion to ventilate the gills (Heberer, 2010). The reduced ability to extract oxygen from the water during capture as well as the stress induced from these capture methods may influence recovery following release. The findings of Heberer (2010) demonstrate that large tail-hooked common thresher sharks with prolonged fight times (≥85 min) exhibit a heightened stress response, which may contribute to an increased mortality rate. This work suggests, especially for larger thresher sharks, that recreational catch-and-release may not be an effective conservation-based strategy for the species. A recent paper by Sepulveda (2014) found similar evidence for high post-release

mortality of recreationally caught common thresher sharks in the California recreational shark fishery. Their results demonstrated that caudal-fin-based angling techniques, which often result in trailing gear left embedded in the shark, can negatively affect post-release survivorship. This work suggests that mouth-based angling techniques can, when performed properly, result in a higher survivorship of released sharks. However, these techniques are not a common practice. Recreational catch varies widely from year to year but has averaged roughly 20 mt annually in recent years (CDFG, 2008). The estimated level of catch in this fishery may be imprecise because the fishery is patchy and sporadic. Although recreational catch rate data are unavailable or highly unreliable, evidence for high post-release mortality suggests that increases in recreational fishing may pose a threat to the common thresher shark.

Overall, trends throughout the Eastern Pacific Ocean suggest that the species either may be rebuilding from historical overexploitation, or may be stable. Elsewhere across the species' range, information in the petition and in our files suggests that the species may continue to experience declines as a result of overutilization. While measures may be implemented to improve post-release mortality of a recreational common thresher shark fishery, and to reduce bycatch, we found no evidence that these measures have been incorporated into common practice. In summary, the petition, references cited, and information in our files comprise substantial information indicating that listing may be warranted because of overutilization for commercial, recreational, scientific or educational purposes.

Disease and Predation

The petitioner does not identify predation and disease as a threat to the common thresher shark, and we were unable to find any information in our files to suggest that this factor is affecting the continued survival of the species.

Inadequacy of Existing Regulatory Mechanisms

The petition states that "the U.S. does not provide adequate protection for this species. Additionally, this global species lacks international protection under the Convention on International Trade in Endangered Species (CITES), and regional management mechanisms remain ineffective."

On the contrary, we found that national fishing regulations on common thresher shark fishing in the United States are precautionary, and have led to the rebuilding of the species in U.S. waters over the last two decades. The Fishery Management Plan for U.S. West Coast Fisheries for Highly Migratory Species includes an annual harvest guideline of 340 mt for thresher shark. This is a precautionary harvest guideline for commercial catch, which is estimated to be 75 percent of the regional maximum sustainable yield for this population. Time and area restrictions in the pelagic drift gillnet fishery were imposed off California in the mid-1980s to protect thresher sharks, and more regulations were added in 2000 to protect sea turtles, resulting in reduced effort. In the United States Atlantic Ocean, the species has been managed as part of the pelagic shark complex under the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan. Management measures include the following: commercial quotas, limited entry, time-area closures, and recreational bag limits. Sharks are required to be landed with fins naturally attached to the carcass. Overfishing and overfished status is currently unknown (NMFS HMS 3rd Qtr 2011 stock status), but preliminary stock assessment data suggest

that the species is rebuilding in U.S. waters due to management measures to conserve the species (SWFSC, unpublished).

Since we received the petition, the common thresher shark has been listed in Appendix II under the International Convention on the Conservation of Migratory Species of Wild Animals (CMS). The petitioner stated that there are no laws specifically addressing the needs of the common thresher shark; however, a CMS Appendix II listing now encourages international cooperation towards conservation of the species.

We agree with the petition that the majority of other international regulations provide general protection for all sharks, and that includes the common thresher shark. The petition asserts that finning regulations are "inadequate" for protecting the common thresher shark species because common thresher sharks may still be caught, either directly or indirectly as bycatch. The petition also cites several regional fisheries management organizations (RFMOs) that implement a 5-percent fin-to-carcass ratio regulation, describes what the petitioner contends are potential loopholes in those regulations, and states that these general regulations are inadequate for the common thresher shark, whose larger fins make it a more targeted species. We agree with the petitioner that the common thresher shark is highly valued for its fins, and can be identified in the shark fin market, although only to the genus level. However, we do not find that national and international regulations are inadequate for protecting the common thresher shark.

Finning regulations are a common form of shark management regulation and have been adopted by far more countries and regional fishery management organizations than the petition lists (see HSI, 2012). While the petitioner asserts that there may be some loopholes in

regulations using a 5% fin-to-carcass ratio, we find that the common thresher shark is rebuilding in broad portions of its range and is of lower vulnerability due to its demographic characteristics, such that current regulations are not considered inadequate. In addition, a number of countries have also enacted complete shark fishing bans, with the Bahamas, Marshall Islands, Honduras, Sabah (Malaysia), and Tokelau (an island territory of New Zealand) added to the list in 2011, and an area of 1.9 million km off the Cook Islands added in 2012. The petition states that Tokelau and the Cook Islands have only partial fishing bans, but this statement appears to be based on incomplete information. Shark sanctuaries can also be found in the Eastern Tropical Pacific Seascape (which encompasses around 2,000,000 km^2 and includes the Galapagos, Cocos, and Malpelo Islands), and in waters off the Maldives, Mauritania, Palau, and French Polynesia. Countries, states, and territories that prohibit the sale or trade of shark fins or products include the Bahamas, Commonwealth of the Northern Mariana Islands, American Samoa, Cook Islands, Egypt, French Polynesia, Guam, Republic of Marshall Islands, and Sabah. Several U.S. States prohibit the sale or trade of shark fins/products as well, including Hawaii, Oregon, Washington, California, Illinois, Maryland, Delaware, New York and Massachusetts. The U.S. Shark Conservation Act of 2010 protects all shark species, making it illegal to remove any of the fins of a shark (including the tail) at sea; to have custody, control, or possession of any such fin aboard a fishing vessel unless it is naturally attached to the corresponding carcass; to transfer any such fin from one vessel to another vessel at sea, or to receive any such fin in such transfer, without the fin naturally attached to the corresponding carcass; or to land any such fin that is not naturally attached to the corresponding carcass, or to land any shark carcass without such fins naturally attached. Additionally, many cities in Canada also prohibit the sale or trade of shark

fins/products. All of these measures provide protections for the global common thresher shark population.

