

# Sand Whiting (2018)

*Sillago ciliata*



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## STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Queensland	Queensland	ECIFFF	Sustainable	Commercial catch and CPUE, length and age, mortality rate
New South Wales	New South Wales	EGF, N/A, OHF	Sustainable	Catch, effort and CPUE, length and age, mortality rate

EGF Estuary General Fishery (NSW), N/A Not Applicable (NSW), OHF Ocean Hauling Fishery (NSW), ECIFFF East Coast Inshore Fin Fish Fishery (QLD)

## 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 [Gray et al. 2000, Hoyle et al. 2000, Ochwada-Doyle et al. 2014, O'Neill 2000].

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 (by the mesh netting and hauling sectors), with smaller catches reported by the Ocean Hauling Fishery [Hall 2015]. Annual commercial catches of Sand Whiting in NSW waters over the last five years have been well below the preceding 20 year average of 162 t [NSW DPI unpublished]. In 2017, the total commercial catch of Sand Whiting was just 62.5 t, which was the smallest annual catch reported from NSW waters since 1960. This recent decrease in catches has coincided with a similar decline in effort, such that the median commercial catch rates (nominal) for both mesh netting and hauling, while variable, have not decreased noticeably over the last eight years [NSW DPI unpublished]. Estimates of recreational harvest also decreased from 230–460 t

in 2000–01 to just 69 t in 2013–14, and while there was a concurrent drop in effort, the combined whiting catch rate decreased by 50 per cent between the two surveys [West et al. 2016]. There is, however, uncertainty in the 2000–01 recreational estimates as Sand Whiting catches were estimated from mixed whiting totals (probably comprising Sand Whiting, Trumpeter Whiting and other whiting species). 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) [Hall 2015]. 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]. Despite the conflicting signals from the recreational sector that will be further monitored, 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 eight years have been well below historical levels. In 2017, effort levels dropped again in both sectors from 9 454 to 6483 days for mesh netting and from 1 364 to 1 037 days for hauling [NSW DPI unpublished]. The minimum legal length for both commercial and recreational fishers (270 mm TL), and spatial closures in New South Wales reduce 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 [Ochwada-Doyle et al. 2014]. 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** In 2017, the commercial catch of Sand Whiting in Queensland was 189 tonnes (t) which was below the mean catch during the period 1990–2016 (277 t) [QDAF 2018]. South of Baffle creek, where Sand Whiting are most commonly targeted by the commercial net fishery, the total catch in 2017 was 183 t. This was below the average of Queensland’s contemporary Commercial Fisheries information System data series (mean of 258 t, 1990–2016) and also below the historical Queensland Fish Board (QFB) data series (mean of 266 t, 1945–80), although the latter data set includes catch from both recreational and commercial fishers [QDAF 2018]. Large reductions in effort, starting in 2006, have contributed to this reduced total catch.

The nominal catch rate in 2017 (63 kg per day) was close to the highest ever recorded for the 1990–2016 period [QDAF 2018]. Fishery-dependent monitoring of Sand Whiting, beginning in 2007, indicates consistent length and age structures [QDAF 2018]. These are good indicators of a stable population with continued recruitment. 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 in the Queensland commercial net fishery in 2017 was at a historic low, a result of Government funded buy backs, beginning in 2006 (2 988 days in 2017, compared with 3 537 days in 2016 and 5 513 days in 2007 or a 45 per cent reduction) [QDAF 2018]. . In areas where Sand Whiting are most common (south of Rockhampton) recreational effort (in days fished) has also fallen since 2001 (417 000 in 2001; 216 400 in 2011; 158 300 in 2014) [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]. Sand Whiting have a high rate of survival when released by recreational anglers, thus reducing discard mortality impacts on the stock [Butcher et al. 2006]. Fishers using tunnel nets operate under industry developed code of best practice guidelines which limits post release mortality [Moreton Bay Seafood Industry Organisation 2012]. In Queensland, coastal river

and estuary set gillnets have been shown to have minimal impact on the environment and are quite selective in their harvest. Bycatch is generally low when compared to the harvest of the target species [Halliday et al. 2001].

Estimates of mortality for Sand Whiting in Queensland (from catch curves) are high (the rate of fishing mortality [ $F$ ] is close to the rate of natural mortality [ $M$ ] [Then et al. 2014]), indicating a fully-fished stock; however, the estimates have remained steady at these levels since 2007 [QDAF 2018]. The results of a stock assessment, using all of the available data, will be available in 2019. This combined with the on-going collection of fishery dependent length and age data aims to mitigate negative stock outcomes resulting from current levels of fishing pressure. The above evidence indicates that 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 19–240 mm FL

## DISTRIBUTION



Distribution of reported commercial catch of Sand Whiting

## TABLES

Commercial Catch Methods	New South Wales	Queensland
Haul Seine	✓	
Hook and Line		✓
Mesh Net	✓	

