

Greenback Flounder (2020)

Rhombosolea tapirina



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Western Australia	Western Australia	Negligible	
Victoria	Victoria	Sustainable	Catch, CPUE
Tasmania	Tasmania	Undefined	
South Australia	South Australia	Depleted	Catch, targeted effort

STOCK STRUCTURE

Greenback Flounder has a wide distribution in Australia, from Jervis Bay on the central coast of New South Wales, around the south of the continent including Tasmania, and up to Mandurah on the south-eastern coast of Western Australia [Kailola et al. 1993]. They also occur in New Zealand [Sutton et al. 2010].

The broad distribution of Greenback Flounder in Australia is thought to be divisible into a number of separate biological stocks. Genetic studies have demonstrated that the most significant division occurs between Australian and New Zealand populations [van den Enden et al. 2000]. Within Australia, there is strong evidence that populations in western Tasmania are genetically isolated from populations in Victoria, and northern and south-eastern Tasmania. These results are consistent with those of Kurth [1957], who identified distinct western and eastern Tasmania populations on the basis of morphometrics. Biological stock structure along the southern mainland coasts of Australia is not known.

Here, assessment of stock status for Greenback Flounder is presented at the jurisdictional level—Western Australia, Victoria, Tasmania and South Australia.

STOCK STATUS

**South
Australia**

The Lakes and Coorong Fishery (LCF) has traditionally been the most productive of South Australia's fisheries for Greenback Flounder, consistently accounting for > 95 per cent of the State's commercial catch since the 1970s [Earl and Ye 2016]. Small catches of this species are also taken by the Marine Scalefish Fishery (MSF) in some years. The most recent assessment for Greenback Flounder in the LCF was completed in 2020, and used a weight-of-evidence approach that considered fishery catch and effort data to the end of June 2019 [Earl 2020].

The primary measures of biomass and fishing mortality are total catch and total targeted effort from LCF gillnet fishers. Long-term trends in commercial catches indicate high interannual variability in fishable biomass in the Coorong estuary [Earl and Ye 2016]. Annual catches were highly variable and ranged from 3–65 tonnes (t).yr⁻¹ during the 1980s and 1990s, before declining to historically low levels during the Millennium Drought from 2002 to 2010. In 2011–12, (i.e. the year after drought-breaking Murray River flows reached the Coorong estuary), a large biomass of large Greenback Flounder moved into the estuary from the adjacent marine environment [Earl et al. 2017], and catch sharply increased to 31 t. This sudden increase in biomass was not consistent with a spawning biomass that was in a recruitment overfished state [Earl and Ye 2016]. Low targeted fishing effort and low catches in recent years have been associated with low-moderate freshwater inflows and likely reflect a low fishable biomass in the Coorong estuary.

The high inter-annual variation in Greenback Flounder abundance in the Coorong estuary has been strongly associated with variation in freshwater inflow to the estuary, with a lag of 1–2 years [Earl and Ye 2016]. This is because large areas of estuarine habitat that support high abundances of this species are only available after years of high freshwater inflow (e.g. 1990–91, 1996–97, 2010–11). Alternatively, during periods of low inflow (e.g. from the Millennium Drought), abundance in the estuary is typically very low. It is likely that low flow conditions reduce the favourable habitat for Greenback Flounder in the estuary, during which time, some individuals move from the estuary to the ocean where they remain and can possibly return when estuarine conditions improve [Earl et al. 2017]. This was evidenced by the movement of a large biomass of Greenback Flounder into the estuary in 2011–12, after the most recent high inflow event, as indicated by trends in catch [Earl and Ye 2016]. The current low biomass in the Coorong estuary appears to relate to the below average freshwater inflow to the system in recent years, rather than a depleted spawning stock biomass (i.e. the spawning biomass is not considered to be recruitment overfished). The state-wide recreational catch of Greenback Flounder was estimated at 0.27 t in 2013–14 [Giri and Hall 2015].

Low targeted effort and catches since 2012–13 likely reflect low fishable biomass in the Coorong estuary as a consequence of low recruitment over several recent years due to the low freshwater inflows to the estuary (i.e. non-fishing effects). The above evidence indicates that the biomass of this stock is likely to be depleted and recruitment is likely to be impaired. Furthermore, the evidence indicates that current fishing mortality is constrained by management to a level that should allow the stock to recover from its recruitment impaired state.

On this basis, Greenback Flounder in South Australia is classified as a **depleted stock**.

Tasmania

Although not generally reported at the species level, Greenback Flounder are assumed to constitute the majority of the commercial catch of flounder in Tasmania. Flounder landings have declined steadily from recorded peak annual catches >30 t in the mid-1990s to a historical low of 1 t in 2015–16. Catches over the last two years were slightly higher, amounting to 3.9 t in 2017–18 and 2.2 t in 2018–19 [Krueck et al. 2020]. Greenback Flounder are a relatively important recreational species, and in recent years, recreational landings have

matched or exceeded those of the commercial sector [Lyle et al. 2019]. Similar to commercial catches, recreational catches appear to have declined progressively over the years, with an estimated peak of 15.2 t in 2000–01 and a low of 3.8 t in 2017–18 [Lyle et al 2019]. Possible explanations for declining catches of flounder include a ban on overnight gillnetting and reduced market demand. However, the potential role of overfishing and population depletion cannot confidently be assessed due to insufficient data. The data available are inadequate to estimate biomass or exploitation rates. There is little knowledge on recruitment or harvestable biomass. This prevents assessment of current stock size or fishing pressure. Consequently, there is insufficient information available to confidently classify the status of this stock.

