

Spot-Tail Shark (2023)

Carcharhinus sorrah



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Western Australia, Northern Territory, Queensland	Northern Australia	Sustainable	Biomass, fishing mortality, catch, catch rate

STOCK STRUCTURE

Spot-Tail Shark (*Carcharhinus sorrah*) are medium-sized Whalers that are common over open areas on the shallow continental and insular shelves in northern Australian and Indo-West Pacific waters [Last and Stevens 2009; Kyne et al. 2021]. Spot-Tail Shark form discrete populations across deep water boundaries, with the Australian population thought to be distinct [Giles et al. 2014; Naylor et al. 2012]. While stock differentiation between Australia and other regions is well established, population structure within Australia is less clear. Genetic studies have found low to no genetic structuring within Australian waters [Giles et al. 2014; Laverly and Shaklee 1989; Ovenden et al. 2007] and tag release research has shown that Spot-Tail Shark display movements that would provide sufficient gene flow to prevent genetic stock differentiation [Stevens et al. 2000].

Here, assessment of the stock status for Spot-Tail Shark is presented at the biological stock level—Northern Australia.

STOCK STATUS

Northern Australia The Northern Australian biological stock straddles three jurisdictions: Western Australia, The Northern Territory and Queensland.

Spot-Tail Sharks are relatively easily distinguished from other blacktip shark species and have been recorded to species level in Northern Territory

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commercial logbooks since 2000. In the Northern Territory, Spot-Tail Shark is primarily taken in the Offshore Net and Line Fishery (ONLF) under a species-specific total allowable catch limit, which is managed through an individual transferable quota system. Northern Territory commercial catches from this stock have declined to relatively low levels, averaging 20 t a year since 2013, compared to an annual average of 110 t for the 10 years preceding 2013. This decrease in catch was largely driven by changing operational practises in the ONLF [Northern Territory Government 2017].

In Queensland, Spot-Tail Sharks are harvested in the Gulf of Carpentaria Inshore Fishery (GOCIF) and the East Coast Inshore Fishery (ECIF). The GOCIF retained 12.7 t of Spot-Tail Shark in 2021–22, which is below the 10-year average (22 t). Since 2012–13, between 10 and 35 t of Spot-Tail Shark have been retained in the Gulf of Carpentaria. Harvest rates for the Queensland east coast are lower compared to the Gulf of Carpentaria. In 2021–22, Queensland east coast fishers reported < 4 t of Spot-Tail sharks. In the last 10 years, the region has registered harvest levels from 3 to approximately 23 t at an average of 8 t per year. The commercial take of sharks on the Queensland east coast is managed through a 400 t annual total allowable commercial catch (TACC) limit (species combined) and regional harvest strategies. A TACC is not currently applied to sharks in the Gulf of Carpentaria. However, a regional harvest strategy is being developed. Recreational harvest in Queensland is limited by a one shark in possession limit and maximum legal size of 1.5 m total length. No shark harvest estimates are available from the recreational and charter sectors however, harvest rates in these sectors are expected to be low.

Although there is uncertainty regarding species composition and the magnitude of historical catches of "Blacktip Sharks" from Western Australia, commercial harvests of Spot-tail Shark in this jurisdiction have been negligible since April 2009 when WA's northern shark fisheries ceased operations [Molony et al. 2013; Braccini et al. 2021]. These negligible harvests are expected to allow for increasing biomass levels. In addition, recreational catches in Western Australia are negligible [Ryan et al 2019].

A stock assessment was undertaken for the Northern Australian biological stock utilising a stochastic Stock Reduction Analysis (SRA) model using data to 2021. Standardised Catch Per Unit Effort (CPUE) from the pelagic gillnet component of the ONLF was used as the abundance indicator for this assessment. The assessment estimated that biomass in 2021 was 89% of the unfished levels and that fishing mortality was 7% of that required to reach maximum sustainable yield [Northern Territory Government, unpublished]. The results of this assessment are consistent with mark-recapture studies undertaken on all species of blacktip shark in Northern Territory waters [Bradshaw et al. 2013], a previous assessment undertaken for the Northern Territory and West Australian portion of this stock [Grubert et al. 2013] and an assessment that demonstrates that Spot-Tail Shark are being fished within sustainable limits on the east coast of Australia [Leigh 2015]. The above evidence indicates that the biomass of this stock is not recruitment impaired and the current level of fishing will not cause the stock to become recruitment impaired.

