

Species Status Assessment

Common Name: Longfin mako shark

Date Updated: 12/4/2023

Scientific Name: *Isurus paucus*

Updated by: Tajrian Sarwar, MISC

Class: Chondrichthyes

Family: Lamnidae

Species Synopsis (a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):

Globally, there is a lack of information regarding the abundance, distribution, and life history of the longfin mako. The longfin mako is a pelagic oceanic shark species which has a wide distribution, inhabiting tropical and warm temperate waters at depths of 760 – 1,750 meters. The longfin mako likely occurs globally, but distribution data is lacking (Rigby 2019). Locally, there is no information pertaining to their presence in New York waters. Although historical catch records of longfin mako along the U.S. Atlantic coast do exist (Dodrill and Gilmore 1979), this species is rare leading to vast uncertainty in, or a general lack of abundance estimates (Camhi et al. 2009). Additionally, the Longfin Mako is commonly misidentified as the Shortfin Mako which further complicates the assessment of this species. This species is large, reaching over four meters in length and is classified as being oceanic pelagic with low fecundity (two to eight pups per litter) (Reardon et al. 2006). However, it is known to be caught as bycatch in longline tropical pelagic fisheries, particularly offshore longlining (Queiroz et al. 2006). Further, most records of catch come from Portugal, Spain, and South Africa (Camhi et al. 2009). Based on the current information in the literature, this species is found in warmer waters far south of New York. It is possible it could be found on rare occasion in the New York Bight. However, New York specific conservation efforts would likely have no significant impact on this species. It is therefore, recommended that this species be removed from the list of Species of Greatest Conservation Need.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed _____ **Candidate:** No _____

ii. **New York:** Not Listed _____

b. Natural Heritage Program

i. **Global:** G2G3 imperiled _____

ii. **New York:** Not Ranked _____ **Tracked by NYNHP?:** No _____

Other Ranks:

-New York 2025 SGCN status: Species of Greatest Conservation Need

-IUCN Red List: Endangered A2d

-Northeast Regional SGCN:

-Convention on the Conservation of Migratory Species of Wild Animals (CMS): Appendix II

-NOAA, Fisheries: Protected under the Consolidate Highly Migratory Species Fisheries Management Plan (FMP)

Status Discussion:

The Longfin Mako is a widely distributed but apparently rare species as it is infrequently encountered. This species likely occurs circumglobally, however studies on this species' distribution are sparse. This species is very susceptible to decline due to its global rarity and low fecundity. Deficiency of data regarding this species' distribution, abundance, and poor documentation of landings further raises serious conservation concerns, especially given that it is caught globally in targeted fisheries and as bycatch in pelagic longline, purse seine, and gillnet fisheries (Rigby 2019). The limited data available indicates that the longfin mako is experiencing strong declines, like its counterpart the shortfin mako. The longfin mako has been listed as Endangered by the IUCN for these reasons (Rigby 2019).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	Unknown			-
Northeastern US	Yes	Unknown	Unknown			-
New York	No data	-	-		Not Listed	No
Connecticut	No data	-	-		Not Listed	No
Massachusetts	No data	-	-		Not Listed	No
New Jersey	No data	-	-		Not Listed	No
Pennsylvania	No data	-	-		Not Listed	No
Vermont	No	-	-			-
Ontario	No data	-	-		Not Listed	No
Quebec	No data	-	-		Not Listed	No

Column options

Present?: Yes; No; Unknown; No data; (blank) or Choose an Item

Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item

SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York (*specify any monitoring activities or regular surveys that are conducted in New York*):

New York does not currently have any monitoring activities or regular surveys specific to the longfin mako shark or any other shark species.

Trends Discussion (*insert map of North American/regional distribution and status*):

The longfin mako is listed as vulnerable globally due to its low fecundity and global rarity. Since it is caught as bycatch in the same fisheries as the shortfin mako, it is assumed to be experiencing a similar decline in abundance as the shortfin mako. Confusion between the two species often occurs and is most likely contributing to severe underreporting of longfin mako catch (Rigby 2019, Camhi et al. 2009). There are no data for the total abundance, population size, or population

structure for the Longfin Mako. The only population data that is available for this species is standardized CPUE observer data in the Western Atlantic Ocean from the United States pelagic longline fishery. Based on this data, trend analyses estimate that Longfin Mako populations in the Northwestern Atlantic have experienced significant declines of 93.5% over 75 years (Rigby 2019).

