

School Shark (2018)

Galeorhinus galeus



James Woodhams: Australian Bureau of Agricultural and Resource Economics and Sciences, **Brett Ingram :** Victorian Fisheries Authority, **Jeremy Lyle:** Institute for Marine and Antarctic Studies, University of Tasmania, **Matias Braccini:** Department of Primary Industries and Regional Development, Western Australia, **Paul Rogers:** South Australian Research and Development Institute, **Vic Peddemors:** Department of Primary Industries, New South Wales

STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Commonwealth, Western Australia, New South Wales, Victoria, Tasmania, South Australia	Southern Australia	EGF, ITF, JASDGLMF, MSF, N/A, OF, OTF, OTLF, PPBWPF, SESSF (CTS), SESSF (GABTS), SESSF (GHST), SF, VRLF	Depleted	Estimate of biomass (relative pup production)

SESSF (CTS) Southern and Eastern Scalefish and Shark Fishery (Commonwealth Trawl Sector) (CTH), SESSF (GABTS) Southern and Eastern Scalefish and Shark Fishery (Great Australian Bight Trawl Sector) (CTH), SESSF (GHST) Southern and Eastern Scalefish and Shark Fishery (Gillnet Hook and Trap Sector) (CTH), EGF Estuary General Fishery (NSW), N/A Not Applicable (NSW), OTF Ocean Trawl Fishery (NSW), OTLF Ocean Trap and Line Fishery (NSW), MSF Marine Scalefish Fishery (SA), SF Scalefish Fishery (TAS), 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), JASDGLMF Joint Authority Southern Demersal Gillnet and Demersal Longline Managed Fishery (Zone 1 & Zone 2) (WA)

STOCK STRUCTURE

School Shark has a broad distribution throughout temperate waters of the eastern North Atlantic, western South Atlantic, and north-eastern and south-eastern Pacific, off South Africa, New Zealand and southern Australia. There is some uncertainty about the stock structure for School Shark [AFMA 2013, SharkRAG 2011] however, a recent genetic study found there is likely to be one genetic stock spread between Australia and New Zealand [Hernández et al. 2015]. A single Australian biological stock is assumed for management purposes. Insufficient data exist to support more complex analysis of stock structure [SharkRAG 2011].

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

STOCK STATUS

**Southern
Australia**

The majority of School Shark catch is taken as bycatch by fishers targeting Gummy Shark in the Gillnet Hook and Trap Sector (GHTS) of the Southern and Eastern Scalefish and Shark Fishery (SESSF). The School Shark total allowable catch (TAC) in the SESSF represents a bycatch quota and targeting the species is not permitted. A bycatch ratio rule is implemented so operators cannot land quantities of School Shark greater than 20 per cent of their Gummy Shark (*Mustelus antarcticus*) holdings. Additional regulations were implemented in the SESSF in 2015 to reduce fishing mortality of School Shark and animals deemed to be alive at capture must be released [AFMA 2018]. Minor catches of School Shark are also taken in state waters of Western Australia, New South Wales, Victoria, Tasmania and South Australia.

Assessments since 1991 have consistently estimated that the School Shark stock is less than 20 per cent of the unfished biomass. The ongoing, unavoidable bycatch of School Shark when fishing for Gummy Shark complicates efforts to minimise School Shark fishing mortality. However, historically they were a target species in southern Australia and catches were much larger. A full stock assessment for School Shark was published in 2009 [Thomson and Punt 2009]. In 2012, the 2009 assessment was re-run with additional catch data between 2009 and 2012 [Thomson 2012]. The outputs of this assessment were used in the development of the rebuilding strategy in 2015. There remain concerns about the ability of the stock assessment to reliably estimate the state of the stock. The assessment incorporates a number of fishery-dependent (catch and effort) and fishery-independent (survey) data series. However, given the low TAC in recent years (potentially affecting quota availability), uncertainty regarding accurate reporting of discards, the avoidance behaviour reported by fishers, and recent introduction of spatial closures predominantly off South Australia that prohibit the use of gillnets, the catch per unit effort data may be less reliable as an index of abundance in recent years [SharkRAG 2013], therefore limiting the ability of the model to accurately estimate the state of the stock.

The most recent assessment [Thomson and Punt 2009] estimated that 2008 biomass was 12 per cent of the unfished level.

Industry members have reported signs of increasing availability of School Shark, and that School Shark are becoming harder to avoid [AFMA 2013]. This is supported by preliminary survey work currently being conducted by the Institute for Marine and Antarctic Studies in pupping areas adjacent to Tasmania [McAllister et al. 2015, 2018].

