Snook (2018)

Sphyraena novaehollandiae

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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Western Australia	Western Australia	CSFNMF, CSFNMF || SCEMF || SWCBNF || WL (NC, GC, WC) || WL (SC), SCEMF, SWCBNF, WL (NC || GC || WC), WL (SC)	Sustainable	Catch, indicator species, risk assessment, stock reduction analyses
New South Wales	New South Wales	N/A	Negligible	
Victoria	Victoria	CIF, GLF, OF, PPBWPF	Undefined	Catch
Tasmania	Tasmania	SF	Sustainable	Catch, effort, CPUE trends, catch curve analysis
South Australia	South Australia	MSF || NZRLF, NZRLF	Sustainable	Catch, effort, CPUE trends

N/A Not Applicable (NSW), NZRLF Northern Zone Rock Lobster Fishery (SA), SF Scalefish Fishery (TAS), CIF Corner Inlet Fishery (VIC), GLF Gippsland Lakes Fishery (VIC), OF Ocean Fishery (VIC), PPBWPF Port Phillip Bay and Western Port Bay Fishery (VIC), CSFNMF Cockburn Sound (Fish Net) Managed Fishery (WA), SCEMF South Coast Estuarine Managed Fishery (WA), SWCBNF South West Coast Beach Net Fishery (Order) (WA), WL (SC) Open Access in the South Coast (WA), WL (NC || GC || WC) Open Access in the North Coast, Gascoyne Coast and West Coast Bioregions (WA), MSF || NZRLF Marine Scale Fishery (including Northern Zone Rock Lobster Fishery) (SA), CSFNMF || SCEMF || SWCBNF || WL (NC, GC, WC) || WL (SC) Various Fisheries combined due to 3 boat rule (WA)

STOCK STRUCTURE

Also known as Shortfin Pike, Snook is distributed around southern Australia from Jurien Bay in Western Australia to southern Queensland, including Tasmania. Snook are usually found over seagrass beds and kelp reefs near the surface both in inshore and offshore waters of up to 20 m [Bertoni 1995, Edgar 2008, Gormon et al. 2008]. There is no information available on the

stock structure of Snook in Australian waters.

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

STOCK STATUS

New South Wales

Stock status for the New South Wales stock is reported as Negligible due to historically low catches in this jurisdiction and the stock has generally not been subject to targeted fishing. The New South Wales commercial catch in 2012–17 averaged less than 0.1 t per annum. Snook is also not a major component of recreational landings. Fishing is unlikely to be having a negative impact on the stock.

South Australia

The most recent assessment of Snook was completed in 2018 and used data to the end of December 2017 [Steer et al. 2018]. The primary measures for biomass and fishing mortality are targeted catch rates using troll lines and hauling nets. Approximately 25 per cent of the annual catch is targeted using troll lines and hauling nets, with the remaining 75 per cent landed as byproduct when fishers target other, higher-value species. Targeted catch rates for both gear types are typically variable, ranging between 15–30 kg per fisher day and 20–80 kg per fisher day for troll lines and hauling nets, respectively. Total annual commercial catches have declined from a peak of 147 t in 1995 to 39 t in 2017, driven by an 80 per cent reduction in fishing effort. This reduction largely reflects the removal of hauling net fishers through the implementation of a voluntary buy-back scheme and spatial netting closures in 2005 [Steer et al. 2018]. During this time, catch rates have been highly variable, but have not shown any long-term decline. An estimated 126 t of Snook was landed by the recreational sector in 2013/14 [Giri and Hall 2015], and potentially represents the largest source of mortality. 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 provided above, Snook in South Australia is classified as a **sustainable stock**.

Tasmania

The fishery for Snook in Tasmania is small and mainly limited to northern areas of the state. Snook, for the most part, are a byproduct species, but may be targeted opportunistically by a small number of fishers. Commercially, Snook is usually targeted through the use of troll or small mesh net fishing gear and as a byproduct of beach seining and gillnetting [Moore et al. 2018]. Prior to 2000, commercial landings of Snook averaged 15 t per year, before declining to around 5 t in the mid-2000s. Since 2005, landings have remained fairly stable, averaging 6–9 t per year [Moore et al. 2018]. These catch estimates are slightly lower than recent estimates of MSY based on Catch-MSY estimation methods [Haddon and Punt 2018], which estimate MSY in State waters to be just under 10 t. Trolling effort for Snook has been relatively stable in recent years, while mesh net effort has been variable. Catch rates have also been variable for both methods, likely due to the species not being actively targeted, but show no evidence of long-term decline. A recent catch-curve analysis based on fishery-dependent sampling in the north of the state estimated fishing mortality (F) to be low, with F estimated one quarter of natural mortality (M) (F=0.06 yr[-1], M=0.24 yr[-1]) [Webb 2017]. While there are no estimates of recreational landings (by weight), evidence suggests that the species is not a major recreational target and when caught, most individuals are released. 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 provided above, Snook in Tasmania is classified as a **sustainable stock**.

