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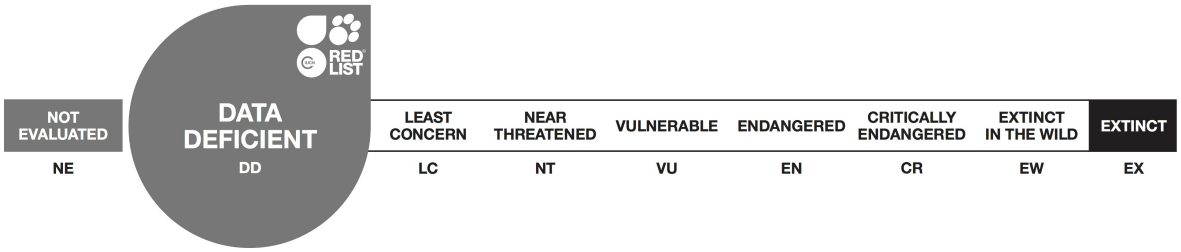
Scope: Global
Language: English

Echinorhinus cookei, Prickly Shark

Assessment by: Finucci, B.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Squaliformes	Echinorhinidae

Taxon Name: *Echinorhinus cookei* Pietschmann, 1928

Common Name(s):

- English: Prickly Shark, Spinous Shark

Taxonomic Source(s):

Eschmeyer, W.N., Fricke, R. and Van der Laan, R. (eds.). 2018. Catalog of Fishes: genera, species, references. Updated 29 March 2018. Available at: http://researcharchive.calacademy.org/research/ichthyology/catelog/fishcatmain.asp.

Assessment Information

Red List Category & Criteria: Data Deficient ver 3.1

Year Published: 2018

Date Assessed: June 30, 2017

Justification:

The Prickly Shark (*Echinorhinus cookei*) is a large deepwater shark (to 450 cm total length) with a widespread but patchy distribution across the western, central and eastern Pacific Ocean. This species has been recorded on the upper and mid continental slope and seamounts at depths of 4-1,110 m. It undertakes vertical migrations, so also occurs in the pelagic zone. Population size and trends are unknown. The Prickly Shark is very rarely recorded as incidental catch from commercial and artisanal fisheries across its range, however, it may be misidentified as its cogener, the Bramble Shark (*Echinorhinus brucus*). The deep depth range and diel migrations of the Prickly Shark may offer it refuge from fishing effort, although high site fidelity may increase its susceptibility to localised depletion. Beyond some information provided from around the Monterey Canyon, there is virtually no information on the ecology, and population size and trends of Prickly Shark, despite its widespread distribution. Interactions with fisheries are limited to a handful of records. Due to the absence of information on the impacts of fisheries and the issue of misidentification, this species is assessed as Data Deficient.

Previously Published Red List Assessments

2003 – Near Threatened (NT)
http://dx.doi.org/10.2305/IUCN.UK.2003.RLTS.T41802A10564325.en

Geographic Range

Range Description:

The Prickly Shark has a widespread but patchy distribution across the western (Japan to Australia and New Zealand), central (Hawaii) and eastern (United States to Chile) Pacific Ocean (Last and Stevens

2009, Long *et al.* 2011, Ebert *et al*. 2013a).

Country Occurrence:

Native: Australia (Queensland, Victoria); Chile (Antofagasta, Atacama, Biobío, Coquimbo, O'Higgins, Tarapacá, Valparaíso); Colombia (Colombia (mainland), Malpelo I.); Costa Rica (Cocos I., Costa Rica (mainland)); Ecuador (Ecuador (mainland), Galápagos); Japan (Honshu); Mexico (Baja California, Baja California Sur, Nayarit, Sinaloa); New Caledonia; New Zealand (Kermadec Is., North Is., South Is.); Nicaragua (Nicaragua (mainland)); Palau; Panama; Peru; Taiwan, Province of China; Tonga; United States (California, Hawaiian Is., Oregon)

FAO Marine Fishing Areas:

Native: Indian Ocean - eastern, Pacific - southwest, Pacific - eastern central, Pacific - northwest, Pacific - western central, Pacific - southeast

http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T41802A68622003.en

Distribution Map

Echinorhinus cookei

0 7,200

Kilometer

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

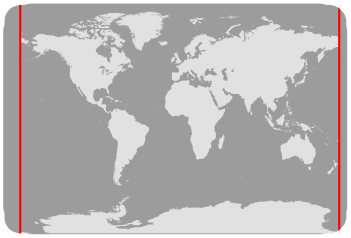
Range

Extant (resident)

Compiled by:

International Union for Conservation of Nature (IUCN)

NE **DD** DATA DEFICIENT LC NT VU EN CR EW EX



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.

http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T41802A68622003.en

Population

Population size and trends are unknown for this species, and there have been no dedicated surveys or population estimates. Records across its range are sparse and limited. Deepwater longline fishing (177-370 m) programs conducted in Hawaii between 1959 and 1980 recorded a total of 13 individuals (Crow *et al.* 1995). In shrimp trawl fisheries on the Pacific coast of Costa Rica, Prickly Shark made up <2% of total catch (11 individuals) at depths >100 m from 2008-2012 (Clarke *et al*. 2016). This species has also been recorded from artisanal pelagic fisheries in Ecuador (three individuals from 2008-2012; Martínez-Ortiz *et al.* 2015), and in Mexico, where artisanal fisheries account for up to 80% of elasmobranch fishing effort, one Prickly Shark was recorded from Baja California Sur between 2000-2010 (Cartamil *et al.* 2011).

