

Ocean Jacket (2023)

Nelusetta ayraud



Amy Smoothey: New South Wales Department of Primary Industries, **Stephen Bradshaw:** Institute for Marine and Antarctic Studies, University of Tasmania, **Daniel Wright:** Australian Bureau of Agricultural and Resource Economics and Sciences, **Michael Drew:** South Australian Research and Development Institute, **Justin Bell:** Victorian Fisheries Authority

STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Commonwealth	Commonwealth Trawl Sector	Sustainable	Catch, effort, CPUE
Commonwealth	Great Australian Bight Trawl Sector	Sustainable	Catch, effort, CPUE
New South Wales	New South Wales	Sustainable	Catch, effort, CPUE
Victoria	Victoria	Undefined	Catch
Tasmania	Tasmania	Negligible	
South Australia	South Australia	Sustainable	Catch, effort, CPUE

STOCK STRUCTURE

Ocean Jackets are distributed along the southern half of Australia from Cape Moreton in Queensland around to North West Cape in Western Australia, including northern Tasmania [Kailola et al 1993]. Throughout their distribution, Ocean Jackets are found in many habitats. As juveniles they are found in estuaries and sheltered bays amongst seagrass beds of *Zostera sp.* and *Posidonia sp.* [Grove-Jones and Burnell 1991, Jones and West 2005]. Sub-adults and adults are found in different habitats such as rocky reefs, sandy–mud benthos, or sponge–coralline algae gardens in waters from 2–250 m [Grove-Jones and Burnell 1991, Hutchins 1999], where they are known to aggregate seasonally in large schools.

Little is known about the biological structure of the Ocean Jacket stock. Here, assessment of stock status is presented at the management unit level—Commonwealth Trawl Sector, Great Australian Bight Trawl Sector (Commonwealth); and at the jurisdictional level—New South

Wales, Victoria, Tasmania and South Australia.

STOCK STATUS

Commonwealth Trawl Sector In the Commonwealth Trawl Sector (CTS) of the Southern and Eastern Scalefish and Shark Fishery (SESSF), Ocean Jacket is a non-quota, by-product species. It has not been the subject of formal stock assessments under the SESSF Harvest Strategy Framework (HSF) [AFMA 2021]. However, CPUE is standardised.

A standardised CPUE series for Ocean Jacket in the CTS shows a similar trend to landings, suggesting that the abundance of Ocean Jackets increased after 2003. Following a period of relatively high CPUE from 2007 to 2017, it was slightly less between 2018 and 2020, but in 2020 remained above the long-term average across the entire time series [Sporcic 2021]. Ocean Jacket in the CTS was recently assessed under a sustainability assessment for fishing effects (SAFE). The SAFE found Ocean Jacket to be at 'low risk', meaning that the estimated fishing mortality rate during 2012 to 2016 (the period under assessment) was less than that required to drive the stock below the maximum sustainable mortality level [Sporcic et al. 2021].

Commonwealth-landed catch in the 2021–22 fishing season was 168.1 tonnes (t), based on logbook data [Emery et al. 2022]. The weighted average of the previous four calendar years (2017 to 2020) was calculated and used to estimate discards of 704.3 t [Althaus et al. 2021]. The CPUE remains above the long-term average of the entire time series, indicating that CTS catches are not driving the stock below the limit reference point (20% of the unfished biomass).

There is some uncertainty with regard the use of CPUE as a reliable indicator of abundance, for instance, because of the large and variable estimates of discards in the CTS. However, the above evidence indicates that the biomass of this stock is unlikely to be depleted and fishing mortality is unlikely to cause the stock to become recruitment impaired.

On the basis of the evidence presented above, Ocean Jacket in the Commonwealth Trawl Sector (Commonwealth) management unit is classified as a **sustainable stock**.

Great Australian Bight Trawl Sector In the Great Australian Bight Trawl Sector (GABTS) of the Commonwealth managed SESSF, Ocean Jacket is a non-quota, by-product species. It has not been the subject of formal stock assessments under the SESSF HSF [AFMA 2021], however, CPUE is standardised. A bycatch survey of the GABTS stock in 2001 indicated that Ocean Jacket is often discarded [Knuckey and Brown 2002], which potentially limits the use of commercial CPUE as an index of abundance for this species [Moore et al. 2022].

Ocean jacket is a relatively short-lived species (approximately 6 years), reaching maturity within 2–3 years. Large cyclical changes in abundance appear to have occurred off eastern Australia [Miller and Stewart 2009]. Historical catch data suggest that Ocean Jacket was fished down off the east coast of Australia in the 1920s and 1950s [Klaer 2001]. There are no age data for Ocean Jacket from the GABTS, and the available historical length-frequency data are too old to be useful.

