

Australian Blacktip Shark (2020)

Carcharhinus tilstoni



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Western Australia, Northern Territory	North Western Australia	Sustainable	Biomass, fishing mortality, catch, catch rate
Northern Territory, Queensland	Gulf of Carpentaria	Undefined	Catch
Queensland	East Coast	Sustainable	Biomass, catch

STOCK STRUCTURE

Australian Blacktip Shark (*Carcharhinus tilstoni*) are distributed within the waters of Northern Australia. Genetic studies have identified two biological stocks of Australian Blacktip Shark. A western stock extending from the western Northern Territory into northern Western Australia, and an eastern stock extending from the Gulf of Carpentaria to the east coast of Queensland and New South Wales [Ovenden et al. 2007]. The stock boundary between the North Western Australia and the North Eastern Australia biological stocks is uncertain.

Australian Blacktip Shark are similar in appearance to Common Blacktip Shark (*C. limbatus*). Previously taxonomic differentiation of these species was only possible by genetic analyses, precaudal vertebral counts or, in certain size classes, differences in size at maturity [Harry et al. 2011]. A new identification technique, utilising body measurements and pelvic fin colouration, has been developed and may assist in distinguishing between these two species [Johnson et al. 2017]. However, accurate field identification remains difficult and is not practical during fishing operations [Johnson et al. 2017]. Hybridisation between the species has also been recorded, though its implications for fisheries assessment and management remain poorly understood [Harry et al. 2012, Johnson 2017, Morgan et al. 2011]. Consequently, Australian Blacktip Shark and Common Blacktip Shark are often reported as a species complex in commercial logbooks. For the purpose of these assessments a portion of the combined blacktip shark catch for each jurisdiction has been attributed to Australian Blacktip Shark using relative abundance ratios determined from onboard observer programs and published research [Johnson 2017, Ovenden 2007].

Here, assessment of stock status for Australian Blacktip Shark is presented at the biological stock level—North Western Australia—and the management unit level—Gulf of Carpentaria (Northern Territory and Queensland) and East Coast (Queensland and New South Wales).

STOCK STATUS

East Coast The most recent stock assessment [Leigh 2015] based on data up to 2013 provided a range of annual maximum sustainable yield (MSY) estimates for Australian Blacktip Shark on the Queensland East Coast from 144 t to 670 t. The MSY range is well above the estimated total commercial catch of Australian Blacktip Shark reported from the east coast in 2018–19 (25 t) and the average ten year annual harvest (79 t). Commercial catch of Australian Blacktip Shark peaked between 2003-04 and 2007-08 (averaging 127 t per year), with the maximum catch in this period (157 t in 2003-04) being the only occasion where catches have exceeded the lower estimate of MSY since 1991-92. Harvest has declined in recent years, although this reflects poor market demand for shark products and is unlikely to be related to biomass declines. In 2009 Queensland introduced a 600 t annual total allowable commercial catch (TACC) limit (species combined), applying to all sharks and rays retained for sale on the Queensland east coast. This TACC was introduced in conjunction with an 'S' fishing symbol that significantly reduced the number of licences permitted to target sharks in high quantities. The catch of Australian Blacktip sharks in the Queensland Shark Control Program is negligible, averaging five individuals per year since 2001 [QFISH 2020]. Recreational harvest in Queensland is limited to one shark in possession and maximum legal size of 1.5 m total length. The 2015 stock assessment report acknowledged that there are a number of data limitations for Queensland shark fisheries, particularly with respect to the species identifications and the quantity and reliability of available catch data. Species differentiation for the Blacktip Shark complex has improved with the introduction of a new Shark and Ray logbook on 1 January 2018 that limits the 'Blacktip Whaler' category to *C. limbatus* and *C. tilstoni* only. While identification of Australian Blacktip Shark and Common Blacktip Shark is particularly difficult in the field, contemporary genetic data have recently been collected by a two year on-board observer program that aims to improve species composition data for sharks in Queensland fisheries.

In New South Wales, Australian Blacktip Shark are not differentiated in commercial logbooks; however, observations on commercial fishing vessels indicate that the amount of Australian Blacktip Shark caught is likely less than 0.1% of total shark catch (Macbeth et al, 2009) and therefore represents a negligible proportion of catch for this biological stock.