On the basis of the evidence provided above, Greenback Flounder in Tasmania is classified as an **undefined stock**.

Victoria

Commercial catches of Greenback Flounder in Victoria have averaged 11 t annually over the past two decades, and ranged between approximately 9–14 t accounting for 73 per cent of the national commercial catch over the past five years.

Greenback Flounder are mostly taken commercially by haul seine and mesh net from Corner Inlet. Haul seine catch rates have shown an increasing trend in the standardised curve since a trough in the early 1990s, but have been highly variable over time with peaks in the raw data in 1978–79, 1984–85, 1997–98, 2004–05 and 2011–12 [Conron et al. 2016]. In contrast, the trend for mesh net catch-per-unit-effort (CPUE) follows a consistently negative trajectory which levelled out close to zero after the mid-2000s [Conron et al. 2020]. This produces a conflicting impression about stock status, but the mesh net results have much higher uncertainty and hence are considered less reliable. This is because of a past history of commercial operators targeting Greenback Flounder, likely with specifically designed mesh nets (loosely slung with small drop), whereas in recent years, fishers in Corner Inlet have predominantly targeted rock flathead and taken flounder as by-product. Consequently, the low landings of flounder by mesh net during the past two decades should not be interpreted as a reduction in biomass [Conron et al. 2020].

The increasing trend in haul seine CPUE slowed asymptotically from the mid-2000s reaching its zenith in 2018–19. It is unclear if it has now stabilised, currently at 1.5 times the long-term average (1986–2015) or is at the top of a cycle that will show a decreasing pattern over the next two decades like it did from the late 1970s to early 1990s. Although the CPUE trends from the two different types of nets would indicate an undefined classification if the assumption that CPUE was reflecting biomass in each instance, the uncertainty in this assumption for mesh net CPUE supports exclusive reliance on haul seine CPUE as an indicator of biomass for Greenback Flounder in Victoria.

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 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 provide above, Greenback Flounder in Victoria is classified as a **sustainable stock**.

Western Australia

Stock status for Western Australia is reported as **Negligible** due to low catches by this jurisdiction. There are no records of commercial catch of this species in recent times, and it has not previously been depleted. Any current level of fishing, commercial or recreational, is so low that it is unlikely to be having a negative impact on the stock.

BIOLOGY

[Sutton et al. 2010; Earl 2014]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Greenback Flounder	10 years; 500 mm TL	198 mm TL for females; 211 mm TL for males (SA)

DISTRIBUTION



Distribution of reported commercial catch of Greenback Flounder.

TABLES

Fishing methods	South Australia	Tasmania	Victoria
Commercial			
Gillnet	✓		
Net			✓
Unspecified	✓	✓	
Recreational			
Gillnet	✓		
Hand held- Implements	✓	✓	✓
Hook and Line	✓	✓	✓
Management Methods			

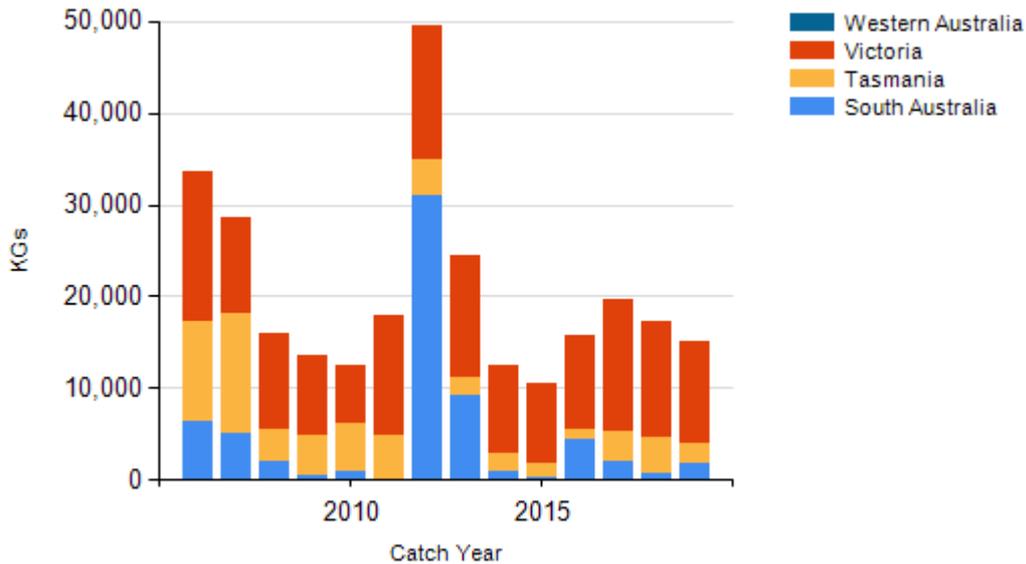
	South Australia	Tasmania	Victoria
Commercial			
Gear restrictions	✓	✓	✓
Limited entry	✓	✓	✓
Size limit	✓	✓	✓
Spatial closures		✓	✓
Spatial restrictions	✓		
Temporal closures	✓		✓
Total allowable effort	✓		
Vessel restrictions		✓	
Recreational			
Bag and boat limits	✓		
Bag and possession limits		✓	
Bag limits			✓
Gear restrictions	✓	✓	✓
Licence		✓	
Size limit		✓	✓
Spatial closures	✓		✓
Temporal closures	✓		

Catch	South Australia	Tasmania	Victoria	Western Australia
Commercial	1.85402 t	2.15956 t	11.0175 t	0 t
Indigenous	Unknown	Unknown	Unknown	Unknown
Recreational	0.27 t (in 2013–14)	3.8 t (in 2017–18)	Unknown	Unknown

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



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