Standardised CPUE for Ocean Jacket in the GABTS has been variable through time, with the most recent estimate similar to that at the start of the series (1986) [Sporcic 2021]. Fishery-independent surveys have been undertaken in the GAB since 2005. The relative abundance estimate increased by 77% between surveys in 2018 and 2021 [Knuckey et al. 2018, 2021]. This variability in Ocean Jacket abundance aligns with previous observations reported by Miller and Stewart [2009].

Landed catch of Ocean Jacket in the GABTS peaked in 2005 at 527 t. Commonwealth-landed catch in the GABTS has been less than 250 t since 2008–09 and was 182 t in the 2021–22 fishing season, based on logbook data [Moore et al. 2022].

The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. Furthermore, the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

On the basis of the evidence presented above, Ocean Jacket in the Great Australian Bight Trawl Sector (Commonwealth) management unit is classified as a **sustainable stock**.

New South Wales

In New South Wales, Ocean Jackets have a long history of commercial exploitation from the use of oceanic demersal fish traps and demersal otter trawls. Records of reported landings indicate that substantial peaks of between 600 and 900 t per year occurred during the 1920s and the 1950s. These peaks were followed by large declines, suggesting that the species is vulnerable to over-exploitation. Between 2000–01 and 2006–07, annual commercial landings from oceanic demersal fish traps and demersal otter trawls increased from 134 to 430 t. Since then, the variability in catch has been less as it peaked in 2010 at 510 t and then declined to 163 t in 2021–22, with a five-year average of 228 t. Since 2009–10, CPUE has been relatively stable [Smoothery 2023].

Ocean Jacket is important to the New South Wales recreational and charter boat fishers. Since 2015–16, an average of 4,499 Ocean Jackets have been caught annually by charter boat fishers (range: 1,256–7,527 fish) [Hughes et al. 2023]. The most recent estimate during 2019–20 of the recreational harvest of Leather Jackets (all species combined) in New South Wales, based on a survey of Recreational Fishing Licence (RFL) Households, was approximately 38,111 with 52% released alive caught, with the majority landed using line fishing with bait [Murphy et al. 2022]. RFL households comprised at least one member who possessed a long-term (1 and 3 years duration) fishing licence and included other fishers resident within their households. The recent recreational fishing estimate from 2019–20 is down from previous estimates of 53,062 and 71,000 fish recorded during 2017–18 and 2013–14, respectively [West et al. 2015; Murphy et al. 2020].

The recent decreases in commercial and recreational catches, coupled with the boom-bust history of the fishery, may suggest that the biomass is declining. However, the above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired.

Based on the evidence presented above, Ocean Jacket in New South Wales is classified as a **sustainable stock**.

**South
Australia**

Ocean Jacket is considered a tertiary species of South Australia's commercial multi-species, multi-gear and multi-sectoral Marine Scalefish Fishery. The species is not heavily targeted by recreational and charter boat fishers and no estimates of catch from these sectors are available. The primary measures for biomass and fishing mortality are total commercial catch, targeted fish trap effort and targeted fish trap CPUE [Smart et al. 2023]. The commercial fishery for Ocean Jackets in South Australia commenced in 1984, when this species was first targeted using baited fish traps in offshore waters [Grove-Jones and Burnell 1991]. Targeted catches rose quickly through the 1980s until regulations to control fishing effort were introduced. Total annual catch (1,006 t) and effort (3,322 fisher-days) peaked during the early 1990s, before declining significantly until 2005–06 (140 t). Catch and effort then stabilised at low levels from 2006–07 to 2014–15. Since then, commercial catch and effort have increased, although annual catch has generally remained relatively low at approximately 200 t and effort at approximately 400 fisher days. The most recent assessment of Ocean Jackets used data to the end of June 2022 [Smart et al. 2023]. In 2021–22, the total commercial catch was 254 t and total CPUE was at a record high of 687 kg.fisherday⁻¹.

The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. Furthermore, it indicates that the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

On the basis of the evidence presented above, Ocean Jacket in South Australia is classified as a **sustainable stock**.

Tasmania

Although not differentiated from other leatherjacket species in either commercial or recreational landings, the stock status for the Ocean Jacket in Tasmania is assumed to be **negligible**. Whilst likely under-reported or misidentified, catches are likely to be low given that the Tasmanian stock does not appear to have been subjected to targeted fishing.

