

# Snook (2020)

*Sphyraena novaehollandiae*



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## STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Western Australia	Western Australia	Sustainable	Catch, indicator species, risk assessment, stock reduction analyses
New South Wales	New South Wales	Negligible	
Victoria	Victoria	Undefined	Catch
Tasmania	Tasmania	Sustainable	Catch, effort, CPUE trends, catch curve analysis
South Australia	South Australia	Sustainable	Catch, effort, CPUE trends

## STOCK STRUCTURE

Snook, also known as Shortfin Pike, is distributed around southern Australia from Jurien Bay in Western Australia to southern Queensland, including Tasmania. Snook are found over seagrass beds and kelp reefs near the surface both in inshore and offshore waters of up to 20 m depth [Bertoni 1995, Edgar 2008, Gormon et al. 2008]. There is no information available on the stock structure of Snook in Australian waters. Thus, 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 during 2014–15 to 2018–19 averaged less than 0.1 tonne (t) per annum, and Snook is 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 2020 [Steer et al. 2020]. The primary indicators of biomass and fishery status are targeted catch rates using troll lines and hauling nets. During the assessment period, catch rates were highly variable, without being indicative of any long-term trend. Annual catches of Snook in South Australia's commercial multi-species, multi-gear and multi-sectoral Marine Scalefish Fishery (MSF) ranged between 40 and 113 t from 1999–00 to 2018–19, with 41 t landed in 2018–19. Annual nominal catches of Snook in the South Australian Charter Boat Fishery have ranged between 5 376 and 1 510 fish between 2007–08 and 2018–19 [Rogers et al. 2020]. An estimated 126 t of Snook was landed by the recreational sector in 2013–14 [Giri and Hall 2015], which represents the potentially largest source of fishing 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 generally concentrated in northern areas of the state. Snook is commonly landed as a byproduct species, but also known to be targeted by some fishers. Snook is caught by using troll or small mesh net fishing gear (targeted operations) and by beach seine and gillnetting operations (by-product) [Moore et al. 2018]. Prior to 2000, commercial landings of Snook averaged about 15 t per year, before declining to around 5 t since then. Following fluctuations between 3-10 t over recent years, commercial catches in 2018–19 declined to only 2.7 t [Krueck et al. 2020]. While Snook do not appear to represent an important target species for recreational fishers, the most recent estimate of landed individuals for the 2017–18 season was 9000 individuals, which translates to approximately 9 t. This latest recreational catch estimate is twice as high as the previous estimate for the 2012–13 season, but almost identical to an earlier estimate for the 2000–01 season [Lyle et al. 2019]. Given simultaneous recent declines in commercial catches, the latest recreational catch estimate is approximately three times higher than the current commercial catch. However, the latest recreational catch estimate was associated with notably high uncertainty (a large standard error) [Lyle et al. 2019].

Trolling and mesh net effort for Snook have been variable. Catch rates have also been variable for both methods, but do not indicate long-term decline. A recent catch-curve analysis based on fishery-dependent sampling in northern state waters suggests that fishing mortality (F) is low, with F estimated to be about one quarter of natural mortality (M) ( $F=0.06 \text{ yr}^{-1}$ ,  $M=0.24 \text{ yr}^{-1}$ ) [Webb 2017].

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 current level of fishing mortality is unlikely to cause the stock to become recruitment impaired. On this basis, 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'. A very large decrease in total snook landings has largely resulted from decreased fishing effort in Port Phillip Bay due to the commercial licence buyout. Conversely, fishing effort of both seine and mesh net in Corner Inlet has increased in recent years, which has seen the highest landings of Snook ever reported from Corner Inlet [Conron et al. 2020].

During the past two decades annual landings of Shortfin Pike that can be

reported publicly in accordance with the 5-fisher minimum to protect confidentiality were taken entirely by mesh net in all but one instance; in 2007 an additional 341 kg was taken by hook and line. Catches by mesh net averaged about 15 t during the 5-year period 2011–2015, then subsequently reduced by 42 per cent to an average of about 9 t per annum.

CPUE for Snook in Corner Inlet using seine nets has remained relatively consistent from 1978–2018, albeit with some interannual variability around the reference period average. This interannual variability may be a result of natural variation in the population or because Snook represent a relatively minor by-product of this fishery (i.e. not targeted and hence caught in relatively low quantities). Interannual variability means that the generalised additive model applied to the CPUE data has defaulted to a linear equation that shows a slightly increasing trend throughout the time series. Snook catches receive a moderate price at market so there is no reason to suspect that they are discarded which would render the CPUE trend to be unreliable [Conron et al. 2020].

