

Sand Whiting (2020)

Sillago ciliata



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Queensland	Queensland	Sustainable	Stock assessment, commercial catch and CPUE, recreational catch, length and age
New South Wales	New South Wales	Sustainable	Catch, effort and standardised CPUE, length and age, mortality rates

STOCK STRUCTURE

Sand Whiting occur along the east coast of Australia and are most abundant in southern Queensland and northern New South Wales. Tagging studies have shown movement of adult fish between estuaries, but information on biological stock boundaries remains incomplete. The unknown nature of biological stock composition means no formal assessment of the entire biological stock has been completed. Separate assessments of Sand Whiting have been conducted in Queensland and New South Wales [Hoyle et al. 2000, O'Neill et al. 2000, Ochwada-Doyle et al. 2014, Hall 2020].

Here, assessment of stock status is presented at the jurisdictional level—Queensland and New South Wales.

STOCK STATUS

New South Wales In New South Wales, Sand Whiting are mainly taken by the commercial Estuary General Fishery using mesh nets and general-purpose hauling nets, and smaller catches are reported by the Ocean Hauling Fishery [Hall 2015]. Annual commercial catches of Sand Whiting in New South Wales waters remained above 130 tonnes (t) between 1980–91 and 2007–08 but have since gradually decreased to the lowest catches in five decades of 74.9 t in 2017–18 and 75.1 t in 2018–19 [Hall 2020]. This recent decrease in catches has coincided with a similar decline in effort, such that the standardised commercial catch rates for

both the mesh netting and hauling sectors, while variable, have remained near long-term averages over the last 11 years [Hall 2020]. The length compositions of the commercial landings for this species have been relatively stable since the late-1960s (although the time-series has many missing years) [NSW DPI, unpublished data]. Local populations that have been studied are predominantly comprised of fish that are between two and five years of age [Ochwada-Doyle et al. 2014].

Relative to the commercial catch, recreational catches comprised approximately 46.3 per cent of the total harvest from New South Wales in 2013–14 [Hall 2020]. The most recent estimate of the recreational harvest of Sand Whiting in New South Wales was approximately 280 064 fish or around 33.6 t during 2017–18 [Murphy et al. 2020]. This estimate was based on a survey of Recreational Fishing Licence (RFL) Households, comprised of at least one fisher possessing a long-term (1 or 3 years duration) fishing licence and any other fishers resident within their household. The equivalent estimated recreational harvest in 2013–14 was approximately 38 per cent smaller at 172 941 fish, which suggests catches have recently increased, although available data are limited [Murphy et al. 2020]. A survey of Aboriginal cultural fishing in the Tweed River catchment identified Sand Whiting as one of the top 10 most important species numerically in catches and was estimated to account for 14.2 per cent of the total finfish catches in that catchment [Schnierer and Egan 2016]. Statewide estimates of the annual Aboriginal harvest of Sand Whiting in NSW waters are unknown but are assumed to be significant. In combination, the above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired.

Nominal effort levels (in total number of days fished) over the past 11 years have been well below historical levels. In 2018–19, effort was 7 969 days for mesh netting and 950 days for hauling compared with 23 093 and 8 012 days, respectively, in 1998–99 [Hall 2020]. Changes in catch reporting from monthly to daily records in July 1997 significantly altered effort distributions and would account for some of the historical decrease. There is a minimum legal length for both commercial and recreational fishers of 270 mm TL and recreational fishing havens in 31 New South Wales estuaries, and associated commercial fishing licence buyout, have also reduced commercial fishing pressure on the spawning stock. Previous estimates of mortality from catch curves indicate that the rate of fishing mortality is likely to be less than that of natural mortality, although these estimates need to be updated [Ochwada-Doyle et al. 2014]. Collectively, 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, Sand Whiting in New South Wales is classified as a **sustainable stock**.

Queensland Sand Whiting is a major target species for both commercial and recreational fishers in south-east Queensland [Leigh et al. 2019]. The most recent stock assessment [Leigh et al. 2019] of Sand Whiting for the Moreton and Fraser regions in Queensland estimated the exploitable biomass in 2017 to be 29 per cent of unfished biomass. This is approximately the biomass corresponding to maximum sustainable yield (MSY). Fishery-dependent monitoring of Sand Whiting, beginning in 2007, indicates consistent length and age structures, indicating a stable population with continued recruitment [QDAF unpublished]. In the 2019 calendar year, the commercial catch of Sand Whiting in Queensland was 123 tonnes (t) which was below the mean catch during the period 1990–2018 (272 t) [QFISH 2020]. South of Baffle Creek, where Sand Whiting are most commonly targeted by the commercial net fishery, the total catch in 2019 was 114 t. This was below the long-term average of 253 t (1990–2018) for the region and also below the historical Queensland Fish Board (QFB) data series (mean of 266 t, 1945–80). Recreational harvest in 2019 was also lower (78 t) than the previous estimates (2000: 377 t; 2010: 135 t; 2013: 99 t) [Teixeira et

al. 2021]. Standardised catch rates in recent years have been steady, albeit at lower than historical levels [Leigh et al. 2019]. The stock is not considered to be recruitment impaired.

