

Eastern School Whiting (2018)

Sillago flindersi



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Commonwealth, New South Wales, Victoria, Tasmania	South Eastern Australia	CIF, GLF, ITF, N/A, OTF, SESSF (CTS), SF	Sustainable	

SESSF (CTS) Southern and Eastern Scalefish and Shark Fishery (Commonwealth Trawl Sector) (CTH), N/A Not Applicable (NSW), OTF Ocean Trawl Fishery (NSW), SF Scalefish Fishery (TAS), CIF Corner Inlet Fishery (VIC), GLF Gippsland Lakes Fishery (VIC), ITF Inshore Trawl Fishery (VIC)

STOCK STRUCTURE

Eastern School Whiting is endemic to south eastern Australia and occurs from southern Queensland to western Victoria. Some historical genetic and growth data suggests there may be separate northern and southern stocks of Eastern School Whiting along the New South Wales coast, with a division around Forster [Dixon et al. 1987]. However, the power of the methods used to detect a difference was limited and the results were difficult to interpret, and no clear geographic pattern in the genetic variation was detected (Dixon et al. 1987). Overall, the hypothesis of a single, genetically diverse panmictic stock could not be rejected. Therefore, Eastern School Whiting is considered to be a single biological stock for assessment purposes [Day 2017, Morison et al. 2013].

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

STOCK STATUS

South Eastern Australia

In 2017 Eastern School Whiting was managed as a tier 1 stock under the Southern and Eastern Scalefish and Shark Fishery Harvest Strategy Framework [AFMA 2009] and using a tier 1 analysis generated in 2009 [Day 2010]. Out of the 2009 assessment a long term recommended biological catch (RBC) of 1 660 tonnes (t) across all jurisdictions was estimated and applied to the 2017–18 fishing season.

The 2009 assessment was updated in 2017 [Day 2017] and incorporates data to

the end of 2016, including for catch, discards, catch per unit effort, length, age and ageing error. The spawning stock biomass, predicted by the chosen base-case, was 49 per cent of the unfished biomass (0.49SB0). However, an alternative scenario was considered optimum which estimated the spawning stock biomass to be 47 per cent of the unfished biomass (0.47SB0) slightly below the target biomass (0.48SB0). Considerable uncertainty was observed in the estimate of spawning biomass depletion (with asymptotic intervals between 0.3SB0–0.7SB0, Day 2017). Day [2017] reported on stock status projections under a range of 18 alternative scenarios. Over the range of scenarios (with the exception of one scenario which was considered unrealistic) the spawning biomass depletion was 0.39–0.53SB0 [Day 2017].

Estimates of Eastern School Whiting biomass have varied considerably between successive assessments, largely as a result of the variable and relatively late age of recruitment to the fishery (two to three years) for this short-lived species. Previously, the lifespan was estimated to be seven years [Day 2012] and this was recently updated to nine years following a revised treatment in the way historical otoliths were prepared [Day 2017]. The Resource Assessment Group has expressed concern that biological and fishery information for Eastern School Whiting has been collected from a relatively small area of the fishery (primarily from the Lakes Entrance Danish-seine fleet) and may not be representative of the species distribution that extends from Queensland to western Victoria.

Historically, approximately 60 per cent of the total catch of Eastern School Whiting has come from New South Wales State waters. More recently, between 2011 and 2014, the catch in these waters decreased from historical levels of around 700–1 000 t per year to 492 t in 2014 [Hall 2015] and Commonwealth catches increased to make up 50 per cent of the total catch [Day 2017]. Since 2014, the New South Wales State catch has increased again to 621 t in 2015, 715 t in 2016 and 1035 t in 2017 [NSW DPI unpublished data]. An annual basket total allowable catch (for combined Eastern School Whiting and Stout Whiting, *Sillago robusta*) is to be introduced in New South Wales State waters in 2019 [Hall unpublished].

For the 2017–18 fishing season the RBC was 1 660 t (AFMA 2017). Total landed Commonwealth catch for the 2017 calendar year was 736.188 t, and the weighted average discards were 85.49 t [Castillo-Jordán et al. 2018]. The landed catch and discards combined for the Commonwealth sector was 821.678 t, which was below the RBC of 1 660 t, but combined with the New South Wales State catch of 1 035 t brings the total mortality to 1 856 t which exceeds the RBC of 1 660 t.

