

Tailor (2020)

Pomatomus saltatrix



Anthony Roelofs: Department of Agriculture and Fisheries, Queensland, **John Stewart:** Department of Primary Industries, New South Wales, **Rodney Duffy:** Western Australia Department of Primary Industries and Regional Development, **Simon Conron:** Victorian Fisheries Authority

STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Western Australia	Western Australia	Sustainable	Catch
Queensland, New South Wales, Victoria	Eastern Australia	Sustainable	Biomass, CPUE, catch, effort, fishery-dependent length and age

STOCK STRUCTURE

Tailor are a wide ranging species with several separate stocks found in temperate and sub-tropical waters around the world. Genetic evidence indicates that there are two biological stocks of Tailor in Australia, one along the east coast and a second along the west coast [Nurthen et al. 1992]. The Eastern Australian biological stock is distributed from Bundaberg in southern Queensland along the entire New South Wales coast and into eastern Bass Strait in Victoria [Brodie et al. 2018, Miskiewicz et al. 1996]. The Western Australian biological stock is distributed along the western coastline of Australia from Exmouth to Esperance [Lenanton et al. 1996, Smith et al. 2013]. Within each stock, multiple spawning groups may exist that spawn at different times and locations [Miskiewicz et al. 1996, Young et al. 1999, Ward 2003, Schilling et al. 2020]. However, several characteristics, such as the dispersal of pelagic eggs and larvae with prevailing currents, the movement of juveniles into sheltered nearshore or estuarine habitats in northern and southern areas of the species range, and the seasonal migration behaviour of adults, suggest that a genetically homogenous population occurs on each coast [Bade 1977, Brodie et al. 2018, Juanes et al. 1996, Lenanton et al. 1996, Miskiewicz et al. 1996, Ward et al. 2003, Young et al. 1999].

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

STOCK STATUS

Eastern Tailor has a long history as a key fishery species for Indigenous, commercial and

Australia recreational fishers on the east coast. The status presented here for the entire biological stock has been established using evidence from the three jurisdictions which access this stock—Queensland, New South Wales and Victoria.

The Eastern Australian biological stock of Tailor has been targeted by commercial fisheries in Queensland and New South Wales and to a lesser extent in Victoria from the early-mid 1900s [Bade 1977, Leigh et al. 2017]. By the 1970s the stock was predominantly targeted by recreational fisheries in Queensland and New South Wales. Tailor is a culturally significant species for Indigenous groups along the eastern seaboard, however harvest levels are unknown [Schnierer 2011].

The total harvest of Tailor from Queensland and New South Wales peaked in the mid-1990s, followed by a sharp decline due in part to changes in market demand, participation rates and management measures [Leigh et al. 2017]. The most recent stock assessment (data inclusive of 2019 for New South Wales and Queensland Fisheries where the majority of the catch is taken) indicates the spawning biomass has fluctuated, but with no overall trend, since the 1990s and was approximately 51 per cent of unfished levels in 2019 [Lovett et al 2020]. Annual fishery-dependent monitoring of the Queensland harvest shows relatively consistent length structures up to 2019 and indicates a range of ages, including older fish (4–7 year olds), are consistently present in the harvest [Lovett et al. 2020]. The length composition in New South Wales commercial landings have remained consistent, typically ranging between 300–450 mm fork length [Stewart et al. 2015, Schilling 2019]. These are positive indicators of a stable population with continuing recruitment.

