DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 571

[Docket No. NHTSA–2026–0728]

RIN 2127–AN00

Federal Motor Vehicle Safety Standards; Modernization of FMVSS No. 135 To Accommodate ADS-Equipped Vehicles; Extension of Comment Period

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT).

ACTION: Extension of comment period.

SUMMARY: In response to a request from Varnum LLP (Varnum), NHTSA is announcing a 30-day extension of the public comment period for the notice of proposed rulemaking (NPRM) published on June 26, 2026 proposing to amend Federal Motor Vehicle Safety Standard (FMVSS) No. 135, ''Light vehicle brake systems.'' The proposed modifications would distinguish how regulations apply to vehicles with and without manually operated driving controls. The comment period for the NPRM was originally scheduled to end on July 27, 2026. It will now end on August 26, 2026.

DATES: The comment period for the NPRM published at 91 FR 38593 on June 26, 2026, is extended to August 26, 2026.

ADDRESSES: You may submit comments identified by the docket number in the heading of this document through any of the following methods:

- *Electronic submissions:* Go to the Federal eRulemaking Portal at *http://www.regulations.gov.* Follow the online instructions for submitting comments.
- *Fax:* (202) 493–2251.
- *Mail or Hand Delivery:* Docket Management, U.S. Department of Transportation, 1200 New Jersey Avenue SE, West Building, Suite W58–213, Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except on Federal holidays. To be sure someone is there to help you, please call (202) 366–9826 or (202) 366–9317 before coming.

Instructions: All submissions must include the agency name and docket number for this notice. Note that all comments received will be posted without change to *http://www.regulations.gov,* including any personal information provided. Please see the Privacy Act heading below.

Privacy Act: Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477–78) or you may visit *https://www.transportation.gov/privacy.*

Docket: For access to the docket to read background documents or comments received, go to *http://www.regulations.gov* or the street address listed above. Follow the online instructions for accessing the dockets via internet.

Confidential Business Information: If you claim that any of the information in your comment (including any additional documents or attachments) constitutes confidential business information within the meaning of 5 U.S.C. 552(b)(4) or is protected from disclosure pursuant to 18 U.S.C. 1905, please see the detailed instructions given under the Public Participation heading of the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: For technical issues, you may contact Ms. Lina Valivullah, Office of Automation Safety; Telephone: 202–366–1810; Email: *Lina.Valivullah@dot.gov;* Facsimile: 202–493–2739. For legal issues, you may contact Mr. David Jasinski, NHTSA Office of the Chief Counsel, Email: *David.Jasinski@dot.gov.* The mailing address of these officials is: National Highway Traffic Safety Administration, 1200 New Jersey Avenue SE, Washington, DC 20590.

SUPPLEMENTARY INFORMATION: On June 26, 2026, NHTSA published an NPRM to amend FMVSS No. 135.[1] The proposed modifications would distinguish how regulations apply to vehicles with and without manually operated driving controls. The proposed modifications would clarify definitions, telltale requirements, performance requirements, and test procedures in the standard and remove sections that are no longer relevant. The stopping distance performance requirements, which address the primary safety purpose of the standard, would still apply to all subject vehicles. This rulemaking would remove unnecessary regulatory burdens and costs without detriment to vehicle safety. The NPRM provided a 30-day comment period which closes on July 27, 2026.

On July 23, 2026, NHTSA received a request from Varnum for a 30-day extension of the comment period.[2] Varnum stated that the NPRM addresses highly technical subject matter and raises novel questions, requiring significant time to thoroughly review the proposed changes and develop comments. Varnum said a 30-day extension of the comment period would allow Varnum to advise clients in submission of comprehensive comments on the NPRM.

NHTSA is granting the request to extend the comment period by 30 days. NHTSA has determined that the requestors have shown good cause for an extension and that the extension is consistent with public interest. A 30-day extension appropriately balances NHTSA's interest in providing the public with sufficient time to comment on the NPRM with its interest in obtaining specific feedback from stakeholders in a timely manner. Accordingly, NHTSA is extending the comment period until August 26, 2026.[3]

Authority: 49 U.S.C. 322, 30111, 30115, 30117, and 30166; delegation of authority at 49 CFR 1.95.

Jonathan Morrison,

Administrator.

[FR Doc. 2026–15231 Filed 7–27–26; 8:45 am]

BILLING CODE 4910–59–P

[1] 91 FR 38593.

[2] NHTSA–2026–0728.

[3] Readers should note that, even after the comment closing date has passed, interested persons are able to file comments in the docket, which NHTSA will consider to the extent practicable. 49 CFR 553.23. NHTSA may also continue to file relevant information in the docket as it becomes available. Accordingly, the Agency recommends that readers periodically check the docket for new material.

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 223

[Docket No. 260722–0176; RTID 0648–XR127]

Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List the Smalltail Shark (Carcharhinus porosus) 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 12-month finding and availability of a status review.

SUMMARY: We, NMFS, have completed a comprehensive status review for the smalltail shark (*Carcharhinus porosus*) in response to a petition from the Center for Biological Diversity to list the species. After reviewing the best scientific and commercial data available, including the Status Review Report, we have determined that listing the smalltail shark as a threatened or endangered species under the Endangered Species Act (ESA) is not warranted.

DATES: This finding was made on July 28, 2026.

ADDRESSES: The petition, status review report, **Federal Register** notices, and the list of references can be accessed electronically on our website at *https://www.fisheries.noaa.gov/species/smalltail-shark.* The peer review plan and charge to peer reviewers are available at *https://www.noaa.gov/information-technology/smalltail-shark-status-review-report.*

FOR FURTHER INFORMATION CONTACT: Dr. Nick Farmer, NMFS Southeast Regional Office, (727) 228–3855 or *nick.farmer@noaa.gov.*

SUPPLEMENTARY INFORMATION:

Background

On October 31, 2022, we received a petition from the Center for Biological Diversity to list the smalltail shark (*Carcharhinus porosus*), or any distinct population segment (DPS) of the species, as an endangered or threatened species under the ESA. On May 23, 2023, we announced in the **Federal Register** that the petition presented substantial information in support of the petitioned action and that we would conduct a status review, and we solicited information from the public to support our status review (88 FR 33075, May 23, 2023). We also provided notice to jurisdictions [1] in Central America and northern South America and requested scientific and commercial data, as well as information on any ongoing conservation efforts, regarding this species. All relevant information is incorporated in the status review report (Heublein *et al.,* 2025) and in this 12-month finding.

Listing Determinations Under the ESA

We are responsible for determining whether species are threatened or endangered under the ESA (16 U.S.C. 1531 *et seq.*). To make this determination, we first consider whether a group of organisms constitutes a species under section 3 of the ESA, then whether the status of the species qualifies it for listing as either threatened or endangered. Section 3 of the ESA defines ''species'' to include any subspecies of fish or wildlife or plants and any DPS of any species of vertebrate fish or wildlife which interbreeds when mature (16 U.S.C. 1532(16)). Because the petition requested we list the taxonomic species or any DPS of the species, we assessed if information was available to list individual populations as DPSs.

Section 3 of the ESA defines an endangered species as ''any species which is in danger of extinction throughout all or a significant portion of its range'' and a threatened species as one ''which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range'' (16 U.S.C. 1532(6) and (20)). Thus, we interpret an ''endangered species'' to be one that is presently at risk of extinction. A ''threatened species,'' on the other hand, is not currently at risk of extinction, but is likely to become so in the foreseeable future. In other words, the primary statutory difference between a threatened and endangered species is the timing of when a species is in danger of extinction, either presently (endangered) or not presently but in the foreseeable future (threatened). Additionally, as the definitions of ''endangered species'' and ''threatened species'' make clear, the determination of extinction risk can be based on either the range-wide status of the species or the status of the species in a significant portion of its range. A species may be endangered or threatened throughout all of its range or a species may be endangered or threatened within a significant portion of its range (SPR).

Section 4(a)(1) of the ESA requires us to determine whether any species is endangered or threatened as a result of any of the following five factors: (A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence (16 U.S.C. 1533(a)(1)). Section 4(b)(1)(A) of the ESA requires us to make listing determinations based solely on the best scientific and commercial data available after conducting a review of the status of the species and after taking into account conservation efforts being made by any state or foreign nation or political subdivision thereof to protect the species (16 U.S.C. 1533(b)(1)(A)).

Status Review

We convened a team of six agency scientists to conduct a status review for the smalltail shark and prepare a report. The status review team (SRT) comprised natural resource management specialists and fishery biologists from the NMFS Southeast Regional Office, Office of Protected Resources, and Southeast Fisheries Science Center (SEFSC). The SRT members have expertise in shark life history and ecology, population dynamics, fisheries management and stock assessment science, and protected species management and conservation. The status review report (Heublein *et al.,* 2025) presents the SRT's professional judgment of the extinction risk facing the smalltail shark but makes no recommendation as to the listing status of the species. The status review report was subjected to peer review as required by the Office of Management and Budget Final Information Quality Bulletin for Peer Review (M–05–03; December 16, 2004). The status review report was peer reviewed by three independent specialists selected from the scientific community with expertise in smalltail shark biology and ecology, conservation and management and specific knowledge of threats to the smalltail shark. The peer reviewers were asked to evaluate the adequacy, appropriateness, and application of data used in the status review as well as the findings based on those data. All peer reviewer comments were addressed prior to finalizing the status review report and are available online (see **ADDRESSES**).

We subsequently reviewed the status review report, its cited references, and public and peer reviewer comments. Much of the information discussed below on smalltail shark biology and ecology, distribution and connectivity, density and abundance, threats, and extinction risk is taken from the status review report. We have also considered new information published subsequent to the completion of the status review report. We have independently applied the statutory provisions of the ESA, including evaluation of the factors set forth in section 4(a)(1)(A)–(E) and protective efforts under section 4(b)(1)(A) in making our determination that listing the smalltail shark as an endangered or threatened species under the ESA is not warranted.

[1] We use the term ''jurisdiction'' rather than ''nation,'' as French Guiana is an overseas department of France.

Life History, Ecology, and Status of the Petitioned Species

Taxonomy and Species Description

The taxonomy of the smalltail shark has been relatively stable since it was described as *Carcharias porosus* (Ranzani 1839) based on a male holotype collected in the western South Atlantic Ocean off Brazil, although the species was later moved to the genus *Carcharhinus.* Junior synonyms are limited to *Carcharias* (*Prionodon*) *henlei* (Müller and Henle 1838) and *Carcharhinus cerdale* (Gilbert in Jordan and Evermann 1898). Castro (2011a) provided a thorough history of the taxonomy of *C. cerdale* and the confusion that surrounds its synonymy with *C. porosus.* Presently, *C. porosus* is taxonomically accepted as a valid species. Common names utilized for *C. porosus* vary throughout its range and include the generic names cazón and toyo and the more specific common names smalltail shark (English), Atlantischer Zwerghai (German), requin tiqueue (French), squalo codapiccola (Italian), cação-azeiteiro, cação-junteiro, sicuri-branco (Portuguese), tiburón cuero duro, tiburón gordito, and tiburón poroso (Spanish) (Applegate *et al.,* 1979; Compagno 1984; Gadig 2001; Castro 2011b; Voight and Weber 2011).

Physical Appearance

The smalltail shark is a relatively small-bodied shark that lacks an interdorsal ridge and has a nearly equilateral triangle shaped first dorsal fin with coloration that is light brown to gray dorsally and dirty white ventrally (Castro 2011b). Smalltail shark fins lack distinctive marking or coloration. Smalltail sharks are thought to grow no larger than 150 centimeters (cm) in total length (TL; *i.e.,* the length measured from the tip of the snout to the tip of the tail) (Compagno 1984; Lessa and Santana 1998).

The smalltail shark is the sole species in the *Carcharhinus* genus in the western Atlantic Ocean with a second dorsal fin originating above the midpoint of the anal fin. However, species within the genus *Rhizoprionodon,* often referred to as sharpnose sharks, share this characteristic. Sharpnose sharks are morphologically similar to smalltail sharks, often leading to confusion and misidentification even among biologists. The primary characteristic that readily differentiates a smalltail shark from a sharpnose shark is the relative length of the labial furrows. A smalltail shark has a very short to rudimentary upper labial furrow at both corners of its mouth that can be difficult to detect, whereas all sharpnose sharks have conspicuous and long labial furrows. Additionally, smalltail sharks have poorly and minimally developed preanal ridges, whereas these structures are elongated and easily recognizable in sharpnose sharks when the caudal fin and peduncle are depressed dorsoventrally while keeping the trunk static.

Distribution, Movements, and Habitat Use

The distribution of the smalltail shark is limited to the western Atlantic Ocean, although at least one dubious record of a single individual in the eastern Atlantic Ocean exists (Bennet 1830). Based on authoritative sources, the range extends from at least São Paulo, Brazil (approximately 25° S latitude; Gadig 2001) in the South Atlantic to coastal Mississippi (approximately 30° N latitude; Bigelow and Schroeder 1948) in the North Atlantic. Within the western Atlantic Ocean, smalltail sharks are documented in multiple countries and jurisdictions including Brazil, French Guiana, Suriname, Guyana, Venezuela, Panama, Mexico, and the United States (Bigelow and Schroeder 1948; Applegate *et al.,* 1979; Garrick 1982; Kohler *et al.,* 1998; Mejía Falla *et al.,* 2007; Tavares and Sánchez 2012).

Within U.S. waters, smalltail sharks have been collected off Texas, Louisiana, and Mississippi (Baughman 1943; Bigelow and Schroeder 1948; Castro 2011b; Swift and Portnoy 2021). Several sources state that smalltail sharks occur in the coastal waters of Florida (Heemstra 1965); however, this is likely attributable to the often-cited Briggs (1958), who included smalltail sharks as part of the shark fauna in the northern Gulf of America (GOA) [2] and explicitly stated he assumed this and other species, by virtue of proximity, likely extend into Florida waters. According to a comment letter submitted by the Florida Fish and Wildlife Conservation Commission in response to the 90-day finding on the listing petition (88 FR 33075), a few recreational landings of smalltail sharks were reported in Florida waters in 1995 and 1996, but ''the uncertainty for these landings are [*sic*] extremely high'' given its rarity and possible confusion with the Atlantic sharpnose shark (*Rhizoprionodon terraenovae*). No commercial landings have been reported in Florida waters since 1986 (Florida Fish and Wildlife Conservation Commission July 17, 2023). Since 2010, there have been only six records of smalltail sharks in U.S. fisheries; of these, five were biosamples from surveys off Louisiana and Texas and one was a recreational landing record in a Texas creel survey. Length was recorded for 47 smalltail sharks captured in U.S. fisheries in the northern GOA between 1984 and 2021; 42 were likely adult smalltail sharks (<65 cm TL). Of the five potential juvenile smalltail sharks, all were estimated to be over a year old based on length (<40 cm TL) with the exception of a 26 cm TL smalltail shark that was noted as a possible misidentification. These data suggest smalltail sharks are not using waters of the northern GOA as birthing or nursery habitat and are also extremely rare in U.S. waters.

