



DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Parts 223 and 224

[Docket No. 240212-0044; RTID 0648-XR130]

Endangered and Threatened Wildlife; 90-Day Finding on a Petition to List the Whitespotted Eagle Ray as Threatened or Endangered Under the Endangered Species Act

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

ACTION: Notification of 90-day petition finding.

SUMMARY: We, NMFS, announce a 90-day finding on a petition under the Endangered Species Act (ESA) to list the whitespotted eagle ray (*Aetobatus narinari*) as a threatened or endangered species and to designate critical habitat concurrent with the listing. We find that the petition does not present substantial scientific or commercial information indicating that the petitioned action may be warranted.

DATES: These findings were made on *[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]*.

ADDRESSES: Copies of the petition and related materials are available from the NMFS website at <https://www.fisheries.noaa.gov/national/endangered-species-conservation/negative-90-day-findings>.

FOR FURTHER INFORMATION CONTACT: Adrienne Lohe, NMFS Office of Protected Resources, (301) 427-8442, adrienne.lohe@noaa.gov.

SUPPLEMENTARY INFORMATION:

Background

On April 6, 2023, we received a petition from the Defend Them All Foundation to

list the whitespotted eagle ray, *Aetobatus narinari*, as a threatened or endangered species under the ESA and to designate critical habitat concurrent with the listing. The petition asserts that this species is threatened by four of the five ESA section 4(a)(1) factors: (1) present or threatened destruction, modification, or curtailment of its habitat or range; (2) overutilization for commercial and recreational purposes; (3) inadequacy of existing regulatory mechanisms; and (4) other natural or manmade factors. The petition requests that if the species is listed as threatened or endangered, we promulgate a regulation under section 4(e) of the ESA for species similar in appearance to the whitespotted eagle ray, and if we determine the whitespotted eagle ray warrants listing as a threatened species, we promulgate a protective regulation under section 4(d) of the ESA. The petition is available online (see **ADDRESSES**).

ESA Statutory, Regulatory, and Policy Provisions and Evaluation Framework

Section 4(b)(3)(A) of the ESA of 1973, as amended (16 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 such finding in the **Federal Register** (16 U.S.C. 1533(b)(3)(A)). When it is found 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 during which we will conduct a comprehensive review of the best available scientific and commercial information. In such cases, we conclude the review with a finding as to whether, in fact, the petitioned action is warranted within 12 months of receipt of the petition (16 U.S.C. 1533(b)(3)(B)). Because the finding at the 12-month stage is based on a more thorough review that encompasses all the best

available information, as compared to the narrow scope of review at the 90-day stage, a “may be warranted” finding 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 any vertebrate distinct population segment (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 clarifies the Services’ 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 ESA section 4(a)(1) factors: (1) the present or threatened destruction, modification, or curtailment of habitat or range; (2) overutilization for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms to address identified threats; or (5) 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(h)(1)(i)) define “substantial scientific or commercial information” in the context of reviewing a petition to list, delist, or reclassify a species as “credible scientific or commercial information in support of the petition’s claims such that a reasonable person conducting an impartial scientific review would conclude that the action proposed in the petition may be warranted.” Conclusions drawn in the petition without the support of credible scientific or commercial information will not be considered “substantial

information.” In accordance with 50 CFR 424.14(h)(1)(ii), in reaching the initial (90-day) finding on the petition, we will consider the information described in subsections 50 CFR 424.14(c), (d), and (g) (if applicable).

Our determination as to whether the petition provides substantial scientific or commercial information indicating that the petitioned action may be warranted will depend in part on the degree to which the petition includes the following types of information: (1) information on current population status and trends and estimates of current population sizes and distributions, both in captivity and the wild, if available; (2) identification of the factors under section 4(a)(1) of the ESA that may affect the species and where these factors are acting upon the species; (3) whether and to what extent any or all of the factors alone or in combination identified in section 4(a)(1) of the ESA may cause the species to be an endangered species or threatened species (*i.e.*, the species is currently in danger of extinction or is likely to become so within the foreseeable future), and, if so, how high in magnitude and how imminent the threats to the species and its habitat are; (4) information on adequacy of regulatory protections and effectiveness of conservation activities by states as well as other parties, that have been initiated or that are ongoing, that may protect the species or its habitat; and (5) a complete, balanced representation of the relevant facts, including information that may contradict claims in the petition. See 50 CFR 424.14(d).

