

# Southern Sand Flathead (2023)

*Platycephalus bassensis*



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## STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Western Australia	Western Australia	Negligible	Catch
Victoria	Port Phillip Bay	Recovering	Catch, CPUE, survey biomass estimates, survey pre-recruit estimates, age/ length compositions
Victoria	Victoria Other	Sustainable	Catch, CPUE
Tasmania	Tasmania	Depleted	Catch, CPUE, length and age composition, fishery-independent survey
South Australia	South Australia	Undefined	

## 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, 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% smaller than fish from Bass Strait and 20% 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

**Port Phillip Bay** Historically large commercial catches (approximately 200–300 t per year) were taken from Port Phillip Bay (PPB) [Koopman et al. 2009], but since the 1980s, catches have declined, reaching negligible (less than 1 t per year) since 2010 due to removal of commercial effort by license buy-back schemes and a lack of targeting by remaining operators. Catch from PPB is now entirely recreational, with Southern Sand Flathead accounting for 80% of flathead landings [Hirst et al. 2014]. Although a recent estimate of recreational catch is unavailable, estimates in the late 1980s indicated recreational catches of flathead species from PPB were about 450 t per year [MacDonald and Hall 1987] and by the mid-2000s had dropped to approximately 110 t per year [Hirst et al. 2014; Ryan et al. 2009].

Standardised catch per unit effort (CPUE) from creel surveys has remained relatively low since the mid-2000s but has stabilised with signs of an increase from the lowest point in 2013 through until 2020–21, however in 2021–22 CPUE declined reaching a historic low [Bell et al. 2023]. Consistent with creel CPUE, diary angler CPUE showed historic declines, but since 2004 showed an increasing trend in both under- and over-legal minimum fish [Bell et al. 2023]. The catch rate of legal size fish has declined since 2019–20, similar to creel catch rates.

Since 2015, long-line CPUE is no longer considered indicative of stock status due to the exceptionally low reported catches, and likely discarding, but is considered nevertheless for context along with mature biomass inferred from otter trawls (ceased in 2011) [Bell et al. 2023]. These two indicators of mature biomass show a period of higher biomass from the mid-1990's to the early 2000s [Bell et al. 2023]. Ongoing fishery independent small beam trawl CPUE for mature fish (greater than 25 cm TL) indicates a similar drop in biomass from 2004 to 2006 as per long-line and trawl biomass, but an increasing trend since 2012 consistent with recreational catch rates [Bell et al. 2023]. Overall, various CPUE and fishery independent indices suggest abundance is slowly increasing from an historic low during the late 2000s, with the current increases in abundance due to recent recruitment to a population now dominated by fish below the legal minimum length. A large proportion of these fish are mature, and therefore contributing to recruitment.

Pre-recruit abundance suggests that the high biomass during the mid-1990s to early 2000s was due to strong recruitment during the late 1980's to mid-1990's [Bell et al. 2023]. Recruitment levels since 2000 have been much lower, driving the biomass declines observed during the 2000s. The stock has now stabilised at a lower biomass under this lower recruitment regime, and recruitment has been sufficient to balance natural and fishing mortality at this lower level. Recent recruitment events (i.e., 2004, 2009 and 2013) have been important in stemming ongoing decline and driving the abovementioned increase in biomass. The relatively high 2018 and 2021 recruitment events are expected to contribute to the stability of the stock and should be sufficient to support continuation of the slowly increasing trend.

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On balance, the PPB population has been slowly rebuilding over the last decade but remains at a lower biomass than during the 1990s. Recent recruitment has been sufficient to balance natural mortality and fishing impacts, and indeed enabled some rebuilding, so that overfishing is unlikely to be occurring. Despite recent signs of slow recovery, ongoing recovery in stock biomass will remain slow due to modest recruitment compared to that observed in the 1990s. While the stock biomass is still considered depleted relative to levels observed in the 1990s and early 2000s, the level of fishing mortality should allow the stock to recover from its recruitment impaired state and there is evidence that this is occurring, particularly for sub-legal sized fish, many of which are mature and contributing to recruitment.