Overall the information provided by both jurisdictions indicates that the stock is not considered to be depleted and that recruitment is unlikely to be impaired. Furthermore, the level of fishing mortality is also unlikely to cause the stock to become recruitment impaired.

On the basis of the evidence provided above, Australian Blacktip Shark in the East Coast management unit is classified as a **sustainable stock**.

Gulf of Carpentaria The Gulf of Carpentaria biological stock straddles two jurisdictions: The Northern Territory, east of the Wessel Islands-Queensland border and Queensland, west of Torres Strait Islands to the Northern Territory border. Most Australian Blacktip Sharks in this stock are caught by Queensland Fisheries (Queensland 80 t (est.); Northern Territory 11 t). Harvest has declined in recent years, however this is due to poor market demand for shark products and is unlikely to be related to biomass declines. The most recent stock assessment for Australian Blacktip Shark in the Queensland Gulf of Carpentaria [Leigh GM 2015] based on data up to 2013 provided a range of annual maximum sustainable yield (MSY)

estimates from 95 t to 513 t. Leigh [2015] also identified a number of data limitations for Queensland shark fisheries, particularly with respect to the species identifications and the quantity and reliability of available catch data. Reporting for the Blacktip Shark complex has improved in Queensland with the introduction of a new Shark and Ray logbook on 1 January 2018 that limits the 'Blacktip Whaler' category to *C. limbatus* and *C. tilstoni* only. Until trends in catch levels and their impact on the biological stock of Australian Blacktip Shark are better understood, there is insufficient information to confidently classify the status of this stock.

On the basis of the evidence provided above, Australian Blacktip Shark in the Gulf of Carpentaria management unit is classified as an **undefined stock**.

**North
 Western
 Australia**

The North Western Australia biological stock straddles two jurisdictions: The Northern Territory, west of the Wessel Islands–Western Australian border; and Western Australia. Domestic catches of Australian Blacktip Shark peaked in 2012 but have subsequently declined to relatively low levels. Changing operational practices in the NT Offshore Net and Line Fishery has greatly reduced the take of Australian Blacktip Shark in the Northern Territory. There has been little to no shark-targeted fishing occurring in the Northern Territory since 2012 as a result of declining shark fin prices and increasing value of Grey Mackerel (*Scomberomorus semifasciatus*), which is currently the main target species of this fishery. In this circumstance, the decline in catches has provided opportunity for the population of Australian Blacktip Shark to recover. Although there is uncertainty regarding species composition and the magnitude of historical catches of Blacktip Sharks from Western Australia, harvests of Australian Blacktip Shark in this jurisdiction have been negligible since April 2009 [Molony et al. 2013], allowing the biomass to increase.

A stock assessment was undertaken for the North Western Australia biological stock of Australian Blacktip Shark utilising a Stochastic Stock Reduction Analysis (SRA) model. The assessment estimated that in 2019 the harvest rate for Australian Blacktip Shark was 4 per cent of that required to reach MSY and that biomass was approximately 96 per cent of unfished levels [Usher et al. 2020]. The results of this assessment are supported by mark-recapture research undertaken for all species of Blacktip Shark in Northern Territory waters [Bradshaw et al. 2013]. This stock is not considered to be recruitment impaired and the current level of fishing is unlikely to cause the stock to become recruitment impaired.

On the basis of the evidence provided above, the North Western Australia biological stock of Australian Blacktip Shark is classified as a **sustainable stock**.

BIOLOGY

Blacktip Sharks biology [Harry, 2011, Harry et al. 2012, Last and Stevens 2009]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Australian Blacktip Shark	<i>Carcharhinus tilstoni</i> : Females 15 years, males 13 years; 2 000 mm TL	<i>C. tilstoni</i> : 5–6 years; females 1 350–1 400 mm, males 1 200 mm TL

DISTRIBUTION



Distribution of reported commercial catch of Australian Blacktip Sharks

TABLES

Fishing methods	Northern Territory	Queensland
Charter		
Hook and Line	✓	
Commercial		
Beach Seine	✓	
Gillnet	✓	
Handline	✓	
Line		✓
Longline (Unspecified)	✓	
Net		✓
Recreational		
Hook and Line	✓	✓

