

Species Status Assessment

Common Name: Western Atlantic Torpedo Ray **Date Updated:** 12/1/2023

Scientific Name: *Tetronarce occidentalis* **Updated by:** Kyle Martin, MISC

Class: Chondrichthyes

Family: Torpedinidae

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

Previously included within *Tetronarce nobiliana*, *T. occidentalis* is now recognized as a separate species (Carvalho et al. 2016). Common name changed from Atlantic torpedo ray to Western Atlantic torpedo ray. The Western Atlantic torpedo ray is a medium-sized electric ray with a disjointed but wide distribution occurring from Nova Scotia to Venezuela (including the Caribbean) in the Northwest and Western Central Atlantic. This demersal to semi-pelagic batoid inhabits continental and insular shelves and slopes from the surface down to 800 m (Dunton 2021). Like other members of the order Torpediniformes, *Tetronarce occidentalis* possesses large electric organs which are used to stun prey and predators. Data is limited throughout this species' range, and while information on interactions with fisheries is lacking, it is potentially threatened by demersal trawl fisheries on the outer continental shelf, and degradation of coral reefs may negatively impact juveniles which are dependent on coral reef habitat. Although population declines have been recorded in areas experiencing intense unmanaged fishing along the southern extent of its range, populations in other parts of its range are believed to be stable.

I. Status

a. Current legal protected Status

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

ii. **New York:** Not listed

b. Natural Heritage Program

i. **Global:** Not Ranked

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

Other Ranks:

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

-IUCN Red List: Least concern

Status Discussion:

Population status for the Western Atlantic torpedo ray is difficult to determine due to a lack of data. It is believed to be stable in most of its range, as much of the deep benthic communities it inhabits are unfished (IUCN 2020).

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	Unknown	Unknown	Unknown			-
Connecticut	No data	Unknown	Unknown			No
Massachusetts	No data	Unknown	Unknown			No
New Jersey	No data	Unknown	Unknown			No
Pennsylvania	No	-	-			-
Vermont	No	-	-			-
Ontario	No	-	-			-
Quebec	No data	Unknown	Unknown		Not listed	-

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*):

In a 2012 survey for Atlantic Sturgeon (*Acipenser oxyrinchus*), a single Western Atlantic Torpedo Ray was captured off the coast of the Rockaways and fitted with an acoustic transmitter. A study published in 2021 tracked movements of this tagged individual (May 2012 – June 2013), which found that the Mid-Atlantic Bight may be important seasonal habitat for the Western Atlantic Torpedo Ray. Additionally, 14 individual captures of Western Atlantic Torpedo between 2005 and 2007 were reported in a trawl survey between May and August (average depth 13.4 m) (Dunton et al., 2010). Both the acoustic and trawl data suggest the Western Atlantic Torpedo Ray utilizes the south shore of Long Island as important habitat intermittently in spring (Dunton et al., 2021).

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

There are no range-wide estimates of population size or trend for the Western Atlantic torpedo ray due to insufficient data.