If the petitioner provides supplemental information before the initial finding is made and states that it is part of the petition, the new information, along with the previously submitted information, is treated as a new petition that supersedes the original petition, and the statutory timeframes will begin when such supplemental information is received. See 50 CFR 424.14(g).

We may also consider information readily available at the time the determination is made (50 CFR 424.14(h)(1)(ii)). We are not required to consider any supporting

materials cited by the petitioner if the petitioner does not provide electronic or hard copies, to the extent permitted by U.S. copyright law, or appropriate excerpts or quotations from those materials (*e.g.*, publications, maps, reports, letters from authorities). See 50 CFR 424.14(c)(6).

The “substantial scientific or commercial information” standard must be applied in light of any prior reviews or findings we have made on the listing status of the species that is the subject of the petition (50 CFR 424.14(h)(1)(iii)). Where we have already conducted a finding on, or review of, the listing status of that species (whether in response to a petition or on our own initiative), we will evaluate any petition received thereafter seeking to list, delist, or reclassify that species to determine whether a reasonable person conducting an impartial scientific review would conclude that the action proposed in the petition may be warranted despite the previous review or finding. Where the prior review resulted in a final agency action - such as a final listing determination, 90-day not-substantial finding, or 12-month not-warranted finding - a petitioned action will generally not be considered to present substantial scientific and commercial information indicating that the action may be warranted unless the petition provides new information or analysis not previously considered.

At the 90-day finding stage, 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 petitioners’ 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 conducting an impartial scientific review would conclude it supports the

petitioners' assertions. In other words, 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 necessitates a negative 90-day finding if a reasonable person conducting an impartial scientific review would conclude that the unknown information itself suggests the species may be at risk of extinction presently or within the foreseeable future.

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, in light of 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 faces an extinction risk such that listing, delisting, or reclassification may be warranted; 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 (*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 indicating

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 nongovernmental 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 will not provide a sufficient 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 (<https://explorer.natureserve.org/AboutTheData/DataTypes/ConservationStatusCategories>). Additionally, species classifications under IUCN and the ESA are not equivalent; data standards, criteria used to evaluate species, and treatment of uncertainty are also not necessarily the same. Thus, when a petition cites such classifications, we will evaluate the source of information that the classification is based upon in light of the ESA standards on extinction risk and impacts or threats discussed above.

Analysis of the Petition

We have reviewed the petition, the literature cited in the petition, and other literature and information readily available in our files. In this section, we provide a summary of this information and present our analysis of whether this information indicates that the petitioned action may be warranted.

Species description

The whitespotted eagle ray, *A. narinari*, is a large (up to 230 centimeters (cm) disc width (DW)) benthopelagic batoid found in warm-temperate and tropical coastal waters (Dulvy *et al.* 2021). The species was previously thought to have a circumglobal distribution, although morphological, parasitological, and genetic evidence indicates that the species is limited to the Atlantic, while eagle rays in the Pacific and Indian Oceans constitute separate species (Sales *et al.* 2019). The petition cites Eschmeyer's Catalog of Fishes (Fricke *et al.* 2020) and Dulvy *et al.* (2021) in its assertion that the species spans the western and eastern Atlantic. This contradicts Sales *et al.* (2019)'s conclusion that based on nuclear and mitochondrial markers, *A. narinari* is restricted to the western Atlantic, and samples from South Africa formed a monophyletic clade closest to another species of eagle ray, *Aetobatus ocellatus*, found in the Indian Ocean. Despite the apparent ongoing scientific debate surrounding the taxonomy of the whitespotted eagle ray and the genus as a whole, there is no further discussion of the taxonomic status of *A. narinari* in the petition. The petition asserts that the whitespotted eagle ray ranges from Cape Hatteras, North Carolina, to Rio de Janeiro, Brazil, including the Gulf of Mexico, the Bahamas, and the Caribbean Islands, and in the eastern Atlantic, from Mauritania south to Angola, and possibly South Africa (Dulvy *et al.* 2021). We accept the petition's characterization of the species' taxonomy and distribution because the petition provides recent and reputable references for this conclusion, and because we find that a reasonable person conducting an impartial scientific review would conclude that the petitioners' assertions are reasonably supported.

