

Species Status Assessment

Common Name: Roughtail stingray

Date Updated: 1/12/2024

Scientific Name: *Dasyatis centroura*

Updated by: Siobhan Keeling

Class: Chondrichthyes

Family: Dasyatidae

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

This is one of the largest marine and brackish water stingrays, occurring in three separate populations: the northwest Atlantic, the southwest Atlantic and the eastern Atlantic oceans (Bullis and Struhsaker 1961, Struhsaker 1969, Rosa et al. 2007). New York is included in the northwest Atlantic population. Despite the limited amount of data available on the biology of this species, its large size and low fecundity make it inherently vulnerable to overexploitation (Rosa et al. 2007). In United States waters of the northwest Atlantic this species is not targeted, and the data suggests that populations off the East Coast are stable (Rosa et al. 2007). In the southwest Atlantic and Mediterranean, it is taken by fisheries operating throughout much of its habitat (Eagle no date, Rosa et al. 2007). This species has been captured occasionally off Long Island (M. Richards, personal communication), but because there are so few records experts feel that conservation actions are best approached at a level higher than species (expert marine fish meeting). The IUCN Red List status has changed from least concern to vulnerable (Carlson et al. 2020). The World Register of Marine Species has the scientific name listed as *Dasyatis centroura* but an accepted name is *Bathytoshia centroura* (Froese 2023).

I. Status

a. Current legal protected Status

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

ii. **New York:** Not Listed

b. Natural Heritage Program

i. **Global:** GNR, Unranked

ii. **New York:** SNR, Unranked **Tracked by NYNHP?:** No

Other Ranks:

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

-IUCN Red List: Vulnerable

-Northeast Regional SGCN: Watchlist [Assessment Priority]

Status Discussion:

The eastern Atlantic and southwest Atlantic populations are in decline from overfishing, the northwestern Atlantic population apparently is stable (Rosa et al. 2007).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	-	-	Past 20 years (Rosa et al.2007)		-
Northeastern US	Yes	-	-	Northeastern U.S. Past 20 years (Rosa et al.2007)		-
New York	Yes	Unknown	Unknown			Yes
Connecticut	Yes	Unknown	Unknown	Unknown	Not Listed	Yes
Massachusetts	No data	Unknown	Unknown	Unknown	Not Listed	No
New Jersey	Yes	Stable	Stable	Not specified	Not listed-considered common (NJDEP)	No
Pennsylvania	No	-	-			-
Vermont	No	-	-			-
Ontario	No	-	-			-
Quebec	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*):

There are no surveys or monitoring activities for this species; however it is occasionally captured in trawl and seine surveys off Long Island.

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

The current population trend is decreasing according to the IUCN red list (Carlson et al. 2020). Populations in the northwest Atlantic are stable (Rosa et al. 2007). The Mediterranean population is becoming increasingly smaller and there is little information available on the southwest Atlantic population (Rosa et al. 2007). Over the last three generations (64.5 years), the rough tail stingray has had an overall population reduction of 30 to 49% (Carlson 2020).

Distribution Map

Bathytoshia centroura



Legend

■ EXTANT (RESIDENT)

Compiled by:

IUCN SSC Shark Specialist Group 2020

Figure 1. IUCN Red List Rough-tail Stingray distribution map (Carlson 2020)



Figure 2. Global distribution of the rough-tail stingray (Eagle no date).

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

In the northwest Atlantic this species is fairly common but there are very few records in New York (Struhsaker 1969).

Details of historic and current occurrence:

Historic:

There is no historic occurrence information available.

Current:

There little catch data available for this species in New York. The NYSDEC has records of two individuals being captured during trawl surveys from 2009 in Noyack Bay, Suffolk County (M. Richards, personal communication).

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	~300 miles

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, Shallow Subtidal, Benthic Geomorphology
- b. Marine, Deep Subtidal, Benthic Geomorphology
- c. Estuarine, Brackish Deep Subtidal

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:

Roughtail stingrays are usually found at 100 to 275m depth in soft bottom areas (Carlson et al. 2020) This species is found in coastal waters over sandy and muddy bottoms, sometimes in brackish water, normally less than 328 feet in depth (Rosa et al. 2007). It has been recorded in waters up to 900 feet in depth in the Bahamas (McEachran and Fechem 1998).

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):*

The most discernible feature of this species is its tail, which has numerous rows of small thorns (Eagle no date, Parsons 2006). This species has a poisonous spine (Eagle no date). Roughtail stingray reach a maximum size of 220cm disc width (DW) and males mature at 130 to 150cm (DW). Females mature at 140 to 160cm (DW) (Carlson et al. 2020). This species is ovoviviparous and can have 2-6 pups per clutch (Struhsaker 1969, Rosa et al. 2007, Eagle 2018). Their diet consists of fishes and invertebrates including crabs, bivalves, gastropods and cephalopods (Struhsaker 1969, Rosa et al. 2007). This species is seasonally migratory (Struhsaker 1969). From December to March the main population of roughtail stingray winters off the southeastern coast of the United States in the open shelf, live bottom and shelf-edge habitats of the Continental Shelf (Struhsaker 1969). When waters warm in the spring there is an inshore movement into coastal habitat and a northerly movement along the coast (Struhsaker 1969). Sharks and other large fish are among the only species which prey on rays (Eagle no date).