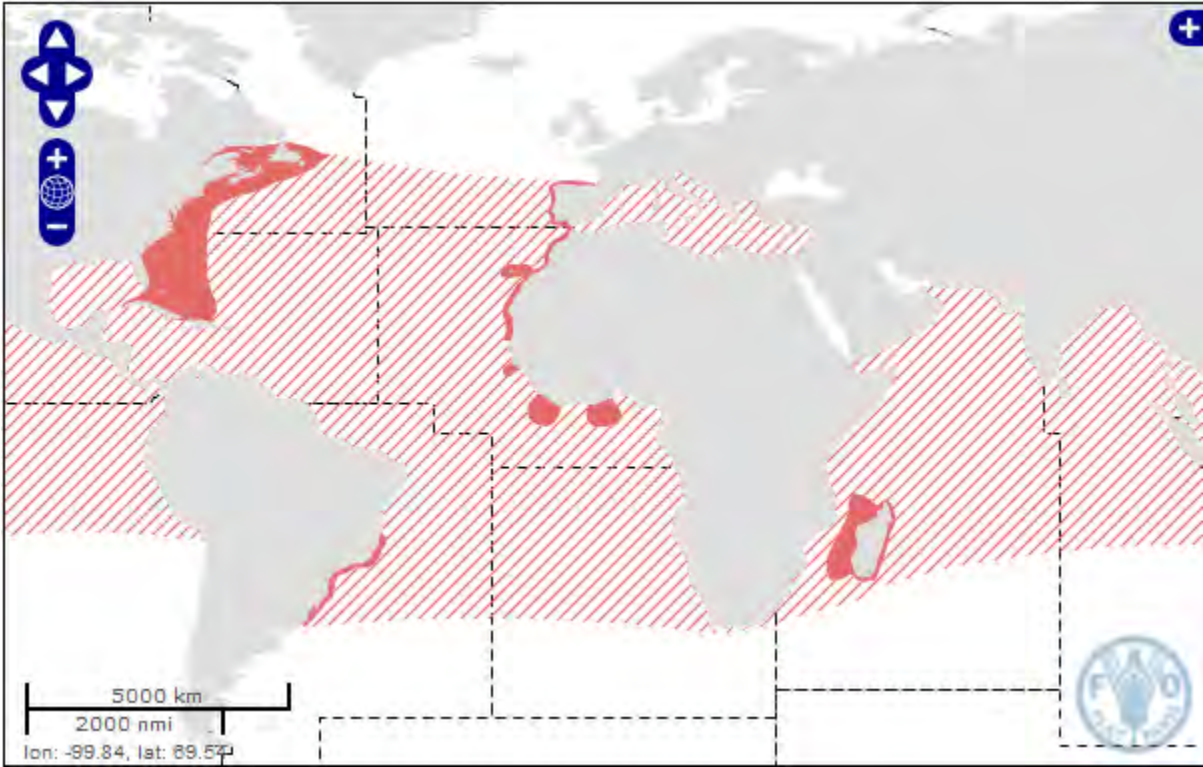


Figure 1. Global distribution of the longfin mako shark, *Isurus paucus* (FAO 2013)

North Atlantic: CPUE (1992–2015), Northwest Atlantic, USA longline fishery, Delta GLM.

