

SAWSHARKS (2023)

Pristiophorus spp.



Kurt Davis: Australian Bureau of Agricultural and Resource Economics and Sciences, **Matias Braccini:** Department of Primary Industries and Regional Development, Western Australia, **Stephen Bradshaw:** Institute for Marine and Antarctic Studies, University of Tasmania, **Vic Peddemors :** New South Wales Department of Primary Industries, **Michael Drew:** South Australian Research and Development Institute

STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Commonwealth, Western Australia, New South Wales, Tasmania, South Australia	Southern Australia	Sustainable	Standardised CPUE, catch

STOCK STRUCTURE

This is a multispecies stock comprising three endemic species: the Common Sawshark, *Pristiophorus cirratus*, ranging south of 27°S to depths of greater than 600 m [Raoult et al. 2020]; the Southern Sawshark, *P. nudipinnis*, ranging south of 35°S to depths of greater than 600 m, but with catches skewed to depths less than 100m [Raoult et al. 2020]; and the Eastern Sawshark, *P. peroniensis*, ranging from Bass Strait to central New South Wales at depths of 100–630 m [Last and Stevens 2009]. Biological stock structure is unknown for these species. The majority of the historical catch has been taken in Bass Strait [Walker and Hudson 2005] and these species are primarily assessed and managed in the Commonwealth Southern and Eastern Scalefish and Shark fishery (SESSF). Only Common Sawshark and Southern Sawshark have been reported by observers in fisheries where Sawsharks are caught [Raoult et al. 2020].

Here, assessment of stock status is presented at the management unit level—Southern Australia.

STOCK STATUS

**Southern
Australia**

Most of the reported commercial catch of Sawsharks is taken in the Commonwealth Trawl Sector (CTS), Great Australia Bight Trawl Sector (GABTS) and Gillnet Hook and Trap Sector (GHTS) of the Southeast Scalefish and Shark Fishery (SESSF). The stock status classification reported here is based on an analysis conducted for the SESSF, which includes State catches.

Catch of Sawshark in the shark gillnet and shark hook sectors of the Commonwealth-managed SESSF increased in the early 1970s to around 200 tonnes (t) by around 1974, and then fluctuated between about 170 t and 350 t per year until the early 2000s.

Minor catches of Sawsharks are taken in state waters by local commercial and recreational fishers. Sawshark catches in Western Australia are negligible (< 10 t per year) [McAuley et al. 2015; Braccini et al. 2021].

Sawshark catches in New South Wales were less than 10 t during 2021 and less than 8 t during 2022. Standardised catch rate for Sawsharks in New South Wales-managed fisheries have been relatively stable since the year 2000 [Raoult et al. 2020]. Most of the New South Wales catches are reported as Common Sawshark. No recreational or indigenous catches are reported for this species in New South Wales.

Within Tasmanian state waters, Sawsharks are taken by SESSF vessels as well as the multi-gear, multi-species Tasmanian Scalefish Fishery (TSF). Maximum total commercial landings of unspecified Sawsharks between 87 t and 128 t were recorded between 1995 and 2001, declining to less than 25 t in more recent years. TSF catches account for a small proportion of total landings in Tasmania, amounting to less than 0.1 t of annual harvest over the last three years, and nil recordings of catch for the decade prior [Sharples et al. 2023]. Numbers of Sawsharks taken by recreational fishers using gillnets and setlines are likely to be low [Lyle and Tracey 2012a, b].

Sawshark catches within the inshore coastal waters of South Australia are taken by the Marine Scalefish Fishery (MSF). Catches of Sawsharks within the MSF have been relatively low, with an average annual catch of 9 t during the peak of landings between 1985–85 and 1996–97. Since the early 2000s catches of Sawsharks have been rare in South Australian coastal waters, which is partly a function of reductions in the use of demersal gillnets to target School and Gummy shark. No recreational or indigenous catches have been reported for Sawsharks in South Australia.

For Western Australia, the sustainability of catches from state and Commonwealth fisheries operating in Western Australian waters (mainly GABTS) was assessed using an ensemble of three different catch-only modelling methods DBSRA [Dick and MacCall 2011], Catch-Maximum Sustainable Yield (MSY) [Martell and Froese 2013] and Simple Stock Synthesis (SSS) [Cope 2013] in combination with species-specific life history and stock-specific depletion information derived from the known history of management and fishery dynamics in Western Australia [Braccini unpublished]. Given the historically low levels of population extractions across the species distribution in Western Australia, the inferred MSY values are likely to be underestimated. Regardless, current catch levels are below MSY.

In the Commonwealth, Sawsharks are managed as a tier 4 stock under the SESSF harvest strategy framework [AFMA 2021]. In 2014, Shark Resource Assessment Group (SharkRAG) recommended a decrease in the biomass target

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reference point (TRP) for Sawsharks from 48% to 40% of unfished biomass to reflect the byproduct nature of the stock [AFMA 2014].