Current harvest levels (commercial and recreational combined) should see the stock rebuild to target biomass levels (B60) by about 2027 [Leigh et al. 2019]. Nominal effort for Sand Whiting in the Queensland commercial net fishery in 2019 was at a historic low [QFISH 2020]. In areas where Sand Whiting are most common (south of Rockhampton) recreational effort (in days fished) had also fallen since 2001 (417 000 in 2000; 216 400 in 2010; 158 300 in 2013) [Webley et al. 2015]. There is no estimate of Indigenous harvest for fishers using traditional fishing methods. The introduction in 2009 of an in-possession limit (30 fish) for recreational fishers aimed to further reduce fishing mortality. The current minimum legal size for Sand Whiting in Queensland (230 mm total length [TL]) allows a proportion of mature fish to spawn at least once [Ochwada-Doyle 2014]. The current level of fishing pressure is unlikely to cause this stock to become recruitment impaired.

On the basis of the evidence provided above, Sand Whiting in Queensland is classified as a **sustainable stock**.

BIOLOGY

Sand Whiting biology [Burchmore et al. 1988, McKay RJ 1992, Ochwada-Doyle 2014, Stocks et al. 2011]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Sand Whiting	12 years, 510 mm TL	Males 170–240 mm FL Females 190–240 mm FL

DISTRIBUTION



Distribution of reported commercial catch of Sand Whiting

TABLES

Fishing methods		
	New South Wales	Queensland
Charter		
Hook and Line	✓	✓
Commercial		
Haul Seine	✓	
Line		✓
Mesh Net	✓	
Net		✓
Otter Trawl	✓	
Seine Nets	✓	
Various	✓	
Recreational		
Hook and Line	✓	✓

Management Methods		
	New South Wales	Queensland
Charter		
Bag and possession limits	✓	
Gear restrictions	✓	✓
Possession limit		✓
Size limit	✓	✓
Spatial closures	✓	✓
Commercial		
Gear restrictions	✓	✓
Limited entry	✓	✓
Size limit	✓	✓
Spatial closures	✓	✓
Temporal closures	✓	✓
Recreational		
Bag and possession limits	✓	
Gear restrictions	✓	✓

In possession limits	✓	
Possession limit		✓
Size limit	✓	✓
Spatial closures	✓	✓

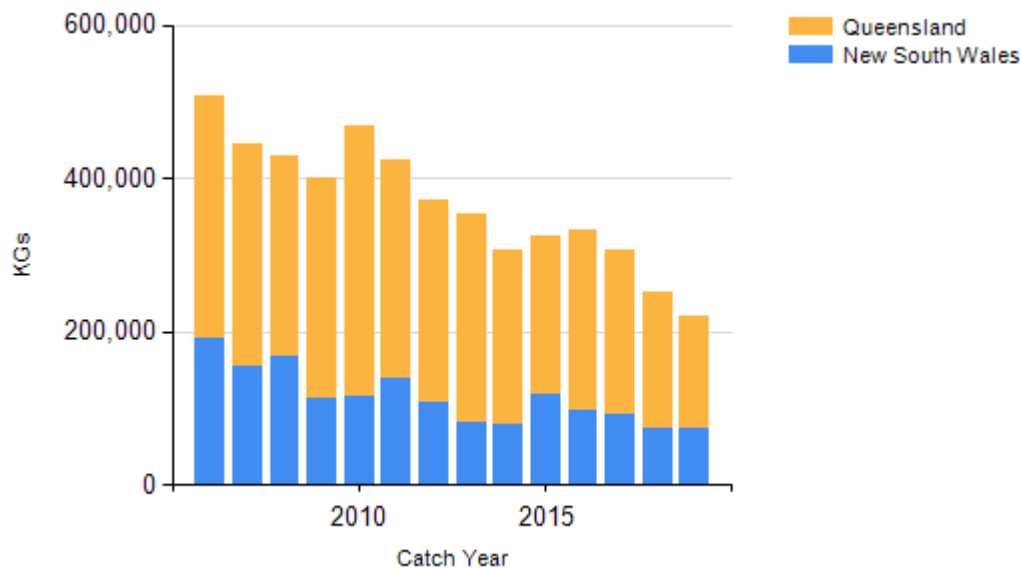
Catch		
	New South Wales	Queensland
Charter	242 fish (2018-19)	
Commercial	74.7477 t	144.77 t
Indigenous	Unknown	Unknown
Recreational	33.6 t (2017-18)	78 t (2019-20)

Queensland – Indigenous (management methods) for more information see <https://www.daf.qld.gov.au/business-priorities/fisheries/traditional-fishing>

New South Wales – Recreational (catch totals) Estimate from Murphy et al. [2020], based on a survey of Recreational Fishing Licence households.

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

CATCH CHART



Commercial catch of Sand Whiting - note confidential catch not shown

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