Whitespotted eagle rays occur in the neritic zone from the low-tide mark to water depths of 60 meters (m), and are often associated with coral reefs, lagoons, and estuaries (Cerutti-Pereyra *et al.* 2018, Dulvy *et al.* 2021). They are highly mobile and display both migratory and resident behavior (Bassos-Hull *et al.* 2014; Sellas *et al.* 2015; De Groot *et al.* 2021). Whitespotted eagle rays are mid-trophic level predators that forage for

invertebrates (often bivalves, gastropods, and crustaceans) in the seabed sediment, serving as bioturbators (Ajieman *et al.* 2012; Flowers *et al.* 2021). The species is often observed as solitary individuals, but can also be seen in large aggregations of up to several hundred individuals (Bassos-Hull *et al.* 2014; Tagliafico *et al.* 2012). Size at maturity has been estimated at approximately 115-130 cm DW for males and slightly larger for females (Araújo *et al.* 2022; Bassos-Hull *et al.* 2014; Taglificio *et al.* 2012). Age at maturity is estimated at 4 to 6 years (Cerutti-Pereyra *et al.* 2018). Whitespotted eagle rays exhibit matrotrophic viviparity in which embryos are nourished through uterine secretions and born live (Araújo *et al.* 2022). Between one and five young are produced in each litter after a gestation period of 12 months (Dulvy *et al.* 2021). Generation length for the species is estimated at 10 years, inferred from the slightly larger *A. ocellatus* which has a generation length of 12 years (Dulvy *et al.* 2021).

Population Status and Trends

The petition asserts that the whitespotted eagle ray has undergone dramatic population decline, largely relying on the IUCN Red List Assessment of the species as “endangered” (Dulvy *et al.* 2021). This assessment concludes that the whitespotted eagle ray “is suspected” to have experienced a population reduction of 50–79 percent over the past three generation lengths (30 years) due to “actual and potential levels of fishing pressure” (Dulvy *et al.* 2021).

Dulvy *et al.* (2021) use population trend data from baited remote underwater videos (BRUVs) in Belize from 2009–2018 (G. Clementi and D. Chapman, unpublished data 2019) and a survey in Mexico spanning 2000–2014 (J-C. Pérez Jiménez unpublished data 2019) to perform Bayesian state-space population trend analysis over three generation lengths (30 years). The BRUV data from Belize indicated an increase in abundance of 7.5 percent annually, while data from Mexico indicate a 0.95 percent decrease in abundance annually over the respective time series. Additionally, Dulvy *et al.*

(2021) state that in the southern Gulf of Mexico, interviews with fishermen indicated catch declines from 30–40 rays per night/trip from 1990 to 2000 to 10–15 rays per night/trip in 2019 (Cuevas-Zimbrón *et al.* 2011; J-C. Pérez Jiménez unpublished data 2019, as cited in Dulvy *et al.* 2021). Considering the two available population trend datasets (Belize 2009–2018 and Mexico 2000–2014) and extrapolating over three generation lengths, however, Dulvy *et al.* (2021) found an increasing population trend of 1.32 percent per year in the Western Central Atlantic.

Outside of these datasets, there is little information available on whitespotted eagle ray population trends. Dulvy *et al.* (2021) rely on the assumption that where the species is known to be targeted in artisanal fisheries or bycaught in commercial fisheries (e.g., in Colombia, Venezuela, the Guianas; see *ESA Section 4(a)(1) Factors*), it is experiencing population declines. In Brazil, personal communications cited in Dulvy *et al.* (2021) from 2018 indicate that landings of the species in gillnets at Pernambuco have declined by about 80 percent since 1995, and that the species has also declined in São Paulo, where fishery monitoring between 1996 and 2002 only recorded five individuals. Dulvy *et al.* (2021) write that because unmanaged fisheries in Brazil have led to declines in other species, “...there is no reason not to suspect that this species has also been reduced in numbers in that area.” Based on suspected high exploitation levels and lack of adequate management, their assessment indicates that it is “suspected that this species has undergone a population reduction of 50–79 percent over the past three generation lengths (30 years) in the Atlantic South American part of its range” (Dulvy *et al.* 2021). It is unclear whether the personal communications cited by Dulvy *et al.* (2021) are based on time series data or take into account fishing effort or other factors. Therefore, it is unknown how accurately this estimate reflects the abundance of whitespotted eagle rays across this region. We find that, based on the information presented in the petition, a reasonable person conducting an impartial scientific review would conclude that some

