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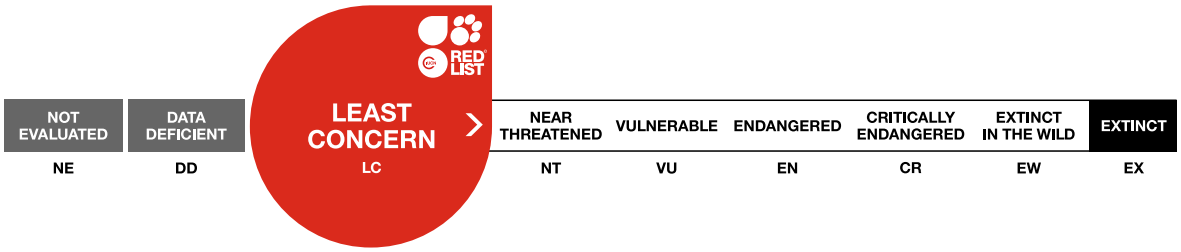
Galeus sauteri, Blacktip Sawtail Catshark

Assessment by: Rigby, C.L. *et al.*



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Carcharhiniformes	Pentanchidae

Scientific Name: *Galeus sauteri* (Jordan & Richardson, 1909)

Synonym(s):

- *Pristiurus sauteri* Jordan & Richardson, 1909

Common Name(s):

- English: Blacktip Sawtail Catshark

Taxonomic Source(s):

Fricke, R., W.N. Eschmeyer and R. Van der Laan (eds.). 2020. Eschmeyer's catalog of fishes: Genera, species, references. Available at: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp. (Accessed: March 2020).

Assessment Information

Red List Category & Criteria: Least Concern ver 3.1

Year Published: 2020

Date Assessed: May 6, 2020

Justification:

The Blacktip Sawtail Catshark (*Galeus sauteri*) is a small (to 50 cm total length) catshark endemic to the Northwest and Western Central Pacific Oceans where it occurs from Japan to the Philippines. It is demersal and epi-pelagic on the continental shelf and slope at depths of 60–600 m. The species is a bycatch of mainly demersal trawl fisheries, and to a lesser extent, line fisheries. Trawl fisheries operate across most of its range to depths of 700 m off Japan and Taiwan, and to ~300 m off China and the Philippines; it is discarded in Japan and retained for fish meal in Taiwan, and likely China and the Philippines. It is the most common and abundant shark taken in trawls in Taiwan with little change to the landing rates of this species over the past 31 years (two generation lengths) that infers a stable population based on relatively stable trawl effort over that time. The fishing pressure in Taiwan is intensive and captures most life stages of the Blacktip Sawtail Catshark. Resilience to fishing pressure in Taiwan and elsewhere is likely provided by the species' continuous reproductive cycle and possibly rapid growth rate. The species is not frequently observed elsewhere which may be due to a higher proportion of its preferred habitat occurring in Taiwan. There is no evidence of population decline, the species is not suspected to be close to reaching the population reduction threshold, and the Blacktip Sawtail Catshark is assessed as Least Concern.

Previously Published Red List Assessments

2009 – Data Deficient (DD)
https://dx.doi.org/10.2305/IUCN.UK.2009-2.RLTS.T161406A5416990.en

https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T161406A124479635.en

Geographic Range

Range Description:

The Blacktip Sawtail Catshark is endemic to the Northwest and Western Central Pacific Oceans where it occurs off Japan, Taiwan, China, and the Philippines (Ebert *et al.* 2013a).

Country Occurrence:

