

Stout Whiting (2016)

Sillago robusta



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Queensland, New South Wales	Eastern Australia	FTF, OTF	Sustainable	Standardised catch rate, catch-at-age frequencies

OTF Ocean Trawl Fishery (NSW), FTF Finfish Trawl Fishery (QLD)

STOCK STRUCTURE

The geographic distribution of the east coast Stout Whiting biological stock is restricted to southern Queensland and northern New South Wales. Genetic analysis of Stout Whiting catches from southern Queensland locations indicate that biological sub-stocks are unlikely to exist[1].

Here, assessment of stock status is presented at the biological stock level—Eastern Australia.

STOCK STATUS

Eastern Australia On average, 80 per cent of the annual commercial catch is taken in Queensland and 20 per cent in New South Wales, with most information being derived from the Queensland fishery. Evidence for the status of Stout Whiting in Queensland waters is therefore used to determine status for the entire biological stock[2].

In Queensland, the current annual total allowable catch (TAC) limit for Stout Whiting is 1090 tonnes (t). The annual TAC is reassessed before the start of each fishing year using both commercial catch rate and age and length data in a decision-support model developed in 2002[3]. In 2014, the Queensland Department of Agriculture, Fisheries and Forestry (DAFF) investigated alternative quota setting procedures for the Finfish Trawl Fishery (unpublished data, DAFF, Queensland) incorporating new data on changes to the fishery area, fishing gear and otolith weight. The procedures included New South Wales catch data on Stout Whiting and Queensland otter trawl fishery bycatch estimates. The outcome of the 2014 analysis recommended reducing the TAC (which is set at the estimated maximum sustainable yield [MSY] level for the fishery) from

1500–1360 t. The current harvest is much lower than these limits.

The 2016 quota setting procedure[4] used a revised model and estimated that the 2015 relative catch rate index from Queensland and New South Wales waters was 86 per cent of the long-term mean standardised catch rate. There was a stable trend in catch rates from 2012–15, with the 2014–15 catch rates being 85 per cent of the mean catch rate. Population modelling conducted in 2014 indicated that biomass was marginally above the biomass that would produce MSY. The stock is not considered to be recruitment overfished.

Long-term size-at-catch and age-at-catch frequency data from commercial landings indicate that the biological stock size structure is relatively stable[2], with the 2014–15 age structure being dominated by fish aged 1+ years and 2+ years and a slightly higher proportion of fish aged 2–3 years in 2015. Model analysis of fish length frequency and age length data estimated that survival rate has generally increased over the period 2011–14, with survival increasing from about 35–40 per cent in 2013 to 38–64 per cent in 2014, indicating stronger survival of fish as they recruited and aged.

Two vessels fished for Stout Whiting in the 2015 fishing year, harvesting 663 t from Queensland waters, which was approximately 57 per cent of the Queensland annually adjusted TAC. Annual landings of Stout Whiting averaged about 713 t for the fishing years 2013–15, with a maximum harvest in the past 10 fishing years of 1140 t and a maximum historical harvest of 2400 t in 1995. In New South Wales, 30 Ocean Trawl Fishery operators landed an estimated 224 t of Stout Whiting, which was 25 per cent less than the long-term average of 340 t per year. The southern extremity of the Stout Whiting distribution overlaps with the northern end of Eastern School Whiting, *Sillago flindersi*, distribution and reported landings from northern New South Wales are adjusted to account for estimated levels of species misreporting[2]. This level of fishing pressure is unlikely to cause the stock to become recruitment overfished.

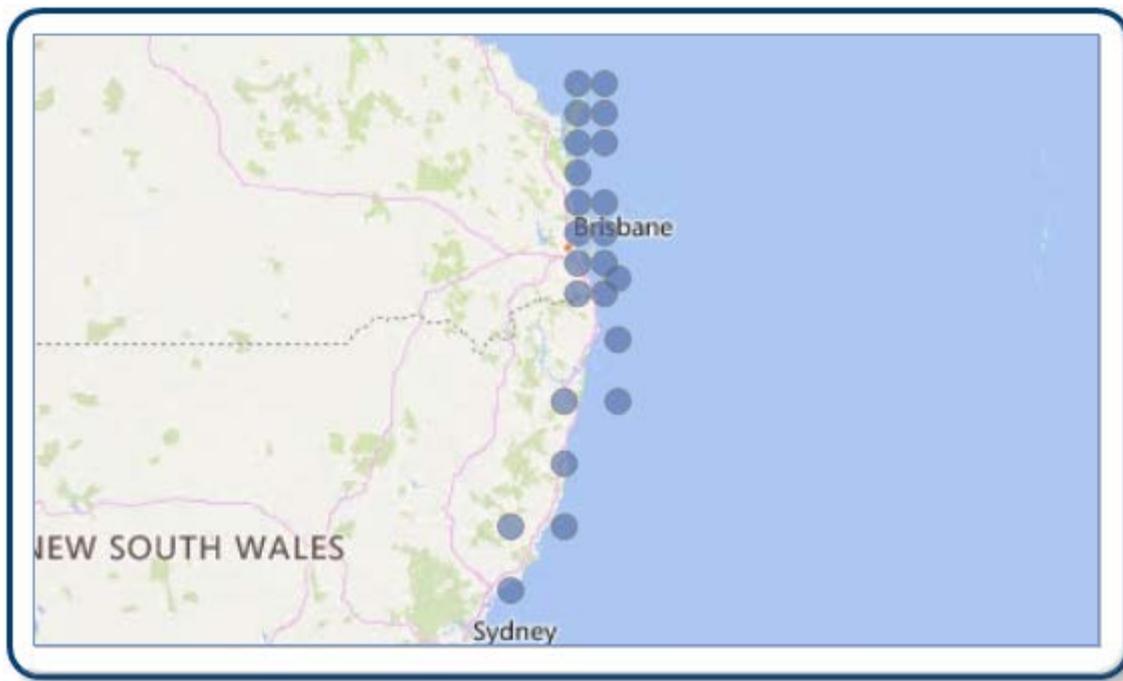
On the basis of the evidence provided above, the Eastern Australian biological stock is classified as a **sustainable stock**.