level of population decline may be occurring in the Southwest Atlantic, although there is not sufficient credible scientific or commercial information to conclude that the species has declined by 50-79 percent.

Trends specific to *A. narinari* are unavailable in the Eastern Atlantic, and therefore Dulvy *et al.* (2021) use reported catch levels of elasmobranchs as a proxy for whitespotted eagle ray population trends here. Dulvy *et al.* (2021) report the decline in average elasmobranch catch per unit effort by 71 percent from 1970–2015 and simultaneous increase in average elasmobranch catch by over 250 percent across the West Africa region, implying a dramatic increase in fishing effort. Trends in elasmobranch landings during this period of increasing fishing effort are described for individual countries in the region. In Mauritania, landings increased by 246 percent over 1992–2015; since then effort has been stable and landings continued to increase. In Senegal, reconstructed landings (which include an estimate of unreported landings data, therefore increasing uncertainty) showed a 30–80 percent decline from 2001–2016, suggesting population decline. In Guinea-Bissau, reconstructed landings declined 22 percent from 2012 to 2016 after rising since the 1960s. In Cameroon, there has been a 96 percent decline in reconstructed landings from 2007–2016 after rising since the 1960s. There have been few recent observations of the species in the Republic of Congo, Mauritania, Gabon, Senegal, Gambia, Guinea-Bissau, Sierra Leone, Ghana, Nigeria, Cameroon or Angola; in certain cases, this is despite sightings of species with similar habitat needs and catchability. However, some confounding factors are at play; for example, in Ghana there are few shallow fishing gears likely to take the species (Dulvy *et al.* 2021). Dulvy *et al.* (2021) take the above information to indicate that the species has largely disappeared from the Eastern Atlantic part of its range. Dulvy *et al.* (2021) conclude “it is suspected that a population reduction of more than 80 percent has occurred in the past three generation lengths (30 years)” (Dulvy *et al.* 2021). While trends

in elasmobranch catch and fishing effort are concerning, they do not provide enough species-specific evidence for us to conclude that the whitespotted eagle ray in particular has followed these same trends. Further, neither the petition nor Dulvy *et al.* (2021) provide information on historical population sizes in the areas with few recent observations. We find that, based on the information presented in the petition, a reasonable person conducting an impartial scientific review would conclude that some level of population decline may be occurring in the Eastern Atlantic, although there is not sufficient credible scientific or commercial information to conclude that the species has declined by more than 80 percent.

Altogether, Dulvy *et al.* (2021) conclude that the whitespotted eagle ray has undergone a population reduction of 50–79 percent over the past three generation lengths across its range. However, a reasonable person would conclude that this information is not supported by credible scientific information and is therefore unreliable given the only available quantitative population data for whitespotted eagle rays from Belize and Mexico indicate that the population is increasing there. Species-specific information on trends is unavailable from the Southwest Atlantic, the Eastern Central Atlantic, and Southeast Atlantic, although Dulvy *et al.* (2021) suspect population reductions in these areas. While declining elasmobranch landings, few recorded sightings of the species, and accounts of reduced catch by artisanal fishermen are indicative of potential population declines in these areas, we are not able to conclude that this information points to the dramatic population declines that Dulvy *et al.* (2021) infer.

Outside of the IUCN Red List Assessment (Dulvy *et al.* 2021), the petition discusses just one other relevant study relating to population trends for the species. Bassos-Hull *et al.* (2014) observed a yearly decrease in number of whitespotted eagle rays observed in both aerial and boat-based surveys in the eastern Gulf of Mexico off southwest Florida from 2008–2013. The authors note, however, that without further

study, it is unclear whether this is due to a true decrease in abundance over time or other factors such as sampling bias, a shift in range, or a clustering phenomenon in the study area during the 2008–2009 season (Bassos-Hull *et al.* 2014).