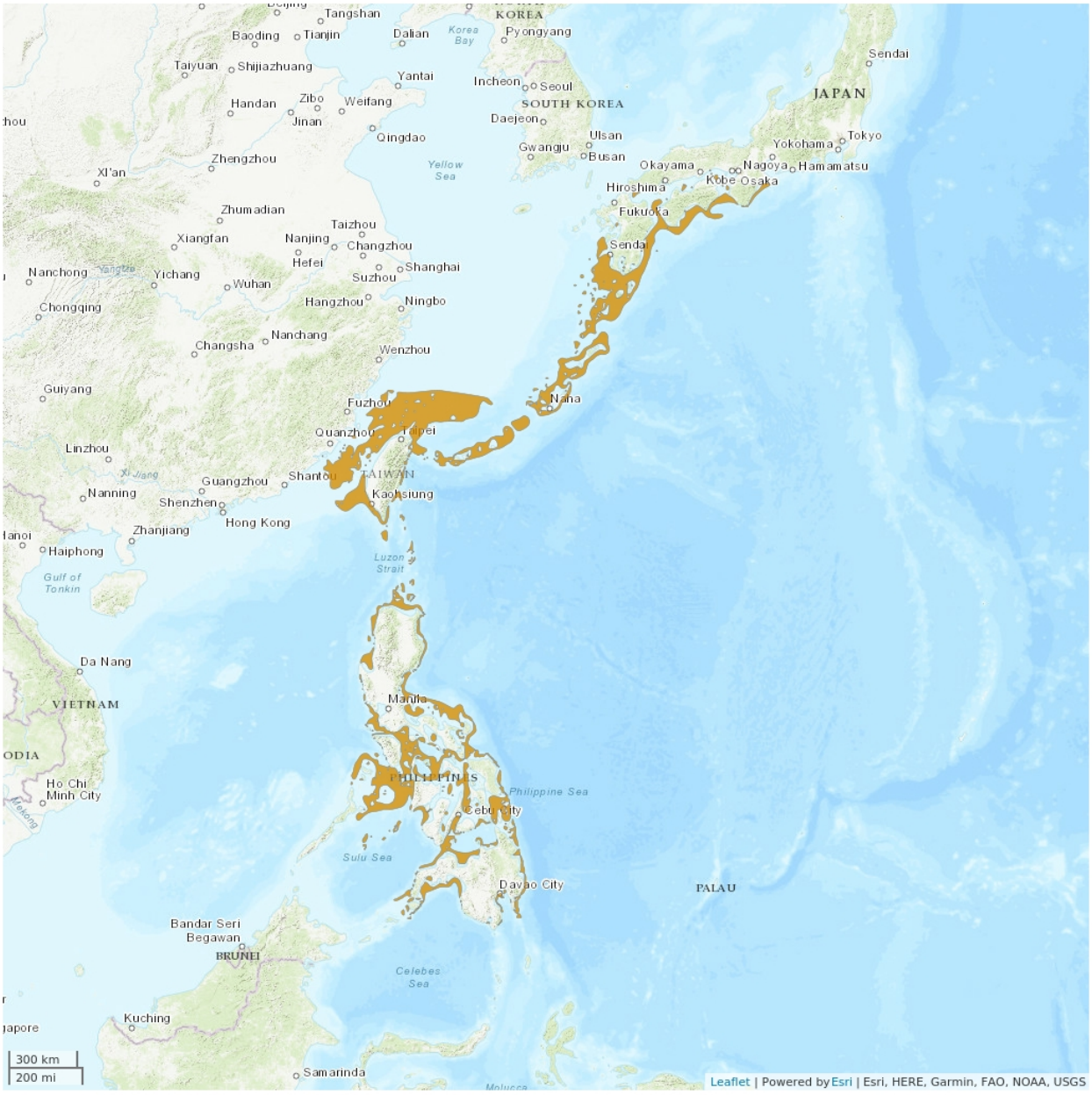
Native, Extant (resident): China; Japan; Philippines; Taiwan, Province of China

FAO Marine Fishing Areas:

Native: Pacific - northwest

Native: Pacific - western central

Distribution Map



Legend

EXTANT (RESIDENT)

Compiled by:

