

Sand Whiting (2016)

Sillago ciliata



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Queensland	Queensland	ECIFFF	Sustainable	Commercial catch and <u>CPUE</u> , length and age, mortality rate
New South Wales	New South Wales	EGF, OHF, OTF	Sustainable	Commercial catch and <u>CPUE</u> , length and age, mortality rate

EGF Estuary General Fishery (NSW), OHF Ocean Hauling (NSW), OTF Ocean Trawl 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[1–4].

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

STOCK STATUS

New South Wales The median commercial catch rates (nominal) of Sand Whiting in New South Wales have fluctuated over the past 5 years. Catch rates declined in 2013, when historically low landings (79 t) and nominal effort were reported across all sectors[8]. In 2014–15, catch rates returned to previous levels, with an increase in landings (104 t and 87 t, respectively) while effort levels remained steady. Although commercial catches over the past 3 years were well below the long-term average of 145 t, this decrease corresponded with a similar decline in nominal effort. 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. The length compositions of the commercial landings for this species have been relatively stable since the late-1960s. Local populations that have been studied are predominantly comprised of fish that are between 2 and 5 years of age[3,8]. Although there were some conflicting signals from the recreational sector that will be further monitored, there was enough uncertainty in the 2000–01 recreational estimates (because Sand Whiting catches were estimated from mixed whiting totals) to consider that the weight of the above evidence indicates that the biomass of this stock is unlikely to be recruitment overfished.

Nominal effort levels (in number of fisher days) over the past 3 years have remained fairly steady, but are well below historical levels. In 2015, 12 182 days were reported for the Estuary General Fishery, 386 days for the Ocean Haul Fishery and 190 days for the Ocean Trawl Fishery–Prawn Sector[8]. 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. Recent estimates of mortality, from catch curves, indicate that the rate of fishing mortality is less than that of natural mortality[3]. The above evidence indicates that the current level of fishing pressure is unlikely to cause the stock to become recruitment overfished.

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

Queensland In 2015 the commercial catch of Sand Whiting in Queensland was below the mean catch during the period 2000–14 (mean of 297 tonnes [t]; 2000–14; 257 t in 2015). The nominal catch rate in 2015 (68 kg per day) was the highest ever recorded for the 2000–15 period[5]. Fishery-dependent monitoring of Sand Whiting, beginning in 2007, indicates consistent length and age structures[5]. 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 recruitment overfished.

Nominal effort in the Queensland commercial fishery in 2015 was higher than in 2014, but remained lower than in previous years, which has improved the commercial catch rate (3753 days in 2014, compared with 3264 days in 2014 and 5400 days in 2009)[5]. Effort in the recreational sector of the fishery has reduced since 2001[6], and the introduction in 2009 of an in-possession limit (30 fish) aims to limit the overall recreational harvest. 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[3]. Sand Whiting have a high rate of survival when released by recreational anglers, thus reducing discard mortality impacts on the stock[7]. 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]), indicating a fully-fished stock; however, the estimates have remained steady at these levels since 2007[5]. The above evidence indicates that the current level of fishing pressure is unlikely to cause this stock to become recruitment overfished.

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

BIOLOGY

Sand Whiting biology[3,9–11]

Species	Longevity / Maximum Size	Maturity (50 per cent)
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Sand Whiting	12 years; 510 mm <u>TL</u>	Males 170–240 mm <u>FL</u> Females: 19–240 mm <u>FL</u>
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DISTRIBUTION



Distribution of reported commercial catch of Sand Whiting

TABLES

Commercial Catch Methods	New South Wales	Queensland
Gillnet	✓	
Line		✓
Net		✓
Otter Trawl	✓	
Unspecified - Seine	✓	

Fishing methods	New South Wales	Queensland
Commercial		
Gillnet	✓	
Line		✓
Net		✓
Otter Trawl	✓	
Unspecified - Seine	✓	
Recreational		
Cast Net		✓

Hand Line, Hand Reel or Powered Reels	✓	✓
Management Methods		
	New South Wales	Queensland
Commercial		
Fishing gear and method restrictions	✓	✓
Limited entry	✓	✓
Size limit	✓	✓
Spatial closures	✓	✓
Temporal closures	✓	✓
Indigenous		
Bag limits	✓	
Fishing gear and method restrictions	✓	
Section 31 (1)(c1), Aboriginal cultural fishing authority	✓	
Size limit	✓	
Spatial closures	✓	
Recreational		
Bag limits	✓	
Fishing gear and method restrictions	✓	✓
In possession limits	✓	✓
Licence	✓	
Size limit	✓	✓
Spatial closures	✓	✓
Active Vessels		
	New South Wales	Queensland
	255 License in FGF. 27 License	163 License in FCIFFF.