Commercial catches of all leatherjacket species combined have averaged 2.1 t for the last decade, with peaks of around 15 t recorded in the 1990s and early 2000s, with the most recent 2021–22 landings being 0.1 t [Sharples et al. 2023]. Recreational harvest is likely to be similar, albeit with lower estimated peak catches of less than 10 t in the early 2000s [Sharples et al. 2023]. Given that adult Ocean Jackets primarily inhabit continental shelf and slope waters and that the bulk of the Tasmanian leatherjacket catch is harvested using fish traps from waters deeper than 50 m [Moore et al. 2018], the species is considered to constitute only a minor proportion of commercial and recreational landings of leatherjacket in Tasmania. Fishing is unlikely to be having a negative impact on the stock.

Victoria

Victoria does not play a significant role in the management of Ocean Jacket fisheries. It is not differentiated from other species of leatherjackets that are caught commercially or recreationally. Nevertheless, across all species landed, in 2021–22 the quantity of leatherjackets reported in Victorian commercial fisheries was only 9.78 t, with the majority caught in traps of the Victorian Rock Lobster Fishery. The only other Victorian fishery landing significant quantities of leatherjackets is the Corner Inlet-Nooramunga Fishery, but this fishery operates in shallow, inshore waters, so it is likely they are other species. Given the lack of species-specific catch and effort reporting from both commercial and

STATUS OF AUSTRALIAN FISH STOCKS REPORT
Ocean Jacket (2023)

recreational fisheries, there is insufficient information available to confidently classify the status of this stock.

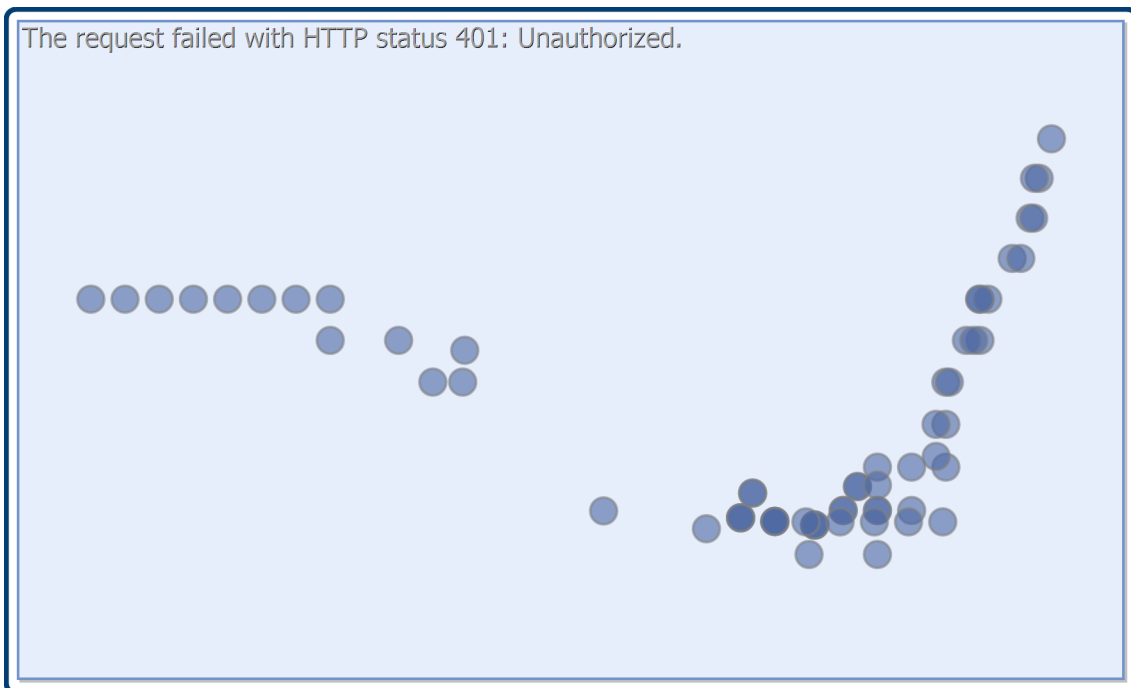
On the basis of the evidence presented above, Ocean Jacket in Victoria is classified as an **undefined stock**.

BIOLOGY

Ocean Jacket biology [Kailola et al. 1993; Miller et al. 2010; Miller and Stewart 2012]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Ocean Jacket	at least 9 years, 790 mm FL New South Wales 6 years, 656 mm TL	New South Wales 2.5 years

DISTRIBUTION



Distribution of reported commercial catch of Ocean Jacket

TABLES

Fishing methods	Commonwealth	New South Wales	South Australia	Victoria
Charter				
Hook and Line		✓		

STATUS OF AUSTRALIAN FISH STOCKS REPORT
Ocean Jacket (2023)

Commercial				
Danish Seine	✓			
Fish Trap		✓		
Hook and Line				✓
Net				✓
Otter Trawl	✓	✓		
Traps and Pots				✓
Unspecified			✓	
Various		✓		
Recreational				
Hook and Line		✓	✓	✓
Spearfishing		✓		✓

