

Yelloweye Mullet (2018)

Aldrichetta forsteri



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Western Australia	Western Australia	FBLC84, FBLC84 SCEMF SWCBNF WCEMF WL (NC, GC, WC) WL (SC), SCEMF, SWCBNF, WCEMF, WL (NC GC WC), WL (SC)	Sustainable	Catch
Victoria	Victoria	CIF, GLF, PPBWPF	Recovering	Catch, CPUE
Tasmania	Tasmania	SF	Sustainable	Catch, CPUE
South Australia	South Australia	LCF, MSF	Sustainable	Catch, CPUE

LCF Lakes and Coorong Fishery (SA), MSF Marine Scalefish Fishery (SA), SF Scalefish Fishery (TAS), CIF Corner Inlet Fishery (VIC), GLF Gippsland Lakes Fishery (VIC), PPBWPF Port Phillip Bay and Western Port Bay Fishery (VIC), SCEMF South Coast Estuarine Managed Fishery (WA), SWCBNF South West Coast Beach Net Fishery (Order) (WA), WCEMF West Coast Estuarine Managed Fishery (WA), WL (SC) Open Access in the South Coast (WA), FBLC84 Fishing Boat Licence Conditions (WA), WL (NC || GC || WC) Open Access in the North Coast, Gascoyne Coast and West Coast Bioregions (WA), FBLC84 || SCEMF || SWCBNF || WCEMF || WL (NC, GC, WC) || WL (SC) Various Fisheries combined due to 3 boat rule (WA)

STOCK STRUCTURE

Yelloweye Mullet is widely distributed along the southern coasts of Australia, from Murchison River in Western Australia to Hunter River in New South Wales, and around Tasmania [Gomon et al. 2008]. Yelloweye Mullet typically occur in schools in nearshore marine waters from the intertidal zone to depths of at least 10 m, and are often abundant in estuaries and the lower reaches of rivers [Kailola et al. 1993, Connolly 1994].

Biological stock structure for Yelloweye Mullet in Australia is uncertain. It has been suggested that there are two biological stocks—Western and Eastern—based on morphological

differences [Thomson 1957, Pellizzari 2001]. However, further studies are required to confidently define biological stock delineation for this species.

Here, assessment of stock status for Yelloweye Mullet is presented at the jurisdictional level—Western Australia, Victoria, Tasmania and South Australia.

STOCK STATUS

South Australia

The multi-species and multi-gear Lakes and Coorong Fishery (LCF) has traditionally been the most important of South Australia's fisheries for Yelloweye Mullet, accounting for around 90 per cent of the State's total commercial catch since 2007, with the remainder taken by the Marine Scalefish Fishery (MSF). The most recent assessment for Yelloweye Mullet in the LCF was completed in 2013, and used data to the end of June 2012 [Earl and Ferguson 2013]. Interactions between Lakes and Coorong fishers and Long-nosed Fur Seals (*Arctocephalus forsteri*) have increased in recent years [Mackay 2017], with seal depredation on Yelloweye Mullet caught in gillnets likely to have resulted in reduced catches and CPUE for this species.

The primary measures for biomass and fishing mortality are total catch and targeted CPUE from commercial gillnet fishers. Commercial landings of Yelloweye Mullet in South Australia peaked at 460 t in 1990 and then progressively declined to 148 t in 2004. This long-term decline likely reflected a reduction in targeted effort in the MSF due a combination of licence buy-backs and low wholesale prices rather than a declining biomass, because estimates of annual CPUE were stable during this period. From 2008 to 2013, gillnet CPUE in the LCF increased to historically high levels, with an average annual catch of around 210 t. Catch declined to 121 t in 2015 reflecting a substantial decline in CPUE, before increasing to around 210 t in 2016. The total catch of 165.4 t in 2017 was associated with relatively high CPUE. The state-wide recreational catch was estimated at approximately 19 t in 2013/14 [Giri and Hall 2015]. The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. Furthermore, 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 provide above, Yelloweye Mullet in South Australia is classified as a **sustainable stock**.