In all, we do not find that the information presented in the petition constitutes credible scientific information that indicates a dramatic decrease in whitespotted eagle ray abundance across its range as asserted by the petitioners. In fact, the region with available time-series population data shows an increasing population trend for the species. Information presented in the petition only points to potential abundance decreases in other parts of its range with little supporting information; the principal study the petition relies on for this assertion is unreliable because it rests on unsupported assumptions (*i.e.*, the assumptions that, where the species is known to be targeted in artisanal fisheries or bycaught in commercial fisheries, it is experiencing population declines; and that, where elasmobranch catch rates are declining, the species is experiencing population declines) rather than data. Therefore, we do not find that the petition offers substantial scientific or commercial information that would suggest that the species' current population status and trends may warrant the petitioned action.

ESA Section 4(a)(1) Factors

The petition asserts that four of the five factors in section 4(a)(1) of the ESA are adversely affecting the whitespotted eagle ray: (A) present or threatened destruction, modification, or curtailment of habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (D) inadequacy of existing regulatory mechanisms; and (E) other natural or manmade factors affecting its continued existence. While the petition does not state that factor (C), disease or predation, poses a threat to the species, it does argue that the species may be more susceptible to disease in combination with other stressors. In the following sections, we discuss the information presented in

the petition, viewed in the context of information readily available in our files where applicable, regarding threats to this species.

(A) Present or Threatened Destruction, Modification, or Curtailment of Habitat or Range

The petition describes the effect of destructive fishing practices, specifically bottom trawling, on coastal ocean habitats. Although the petition discusses negative impacts of trawling, including damage and destruction of biotic and abiotic seabed structures, increased water column turbidity, release of contaminants contained in seabed sediment, and reduced food availability for bottom-feeders, the petition includes no discussion of specific areas where bottom trawling activities occur within the range of the whitespotted eagle ray, or the intensity of bottom trawling activity. While the impacts of bottom trawling are concerning for certain marine habitats generally, the extent to which whitespotted eagle rays in particular may be threatened by such impacts is not clear based on the information in the petition.

The petition similarly discusses impacts of coastal development and dredging, as well as resulting pollution and suspension of sediment, on marine habitats. Suspension of sediment resulting from dredging can cause physiological stress and changes in foraging and predation behavior in marine fishes (Wenger *et al.* 2016). Contaminants released from disturbed sediment (*e.g.*, metals and persistent organic pollutants (POPs) such as polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and dichlorodiphenyltrichloroethane (DDT)), have been shown to accumulate in, and have further negative impacts on marine fishes, including on the reproductive success of adults and development of eggs and larvae (Wenger *et al.* 2016). PCBs, DDT and hexachlorobenzene (HCB) were detected in whitespotted eagle rays off Australia, sometimes in high enough concentrations to cause possible negative long-term impacts (Cagnazzi *et al.* 2019). Without further study, however, it remains unclear whether observed contaminant loads lead to lower survival and/or lower reproductive success in

elasmobranchs (Cagnazzi *et al.* 2019). The petition also asserts that sounds from dredging activity may cause harm to whitespotted eagle rays based on a study that found the sound of boat motors to disturb *A. ocellatus*, causing these rays to exhibit escape behavior when foraging (Berthe and Lecchini 2016). It is unclear whether such disruptions of foraging behavior would lead to population-level impacts to *A. narinari*, or whether noise from dredging would cause a similar response; neither of these points are addressed in the petition. Generally, the whitespotted eagle ray is vulnerable to coastal development as it uses shallow, coastal areas for breeding and feeding (Dulvy *et al.* 2021). While coastal development has the potential to negatively impact whitespotted eagle rays, specific information indicating how and where dredging and development are impacting the whitespotted eagle ray's habitat is not provided in the petition, and thus the degree to which the population may be threatened by this stressor is unclear.