Victoria

In Victoria, commercial landings of Snook (Shortfin Pike) and Longfin Pike (*Dinolestes lewini*) are not reported separately. Consequently, reported catches are pooled and reported as 'Pike'. In 2017, 8.92 t of 'Pike' was caught in the Corner Inlet Fishery (CIF) whilst there was no commercial catch of 'Pike' in the Port Phillip Bay and Western Port Fishery (PPBWPF). Pike are landed using mesh net and haul seine, although the species proportion is unknown. Commercial netting is being phased out in Port Phillip Bay. Since 2016, 34 of the 43 licences have been bought out by the Victorian government. This has significantly reduced commercial effort for 'Pike'. Commercial catch of 1.33 t in 2016 was reduced to zero in the PPBWPF in 2017. Commercial net fishing in Port Phillip Bay will cease by 2022 and has already ceased in Corio Bay. There is insufficient information available to confidently classify the status of this stock.

On the basis of the evidence provided above, Snook in Victoria is classified as an **undefined stock**.

Western Australia

In Western Australia, Snook and Pike (Family: Sphyraenidae) are very minor components of commercial and recreational catches. Commercially, the highest catches of Snook were reported from the Wet Line sector in the Open Access in the South Coast (WA), but catches have been less than 3 tonnes (t) prior to 2014 and less than 5 t in subsequent years. Snook are not targeted by any sector and there is no evidence that catches have fluctuated greatly through time.

All assessments in Western Australia are undertaken using a weight of evidence approach. For Snook, the lines of evidence considered included: catches, catch distribution, effort, vulnerability assessment (Productivity Susceptibility Analysis) and stock reduction analyses (Catch-MSY) [Haddon and Punt 2018]. Furthermore, Catch-MSY forward projections (based on recent catch levels) indicate biomass remains well above the point of recruitment impairment (BMSY limit reference point) under current management arrangements. In addition, in Western Australia, all finfish species are allocated to a species suite [Department of Fisheries 2011]. Snook are part of the nearshore suite in temperate waters of Western Australia. Indicator species are identified, based on biological vulnerability and frequency of capture and include King George Whiting, Australian Salmon and Sea Mullet. As these indicator species have been assessed as sustainable under current management, and given the very low Snook catches and the weight of evidence assessment, the current risk level for the Western Australia Snook stock is estimated to be "Medium". Therefore, current status of the Snook stock in Western Australia is "Acceptable-Sustainable" and no new management is required.

The available information indicates that the biomass is not depleted and recruitment is unlikely to be impaired. The current level of fishing mortality is unlikely to lead to recruitment impairment.

On the basis of the evidence provided above, Snook in Western Australia is classified as a **sustainable stock**.

BIOLOGY

Snook biology [Bertoni 1995, Edgar 2008, Gormon et al. 2008]

Species	Longevity / Maximum Size	Maturity (50 per cent)

Snook	20 years, 1 100 mm TL	420 mm TL

DISTRIBUTION

Distribution of reported commercial catch of Snook

TABLES

Commercial Catch Methods	New South Wales	South Australia	Tasmania	Victoria	Western Australia
Beach Seine					✓
Dropline					✓
Gillnet					✓
Hand Line, Hand Reel or Powered Reels			✓		✓
Haul Seine					✓
Hook and Line				✓	
Mesh Net			✓		
N/A	✓				
Net				✓	
Seine Nets		✓			
Trolling		✓	✓		✓
Unspecified		✓	✓	✓	✓
Various			✓		

Fishing methods				
	South Australia	Tasmania	Victoria	Western Australia
Charter				
Hook and Line				✓
Commercial				

Beach Seine				✓
Dropline				✓
Gillnet				✓
Hand Line, Hand Reel or Powered Reels		✓		✓
Haul Seine				✓
Hook and Line			✓	
Net			✓	
Seine Nets	✓			
Trolling	✓	✓		✓
Unspecified	✓			✓
Various		✓		
Recreational				
Diving			✓	
Gillnet		✓		
Hook and Line	✓	✓	✓	✓
Trolling	✓	✓		✓

Management Methods				
	South Australia	Tasmania	Victoria	Western Australia
Charter				
Bag limits				✓
Licence				✓
Limited entry				✓
Size limit				✓
Spatial closures				✓
Commercial				
Effort limits			✓	
Gear restrictions	✓	✓	✓	✓
Licence			✓	
Limited entry	✓	✓	✓	✓
Size limit			✓	
Spatial closures	✓		✓	✓
Indigenous				
Bag and possession limits		✓		
Bag limits		✓		✓
Customary			✓	

fishing permits				
Recreational				
Bag and possession limits	✓	✓	✓	✓
Bag limits	✓	✓	✓	✓
Licence		✓	✓	✓
Size limit	✓		✓	✓
Spatial closures			✓	✓

Active Vessels				
	South Australia	Tasmania	Victoria	Western Australia
	110 Licences in MSF, 1 Licences in NZRLF,	19 Vessels in SF,	17 Licence Holders in CIF, 1 Licence Holders in GLF, 2 Licence Holders in OF, 3 Licence Holders in PPBWPF,	<3 in CSFNMF, 6 in SCEMF, 5 in SWCBNF, 20 in WL (SC), 3 in Charter, <3 in WL (NC || GC || WC),