Within the South Atlantic Ocean, smalltail sharks are documented in coastal waters throughout Brazil, including the states of Amapá, Pará, Maranhão, Pernambuco, Sergipe, Bahia, and São Paulo (Bigelow and Schroeder 1948; Garrick 1982; Gadig 2001). Smalltail sharks have been reported as far south as Uruguay and Argentina (Menni and Lucifora 2007; Nión *et al.,* 2016).

Throughout their range, smalltail sharks inhabit relatively shallow continental shelf waters. Reported depths of occurrence range from shallow littoral waters, often associated with mud substrate in estuaries, bays, and river mouths (Castellanos 2010; Swift and Portnoy 2021), out to depths of at least 84 meters (m) (Gadig 2001). According to Feitosa *et al.* (2020a), there is no age-based change in habitat use and all life stages co-occur, with the exception of seasonal habitat partitioning based on sex. Water temperatures associated with locations of smalltail shark capture range from 22 to 30° C (NMFS SEFSC unpublished data (number (n)=6); Feitosa *et al.,* 2020a (n=17); Swift and Portnoy 2021 (n=1)). There is limited information available to describe salinity ranges associated with individual catches of smalltail sharks; however, data from 2 fisheries-independent surveys [NMFS SEFSC unpublished data (n=6); Swift and Portnoy 2021 (n=1)] conducted in U.S. waters reported salinities at the location of capture ranging from 24 to 36. Two studies have reported incidental capture of neonate or juvenile smalltail sharks in areas with reduced salinity, such as river mouths and estuaries (n=1 in Castellanos 2010; n=1 in Swift and Portnoy 2021). The only data source we are aware of that measured dissolved oxygen at the location of capture indicated that smalltail sharks (n=6) were captured in normoxic waters 4.0 milligrams per liter

[2] Formerly Gulf of Mexico. Renamed pursuant to Executive Order 14172, and Secretary of the Interior Order No. 3423.

(mg/L) of oxygen and higher (NMFS SEFSC unpublished data).

Feitosa *et al.* (2020b) generated species distribution models for smalltail sharks using historical catch data. Distribution models were generated using a combination of four algorithms trained on environmental data (water temperature, light at the bottom, and dissolved oxygen) and species occurrence records. Suitable habitat for the species tended to fall on continental platforms, with models determining that the northern coast of South America provides the most suitable habitat for smalltail sharks compared to the eastern coast of South America and the GOA. Additionally, the species distribution models indicated a larger predicted range than empirical observations support, spanning from the mid-Atlantic East Coast of the United States to southern Brazil. The Caribbean islands were not found to have many suitable areas for smalltail shark habitat. Species occurrence records further indicate that the northern coast of South America is the most important area for the smalltail shark in terms of habitat suitability and historical catch. Feitosa *et al.* (2020a) also used vertebra microchemistry to argue that Brazil's northern coast (BNC) is an essential habitat for the species because its whole life cycle can occur in the area. Microchemistry suggests the presence of multiple BNC birthing areas that have been used across decades. The coexistence of adults born in areas with diverging biochemical signatures suggests a single population. Historical catch records indicate a relatively higher occurrence of neonates in these birthing areas and elemental concentrations from vertebrae indicate that individuals are likely not only birthed in these areas but spend their lifetimes in the BNC.

Diet and Feeding

Smalltail sharks are considered to be opportunistic predators that feed on relatively small prey, primarily fishes but also invertebrates (Cortés 1999; Gadig 2001; Castro 2011b). Their diet is similar to other small-bodied sharks within the family Carcharhinidae, such as Atlantic sharpnose (*R. terraenovae*), blacknose (*C. acronotus*), and finetooth (*C. isodon)* sharks in the western North Atlantic Ocean. Lessa and Almeida (1997) examined the stomach contents of 684 smalltail sharks off the coast of northern Brazil and determined that approximately 80 percent of the species' diet consists of small teleosts including those from the families Sciaenidae (drums and croaker), Mugilidae (mullet), Engraulidae (anchovies) and Stromatidae (butterfish). The authors noted a decrease in teleost prey through ontogeny and observed that other elasmobranchs, most notably *Rhizoprionodon* spp. (sharpnose sharks) and *Dasyatis* spp. (stingrays), were found in the stomachs of adults. Compagno (1984) also reported small elasmobranchs in the diet of smalltail sharks, including young sphyrnids (hammerhead sharks). Based on seasonal abundance of prey species, Lessa and Almeida (1997) determined that smalltail sharks are opportunistic and feed on whichever prey are most abundant.

Age and Growth

Two studies have examined the age and growth of smalltail sharks. Batista and Silva (1995) examined 257 vertebrae collected from individuals captured in gillnets off northern Brazil. The authors did not generate a growth model but did suggest that growth characteristics for smalltail sharks are typical of those observed for other species in the family Carcharhinidae. Lessa and Santana (1998) used direct aging of vertebrae for 508 specimens also collected in northern Brazil and concluded there was no difference in growth between females and males. Their estimated growth coefficients were similar to those estimated for larger species (*e.g.,* dusky sharks, *Carcharhinus obscurus*) and lower than those estimated for other small coastal shark species (Cortés 2002). Lessa and Santana (1998) noted that the lack of samples from larger individuals may result in inaccurately slow estimates of growth rate and maturation time for the species. Lessa and Santana (1998) acknowledged potential bias in their estimated growth parameters, potentially attributable to length-selective fishing mortality. In particular, their estimate of theoretical age at size zero (t_o), is relatively long at −3.40 yr and their estimate of longevity is nearly 35 years, although the oldest directly aged individual was just 12 years old. By comparison, the t_o estimate for the similar-sized and phenotypically similar Atlantic sharpnose shark (*Rhizoprionodon terraenovae*) is only −0.88 yr and theoretical longevity is 9.5 years (Carlson and Baremore 2003).

Reproductive Biology

Like other species within the genus *Carcharhinus,* female smalltail sharks are placentally viviparous (Sadowsky 1967; Lessa *et al.,* 1999; Castro 2011b). Male smalltail sharks are reported to mature between 70 and 80 cm TL, while females reach maturity at 65–85 cm TL (Compagno 1984; de Campos Santos *et al.,* 1999; Gadig 2001; Castro 2011b). Both sexes are reported to reach maturity at an age of 6 years (Lessa *et al.,* 1999), with generation time estimated between 7.9 and 9 years (Cortés 2002; Santana *et al.,* 2020).

Lessa *et al.* (1999) reported that females in waters off northern Brazil ovulate from July through September, indicating this is when mating occurs in the region. However, several authors indicate smalltail shark reproduction is asynchronous throughout its range; although peaks exist, seasonality cannot be definitively described (Castro 2011b). Gestation lasts for 10–12 months and size at birth is approximately 30–40 cm TL with neonates being present in coastal waters from June through October (Sadowsky 1967; Compagno 1984; Menni and Lessa 1998; Lessa *et al.,* 1999; Gadig 2001). The sex ratio of females to males within each brood was observed to be 1:1, and brood size ranges from 1 to 11 embryos with a reported mean of 5.94 young (de Campos Santos *et al.,* 1999; Gadig 2001). Lessa *et al.* (1999) found a significant positive relationship between maternal body length and brood size. Female smalltail sharks are thought to reproduce on a biennial cycle based on limited observations of gravid females with inactive ovarian follicles (de Campos Santos *et al.,* 1999; Castro 2011b).

Population Structure and Genetics

There is limited available information on smalltail shark population structure or genetics. Tavares *et al.* (2013) evaluated 50 samples obtained from the catches of the commercial fishing fleet based in Bragança, in the Brazilian state of Pará. This geographically limited study found smalltail shark had the highest levels of haplotype and nucleotide diversity in this region among the four studied species, but the results of the neutrality tests were inconclusive regarding recent population trends (*i.e.,* all negative, but insignificant). There were several conflicting findings within the paper. They detected a unimodal distribution of pairwise differences in the mitochondrial control region, a possible sign of population growth. However, *C. porosus* lacked the high number of singletons and the consistent statistical significance across all tests seen in Caribbean sharpnose shark (*R. porosus*), which was also tested. In population genetics, a unimodal curve without significant neutrality tests such as observed by Tavares *et al.* (2013) is often treated as a false positive or a signal too weak to confirm expansion, especially in the presence of genetic bottlenecks (Ramos-Onsins and Rozas 2002).

Tavares *et al.* (2013) also analyzed diversity in the more variable mitochondrial control region, which yielded conflicting results, further complicated by concern about bias introduced by possible mutational hotspots. For example, they reported reduced nucleotide diversity, possibly due to reduced population sizes, but also reported high haplotype diversity and indications of population growth based on neutrality tests and pairwise differences. The authors raised concerns about recombination events and mutational hotspots in the mitochondrial control region contributing to homoplasy (a shared genetic trait not inherited from a common ancestor) and consequent underestimation of genetic diversity and divergence times because the hyper-variable sites might be masking the accumulation of unique mutations. Ultimately, Tavares *et al.* (2013) concluded that Cytochrome *b* results might better reflect the species' genetic diversity. They reported an L-shaped curve and insignificant neutrality tests (Tajima's D, Fu's F_s), suggesting no population expansion.

Many aspects of the Tavares *et al.* (2013) experimental design would be anticipated to bias estimates towards low diversity, including the reliance on geographically limited and potentially biased fishery dependent data collection (*e.g.,* gillnets), the lack of comparative samples from other parts of the species' range (*e.g.,* Caribbean or southern Brazil), and the reliance on mitochondrial DNA (which does not capture male-mediated gene flow). Given these factors and the conflicting findings within the paper regarding demographic expansion and genetic diversity, it is difficult to draw conclusions from this study.

Demography

Natural mortality for smalltail sharks was estimated from specimens (n = 937) collected in gillnets from waters off Maranhão state in 1984–1987 using nine age-independent and two age-dependent methods (Santana *et al.,* 2020). Santana *et al.* (2020) provided an estimated mean natural mortality rate for males and females combined of 0.261 year $^{-1}$ (range: 0.116–0.329 year $^{-1}$, standard deviation (sd) = 0.770 year $^{-1}$). Total mean mortality was estimated to be 0.656 year $^{-1}$ (sd = 0.519 year $^{-1}$), yielding a mean fishing mortality of 0.395 year $^{-1}$ and an exploitation rate of 0.602 year $^{-1}$ (Santana *et al.,* 2020). Santana *et al.* (2020) applied these estimates in a demographic analysis, which suggested an annual decrease of 28 percent in the intrinsic population growth rate, resulting in a population decline of more than 90 percent in only 10 years, and much higher through the terminal model year of 2019.

In their demographic analysis of smalltail sharks collected in the gillnet fisheries off the BNC, Santana *et al.* (2020) calculated a mean finite population growth rate (λ) for smalltail sharks of 0.902 year $^{-1}$ (0.756–1.011 year $^{-1}$), suggesting a declining population with a mean generation time of 7.7 years (7.2–8.0 years), and juvenile and adult survival rates of 0.661 year $^{-1}$ (0.628–0.701 year $^{-1}$) and 0.206 year $^{-1}$ (0.158–0.246 year $^{-1}$), respectively. By contrast, Cortés (2002) explored the effects of uncertainty in demographic traits for 41 populations of 38 species of sharks and reported higher population growth rates (1.086 year $^{-1}$), generation times (8.4 years), and juvenile (0.582 year $^{-1}$) and adult (0.312 year $^{-1}$) survival rates for smalltail sharks. Subsequently, Cortés (2016) presented an updated meta-analysis of 65 shark species, estimating smalltail shark population growth rate at 1.203 year $^{-1}$ (1.097–1.437 year $^{-1}$). Farmer (2025) updated the Cortés (2016) analysis for smalltail shark using demographic parameters from Santana *et al.* (2020) and estimated a population growth rate of 1.049 year $^{-1}$ (0.881–1.102 year $^{-1}$); slightly lower than Cortes (2002) and Cortes (2016) but still reflecting positive population growth potential in five of six scenarios evaluated.

Status of the Population

Global and Regional Abundance Estimates and Trends

There is limited information on global and regional abundance for the smalltail shark. Modeled catch probability distributions from their reported range showed declines in smalltail sharks between the 1970s and 2010s, with the greatest declines predicted along eastern South America and throughout the GOA and, to a lesser extent, along the northern coast of South America (Feitosa *et al.,* 2020b). Notably, modeled declines of smalltail sharks outside of the northern coast of South America were based on extremely limited data, and the SRT was unable to find empirical studies of global smalltail shark abundance beyond these modeling estimates. While general trends in smalltail shark abundance were reported based on anecdotal information, the SRT was not able to locate any systematically collected data from fisheries-dependent or independent sources.

Northern GOA

Smalltail sharks are relatively rare in the northern GOA as this region represents the northernmost extent of their range (Bigelow and Schroeder 1948; Compagno 1984; McEachran and Fechhelm 2005). Stewart Springer (Shark Industries, Inc.) first reported, ''a nice series of '*cerdale*' '' (a junior synonym of *C. porosus*) taken off Biloxi, Mississippi in 1943. From 1969 to 2021, NMFS caught only a dozen smalltail sharks off Alabama, Mississippi, Louisiana, and Texas in the northern GOA using shrimp trawl and bottom longline gears (NMFS unpublished data). As mentioned above, 47 smalltail sharks have been captured and measured in U.S. fisheries in the northern GOA between 1984 and 2021. Since 1986, there have been no commercial landings and only a few recreational landings (1995 and 1996) of smalltail sharks in Florida waters (Florida Fish and Wildlife Conservation Commission July 17, 2023). Furthermore, Swift and Portnoy (2021) conducted an elasmobranch essential habitat study off Texas and reported one smalltail shark from Corpus Christi Bay, representing one of only a few verified observations of this species in Texas waters (Baughman 1943; Baughman and Springer 1950). Based on its rarity in this region, no abundance trends could be identified.