The petition discusses, and provides references regarding, direct and indirect impacts of climate change, including physical and chemical changes to ocean habitats (*e.g.*, ocean warming and increasing ocean acidity), changes in ocean circulation patterns, declines in primary productivity, range shifts, increasing occurrences of extreme weather events and harmful algal blooms, and physiological and behavioral impairments in certain marine fishes. The specific effects of climate change on ray ecology are largely unknown, and few studies have investigated the impacts of climate change on the whitespotted eagle ray. Specific impacts that may be of concern to the whitespotted eagle ray that are discussed in the petition include decreased aragonite and calcite availability due to ocean acidification, which can hinder the ability of calcifying organisms such as bivalves and corals to build their skeletons (Branch *et al.* 2013; Kroeker *et al.* 2013). This could result in reduced availability of certain prey species and coral reef habitat for the whitespotted eagle ray to utilize. The petition cites Flowers *et al.* (2021) in its assertion that range and habitat shifts may result in negative effects on ray fitness through

decreased ability to find food, increased predation risk and increased competition. However, the same study points out that vulnerability to climate change varies by species, and, in certain cases, climate change may have beneficial outcomes for rays (Flowers *et al.* 2021). The petition also points out that sharks and rays in particular exhibit thermotaxis, a behavior that involves moving to waters of different temperatures throughout the day. Therefore, beyond large-scale geographic range shifts that may occur as a result of climate change, changes in such small-scale movements may also be significant to the fitness and survival of sharks and rays (Vilmar and Di Santo 2022). In an assessment of shark and ray behavior in response to gradual increases in sea surface temperature as well as acute temperature anomalies caused by El Niño Southern Oscillation over 27 years, *A. narinari* exhibited significantly increased relative abundance at higher temperatures in both cases (Osgood *et al.* 2021). While this study took place in the eastern Pacific and taxonomic revisions have limited *A. narinari* to the Atlantic (see *Species Description*), the results suggest that eagle ray species such as *A. narinari* could be more tolerant of temperature extremes than other elasmobranchs (Osgood *et al.* 2021). Although climate change has the potential to adversely impact the whitespotted eagle ray, the degree to which whitespotted eagle ray individuals or populations have been or will be affected is unclear. Therefore, the degree to which climate change threatens the whitespotted eagle ray is not clear based on the information in the petition.

In summary, the petition and the references cited therein do not comprise substantial scientific or commercial information indicating there is present or threatened destruction, modification, or curtailment of the whitespotted eagle ray's habitat or range such that a reasonable person conducting an impartial scientific review would conclude that listing may be warranted.

(B) Overutilization for commercial, recreational, scientific, or educational purposes

The petition identifies overutilization for commercial purposes as the greatest threat to the whitespotted eagle ray. The species is captured as incidental bycatch and, less commonly, in targeted fisheries (Tagliafico *et al.* 2012).

In the Western Central Atlantic, artisanal fisheries targeting the species are known to exist (but “are not well described”) in Mexico, Cuba, the Caribbean coast of Colombia, and Venezuela (Dulvy *et al.* 2021). In Colombia, the whitespotted eagle ray is taken in gillnet, longline, and trawl gears (Dulvy *et al.* 2021). In both Colombia and Venezuela, artisanal fisheries are widespread, intense, and lack management (Dulvy *et al.* 2021). A study of the small, directed fishery in northeastern Venezuela found that while the time series analyzed (August 2005 to December 2007) is too short to infer changes in population abundance, the capture of juvenile, mature, and pregnant individuals is of concern (Tagliafico *et al.* 2012). An artisanal fishery targeting *A. narinari* exists off the coast of the State of Campeche in the southern Gulf of Mexico driven by the traditional consumption of this species there (Cuevas-Zimbrón *et al.* 2011). According to fishermen interviewed, catches of *A. narinari* have declined over recent decades due to overfishing of the species as well as its molluscan prey (Cuevas-Zimbrón *et al.* 2011). Data from Mexico’s National Aquaculture and Fisheries Commission (CONAPESCA) indicate that in 2013, *A. narinari* was the second-most captured batoid in the region at about 40 tons each year (Rodriguez-Santiago *et al.* 2016). Whitespotted eagle rays have also been caught as bycatch in shark gillnet fisheries in the U.S. south Atlantic, and the petition asserts that they are among the top bycatch species by abundance in the observed catches (Trent *et al.* 1997). However, according to information readily available in our files, which provides important context for judging the accuracy and reliability of the information presented in the petition, the species hasn’t been observed as bycatch in this fishery since 2008 (NOAA Fisheries Southeast Fisheries Science Center, unpublished data). In all, despite the existence of artisanal fisheries targeting the whitespotted eagle