IUCN SSC Shark Specialist Group 2020

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

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Population

The Blacktip Sawtail Catshark is the most common and abundant shark captured in trawls in Taiwan (Ebert *et al.* 2013b, H. Ho unpubl. data 2019). There has been little change to the landing rates of this species over the past 31 years (D. Ebert unpubl. data 2019). Although landings data are not a direct measure of abundance, these can be used to infer a stable population as landings have remained stable while fishing effort has remained relatively stable. Nothing is known about the trend of this species in Japan, China, or the Philippines. It is not frequently observed at landing sites in China, which accounts for a minor part of its distribution (X. Chen unpubl. data 2019). It is not considered prevalent in the Philippines (D. Tanay and J. Utzurrum unpubl. data 2020). The reason that it has a high and stable abundance in Taiwan and that it is observed less frequently elsewhere is unknown; Taiwan may have a higher proportion of its preferred habitat (H. Ho unpubl. data 2019). Despite intensive fishing pressure in Taiwan, this species remains abundant which may be due to a continuous breeding cycle and possibly rapid growth rate (Chen *et al.* 1996, Liu *et al.* 2011, H. Ho. unpubl. data 2019) that would provide resilience to fishing pressure. Although it is not frequently observed elsewhere, the potentially high productivity suggests it would also be resilient to fishing pressure elsewhere. There is no evidence to suspect this species has declined, and due to inferred stability in approximately half of the distribution where it has remained common and abundant for at least the past two generation lengths, the population is suspected to be stable.

Current Population Trend: Stable

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

The Blacktip Sawtail Catshark is demersal and epi-pelagic on soft sediments on the continental shelf and slope at depths of 60–600 m (Lin 2009, Weigmann 2016, Shao *et al.* 2019). It reaches a maximum size of 49.8 cm total length (TL), males mature at 35 cm TL and females mature at 41 cm TL (Chen *et al.* 1996, Liu *et al.* 2011, Ebert *et al.* 2013a). Reproduction is oviparous with pairs of egg cases laid year-round; the species forms sex separated and female breeding aggregations; size-at-birth is estimated as 7 cm TL (Chen *et al.* 1996, Liu *et al.* 2011, H. Ho. unpubl. data 2019). Female age-at-maturity is 9 years and maximum age is 21 years; generation length is therefore 15 years (Liu *et al.* 2011). It possibly has a rapid growth rate, although ageing of catsharks is difficult and further age validation is needed (Liu *et al.* 2011).

Systems: Marine

Use and Trade

The species is considered too small for human consumption and is used for fish meal in Taiwan (H. Ho unpubl. data 2019), and possibly in China and the Philippines.

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

The Blacktip Sawtail Catshark is a bycatch of mainly demersal trawl fisheries across most of its range. It is also taken as bycatch on line fisheries in Taiwan and the Philippines (Chuang *et al.* 2016, D. Tanay unpubl. data 2020). In Japan and Taiwan, the trawl fisheries operate to depths of 600–700 m and discard this species in Japan and retain it in Taiwan (Horie and Tanaka 2000, H. Ho unpubl. data 2019). In the Philippines, trawl fisheries operate to depths of 200 m (D. Tanay unpubl. data 2020) and if caught, this

species is likely retained (Palomares and Pauly 2014). Although there is no detailed effort data, the number of trawl vessels operating in the northeast of Taiwan has remained fairly stable from 1999–2008 (H. Hsu, Taiwan National Fisheries Statistics unpubl. data 2019). The small mesh sizes used in trawls in Taiwan, that have been intensive for a considerable time, means that both juveniles and adults are captured (D. Ebert and H. Ho unpubl. data 2019); this range of sizes was also reported as captured in Japan for the cogener Gecko Catshark (*Galeus eastmani*), although far fewer juveniles were captured than adults (Horie and Tanaka 2000), which could also be the case for the Blacktip Sawtail Catshark. Juveniles are also captured in mid-water trawls in Taiwan and egg cases of this species are commonly taken by bottom trawls in Taiwan (H. Ho unpubl. data 2019). The Blacktip Sawtail Catshark accounted for 72% of all small sharks landed at Da-xi, northeast Taiwan from 2007–2008 (Lin 2009). It has been reported as captured on longlines off Taiwan, though only in very small numbers (Chuang *et al.* 2016). The species is possibly captured in China where commercial trawls operate to depths of 300 m, although it has not frequently been observed at landing sites (X. Chen unpubl. data 2019). In the Philippines, it is possibly taken as bycatch in the municipal and commercial trawl and line fisheries but has not been reported in official landing statistics; it may not be landed at monitored landing sites and ports (D. Tanay unpubl. data 2020). It was previously reported as observed at fish markets in the Philippines, and presumed to have been caught in demersal trawls that have decreased in effort since the mid-1980s (Iglésias and Nakaya 2009).