MSF Marine Scalefish Fishery(SA)

NZRLF Northern Zone Rock Lobster Fishery(SA)

SF Scalefish Fishery(TAS)

CIF Corner Inlet Fishery(VIC)

GLF Gippsland Lakes Fishery(VIC)

OF Ocean Fishery(VIC)

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

CSFNMF Cockburn Sound (Fish Net) Managed Fishery(WA)

SCEMF South Coast Estuarine Managed Fishery(WA)

SWCBNF South West Coast Beach Net Fishery (Order)(WA)

WL (SC) Open Access in the South Coast(WA)

Charter Tour Operator(WA)

WL (NC || GC || WC) Open Access in the North Coast, Gascoyne Coast and West Coast Bioregions(WA)

Catch					
	New South Wales	South Australia	Tasmania	Victoria	Western Australia
Charter					0.028 t in Charter
Commercial		38.8535t in MSF || NZRLF,	9.37335t in SF,	0t in CIF, 0t in GLF, 0t in OF, 0t in PPBWPF,	3.924t in CSFNMF || SCEMF || SWCBNF || WL (NC, GC, WC) || WL (SC),
Indigenous		Unknown	Unknown	Unknown (No catch under	Unknown

				permit)	
Recreational		126.3 (2013–14)	Unknown	Unknown	0.37 t (± 0.13) t (2015–16)

N/A Not Applicable (NSW), NZRLF Northern Zone Rock Lobster Fishery (SA), SF Scalefish Fishery (TAS), CIF Corner Inlet Fishery (VIC), GLF Gippsland Lakes Fishery (VIC), OF Ocean Fishery (VIC), PPBWPF Port Phillip Bay and Western Port Bay Fishery (VIC), CSFNMF Cockburn Sound (Fish Net) Managed Fishery (WA), SCEMF South Coast Estuarine Managed Fishery (WA), SWCBNF South West Coast Beach Net Fishery (Order) (WA), WL (SC) Open Access in the South Coast (WA), WL (NC || GC || WC) Open Access in the North Coast, Gascoyne Coast and West Coast Bioregions (WA), MSF || NZRLF Marine Scale Fishery (including Northern Zone Rock Lobster Fishery) (SA), CSFNMF || SCEMF || SWCBNF || WL (NC, GC, WC) || WL (SC) Various Fisheries combined due to 3 boat rule (WA),

Western Australia – Recreational (catch) Western Australia boat-based recreational catch from 1 September 2015–30 November 2016. Shore based catches are largely unknown.

Western Australia – Recreational (management methods) In Western Australia, a recreational fishing from boat licence is required to take finfish from a powered vessel.

Victoria – Commercial (catch) Snook is not differentiated from Longfin Pike caught in Victorian commercial fisheries.

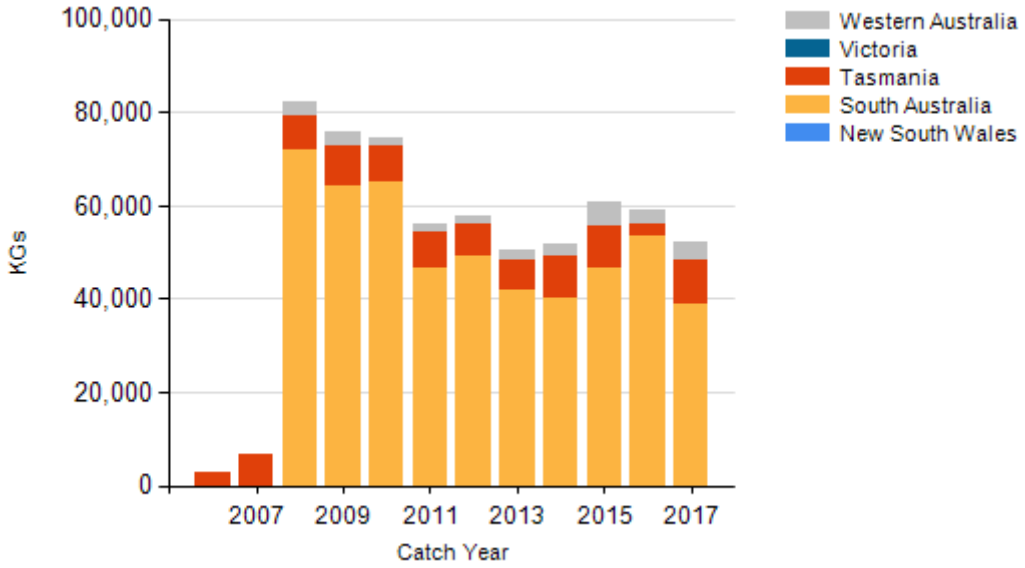
Victoria – Indigenous In Victoria, regulations for managing recreational fishing may not apply to fishing activities by Indigenous people. Victorian traditional owners may have rights under the Commonwealth's *Native Title Act 1993* to hunt, fish, gather and conduct other cultural activities for their 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 (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 – 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 2016–17.

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. 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 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 Snook - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

ENVIRONMENTAL EFFECTS on Snook

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