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	(bycatch)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 1. Threats to roughtail stingray.

There is some bycatch in shrimp and groundfish trawl and bottom longline fisheries which may threaten populations (Rosa et al. 2007).

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:

There is no existing legislation protecting this species.

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

Because there are very few records of this species in New York, experts feel that conservation actions are best approached at level higher than species.

Management/conservation actions for this species are not described in the literature. The New York State Wildlife Action Plan (NYSDEC 2005) identifies general conservation/management actions for rays including:

- Develop fact sheets for all species of skates and rays found in or near to New York's Territorial waters.
- Participate in programs to obtain new biological information relative to this species complex for those species found in harvested or landed in New York.
- Implement new rules and regulations as necessary and appropriate consistent with rules and regulations implemented by National Marine Fisheries Service.
- Support existing monitoring and develop as necessary new biological monitoring for this species.
- Develop webpage information about the species in this complex.

Action Category	Action	Description
A.1 Direct Habitat Management	A.1.0.0.0 Direct habitat management	Species management
A.2 Direct Species Management	A.2.0.0.0 Direct species management	Harvest management
A.2 Direct Species Management	A.2.0.0.0 Direct species management	Species recovery

Table 2. Recommended conservation actions for rough-tail stingray (Carlson et al. 2020).

VII. References

- Bullis, H.R. Jr. and P. Struhsaker. 1961. Life history notes on the rough-tail stingray, *Dasyatis centroura* (Mitchill). *Copeia* 2:232-234.
- Carlson, J., Charvet, P., Avalos, C., Briones Bell-Iloch, A., Cardenosa, D., Espinoza, E., Herman, K., Morales-Saldaña, J.M., Naranjo-Elizondo, B., Pacoureaux, N., Pilar Blasco, M., Pérez Jiménez, J.C., Schneider, E.V.C., Simpson, N.J. & Talwar, B.S. 2020. *Bathytoshia centroura*. The IUCN Red List of Threatened Species 2020: e.T104065040A3122808. <https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T104065040A3122808.en>. Accessed on 11 December 2023.
- Eagle, D. No date. Florida Museum of Natural History Ichthyology Department (On-line). Rough-tail Stingray. Available at: <<http://www.flmnh.ufl.edu/fish/Gallery/Descript/RtailStingray/RtailStingray.html>> (Accessed: April 23, 2013).
- Eagle, D., 2018. *Dasyatis centroura*, Rough-tail Stingray. Florida Museum. <https://www.floridamuseum.ufl.edu/discover-fish/species-profiles/dasyatis-centroura/> Accessed on 10 January 2024.
- Froese, R. and D. Pauly. Editors. (2023). FishBase. *Dasyatis centroura* (Mitchill, 1815). Accessed through: World Register of Marine Species at: <https://www.marinespecies.org/aphia.php?p=taxdetails&id=105850> on 2023-12-18
- McEachran, J.D. and Fechhelm, J.D. 1998. Fishes of the Gulf of Mexico: Myxiniiformes to Gasterosteiformes. University of Texas Press, Austin, USA.
- NatureServe Explorer. 2023. NatureServe Explorer. Page last published 5 January 2024. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.105548/Dasyatis_centroura Accessed 11 January 2024.
- New York State Department of Environmental Conservation. 2005. New York State Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>.
- New York State Department of Environmental Conservation. 2015. New York State Species of Greatest Conservation Need. https://extapps.dec.ny.gov/docs/wildlife_pdf/sgnc2015list.pdf
- Northeast Fish and Wildlife Diversity. 2023. Regional Species of Greatest Conservation Need (RSGCN). <https://northeastwildlifediversity.org/rsgcn> Accessed on 5 January 2024.
- Parsons, G.R. 2006. Sharks, skates and rays of the Gulf of Mexico: a field guide. Mississippi Department of Marine Resources.
- Richards, M. 2013. E-mail with excel file featuring rough-tail stingray catches in Long Island. Personal communication.
- Rosa, R.S., Furtado, M., Snelson, F., Piercy, A., Grubbs, R.D., Serena, F. & Mancusi, C. 2007. *Dasyatis centroura*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. <www.iucnredlist.org> (Accessed: April 22, 2013).
- Struhsaker, P. 1969. Observations on the biology and distribution of the thorny stingray, *Dasyatis centroura* (Pisces: Dasyatidae). *Bulletin of Marine Sciences* 19: 456-481.