A close kin mark recapture study is currently underway. This project is expected to provide estimates of current population size, an index of abundance and forecasts of the stock response to various levels of fishing mortality going forward.

While a number of management measures have been implemented to protect and recover the stock, until such time as there is a reliable and robust indicator of an increase in biomass, it is not possible to establish a demonstrable recovery. The above evidence indicates that the biomass of the stock is depleted and that recruitment is likely to be impaired.

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

BIOLOGY

School Shark biology [Last and Stevens 2009, Moulton et al. 1992, Punt and Walker 1998, Walker 2005]

Species	Longevity / Maximum Size	Maturity (50 per cent)
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School Shark	50 years, ~1 750 mm TL , 32.5 kg	12–16 years, mean length at female maturity and pupping are 1 240 and 1 420 mm TL, respectively
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DISTRIBUTION



Distribution of reported commercial catch of School Shark

TABLES

Commercial Catch Methods	Commonwealth	New South Wales	South Australia	Tasmania	Victoria	Western Australia
Danish Seine	✓					
Demersal Gillnet	✓					
Demersal Longline	✓	✓		✓		
Demersal Pair Trawl	✓					
Dropline	✓	✓				
Fish Trap		✓				
Gillnet				✓		✓
Hand Line, Hand Reel or Powered Reels				✓		
Hook and Line	✓	✓			✓	
Longline (Unspecified)						✓
Mesh Net		✓				
Midwater Trawl	✓					
Net					✓	
Otter Trawl	✓	✓				
Rod and reel	✓					

Traps and Pots					✓	
Trawl	✓					
Trotline	✓	✓				
Unspecified		✓	✓	✓	✓	✓

Fishing methods						
	Commonwealth	New South Wales	South Australia	Tasmania	Victoria	Western Australia
Commercial						
Danish Seine	✓					
Demersal Gillnet	✓					
Demersal Longline	✓	✓				
Dropline	✓	✓				
Fish Trap		✓				
Gillnet						✓
Hook and Line		✓			✓	
Mesh Net		✓				
Net					✓	
Otter Trawl	✓	✓				
Trotline		✓				
Unspecified		✓	✓	✓	✓	
Recreational						
Demersal Longline				✓		
Gillnet				✓		
Hook and Line		✓	✓	✓	✓	✓
Management Methods						
	Commonwealth	New South Wales	South Australia	Tasmania	Victoria	Western Australia
Commercial						
Effort limits (individual transferable effort)					✓	✓
Gear restrictions	✓	✓	✓	✓	✓	✓
Individual transferable quota	✓					
Limited entry	✓	✓	✓		✓	✓
Possession restrictions	✓	✓	✓		✓	✓
Size limit	✓	✓	✓	✓	✓	
Spatial	✓	✓		✓	✓	✓

closures						
Total allowable catch	✓				✓	
Trip limits			✓	✓	✓	
Indigenous						
Bag limits		✓	✓			
Customary fishing permits					✓	
Gear restrictions			✓			
Native Title		✓				
Section 37 (1d)(3)(9), Aboriginal cultural fishing authority		✓				
Size limit			✓			
Recreational						
Bag and possession limits						✓
Bag limits		✓	✓	✓	✓	✓
Gear restrictions			✓			
Licence				✓		✓
Size limit		✓	✓	✓	✓	
Spatial closures				✓	✓	✓
Trip limits				✓		

Active Vessels	New South Wales	South Australia	Tasmania	Victoria	Western Australia
	15 Fishing Business in EGF, 9 Fishing Business in OTF, 11 Fishing Business in OTLF,	59 Licences in MSF,	14 Vessels in SF,	11 Licence Holders in OF, 2 Licence Holders in PPBWPF, 2 Licence Holders in ITF, 1 Licence Holders in VRLF,	<3 in JASDGLMF,

EGF Estuary General Fishery(NSW)

OTF Ocean Trawl Fishery(NSW)

OTLF Ocean Trap and Line Fishery(NSW)

MSF Marine Scalefish Fishery(SA)

SF Scalefish Fishery(TAS)

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)

JASGDLMF Joint Authority Southern Demersal Gillnet and Demersal Longline Managed Fishery (Zone 1 & Zone 2)(WA)

Catch						
	Commonwealth	New South Wales	South Australia	Tasmania	Victoria	Western Australia
Commercial	21.9898t in SESSF (CTS), 2.714t in SESSF (GABTS), 181.283t in SESSF (GHTS),	1.007t in EGF, 0.183t in N/A, 0.92t in OTF, 0.652t in OTLF,		1.67622t in SF,	0.5278t in OF,	
Indigenous			Unknown	Unknown		Undetermined but likely to be negligible
Recreational		Unknown	Unknown. 7 749 individuals in 2013–14 (of which, 7 208 were retained)	Unknown	Unknown (No catch under permits)	No School Sharks caught from boats (Ryan et al. 2017), shore-based catches are undetermined