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

**South  
Australia**

Eight species of flathead 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 logbooks for South Australia's commercial multispecies, multi-gear and multi-sectoral Marine Scalefish Fishery (MSF). The total reported annual catch across all flathead species between 2008–09 and 2021–22 has been low averaging 2 t per year and ranging from < 1 to 6 t per year [Smart et al. 2023]. These catches are taken with a variety of line and net gear types. The most recent estimate of recreational catch across the eight species of flathead was 9 t in 2021–22 [Beckmann et al. 2023].

There is no published assessment of Southern Sand Flathead, and there are no data available to estimate biomass or exploitation rates. In addition, there is no knowledge on recruitment or harvestable biomass, and there are no defined target or limit reference levels. 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 presented above, the Southern Sand Flathead stock in South Australia is classified as an **undefined stock**.

**Tasmania**

In Tasmanian waters, Southern Sand Flathead are targeted primarily by recreational fishers. Commercial catches are comparatively minor. Commercial fishing methods include hook and line gears (primarily), gillnet and Danish seine. Records of commercial landings show peak catches of roughly 10–15 t between 1995–96 and 2008–09 [Krueck et al. 2020]. From then on, annual commercial catches have declined to less than 10 t, amounting to only 3.8 t in 2021–22 [Cresswell et al. 2023]. Recreational catches of Southern Sand Flathead are substantially higher than commercial catches, with an estimated total of almost 300 t landed in the early 2000s and subsequent declines to 184 t in 2017–18 [Krueck et al. 2020; Lyle et al. 2019]. 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. Thus, fishery-independent surveys were implemented using fishing gear and targeting practices typical of recreational fishers in areas of significant effort [Ewing et al. 2014]. Surveys have been conducted annually since 2012 and provide data on catch rates as well as the age and size composition of Southern Sand Flathead. Survey results indicated low abundances of legal sized fish, particularly in south-eastern Tasmania. In November 2015, recreational daily bag limits were therefore reduced from 30 to 20 and the minimum legal size increased from 300

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to 320 mm. Continued monitoring and analysis of survey data indicated that these changes may have benefited populations, but that any potential recovery was short-lived given consistently heavy fishing pressure in the region, particularly on females [Krueck et al. 2020]. From 2020 onwards, independent sampling has been intensified and expanded to more sites along the east coast and north coast. A first in-depth analysis of the expanded survey dataset in 2021–22 indicated that in most regions the spawning biomass of females has likely been depleted below 20% of unfished levels, and that fishing mortality of females remains unsustainable (2–4 times higher than natural mortality) [Fraser et al. 2022]. More comprehensive sampling is needed to corroborate estimates of female stock status in some regions, but current levels of estimated fishing mortality are unlikely to allow for recovery from depletion in most areas where surveys have been conducted to date [Fraser et al. 2022]. These findings indicate that Southern Sand Flathead are likely to be depleted in most regions, which has triggered preliminary management changes, including a reduction of the bag limit from 20 to 10, and an increase of the minimum legal size from 320 to 350 mm.

On the basis of this information, Southern Sand Flathead in Tasmania is classified as a **depleted stock**.

**Victoria  
Other**

Victorian commercial catch of Southern Sand Flathead from coastal waters and other bays and inlets besides Port Phillip Bay is relatively low, below 5 t per year since 2000, noting that historical landings from Corner Inlet-Nooramunga were largely misidentified Southern Bluespotted Flathead. Recreational landings are not known.

Southern Sand Flathead are a by-product of several commercial fisheries, principally the Inshore Trawl fishery that operates in coastal waters and the Corner Inlet-Nooramunga fishery [Bell et al. 2023]. However, the lack of targeting, low landings, and the abovementioned misidentification issues mean historical data are too few, or unreliable, to enable meaningful analysis.

