

Southern Sand Flathead (2018)

Platycephalus bassensis



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Western Australia	Western Australia	N/A	Negligible	
Victoria	Corner Inlet	CIF	Sustainable	Catch, CPUE
Victoria	Port Phillip Bay	PPBWPF	Recovering	Catch, CPUE, survey biomass estimates, survey pre-recruit estimates, age/length compositions
Victoria	Victoria Other	ITF, OF, VRLF	Sustainable	Catch, CPUE
Tasmania	Tasmania	SF	Depleting	Catch, length and age composition, CPUE
South Australia	South Australia	MSF NZRLF SZRLF, NZRLF, SZRLF	Undefined	Catch

NZRLF Northern Zone Rock Lobster Fishery (SA), SZRLF Southern Zone Rock Lobster Fishery (SA), SF Scalefish Fishery (TAS), CIF Corner Inlet Fishery (VIC), OF Ocean Fishery (VIC), PPBWPF Port Phillip Bay and Western Port Bay Fishery (VIC), ITF Inshore Trawl Fishery (VIC), VRLF Victorian Rock Lobster Fishery (VIC), N/A Not Applicable (WA), MSF || NZRLF || SZRLF Marine Scale Fishery (including Northern & Southern Zone Rock Lobster Fishery) (SA)

STOCK STRUCTURE

Southern Sand Flathead (*Platycephalus bassensis*) is endemic to Australia and inhabits bays, inlets, estuaries and shallow coastal waters to a depth of around 100 m from the central New South Wales coast, around Tasmania to South Australia and southern Western Australia [Gomon et al. 2008]. There is some evidence of regional sub-populations with differences in physical characteristics, recruitment dynamics and growth rates. Information from tagging, larval sampling and growth rate studies [Brown 1977, Hamer et al. 2010, Hirst et al. 2014], indicate that Southern Sand Flathead in Port Phillip Bay, Victoria, comprise a distinct biological stock that has slower growth, and asymptotic length that is 30 per cent smaller than fish from Bass Strait and 20 per cent smaller than fish from south east Tasmania [Hirst et al. 2014, Koopman et al. 2009]. However, biological stock structure has not been studied in detail in other areas and each of the State jurisdictions have different management arrangements for

Southern Sand Flathead.

Here, assessment of stock status is presented at the biological stock level—Port Phillip Bay (Victoria); at the management unit level—Corner Inlet and Victoria Other (Victoria); and at the jurisdictional level—Western Australia, Tasmania, and South Australia.

STOCK STATUS

Corner Inlet Southern Sand Flathead is a minor species in the Corner Inlet-Nooramunga commercial fishery, with catches averaging about 5 t per year over the last 10 years, and not exceeding 7 t per year since 2000 [Conron et al. 2016a]. Southern Sand Flathead is not a key target species in this fishery, and the commercial catch is expected to remain around the same low level in the immediate future. The majority of the catch is taken by haul seine. Catch rates by haul seine have varied at levels below the long-term average since 1998/99, but displayed an increasing trend from 2006/07 until 2011/12, before falling again over the following three years. The recent five year average catch rate is 20 per cent below the long-term average [Conron et al. 2016]. However, there is some uncertainty about the reliable identification of Southern Sand Flathead in catch and effort reporting, particularly in the early years of the time series.

Southern Sand Flathead are also targeted by recreational fishers in Corner Inlet-Nooramunga, but there is no information on catches, effort or catch rate trends for the recreational fishery.

Overall, the consistent low commercial catches for over more than 15 years would indicate 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, Southern Sand Flathead in the Corner Inlet (Victoria) management unit is classified as **sustainable**.