ray in this region as well as interactions with commercial fisheries, available population data does not support the conclusion that these fisheries are causing significant population declines. Rather, available data sources indicate an increasing population trend in the Western Central Atlantic (see *Population Status and Trends*).

In the Southwest Atlantic, artisanal fisheries and commercial trawl and longline fisheries along the coast of South America can be intense and unmanaged, and the petition asserts this has led to the disappearance of several elasmobranch species in the region, including largetooth sawfish (*Pristis pristis*), smalltooth sawfish (*Pristis pectinata*), daggernose shark (*Isogomphodon oxyrinchus*), and smalltail shark (*Carcharhinus porosus*) (Dulvy *et al.* 2021). Although fishing pressure is heavy and many of the stocks targeted by artisanal fishermen are overexploited in this region (Dulvy *et al.* 2021), the petition does not present any information about the specific fisheries that interact with the whitespotted eagle ray, or levels of catch of the whitespotted eagle ray.

In the Eastern Central Atlantic, sharks are targeted in artisanal fisheries across much of the region due to demand for dried salted shark meat (Dulvy *et al.* 2021). Specifically, drift gillnets and demersal set gillnets are used to target sharks and rays in artisanal fisheries of Mauritania, Nigeria, Ghana, and Cameroon (Dulvy *et al.* 2021). Population reductions and some local extinctions of shark and ray species have been observed in this region as a result of fishing pressure (Dulvy *et al.* 2021). The petition states that total demersal biomass of inshore stocks in the Gulf of Guinea is estimated to have declined by 75 percent since 1982 as a result of destructive fishing practices (Dulvy *et al.* 2021). Additionally, the number of traditional and industrial fishing boats has significantly increased since 1950 (Dulvy *et al.* 2021). Although poorly managed fishing activity in this region is having negative impacts on fish stocks generally, the petition presents no information relating to the capture or landings of the whitespotted eagle ray in particular.

Little information on the impact of fisheries bycatch on the species was provided in the petition. A study examining the physiological responses of capture on benthopelagic rays, including *A. narinari*, showed elevated lactate and glucose levels lasting the length of time that the rays were confined after capture (Rangel *et al.* 2021). This is indicative of increased physiological stress, and immediate release of captured individuals is recommended (Rangel *et al.* 2021). Mortality rates or other sublethal effects of capture on the whitespotted eagle ray were not addressed in the petition.

The petition also discusses other potential sources of overutilization. The whitespotted eagle ray is popular in public aquarium displays and is collected for this purpose (Dulvy *et al.* 2021). No further information on the impact of the aquarium trade on the species is included in the petition. The petitioners also assert that the species may be vulnerable to negative interactions with shellfish farms due to their molluscan diet. Negative interactions have been anecdotally reported in the Northwest Atlantic, although confirmed interactions generally take place with eagle rays in the Indo-Pacific (Dulvy *et al.* 2021).

In all, while the petition presents information on fisheries targeting the whitespotted eagle ray in the Western Central Atlantic, overutilization does not appear to be occurring based on population increases indicated in this region. The petition does not provide information specific to fisheries affecting the whitespotted eagle ray in the Southwest Atlantic or the Eastern Atlantic parts of its range, although fishing pressure is generally high in these areas. There is little information on other potential sources of overutilization of the species such as the aquarium trade. Based on information in the petition and readily available in our files, overutilization does not appear to be affecting the species to such a point that a reasonable person conducting an impartial scientific review would conclude that the petitioned action may be warranted.

(C) Disease or predation

Disease and predation are not identified as primary threats to the species in the petition. Although the petition asserts that whitespotted eagle rays may be more susceptible to disease and parasitic infection in the face of other stressors, there is no evidence in the petition indicating that disease or predation are negatively impacting the species.

