Yelloweye Mullet (2020)

Aldrichetta forsteri

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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Western Australia	Western Australia	Sustainable	Catch
Victoria	Victoria	Recovering	Catch, CPUE
Tasmania	Tasmania	Sustainable	Catch, CPUE
South Australia	South Australia	Sustainable	Catch, CPUE

STOCK STRUCTURE

Yelloweye Mullet is widely distributed along the southern coasts of Australia, from Murchison River in Western Australia to the 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 metres, 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 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 2020, and used a weight-of-evidence approach that considered fishery catch and effort data to the end of June 2019 [Earl 2020].

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 519 t in 1989–90 and then progressively declined to 155 t in 2003–04. This long-term decline reflected a reduction in targeted effort due a combination of licence buy-backs in the MSF and low wholesale prices rather than a declining biomass, because catch rates for the major gear types (gillnets in the LCF; and hauling nets in the MSF) were stable at relatively high levels during that period. Since the 2000s, catches have been higher in most years, reflecting increases in targeted effort and gillnet CPUE. The total catch of 301 t in 2018–19 was the highest state-wide catch since 1994–95 and was associated with record-high gillnet CPUE [Earl 2020]. The state-wide recreational survey in 2013–14 estimated that 100 876 Yelloweye Mullet were captured, of which 71 278 fish were harvested [Giri and Hall 2015]. The estimated total recreational harvest weight was 18 t, which was approximately 8 per cent of the State's total catch in 2013–14. 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. Records of commercial landings reveal peak catches at around 5 t in 1999–00, before declining to on average 1.5 t over the past decade. The commercial catch in 2018–19 was < 0. 2 t, which is similar to the previous two years [Krueck et al. 2020]. Targeted beach seine effort on this species has been stable at low levels since 2005–06. Catch rates have also remained stable at relatively high levels over the past decade. Recreational fishers in Tasmania target Yelloweye Mullet using gillnets and beach seine nets, generally landing catches substantially higher than those by the commercial sector. Estimates of recreational catches revealed peaks of 30 t in 2000–01. The most recent estimate of recreational catch from 2017–18 was 4.6 t [Lyle et al. 2019]. 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. 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 this assessment, the Yelloweye Mullet fishery in Tasmania is classified as a **sustainable stock**.

Victoria

In Victoria, a total of 29.14 t of Yelloweye Mullet was caught in 2019 by commercial fishers operating in Corner Inlet and Port Phillip Bay [Conron et al. 2020]. Annual catches over the last decade have ranged from 28 t to 68 t with a long-term declining trend since peaking in the 1980s. Over the past four years catches have been consistently around 30 t which is about two-thirds or less than annual catches during 2009–2014. Historically, Yelloweye Mullet was regularly targeted by commercial net fishers, but not in recent decades with other higher value species being preferred. Yelloweye Mullet are caught by recreational anglers, but recent catch quantities are unknown.

Over recent decades, effort using mesh nets and haul seine, the predominant

commercial gear used to target Yelloweye Mullet, has declined throughout all Victorian commercial fisheries [Conron et al. 2020], having now ceased in Gippsland Lakes and will also cease in Port Phillip Bay by 2022 following buy-outs of all commercial netting licences, implemented to improve recreational fishing access by hook and line methods.

In Port Phillip Bay, the majority of Yelloweye Mullet were caught commercially using haul seine nets with the remainder taken using mesh nets [Hamer et al. 2016]. Haul seine and mesh net CPUE peaked during the 1980s and then declined until the early 2000s [VFA 2017], with haul seine CPUE since stabilising and more recently increasing [Conron et al. 2020]. It is currently slightly above the average for 1986–2015 [Conron et al. 2020]. Mesh net CPUE from Port Phillip Bay was not assessed beyond 2016 [VFA 2017] due to the reduction in suitable data available for analysis arising from the progressive phasing out of the commercial net fishery.

Corner Inlet is now the mainstay of the commercial fishery, the majority of Yelloweye Mullet are caught using haul seine nets with the remainder taken using mesh nets [Conron et al. 2020]. Mesh net CPUE is considered less reliable as a proxy for biomass than haul seine CPUE as the former gear type isn't typically used to target Yelloweye Mullet. Overall, the CPUE time series are highly variable and have been influenced to an unknown degree by variation in the level of harvest retention and reporting. It is thought that in recent decades, due to their low value, Yelloweye Mullet have often been discarded and therefore the reported CPUE may have been under-estimating abundance, possibly also underestimating fishing mortality to the extent that there is some degree of post-release mortality. Notwithstanding these considerations, haul seine CPUE for Yelloweye Mullet in Corner Inlet has shown an increasing trend over the past decade, rising close to the average for 1986–2015. This trend is occurring in the context of a recently stable reduced level of catch [Conron et al. 2020].