With stable, or slightly increasing CPUE, there is no evidence that Snook abundance has declined in Corner Inlet during 1978–2018. Fishing effort is at historic highs within this fishery and there is a possibility that this could result in localised depletion. Thus, it is important that the performance of the stock is carefully monitored, especially if fishing effort remains high or increases. However, at present, there is no indication that fishing has, or will, result in recruitment impairment of Snook in Victoria [Conron et al. 2020].

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 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. Recreationally the estimated statewide boat-based catch was 1 181 fish (+/- se 404) in 2017–18 [Ryan et al. 2019]. 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

Fishing methods	New South Wales	South Australia	Tasmania	Victoria	Western Australia
<b>Charter</b>					
Rod and reel					✓
<b>Commercial</b>					
Beach Seine					✓
Gillnet					✓
Hand Line, Hand Reel or Powered Reels			✓		✓
Haul Seine					✓

Mesh Net			✓		
Net				✓	
Seine Nets		✓			
Trolling		✓			✓
Unspecified		✓	✓		
Various	✓				
<b>Recreational</b>					
Diving				✓	
Gillnet			✓		
Hook and Line		✓	✓	✓	✓
Trolling		✓	✓		✓

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

<b>Catch</b>					
	<b>New South Wales</b>	<b>South Australia</b>	<b>Tasmania</b>	<b>Victoria</b>	<b>Western Australia</b>

<b>Charter</b>					Negligible
<b>Commercial</b>	0.0435 t	40.9301 t	2.69774 t	10.1344 t	4.736 t
<b>Indigenous</b>		Unknown	Unknown	Unknown (No catch under permit)	Unknown
<b>Recreational</b>		126.3 (2013–14)	Approximatley 9000 individuals (2017/18)	Unknown	1 t (2017/18)

**Western Australia – Recreational (catch)** Western Australia boat-based recreational catch from 1 September 2017–30 August 2018 [Ryan et al 2019]. 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.

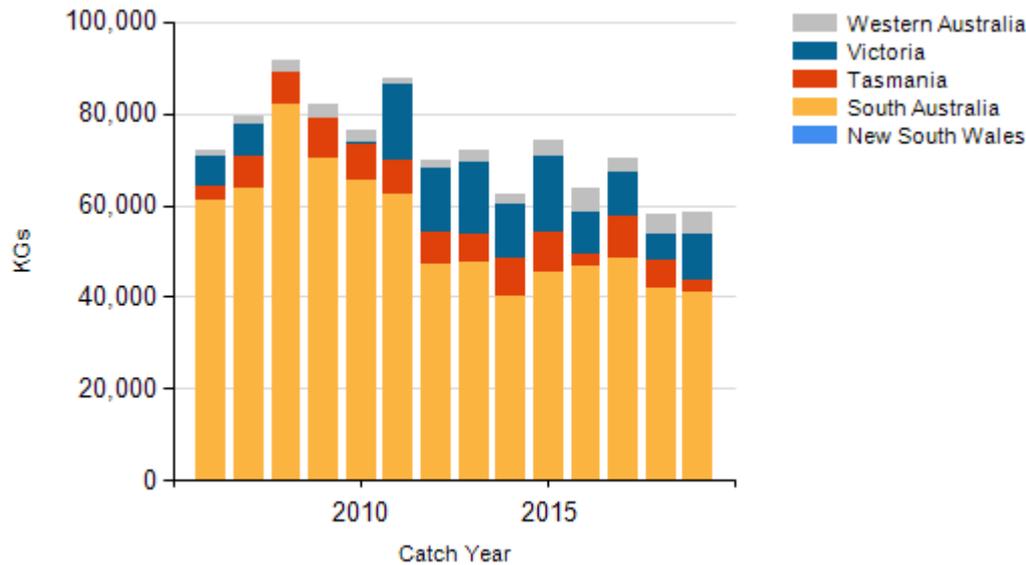
**Victoria – Indigenous (Management Methods)** A person who identifies as Aboriginal or Torres Strait Islander is exempt from the need to obtain a Victorian recreational fishing licence, provided they comply with all other rules that apply to recreational fishers, including rules on equipment, catch 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 – 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 2018/19.

**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://dpiwwe.tas.gov.au/Documents/Policy%20for%20Aboriginal%20tags%20and%20alloting%20an%20UIC.pdf>).

## CATCH CHART



Commercial catch of Snook - note confidential catch not shown

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