(D) Inadequacy of existing regulatory mechanisms

According to the petition, current regulatory mechanisms are inadequate to protect the whitespotted eagle ray from threats posed by fisheries. Generally, the petition states that the lack of research, monitoring plans, protected areas, species management, and education (as determined by Dulvy *et al.* 2021) contribute to the species' decline. In the United States, while Florida has prohibited the harvest, possession, landing, purchase, sale, or exchange of the species in state waters for over two decades, neighboring states do not have similar regulatory measures. The petition cites Dulvy *et al.* (2021) in its assertion that similar actions in other states "could contribute to the conservation of the species." The petition concludes that because harvest is allowed in nearby state and federal waters, regulatory measures are inadequate; however, the petition fails to discuss why the lack of regulations is inadequate to address the threats. As discussed in *Population Status and Trends* above, the species has an increasing population trend in the Western Central Atlantic and it is not clear why further regulation would be needed in this area. Internationally, 13 of the top 20 shark-fishing nations have completed and implemented National Plans of Action for elasmobranchs (Dulvy *et al.* 2021), and the petition argues that this leaves whitespotted eagle rays vulnerable to threats globally. It is not clear if this statistic is relevant to the whitespotted eagle ray, or where in the species' range regulatory actions are lacking. Overall, the petition does not provide substantive information regarding the existing regulatory mechanisms for the species outside of the United States, or on whether they are inadequate to manage fisheries for the species.

Unsupported conclusions are not considered “substantial information” under our regulations (50 CFR 424.14(h)(1)(i)).

The petition also argues that current regulatory mechanisms are inadequate to protect the whitespotted eagle ray from threats posed by climate change. While the petition discusses ways in which domestic and international regulatory measures are not sufficient to reduce greenhouse gas emissions, it remains unclear to what degree climate change is impacting or will impact the species in particular, and therefore, whether additional regulations are needed to address the impact of climate change on the species.

Altogether, we find that the information presented in the petition does not comprise substantial scientific or commercial information indicating inadequacies of existing regulatory mechanisms such that a reasonable person conducting an impartial scientific review would conclude that listing may be warranted.

(E) Other natural or manmade factors affecting its continued existence

Finally, the petition discusses threats of noise, chemical pollution, plastic pollution, and human disturbance. We considered information provided on the impacts of noise, chemical pollution, and human disturbance (development and dredging) under (A) Present or Threatened Destruction, Modification, or Curtailment of Habitat or Range, above. We considered information provided on the impact of human disturbance through fisheries bycatch/entanglement in fishing gear in (B) Overutilization for commercial, recreational, scientific, or educational purposes, above. The petition very briefly mentions the species’ susceptibility to boat strikes as it inhabits coastal waters, although, beyond two individual whitespotted eagle rays with scars from boat strikes documented by Bassos-Hull *et al.* (2014), the petition does not provide any discussion of the frequency of, or impact of, boat strikes on the species.

Ingestion of microplastics has been shown to result in deleterious effects such as inflammation, metabolic disruption, compromised intestinal function, and behavioral

changes in bony fishes (Pinho *et al.* 2022). Microplastics can also absorb POPs and other contaminants, leading to further contaminant exposure when ingested (Pinho *et al.* 2022). However, no information is presented in the petition on the effect of microplastic ingestion in batoids. While microplastic ingestion poses a potential threat to the whitespotted eagle ray, the physiological impacts to individual rays and population-level impacts on survival and fitness remain unaddressed. We therefore find that there is not substantial scientific or commercial information provided in the petition indicating that the other natural or manmade factors named in the petition are impacting the species to such a degree that a reasonable person conducting an impartial scientific review would conclude that listing may be warranted.

Petition Finding

After thoroughly reviewing the information presented in the petition in the context of information readily available in our files, we conclude the petition does not present substantial scientific or commercial information indicating that the petitioned action may be warranted.

References Cited

A complete list of all references cited herein is available upon request (See **FOR FURTHER INFORMATION CONTACT**).

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

Dated: April 15, 2024.

Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs,

National Marine Fisheries Service.