BIOLOGY

Stout Whiting biology[3]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Stout Whiting	8 years; 23 cm <u>FL</u>	2–3 years; 14–18 cm <u>FL</u>

DISTRIBUTION



Distribution of reported commercial catch of Stout Whiting

TABLES

Commercial Catch Methods	New South Wales	Queensland
Danish Seine	✓	✓
Otter Trawl	✓	✓

Fishing methods	New South Wales	Queensland
Commercial		
Danish Seine		✓
Otter Trawl	✓	✓
Indigenous		
Hand Line, Hand Reel or Powered Reels	✓	
Recreational		
Hand Line, Hand Reel or Powered Reels	✓	

Management Methods	New South Wales	Queensland
Commercial		

Catch limits		✓
Gear restrictions	✓	✓
Limited entry	✓	✓
Spatial closures	✓	✓
Temporal closures		✓
Vessel restrictions	✓	✓
Indigenous		
Bag limits	✓	
Gear restrictions	✓	
Section 31 (1)(c1), Aboriginal cultural fishing authority	✓	
Spatial closures	✓	
Recreational		
Bag limits	✓	
Gear restrictions	✓	
Licence	✓	
Spatial closures	✓	
Active Vessels		
	New South Wales	Queensland
	30 License in OTF,	2 License in FTF,

OTF Ocean Trawl Fishery(NSW)

FTF Finfish Trawl Fishery(QLD)

Catch		
	New South Wales	Queensland
Commercial	223.88t in OTF,	786.581t in FTF,
Indigenous	Unknown	Negligible
Recreational	Unknown	Negligible

OTF Ocean Trawl Fishery (NSW), FTF Finfish Trawl Fishery (QLD),

a Queensland Queensland reporting period is fishing season (1 January–31 December).

b New South Wales New South Wales reporting period is calendar year.

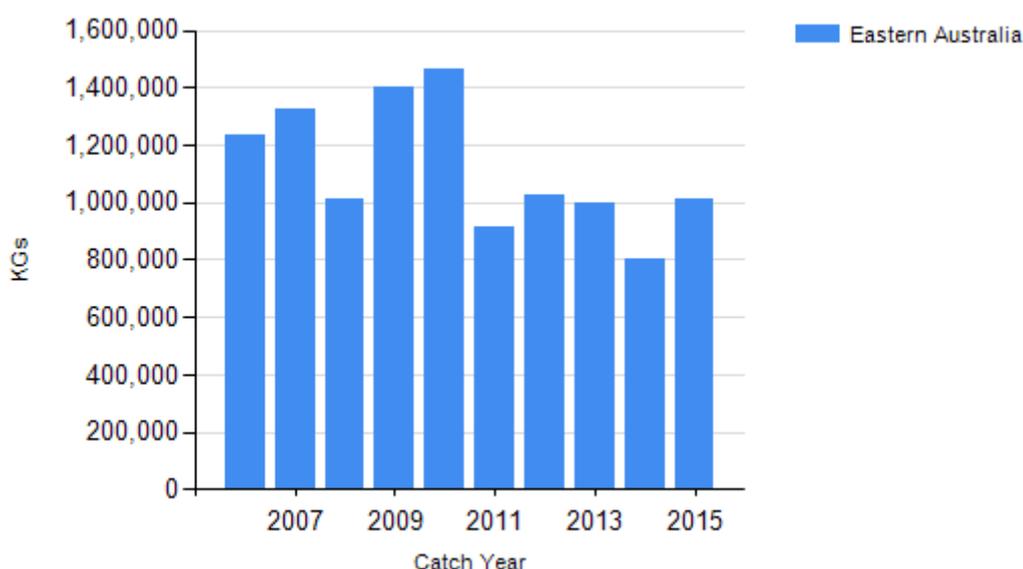
c Queensland - Indigenous In Queensland, under the Fisheries Act 1994 (Qld), indigenous fishers are entitled to use prescribed traditional and non-commercial fishing apparatus in waters open to fishing. Size and possession limits and seasonal closures do not apply to Indigenous fishers. Full exemptions to fishery regulations may be applied for through permits.