On the basis of the evidence provided above, the Northern Australian biological stock is classified as a **sustainable stock**.

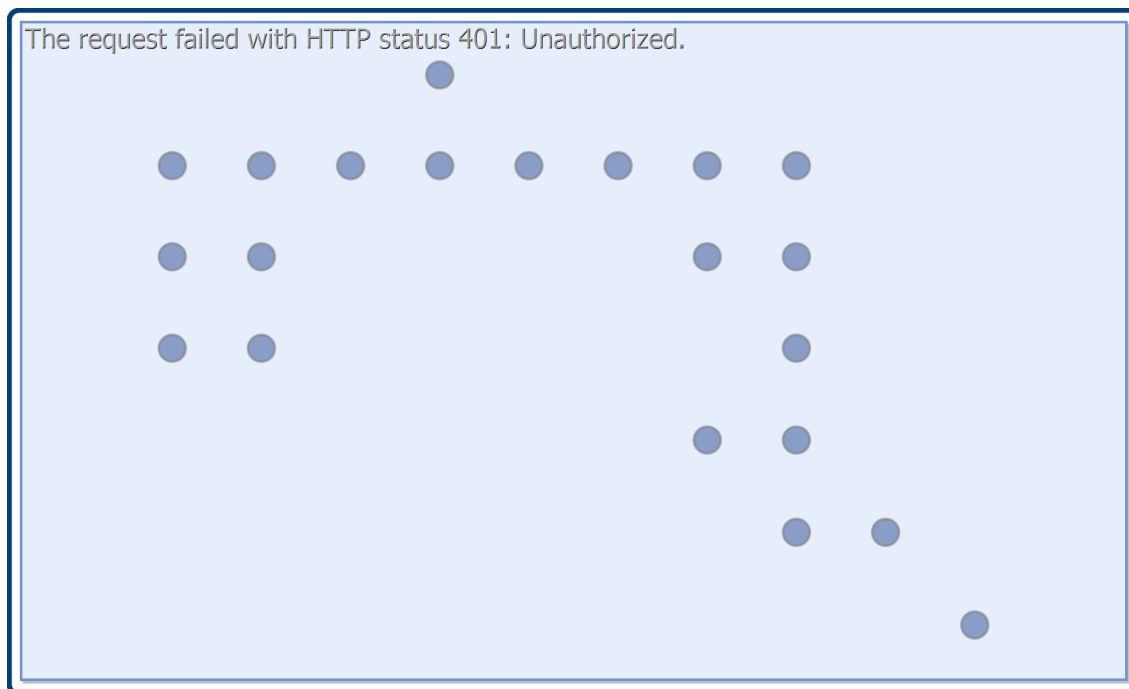
BIOLOGY

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[Harry 2011; Last and Stevens 2009].

Species	Longevity / Maximum Size	Maturity (50 per cent)
Spot-Tail Shark	Females 14 years, males 9 years, 1,600 mm TL	2-3 years, both sexes 900-950 mm TL

DISTRIBUTION



Distribution of reported commercial catch of Spot-Tail Shark.

TABLES

Fishing methods	Northern Territory	Queensland	Western Australia
Charter			
Hook and Line	✓		
Commercial			
Gillnet	✓		
Line		✓	
Net		✓	
Unspecified	✓		

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Recreational			
Handline			✓
Hook and Line	✓	✓	✓

Management Methods			
	Northern Territory	Queensland	Western Australia

Charter			
Bag limits			✓
Gear restrictions	✓		
Licence (boat-based sector)			✓
Possession limit	✓		
Spatial closures	✓		✓