Management Methods				
	Commonwealth	New South Wales	South Australia	Victoria
Commercial				
Effort limits			✓	✓
Fishing gear and method restrictions		✓		
Gear restrictions	✓		✓	✓
Licence				✓
Limited entry	✓	✓	✓	✓
Marine park closures	✓			
Spatial closures	✓	✓		✓
Trip limits	✓			
Recreational				
Bag limits		✓		✓
Gear restrictions		✓	✓	✓
Licence		✓		✓
Spatial closures				✓
Spatial zoning		✓		

STATUS OF AUSTRALIAN FISH STOCKS REPORT
Ocean Jacket (2023)

Catch	Commonwealth	New South Wales	South Australia	Tasmania	Victoria
Charter		1,256 fish during 2022–23			
Commercial	327.686 t	162.847 t	254.224 t	0 t	9.78245 t
Indigenous		Unknown	Unknown	Unknown	Unknown (No catch under permit)
Recreational		53,062 fish during 2017–18	Unknown	Unknown	Unknown

Commonwealth – Commercial (Management Methods/Catch). Data provided for the Commonwealth align with the Commonwealth Southern and Eastern Scalefish and Shark Fishery for the 2021–22 financial year.

Commonwealth – Recreational. The Australian government does not manage recreational fishing in Commonwealth waters. Recreational fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters, under its management regulations.

Commonwealth – Indigenous. The Australian government does not manage non-commercial Indigenous fishing in Commonwealth waters, with the exception of Torres Strait. In general, non-commercial Indigenous fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters.

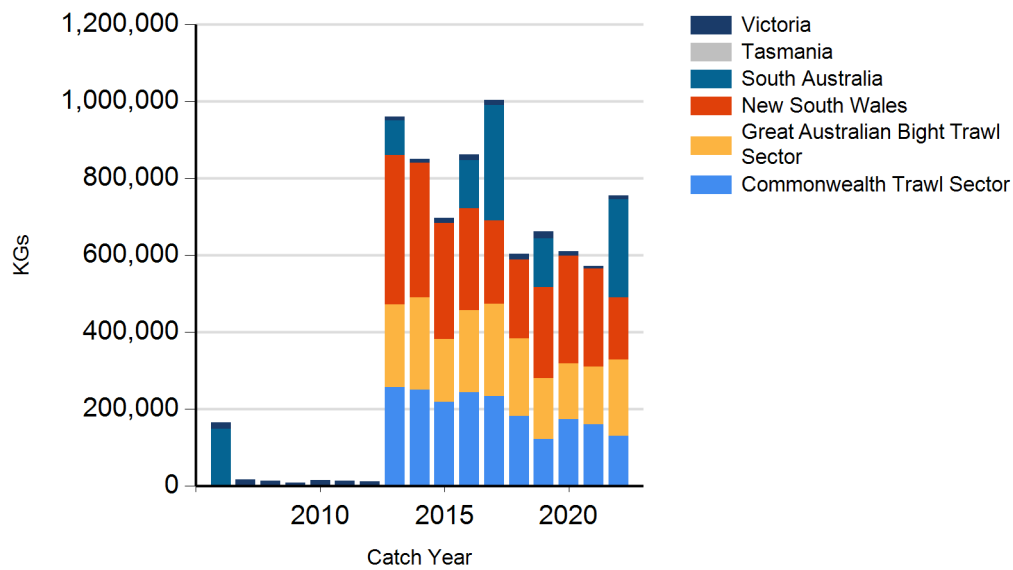
New South Wales – Indigenous (Management Methods).
<https://www.dpi.nsw.gov.au/fishing/aboriginal-fishing>

New South Wales – Recreational (Catch). Murphy et al. [2022].

Victoria – Indigenous (Management Methods). A person who identifies as Aboriginal or Torres Strait Islander is exempt from the need to obtain a Victorian recreational fishing licence, provided they comply with all other rules that apply to recreational fishers, including rules on equipment, catch limits, size limits and restricted areas. Traditional (non-commercial) fishing activities that are carried out by members of a traditional owner group entity under an agreement pursuant to Victoria’s *Traditional Owner Settlement Act 2010* are also exempt from the need to hold a recreational fishing licence, subject to any conditions outlined in the agreement. Native title holders are also exempt from the need to obtain a recreational fishing licence under the provisions of the Commonwealth’s *Native Title Act 1993*.

CATCH CHART

STATUS OF AUSTRALIAN FISH STOCKS REPORT
Ocean Jacket (2023)



Commercial catch of Ocean Jacket - note confidential catch not shown

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STATUS OF AUSTRALIAN FISH STOCKS REPORT
Ocean Jacket (2023)

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