

Teraglin (2020)

Atractoscion atelodus



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Queensland, New South Wales	Eastern Australia	Sustainable	Depletion estimates, Catch, Effort, CPUE, Size composition, Age composition, Harvest rates

STOCK STRUCTURE

Teraglin (*Atractoscion atelodus*) was recently distinguished as a distinct species that occurs only in eastern Australia, having formerly been known as *Atractoscion aequidens* which also occurs around southern Africa from Angola to South Africa (Song et al. 2017). Within Australia Teraglin are distributed from southern Queensland to Montague Island in NSW. Due to the species' limited latitudinal distribution along eastern-Australia, and the influence of the prevailing southerly flowing Eastern Australian Current in distributing larvae across this area Teraglin are considered to be a single biological stock in this region—the Eastern Australia biological stock.

STOCK STATUS

Eastern Australia This cross-jurisdictional biological stock has components in Queensland and New South Wales. The status presented here for the entire biological stock has been established using evidence from both jurisdictions.

Total harvest of Teraglin appears to have peaked during the late 1950s, when the New South Wales commercial harvest alone peaked at more than 200 t per annum [Stewart and Hegarty 2020, Stewart et al. 2015]. Since that time landings have declined steadily and in 2018-19 NSW commercial landings were less than 20 t, and landing from the entire stock estimated at around 50 t [Stewart and Hegarty 2020]. Stock-wide standardized commercial catch rates indicate that the available biomass of Teraglin may have declined slightly since 1997-98 but has been variable and with no obvious trend since around 2000 [Stewart and Hegarty 2020]. The stock was assessed in 2020 using data up to and including 2018-19 using a simple Catch-MSY model [Haddon et al. 2018, Martell and Froese 2013] using NSW commercial and recreational data 1950 to

2019, and an age-structured surplus production model using commercial and recreational catch data from Queensland and New South Wales 1997-98 to 2018-19, with a mean standardized catch rate weighted to be relative to each state’s harvest. The model outputs indicated that biomass has been increasing in recent years to be at around 0.35 of the unfished biomass in 2018-19 [Stewart and Hegarty 2020]. The weight of evidence is that the biomass of Teraglin declined to be around 0.30 of the unfished level during the late 1990s and has since increased slightly to be well above the limit reference point of 0.2 of unfished levels. The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired.

The total harvest across the biological stock has declined substantially since the 1970s. The Catch-MSY model (using just NSW data) estimated that landings in that state exceeded the MSY (approximately 110 t per annum) frequently until the mid-1980s, and has been beneath that level since [Stewart and Hegarty 2020]. Estimated mean harvest rate exceeded F_{targ} between the 1970s to the early 2000s and declined thereafter to be below that since the early 2010s. Commercial fishing effort in terms of days fished when Teraglin were reported has declined since the late 1990s but has been relatively stable since the early 2000s [Stewart and Hegarty 2020]. The size composition in the landed catch between the 1970s and 2013-14, as well as a single age composition from 2011-12, indicated the fishery in New South Wales was based on a truncated population with relatively few fish greater than 3-4 years of age; however a catch-curve derived estimate of total mortality for 2011-12 suggested that fishing mortality was similar to natural mortality [Stewart and Hegarty 2020]. The weight of evidence is that fishing mortality was excessive during the 1970s to early 2000s, and since that time fishing mortality has declined substantially across the stock to be at a level under which the population is increasing. Teraglin grow reasonably quickly and mature at a relatively small size and young age [Hegarty 2016], indicating potential for relatively rapid population growth. The above evidence indicates that the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

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

BIOLOGY

Teraglin biology [Hegarty 2016, Hutchins and Swainston 2006]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Teraglin	14+ years, 1000 mm TL	1-2 years, 360 mm FL

DISTRIBUTION



Distribution of reported commercial catch of Teraglin

TABLES

Fishing methods	New South Wales	Queensland
Charter		
Hand Line, Hand Reel or Powered Reels	✓	
Hook and Line		✓
Commercial		
Hook and Line	✓	
Line		✓
Net		✓
Various	✓	
Recreational		
Hand Line, Hand Reel or Powered Reels	✓	
Hook and Line		✓
Spearfishing	✓	✓

Management Methods	New South Wales	Queensland

Charter		
Bag limits	✓	
Gear restrictions	✓	✓
License	✓	
Marine park closures	✓	
Possession limit	✓	✓
Size limit	✓	✓
Spatial closures	✓	✓
Commercial		
Gear restrictions	✓	
Limited entry	✓	
Marine park closures	✓	
Size limit	✓	✓
Spatial closures	✓	✓
Temporal closures		✓
Vessel restrictions	✓	
Recreational		
Bag limits	✓	
Gear restrictions	✓	✓
License	✓	
Marine park closures	✓	
Possession limit	✓	✓
Size limit	✓	✓
Spatial closures	✓	✓

Catch		
	New South Wales	Queensland
Commercial	16.639 t	4.0372 t
Indigenous	Unknown	Unknown
Recreational	18.3 t (2017-18)	8.5 t (2013-14)

New South Wales – Recreational (Catch) Murphy et al. [2020].

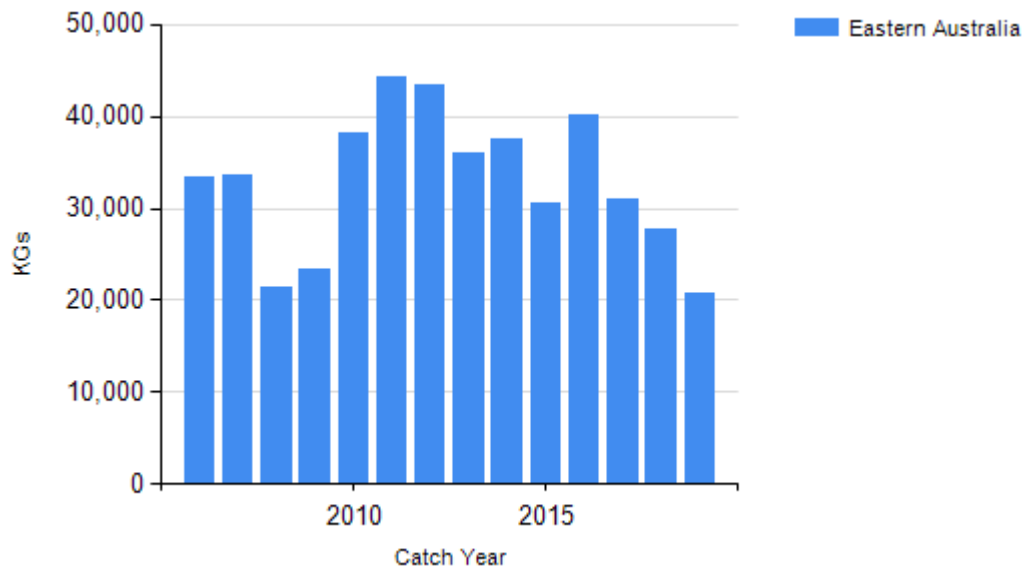
New South Wales – Indigenous (management methods)

(<https://www.dpi.nsw.gov.au/fishing/aboriginal-fishing>)

Queensland – Indigenous (management methods) for more information see

<https://www.daf.qld.gov.au/business-priorities/fisheries/traditional-fishing>

CATCH CHART



Commercial catch of Teraglin

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