N/A		✓
Net		✓
Seine Nets	✓	
Unspecified	✓	

<b>Fishing methods</b>		
	<b>New South Wales</b>	<b>Queensland</b>
<b>Charter</b>		
Hook and Line	✓	✓
<b>Commercial</b>		
Haul Seine	✓	
Hook and Line		✓
Mesh Net	✓	
Net		✓
<b>Indigenous</b>		
Hook and Line	✓	
Various		✓
<b>Recreational</b>		
Hook and Line	✓	✓

<b>Management Methods</b>		
	<b>New South Wales</b>	<b>Queensland</b>
<b>Charter</b>		
Bag and possession limits		✓
Bag limits	✓	
Fishing gear and method restrictions		✓
Gear restrictions	✓	
In possession limits	✓	
Size limit	✓	✓
Spatial closures	✓	✓
<b>Commercial</b>		
Gear restrictions	✓	✓
Limited entry	✓	✓
Size limit	✓	✓
Spatial closures	✓	✓
Temporal	✓	✓

closures		
<b>Indigenous</b>		
Bag limits	✓	
Native Title	✓	
Section 37 (1d)(3)(9), Aboriginal cultural fishing authority	✓	
<b>Recreational</b>		
Bag and possession limits		✓
Bag limits	✓	
Fishing gear and method restrictions		✓
Gear restrictions	✓	
In possession limits	✓	
Size limit	✓	✓
Spatial closures	✓	✓

Active Vessels		
	New South Wales	Queensland
	207 Fishing Business in EGF, 22 Fishing Business in OHF,	129 in ECIFFF,

EGF Estuary General Fishery(NSW)

OHF Ocean Hauling Fishery(NSW)

ECIFFF East Coast Inshore Fin Fish Fishery(QLD)

Catch		
	New South Wales	Queensland
Charter	389 fish (2017)	
Commercial	56.398t in EGF, 0.221t in N/A, 5.947t in OHF,	192.274t in ECIFFF,
Indigenous	Unknown	Unknown
Recreational	69 t (2013–14)	102 t (2013–14)

EGF Estuary General Fishery (NSW), N/A Not Applicable (NSW), OHF Ocean Hauling Fishery (NSW), ECIFFF East Coast Inshore Fin Fish Fishery (QLD),

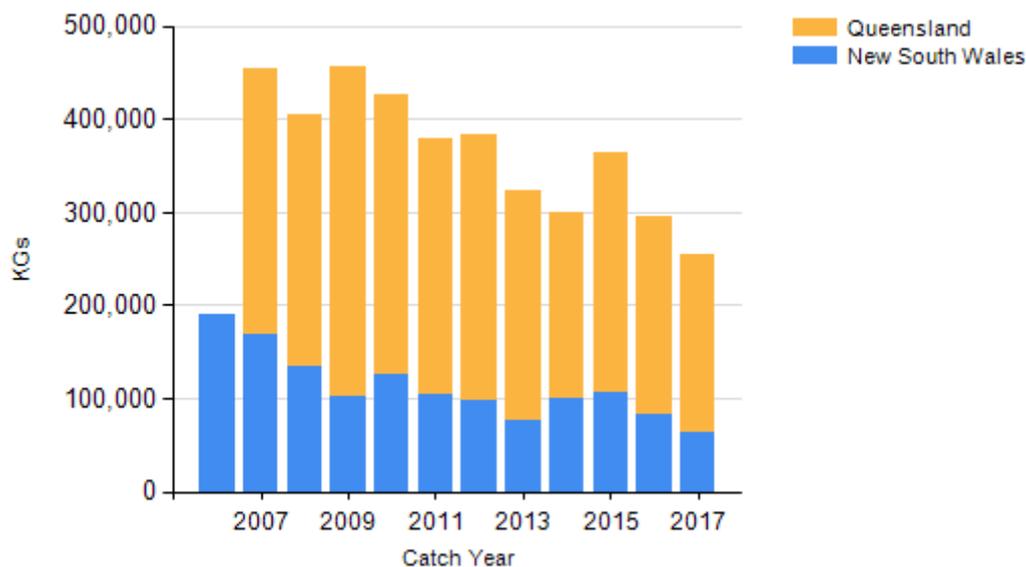
**Queensland – Indigenous** In Queensland, under the *Fisheries Act 1994* (Qld), Indigenous

fishers are able to use prescribed traditional and non-commercial fishing apparatus in waters open to fishing. Size and bag limits and seasonal closures do not apply to Indigenous fishers. Further exemptions to fishery regulations can be obtained through permits.

**New South Wales – Indigenous (management methods)** (a) Bag limits - the 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 themselves; (b) Aboriginal cultural fishing authority- 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) Native title- 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.

**New South Wales – Charter (catch)** Considerable under-reporting of catch by this sector is likely [NSW DPI unpublished].

### CATCH CHART



Commercial catch of Sand Whiting - note confidential catch not shown

### EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

#### ENVIRONMENTAL EFFECTS on Sand Whiting

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