The status of Tailor stocks in Victoria was evaluated in 2019 using nominal CPUE for commercial mesh-net fisheries in the Gippsland Lakes (GL) [Conron et al. 2020]. Tailor are also infrequently captured by fishers in Corner Inlet (CI) and by purse seine fishers offshore, however there were insufficient data available from these fisheries to inform temporal abundance trends. The GL commercial fishery was closed from the beginning of April 2020 following a buy-out of all commercial licences, implemented to improve recreational fishing access by hook and line methods. A small recreational fishery persists in GL, but with insufficient data for assessment. Recreational fishers catch Tailor incidentally from Port Phillip Bay [Fishing Victoria Forum 2017], Lake Tyers [Day 2017, and Ninety-mile Beach [Wiki Fishing Spots 2020]. State-wide commercial tailor harvests have been variable from <20 t to nearly 100 t representing changes in targeting, retention rates and availability of this highly mobile species [Conron et al. 2020]. Landings in the last ten years have also been variable but well within the bounds of historical peaks observed during the 1980s to 2000s [Conron et al. 2020]. Nominal CPUE of tailor from the Gippsland Lakes mesh net fishery has been variable, again likely as a result of variation in targeting, retention rates and availability [Conron et al. 2020]. Although there appears to be an overall slow decline in CPUE the very high spikes in 1998 and 2003 with large associated variance contrast markedly with greater stability in the last decade where in most years values have been close to the average and variance in the data has been noticeably small [Conron et al. 2020]. There is no evidence that recruitment to the stock has ever been impaired and the available evidence suggests the fishery has been sustainable and will remain so under current and future conditions [Conron et al. 2020]. The catch rates for this species are variable between years but show no evidence of a sustained decline. However, as the majority of catch is taken in NSW and Queensland, catch from Victoria is unlikely to influence the biomass of the biological stock.

The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired.

Estimates of maximum sustainable yield (MSY) for the combined Queensland and New South Wales harvest from the most recent stock assessment vary from 469 t to 857 t depending on the predicted recruitment levels [Lovett et al. 2020]. The current combined harvest (204 t) is about half of the predicted MSY

using the more conservative low recruitment scenario, and the estimate of fishing pressure is safely below the limit reference point (F20) and FMSY [Lovett et al. 2020].

The recreational and commercial fisheries in Queensland, New South Wales and Victoria have been subject to numerous management measures that have reduced fishing pressure, as indicated in the trends shown in harvest and effort for both recreational and commercial fisheries [Litherland et al. 2018, Stewart et al. 2015, Webley et al. 2015, West et al. 2015, Teixeira et al. 2021]. Fishing pressure is considered adequately controlled in commercial fisheries. In New South Wales this is through restrictive daily trip limits of 100 kg per day (ocean haul nets) or 50 kg per day (other netting methods). In Queensland, gill, seine and haul nets methods used by commercial fishers in nearshore and estuarine waters are deployed in a targeted manner and result in minimal bycatch relative to the harvest of the target species [Halliday et al. 2001]. Mesh size regulations help ensure that target species caught by these methods are within an appropriate size range. Fishers using tunnel nets in Moreton Bay in Queensland operate under the Industry Code of Best Practice to minimise their impacts [MBSIA 2012]. The recreational harvest is constrained through various size and bag limits as well as seasonal closures. The rates of survival for released line-caught Tailor are considered high [Ayvazian et al. 2002, Broadhurst et al. 2012].

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, the Eastern Australia biological stock is classified as a **sustainable stock**.

Western Australia

The current assessment of tailor is 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 per cent BMSY is set as the limit reference level. The target level is considered as any stock levels above BMSY.

Annual catches of tailor taken in WA since 1976 increased from the start of the time series to around 70 t in 2000. After this, there was a continued decline in catch to the current levels around 10 to 20 t. The estimated fishing mortality experienced by the stock in 2019 was 0.04 year⁻¹, with 95 per cent CLs ranging from 0.03 to 0.13 year⁻¹. As the current value of this performance indicator is below the level of FMSY (0.12 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 low at 0.52 of the unfished level (95 per cent CLs = 0.22–0.69). As the current value of this performance indicator is above the threshold, the stock is considered not to be depleted to a level at which recruitment could be impaired.

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

BIOLOGY

Tailor biology [Bade 1977, Juanes et al. 1996, Schilling et al. 2019, Smith et al. 2013, Young et al. 1999]

Species	Longevity / Maximum Size	Maturity (50 per cent)
---------	--------------------------	------------------------

Tailor	11–13 years, 1200 mm TL	Eastern Australian biological stock: 1–2 years, males 290 mm TL, females 310 mm TL Western Australian biological stock: 1–2 years, L50 per cent 320 mm TL
--------	-------------------------	--

DISTRIBUTION



Distribution of reported commercial catch of Tailor

TABLES

Fishing methods	New South Wales	Queensland	Victoria	Western Australia
Charter				
Hook and Line	✓			
Rod and reel				✓
Commercial				
Beach Seine				✓
Gillnet				✓
Hand Line, Hand Reel or Powered Reels				✓
Haul Seine	✓			✓
Hook and Line	✓		✓	
Line		✓		✓
Mesh Net	✓			
Net		✓	✓	
Otter Trawl	✓			