Port Phillip Bay Historically large commercial catches (ca. 200–300 tonnes [t] per year) of Southern Sand Flathead were taken from Port Phillip Bay [Koopman et al. 2009]. However, since the 1980s commercial catches have declined to negligible levels (< 1 t per year) due to removal of commercial effort by license buy back schemes and lack of targeting by remaining operators. The Southern Sand Flathead catch from Port Phillip Bay is now virtual entirely taken by the recreational fishery, where 80 per cent of flathead species harvested are Southern Sand Flathead [Hirst et al. 2014]. Recent estimates of recreational catch or other measures of fishing mortality are unavailable. Recreational catch estimates in the late 1980s indicated catches of flathead species from Port Phillip Bay were in the order of 450 t per year [MacDonald and Hall 1987]. In the early 2000s recreational catch was estimated at 322 t per year [Henry and Lyle 2003] and by the mid-2000s it had dropped to approximately 110 t per year [Hirst et al. 2014, Ryan et al. 2009].

The most recent published assessments of Southern Sand Flathead in Port Phillip Bay occurred in 2016 and 2017 [Hamer et al. 2016, VFA 2017]. These assessments involved a weight of evidence consideration of annual time series of commercial and recreational catch rates (creel surveys and angler diary), length composition of recreational catches, and fishery independent trawl surveys that provide an annual index of O+ age recruitment since 1988 [Hirst et al. 2014]. Historical context is also provided by comparisons of the fishery dependent catch rates with a fishery independent trawl survey that estimated total and spawning biomass from 1990 to 2011 [Hamer et al. 2016, Hirst et al. 2014, VFA 2017]. A more recent review of catch rate indicators, recruitment, length and age composition was compiled in early 2018 [VFA, unpublished data].

Estimates of total biomass from the fishery-independent trawl survey declined by approximately 80 per cent, and the spawning biomass by 60–70 per cent, between 2000 and 2010 [Hamer et al. 2016, Hirst et al. 2014]. The period 1997–2002 was a period of high spawning biomass driven by exceptionally strong recruitment events in 1989, 1993 and to a lesser extent 1997, with spawning being far lower since then. Spawning biomass estimates for the early 1990s were approximately 50 per cent lower than during the peak period [Hamer et al. 2016, VFA 2017]. The biomass estimates from the trawl survey between 2009 to 2011 indicated spawning biomass at that time was at a 20 year low [Hamer et al. 2016]. Fishery dependent catch rate data from the commercial long-line fishery and recreational creel surveys showed similar declines to the fishery independent trawl biomass estimates [Hamer et al. 2016, Hirst et al. 2014].

Over the period of decline in this stock, length frequency data show stable length composition [Hamer et al. 2016, Hirst et al. 2014, VFA 2017]. Since 2015 there has been an increasing trend in the average and 90th percentile lengths for both the creel survey and fishery independent trawl survey length composition [VFA, unpublished data]. Age composition data collected in 2017 show that while some fish up to at least 18 years age are currently present in the stock, most are < 10 years age, and therefore derived from a recent decade of poor recruitment [VFA, unpublished data]. The decline in the Port Phillip Bay Southern Sand Flathead stock since 2000 was clearly driven by persistent poor recruitment, thought to be related to prolonged drought during the 2000s and associated low freshwater flows and nutrient input to Port Phillip Bay [Hirst et al. 2014].

Since 1999 several stronger recruitment events have been observed; 2000, 2004, 2013, and 2018 [VFA 2017, VFA unpublished data], although these recruitments were low compared to those observed in the late 1980s and early 1990s. The stability of stock biomass indicators since the late 2000s, indicates that recruitment levels over the last decade have been sufficient to balance the natural and fishing mortality, preventing further stock decline, but insufficient to drive a major increase in biomass. Increasing trends in catch rates of legal sized (≥ 270 mm total length) Southern Sand Flathead have been observed for recreational creel surveys and diary angler records since 2014 [VFA, unpublished data]. Similar increases in catch rates of mature (≥ 250 mm total length) Southern Sand Flathead have been observed for the fishery independent trawl survey [VFA, unpublished data]. The recent increasing trend in catch rate indicators of mature biomass likely relates to the higher recruitment in 2013. Increased recruitment in 2018 is expected to further contribute to this recovering trend. However, additional strong recruitment events will be required in the immediate future to support a sustained stock recovery. While stock biomass is still considered depleted relative to levels observed in the early 2000s, the level of fishing mortality should allow the stock to recover from its recruitment impaired state.