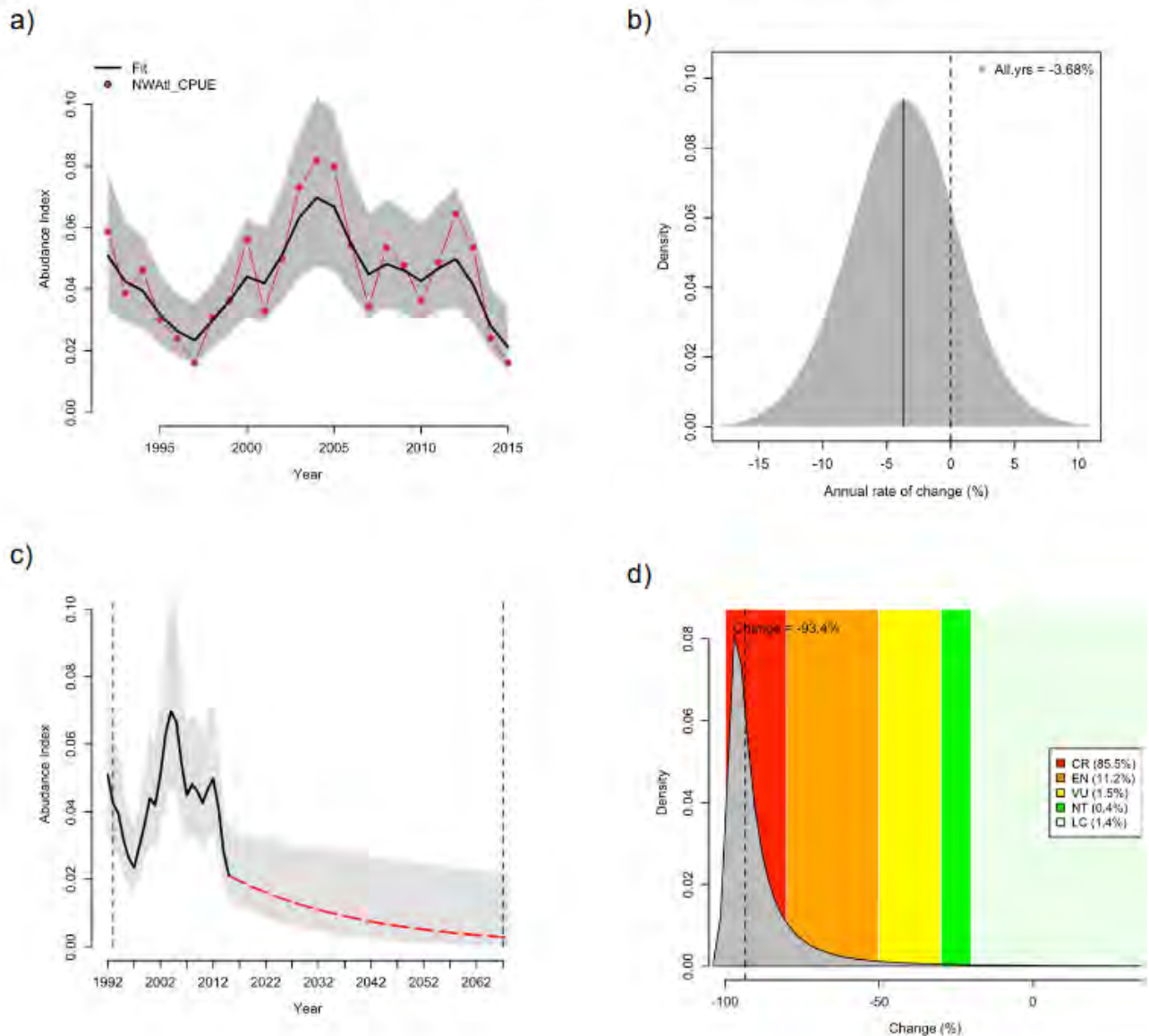


Figure 2: IUCN Red List Assessment of Longfin Mako population trends in the Northwest Atlantic (Rigby 2019)

III. New York Rarity (provide map, numbers, and percent of state occupied)

Longfin makos are considered globally rare (Reardon et al. 2006).

Details of historic and current occurrence:

The historic occurrence of longfin mako sharks in New York waters is unknown. However, there are no confirmed sightings or records of catches of this species in New York waters.

The current occurrence of longfin mako sharks in New York waters is unknown. Based on life history and global catch records, it is believed to be found further south and generally not in New York waters.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options

Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item

Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type (from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):

a. Marine, Deep Subtidal

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/Community Trend	Time frame of Decline/Increase
-	-	Unknown	

Column options

Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item

Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Longfin mako sharks are a pelagic oceanic species, and occur in tropical, subtropical and warm-temperate waters. They possibly occur circumglobally, and they are known to occupy deep water; their range of depth has been recorded to be between 760 – 1750 meters. (Rigby 2019, Camhi et al. 2009).

V. Species Demographics and Life History

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/Catadromous?
Unknown	-	-	-	-	-

Column options

First 5 fields: Yes; No; Unknown; (blank) or Choose an item

Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion (include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):

Little is known about this species' life history. They are ovoviviparous and exhibit oophagy, meaning they feed on unfertilized eggs supplied by the mother while inside the womb. Generally, two to eight pups per litter are born, suggesting low fecundity. These are large sharks reaching a length of four meters (Reardon et al. 2012).