Some information exists on recreational Southern Sand Flathead catch rates from creel surveys in Western Port and Corner Inlet-Nooramunga, and from anglers fishing in Bass Strait but landing inside Victorian bays and inlets [Bell et al. 2023]. However, these data are too scarce to be used as a meaningful proxy for biomass because Southern Sand Flathead do not represent a popular target species (Western Port and Corner Inlet-Nooramunga), the time series is too short to establish temporal trends (Corner Inlet-Nooramunga) and, in general, few anglers leave the bays and inlets where creel surveys are undertaken meaning that although they are a popular target in Bass Strait, few creel survey interviews encounter these anglers.

In addition to the above, there is no knowledge on recruitment or harvestable biomass, and there are no defined target or limit reference levels. 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, Southern Sand Flathead in the “Victorian Other” management unit is classified as an **undefined stock**.

**Western  
Australia**

Stock status for Western Australia is reported as **Negligible**. Although the distribution of this species extends to south-western Australia, there are no reported catches of this species by any fishing sector up to 2021–22. There is no

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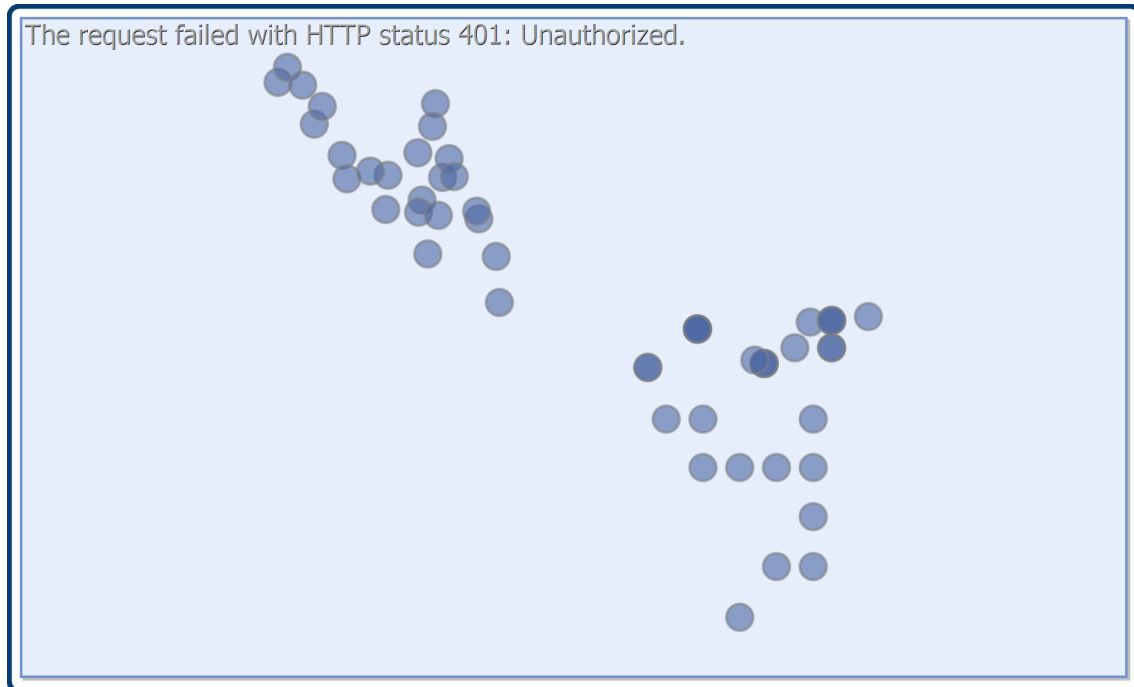
evidence to indicate this stock has previously been depleted and the absence of any catch suggests a negative impact on the stock is highly unlikely.