Southern GOA

There is minimal available information on smalltail shark abundance in the southern GOA. Fisheries monitoring or research is either lacking or regional journals and reports are inaccessible (Bigelow and Schroeder 1948; Compagno 1984; McEachran and Fechhelm 2005). A few studies characterizing the gillnet and small-scale bottom longline fisheries in the southern GOA from 1993 to 2012 reported that smalltail shark catch represented 0.2–2.0 percent of the total catch in those fisheries (Castillo-Géniz *et al.,* 1999; Pérez-Jiménez and Mendez-Loeza 2015; Pérez-Jiménez *et al.,* 2020). Since fishery-dependent shark catch data are scarce in the southern GOA, Bravo-Zavala *et al.* (2022) used data-limited assessment methods to determine the susceptibility, rebound potential, and cumulative vulnerability of sharks and rays in the region. Bravo-Zavala *et al.* (2022) found smalltail shark had moderate rebound potential (0.04 to 0.08) relative to 13 other elasmobranch species in two of three scenarios evaluated and consistently ranked higher than six other shark species. Although the smalltail shark had the lowest rebound potential among small coastal sharks, the analysis utilized life history characteristics reported by Lessa and Santana (1998) that the SRT did not consider robust, particularly when compared to similarly sized species. These potentially biased growth parameters, detailed in the Age and Growth section above, were used by Bravo-Zavala *et al.* (2022) to estimate population growth coefficients for smalltail sharks, and the resultant estimates were similar to those for larger species (*e.g.,* dusky sharks) as compared to similar-sized smaller coastal shark species (Cortés 2002; see Life History, Ecology, and Status of the Petitioned Species section). Despite this potential bias, smalltail sharks exhibited low to moderate cumulative vulnerability to current gillnet and longline fisheries in the southern GOA (Bravo-Zavala *et al.,* 2022). The low documented catch rates of smalltail sharks in the southern GOA fisheries support the low cumulative vulnerability designation; however, fishers have indicated the species was more abundant in waters off of Campeche, Mexico before the 1990s (Bravo-Zavala *et al.,* 2022). On the basis of limited available information and primarily anecdotal reports of fishers, it is possible that smalltail shark populations may have declined in the southern GOA, but the information is inconclusive.

Honduras

Rojas *et al.* (2000) reported that in Honduran waters, *C. porosus* represented 1 percent of commercial fisheries catch, indicating that smalltail sharks are present in Honduran waters. The General Director of Fisheries and Aquaculture also recently reported the majority of shark species taken as bycatch in fisheries are members of the family Carcharhinidae, including the smalltail shark (K. Alvarado personal communication, July 25, 2023). This information is inadequate to determine any trend for smalltail shark populations in Honduras.

Venezuela

Available information on the abundance of smalltail sharks in Venezuelan waters is minimal. Kleijn (1974) described exploratory and experimental shark fishing cruises on the South American continental shelf from Venezuela to French Guiana from 1968 to 1970 and reported that smalltail sharks were the most abundant species collected during the study, making up nearly 45 percent of the catch. Kleijn (1974) did not explicitly report smalltail shark catch by country but catch by gear type and effort by country were provided, which we can use to roughly infer relative abundance. For example, handlining accounted for 74 percent of all smalltail sharks caught in this study but was not reported as a fishing method in use in Venezuela, suggesting the catch of the species in Venezuelan waters was likely less than that of Guyana, Suriname, and French Guiana. A shark nursery study conducted in the Gulf of Venezuela during the mid-2000s collected only seven smalltail sharks (2 percent of total catch), suggesting smalltail sharks are not common in this region (Tavares and Sánchez 2012). This was further supported by Marquez *et al.* (2019), who documented the elasmobranch composition in the Sucre State artisanal gillnet and longline fishery from 2016 to 2017, where smalltail sharks made up 3.1 percent of the elasmobranch catch.

Although smalltail sharks are primarily found in shallow coastal waters, Arocha *et al.* (2002) reported catches of this species by tuna and swordfish vessels off Venezuela from 1994 to 2000. They reported that smalltail sharks made up 8.4 percent of the overall bycatch; however, the reported maximum size of the captured sharks (range: 80–150 cm fork length (FL)) exceeded the putative maximum size for smalltail sharks (150 cm TL; Compagno, 1984). Therefore, the SRT questioned whether some of these sharks may have been misidentified.

Trinidad and Tobago

Shing (2006) reviewed the shark species composition from a fishery-independent survey conducted off Trinidad and Tobago from 1985 to 2000, designed to mimic the artisanal gillnet fishery on the north and east coasts where shark catches were highest. Smalltail sharks were the most common shark species encountered in the survey, primarily represented by immature sharks, but gravid female smalltail sharks represented a substantial portion of the catch from the inshore artisanal fishery from March to May (Shing 2006). We were not able to find any other information regarding smalltail shark abundance in Trinidad and Tobago.

Guyana, Suriname, and French Guiana

As mentioned above, Kleijn (1974) conducted an experimental shark survey off the South American continental shelf from Venezuela to French Guiana from 1968 to 1970 and reported that smalltail sharks were the most abundant species collected during the study, making up nearly 45 percent of the catch (n=2,040). Most of the smalltail sharks (n=1,577, 77 percent) were caught during handline operations off French Guiana, Suriname, and Guyana (Kleijn 1974). The number of smalltail sharks caught by country was not reported, but the total catch relative to effort suggests that smalltail sharks were relatively common in the coastal waters of these three countries from 1968 to 1970. Since this study, little shark research has been conducted in this region; as a result, the species composition and abundance of coastal sharks in the region is poorly understood. Kolmann *et al.* (2017) used deoxyribonucleic acid (DNA) barcoding to determine the species most commonly caught and consumed along the coastline of Guyana by sampling sharks at fish markets. Smalltail sharks comprised 17.4 percent (n=32) of the shark specimens examined, representing the second most abundant shark species identified in the study.

Brazil

Most of the information available on smalltail shark population abundance is from Brazil. Smalltail sharks are not targeted in fisheries in this region but are caught as bycatch in gillnet, longline, and trawl fisheries, which target various commercial species, including mackerels, weakfish, and shrimp (Lessa *et al.,* 1999; Marceniuk 2020). The highest levels of bycatch occur along the BNC, which includes the states of Maranhão, Pará, and Arapá (Feitosa *et al.,* 2020b; Santana *et al.,* 2020). There are indications the smalltail shark has suffered severe population declines over the past few decades off the BNC; however, the quantitative data underlying these conclusions is limited (Feitosa *et al.,* 2020b). Lessa *et al.* (2018) cites two studies (Stride *et al.,* 1992; Morais, 2004) claiming that trawl catch per unit effort (CPUE) had declined approximately 85 percent, from 2.87 kg/hr in 1990 to 0.43 kg/hr in the early 2000s. However, the SRT was not able to verify this decline, as descriptions of the data were inconsistent with the cited literature, and the SRT was unable to access the original data after multiple attempts.

There has also been a notable change in the prevalence of smalltail sharks in catches reported by artisanal fisheries in northern Brazil over time. For example, smalltail sharks comprised 43–52 percent of the shark species caught in the artisanal gillnet fishery in the 1980s (Lessa 1997; Menni and Lessa 1998). A study investigating shark species composition at local fish markets within the BNC region documented smalltail sharks as the most common shark species in the early 2000s, representing nearly 46.7 percent (57 of 122 individual sharks) of the specimens examined (da Silva Rodrigues-Filho *et al.,* 2009). However, the shark specimens that were sampled in this study could not be attributed to specific fisheries, so comparisons drawn between this study and artisanal gillnet catch from the 1980s described above must be interpreted cautiously. More recent studies conducted in the region from 2014 to 2018 reported that smalltail sharks were the third most abundant species from markets and port sampling, representing between 5.5 and 13.1 percent of the total specimens examined (n=42 in Feitosa *et al.,* 2018; n=98 in da Silva Ferrette *et al.,* 2019; n=1 in Martins *et al.,* 2021). None of these studies used comparable methods or were designed to investigate the decline in smalltail sharks in fisheries over time. For example, specimens were sampled at different times in different studies across various fish markets across northern Brazil. Specimens were collected from many different fisheries, including trawl, gillnet, and longline, each with their own unique selectivity and catchability for the species. Additionally, Brazil enacted harvest prohibitions on smalltail shark beginning in 2014 (see *Inadequacy of Existing Regulatory Mechanisms*), which may have reduced the number of smalltail sharks brought into fish markets. Due to these inconsistencies in sampling methods and the additional confounding factor of management prohibitions, it is impossible to assign a quantitative value to the magnitude of decline based on these data.

Batista and Silva (1995), while conducting an age and growth study of juvenile smalltail sharks in Maranhão coastal waters of the BNC, did not find evidence of size-selective fishing. The authors concluded that fisheries had not seriously affected the stock because there was no specific fishery for smalltail sharks in the region and bycatch data did not show a clear tendency for back-calculated lengths to diminish with age class (*i.e.,* ''Lee's phenomenon;'' Ricker 1975). Lee's phenomenon suggests that faster-growing fish would be exposed to size-selective fishing mortality sooner and die younger, where slower growers would survive, meaning slower-growing fish would be over-represented in the contemporary population. Batista and Silva (1995) did not observe back-calculation bias in their samples, suggesting selective fishing pressure was not taking place. Over two decades later, Martins *et al.* (2018) conducted interviews with experienced artisanal gillnet and longline fishers to describe shark catch over time and the status of local stocks. The fishers reported that smalltail sharks were once easily caught during the 1980s and 1990s in the BNC but were now scarce and found only in deeper offshore waters (Martins *et al.* 2018). The authors reported that fishers indicated that smalltail shark is the species at the greatest risk of extinction in Maranhão waters (Martins *et al.,* 2018).

Relative to the BNC, records of smalltail shark catches off Brazil's central, southeast, and south coasts are less frequent; however, there is some anecdotal evidence of decline. Gadig (2001) states that data indicate smalltail sharks were abundant on the south coasts of São Paulo in the 1960s, but catches there are now uncommon.

The most direct explanation for declines in smalltail shark populations is overexploitation. Santana *et al.* (2020) reports that smalltail shark was the most abundant elasmobranch species in fisheries off the BNC in the 1980s, but its population has been declining since the 1990s. Most (90.6 percent) smalltail shark specimens (n=937) collected with gillnets in the eastern BNC in the 1980s were juveniles (<6 years old). Demographic analysis indicated mortality and exploitation rates in the 2000s were 92.3 percent above the fishing mortality rate corresponding to the population equilibrium threshold (Santana *et al.,* 2020). Santana *et al.* (2020) reported that the combination of compromised recruitment of juveniles, overfishing, and intrinsically low resilience (*e.g.,* slow growth rate, late age of maturity, and low fecundity) relative to other small coastal shark species all contributed to model-estimated population declines. Santana *et al.* (2020) predicted between a 77.1 percent to 99.9 percent decline in abundance by 2011. Santana *et al.* (2020) also reported several localized extinctions for the species in the northeastern and southeastern regions of Brazil. However, Santana *et al.* (2020) also predicted between a 49.5 percent to 94.2 percent decline in abundance by 1997, which stands in contrast to the findings of Batista and Silva (1995) discussed previously, which suggested fishing pressure was not a concern for the species during the early 1990s.

A decline in the abundance of the smalltail shark in Brazil is reported almost uniformly across disparate data sources. Given the available information, the SRT was unable to estimate the magnitude of the smalltail shark's abundance decline in Brazil in quantitative terms. However, the SRT concluded the available information suggests the population in Brazil has declined substantially based on the number and consistency of local references reporting this conclusion and the fact that at least a portion of these studies relied on quantitative data.

Assessment of Extinction Risk

As noted previously, the ESA defines an endangered species as ''any species which is in danger of extinction throughout all or a significant portion of its range'' and a threatened species as ''any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range'' (16 U.S.C. 1532(6) and (20)). NMFS' implementing regulations describe the ''foreseeable future'' as extending into the future as far as we can make reasonably reliable predictions about the threats to the species and the species' responses to those threats (50 CFR 424.11(d)). On November 21, 2025, NMFS and the U.S. Fish and Wildlife Service (USFWS) published a proposed rule that would slightly revise the description of the foreseeable future to state that it ''extends only so far into the future as the Services can reasonably determine that both the future threats and the species' responses to those threats are likely'' (90 FR 52607, November 21, 2025). The current and proposed regulations instruct us to describe the foreseeable future on a case-by-case basis, using the best available data and taking into account considerations such as the species' life-history characteristics, threat-projection timeframes, and environmental variability. The current and proposed regulations also state that we need not identify the foreseeable future in terms of a specific period of time. We considered the proposed revision to this regulation and concluded that our assessment of the extinction risk for the smalltail shark is the same under either description of the foreseeable future.

For the assessment of extinction risk for the smalltail shark, the SRT considered the ''foreseeable future'' to extend out approximately 25 years for the main identified threats of overutilization and inadequacy of existing regulatory mechanisms and most other potential threats. Given the species' life history (*i.e.,* mean generation time approximately 8 years and maximum age approximately 34 years), it would likely take multiple generations for management actions to be reflected in population status. Similarly, the impact of present threats to the species could be realized in the form of noticeable population declines within this time frame, as demonstrated in the available survey and fisheries data. The SRT also acknowledged that population recovery is likely dependent on when a protective regulatory measure, such as a closure, is implemented and enforced, and also the status of the population at the time of the closure.

To assess the potential threat of warming seas and the increasing frequency and intensity of extreme weather events, the SRT considered these environmental shifts over a longer time horizon, extending out to 2100. The SRT determined that warming seas and increasing extreme weather events could be reasonably expected through the year 2100, albeit with increasing uncertainty in their magnitude through time; however, the SRT could not reasonably determine how smalltail sharks would respond to these environmental changes.