Potential avoidance of Sawsharks by operators using gillnets suggests that the corresponding standardised catch-per-unit-effort (CPUE) may not adequately reflect stock abundance. As a result, SharkRAG recommended using standardised trawl CPUE as an index of abundance [AFMA 2015] when applying the tier 4 harvest control rule. Two species (Common Sawshark and Southern Sawshark) and 2 species-group codes (*Pristiophorus* spp. and Pristiophoridae) comprise the catch data used in the tier 4 analyses for Sawsharks.

The most recent tier 4 analysis using standardised trawl CPUE was in 2020 [Sporcic 2020]. This analysis indicated that recent average CPUE (2015 to 2019) was above the limit reference point (and the TRP). The estimated recommended biological catch (RBC) for 2020 was 653.4 t [Sporcic 2020]. Known catches (commercial and recreational) in neighbouring states are deducted from the RBC in the calculation of the total allowable catch (TAC) for the Commonwealth fleet, resulting in a TAC for 2021–22 of 430 t.

Noting the multispecies nature of the stock and the tier 4 analysis, SharkRAG, at its meeting in 2020, discussed the value of monitoring the species composition of the catch, to enable a response to any changes that would have implications for future assessment [AFMA 2020]. SharkRAG also discussed the value of collecting life-history data for the species taken [AFMA 2020].

Combined landed catch (from catch disposal records – CDRs) from the GHTS, the CTS, and the GABTS in 2021–22 was 147 t, down from 172 t in 2020–21 and 189 t in 2019–20.

Reliable estimates of discards of Sawshark are currently unavailable. Additionally, post-release survival of discarded Sawshark is uncertain, meaning that the fishing mortality associated with these discards is also uncertain. For the purposes of status determination, all discards for this stock are assumed to be dead. There are no recent estimates of recreational take of this stock.

In an analysis of congruence between electronic monitoring (EM) and logbook reporting in the GHTS, Emery et al. [2023] concluded that discarded Sawshark (grouped codes) within the gillnet sector displayed low congruence at the fleet level, with EM on average reporting 3.65 individuals for every 2.55 individuals reported by logbook across the period examined (2016–17 to 2019–20). The work by Emery et al. [2023] indicates that current logbook estimates of discards for this stock should not be relied on.

Althaus et al. [2021] estimated the 4-year weighted average for state catches and discards to be 10.1 t and 26.4 t, respectively. Using the combined landed catch from CDRs (147 t), and the 4-year weighted averages for state catch (10.1 t) and discards (26.4 t), total catch and discards for the 2021–22 fishing season is estimated to be 183.5 t [Woodhams 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 above evidence indicates that the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

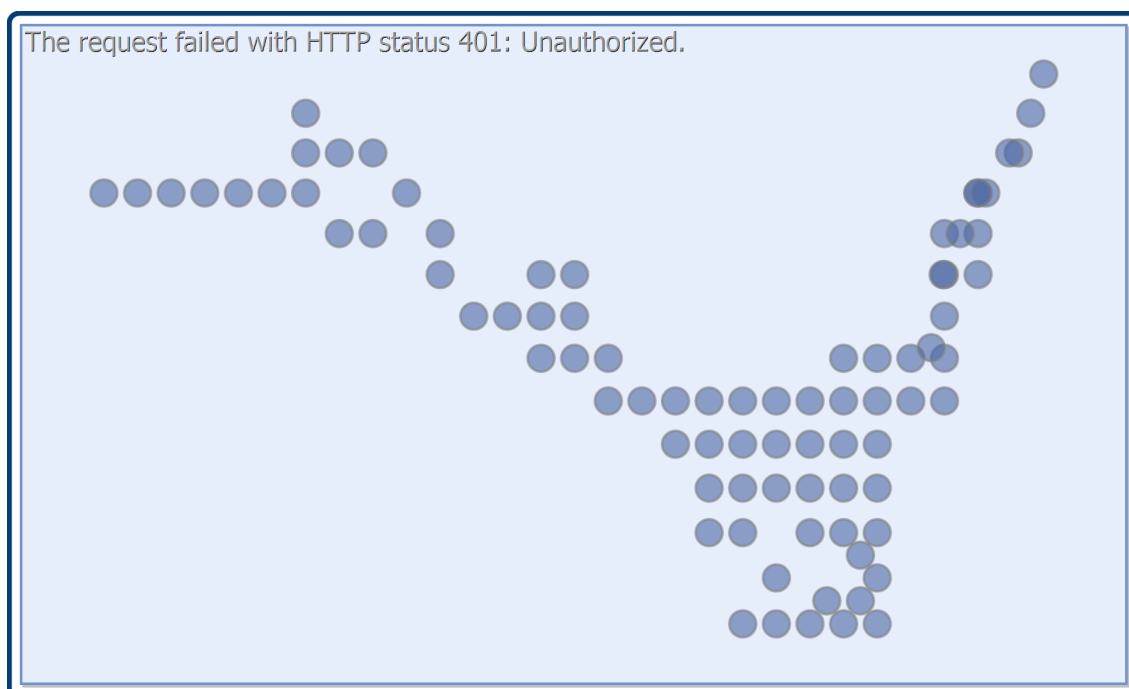
On the basis of the evidence above, the Southern Australia biological stock is classified as a **sustainable stock**.