Tasmania

In Tasmania, Yelloweye Mullet is caught mainly using beach seine nets, with annual commercial catches peaking at around 22 t in 1999–2000, before declining to less than 5 t over the past decade. The commercial catch in 2017 was 0.2 t [Moore et al. 2018]. Targeted beach seine effort on this species has been stable at low levels since 2005–06, while nominal CPUE has remained relatively stable over time with a sharp increase in 2012–13, before declining again to average levels. Recreational fishers in Tasmania target Yelloweye Mullet using gillnets and beach seine nets. Increased regulation of recreational netting over the past decade has resulted in a general reduction catch and effort, with around 1.7 t taken by netting in 2009–10. State-wide recreational catch of Yelloweye Mullet was estimated at 7.1 t in 2012–13, which included all fishing methods [Lyle et al. 2014]. Yelloweye Mullet are most abundant in estuarine habitats [Edgar 2008], where netting is prohibited or restricted, thereby providing a high degree of protection for the species throughout most of its range in Tasmania. The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. The above evidence also suggests 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, Yelloweye Mullet in Tasmania is

classified as a **sustainable stock**.

Victoria

In Victoria, a total of 32.9 t of Yelloweye Mullet was caught in 2017 by commercial fishers operating in the Corner Inlet, Gippsland Lakes, and Port Phillip Bay Western Port fisheries. Annual catches of Yelloweye Mullet in Victoria over the last decade have ranged from 27.9 t to 68 t but have shown a long-term declining trend since their historic peak in the 1980s. Historically, Yelloweye Mullet was regularly targeted by commercial net fishers, but not in recent decades with other higher value species such as King George Whiting and Black Bream being targeted with Yelloweye Mullet catches being lower value and market dependant. Yelloweye Mullet are caught by recreational fishers, but recent catch quantities are unknown.

In the Corner Inlet commercial fishery, the majority of Yelloweye Mullet are caught using haul seine nets with the remainder taken using mesh nets [Conron et al. 2016a]. Yelloweye Mullet landed by the Gippsland Lakes commercial fishery are mainly caught using mesh nets with the remainder taken using haul seine nets [Conron et al. 2016b]. Haul seine catch per unit effort (CPUE) in Corner Inlet and mesh-net CPUE in Gippsland Lakes show long-term declining trends. The three year averaged haul seine CPUE in Corner Inlet was below the long-term (1978–2015) average in most of the 2000s, and despite showing a recent increase, the annual index was below the limit level in 2015 (VFA 2017).

In the Port Phillip Bay commercial fishery, the majority of Yelloweye Mullet were caught using haul seine nets with the remainder taken using mesh nets [Hamer et al. 2016]. Despite stability in the catch rate at close to the long-term average from 2006–07 to 2013–14, it has continued to decline from 2012–13 to 2015–16 [Hamer et al. 2016, VFA 2017]. Commercial netting is being phased out in Port Phillip Bay and since 2016, 34 of the 43 licences have been bought out by the Victorian Government. Catch rate data from Port Phillip Bay was not assessed post 2016 due to the reduction in suitable data available for analysis as a result the phasing out of the commercial net fishery.

Overall, the above evidence indicates that the biomass of this stock is likely to have been depleted and that recruitment was impaired. Furthermore, the above evidence indicates that the current level of fishing mortality should allow the stock to recover from its recruitment impaired state.

On the basis of the evidence provided above, Yelloweye Mullet in Victoria is classified as a **recovering stock**.

Western Australia

In Western Australia, commercial targeting of Yelloweye Mullet is mainly restricted to estuaries and embayments south of Perth. In 2017, a total commercial catch of 20 tonnes (t) was taken in Western Australia. The majority of this (approximately 81 per cent) was taken by the West Coast Estuarine Managed Fishery (WCEMF), approximately 14 per cent was taken by the South Coast Estuarine Managed Fishery (SCEMF), and the remainder was taken as minor catches in other fisheries. Yelloweye Mullet are also caught by recreational fishers and total catch is estimated to be around 3.3 t (\pm 2.7 se) for the west coast and negligible on the south coast [Ryan et al. 2017]. Shore based recreational catch is unknown.

Annual catches in each of the two main commercial fisheries (WCEMF, SCEMF) have followed a similar long-term trend. Catches peaked around 1980 and then gradually declined over the following two decades. A sharp drop in catch occurred in each fishery around 2000. Subsequent catches have remained low. Since 2000, the WCEMF catch has continued to decline reaching an historic low of 6 t in 2015, while the SCEMF catch has been stable at around 4 t per year. The long-term decline in catch may reflect reductions in fishing effort (due to licence buy-backs and low wholesale prices). However, the catch decline also appears to reflect a substantial decline in stock abundance. Anecdotal reports

from commercial and recreational fishers suggest Yelloweye Mullet abundance in south-western Western Australia is low compared to historic levels. However, experienced fishers have recently commented that they have seen schools of Yelloweye Mullet for the first time in years.