On the basis of the evidence provided above, Southern Sand Flathead in Port Phillip Bay (Victoria) is classified as a **recovering** stock.

South Australia

There is a suite of eight species of flathead that are taken in commercial catches from the coastal waters of South Australia. Whilst the Southern Sand Flathead is likely to be the most abundant of these, there is no differentiation amongst species in the catch records. The total reported annual catch across all flathead species between 2008 and 2017 has been low averaging 2.6 t per year and ranging from < 1 to about 6 t per year [Steer et al. 2018]. These catches are taken with a variety of line and net fishing gears. The most recent estimate of recreational catch across the eight species of flathead was 8.3 t in 2013/2014 [Giri and Hall 2015]. Given the lack of specific catch and catch rate data and biological information for Southern Sand Flathead in South Australia, there is insufficient information to confidently classify the status of the stock.

On the basis of the evidence presented above, the Southern Sand Flathead in South Australia is classified as **undefined**.

Tasmania In Tasmanian waters, Southern Sand Flathead are mainly landed commercially by hook and line, with minor catches taken by gillnet and Danish seine. Commercial landings in recent years have been low, with an average annual catch of 5.91 t over the past five years. The commercial catch of Southern Sand Flathead in State waters was 6.41 t in 2017 [Moore et al. 2018]. In contrast, Southern Sand Flathead dominates the recreational fishery in terms of overall catch numbers and weight, with an estimated 205 t landed in 2012–13 [87 per cent of the total estimated flathead catch of 236 t; Lyle et al. 2014]. The low commercial catch relative to that taken by the recreational sector means that limited inferences can be made about stock status based on commercial catch and effort data. A fishery-independent survey was therefore implemented using fishing gear and targeting practices typical of recreational fishers in areas of significant effort [Ewing et al. 2014]. This survey has been conducted annually since 2012 and provides data on catch rates, age and size composition of Southern Sand Flathead. The survey indicated relatively low abundances of legal sized fish, particularly in south-eastern Tasmania. Standardised catch rates between 2012 and 2016 declined in all three survey regions. In November 2015, recreational daily bag limits were reduced from 30 to 20 and the minimum size increased from 300 to 320 mm. Early indications suggest these changes may benefit stocks, with increased catch rates observed during the 2017 and 2018 surveys relative to 2015 and 2016, with catch rates in 2017 and 2018 generally approximating or exceeding 2012 baseline levels [Moore et al. 2018, IMAS unpublished data]. However, current levels of fishing mortality remain high, particularly for females with the estimated fishing mortality (F) being 2–3 times higher than natural mortality (M) at all sites surveyed [IMAS unpublished data].

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

On the basis of the evidence provided above, Southern Sand Flathead in Tasmania is classified as a **depleting** stock.

Victoria Other Victorian commercial catch of Southern Sand Flathead from coastal waters and other bays and inlets besides Corner Inlet-Nooramunga and Port Phillip Bay is low, averaging about 1.5 t per year since 2000. Recreational catch is not known. Information on recreational catch rates from creel surveys in Western Port have shown variable catch rates from 1998 until 2014, but unlike Port Phillip Bay, there is no evidence of a long-term declining trend during the 2000s, and Southern Sand Flathead is not a priority target species [Conron et al. 2016b].

Given the low commercial harvest and lack of declining trend in recreational catch rates in Western Port, the current level of fishing mortality of Southern Sand Flathead in the “Victorian Other” management unit is unlikely to cause the stock to become recruitment impaired.

On the basis of the evidence provided above, Southern Sand Flathead in the “Victorian Other” management unit is classified as a **sustainable**.

Western Australia Stock status for Western Australia is reported as Negligible due to low catches by this jurisdiction. The species is rare in Western Australia; catch is unknown but very low, possibly zero. This stock has not previously been depleted, is not subject to targeted fishing and the current level of fishing is unlikely to be having a negative impact on the stock.

