

Saddletail Snapper (2018)

Lutjanus malabaricus



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Western Australia	North Coast Bioregion	NDSMF, NDSMF PFTIMF PLF PTMF, PFTIMF, PLF, PTMF	Sustainable	Catch, indicator species status
Northern Territory, Queensland	Northern Australia	CLF, DF, GOCDFFTF, GOCLF, ONLF, TRF	Sustainable	Catch, CPUE, SRA
Queensland	East Coast Queensland	CRFFF	Undefined	Catch, effort, CPUE

CLF Coastal Line Fishery (NT), DF Demersal Fishery (NT), ONLF Offshore Net and Line Fishery (NT), TRF Timor Reef Fishery (NT), LFR Line Fishery (Reef) (QLD), GOCDFFTF Gulf of Carpentaria Developmental Fin Fish Trawl Fishery (QLD), GOCLF Gulf of Carpentaria Line Fishery (QLD), NDSMF Northern Demersal Scalefish Managed Fishery (WA), PFTIMF Pilbara Fish Trawl (Interim) Managed Fishery (WA), PLF Pilbara Line Fishery (WA), PTMF Pilbara Trap Managed Fishery (WA), NDSMF || PFTIMF || PLF || PTMF Various Fisheries combined due to 3 boat rule (WA)

STOCK STRUCTURE

Saddletail Snapper is a widespread Indo-Pacific species found from Shark Bay in Western Australia, across northern Australia to the east coast of Queensland [Newman, 2002]. Genetic studies indicate that the species is comprised of three biological stocks: the North Coast Bioregion biological stock, the Northern Australian biological stock (including the Timor Sea, Arafura Sea and the Gulf of Carpentaria) and the East coast of Queensland biological stock [Elliot 1996, Salini et al. 2006].

Here, assessments of stock status are presented at the biological stock level—North Coast Bioregion (Western Australia), Northern Australia (Northern Territory and Queensland) and East coast Queensland.

STOCK STATUS

East Coast Queensland There has been no stock assessment of this biological stock and there is no estimate of **MSY** for East Coast Queensland Saddletail Snapper. Saddletail Snapper comprised approximately 57 per cent (120 t) [QDAF 2018] of the Crimson Snapper and Saddletail Snapper species complex reported during the 2013–14 recreational fishing survey [Webley et al 2015]. Recreational catches of Saddletail Snapper constitute around 70 per cent of the total landings for the species [QDAF 2018].

Around 2004, the reported commercial harvest declined from an average of 150 t per year to around 50 t per year. This decrease coincided with expansion of no-take marine reserves within the Great Barrier Reef Marine Park (GBRMP) and the introduction of a quota management system for coral reef finfish species. Both management interventions are likely to have influenced commercial harvest. However, since 2012–13, both commercial catches and catch rates have been steadily increasing from 38 t to 77 t in 2016–17 and 40 kg per day to 59 kg per day, respectively. Commercial harvest of Saddletail Snapper falls under the “Other Species” quota in the Coral Reef Fin Fish Fishery (CRFFF, 956 t in 2016–17), which comprises many other coral reef finfish species. The Indigenous catch is unknown but is expected to be minor. A portion of the biomass is afforded some protection from fishing by the Great Barrier Reef Marine Park, although this has not been quantified. With increasing targeting of this species and a high degree of uncertainty on the status of the biomass, there is insufficient information available to confidently classify the status of this stock.

On the basis of the evidence provided above, the East Coast Queensland biological stock is classified as an **undefined stock**.

North Coast Bioregion Saddletail Snapper is caught primarily on the north-west coast of Western Australia as a component of the multispecies Pilbara Demersal Scalefish Fisheries (which includes the Pilbara Fish Trawl (Interim) Managed Fishery, the Pilbara Trap Managed Fishery and the Pilbara Line Fishery) in the Pilbara management region of the North Coast Bioregion; and the Northern Demersal Scalefish Managed Fishery (NDSMF) in the Kimberley management region of the North Coast Bioregion of Western Australia [Newman et al. 2018a]. Saddletail Snapper is assessed on the basis of the status of several indicator species (including Red Emperor and Goldband Snapper in the Kimberley region) considered to provide reliable indices of overall fishing pressure on the entire inshore demersal suite of species occurring at depths of 30–250 m [Newman et al. 2018b].