In analyzing the extinction risk of smalltail shark, the SRT considered not only the current and potential threats impacting the species' status but also the species' demographic status and vulnerability. Thus, the SRT conducted an extinction risk analysis in three parts: (1) demographic risk analysis, (2) threats assessment, and (3) overall extinction risk analysis.

Demographic Risk Analysis

A demographic risk analysis is an assessment of the manifestation of past threats that have contributed to the species' current status and informs the consideration of the biological response of the species to present and future threats. The SRT's demographic analysis assessed demographic risk by considering a set of questions adapted from McElhany *et al.* (2000). The SRT considered the best scientific and commercial data available regarding four demographic characteristics (*i.e.,* abundance/trends, growth rate/productivity, spatial structure/connectivity, and diversity) for the smalltail shark to evaluate how these factors influence extinction risk for the smalltail shark. After reviewing all relevant biological and commercial information for the species, each SRT member assigned a ranking to each of the four demographic factors. Risks for each demographic factor were ranked on a scale of 1 (low risk) to 3 (high risk). Details about these risk categories can be found in the status review report (Heublein *et al.,* 2025). This process helped the SRT integrate and summarize a large amount of diverse information and served as a useful tool to help the SRT organize the information and assist in the process for determining overall risk of extinction for the species.

Abundance

There is minimal information on global and regional abundance estimates for the smalltail shark. Although robust quantitative data useful in exploring trends in population abundance are lacking, available data from other sources (*e.g.,* fish markets, interviews and fisher surveys) and anecdotal accounts consistently indicate abundance, or frequency of encounters, has declined significantly off Brazil since the 1980s (Feitosa *et al.,* 2018; Martins *et al.,* 2018; da Silva Ferrette *et al.,* 2019; Martins *et al.,* 2021). Modeled catch probability distributions from their reported range predicted declines in smalltail sharks between the 1970s and 2010s, with the greatest declines predicted along eastern South America (approximately –50 percent) and throughout the GOA (approximately –40 percent), and to a lesser extent, along the northern coast of South America (approximately –10 percent; Feitosa *et al.,* 2020b). Notably, modeled declines of smalltail sharks outside of the northern coast of South America were based on extremely limited data, and we were unable to find empirical studies of global smalltail shark abundance beyond these modeling estimates. Although population declines are apparent across studies, there is substantial uncertainty in the magnitude of decline.

Santana *et al.* (2020) performed demographic modeling based on 937 smalltail sharks caught between 1984 and 1986 during experimental gillnet fisheries sampling off the Brazilian state of Maranhão. Santana *et al.* (2020) estimated theoretical population declines ranging from 7 to 28 percent per year. There are important shortcomings in this analysis and questions about the life history data used in the models, given the magnitudes of decline predicted appear to be well above those suggested by other studies.

Considering the ongoing threat of overutilization by artisanal fisheries and the consistent reports of population decline, it is likely the abundance of smalltail sharks in the core BNC region has declined substantially since the 1980s. Data from regions outside of the BNC are more limited and offer minimal insight into the species' abundance. Anecdotal reports from fishers in Mexico and southern Brazil, however, state that smalltail shark numbers are significantly reduced from several decades ago (Gadig 2001; Bravo-Zavala *et al.,* 2022).

In contrast to the Santana *et al.* (2020) study results for Maranhão state in Brazil, studies conducted in other areas where the species has been historically abundant (*i.e.,* off the coasts of southern Central America and other areas in northern Brazil) indicate the smalltail shark continues to be a common species. For example, da Silva Rodrigues-Filho *et al.* (2009) found smalltail shark to be the most common shark species at the municipal fish market in Bragança and at the docks in Bacuriteua and Bragança (in the Brazilian state of Pará) between October 2005 and December 2006 (n=57/122). Feitosa *et al.* (2018) found smalltail shark to be the third most abundant shark species in samples taken from BNC fish markets (Amapá (n=48), Belém (n=26), Bragança (n=55), Vigia (n=13), Carutapera (n=14), Raposa (n=53), and Tutoia (n=219)), appearing in 9.81 percent of samples. Similarly, da Silva Ferrette *et al.* (2019) found smalltail shark to be the third most common shark species in samples taken from BNC fish markets, appearing in 98 (14 percent) of 700 samples taken from the states of Pará (n=400) and Natal (n=300).

Following the completion of the Status Review Report, Coelho *et al.* (2025) published the results of interviews with 314 fishers from across the Maranhão State coastline in the BNC conducted between December 2019 and October 2020. Smalltail shark was the second most abundant shark species, with 1,576 total fisher reports (Reentrâncias Maranhenses, n=684; Upaon Açu, n=353; Foz do Rio das Preguiças, n=539). Smalltail sharks were most commonly caught by gillnet (approximately 90 percent of catch) in Reentrâncias Maranhenses; by gillnet (approximately 65 percent) and longline (approximately 30 percent) in Upaon Açu; and by gillnet (approximately 55 percent), longline (approximately 20 percent), and beach seine (approximately 20 percent) in Foz do Rio das Preguiças. Per fisher reports, smalltail shark were the third most commonly caught shark in Reentrâncias Maranhenses (3.58 ± 4.34 sharks, N=191), the second most commonly caught shark in Upaon Açu (5.43 ± 6.04 sharks, N=65), and the most commonly caught shark in Foz do Rio das Preguiças (9.29 ± 7.65 sharks, N=58).

While the SRT agreed smalltail shark abundance has very likely decreased since the 1980s, the uncertainty associated with quantifying the decline affected their rankings. Thus, while the available abundance information indicates the smalltail shark is not presently at a high risk of extinction, the majority of the SRT thought the likelihood of declining abundance in the foreseeable future contributed to the species' extinction risk. Conversely, one SRT member considered abundance to be a low demographic risk, based on the data uncertainty, limited data available, and certain reports indicating that the species is still commonly captured in the core of its range. Overall, the SRT ranked abundance as a moderate risk to the extinction of the smalltail shark.

We considered the SRT's findings and agree that although modeled catch probability distributions from their reported range suggest declines in smalltail sharks between the 1970s and 2010s (Feitosa *et al.,* 2020b), it is difficult to determine the magnitude of this decline. Records in the northern GOA are too sparse to be conclusive regarding any trend. Analyses for the southern GOA using the potentially biased Lessa and Santana (1998) growth parameters suggests low to moderate vulnerability to current gillnet and longline fisheries in the southern GOA, a finding supported by low documented catch rates (Bravo-Zavala *et al.,* 2022). No information on a trend was available for Honduras or Venezuela. Historically, smalltail sharks were the most common species of shark encountered in gillnet surveys off Trinidad and Tobago (Shing 2006) and in handline studies off French Guiana, Suriname, and Guyana (Kleijn 1974), but given the lack of comparative contemporary studies, no trend can be inferred for these countries. Notably, smalltail sharks were the second most abundant shark species identified in Guyana fish markets by Kolmann *et al.* (2017), suggesting the species may still be reasonably abundant off that coast. Off Brazil, where smalltail sharks are caught as bycatch in a variety of fisheries (Lessa *et al.,* 1999; Marceniuk 2020), the SRT was unable to verify the large declines modeled by Santana *et al.* (2020). It is possible the percentage of smalltail sharks encountered in fish markets and port sampling declined between the 1980s–2000s (Lessa 1997; Menni and Lessa 1998; da Silva Rodrigues-Filho *et al.,* 2009) and 2014–2018 (Feitosa *et al.,* 2018; da Silva Ferrette *et al.,* 2019; Martins *et al.,* 2021); however, differences in observed abundance could also be explained by differences in source fishery, sampling methodology, overall study purpose, and the enactment of harvest prohibitions by Brazil beginning in 2014.

We conclude that the smalltail shark is vulnerable to overexploitation due to its coastal, shallow-water habitat and the continued operation of largely unmonitored artisanal gillnet fisheries and semi-industrial and industrial shrimp and general teleost trawl fisheries in their range (Santana *et al.,* 2020). While anecdotal reports, limited studies, and models suggest a likely population decline—with some estimates indicating a significant reduction off Brazil since the 1980s—the absence of comparable and systematic long-term studies makes it impossible to definitively quantify the extent of this decline or evaluate contemporary abundance in the context of extinction risk.

Growth Rate/Productivity

The majority of the available information on growth rate and productivity in smalltail sharks is summarized by Santana *et al.* (2020), who estimated low population growth rate and extremely low survival rates in the BNC. However, the limited life history information for the species likely contributed to these results being more extreme than would be expected. Two age and growth studies are available for this species, although only one provides growth curves (Lessa and Santana 1998), and one was based mostly on juvenile individuals (Batista and Silva 1995). The lack of data from larger individuals may have greatly influenced the estimated age and subsequent growth parameters for the species, with no data to anchor the growth curves' upper limit. This results in a model that overestimates theoretical maximum size (L_∞). Maximum age is calculated based on the time required to reach L_∞, leading to an overestimate of lifespan which then translates to pessimistic estimates of population growth potential. The estimated growth coefficients for smalltail sharks are similar to those estimated for slower growing larger species (*e.g.,* dusky sharks) and lower than those estimated for other small, coastal shark species (Cortés 2002). The lack of samples from larger individuals in the Lessa and Santana (1998) study may have contributed to a surprisingly low growth coefficient estimate, which, in turn, could result in underestimates for individual and population growth rates. Although smalltail sharks reproduce biennially (de Campos Santos *et al.,* 1999; Castro 2011b), there is limited reproductive information available for the species by which we can further assess the species productivity.

Population growth and mortality estimates provided by Santana *et al.* (2020) suggested low recovery potential even in the absence of fishing, although, as noted above, there were various shortcomings in the modeling approach used. The SRT noted uncertainty in the growth coefficients used to determine recovery potential. The growth model of Lessa and Santana (1998) is the foundation for assumptions regarding the apparent slow growth, late age at maturity, and low estimated fecundity for the species that drive the conclusions of Santana *et al.* (2020) and Bravo-Zavala *et al.* (2022) regarding the relatively low productivity for this species when compared to other small, coastal sharks.

There was no available information indicating that reproductive traits have changed over time. The species does not exhibit trends in demographic or reproductive and growth characteristics that portend declines in per capita growth rate. As with other life history data, the information available about reproductive traits is based on a limited sample of adult smalltail sharks (Lessa *et al.,* 1999).

Because the estimated population growth rate is unreliable, the SRT could not be certain if the population growth rate is above or below replacement and whether depensation is a risk factor. However, the SRT felt that continued declines in abundance and evidence of overfishing suggested population growth rates for smalltail sharks are likely below replacement. Although there is currently little evidence of depensatory processes in smalltail shark populations, the SRT indicated it was likely that smalltail shark are at increased risk for negative impacts due to depensatory processes in the foreseeable future.

Given the potentially high levels of harvest occurring along the north coast of South America, and evidence of significant population declines throughout the BNC (core range), the majority (four of six) of SRT members found that current population growth and productivity rates present a moderate risk to the species, significantly contributing to its long-term extinction risk. Two SRT members, however, concluded that growth rate and productivity were a low risk, primarily because of the lack of conclusive evidence of population decline and the continued presence of smalltail sharks across a broad geographic range.

We considered the SRT's findings and agree with their characterization of the uncertainty regarding the population growth rate for smalltail shark populations. Santana *et al.* (2020) calculated a mean finite population growth rate (λ) for smalltail sharks of 0.902 $year^{-1}$ (0.756–1.011 $year^{-1}$), suggesting a declining population. As noted by the SRT, Cortés (2002) reported slightly higher population growth rates (1.086 $year^{-1}$) for smalltail sharks. Additionally, Cortes (2016) presented a meta-analysis of the intrinsic rate of population growth (r_{max}) calculated by six different methods across 65 shark species: (1) Myers *et al.* (1997)'s extinction risk equation, which was intentionally misspecified to omit a cumulative survival term; (2) Eberhardt *et al.* (1982)'s equation, a derivation of the Euler-Lotka equation assuming constant adult survival and fecundity; (3) Skalski *et al.* (2008)'s equation, a modification of Eberhardt *et al.* (1982) that does not require estimates of longevity; (4) Smith *et al.* (1998)'s rebound potentials, which incorporate density dependence through increased pre-adult survival; (5) Niel and Lebreton (2005)'s Demographic Invariant Method, which combines age-based matrix models with allometric models; and (6) the traditional Euler-Lotka equation, which is age-structured and uses age-specific survivorship. The Cortes (2016) estimate of r_{max} for smalltail shark corresponds to a λ of 1.203 year^{-1} (1.097–1.437 year^{-1}).

To further evaluate the productivity of smalltail shark populations, we updated the analysis of Cortes (2016) with reproductive parameters from Santana *et al.* (2020) to compute r_{max} for smalltail shark (Farmer 2025). Cortés (2016) used r_{max} results from the Euler-Lotka equation (Method 6) to define slow-growing (r_{max} ≤0.05), medium-growing (0.05 < r_{max} ≤0.15), and fast-growing (r_{max} >0.15) populations. Using updated reproductive parameters, we found the smalltail shark median value for r_{max} for the Euler-Lotka equation was 0.084, making it a medium-growing population following the Cortés (2016) criteria (Farmer 2025). Further, the median value for r_{max} for smalltail sharks exceeded the median value for medium-growing species evaluated by Cortés (2016) in 5 of 6 methods evaluated. The updated r_{max} values correspond to a λ of 1.049 year^{-1} (0.881–1.102 year^{-1}); slightly lower than Cortes (2002) and Cortes (2016) but still reflecting positive population growth potential for 5 of 6 methods evaluated. A lambda value greater than one is a good indicator for a species' health and resilience. It suggests that the birth rate and survival rates are sufficient to overcome the death rate, leading to a growing population. The relatively high r_{max} for smalltail shark suggests a greater capacity for a population to increase its numbers under ideal conditions, such as low density and abundant resources (Begon *et al.,* 2006). Smalltail shark populations may be able to withstand higher levels of exploitation relative to less productive shark species because their rapid reproductive rates and shorter generation times enable them to compensate for individuals removed through harvesting (Myers and Mertz 1998).