BIOLOGY

Southern Sand Flathead biology [Bani and Moltschaniwskyj 2008, Brown 1977, Jordan 1998, Koopman et al. 2004]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Southern Sand Flathead	23 years (both sexes) Males 370 mm TL Females 480 mm TL	Males 2.5–3.5 years, 210 mm TL Females 2.6–5.2 years, 235 mm TL

DISTRIBUTION



Distribution of reported commercial catch of Southern Sand Flathead

TABLES

Commercial Catch Methods	South Australia	Tasmania	Victoria	Western Australia
Demersal Longline		✓		
Dip Net		✓		
Gillnet		✓		
Hand Line, Hand Reel or Powered Reels		✓		
Haul Seine		✓		
Hook and Line			✓	
Mesh Net		✓		
N/A				✓
Net			✓	
Spearfishing		✓		
Squid Jigging		✓		
Unspecified	✓	✓	✓	
Various		✓		

Fishing methods			
	South Australia	Tasmania	Victoria
Commercial			
Demersal Longline		✓	
Gillnet		✓	
Hand Line, Hand Reel or Powered Reels		✓	
Hook and Line			✓
Net			✓
Unspecified	✓		✓
Various		✓	
Indigenous			
Gillnet		✓	
Hook and Line		✓	
Recreational			
Gillnet		✓	
Hook and Line	✓	✓	✓
Spearfishing			✓
Management Methods			
	South Australia	Tasmania	Victoria
Commercial			
Gear restrictions	✓	✓	✓
Licence			✓
Limited entry	✓	✓	✓
Size limit	✓	✓	✓
Spatial closures		✓	✓
Vessel restrictions		✓	
Indigenous			
Bag and possession limits		✓	
Bag limits		✓	
Gear restrictions		✓	
Size limit		✓	
Spatial closures		✓	
Recreational			

Bag and possession limits		✓	
Bag limits	✓	✓	✓
Gear restrictions		✓	✓
Licence		✓	✓
Size limit	✓	✓	✓
Spatial closures		✓	✓

Active Vessels	South Australia	Tasmania	Victoria	Western Australia
	62 Licences in MSF, 1 Licences in NZRLF, 2 Licences in SZRLF,	48 Vessels in SF,	3 Licence Holders in CIF, 1 Licence Holders in OF, 2 Licence Holders in PPBWPF, 9 Licence Holders in ITF, 1 Licence Holders in VRLF,	<3 in Charter,

MSF Marine Scalefish Fishery(SA)

NZRLF Northern Zone Rock Lobster Fishery(SA)

SZRLF Southern Zone Rock Lobster Fishery(SA)

SF Scalefish Fishery(TAS)

CIF Corner Inlet Fishery(VIC)

OF Ocean Fishery(VIC)

PPBWPF Port Phillip Bay and Western Port Bay Fishery (VIC)

ITF Inshore Trawl Fishery(VIC)

VRLF Victorian Rock Lobster Fishery(VIC)

Charter Tour Operator(WA)

Catch	South Australia	Tasmania	Victoria	Western Australia
Commercial	1.07025t in MSF NZRLF SZRLF,	6.41242t in SF,	1.7875t in ITF,	
Indigenous	None	Unknown	Unknown (No catch under permit)	
Recreational	8.3 t across all flathead species in 2013/14	209 t (2012–13)	Unknown	

NZRLF Northern Zone Rock Lobster Fishery (SA), SZRLF Southern Zone Rock Lobster Fishery (SA), SF Scalefish Fishery (TAS), CIF Corner Inlet Fishery (VIC), OF Ocean Fishery (VIC), PPBWPF Port Phillip Bay and Western Port Bay Fishery (VIC), ITF Inshore Trawl Fishery (VIC), VRLF Victorian Rock Lobster Fishery (VIC), N/A Not Applicable (WA), MSF || NZRLF || SZRLF Marine Scale Fishery (including Northern & Southern Zone Rock Lobster Fishery) (SA),