The major performance measures for these indicator species are estimates of spawning stock levels estimated using an integrated age-structured assessment. The target level of spawning biomass is 40 per cent of the unfished level. The limit level is 30 per cent of the estimate of initial spawning biomass [DPIRD 2017]. Indicator species assessments determined that the spawning biomass levels of each of the indicator species were greater than 40 per cent of the unfished level in the Pilbara Demersal Scalefish Fisheries in 2015, the year the last integrated assessment was undertaken. The spawning biomass levels of the indicator species were either greater than the target level or between the target level and the threshold level in the NDSMF in 2014 [Newman et al. 2018a]. The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired.

The catch of Saddletail Snapper in the Pilbara Demersal Scalefish Fisheries has been low and stable for the past five years (2013–17), ranging from 72–111 tonnes (t), with a mean annual catch of 85 t. The catch of Saddletail Snapper in the NDSMF has been stable for the past five years (2013–17), ranging from 89–166 t, with a mean annual catch of 116 t. 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 North Coast Bioregion (Western Australia) biological stock is classified as a **sustainable stock**.

Northern Australia

This cross-jurisdictional biological stock has components in the Northern Territory and Queensland. Each jurisdiction assesses that part of the biological stock that occurs in its waters. The status presented here for the entire biological stock has been established using evidence from both jurisdictions.

For the Northern Territory component of this biological stock (where most of the commercial catch is taken), Saddletail Snapper was assessed in 2013 using a stochastic stock reduction analysis (SRA) model [Martin 2013]. Egg production in 2013 was estimated to be around 80 per cent of that prior to the start of the fishery. This evidence indicates that this part of the stock is unlikely to be depleted.

The Northern Territory manages the commercial harvest of Saddletail Snapper and Crimson Snapper together as 'red snappers' with a combined total allowable commercial catch of 3 800 t. Saddletail Snapper has averaged 78 per cent of the annual red snapper catch over the past 10 years, with the 2017 commercial catch of this species being 2 077 t. Trawl effort and catch per unit effort have both increased since 2012. The 2013 assessment indicated that the current harvest rate of Saddletail Snapper is well below that required to achieve maximum sustainable yield (MSY). This level of fishing pressure is unlikely to cause this part of the stock to become recruitment impaired.

Saddletail Snapper in the Queensland component of the stock are mainly taken by the commercial Gulf of Carpentaria Developmental Fin Fish Trawl Fishery (GOCDFTF). The MSY for this part of the stock is approximately 150 t [Leigh and O'Neill 2016] and the average catch from 2006–15 was slightly below this level. Less than 0.5 t has been landed by the Gulf of Carpentaria Line Fishery (GOCLF) since 2013. The above evidence indicates that the biomass of this part of the stock is unlikely to be depleted and that recruitment is unlikely to be impaired.

The total allowable commercial catch (TACC) for target species for the Queensland GOCDFTF was reduced from 1 250 t to 450 t in 2014 and changed to a species-specific non-transferable quota entitlement with a TACC of 150 t for Saddletail Snapper on 1 July 2016 as part of new permitting arrangements. There has been no fishing in the GOCDFTF since the start of the 2016–17 financial year. This contrasts with catches of 150–250 t per year during the period 2006–11 and catches of 0–67 t during the period 2012–15. There is no reliable estimate of recreational or Indigenous harvest of Saddletail Snapper in the GOC, but it is expected to be minor given the offshore nature of the fishery. The above evidence indicates that the current level of fishing mortality is unlikely to cause the Queensland component of the stock to become recruitment impaired.