Commercial			
Bag/possession limits		✓	
Boat limits		✓	
Catch limits			✓
Effort limits (individual transferable effort)			✓
Gear restrictions	✓	✓	✓
Harvest Strategy		✓	
Limited entry		✓	✓
Processing restrictions	✓	✓	
Quota	✓		
Seasonal or spatial closures		✓	
Size limits		✓	
Spatial closures	✓		✓
Total allowable catch	✓	✓	

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Vessel restrictions		✓	
Recreational			
Bag limits			✓
Bag/possession limits		✓	
Gear restrictions	✓	✓	✓
Licence (boat-based sector)			✓
Possession limit	✓		
Processing restrictions		✓	
Seasonal or spatial closures		✓	
Size limits		✓	
Spatial closures	✓		✓

Catch			
	Northern Territory	Queensland	Western Australia
Charter	Unknown		
Commercial	35.0114 t	16.2565 t	0 t
Indigenous	Unknown	Unknown	Unknown
Recreational	Unknown	Unknown	No Spot-Tail Shark caught from boats [Ryan et al. 2019], shore-based catches are undetermined

Northern Territory – Charter (Management Methods). In the Northern Territory, charter operators are regulated through the same management methods as the recreational sector but are subject to additional limits on license and passenger numbers.

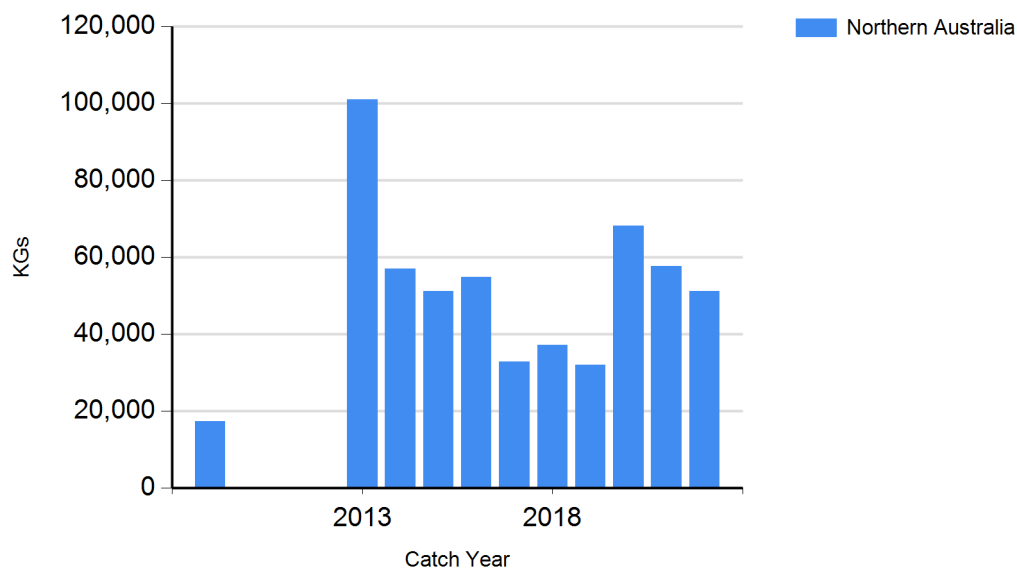
Northern Territory - Indigenous (Management Methods). The *Fisheries Act 1988* (NT), specifies that: “Unless expressly provided otherwise, nothing in this Act derogates or limits the right of Aboriginal people who have traditionally used the resources of an area of land or water in a traditional manner to continue to use those resources in that area in that manner.”

Queensland – Commercial (Management Methods). Harvest strategies are available at: <https://www.daf.qld.gov.au/business-priorities/fisheries/sustainable/harvest-strategy>

Queensland – Indigenous (Management Methods). for more information see <https://www.daf.qld.gov.au/business-priorities/fisheries/traditional-fishing>

Queensland – Commercial (Catch). Queensland commercial and charter data have been sourced from the commercial fisheries logbook program. Further information available through the Queensland Fisheries Summary Report <https://www.daf.qld.gov.au/business-priorities/fisheries/monitoring-research/data/queensland-fisheries-summary-report>

CATCH CHART



Commercial catch of Spot-Tail Shark - note confidential catch not shown.

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