VI. Threats *(from NY 2015 SWAP or newly described)*

Longfin mako sharks are caught as bycatch in tropical pelagic longline and hook and line fisheries. Although their meat is not of high quality, their fins are used in the shark fin trade. Oil from their livers is also valuable due to its high concentration of Vitamin A. Since longfin makos are rare and caught as bycatch in a similar fashion to shortfin makos, and since shortfin makos are experiencing declines in abundance, it is assumed that longfin makos are experiencing a decline in abundance as well. More and better data is needed to assess the status of this species with any level of certainty. Confusion between shortfin and longfin makos may be leading to gross underreporting of the longfin mako catch (Camhi et al. 2009). Shortfin mako harvest is permitted in U.S. waters, and confusion with the species may potentially be leading to the unintentional harvest and landings of longfin mako sharks.

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
5. Biological Resource Use	5.4 Fishing & Harvesting Aquatic Resources	5.4.2 Commercial fishing (bycatch)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
5. Biological Resource Use	5.4 Fishing & Harvesting Aquatic Resources	5.4.3 Poaching/persecution of aquatic species	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	-	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 1. Threats to longfin mako shark

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: X No: Unknown:

If yes, describe mechanism and whether adequate to protect species/habitat:

Since the late 1990s, commercial and recreational fishing of longfin mako sharks has been prohibited in the U.S. Atlantic and Gulf of Mexico (Camhi et al. 2009). Possession of longfin mako sharks is prohibited in New York State (NYSDEC 2013). They are also protected federally by NOAA, Fisheries through their listing as a prohibited species under the Consolidated Highly Migratory Species Fisheries Management Plan. In 2008, the Longfin Mako was listed on Appendix II of the Convention on Migratory Species (CMS). The United States adopted a precautionary ban on retention of Atlantic Longfin Mako in 1999. There are no other known species-specific Longfin Mako catch limits.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The IUCN recommends that Longfin Mako are prohibited for commercial harvest so long as they are categorized as endangered. Improved data collection methods, a better understanding of life history traits and global/regional distribution trends, along with accurate abundance estimates are also needed in order to properly conserve this species. International cooperation is essential for implementation of protections of this species, as it is so widely distributed.

Action Category	Action	Description
C.8 Research and Monitoring	C.8.1.0.0 Basic research and status monitoring	

Table 2 Recommended conservation actions for longfin mako shark.

VII. References

Camhi, M.D., Valenti, S.V., Fordham, S.V., Fowler, S.L. and Gibson, C. 2009. The Conservation Status of Pelagic Sharks and Rays: Report of the IUCN Shark Specialist Group Pelagic Shark Red List Workshop. IUCN Species Survival Commission Shark Specialist Group. Newbury, UK. 78p.

Dodrill, J.W. and R.G. Gilmore. 1979. First North American continental record of the longfin mako (*Isurus paucus* Guitart Mandy). Florida Scientist, 42: 52-58.

New York State Department of Environmental Conservation (NYSDEC). 2013. Saltwater Fishing Regulations- Recreational. <http://www.dec.ny.gov/outdoor/7894.html>. Accessed 15 May 2013.

Queiroz, N., S. Araujo, P.A. Ribeiro, P. Tarroso, R. Xaier, and A.M. Santos. 2006. JMBA 2 – Biodiversity Records. Published online.

Reardon, M.B., Gerber, L. & Cavanagh, R.D. 2006. *Isurus paucus*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. <www.iucnredlist.org>. Accessed 16 May 2013.

Reviewed Native Distribution Map for *Isurus paucus* (Longfin mako). www.aquamaps.org, version of Aug. 2010. Accessed 16 May 2013.

<http://www.nmfs.noaa.gov/sfa/hms/sharks.html>

Rigby, C.L., Barreto, R., Carlson, J., Fernando, D., Fordham, S., Francis, M.P., Jabado, R.W., Liu, K.M., Marshall, A., Pacoureaux, N., Romanov, E., Sherley, R.B. & Winker, H. 2019. *Isurus paucus*. *The IUCN Red List of Threatened Species* 2019: e.T60225A3095898. <https://dx.doi.org/10.2305/IUCN.UK.2019-1.RLTS.T60225A3095898.en>. Accessed on 12 January 2024.