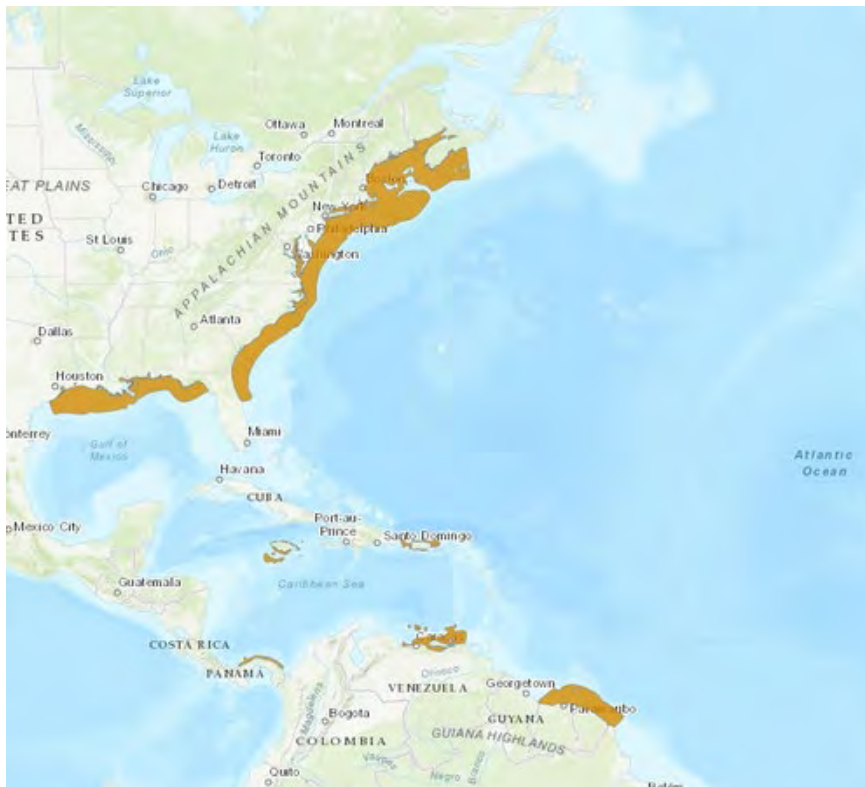


Figure 1: IUCN Red list Distribution Map of Western Atlantic Torpedo Ray (IUCN 2020)

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

This species is rare throughout its range (Notarbartolo di Sciara et al. 2009). In the past, NYSDEC personnel have seen many Atlantic torpedo from inshore oceanic waters and surf zone off the south shore of Long Island (Briggs and Waldman 2002). One large specimen washed up on the north shore of Long Island in early 2024, which NYSDEC personnel collected samples from. Current rarity in New York is unknown.

Details of historic and current occurrence:

Historic: Historical evidence, while limited, suggests that Western Torpedo Rays were once relatively abundant in the 1800s from the Gulf of Maine to North Carolina (Dunton 2021).

Current: According to a 2021 study which tracked the movements of a tagged Western Atlantic Torpedo Ray, coastal waters of New York and New Jersey were continuously inhabited, suggesting that the Mid-Atlantic Bight offers important seasonal habitat for this species (Dunton 2021).

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%	Core	

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. Size/Waterbody Type:

1. Marine, Deep Subtidal
2. Pelagic
3. Marine, Shallow Subtidal
4. Marine, Deep Subtidal, Artificial Structure, Reefs

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/Community Trend	Time frame of Decline/Increase
No	No	Stable	

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:

This species can be found from the surface to depths of about 800 meters (Notarbartolo di Sciarra et al. 2009, Bester no date). Juvenile Atlantic torpedo rays prefer soft substrates or coral reef habitats; adults are pelagic or semi-pelagic (Notarbartolo di Sciarra 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	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

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):

The Western Atlantic torpedo ray can grow to about 70 inches in length, but average about two or three feet. This species feeds primarily on large fish including sharks, dogfish, flounder, and mullet. It will capture fish with its pectoral fins and deliver an electric shock of 170-220 volts. It can distend its jaw allowing it to swallow large fish. Adults are thought to migrate long distances. Reproduction is ovoviviparous. A female can release up to 60 young after a gestation period of about a year (Bigelow and Schroeder 2002). Males reach sexual maturity at about 22 inches and females reach sexual maturity at about 35 inches (Capapé et al. 2006). Young feed on yolk, and then receive nourishment by indirect absorption of uterine “milk” which is enriched with fat and protein (Bester 2013).

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

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.

Table 1. Threats to Western Atlantic torpedo ray.

There is little information available describing threats to this species. It is occasionally caught with bottom trawls and line gear (Notarbartolo di Sciara et al. 2009). Because juveniles can be found in coral reefs, habitat degradation from destructive bottom trawling practices may also be a threat (Notarbartolo di Sciara et al. 2009). Data for bycatch and fishing mortality specific to this species is lacking, but the Western Atlantic torpedo ray is potentially susceptible as bycatch of shrimp bottom trawling. Overall, the bulk of the species' range is suspected to be unfished. Development of infrastructure for offshore wind energy is also a potential threat to this species.

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

Yes: _____ No: X Unknown: _____

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

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

Management and conservation actions for this species are not described in the literature. Monitoring of catches and research on historical abundance is needed to determine population status for this species (Notarbartolo di Sciara et al. 2009). More basic life history information is also needed.

Action Category	Action	Description
C.8 Research and Monitoring	C.8.1.1.1 Characterization, demographic study, population, or inventory	

Table 2. Recommended conservation actions for Western Atlantic torpedo ray.

VII. References

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