Current Population Trend: Unknown

Habitat and Ecology **(see Appendix for additional information)**

The Prickly Shark has been recorded on the upper and mid continental slope and seamounts at depths of 4-1,110 m (Ebert *et al.* 2013a). It reaches a maximum size of 450 cm total length (TL); males mature at 180-200 cm TL; females mature at 250-300 cm TL; size at birth 40-45 cm TL. Reproduction is lecithotrophic viviparous and fecundity is up to 114, much higher than its congener, the Bramble Shark (fecundity of up to 26 pups) (Crow *et al.* 1995, Ebert *et al.* 2013a). Prickly Sharks are diel vertical migrators, and have been documented to come up to shallow waters (200-300 m) at night, and remain at deeper depths (>500 m) during the day (Dawson and Starr 2009, Nakamura *et al.* 2015).

Systems: Marine

Use and Trade

This species is not known to be utilized.

Threats **(see Appendix for additional information)**

The Prickly Shark is very rarely recorded as incidental catch from commercial and artisanal pelagic and deepwater longline, benthic trawl, and benthic gill net (e.g., Kobayashi 1986, Crow *et al*. 1995, Cartamil *et al*. 2011, Martínez-Ortiz *et al*. 2015, Clarke *et al*. 2016). The Prickly Shark has been previously misidentified as the Bramble Shark (*Echinorhinus brucus*) in capture records from Japan, California, Taiwan, and Peru (Taniuchi and Yanagisawa 1983, Ebert *et al*. 2013b), and may be incidentally captured and discarded at sea in some areas (e.g., Peru; Cespedes 2013, Gonzalez-Pestana *et al*. 2014).

In a qualitative risk assessment for New Zealand's chondrichthyans, this species was categorised at low risk from commercial fishing, on the basis of its rare capture (Ford *et al*. 2015). This species displays high site fidelity (Dawson and Starr 2009), potentially increasing its susceptibility to localised depletion.

Conservation Actions **(see Appendix for additional information)**

Further information is required on the distribution, life history, and population of Prickly Shark, as well as any interactions with fishing across its range. There are no species-specific management actions currently in place for this species.

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The largest known aggregation of this species (>30 individuals) was recorded from the Monterey Canyon (Crane and Heine 1992, Dawson and Starr 2009). The Prickly Shark has not been identified as a species that is likely to benefit from Marine Protected Areas (MPAs) within the state of California (CDFW 2007), however, the Soquel Canyon State Marine Conservation Area protects part of the Monterey Submarine Canyon from most fishing effort (CDFW 2016), and may provide some refuge for the Prickly Shark in this region. Tagged sharks have been shown to remain sedentary during the day (Dawson and Starr 2009), and the deep depth distribution of Prickly Sharks may offer some refuge from fishing across its range.

Credits

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Disclaimer

External Resources

For Images and External Links to Additional Information, please see the Red List website.

Appendix

Habitats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Habitat	Season	Suitability	Major Importance?
10. Marine Oceanic -> 10.1. Marine Oceanic - Epipelagic (0-200m)	Resident	Suitable	Yes
10. Marine Oceanic -> 10.2. Marine Oceanic - Mesopelagic (200-1000m)	Resident	Suitable	Yes
11. Marine Deep Benthic -> 11.1. Marine Deep Benthic - Continental Slope/Bathyl Zone (200-4,000m) -> 11.1.1. Hard Substrate	Resident	Suitable	Yes
11. Marine Deep Benthic -> 11.1. Marine Deep Benthic - Continental Slope/Bathyl Zone (200-4,000m) -> 11.1.2. Soft Substrate	Resident	Suitable	Yes
11. Marine Deep Benthic -> 11.5. Marine Deep Benthic - Seamount	Resident	Suitable	Yes

Threats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Threat	Timing	Scope	Severity	Impact Score
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.3. Unintentional effects: (subsistence/small scale) [harvest]	Ongoing	Unknown	Unknown	Unknown
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.4. Unintentional effects: (large scale) [harvest]	Ongoing	Unknown	Unknown	Unknown
	Stresses:	2. Species Stresses -> 2.1. Species mortality		

Conservation Actions in Place

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions in Place
In-Place Research, Monitoring and Planning
Action Recovery plan: No
Systematic monitoring scheme: No
In-Place Land/Water Protection and Management
Conservation sites identified: No
Occur in at least one PA: Unknown
Area based regional management plan: No

Conservation Actions in Place
Invasive species control or prevention: Not Applicable
In-Place Species Management
Harvest management plan: No
Successfully reintroduced or introduced beningly: No
Subject to ex-situ conservation: No
In-Place Education
Subject to recent education and awareness programmes: No
Included in international legislation: No
Subject to any international management/trade controls: No

Conservation Actions Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions Needed
3. Species management -> 3.1. Species management -> 3.1.1. Harvest management

Research Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Research Needed
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.2. Harvest level trends

Additional Data Fields

Distribution
Lower depth limit (m): 1100
Upper depth limit (m): 4
Habitats and Ecology
Movement patterns: Unknown

The IUCN Red List Partnership

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