No published assessment for the stock is available. Stock status is being evaluated using an unpublished analysis that estimates maximum sustainable yield from catch data (CMSY) and provides estimates of biomass and harvest rate [Froese et al. 2016]. The biomass limit reference level is set at 20 per cent of unfished biomass. The current catch is well below the estimated CMSY of 24 t. Biomass estimates indicate, that over the last five years, biomass has been above the limit of 20 per cent of unfished biomass but is still well below the biomass target of 40 per cent of unfished biomass. The harvest rate is currently well below that required to achieve the biomass target level and has been for at least the last decade. The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. Furthermore, 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, Yelloweye Mullet in Western Australia is classified as a **sustainable stock**.

BIOLOGY

Yelloweye Mullet biology [Edgar 2008, Earl and Ferguson 2013, Gaughan et al. 2006]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Yelloweye Mullet	10 years, 440 mm TL	2–3 years, 200–260 mm TL

DISTRIBUTION



Distribution of reported commercial catch of Yelloweye Mullet

TABLES

Commercial Catch Methods	South Australia	Tasmania	Victoria	Western Australia
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Beach Seine				✓
Demersal Longline	✓			
Gillnet	✓	✓		✓
Haul Seine		✓		✓
Hook and Line	✓		✓	
Lift nets	✓			
Net			✓	
Pole and Line	✓			
Seine Nets	✓			
Traps and Pots			✓	
Unspecified	✓	✓	✓	✓
Various		✓		

Fishing methods				
	South Australia	Tasmania	Victoria	Western Australia
Charter				
Various				✓
Commercial				
Beach Seine				✓
Gillnet	✓			✓
Haul Seine				✓
Hook and Line	✓			
Lift nets	✓			
Net			✓	
Pole and Line	✓			
Seine Nets	✓			
Unspecified				✓
Various		✓		
Indigenous				
Beach Seine		✓		
Gillnet	✓	✓		✓
Hook and Line	✓	✓	✓	✓
Traditional apparatus	✓			
Recreational				
Beach Seine		✓		
Diving			✓	
Gillnet	✓	✓		✓
Hook and Line	✓	✓	✓	✓
Net			✓	
Management Methods				

	South Australia	Tasmania	Victoria	Western Australia
Commercial				
Effort limits	✓		✓	
Gear restrictions	✓	✓	✓	✓
Licence			✓	
Limited entry	✓	✓	✓	✓
Size limit	✓	✓	✓	
Spatial closures	✓	✓	✓	✓
Temporal closures	✓		✓	✓
Vessel restrictions		✓		✓
Indigenous				
Bag and possession limits		✓		
Bag limits	✓	✓		✓
Customary fishing permits			✓	
Gear restrictions	✓	✓		✓
Size limit	✓	✓		
Spatial closures	✓			
Temporal closures	✓			
Recreational				
Bag and possession limits		✓		
Bag limits	✓	✓	✓	✓
Gear restrictions	✓	✓	✓	✓
Licence		✓		
Licence (boat-based sector)				✓
Size limit	✓	✓	✓	
Spatial closures	✓		✓	✓
Temporal closures	✓			
Active Vessels				
	South Australia	Victoria	Western Australia	

	21 Licences in LCF, 34 Licences in MSF,	18 Licence Holders in CIF, 10 Licence Holders in GLF, 1 Licence Holders in PPBWPF,	18 in SCEMF, &3 in SWCBNF, 9 in WCEMF, 4 in WL (SC), &3 in FBLC84, 3 in WL (NC GC WC),
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LCF Lakes and Coorong Fishery (SA)

MSF Marine Scalefish Fishery(SA)

CIF Corner Inlet Fishery(VIC)

GLF Gippsland Lakes Fishery(VIC)

PPBWPF Port Phillip Bay and Western Port Bay Fishery (VIC)

SCEMF South Coast Estuarine Managed Fishery(WA)

SWCBNF South West Coast Beach Net Fishery (Order)(WA)

WCEMF West Coast Estuarine Managed Fishery(WA)

WL (SC) Open Access in the South Coast(WA)

FBLC84 Fishing Boat Licence Conditions(WA)

WL (NC || GC || WC) Open Access in the North Coast, Gascoyne Coast and West Coast Bioregions(WA)