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

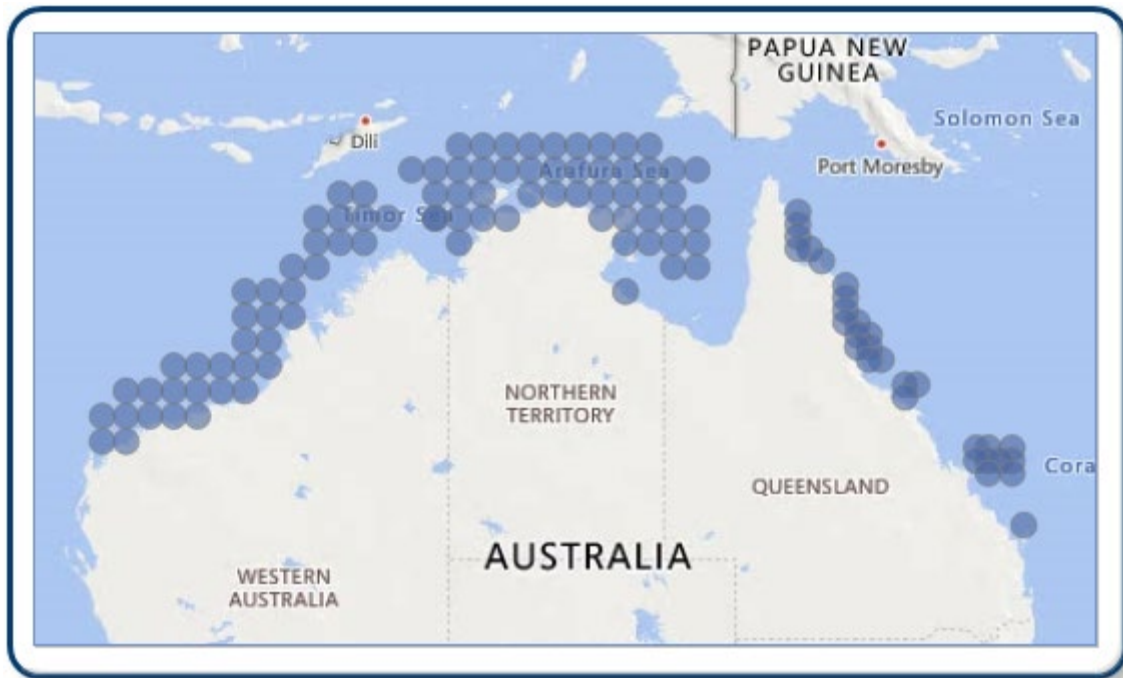
BIOLOGY

Saddletail Snapper biology [Fry and Milton 2009, Fry et al. 2009, McPherson et al. 1992, McPherson and Squire 1992, Carpenter and Niem 2001, Newman 2002, Newman et al. 2000]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Saddletail Snapper	Northern and Western Australia: 33 years, 680 mm SL East coast Queensland, 20 years; 1000 mm TL	Northern and Western Australia: 9 years, Males 280 mm SL, Females 370 mm SL East coast Queensland:

		Females 576 mm FL
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DISTRIBUTION



Distribution of reported commercial catch of Saddletail Snapper – confidential catch is not shown

TABLES

Commercial Catch Methods	Northern Territory	Queensland	Western Australia
Demersal Longline	✓		
Dropline	✓		
Fish Trap	✓		✓
Hand Line, Hand Reel or Powered Reels			✓
Hook and Line	✓	✓	
Midwater Trawl	✓		
Otter Trawl	✓		✓
Pelagic Gillnet	✓		
Trawl		✓	
Trolling	✓		
Trotline	✓		
Unspecified			✓

Fishing methods	Northern Territory	Queensland	Western Australia
Charter			
Hook and Line		✓	✓
Spearfishing		✓	

Commercial			
Dropline	✓		
Fish Trap	✓		✓
Hand Line, Hand Reel or Powered Reels			✓
Hook and Line	✓	✓	
Midwater Trawl	✓		
Otter Trawl	✓		✓
Pelagic Gillnet	✓		
Trawl		✓	
Unspecified			✓
Indigenous			
Hook and Line		✓	
Spearfishing		✓	
Recreational			
Hook and Line	✓	✓	✓
Spearfishing		✓	
Management Methods			
	Northern Territory	Queensland	Western Australia
Charter			
Bag limits			✓
Gear restrictions		✓	
Limited entry			✓
Passenger restrictions			✓
Possession limit		✓	
Size limit		✓	
Spatial closures		✓	✓
Spatial zoning			✓
Temporal closures		✓	
Commercial			
Effort limits			✓
Gear restrictions	✓	✓	✓
Limited entry		✓	✓
Quota		✓	
Size limit		✓	

Spatial closures	✓	✓	✓
Spatial zoning	✓		✓
Temporal closures		✓	
Total allowable catch	✓	✓	
Total allowable effort			✓
Vessel restrictions		✓	✓
Indigenous			
Laws of general application			✓
Recreational			
Gear restrictions		✓	
Licence (Recreational Fishing from Boat License)			✓
Possession limit	✓	✓	✓
Size limit		✓	
Spatial closures	✓	✓	✓
Temporal closures		✓	
Active Vessels			
	Northern Territory	Queensland	Western Australia
	14 LICENCES in CLF, 8 LICENCES in DF, 7 LICENCES in ONLF, 5 LICENCES in TRF,	125 in CRFFF, 0 in GOCDFTF, 2 in GOCLF,	<3 in PFTIMF, 6 in PLF, <3 in PTMF, 18 in Charter, 6 in NDSF,

CLF Coastal Line Fishery(NT)

DF Demersal Fishery(NT)

ONLF Offshore Net and Line Fishery(NT)

TRF Timor Reef Fishery(NT)

LFR Line Fishery (Reef)(QLD)

GOCDFTF Gulf of Carpentaria Developmental Fin Fish Trawl Fishery(QLD)

GOCLF Gulf of Carpentaria Line Fishery (QLD)