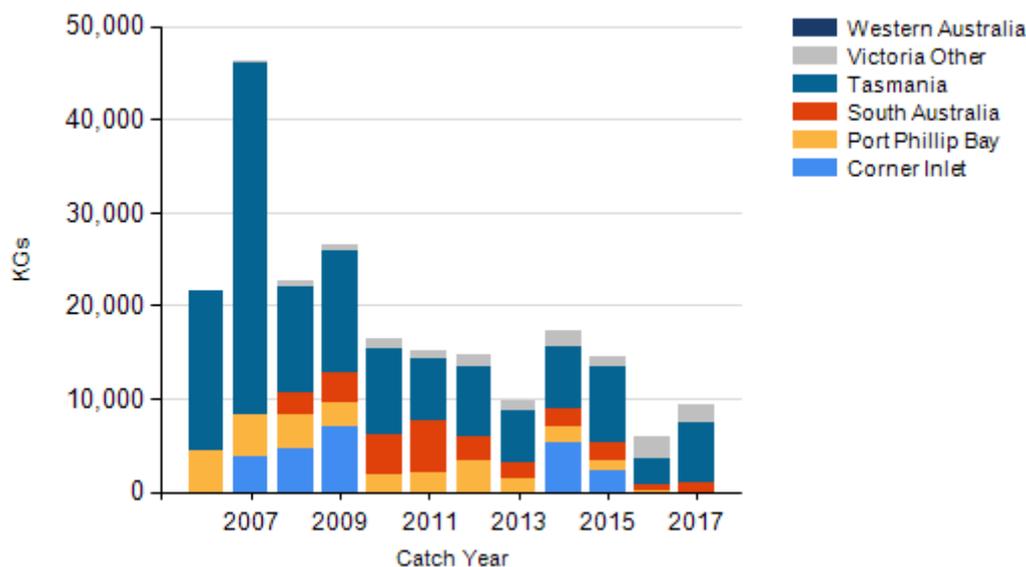
Victoria – Indigenous (Management Methods) In Victoria, regulations for managing recreational fishing may not apply to fishing activities by Indigenous people. Victorian traditional owners may have rights under the *Commonwealth's Native Title Act 1993* to hunt, fish, gather and conduct other cultural activities for their personal, domestic or non-commercial communal needs without the need to obtain a licence. Traditional Owners that have agreements under the *Traditional Owner Settlement Act 2010* (Vic) may also be authorised to fish without the requirement to hold a recreational fishing licence. Outside of these arrangements, Indigenous Victorians can apply for permits under the *Fisheries Act 1995* (Vic) that authorise fishing for specific Indigenous cultural ceremonies or events (for example, different catch and size limits or equipment). There were no Indigenous permits granted in 2017 and hence no Indigenous catch recorded.

Tasmania – Commercial (Catches) Catches reported for the Tasmanian Scalefish Fishery are for the period 1 July to 30 June the following year. The most recent assessment available is for 2016–17

Tasmania – Recreational (Management methods) In Tasmania, a recreational licence is required for fishers using dropline or longline gear, along with nets, such as gillnet or beach seine. The species is subject to a minimum size limit of 320 mm. A bag limit of 20 fish and a possession limit of 30 fish (Sand and Tiger Flathead) is in place for recreational fishers.

Tasmania – Indigenous (Management methods) In Tasmania, Indigenous persons engaged in aboriginal fishing activities in marine waters are exempt from holding recreational fishing licences, but must comply with all other fisheries rules as if they were licensed. Additionally, recreational bag and possession limits also apply, as do size limits. If using pots, rings, set lines or gillnets, Indigenous fishers must obtain a unique identifying code (UIC). The policy document Recognition of Aboriginal Fishing Activities for issuing a Unique Identifying Code (UIC) to a person for Aboriginal Fishing activity explains the steps to take in making an application for a UIC.

CATCH CHART



Commercial catch of Southern Sand Flathead - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

ENVIRONMENTAL EFFECTS on Southern Sand Flathead

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