Catch	South Australia	Tasmania	Victoria	Western Australia
Commercial	143.459t in LCF, 21.953t in MSF,	0.1828t in SF,	17.1011t in CIF, 14.8666t in GLF,	20.171t in FBLC84 SCEMF SWCBNF WCEMF WL (NC, GC, WC) WL (SC),
Indigenous	Unknown	Unknown	Unknown (No catch under permit)	Unknown
Recreational	19 t (in 2013–14)	7.1 t (in 2012–13)	Unknown	3 t (in 2015–16)

LCF Lakes and Coorong Fishery (SA), MSF Marine Scalefish Fishery (SA), SF Scalefish Fishery (TAS), CIF Corner Inlet Fishery (VIC), GLF Gippsland Lakes Fishery (VIC), PPBWPF Port Phillip Bay and Western Port Bay Fishery (VIC), SCEMF South Coast Estuarine Managed Fishery (WA), SWCBNF South West Coast Beach Net Fishery (Order) (WA), WCEMF West Coast Estuarine Managed Fishery (WA), WL (SC) Open Access in the South Coast (WA), FBLC84 Fishing Boat Licence Conditions (WA), WL (NC || GC || WC) Open Access in the North Coast, Gascoyne Coast and West Coast Bioregions (WA), FBLC84 || SCEMF || SWCBNF || WCEMF || WL (NC, GC, WC) || WL (SC) Various Fisheries combined due to 3 boat rule (WA),

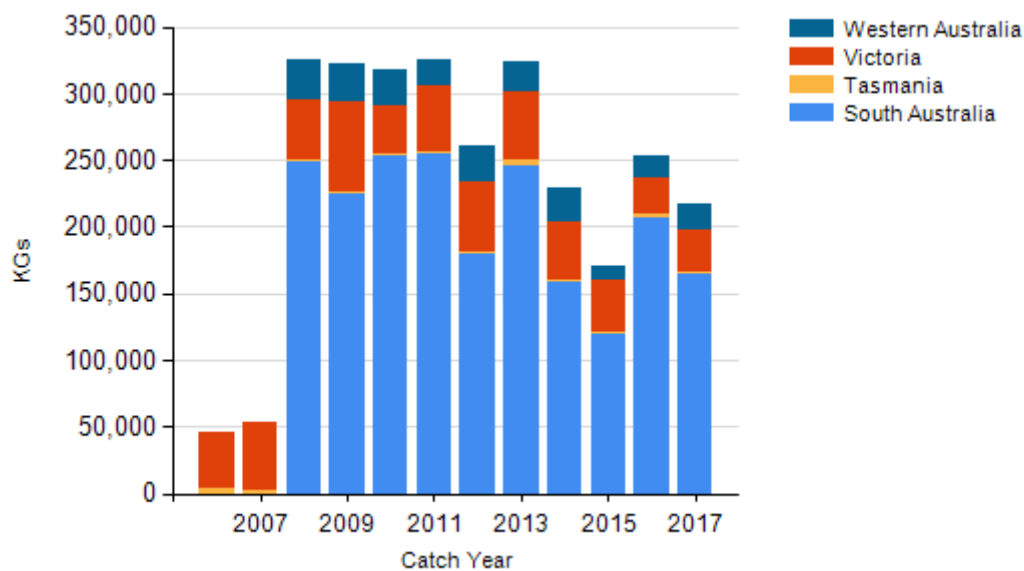
Victoria – Indigenous (Management methods) In Victoria, regulations for managing recreational fishing may not apply to fishing activities by Indigenous people. Victorian traditional owners may have rights under the Commonwealth's *Native Title Act 1993* to hunt, fish, gather and conduct other cultural 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). There were no Indigenous permits granted in 2017 and hence no Indigenous catch recorded.

Tasmania – Commercial (Catch totals) Catches reported for the Tasmanian Scalefish Fishery are for the period 1 July to 30 June the following year. The most recent assessment available is for 2016–17.

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 persons 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.

Tasmania – Recreational (Fishing methods) In Tasmania, a recreational licence is required for fishers using dropline or longline gear, along with nets, such as gillnet or beach seine. The species is subject to a minimum size limit of 250 mm. Mullet (all species combined) are subject to a bag limit of 15 individuals and a possession limit of 30 individuals.

CATCH CHART



Commercial catch of Yelloweye Mullet - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

ENVIRONMENTAL EFFECTS on Yelloweye Mullet

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