We agree with the SRT that analysis of the smalltail shark population's growth and recovery potential is hampered by significant data limitations, particularly regarding life history traits and a lack of comprehensive, up-to-date studies. The SRT was concerned that smalltail sharks may not be as slow-growing as predicted by the Lessa and Santana (1998) growth model, which may have been biased by the lack of samples from larger individuals. Smalltail sharks have a late age at maturity and low fecundity relative to most other small coastal sharks; however, relative to other Carcharhinid sharks, including species that support directed fisheries, the smalltail shark matures at a relatively young age (6 years; Lessa *et al.,* 1999), has a protracted mating season (Castro 2011b), and produces reasonably large broods, averaging 4 to 10 pups per biennial cycle (Lessa *et al.,* 1999, de Campos Santos *et al.,* 1999, Castro 2011b). The pups are also reasonably large at birth (*i.e.,* >20% of adult size; Lessa *et al.,* 1999, de Campos Santos *et al.,* 1999). Large size at birth tends to lead to lower natural mortality rates in shark species by creating a natural predation refuge due to size, higher foraging competence due to better developed sensory systems, and higher innate energy reserves (Branstetter 1990, Hoenig and Gruber 1990, Cortés 2000). While some existing models and studies, such as those by Santana *et al.* (2020), suggest a low intrinsic population growth rate, low survival rates, and a minimal capacity for recovery for smalltail sharks relative to other small coastal sharks, these conclusions are uncertain due to shortcomings in the underlying data and are contradicted by other studies (Cortes 2002, Cortes 2016, Farmer 2025).

Diversity

There is limited available data to inform an assessment of smalltail shark genetic diversity. There has been only one geographically-limited and potentially biased study analyzing the genetic variability of the smalltail shark; no conclusive signs of increased or reduced genetic variability were reported (Tavares *et al.,* 2013). It is reasonable to assume that significant reduction in abundance would reduce the species' phenotypic and genetic diversity. However, there is insufficient information to assess whether and to what degree this reduction has occurred and is contributing to the species' extinction risk. Further, information related to smalltail shark life history is outdated (1980s–1990s), and it is unclear if any changes have occurred over time. Limited genetic and life history information precludes any evaluation of the population structure or diversity factor as neither contemporary nor historical baseline studies needed for comparisons across time are available.

There is no available evidence that there are geographically distinct or spatially separated populations of this species. Feitosa *et al.* (2020a) showed there is suitable habitat throughout the range of the smalltail shark. Additionally, there is no information on dispersal, seasonal movement, or migration patterns that would indicate gene flow could be restricted. Ecological changes directly related to smalltail shark habitat are largely unknown, and there is no indication that the potential natural processes that cause ecological variation have been significantly altered.

Since juvenile smalltail sharks are reported to be caught in higher numbers than other age classes (Batista and Silva 1995; Santana *et al.* 2020), it is possible that this removal could lead to alterations in life history traits over time. Overharvesting of juveniles can lead to a shift towards earlier maturation, smaller size, and increased fecundity (Rutter 1903; Kuparinen and Festa-Bianchet 2017). However, juvenile-dominated catch was documented in the 1980s even when smalltail sharks were considered to be in higher abundance, and life history characteristics documented at the time did not appear to reflect potential changes in growth or reproduction.

Given the above information, the SRT concluded the species does not appear to be at risk of extinction because of alterations to the natural processes of dispersal, migration, and gene flow. Some SRT members (two of six) concluded that the demographic factor of diversity presented a moderate risk, in part due to the potential changes over time associated with continued fishing on specific age groups and the lack of genetic information for this species. The majority of the SRT (four of six) concluded that diversity was unlikely to significantly contribute to the species extinction risk (low risk). The SRT noted low genetic diversity may pose a future risk in combination with low abundance and continued overexploitation. However, at this time, they concluded that the evidence is not substantial enough to suggest that significant changes in or loss of phenotypic or genetic traits are altering genetic diversity to the extent that it is significantly contributing to the species' long-term extinction risk.

We conclude that an assessment of the smalltail shark's genetic diversity and population structure is severely limited by a lack of robust, contemporary data. There is no conclusive evidence of significant genetic loss; the few available studies include an inconclusive genetic analysis (*i.e.,* Tavares *et al.,* 2013; see Population Structure and Genetics, above) and a demographic study relying on outdated data. It is therefore unclear if reduced genetic variation is contributing to risk of extinction for the species. We find that the best scientific information available supports a conclusion of low risk for diversity and population structure. However, the lack of a genetic baseline and the potential for fishing pressure to alter life history traits over time contribute to a high degree of uncertainty in this conclusion.

Spatial Structure and Connectivity

Smalltail sharks occupy coastal waters out to the continental shelf edge from eastern Brazil into the northern GOA. Based on species distribution modeling by Feitosa *et al.* (2020b), there appears to be large amounts of suitable habitat available for smalltail sharks throughout their range. The smalltail shark has a generalist diet (Lessa and Almeida 1997). Given their generalist nature and habitat plasticity, the SRT did not identify obvious disruptions in spatial structure or connectivity, such as geographic range contraction or isolation, for the species.

As noted above, there is no evidence indicating geographically distinct or spatially separated populations of this species; however, the available genetic data are limited. Some reports have suggested the species may be extirpated from the southern extent of its range, but there is no indication that the species' distribution throughout its range has been fragmented or significant gaps in its habitat have been created. There is minimal available information on connectivity throughout its range, and natural rates of dispersal are unknown.

In conclusion, although some studies suggest the range of smalltail sharks has contracted over time, reports suggest that it remains relatively common along the northern coast of South America. While there are reports that fishing pressure may be depleting smalltail shark populations in nearshore shallow water habitats, the species demonstrates a capacity to utilize a variety of habitats (Feitosa *et al.,* 2020b). Smalltail sharks do not appear to be limited by dispersal or a lack of habitat patches, including nursery habitats (Feitosa *et al.,* 2020a). Habitat degradation from coastal development is not considered a primary threat. Although information on habitat destruction and population connectivity is limited, the species' apparent adaptability and broad range suggest that habitat-related threats are not currently a primary risk to its overall survival, even as the core population in northern Brazil faces heightened fishing mortality. Thus, based on the best available information, the SRT concluded, and we agree, that spatial structure and connectivity throughout the species' range poses a low extinction risk to the smalltail shark in the foreseeable future.

Threats Assessment

As noted previously, section 4(a)(1) of the ESA and NMFS' implementing regulations (50 CFR 424.11(c)) state that we must determine whether a species is endangered or threatened because of any one or a combination of the following factors: (A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. The SRT summarized information regarding each of these threats. Similar to the demographics risk analysis, the SRT members were provided a template and asked to rank the significance of each threat in terms of its contribution to the smalltail shark risk of extinction. Risks for each threat were ranked on a scale of 1 (low risk) to 3 (high risk). More details about the definitions of the rankings and process followed by the SRT can be found in the status review report (Heublein *et al.,* 2025). We conclude the SRT's findings with respect to the ESA section 4(a)(1) listing factors are well-considered and based on the best available scientific information, and we concur with their assessment.

Factor A was considered a low threat given the lack of clear impacts from human activities on the core habitats of smalltail shark and the lack of direct evidence of health impacts from contaminants on the species. The BNC is an important region for smalltail sharks, and Feitosa *et al.* (2020b) predicted that this area has the highest occurrence probability throughout the species' range. However, there are no systematic surveys to assess habitat associations, and relevant data are almost exclusively fishery-dependent or based on very small spatial scales. Coastal development and anthropogenic activity may alter the availability and quality of nearshore habitat; however, there is no direct evidence that these actions are significantly contributing to extinction risk of the smalltail shark.

Factor C was considered a low threat due to lack of evidence suggesting disease or predation were affecting the status of the species. Factor E was also considered a low threat because there was limited information regarding how warming seas or increased extreme weather events would affect smalltail shark. Warming seas may cause significant habitat loss for the smalltail shark, particularly at the extreme fringe of their range in the northern Gulf of America (Diaz-Carballido *et al.* 2022). However, the species may find thermal refuge in deeper waters or experience minimal habitat reductions in their core Brazilian range (O'Brien *et al.* 2024), where they are also less likely to suffer from climate-driven changes in prey availability due to their opportunistic diet (Cortés 1999; Gadig 2001; Castro 2011b). The SRT noted that these conclusions are highly uncertain because there are no direct studies on the species' climatic variability and the current modeling reflects broader environmental drivers rather than specific biological responses. Factors B and D (overutilization for commercial, recreational, scientific, or educational purposes and inadequacy of existing regulatory mechanisms) were determined to have potential impacts on the overall extinction risk of the species. These threats are discussed in detail below.

Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Fisheries in U.S. Waters

Time series of landings data are largely absent with the exception of historical landings records in U.S. waters where catch of smalltail sharks has been prohibited since 1999 (64 FR 29090, May 28, 1999). No changes in catch rates or abundance could be detected from the limited landings data available prior to the harvest prohibition, and there is no indication that overutilization is a threat to the smalltail shark in U.S. waters.

Foreign Fisheries

Southern GOA

Fishermen anecdotally report that the species was historically much more abundant in the southern GOA (Bravo-Zavala *et al.,* 2022), but recent studies have found that they now comprise only a small percentage (0.2–3 percent) of total shark catch in gillnet and longline fisheries in the Yucatán region (Castillo-Géniz *et al.,* 1999; Pérez-Jiménez and Mendez-Loeza 2015; Pérez-Jiménez *et al.,* 2020). Bravo-Zavala *et al.* (2022) used limited abundance information to determine that smalltail sharks had low to moderate cumulative vulnerability to current gillnet and longline fisheries in the southern GOA. Yet, Bravo-Zavala *et al.* (2022) also noted that the species had the lowest rebound potential score among the small sharks considered in their study, partly due to decreases in distribution and abundance compared with past decades.

Honduras

Anecdotal reports suggest that the majority of shark species taken as bycatch in Honduran fisheries are in the family Carcharhinidae, which includes the smalltail shark (K. Alvarado, Honduras General Directorate of Fisheries and Aquaculture, personal communication, July 25, 2023); however, species-specific information is lacking. Rojas *et al.* (2000) reported that smalltail sharks represented one percent of commercial fisheries catch in Honduran waters in the 1990s. Directed fishing and exploitation of shark species has been prohibited in the maritime territorial waters of Honduras since 2011.

Venezuela

Smalltail sharks are more common in commercial landings along the northern coast of South America than in Central America. Marquez *et al.* (2019) documented that smalltail sharks comprised 3.1 percent of the elasmobranch catch in the Sucre State (Venezuela) artisanal gillnet and longline fisheries from 2016 to 2017. Arocha *et al.* (2002) reported smalltail sharks made up 8.4 percent of the catch on tuna and swordfish vessels off Venezuela from 1994 to 2000, but length measurements and location data suggest possible species misidentification. In a fishery-independent study conducted in the Gulf of Venezuela during the mid-2000s, smalltail sharks comprised 2 percent of sharks collected (Tavares and Sánchez 2012). The SRT was unable to locate any analyses regarding the sustainability of Venezuelan landings of smalltail shark.

Trinidad and Tobago

In Trinidad and Tobago, there is no quantitative data on abundance, but the limited available information suggests that smalltail sharks are the most commonly caught shark species (Shing 2006). Shing (2006) reported that Walker in his 1992 Trinidad and Tobago shark stock assessment had conducted a preliminary assessment of smalltail shark abundance and ''concluded that it was not yet at the stage of maximum exploitation.'' Castro (2011) states: ''It is the most abundant shallow water shark around Trinidad, where I have seen hundreds taken in a single bottom gillnet.'' The SRT found it concerning that the gillnet fisheries in Trinidad and Tobago seem to disproportionately capture juveniles and gravid females, which can have severe repercussions on the productivity and resilience of the population (Santana *et al.,* 2020).

Guyana, Suriname, and French Guiana

Smalltail sharks are regularly harvested in Guyanese fisheries. Smalltail sharks made up nearly 45 percent of the catch across all species collected during a study conducted between 1968 and 1970 targeting sharks from Venezuela to French Guiana, and most of the smalltail sharks were caught handlining off Guyana (Kleijn 1974). The limited information available suggests smalltail sharks were relatively common in the coastal waters of Guyana, Suriname, and French Guiana from 1968 to 1970 (Kleijn 1974). Since this study, limited shark research has been conducted in this region, but Kolmann *et al.* (2017) used DNA barcoding in Guyanese fish markets to determine the smalltail shark was the second most abundant shark species present (17.4 percent of all sharks sampled across six markets).

Brazil

The majority of information on smalltail sharks in commercial and artisanal fisheries comes from Brazil and is described in detail in the Global and Regional Abundance Estimates and Trends section above. Due to differences in study design and data limitations, the SRT was unable to quantitatively estimate declines in smalltail shark abundance in the BNC or other regions. However, several disparate sources suggest that fishing pressure has significantly reduced smalltail shark abundance over the last few decades (*e.g.,* CPUE declines in fisheries, lower relative abundance in fish markets, age-growth-based demographic models, and anecdotal accounts). Lessa *et al.* (2018), citing Stride *et al.* (1992) and Morais (2004), reported an 85 percent decline in smalltail shark catch rates from the 1990s and 2000s from trawl fishery monitoring; however, the SRT noted inconsistencies in the way this dataset was described and was not able to acquire the primary source data to verify the reported trend. Gadig (2001) reported that smalltail sharks are uncommon on the south coasts of São Paulo but had been abundant in the 1960s. In a study of the artisanal gillnet fishery in Maranhão, Santana *et al.* (2020) determined smalltail sharks were already overharvested in the 1980s. Interviews conducted by Martins *et al.* (2018) with experienced artisanal gillnet and longline fishers in the BNC indicate that smalltail sharks were once easily caught during the 1980s and 1990s, but are now scarce and found only in deeper offshore waters. The artisanal gillnet fishery targeting weakfish and mackerel fishing fleets have increased in size over the past several decades and are using longer gillnets (three-fold increase) (Mourão *et al.,* 2014; Feitosa *et al.,* 2020b). Smalltail sharks make up a major component of the bycatch within these fisheries, and the potential for bycatch has increased through time due to increasing fishing effort, including increased soak times to offset declines in target species (Mourão *et al.,* 2014; Feitosa *et al.,* 2020b), which may, in turn, increase bycatch mortality rates. In the early 2000s, smalltail sharks were the most common (46.7 percent; n=57 of 122) shark examined in BNC fish markets (da Silva Rodrigues-Filho *et al.,* 2009); however, studies conducted in the BNC from 2014 to 2018 reported that smalltail sharks had dropped to the third most abundant shark species, representing between 5.5 and 13.1 percent of the total specimens examined (Feitosa *et al.,* 2018; da Silva Ferrette *et al.,* 2019; Martins *et al.,* 2021). Although percent presence of smalltail sharks declined between these studies, the studies are not directly comparable due to confounding differences in study design and the enactment of harvest prohibitions by Brazil in 2014.