The petition also mentions the lack of CITES protections for the common thresher shark. The common thresher shark is not a CITES listed species, however, a CITES listing would only address threats associated with the international trade of the species, and would not address such impacts as bycatch or recreational catch-and-release of the species. Although a CITES Appendix II listing or international reporting requirements would provide better data on the global catch and trade of the common thresher shark, the lack of a CITES listing or requirements would not suggest that current regulatory mechanisms are inadequate to protect the common thresher shark population from becoming endangered under the ESA.

In summary, the petition, references cited, and information in our files do not comprise substantial information indicating that the species is impacted by inadequacy of regulatory mechanisms such that listing may be warranted.

Other Natural or Manmade Factors Affecting Its Existence

The petition states that the biological constraints of the common thresher shark, such as its low reproduction rate (typically 2-4 pups a year), coupled with the time required to reach maturity (approximately 5 years), contribute to the species' vulnerability to harvesting and its inability to recover rapidly. It is true that the common thresher shark and pelagic sharks, in general, exhibit relatively slow growth rates and low fecundity; however, not all species are equally vulnerable to fishing pressure due to these life history characteristics.

An ecological risk assessment conducted to inform the International Commission for the Conservation of Atlantic Tunas (ICCAT) categorized the relative risk of overexploitation of the

11 major species of pelagic sharks, including the common thresher shark (Cortés et al., 2010, 2012). The study derived an overall vulnerability ranking for each of the 11 species, which was defined as "a measure of the extent to which the impact of a fishery [Atlantic long line] on a species will exceed its biological ability to renew itself" (Cortés et al., 2010, 2012). This robust assessment found that common thresher sharks, along with pelagic stingrays, are relatively productive species that show very low susceptibility to the combined pelagic longline fisheries in the Atlantic Ocean (Cortés et al., 2010, 2012). In fact, of 11 species examined, common thresher sharks exhibited one of the lowest vulnerability rankings. The relatively low vulnerability of the common thresher shark is further supported by a recent comparison of demographic models which ranked 26 pelagic sharks according to their potential growth rate and rebound potential (Chapple et al., 2013). The common thresher shark was found to rank 9 out of 26 overall in terms of its egg production, rebound potential, potential for population increase, and for its stochastic growth rate; again ranking among the highest in productivity when compared with other pelagic sharks (Chapple et al., 2013). Even within the genus Alopiidae, the common thresher shark is considered the fastest-growing and earliest-maturing of the three species, and attains the largest size (Smith et al., 2008).

In summary, the petition, references cited, and information in our files do not comprise substantial information indicating that the species is impacted by "other natural or manmade factors," including the life history trait of slow productivity, such that listing of the species may be warranted.

Summary of Section 4(a)(1) Factors

We conclude that the petition does not present substantial scientific or commercial

information indicating that the ESA section (4)(a)(1) threats of "other manmade or natural factors" or "inadequacy of regulatory mechanisms" may be causing or contributing to an increased risk of extinction for the global population of the common thresher shark. In addition, neither the petition nor information in our files indicated that the "present or threatened destruction, modification, or curtailment of its habitat or range," or "disease or predation" are threats to the species. However, we do conclude that the petition and information in our files present substantial scientific or commercial information indicating that the section 4(a)(1) factor "overutilization for commercial, recreational, scientific, or educational purposes" may be causing or contributing to an increased risk of extinction for the species.

Petition Finding

Based on the above information and the criteria specified in 50 CFR 424.14(b)(2), we find that the petition and information readily available in our files presents substantial scientific and commercial information indicating that the petitioned action of listing the common thresher shark worldwide as threatened or endangered may be warranted. Therefore, in accordance with section 4(b)(3)(B) of the ESA and NMFS' implementing regulations (50 CFR 424.14(b)(2)), we will commence a status review of the species. During the status review, we will determine whether the species is in danger of extinction (endangered) or likely to become so within the foreseeable future (threatened) throughout all or a significant portion of its range. We now initiate this review, and thus, we consider the common thresher shark to be a candidate species (69 FR 19975; April 15, 2004). Within 12 months of the receipt of the petition (August 26, 2015), we will make a finding as to whether listing the species as endangered or threatened is warranted as required by section 4(b)(3)(B) of the ESA. If listing the species is found to be

warranted, we will publish a proposed rule and solicit public comments before developing and publishing a final rule.

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 common thresher shark is endangered or threatened. Specifically, we are soliciting information in the following areas: (1) historical and current distribution and abundance of this species throughout its range; (2) historical and current population trends; (3) life history in marine environments, including identified nursery grounds; (4) historical and current data on common thresher shark bycatch and retention in industrial, commercial, artisanal, and recreational fisheries worldwide; (5) historical and current data on common thresher shark discards in global fisheries; (6) data on the trade of common thresher shark products, including fins, jaws, meat, and teeth; (7) any current or planned activities that may adversely impact the species; (8) ongoing or planned efforts to protect and restore the species and its habitats; (9) population structure information, such as genetics data; and (10) 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: February 25, 2015.

Samuel D. Rauch III,
Deputy Assistant Administrator for Regulatory Programs,
National Marine Fisheries Service.

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