Trolling	✓			
Various	✓			
Recreational				
Beach Seine				✓
Gillnet				✓
Hook and Line	✓	✓	✓	✓
Spearfishing	✓	✓		

Management Methods				
	New South Wales	Queensland	Victoria	Western Australia
Charter				
Bag and possession limits	✓			
Bag limits	✓			
Gear restrictions	✓	✓		
Licence	✓			
Marine park closures	✓			
Possession limit		✓		
Size limit	✓	✓		
Spatial closures	✓			
Temporal closures		✓		
Commercial				
Gear restrictions	✓	✓	✓	✓
Limited entry	✓	✓	✓	✓
Marine park closures	✓			
Size limit	✓	✓	✓	✓
Spatial closures	✓		✓	
Spatial zoning	✓			✓
Temporal closures		✓	✓	✓
Total allowable catch		✓		
Total allowable effort				✓
Vessel restrictions	✓	✓		✓
Recreational				

Bag and possession limits	✓		✓	
Bag limits	✓		✓	✓
Gear restrictions	✓	✓	✓	
Licence	✓		✓	✓
Limited entry (Charter only)				✓
Marine park closures	✓			
Passenger restrictions (Charter only)				✓
Possession limit		✓		
Size limit	✓	✓	✓	✓
Spatial closures	✓		✓	
Spatial zoning (Charter only)				✓
Temporal closures		✓	✓	✓

Catch	New South Wales	Queensland	Victoria	Western Australia
Charter				< 0.5 t
Commercial	59.6212 t	53.8819 t	8.4228 t	20.1774 t
Indigenous	Unknown	Unknown	Unknown (No catch under permit)	Unknown
Recreational	49.1 t (2017–18)	59 t (2019–20)	Unknown	4 t (2017–18)

Western Australia – Recreational (Catch) Current shore-based recreational catch and effort in Western Australia is unknown. Boat-based recreational catch estimated in 2015–16 [Ryan et al. 2017]

Queensland – Indigenous (management methods) for more information see <https://www.daf.qld.gov.au/business-priorities/fisheries/traditional-fishing>

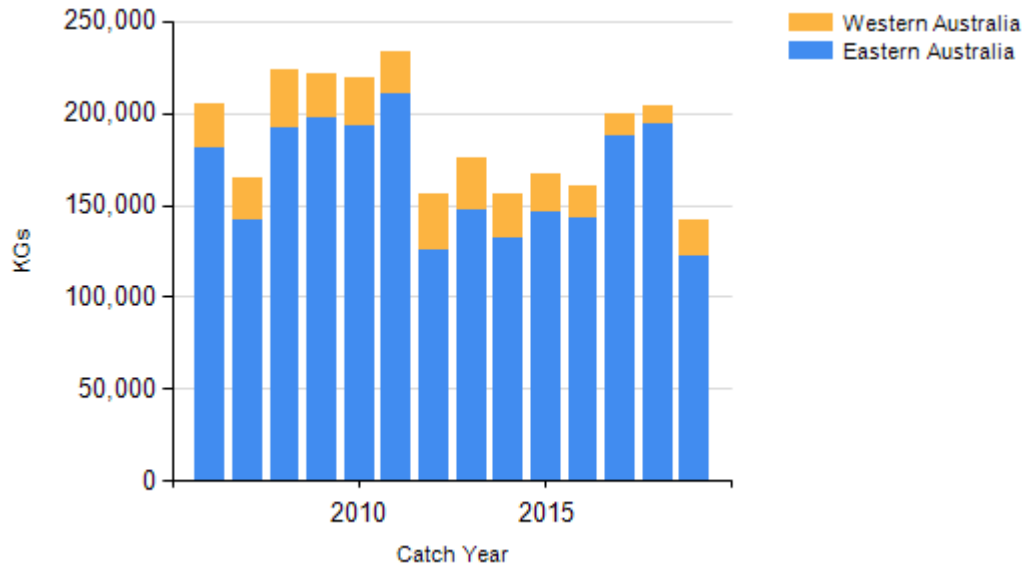
Victoria – Indigenous (Management Methods) A person who identifies as Aboriginal or Torres Strait Islander is exempt from the need to obtain a Victorian recreational fishing licence, provided they comply with all other rules that apply to recreational fishers, including rules on equipment, catch limits, 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*.