Several factors could influence commercial fisheries in Brazil and landings and sale of smalltail sharks over time (*e.g.,* gear, target species, regulations). However, the disparate sources of available information consistently suggest a steep decline in the abundance of smalltail sharks in Brazil. Overfishing in the BNC has likely continued to deplete the smalltail shark population, as fishing effort is reported to have increased in spite of declining catch rates (Feitosa *et al.,* 2019). Similar to Trinidad and Tobago, the SRT was concerned that BNC gillnet fisheries seem to disproportionately capture juveniles and gravid females.

The well-documented presence of smalltail shark product in markets (Feitosa *et al.,* 2018; da Silva Ferrette *et al.,* 2019; Martins *et al.,* 2021) suggests illegal, unreported, and unregulated

(IUU) fishing could be a substantial contributor to the overutilization of the species; however, the level of IUU fishing is unknown, and there are no available studies assessing the impacts of IUU fishing on the smalltail shark. It is likely that illegal harvest and trade of smalltail shark fins is occurring and will continue to occur into the foreseeable future. Recent information from Brazil indicates the species is still retained and brought to local markets or shipped overseas (Feitosa *et al.,* 2018; da Silva Ferrette *et al.,* 2019; Martins *et al.,* 2021). Globally, demand for shark fins appears to be decreasing; however, demand for shark meat appears to be increasing (Dent and Clarke 2015). Recent studies have found smalltail shark fins being sold in Hong Kong markets (Cardeñosa *et al.,* 2018). It is unclear if these fins are sourced from illegal shark fishing or international trade operations. Despite the recent listing of Carcharhinid sharks (including smalltail sharks) in Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix II, the efficacy of this listing may be insignificant if compliance and reporting are poor. Further, CITES measures apply only to international trade and do not address compliance with national fishing restrictions and domestic trade. Overall, given the high likelihood of underreported harvest data and inconsistencies with data collection, IUU fishing of smalltail sharks, and the evidence of significant declines of smalltail sharks in the core of their range, the SRT concluded that smalltail shark populations are likely subject to high exploitation rates throughout the majority of their range, with overutilization significantly contributing to the species' risk of extinction in the foreseeable future.

Summary

All SRT members agreed that fishing, including IUU fishing, is the greatest threat to smalltail sharks. Harvest of the species has primarily involved targeted and incidental catch in commercial and artisanal fisheries off the northern coast of South America. The best available information suggests a significant decline in smalltail shark populations within the core of the species' range along the BNC since the 1980s (Santana *et al.,* 2020), and this conclusion is supported by a number of regional experts (Pollom *et al.,* 2020). Interviews by Martins *et al.* (2018) suggest that fishing practices in the BNC have changed little over the past 4 decades, but effort has increased (Feitosa *et al.,* 2019) and harvest and sale have continued regardless of regulations (Feitosa *et al.,* 2018; da Silva Ferrette *et al.,* 2019). It is impossible to characterize with certainty the rate or extent to which the species has declined due to inconsistencies in sampling methods and data types between studies. The available fishing data from non-core areas to the north and south of BNC is insufficient to draw any conclusions about abundance trends in these areas. Based on the uncertainty in the rates of decline and the limited data from regions outside BNC, the majority of the SRT ranked commercial and artisanal fishing as a moderate threat to the extinction of the smalltail shark. However, one SRT member gave this a high threat ranking (the only high ranking awarded by any SRT member to any threat or demographic risk) due to the scale and intensity of fishing pressure in northern South America.

In conclusion, we find that overutilization, primarily from artisanal and commercial fishing, is the most significant threat to the smalltail shark, particularly within its core population area off northern Brazil. While the species is not typically a target for commercial fisheries, it is a frequent component of bycatch in gillnet, longline, and trawl fisheries, where a disproportionate number of juveniles and gravid females are captured. The intensity and unregulated nature of this fishing pressure have likely driven significant population declines, with anecdotal reports and some empirical data suggesting a substantial reduction in catch and distribution over time, including a reported 85 percent decline in trawl CPUE in northern Brazil from the 1990s to the 2000s. However, data limitations and inconsistent methodologies make it difficult to extrapolate a single estimate of population decline across the species' range and to present day. In addition to legal harvests, illegal fishing and poaching for the fin trade are documented (Feitosa *et al.,* 2018; da Silva Ferrette *et al.,* 2019; Cardeñosa *et al.,* 2020; Martins *et al.,* 2021; Liu *et al.,* 2021). This illegal activity, alongside the general lack of effective regulation and poor compliance, further exacerbates the threat to the species and complicates management efforts.

Inadequacy of Existing Regulatory Mechanisms

Smalltail shark fins and meat have high commercial value, and inadequate regulatory mechanisms can leave the species vulnerable to overharvest. All countries within the species' range have measures in place to prevent shark finning, and 10 of 31 countries either prohibit all shark harvest or have specific regulations on the harvest of smalltail sharks. However, the success of these regulations, including their enforcement, varies. Below is a summary of regulatory measures that currently apply to the species throughout its range and an analysis of whether they are inadequate to protect the species from identified threats.

U.S. Domestic Regulatory Mechanisms

In U.S. waters, there is no sign of decline in smalltail shark landings prior to harvest prohibitions, and there are no contemporary landings or illegal harvest reports indicating that compliance and enforcement are inadequate. There are a variety of regulatory measures in place to protect the species, described below.

Magnuson-Stevens Fishery Conservation and Management Act (MSA)

The MSA is the primary law governing marine fisheries management in U.S. Federal waters, which extend from the seaward boundary of each of the coastal states out to the outer boundary of the exclusive economic zone (EEZ), generally 200 nautical miles offshore. Key purposes of the MSA are to ''take immediate action to conserve and manage the fishery resources found off the coasts of the United States'' and ''promote domestic commercial and recreational fishing under sound conservation and management principles.'' 16 U.S.C. 1801(b)(1)(3). The MSA directs the Secretary to prepare fishery management plans (FMPs) with respect to highly migratory species (HMS), including sharks, in the U.S. EEZ of the Atlantic Ocean, GOA (MSA uses ''Gulf of Mexico'' to describe the area that has been renamed as Gulf of America), and Caribbean Sea (16 U.S.C. 1852(a)(3) and 16 U.S.C. 1854(f)(3)). The Atlantic HMS Management Division within NMFS develops regulations for Atlantic HMS fisheries in Federal waters (domestic) and, for U.S. citizens and vessels, on the high seas (international). Smalltail sharks are managed in the prohibited species complex. Sharks in this complex cannot be retained or possessed. Smalltail sharks were originally part of the small coastal species management unit starting in 1993 (58 FR 21931, April 26, 1993); however, they were added to the prohibited shark complex as part of the 1999 FMP for Atlantic Tunas, Swordfish, and Sharks (64 FR 29090, May 28, 1999).

Individual states establish regulations for sharks in state waters. However, as a condition of their HMS permit, federally permitted shark fishers are required to follow Federal regulations in all waters, including state waters, unless the state has more restrictive regulations. The Atlantic States Marine Fisheries Commission implemented an interstate coastal shark FMP in 2010. This interstate FMP coordinates shark management measures among all states along the Atlantic coast (Florida to Maine). States in the GOA (Alabama to Texas) and U.S. territories in the Caribbean do not have the same coordination. However, smalltail sharks have been prohibited in commercial fisheries in all U.S. states and territories since 2014 or earlier (Heublein *et al.,* 2025, appendix 1).

Shark Finning Prohibition Act of 2000

The Shark Finning Prohibition Act was enacted in December 2000 and implemented by final rule on February 11, 2002 (67 FR 6194). Section 9 of the Shark Finning Prohibition Act defines finning as the practice of taking a shark, removing the fin or fins from a shark, and returning the remainder of the shark to the sea. Section 3 of the Shark Finning Prohibition Act amended the MSA to prohibit any person under U.S. jurisdiction from: (i) engaging in the finning of sharks; (ii) possessing shark fins aboard a fishing vessel without the corresponding carcass; and (iii) landing shark fins without the corresponding carcass. Section 3 of the Shark Finning Prohibition Act also contains a rebuttable presumption that any shark fins landed from a fishing vessel or found on board a fishing vessel were taken, held, or landed in violation (of the act) if the total weight of shark fins landed or found on board exceeds 5 percent of the total weight of shark carcasses landed or found on board. The Shark Finning Prohibition Act also requires NMFS to provide Congress with an annual report describing our efforts to implement the law. The 2018 Shark Finning Report (NMFS 2018) indicated the mean value of shark fin imports dropped from $12,000 to $5,000 per metric ton from 2016 to 2017 before reaching $0 when all imports ceased in 2019 (NMFS 2023). The same reports showed that the mean value of exports decreased from $71,000 per metric ton in 2016 (NMFS 2018) to $5,515 per metric ton in 2022 (NMFS 2023). U.S. participation in the fin trade is decreasing, although this could be driven by reduced demand for shark fins worldwide (Dent and Clarke 2015).

Shark Conservation Act of 2010

The Shark Conservation Act was signed into law on January 4, 2011, and amended the High Seas Driftnet Fishing Moratorium Protection Act and the MSA to improve existing domestic and international shark conservation measures. To address concerns over the practice of shark finning, the Shark Conservation Act, among other things, prohibits any person from removing shark fins at sea (with a limited exception for smooth dogfish) or possessing, transferring, or landing shark fins unless they are naturally attached to the corresponding carcass.

Shark Fin Sales Elimination Act of 2023

The Shark Fin Sales Elimination Act became effective on December 23, 2022. The law prohibits the possession, transport, and sale of shark fins with limited, narrow exceptions. In combination with the Shark Finning Prohibition Act of 2000 and the Shark Conservation Act of 2010, this law allows fishers to transport, land, sell, and export whole sharks with fins naturally attached; however, they may not land, possess, sell, or export detached fins.

Summary of Findings: Inadequacy of Existing U.S. Domestic Regulatory Measures

Landing records of smalltail sharks in U.S. waters were rare prior to Federal harvest prohibitions. Smalltail shark landings were reported only in 9 years between 1984 (NMFS' earliest landing record) and 2000 (the earliest implementation of Federal prohibitions). Adoption of the prohibited shark complex from the 1999 FMP for Atlantic Tunas, Swordfish, and Sharks by all U.S. states and territories (2014 or earlier) has reduced the harvest of smalltail sharks to likely rare incidents of misidentification. Smalltail sharks have only been reported in one landings record since the adoption of harvest prohibitions in all U.S. waters (NMFS 2018). Notably, this recreational landings record could have been a case of misidentification or unawareness of regulations.

Implementation of the Shark Finning Prohibition Act, the Shark Conservation Act, and the Shark Fin Sales Elimination Act have resulted in declines in U.S. exports of shark fins. Additionally, 14 U.S. states and 3 U.S. territories have enacted legislation controlling shark finning by banning the possession and sale of shark fins (Heublein *et al.,* 2025, appendix 1). These state laws have reduced U.S. landings of sharks and therefore U.S. trade and consumption of shark fins. However, it is important to note that the United States has traditionally played a relatively minimal role in the global shark fin trade (0.3 and 0.4 percent of global imports and exports in U.S. dollars according to Ferretti *et al.* (2020)). Measures prohibiting the possession and sale of shark fins may provide some additional conservation benefits to sharks, including the smalltail shark, by discouraging the landing of any sharks.

International Regulatory Mechanisms

Regulations in Brazil

Brazil is the only country outside of the United States and its territories with regulations specifically addressing smalltail sharks. Smalltail sharks were listed as critically endangered on the Brazilian National Red List in 2014 (Ordinance 445/2014) and this designation was reaffirmed in the 2023 update (Ordinance 354/2023). The listing prohibits the capture, transport, storage, processing, and commercialization of the species. Monitoring and enforcement of these regulations, however, is limited and implementation status is considered uncertain (Begossi *et al.,* 2017; Pollom *et al.,* 2020). Available reports suggest that regulations to protect smalltail sharks from harvest in Brazil are not effectively enforced, as the species continues to be identified in Brazilian fish market samples. Feitosa *et al.* (2018) evaluated samples collected between 2014 and 2016 from the major BNC fishing ports of Belém (n=26), Bragança (n=55), Vigia (n=13), Carutapera (n=14), Raposa (n=53), Tutoia (n=219) and broadly across Amapa state (n=48) in 2007 and found that smalltail shark fins comprised 9.8 percent of all identified samples. Similarly, da Silva Ferrette *et al.* (2019) evaluated the species composition of three large seizures of shark fins conducted by Brazilian law enforcement in Belém, Natal, and São Paulo and found that smalltail shark fins comprised 13.1 percent of all identified samples (n=98/747).

United Nations Convention on the Law of the Sea (UNCLOS)

The UNCLOS defines the rights and responsibilities of signatory nations with respect to their use of the world's oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources. The importance of collaborative management for highly migratory species is addressed in Article 64, which states: ''The coastal State and other States whose nationals fish in the region for the highly migratory species listed in Annex I shall cooperate directly or through appropriate international organizations with a view to ensuring conservation and promoting the objective of optimum utilization of such species throughout the region, both within and beyond the exclusive economic zone.'' Carcharhinid sharks (including smalltail sharks) are listed in Annex I, Highly Migratory Species, of UNCLOS and, therefore, benefit from the cooperation required under Article 64. These provisions require party nations to regulate activities of vessels flying their flag and give them the right to monitor and inspect vessels of other nation parties to ensure compliance with internationally agreed fishing regulations, including regulations established by regional fishery management organizations (RFMOs).