d 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 themselves.

e New South Wales - Indigenous 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 (1)(c1), Aboriginal cultural fishing authority.

f Queensland – Commercial (catch) Unknown quantity taken as bycatch in the East Coast Otter Trawl Fishery.

CATCH CHART



Commercial catch of Stout Whiting - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

- The seabed where the fishery occurs lacks major reef structures[5]. Anecdotal information from research trawls and commercial fishers indicates that the seabed in the fishery area is predominantly bare sand[6]. Consequently, the impact of trawling on benthic habitats in the fishery area is likely to be relatively low[6].
- The fishery has potential for interactions with sea turtles, but these occur infrequently[7]. Compulsory use of turtle excluder devices in otter trawls minimises the impact of interactions with turtles. Turtle excluder devices are not required in Danish seine nets; however, due to the nature of this type of fishing, nets are hauled at a much slower speed and pose minimal risks to turtles that are able to outswim the nets when used in this manner.
- Although Danish seine is legislated as an acceptable method for targeting Stout Whiting in Queensland and New South Wales, it is only used by one vessel that fishes in both Queensland and New South Wales. Compared with trawling, Danish seining harvests Stout Whiting more efficiently, has less physical contact with the seabed, and more effectively reduces some forms of bycatch, including prawns, bugs, squid, sea snakes and pipefish[6]. However, due to Danish seine nets not being required to have turtle excluders installed, there is evidence that the bycatch of small sharks and rays can be high when using this type of gear[6].
- The New South Wales Ocean Trawl Fishery mandates otter trawl nets must be fitted with a bycatch reduction device of an approved design to reduce the bycatch of small

prawns and juvenile fish. Mesh size and other gear restrictions are regulated to increase the target species selectivity of otter trawl and Danish-seine nets and codends.

- Sustainability of Stout Whiting taken as bycatch in the East Coast Otter Trawl Fishery (Queensland) has been assessed. At predicted future levels of effort, there is no more than an intermediate risk that discarding will result in an unacceptable decline in Stout Whiting biological stock abundance (unpublished report, Department of Agriculture and Fisheries, Queensland).

ENVIRONMENTAL EFFECTS on Stout Whiting

- Because Stout Whiting is a shallow water oceanic species, it is unlikely that land-based events would significantly affect the biological stock. Marine environmental pressures that may affect the biological stock have not been identified.

References	
1	Ovenden, J and Butcher, A 1999, <i>An investigation of migration and possible stock structuring by stout whiting, Sillago robusta, in southern Queensland waters, and its impact on managing the fishery</i> , final report on the pilot program, Southern Fisheries Centre, Queensland Department of Primary Industries, Brisbane.
2	Hall, KC 2015, Stout Whiting (<i>Sillago robusta</i>), In: Stewart, J, Hegarty, A, Young, C, Fowler, AM and Craig, J (eds), <i>Status of Fisheries Resources in NSW 2013–14</i> , NSW Department of Primary Industries, Mosman, pp 323–326.
3	O'Neill, MF, Yeomans, K, Breddin, I, Jebreen, E and Butcher, A 2002, <i>The Queensland stout whiting fishery 1991 to 2002</i> , Fisheries Assessment Report, Queensland Department of Primary Industries, Brisbane.
4	O'Neill, MF and Leigh, GM 2016, <i>Stout Whiting Fishery Summary : Queensland Total Allowable Catch for 2016</i> . Technical Report. Department of Agriculture and Fisheries, Queensland.5. Interim Marine and Coastal Regionalisation for Australia Technical Group 1998, <i>Interim marine and coastal regionalisation for Australia: an ecosystem-based classification for marine and coastal environments</i> , version 3.3, Environment Australia, Commonwealth Department of the Environment, Canberra.
5	Robins, J and Courtney, AJ 1998, <i>Status report on bycatch within the Queensland Trawl Fishery</i> , in <i>Establishing meaningful targets for bycatch reduction in Australian fisheries</i> , Proceedings of the Australian Society for Fish Biology Workshop, Tasmanian Aquaculture and Fisheries Institute, Hobart.
6	Rowse, N and Davies, J 2011, <i>At-sea observation of the stout whiting fishery 2009-2010</i> , Fisheries Queensland, Queensland Department of Employment Economic Development and Innovation, Brisbane.