New South Wales – Recreational (Catch) Murphy et al. [2020].

New South Wales – Indigenous (Management methods)
<https://www.dpi.nsw.gov.au/fishing/aboriginal-fishing>.

CATCH CHART



Commercial catch of Tailor - note confidential catch not shown

References	
Ayvazian et al. 2002	Ayvazian, SG, Wise, BS and Young, GC 2002, Short-term hooking mortality of tailor (<i>Pomatomus saltatrix</i>) in Western Australia and the impact on yield per recruit, Fisheries Research, 58, 241–248.
Bade 1977	Bade, TM 1977, The biology of tailor (<i>Pomatomus saltatrix</i>) from the east coast of Australia, University of Queensland, University of Queensland, Brisbane.
Broadhurst et al. 2012	Broadhurst, MK, Butcher, PA and Cullis, BR 2012, Catch-and-release angling mortality of south-eastern Australian <i>Pomatomus saltatrix</i> , African Journal of Marine Science, 34, 289–295.
Brodie et al. 2018	Brodie, S, Litherland, L, Stewart, J, Schilling, HT, Pepperell, JG and Suthers, IM 2018, Citizen science records describe the distribution and migratory behaviour of a piscivorous predator, <i>Pomatomus saltatrix</i> , ICES Journal of Marine Science, 75, 1573–1582.
Conron et al. 2016	Conron, S, Giri, K, Hall, K and Hamer, P 2016, Gippsland Lakes Fisheries Assessment 2016. Fisheries Victoria Science Report Series No. 14.
Department of Fisheries 2017	Department of Fisheries, September 2017, Addendum to: Johnston, DJ, Smith, KA, Brown, JI, Travaille, KL, Crowe, F, Oliver, RK and Fisher, EA 2015, Western Australian Marine Stewardship Council Report Series No. 3: West Coast Estuarine Managed Fishery (Area 2: Peel-Harvey Estuary) and Peel-Harvey Estuary Blue Swimmer Crab Recreational Fishery. Department of Fisheries, Western Australia. 284pp
Halliday et al. 2001	Halliday, IA, Ley, JA, Tobin, A, Garrett, R, Gribble, NA and Mayer, DG 2001, The effects of net fishing: addressing biodiversity and bycatch issues in Queensland inshore waters (FRDC Project no. 97/206), Department of Primary Industries, Queensland.
Henry and Lyle 2003	Henry, GW and Lyle, JM 2003, The National Recreational and Indigenous Fishing Survey, FRDC Project No. 99/158, Australian Government Department of Agriculture, Fisheries and Forestry, Canberra.
Johnston et al. 2015	Johnston, DJ, Smith, KA, Brown, JI, Travaille, KL, Crowe, F, Oliver, RK, Fisher, EA 2015, Western Australian Marine Stewardship Council Report Series No. 3: West Coast Estuarine Managed Fishery (Area 2: Peel-Harvey Estuary) & Peel-Harvey Estuary Blue Swimmer Crab