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

CITES is an international convention that aims to ensure that international trade in animals and plants does not threaten their survival, and Carcharhinid sharks (including smalltail sharks) were included in Appendix II of CITES on November 25, 2023. Appendix II includes species not necessarily threatened with extinction, but whose trade must be controlled to ensure utilization is compatible with their survival. Thus, international trade in smalltail sharks is allowed with an export permit, re-export certificate, or introduction from the sea (IFS) certificate granted by the proper management authority. These permits or certificates may be granted if the trade is found to be non-detrimental to the species' survival in the wild and the specimen was found to have been legally acquired. An IFS certificate applies when a specimen is taken on the high seas (not under any state's jurisdiction) and landed in a state. An analysis of trade data and fin samples from a Hong Kong market led Cardeñosa *et al.* (2018) to conclude that compliance with reporting of trade of CITES-listed shark species was low in 2015 through 2016. However, due to the recency of the species' inclusion in Appendix II, compliance with CITES reporting and permitting requirements for this species is unknown.

International Shark Fishing and Finning Regulations

Finning bans and regulations have been implemented by several countries and RFMOs (Heublein *et al.,* 2025, appendix 1). These finning bans and regulations range from requiring fins to remain attached to the body to allowing fishers to remove shark fins if the weight of the fins does not exceed 5 percent of the total weight of shark carcasses landed or found onboard. This latter measure limits shark finning while allowing processing flexibility to the fishing industry (Shiffman and Hammerschlag 2016). All of the relevant RFMOs prohibit the retention of fins onboard that weigh more than 5 percent of the weight of sharks to curb the practice of shark finning. Under the fin-to-carcass ratio measure, landing sharks that do not have fins attached to the body makes it difficult to match fins to a carcass (Lack and Sant 2009). This can allow for switching the fins of species fishers can legally land the carcasses of for the fins of prohibited but more valuable species, a practice called ''high grading'' (Shiffman and Hammerschlag 2016). Controls on finning also lack the capacity to provide differential protection to those shark species most at risk from overfishing and have no impact on the mortality of sharks that are discarded because their fins have either no or very low market value (Lack and Sant 2009). Several countries have enacted complete shark fishing bans (*i.e.,* bans on retention and possession of sharks and shark products), including Honduras (2010), The Bahamas (2011), the Cayman Islands (2015), the British Virgin Islands (2015), Bonaire (2015), Sabah (2015), St. Maarten (2016), and the Dominican Republic (2017) (Porcher and Darvell 2022). Mexico implemented a seasonal (May through June) ban on shark fishing in the GOA and Caribbean starting in 2012. International laws and regulations intended to curb finning are not always effectively enforced by countries and RFMOs (Biery and Pauly 2012). Despite these measures, smalltail shark fins continue to be found in illicit shark fin stockpiles in Brazil, which are likely bound for Asian markets (da Silva Ferrette *et al.,* 2019; Cardeñosa *et al.,* 2020; Liu *et al.,* 2021).

Summary of Findings: Inadequacy of Existing International Regulatory Measures

Although international agreements under the authority of UNCLOS, CITES, and RFMOs play an important role in facilitating cooperation between participating countries, challenges in identifying vessels, ports, and authorities and at-sea enforcement limit their efficacy at controlling overutilization of smalltail shark. The detection of smalltail shark fins in Hong Kong markets in 2018 and illicit shark fin stockpiles in Brazil after shark finning was banned throughout most of the species range (da Silva Ferrette *et al.,* 2019; Cardeñosa *et al.,* 2020) suggests continued noncompliance with these international agreements.

The efficacy of regulations within the EEZ of specific fishing nations may face similar challenges, and it is difficult to validate compliance. Smalltail sharks appear to be or have once been common in multiple South American and Caribbean countries (*i.e.,* Venezuela, Guyana, and Trinidad and Tobago). However, there are no recent surveys or monitoring data in these countries to estimate abundance trends. Thus, we are unable to assess if the regulations in these countries are adequate to protect the smalltail shark from overfishing.

Although mostly based on disparate and anecdotal data sources, all available reports indicate the abundance of smalltail sharks in Brazil (specifically the BNC) is in decline due to both directed harvest and bycatch. The lack of monitoring data and enforcement along largely undeveloped coastlines prevents the development of fisheries management plans that could mitigate the threat of overutilization. The reduced abundance, continued landings (Feitosa *et al.,* 2018), and finning of the species (da Silva Ferrette *et al.,* 2019) all suggest that the harvest and shark finning regulations are inadequately enforced in Brazil, the core of the species' range. The fisheries statistics program in Brazil was discontinued in 2011 (Barreto *et al.,* 2017), and fishing effort has increased with declining catch rates and little oversight (Santana *et al.,* 2020). These varying lines of evidence all suggest that existing regulatory mechanisms are inadequate to effectively address the threat of overutilization.

Ultimately, the SRT was not able to conclusively assess the adequacy of current regulations and compliance outside of Brazil and U.S. waters. However, given the available information that is indicative of poor enforcement in the core range (*e.g.,* declining trends, recent presence in fish markets, and fin seizures) and the probable issues with monitoring and enforcement throughout the Amazonian Coast, five of six SRT members concluded that the threat of inadequate existing regulatory mechanisms is a moderate risk to the species.

We agree with the SRT's conclusion that although various countries within the smalltail shark's range, including Brazil, have established regulations to manage shark stocks and prevent overfishing, the implementation and enforcement of these measures are likely inadequate to address the threat of overutilization, especially in the species' core habitat. Brazil, for instance, has prohibited the harvest of smalltail sharks since 2014; however, this regulation appears poorly enforced, with smalltail sharks and their fins still commonly found in local markets and law enforcement seizures. While some international and national regulations (*e.g.,* in the United States and Honduras) are deemed sufficient, their effectiveness across the species' broad and multi-jurisdictional range is difficult to assess. The lack of monitoring data and a clear understanding of the full extent of illegal harvest and poaching prevent the development of a comprehensive management plan. As a result, the inadequacy of both existing regulations and their enforcement, particularly in Brazil, remains a significant threat to the species.

Overall Extinction Risk Assessment

Guided by the results from their demographic risk analysis and threats assessment, the SRT members used their informed professional judgment to make an overall extinction risk assessment for the smalltail shark. Here, we first review the SRT's findings and next discuss our conclusions regarding the risk of extinction to the smalltail shark. The SRT used a likelihood point (Forest Ecosystem Management Assessment Team 1993) method to evaluate the overall risk of extinction and express uncertainty. Each SRT member distributed 10 likelihood points among the following three extinction risk categories:

Low risk: A species is at low risk of extinction if it is not at moderate or high level of extinction risk (see moderate risk and high risk below). A species may be at low risk of extinction if it is not facing threats that result in declining trends in abundance, productivity, spatial structure, or diversity. A species at low risk of extinction is likely to show stable or increasing trends in abundance and productivity with connected, diverse populations.

Moderate risk: A species is at moderate risk of extinction if it is on a trajectory that puts it at a high level of extinction risk in the foreseeable future (see description of high risk below). A species may be at moderate risk of extinction due to current or projected threats or declining trends in abundance, productivity, spatial structure, or diversity.

High risk: A species with a high risk of extinction is at or near a level of abundance, productivity, spatial distribution/connectivity, or diversity that places its continued persistence in question. The demographics of a species at such a high level of risk may be highly uncertain and strongly influenced by stochastic or depensatory processes. Similarly, a species may be at high risk of extinction if it faces clear and present threats (*e.g.,* confinement to a small geographic area; imminent destruction, modification, or curtailment of its habitat; or disease epidemic) that are likely to create imminent and substantial demographic risks.

Based on the demographic factors contributing to risk, the evidence of significant declines in abundance and overutilization in fisheries, and inadequacy of current regulations and enforcement to control that threat, the SRT assigned the majority of likelihood points (53 percent) to the moderate risk category. Due to uncertainty caused by the lack of landings data and inconsistent study methodologies, team members placed many of their likelihood points in the low risk (42 percent) and, to a much lesser extent, high risk (5 percent) categories. Overall, three of six (50 percent) SRT members assigned six or more of their likelihood points to the moderate risk category.

The SRT's primary concerns for smalltail shark were the cumulative threat of overutilization and the inadequacy of existing regulatory mechanisms to address it. While there is not currently a targeted fishery for smalltail sharks, the species has historically comprised a significant component of retained bycatch in various artisanal fisheries throughout their core range (Almeida *et al.,* 2011). The threat of overutilization is exacerbated by the lack of enforcement and monitoring of fisheries regulations in the core of the range off Brazil and potentially across the broader northern South America region. Although smalltail shark life history studies are outdated and potentially inapplicable for assessing the current population, the consistent reports of population decline from various sources and the limited life history information suggest that the species has relatively low population growth. However, the magnitude of population decline could not be accurately quantified, it was unclear whether declines had occurred in several areas within the range, and the growth potential was higher than most medium-growing shark populations. In their overall extinction risk assessment, the SRT was divided in their opinion of whether the species is on a trajectory that would put it at a high level of extinction risk in the foreseeable future, with three members assigning half or more of their points to moderate or high risk and three members assigning half or more of their points to low risk.

The SRT concluded that available information does not demonstrate that the smalltail shark is currently at or near a level of abundance, productivity, spatial structure, or diversity that places its persistence in question. Despite multiple lines of evidence (Gadig 2001; Feitosa *et al.,* 2018; Martins *et al.,* 2018; da Silva Ferrette *et al.,* 2019; Martins *et al.,* 2021; Bravo-Zavala *et al.,* 2022) suggesting declines, potentially of greater than 90 percent (Santana *et al.,* 2020) since the 1980s, smalltail sharks continue to be relatively abundant in BNC fish markets (da Silva Rodrigues-Filho *et al.,* 2009; Feitosa *et al.,* 2018; da Silva Ferrette *et al.,* 2019; Coelho *et al.,* 2025). While there is compelling evidence of localized decreases in smalltail shark abundance, uncertainty in the current and projected abundance to 2050 was a major reason three of six SRT members assigned at least half of their points to the low category.

The near even split between low and moderate extinction risk scores was also driven by the uncertainty regarding the future of smalltail shark management. The SRT found that regulatory controls for smalltail shark populations are generally increasing; however, the efficacy of those controls is questionable. If regulations were adequately enforced, then the increasing regulations seen in most parts of the smalltail sharks' range may facilitate an increase in abundance. However, if direct harvest, including illegal harvest, continues unabated, there is a chance of smalltail shark abundance declining in the core range in the foreseeable future. Furthermore, in fisheries with high bycatch of smalltail sharks, the target species are also experiencing substantial declines in numbers, which has resulted in extended soak times for fishing gear (Morãu *et al.,* 2014; Feitosa *et al.,* 2019) and an increase in the likelihood of bycatch mortality. These trends could result in a higher risk of extinction for this species.

Overall, after considering the best available scientific and commercial information, including the uncertainty in that information, the SRT collectively assessed that the smalltail shark is most likely at a moderate risk of extinction throughout its range. The SRT concluded that declining abundance, limited reproductive capacity, and trends in the threats of overutilization (through commercial, artisanal, and IUU fishing) and inadequate management and enforcement put smalltail shark on a trajectory towards a high level of extinction risk in the foreseeable future. The SRT assigned an average of 5.3 ± 1.6 points to moderate and 4.2 ± 1.8 points to low risk, reflecting substantial uncertainty whether the species was at low or moderate risk. The SRT members provided narratives supporting their overall risk recommendations. A common theme was that the limited and often contradictory life history data and the presence of numerous sources of bias in existing studies makes a definitive conclusion on the severity and urgency of the extinction risk impossible. The narratives provided by SRT members indicate they spread points across categories to reflect their significant uncertainty about population status into their risk scoring, but most did not think there was sufficient information to definitively support a recommendation of moderate extinction risk.

In making our determination with respect to whether the smalltail shark warrants listing under the ESA, we considered the SRT's review, along with the best available scientific and commercial data, in light of the ESA's standards for making listing determinations. We agree with the SRT's conclusion that the most prominent threat to smalltail sharks is overutilization, primarily from unregulated artisanal and commercial fishing that disproportionately harvests vulnerable juveniles and gravid females, particularly in the species' range off the BNC. We agree with the SRT's conclusion that smalltail shark population abundance has likely declined in the BNC and agree that the magnitude of this decline is impossible to quantify due to a pervasive lack of robust scientific data. We find substantial uncertainty and conflicting information with regards to the abundance of the smalltail shark. Despite apparent declines in the BNC (Santana *et al.* 2020), and despite being a prohibited species in Brazil, the species still commonly appears in BNC markets (Feitosa *et al.,* 2018; da Silva Ferrette *et al.,* 2019; Martins *et al.,* 2021) and is commonly caught in all areas of the BNC (Coelho *et al.,* 2025). Limited data from 1985 to 2000 (Shing 2006) and from fish markets (Kolmann *et al.,* 2017) indicate the species may be relatively common in Trinidad and Tobago and Guyana, respectively. We find there is adequate information to indicate the species has declined from historical levels and is likely overfished; however, there is substantial uncertainty in the magnitude of the decline and the demographic consequences of the decline.

We agree with the SRT's conclusion that the demographic consequences of overutilization and inadequate regulatory controls for smalltail shark are uncertain. Smalltail shark are capable of inhabiting a broad geographic range of suitable habitats (Feitosa *et al.,* 2020b), including multiple nursery habitats (Feitosa *et al.,* 2020a), and are opportunistic predators with a generalist diet (Lessa and Almeida 1997). Demographic plasticity is typically associated with resilience for species (Bradshaw 1965; Stearns 1976; Warner and Chesson 1985; Taylor *et al.,* 2019). Additionally, despite their potentially low productivity relative to most small coastal sharks (Santana *et al.,* 2020), we find that relative to most Carcharhinid sharks, including several species that support directed fisheries, smalltail sharks mature at a relatively young age (6 years; Lessa *et al.,* 1999), have a protracted mating season (Castro 2011b), and produce a relatively large brood (Lessa *et al.,* 1999; de Campos Santos *et al.,* 1999; Castro 2011b). These traits give them an intrinsic population growth potential exceeding that for most shark species characterized as having medium-growing populations (Cortes 2016; Farmer 2025). Given their relatively rapid reproductive rates and shorter generation times, we expect smalltail shark populations to be better able to compensate for individuals removed through harvesting (Myers and Mertz 1998) than most shark species, particularly in the absence of a directed fishery; however, empirical data to support this conclusion is lacking. Conversely, we note that the species appears to have lower reproductive potential than most small coastal sharks and demographic modeling suggests a potentially extreme decline (Santana *et al.,* 2020). Overall, there is no indication that global abundance has declined to the point that reproductive success of the species has declined or inbreeding has resulted (Tavares *et al.,* 2013), nor is there evidence of other depensatory processes associated with small populations. However, we note that the only genetic study conducted (Tavares *et al.,* 2013) was small in scale and not specifically designed to evaluate demographic risk.