The most recent full assessment [Day 2017] forecast spawning stock biomass to be 47 per cent of the unfished level at the beginning of 2018 if recruitment levels remained unchanged. The stock is not considered to be recruitment impaired.

Estimates of fishing mortality are typically used for determining if a stock is subject to overfishing however fishing mortality is difficult to define in stock assessment models that include multiple fleets and multiple fishing selectivity, as is the case for Eastern School Whiting. Spawning potential ratio (SPR) can be used as a metric for fishing mortality (Methot 2013). Results of the most recent tier 1 assessment base case, incorporating data from all jurisdictions and sectors, suggest that the current spawning potential ratio (1-SPR, relative to the target), integrated across all fleet in the fishery was near the target reference point corresponding to when the stock is at least 48 per cent of unfished biomass [Day 2017]. This level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

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

BIOLOGY

Eastern School Whiting biology [Day 2010, Dixon et al. 1987, Kailola et al. 1993, Shelf Resource Assessment Group 2011].

Species	Longevity / Maximum Size	Maturity (50 per cent)
Eastern School Whiting	Females: 7 years, 320 mm FL Males: 6 years	2 years, 140–180 mm FL

DISTRIBUTION



Distribution of reported commercial catch of Eastern School Whiting

TABLES

Commercial Catch Methods	Commonwealth	New South Wales	Tasmania	Victoria
Danish Seine	✓	✓		
Hook and Line				✓
Midwater Trawl	✓			
N/A		✓		
Net		✓		✓
Otter Trawl	✓	✓		
Unspecified			✓	✓

Fishing methods	Commonwealth	New South Wales	Tasmania	Victoria
Commercial				
Danish Seine	✓	✓		
Net				✓
Otter Trawl	✓	✓		
Unspecified			✓	

Indigenous				
Hook and Line		✓		
Recreational				
Gillnet			✓	
Hook and Line		✓	✓	✓
Management Methods				
	Commonwealth	New South Wales	Tasmania	Victoria
Commercial				
Effort limits				✓
Gear restrictions	✓	✓	✓	✓
Licence				✓
Limited entry	✓	✓	✓	✓
Spatial closures	✓	✓	✓	✓
Total allowable catch	✓			
Vessel restrictions		✓		
Indigenous				
Bag and possession limits			✓	
Bag limits		✓	✓	
Customary fishing permits				✓
Native Title		✓		
Section 37 (1d)(3)(9), Aboriginal cultural fishing authority		✓		
Recreational				
Bag and possession limits			✓	
Bag limits		✓	✓	✓
Gear restrictions		✓		✓
Licence		✓		✓
Spatial closures		✓		✓
Active Vessels				
	New South	Victoria		

	Wales	
	67 Fishing Business in OTF,	2 Licence Holders in CIF, 2 Licence Holders in GLF, 10 Licence Holders in ITF,

OTF Ocean Trawl Fishery(NSW)

CIF Corner Inlet Fishery(VIC)

GLF Gippsland Lakes Fishery(VIC)

ITF Inshore Trawl Fishery(VIC)

Catch	Commonwealth	New South Wales	Tasmania	Victoria
Commercial	736.188t in SESSF (CTS),	7.128t in N/A, 1027.75t in OTF,	26.0013t in SF,	5.528t in ITF,
Indigenous	Unknown	Unknown	Unknown	Unknown (No catch under permit)
Recreational	Unknown	5000 fish (in 2013–14)	2.1 t (2012–13)	Unknown

SESSF (CTS) Southern and Eastern Scalefish and Shark Fishery (Commonwealth Trawl Sector) (CTH), N/A Not Applicable (NSW), OTF Ocean Trawl Fishery (NSW), SF Scalefish Fishery (TAS), CIF Corner Inlet Fishery (VIC), GLF Gippsland Lakes Fishery (VIC), ITF Inshore Trawl Fishery (VIC),

Commonwealth – Commercial (Management Methods/ Catch) Data provided for the Commonwealth align with the Commonwealth Southern and Eastern Scalefish and Shark Fishery for the 2017 calendar year.