**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**

Fishing methods	South Australia	Tasmania	Victoria	Western Australia
<b>Commercial</b>				
Demersal Longline		✓		
Gillnet		✓		
Hand Line, Hand Reel or Powered Reels		✓		

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Hook and Line			✓	
Net			✓	
Unspecified	✓	✓		
<b>Recreational</b>				
Gillnet		✓		
Hook and Line	✓	✓	✓	
Spearfishing			✓	
Unspecified				✓

<b>Management Methods</b>				
	<b>South Australia</b>	<b>Tasmania</b>	<b>Victoria</b>	<b>Western Australia</b>
<b>Charter</b>				
Bag limits		✓	✓	✓
License	✓		✓	✓
Limited entry	✓			✓
Marine park closures	✓	✓	✓	
Size limit		✓	✓	✓
<b>Commercial</b>				
Gear restrictions	✓	✓	✓	
License			✓	✓
Limited entry	✓	✓	✓	✓
Size limit	✓	✓	✓	✓
Spatial closures	✓	✓	✓	✓
Vessel restrictions		✓		
<b>Recreational</b>				
Bag and possession limits		✓		
Bag limits	✓	✓	✓	
Bag/possession limits				✓
Gear restrictions	✓	✓	✓	✓
Licence		✓	✓	

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<b>Licence (Recreational Fishing from Boat License)</b>				✓
<b>Size limit</b>	✓	✓	✓	✓
<b>Spatial closures</b>		✓	✓	
<b>Temporal closures</b>				✓

<b>Catch</b>	<b>South Australia</b>	<b>Tasmania</b>	<b>Victoria</b>	<b>Western Australia</b>
<b>Commercial</b>	0.62589 t	3.80643 t	3.4113 t	0 t
<b>Indigenous</b>	None	Unknown	Unknown (No catch under permit)	
<b>Recreational</b>	9.3 t across all flathead species in 2021–22	184 t (2017–18)	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*.

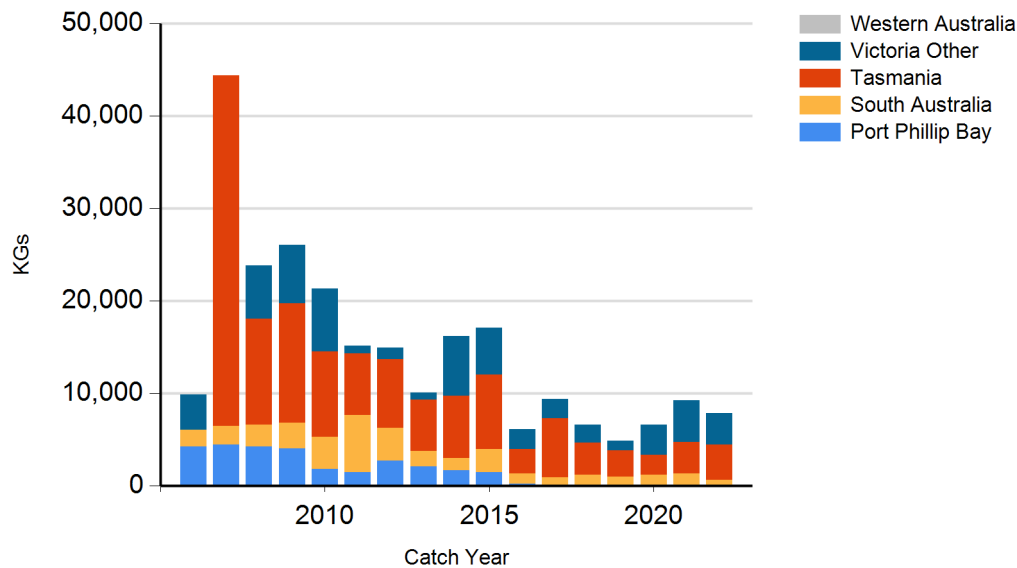
**Tasmania – Commercial (Catches).** Catches reported for the Tasmanian Scalefish Fishery are for the period 1 July to 30 June the following year. The most recent assessment available is for 2021–22.

**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. Due to a recent change in stock status, fishery regulations for the species are currently under review. Until 31 October 2023, the species is subject to a minimum size limit of 350 mm, a bag limit of 10 fish and a possession limit of 30 fish for recreational fishers.

**Tasmania – Indigenous (Management methods).** In Tasmania, Indigenous persons engaged in traditional 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. For details, see the policy document 'Recognition of Aboriginal Fishing Activities' (<https://dpipwe.tas.gov.au/Documents/Policy%20for%20Aboriginal%20tags%20and%20alloting%20an%20UIC.pdf>).

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CATCH CHART



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

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