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

The current assessment of Yelloweye Mullet in WA is primarily based on estimates of biomass and fishing mortality from a data-limited Catch-MSY assessment model, compared periodically to reference levels relating to estimates of Maximum Sustainable Yield (MSY). The estimated biomass expected to achieve MSY (BMSY) is considered as the Threshold reference level for the stock, and 50%BMSY is set as the limit reference level. The target level is considered as any stock levels above BMSY.

Annual catches of Yelloweye Mullet taken in Western Australia have shown a strong decline from catches of well over 500 t in the late 70s and early 80s, to under 100 t by 2000. The decline continued after 2000, and since 2009, the catch has fluctuated between 10 and 30 t. The decline is thought to be market driven. The estimated fishing mortality experienced by the stock in 2019 was too low to be estimated. As the current value of this performance indicator is below the level of FMSY (0.15 year[-1]), the stock is unlikely to deplete to a level at which recruitment could be impaired if the current catch level is maintained.

The point estimate for relative stock biomass in 2019 was high at 0.9 of the unfished level (95% CLs = 0.8-1.0). 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 [Gaughan et al. 2006, Edgar 2008, Earl and Ferguson 2013]

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

Fishing methods				
	South Australia	Tasmania	Victoria	Western Australia
Commercial				
Beach Seine				✓
Gillnet	✓			✓
Haul Seine				✓
Net			✓	
Seine Nets	✓			
Unspecified	✓	✓		
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		✓		✓
Recreational				
Bag and possession limits		✓		
Bag limits	✓	✓	✓	✓
Gear restrictions	✓	✓	✓	✓
Licence		✓		
Licence (boat-based sector)				✓
Size limit	✓	✓	✓	
Spatial closures	✓		✓	✓
Temporal closures	✓			

Catch				
	South Australia	Tasmania	Victoria	Western Australia
Commercial	301.026 t	0 t	29.1377 t	16.219 t
Indigenous	Unknown	Unknown	Unknown (No catch under permit)	Unknown
Recreational	18 t (in 2013–	7.1 t (in 2012–	Unknown	Insufficient data

	14)	13)		

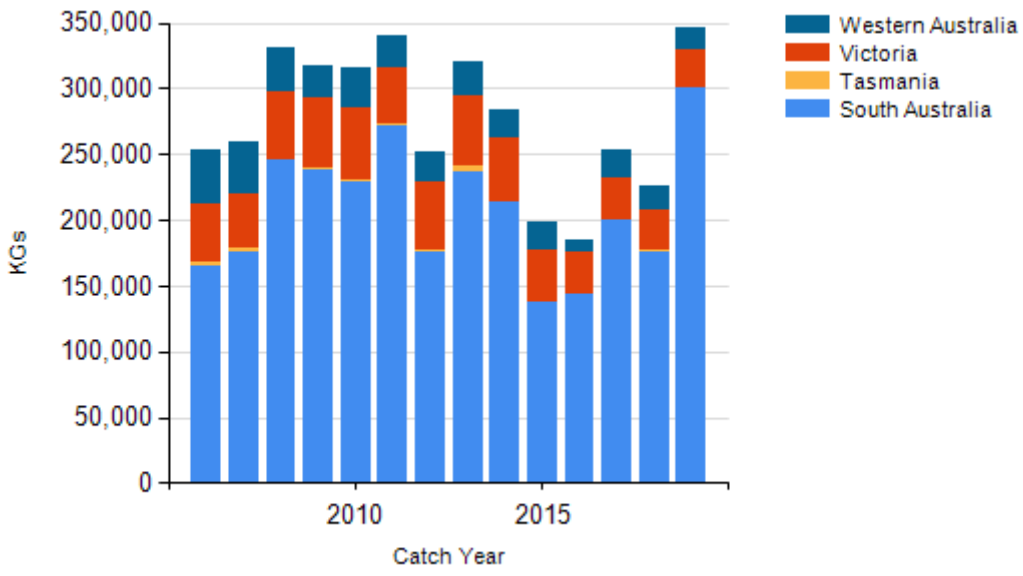
Victoria – Indigenous (Management Methods) A person who identifies as Aboriginal or Torres Strait Islander is exempt from the need to obtain a Victorian recreational fishing licence, provided they comply with all other rules that apply to recreational fishers, including rules on equipment, catch limits, size limits and restricted areas. Traditional (non-commercial) fishing activities that are carried out by members of a traditional owner group entity under an agreement pursuant to Victoria's *Traditional Owner Settlement Act 2010* are also exempt from the need to hold a recreational fishing licence, subject to any conditions outlined in the agreement. Native title holders are also exempt from the need to obtain a recreational fishing licence under the provisions of the Commonwealth's *Native Title Act 1993*.

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 2018/19.

Tasmania – Indigenous (Management methods) In Tasmania, Indigenous persons engaged in traditional 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. For details, see the policy document "Recognition of Aboriginal Fishing Activities" (https://dpipwe.tas.gov.au/Documents/Policy%20for%20Aboriginal%20tags%20and%20alloting%20an%20UIC.pdf).

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

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