Management Methods	New South Wales	Northern Territory	Queensland	Western Australia
Charter				
Bag limits				✓
Gear restrictions		✓		

Licence (boat-based sector)				✓
Possession limit		✓		
Spatial closures		✓		✓
Commercial				
Catch limits				✓
Effort limits	✓			
Effort limits (individual transferable effort)				✓
Gear restrictions		✓	✓	✓
Limited entry	✓			✓
Limited entry (licensing)			✓	
Maximum size limit			✓	
Possession limit			✓	
Processing restrictions	✓	✓		
Quota		✓		
Spatial closures	✓	✓	✓	✓
Total allowable catch		✓	✓	
Recreational				
Bag and boat limits	✓			
Bag limits				✓
Gear restrictions	✓	✓	✓	✓
Licence (boat-based sector)				✓
Maximum size limit			✓	
Possession limit		✓	✓	
Spatial closures		✓		✓

Catch	Northern Territory	Queensland	Western Australia
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Charter	Unknown		
Commercial	36.9701 t	0 t	0 t
Indigenous	Unknown	Unknown	Unknwon
Recreational	Unknown	Unknown	No Australian Blacktip Shark caught from boats [Ryan et al. 2019], shore-based catches are undetermined

Western Australia – Recreational (Management methods) A recreational fishing from boat licence is required for recreational fishing from a powered vessel in Western Australia.

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

New South Wales – Indigenous (Management Methods)
<https://www.dpi.nsw.gov.au/fishing/aboriginal-fishing>

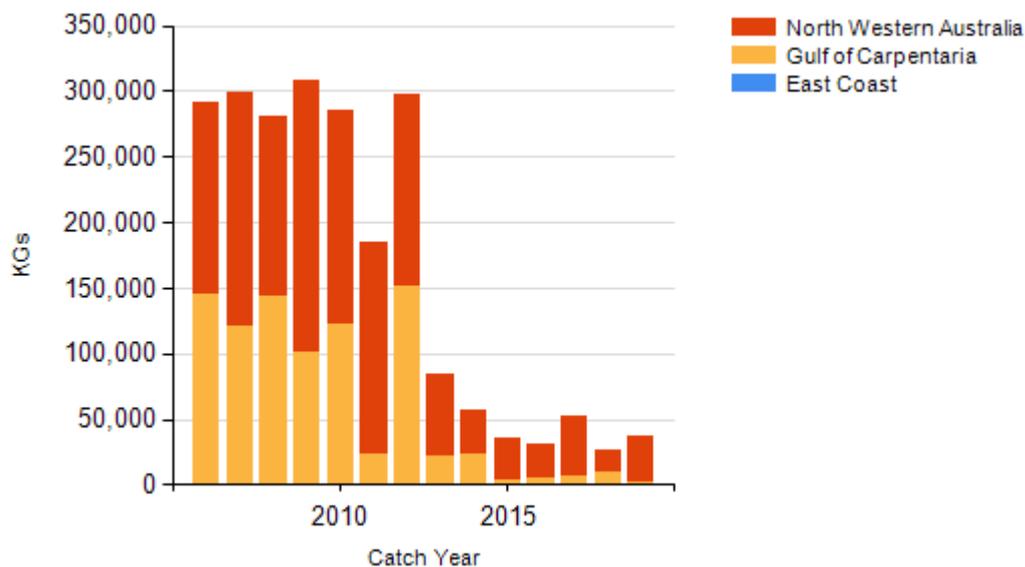
New South Wales commercial fisheries with less than seven active fishers are not presented due to the Privacy Act.

Recreational and Indigenous (catch) Given the offshore distribution of Sandbar Shark, near-shore catches are likely to be negligible.

Northern Territory – Indigenous (Management methods) The *Fisheries Act* 1988 (NT), specifies that “...without derogating from any other law in force in the Territory, nothing in a provision of this Act or an instrument of a judicial or administrative character made under it limits the right of Aboriginals who have traditionally used the resources of an area of land or water in a traditional manner from continuing to use those resources in that area in that manner”.

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.

CATCH CHART



Commercial catch of Blacktip Sharks - note confidential catch not shown

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QFISH 2020	QFish, Department of Agriculture and Fisheries, www.qfish.gov.au