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

No specific measures are in place. In Taiwan, since 1999, all demersal trawling is prohibited within 3 nautical miles (nm) of the coast and within 12 nm for trawlers larger than 50 Gross Registered Tonnage (Fisheries Agency 2019, Liao *et al*. 2019). In China, since the late 1990s, regulations have specified varying annual seasonal fishing closures on commercial demersal trawling in the East China Sea, and in the South China Sea to 12^{o}N (Yu and Yu 2008). The closure times have varied over the years and between regions, but most now commence in May and are in place for 3–4 months. In 2018, this seasonal closure was widened to also include all other commercial fishing gears (e.g. gillnet and longline) with the only exception being for rod and reel to allow small-scale artisanal fisheries and recreational fisheries (J. Zhang unpubl. data 2019). Since 2017, enforcement of the seasonal closure has strengthened (X. Chen unpubl. data 2019). The effectiveness of the closures is debatable as overfishing remains a threat (Yu and Yu 2008, Pauly and Liang 2019).

In the Philippines in 1998, active fishing gears, including trawlers, ‘baby trawlers’, purse seines, and tuna longlines, were prohibited within municipal marine waters (<3 nm from shore). In 1981, there were 5-year closures of the trawl and purse seine fisheries in the waters of Bohol, Cebu, and Negros Oriental and in 1983 in Batangas (Palomares and Pauly 2014, FAO 2020). These bans and closures imply that ‘baby trawlers’ became illegal (Palomares and Pauly 2014). In 1998, a ban was also legislated on muro ami gear (an encircling net and pounding devices) and other gear destructive to coral reefs and marine habitats (FAO 2020). Trawlers within commercial waters have been required since 2010 to use Juvenile and Trashfish Excluder Devices under the Fisheries Administrative Order 237 series of 2010. (D. Tanay unpubl. data 2020), which may reduce the retention of larger sharks and rays (Brewer *et al.* 2006). In the Philippines, there are >1,800 Marine Protected Areas (NFRDI 2017, CTI 2020). Some of these MPAs are known to provide shark and ray protection including Donsol, Malapascua, Cagayancillo MPAs, and Tubbataha Reefs Natural Park (NFRDI 2017, Murray *et al.* 2018). Further research is needed on

population size and trends, and catch rates should be monitored.

Credits

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External Resources

For Supplementary Material, and 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?
9. Marine Neritic -> 9.5. Marine Neritic - Subtidal Sandy-Mud	Resident	Suitable	Yes
9. Marine Neritic -> 9.6. Marine Neritic - Subtidal Muddy	Resident	Suitable	Yes
10. Marine Oceanic -> 10.1. Marine Oceanic - Epipelagic (0-200m)	Resident	Suitable	Yes
11. Marine Deep Benthic -> 11.1. Marine Deep Benthic - Continental Slope/Bathyl Zone (200-4,000m)	-	-	-

Use and Trade

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

End Use	Local	National	International
Food - animal	No	Yes	No

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	Majority (50-90%)	Negligible declines	Low impact: 5
	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	Majority (50-90%)	Negligible declines	Low impact: 5
	Stresses:	2. Species Stresses -> 2.1. Species mortality		

Conservation Actions in Place

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

Conservation Action in Place
In-place research and monitoring
Action Recovery Plan: No
Systematic monitoring scheme: No
In-place land/water protection

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Conservation Action in Place
Conservation sites identified: No
Area based regional management plan: No
Occurs in at least one protected area: Unknown
Invasive species control or prevention: Not Applicable
In-place species management
Harvest management plan: No
Successfully reintroduced or introduced benignly: 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

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): 600
Upper depth limit (m): 60
Habitats and Ecology
Generation Length (years): 15

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The IUCN Red List Partnership

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The IUCN Red List Partners are: Arizona State University; BirdLife International; Botanic Gardens Conservation International; Conservation International; NatureServe; Royal Botanic Gardens, Kew; Sapienza University of Rome; Texas A&M University; and Zoological Society of London.