SESSF (CTS) Southern and Eastern Scalefish and Shark Fishery (Commonwealth Trawl Sector) (CTH), SESSF (GABTS) Southern and Eastern Scalefish and Shark Fishery (Great Australian Bight Trawl Sector) (CTH), SESSF (GHTS) Southern and Eastern Scalefish and Shark Fishery (Gillnet Hook and Trap Sector) (CTH), EGF Estuary General Fishery (NSW), N/A Not Applicable (NSW), OTF Ocean Trawl Fishery (NSW), OTLF Ocean Trap and Line Fishery (NSW), MSF Marine Scalefish Fishery (SA), SF Scalefish Fishery (TAS), 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), JASGDLMF Joint Authority Southern Demersal Gillnet and Demersal Longline Managed Fishery (Zone 1 & Zone 2) (WA),

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 - 'other' fisheries = commercial fisheries with less than seven active fishers are not presented due to the Privacy Act.

New South Wales – Indigenous (Management Methods) (a) Aboriginal Cultural Fishing Interim Access Arrangement—allows an Indigenous fisher in New South Wales to take in excess of a recreational bag limit in certain circumstances; for example, if they are doing so to provide fish to other community members who cannot harvest for themselves, (b) The Aboriginal cultural fishing authority is the authority that Indigenous persons can apply to take catches outside the recreational limits under the *Fisheries Management Act 1994* (NSW), Section 37 (1d)(3)(9), Aboriginal cultural fishing authority, and (c) In cases where the *Native Title Act 1993* (Cth) applies fishing activity can be undertaken by the person holding native title in line with S.211 of that Act, which provides for fishing activities for the purpose of satisfying their personal, domestic or non-commercial communal needs. In managing the resource where native title has been formally recognised, the native title holders are engaged with to ensure their native title rights are respected and inform management of the State's fisheries resources

Victoria – Indigenous Subject to the defence that applies under Section 211 of the *Native Title Act 1993* (Cth), and the exemption from a requirement to hold a Victorian recreational fishing licence, the non-commercial take by indigenous fishers is covered by the same arrangements as that for recreational fishing.

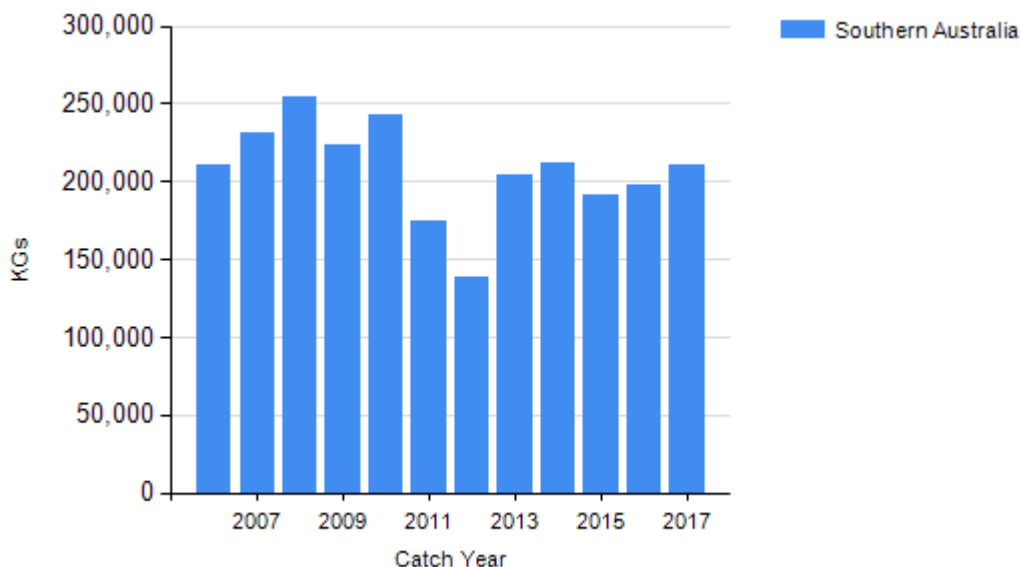
Victoria – Indigenous

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 – Recreational 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 In Tasmania, Indigenous people 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. If using pots, rings, set lines or gillnets, Aborigines must obtain a unique identifying code (UIC). The policy document Recognition of Aboriginal Fishing Activities for issuing a 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 School Shark - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

ENVIRONMENTAL EFFECTS on School Shark

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