	in OHF, 24 License in OTF,	
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EGF Estuary General Fishery(NSW)

OHF Ocean Hauling(NSW)

OTF Ocean Trawl Fishery(NSW)

ECIFFF East Coast Inshore Fin Fish Fishery(QLD)

Catch		
	New South Wales	Queensland
Commercial	76.2094t in EGF, 8.4312t in OHF, 1.9052t in OTF,	257.797t in ECIFFF,
Indigenous	Unknown	Unknown
Recreational	69 t (2013–14)	102 t (2013–14)

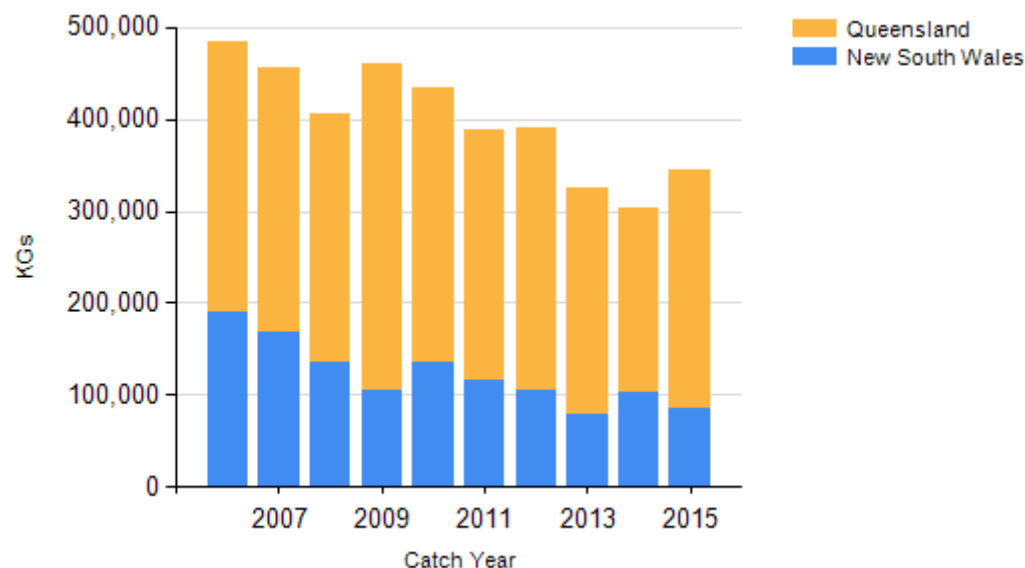
EGF Estuary General Fishery (NSW), OHF Ocean Hauling (NSW), OTF Ocean Trawl Fishery (NSW), ECIFFF East Coast Inshore Fin Fish Fishery (QLD),

a 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.

b New South Wales – Indigenous 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.

c New South Wales – Indigenous Aboriginal cultural fishing authority—the authority to which Indigenous persons can apply to take catches outside the recreational limits under the Fisheries Management Act 1994 (NSW), Section 37 (1)(c1), Aboriginal cultural fishing authority.

CATCH CHART



Commercial catch of Sand Whiting - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

- 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[13]. Bycatch is generally low when compared with the harvest of the target species[13]. Fishers using tunnel nets operate under industry-developed code of best practice guidelines[14]. Marine turtles are released with minimal difficulty, and undersized or unwanted catch is returned to the water alive.
- In New South Wales, it has been shown that seining in estuaries can incur large amounts of bycatch of undersized organisms and unwanted species, but the use of appropriately sized mesh can reduce mortalities of these species[15–18]. Studies conducted in New South Wales indicate that mesh nets used in estuaries can incur substantial bycatches, including the capture of undersized individuals of key species[19–21].
- Seabirds and other marine life often become entangled in discarded recreational fishing tackle[22]. In south-east Queensland, a Fishing Line Recovery Bin program was instigated in 2012, in order to minimise the occurrence of discarded tackle at popular shore-based fishing locations.

ENVIRONMENTAL EFFECTS on Sand Whiting

- Shallow marine habitats are important for juvenile Sand Whiting, particularly during recruitment periods[8,23,24]. Physical impacts on coastal marine vegetation, sub-surface topography and water quality would likely be detrimental to the Sand Whiting stock.

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