PFTIMF Pilbara Fish Trawl (Interim) Managed Fishery(WA)

PLF Pilbara Line Fishery(WA)

PTMF Pilbara Trap Managed Fishery(WA)

Charter Tour Operator(WA)

NDSF Northern Demersal Scalefish Fishery(WA)

Catch	Northern Territory	Queensland	Western Australia
Charter			2.70 t
Commercial	0.054t in CLF, 1891.81t in DF, 0.012t in ONLF, 185.155t in TRF,	76.931t in CRFFF, 0t in GOCDFFTF, 0.21t in GOCLF,	277.916t in NDSMF PFTIMF PLF PTMF,
Indigenous	Unknown	Unknown	Unknown
Recreational	55 t (in 2010)	120 t [QDAF 2018]	1.58 t ± 0.584 t se

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Western Australia – Active Vessels Data is confidential as there were fewer than three vessels in Pilbara Fish Trawl Interim Managed Fishery and Pilbara Trap Managed Fishery.

Western Australia – Recreational (Catch) Boat-based recreational catch is from 1 September 2015–31 August 2016. These data are derived from those reported in [Ryan et al. 2017].

Western Australia – Recreational (management methods) A Recreational Fishing from Boat Licence is required for the use of a powered boat to fish or to transport catch or fishing gear to or from a land-based fishing location.

Western Australia – Indigenous (management methods) Subject to the defence that applies under Section 211 of the *Native Title Act 1993* (Cth), and the exemption from a requirement to hold a recreational fishing licence, the non-commercial take by Indigenous fishers is covered by the same arrangements as that for recreational fishing.

Northern Territory – Recreational (catch) Saddletail Snapper and Crimson Snapper catch were combined during the Northern Territory 2010 recreational fishing survey [West et al. 2012].

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.

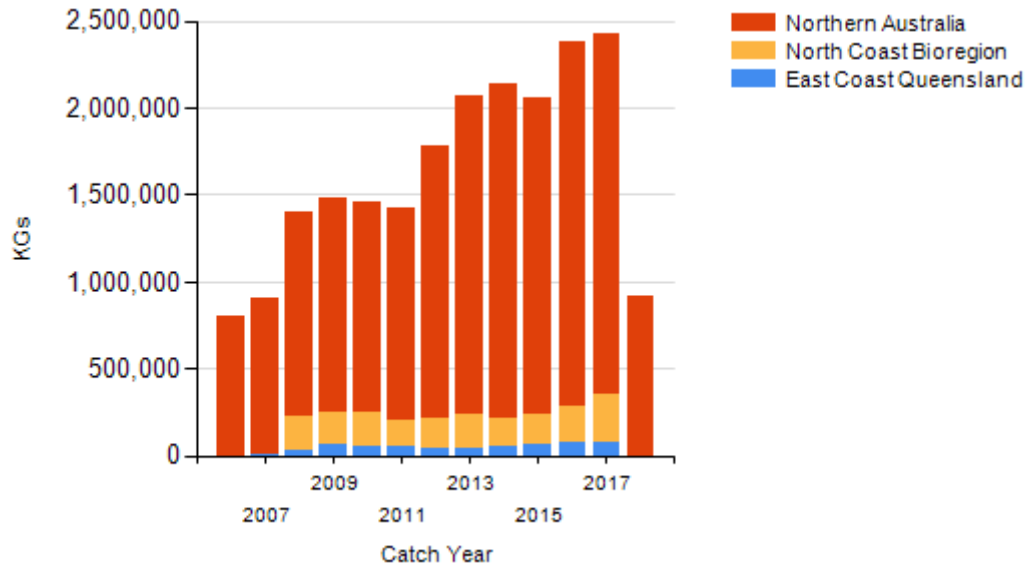
Northern Territory – Indigenous (management methods) The *Fisheries Act 1988* (NT), specifies that "...without derogating from any other law in force in the Territory, nothing in a provision of this Act or an instrument of a judicial or administrative character made under it limits the right of Aboriginals 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".

Queensland – The reporting period for the commercial Coral Reef Fin Fish Fishery (Queensland) is financial year (2016–17).

Queensland – Indigenous (management methods) Under the *Fisheries Act 1994* (Qld), Indigenous fishers in Queensland are entitled to use prescribed traditional and non-commercial fishing apparatus in waters open to fishing. Size and possession limits, and seasonal closures do not apply to Indigenous fishers. Further exemptions to fishery regulations may be applied for

through permits.

CATCH CHART



Commercial catch of Saddletail Snapper - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

ENVIRONMENTAL EFFECTS on Saddletail Snapper

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