We must determine on the basis of the best scientific and commercial data available whether a species is at risk of extinction, and we conclude that the available evidence is insufficient to indicate the smalltail shark is in danger of extinction or likely to become so within the foreseeable future. The Status Review Report, the narratives and extinction risk recommendation of the Status Review Team, and the best scientific information available, as described above, emphasize the conflicting information and substantial uncertainty surrounding the status of this species. That uncertainty was a primary factor considered by the SRT in making a moderate risk recommendation, and we find that the demographic and threats-based evidence supporting the SRT's moderate risk recommendation is insufficient to indicate smalltail sharks are in danger of extinction or likely to become so within the foreseeable future throughout their range.

Determination of Status Throughout a Significant Portion of Its Range

As noted previously, a species may warrant listing under the ESA if it is in danger of extinction or likely to become so in the foreseeable future throughout all or a significant portion of its range. Thus, a species may be endangered or threatened throughout the entirety of its range, or a species may be endangered or threatened throughout only a significant portion of its range. In 2014, NMFS and USFWS finalized a policy that provided the agencies' interpretation of the phrase ''significant portion of its range.'' (''SPR Policy,'' 79 FR 37578, July 1, 2014). Certain aspects of the SPR Policy have been invalidated by courts (*e.g., Desert Survivors* v. *DOI,* 336 F. Supp. 3d 1131 (N.D. Cal. 2018), *Center for Biological Diversity (CBD)* v. *Everson,* 435 F. Supp. 3d 69 (D.D.C. Jan. 28, 2020)). Given our conclusion that available evidence is insufficient to indicate smalltail sharks are in danger of extinction or likely to become so within the foreseeable future throughout the species' range, we evaluated whether there is any portion of the species' range for which both (1) the species is at a moderate or high risk in that portion and (2) the portion is significant. Both criteria must be met to allow for listing the species based on its status in the SPR.

As discussed in the SPR Policy, theoretically, there are an infinite number of ways to divide a species' range into portions. Because the majority of relevant smalltail shark data (*e.g.,* population trends, fisheries regulations) were collected or summarized at the jurisdiction level and the primary identified threats to smalltail sharks (*i.e.,* overutilization, illegal harvest, and inadequate regulations) are managed at the jurisdiction level, the SRT initially evaluated portions at the level of jurisdictions. However, the SRT found a paucity of demographic information or information on threats for the smalltail shark outside of Brazilian waters. Even in Brazil's coastal waters, the reported quantitative population trends require accepting considerable assumptions (see Abundance and Growth Rate and Productivity in Extinction Risk Results and Conclusions). Brazilian waters, specifically those of the BNC, are the reported core distribution of the smalltail shark (Feitosa *et al.,* 2020b;

Santana *et al.,* 2020), based on their relatively common encounters in fisheries in that region (Feitosa *et al.,* 2018; da Silva Ferrette *et al.,* 2019; Coelho *et al.,* 2025). The apparent relative abundance of smalltail sharks within the BNC suggests this region may serve as the source population for smalltail sharks on the periphery of their range. The SRT assessed extinction risk in Brazil and assigned 55 percent of overall extinction risk points to the moderate risk category and 38 percent to the low risk category. On average, the SRT assigned 5.5 ± 1.4 points to moderate risk and 3.8 ± 1.3 points to low risk out of 10 possible points, with their point spread reflecting uncertainty in the underlying data used to determine extinction risk. The majority of scientific studies involving smalltail shark considered in the SRT's range-wide recommendation originated in Brazil, and specifically the BNC; as such, the SRT's scoring was nearly identical with their range-wide scoring.

Based on the best available scientific and commercial information, we agree with the SRT that the BNC likely represents the historical core population for smalltail sharks. We agree with the SRT's conclusion that although smalltail shark population abundance has likely declined in the BNC, the magnitude of this decline is impossible to quantify due to a pervasive lack of robust scientific data. We note that despite possibly extreme declines (Santana *et al.,* 2020) and despite being a prohibited species in Brazil not directly targeted by any fishery, the species still commonly appears in BNC markets and catches (Feitosa *et al.,* 2018; da Silva Ferrette *et al.,* 2019; Martins *et al.,* 2021; Coelho *et al.,* 2025). The common appearance of smalltail sharks in BNC markets suggests inadequate enforcement but also somewhat contradicts demographic projections predicting population collapse in the region (Santana *et al.,* 2020). The smalltail shark exhibits a broad distribution with a generalist diet and multiple nursery habitats and possesses key life-history traits—including early maturity, large brood size, and medium population growth relative to most shark species (Cortés 2016; Farmer 2025)—that confer demographic plasticity and resilience. We conclude that there is reasonable evidence to suggest that smalltail sharks are likely overharvested off Brazil, despite the lack of a directed fishery. However, we find that the evidence supporting the SRT's moderate risk recommendation for the Brazil portion is insufficient to overcome the substantial contradictions and uncertainty noted above. We find that, similar to the range-wide extinction risk assessment, which was primarily informed by data from studies conducted in the BNC, uncertainty was a primary factor considered by the SRT in making a moderate risk recommendation for the Brazil portion of the range. We find that the demographic and threats-based evidence supporting the SRT's moderate risk recommendation is insufficient to support a listing recommendation under the ESA. We conclude that the available evidence is insufficient to indicate smalltail sharks are in danger of extinction or likely to become so within the foreseeable future in the Brazil portion of the range.

The SRT evaluated 15 total jurisdictions in the range of smalltail shark for extinction risk (table 4 in Heublein *et al.,* 2025), including Brazil, and assigned the majority of points to moderate risk for all jurisdictions other than the United States, which was scored as mostly low risk. The SRT noted that for jurisdictions other than Brazil in northern South America (*e.g.,* Guyana, Suriname, French Guiana, Trinidad and Tobago), demographic data are extremely limited to inform a risk determination. No jurisdiction received more moderate risk points from the SRT than Brazil. Mexico received 53 percent moderate risk points, and 10 other jurisdictions received 50 percent. Most jurisdictions received few (3 to 7 percent) high risk points. Nicaragua received 50 percent moderate risk points but also received 12 percent high risk points. The high risk points assigned to Nicaragua were assigned by one SRT member due to concerns about the lack of data and reflected their uncertainty in assigning risk points. All jurisdictional portions evaluated were consistent with the range-wide recommendation of moderate risk with the exception of U.S. waters, which received a majority (58 percent) of low risk points. The SRT considered combining portions; however, given that no portions were found to have elevated risk of extinction relative to the species' risk throughout its range, the SRT concluded that any combination of the jurisdiction-level portions would have the same or lower extinction risk than the jurisdiction-level portions from which it was comprised. Because no portions exceeded the SRT's moderate risk recommendation for the range-wide listing, the SRT did not evaluate any portions for significance.

We have considered the SRT's analysis and partially agree with their conclusions regarding the risk of extinction for smalltail shark in different portions of the range. We concur that U.S. waters, with extremely limited historical occurrence of the species and considerable regulations affording effective protections, are low risk to the species. We find no evidence of decline off Trinidad and Tobago (Shing 2006) and Guyana (Kolmann *et al.,* 2017). We conclude that smalltail sharks within these portions are facing low risk of extinction.

For Mexico, a study by Bravo-Zavala *et al.* (2022) suggested low to moderate cumulative vulnerability to current gillnet and longline fisheries, with low documented catch rates supporting the low vulnerability designation. Bravo-Zavala *et al.* (2022) note that fishers indicated the species was very abundant in Campeche before the 1990s whereas it only accounted for 2% of the total shark catches in the area in the 1990s (Castillo-Géniz *et al.,* 1998). Bravo-Zavala *et al.* (2022) suggest that cumulative susceptibility and cumulative vulnerability for the species was likely higher before the 1990s than after. Although this finding suggests a decrease in abundance and/or distribution for smalltail shark populations in the Campeche Bank area, insufficient information is available to determine the magnitude or significance of this decline for this small coastal shark species with relatively high population growth potential. We conclude there is insufficient information to assign an overall risk recommendation to the Mexico portion. Similarly, we find no information regarding demographic factors or trends for smalltail shark in Belize, Columbia, Costa Rica, French Guiana, Guatemala, Honduras, Nicaragua, Panama, Suriname, or Venezuela. We conclude that the available evidence is insufficient to indicate smalltail sharks are in danger of extinction or likely to become so within the foreseeable future in these portions of the range.

Distinct Population Segments Analysis

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 policy issued by the USFWS and NMFS provides criteria for determining DPSs (''DPS Policy,'' 61 FR 4722, February 7, 1996). The joint DPS Policy identifies two elements that must be considered when identifying a DPS: (1) the discreteness of the population segment in relation to the remainder of the taxon to which it belongs and (2) the significance of the population segment to the remainder of the taxon to which it belongs. A population segment may be considered discrete if it is markedly separate from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors, or if it is delimited by international governmental boundaries. Genetic differences between the population segments being considered may be used to evaluate discreteness. If a population segment is considered discrete, its biological and ecological significance must then be evaluated. Significance is evaluated in terms of the importance of the population segment to the overall welfare of the species.

The petition to list the smalltail shark did not provide information regarding potential DPSs of the smalltail shark or request that we consider listing any particular population segment. To determine whether any discrete populations of smalltail sharks exist, the SRT examined the best available information on smalltail shark population structure, including tagging, tracking, and genetics studies. Only one genetic study on the smalltail shark exists (Tavares *et al.,* 2013), and that study did not examine population structure and only examined smalltail shark samples collected off of the Brazilian state of Pará. There was no available information on smalltail shark population structure, movement ecology, or migratory behavior. The team found no information indicating that major barriers to the species' dispersal that would result in marked separation between potential populations or that smalltail sharks were not a panmictic population across its known range. Overall, the SRT, based on the best available information, did not find evidence to support the existence of discrete populations of smalltail sharks. We agree that there are no population segments of the smalltail shark that would qualify as a DPS under the DPS Policy.

Similarity in Appearance

The petition to list the smalltail shark requested that we use the authority under section 4(e) to list species that are similar in appearance to smalltail sharks. Section 4(e) of the ESA (16 U.S.C. 1533(e)) provides that the Secretary may, by regulation of commerce or taking, and to the extent he deems advisable, treat any species as an endangered or threatened species even though it is not listed pursuant to section 4 of the ESA if: (A) such species so closely resembles in appearance, at the point in question, a species that has been listed pursuant to section 4 of the ESA that enforcement personnel would have substantial difficulty differentiating between the listed and unlisted species; (B) the effect of this substantial difficulty is an additional threat to an endangered or threatened species; and (C) such treatment of an unlisted species will substantially facilitate the enforcement and further the policy of this chapter. As previously described in the Life History, Ecology, and Status of the Petitioned Species section, sharks of the genus *Rhizoprionodon* (sharpnose sharks) are similar to the smalltail shark in size and placement of the second dorsal fin in relation to the origin of the anal fin. However, since we have determined that smalltail shark does not warrant listing as threatened or endangered, we have similarly determined not to treat sharpnose sharks as an endangered or threatened species under section 4(e).

Final Listing Determination

Section 4(b)(1) of the ESA requires that NMFS make listing determinations based on the best scientific and commercial data available after conducting a review of the status of the species and taking into account those efforts, if any, being made by any state or foreign nation, or political subdivisions thereof, to protect and conserve the species. We have independently reviewed the best available scientific and commercial information, public comments submitted in response to the notice of the initiation of a status review (88 FR 33075, May 23, 2023), the status review report (Heublein *et al.,* 2025), and other published (*e.g.,* Coelho *et al.,* 2025; Farmer 2025) and unpublished information, and we have consulted with species experts and individuals familiar with smalltail shark. We considered each of the statutory factors to determine whether it presented an extinction risk to the smalltail shark on its own, now or in the foreseeable future, and also considered the combination of those factors to determine whether they collectively contribute to the extinction risk of the species, currently or in the foreseeable future. As previously explained, we could not identify a significant portion of the species' range that is threatened or endangered, nor did we find that any DPSs of the species exist. Therefore, our determination is based on a synthesis and integration of the foregoing information, factors and considerations, and their effects on the status of the species throughout its entire range.

We have determined the smalltail shark is not presently in danger of extinction, nor is it likely to become so in the foreseeable future throughout all or a significant portion of its range. Therefore, the smalltail shark does not meet the definition of a threatened species or an endangered species and does not warrant listing as threatened or endangered. This finding is consistent with the statute's requirement to base our findings on the best scientific and commercial data available, summarized and analyzed above.

This is a final action, and, therefore, we are not soliciting public comments.

References

A complete list of the references used in this 12-month finding is available upon request, and also available at: *https://www.fisheries.noaa.gov/species/smalltail-shark.*

Peer Review

In December 2004, the Office of Management and Budget (OMB) issued a Final Information Quality Bulletin for Peer Review establishing minimum peer review standards, a transparent process for public disclosure of peer review planning, and opportunities for public participation. The OMB Bulletin, implemented under the Information Quality Act (Pub. L. 106–554) is intended to enhance the quality and credibility of the Federal Government's scientific information, and applies to influential or highly influential scientific information disseminated on or after June 16, 2005. To satisfy our requirements under the OMB Bulletin, we received peer reviews from three independent peer reviewers on the status review report (Heublein *et al.,* 2025), which are available online (*https://www.noaa.gov/organization/information-technology/peer-review-plans*). All peer reviewer comments were addressed prior to dissemination of the final status review report and publication of this 12-month finding. We conclude that these experts' reviews satisfy the requirements for ''adequate [prior] peer review'' contained in the bulletin (sec. II.2.).

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

Dated: July 23, 2026.

Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

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