Commonwealth – Recreational The Australian Government does not manage recreational fishing in Commonwealth waters. Recreational fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters, under its management regulations.

Commonwealth – Indigenous The Australian Government does not manage non-commercial Indigenous fishing in Commonwealth waters, with the exception of the Torres Strait. In general, non-commercial Indigenous fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters.

New South Wales, Victoria and Tasmania State data are for the 2017 calendar year. Reported landings from northern New South Wales waters are adjusted to account for estimated species misreporting with Stout Whiting, *Sillago robusta* [Hall unpublished].

New South Wales – Recreational (catch totals) Estimate from West et al. (2015).

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

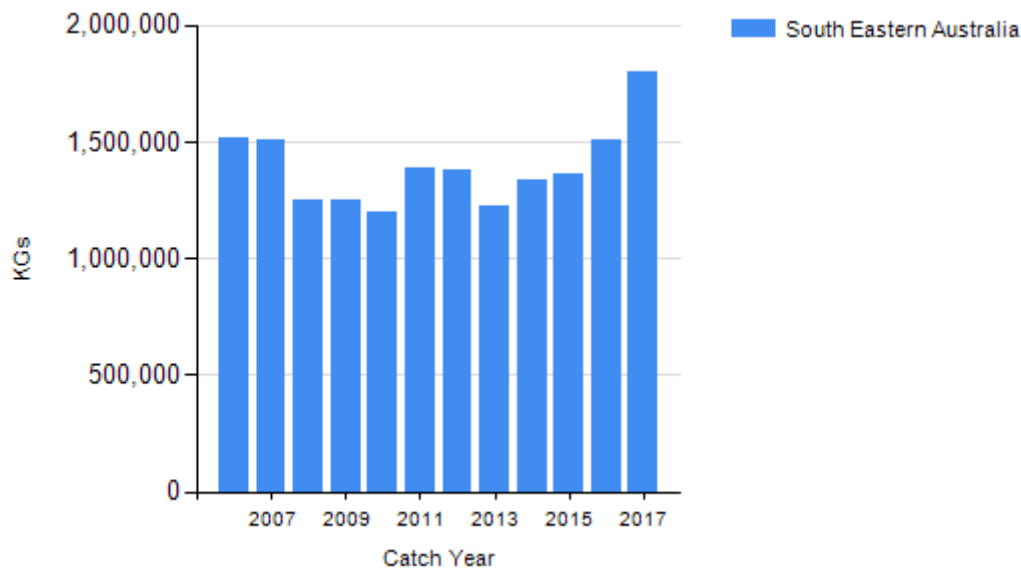
fisheries resources.

Victoria Indigenous (Management Methods) In Victoria, regulations for managing recreational fishing may not apply to fishing activities by Indigenous people. Victorian traditional owners may have rights under the *Commonwealth's Native Title Act 1993* to hunt, fish, gather and conduct other cultural activities for their personal, domestic or non-commercial communal needs without the need to obtain a licence. Traditional Owners that have agreements under the *Traditional Owner Settlement Act 2010* (Vic) may also be authorised to fish without the requirement to hold a recreational fishing licence. Outside of these arrangements, Indigenous Victorians can apply for permits under the *Fisheries Act 1995* (Vic) that authorise fishing for specific Indigenous cultural ceremonies or events (for example, different catch and size limits or equipment).

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. A bag limit of 15 individuals and possession limit of 30 individuals (combined total all whiting species except King George Whiting) is in place for recreational fishers.

Tasmania – Indigenous (Management Methods) In Tasmania, Indigenous persons engaged in aboriginal 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. Additionally, recreational bag and possession limits also apply. If using pots, rings, set lines or gillnets, Indigenous fishers must obtain a unique identifying code (UIC). The policy document Recognition of Aboriginal Fishing Activities for issuing a UIC to a person for Aboriginal Fishing activity explains the steps to take in making an application for a UIC.

CATCH CHART



Commercial catch of Eastern School Whiting - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

ENVIRONMENTAL EFFECTS on Eastern School Whiting

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