BIOLOGY

Sawshark biology [Burke et al. 2020; Last and Stevens 2009; Raoult et al. 2016]

Species	Longevity / Maximum Size	Maturity (50 per cent)
SAWSHARKS	15 years, 1,500 mm TL for female and 1,180 mm TL for male Common Sawshark, 1,050 mm TL for female and 970 mm TL for male Southern Sawshark.	800–900 mm TL for Common Sawshark, 700–900 mm TL for Southern Sawshark.

DISTRIBUTION



Distribution of reported commercial catch of Sawsharks

TABLES

Fishing methods	Commonwealth	New South Wales	South Australia	Tasmania
Charter				
Hook and Line			✓	
Commercial				
Danish Seine	✓			

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Demersal Gillnet	✓			
Demersal Longline	✓			
Midwater Trawl	✓			
Otter Trawl	✓	✓		
Unspecified			✓	✓
Various		✓		
Recreational				
Gillnet				✓
Hook and Line			✓	
Setline				✓

Management Methods					
	Commonwealth	New South Wales	South Australia	Tasmania	Western Australia
Charter					
Bag limits					✓
Gear restrictions			✓		
Licence (boat-based sector)					✓
Spatial closures					✓
Commercial					
Effort limits		✓			
Effort limits (individual transferable effort)					✓
Gear restrictions		✓	✓	✓	✓
Individual transferable quota	✓				
Limited entry	✓	✓	✓	✓	✓
Processing restrictions		✓			✓
Spatial closures		✓	✓	✓	✓

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Spatial restrictions	✓				
Total allowable catch	✓				
Vessel restrictions		✓			
Recreational					
Area closures				✓	
Bag and possession limits				✓	
Bag limits		✓		✓	✓
Gear restrictions		✓	✓		✓
Licence				✓	
Licence (boat-based sector)					✓
Spatial closures					✓

Catch					
	Commonwealth	New South Wales	South Australia	Tasmania	Western Australia
Charter			Unknown		
Commercial	132.609 t	7.97985 t	0 t	0 t	0 t
Indigenous			Unknown	Unknown but considered low	Undetermined but likely to be negligible
Recreational			Unknown	Unknown but considered low	No sawsharks caught from boats [Ryan et al. 2019], shore-based catches are undetermined

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 the Torres Strait. In general, non-commercial Indigenous fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters.

Western Australia – Recreational (Management Methods). A recreational fishing from boat licence is required for recreational fishing from a powered vessel in Western Australia.

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

Tasmania – Commercial (Catch). 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.

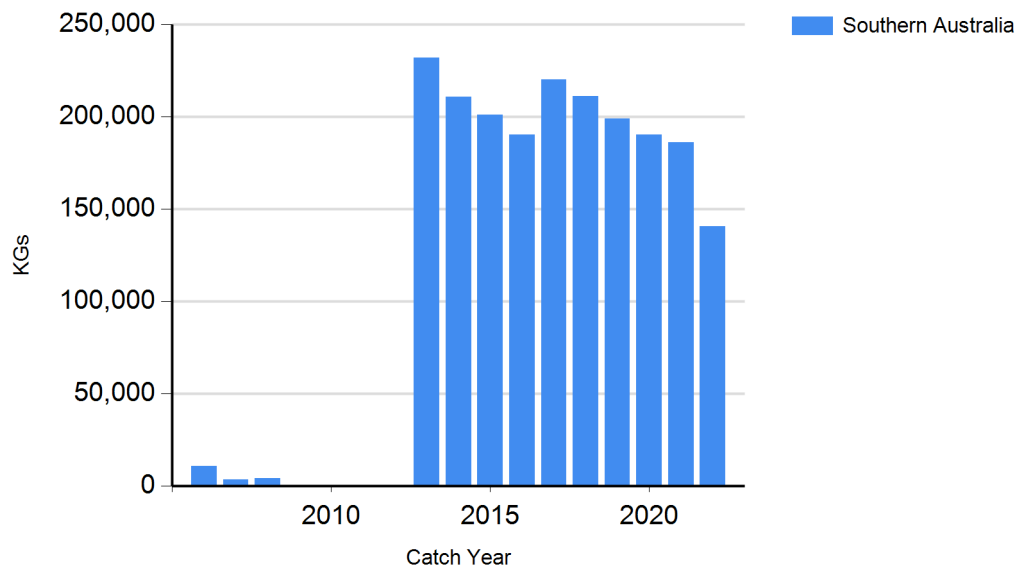
Tasmania – Recreational (Management Methods). In Tasmania, a recreational licence is required for fishers using dropline or longline gear, along with nets, such as gillnet or beach seine.

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. 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' details application procedures for issuing a UIC.

New South Wales – Recreational and Indigenous (Catch). No catch has been reported for Recreational nor Indigenous fishers. Given the offshore distribution of Sawsharks, near-shore catches any unreported catch is likely to be negligible.

CATCH CHART

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Commercial catch of SAWSHARKS - note confidential catch not shown

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