	Recreational Fishery. Department of Fisheries, Western Australia. 284pp
Juanes et al. 1996	Juanes, F, Hare, JA, and Miskiewicz, AG 1996, Comparing early life history strategies of Pomatomus saltatrix: a global approach Marine and Freshwater Research 47, 365–79.
Leigh et al. 2017	Leigh, G, O’Neil, MF, Stewart J 2017, Stock assessment of the Australian east coast tailor (Pomatomus saltatrix) fishery, Queensland Department of Agriculture and Fisheries, Brisbane, Australia.
Lenanton et al. 1996	Lenanton, RC, Ayzavian, SG, Pearce, AF, Strckis, RA and Young, GC 1996, Tailor (Pomatomus saltatrix) off Western Australia: where does it spawn and how are the larvae distributed? Marine and Freshwater Research, 47, 337–346.
MBSIA 2012	Moreton Bay Seafood Industry Association 2012, Moreton Bay tunnel net fishery code of best practice.
Miskiewicz et al. 1996	Miskiewicz, AG, Bruce, BD and Dixon, P 1996, Distribution of tailor (Pomatomus saltatrix) larvae along the Coast of New South Wales, Australia, Marine and Freshwater Research, 47, 331–6.
Nurthen et al. 1992	Nurthen, RK, Cameron, R and Briscoe, DA 1992, Population genetics of tailor, Pomatomus saltatrix (Linnaeus) (Pisces: Pomatomidae), in Australia, Marine and Freshwater Research 43, 1481–6.
Ryan et al. 2019	Ryan, KL, Hall, NG, Lai, EK, Smallwood, CB, Tate, A, Taylor, SM, Wise, BS 2019, Statewide survey of boat-based recreational fishing in Western Australia 2017/18. Fisheries Research Report No. 297. Department of Primary Industries and Regional Development, Government of Western Australia, Perth.
Schnierer 2011	Schnierer, S 2011, Aboriginal fisheries in New South Wales: determining catch, cultural significance of species and traditional fishing knowledge needs, FRDC PROJECT NO. 2009/038, Canberra.
Smith et al. 2013	Smith, K, Lewis, P, Brown, J, Dowling, C, Howard, A, Lenanton, R and Molony, B 2013, Status of nearshore finfish stocks in south-western Western Australia Part 2: Tailor, Fisheries Research Report No. 247, Department of Fisheries, Western Australia, Perth.
Stewart et al. 2015	Stewart, J, Hegarty, A, Young, C, Fowler, AM and Craig, J 2015, Status of Fisheries Resources in NSW 2013–14, NSW Department of Primary Industries, Mosman. 391pp.
Victorian Fisheries Authority 2017	Victorian Fisheries Authority Commercial Fish Production Information Bulletin 2017. Victorian Fisheries Authority, Queenscliff, Victoria, Australia.
Ward et al. 2003	Ward, TM, Staunton-Smith, J, Hoyle, S and Halliday, IA 2003, Spawning patterns of four species of predominantly temperate pelagic fishes in the sub-tropical waters of southern Queensland Estuarine Coastal and Shelf Science, 56, 1125–1140.
Webley et al. 2015	Webley, J, McInnes, K, Teixeira, D, Lawson, A and Quinn, R 2015, Statewide Recreational Fishing Survey 2013–14. Department of Agriculture and Fisheries, Queensland.
West et al. 2015	West, LD, Stark, KE, Murphy, JJ, Lyle JM and Doyle, FA 2015, Survey of recreational fishing in New South Wales and the ACT, 2013/14. Fisheries Final Report Series.
Young et al. 1999	Young, GC, Wise, BC, and Ayzavian, SG 1999, A tagging study on tailor, (Pomatomus saltatrix) in Western Australian waters: their movement, exploitation, growth and mortality, Marine and Freshwater Research, 50, 633–42.
Conron et al. 2020	Conron, SD, Bell, JD, Ingram, BA and Gorfine, HK 2020, Review of key Victorian fish stocks — 2019, Victorian Fisheries Authority Science Report Series No. 15, First Edition, November 2020. VFA: Queenscliff. 176pp.
Murphy et al. 2020	Murphy, JJ, Ochwada-Doyle, FA, West, LD, Stark, KE and Hughes, JM 2020, The NSW Recreational Fisheries Monitoring Program - survey of recreational fishing, 2017/18. NSW DPI - Fisheries Final Report Series No. 158.
Haddon et al. 2018	Haddon, M, Burch, P, Dowling, N, and Little, R 2018, Reducing the Number of Undefined Species in Future Status of Australian Fish Stocks Reports: Phase Two - training in the assessment of data-poor stocks. CSIRO. FRDC Final Report 2017/102. Hobart. 125 p.
Litherland et al. 2018	Litherland, L, Hall, K, Stewart, J and Smith, K 2018, Tailor Pomatomus saltatrix, in Carolyn Stewardson, James Andrews, Crispian Ashby, Malcolm Haddon, Klaas Hartmann, Patrick Hone, Peter Horvat, Stephen Mayfield, Anthony Roelofs, Keith Sainsbury, Thor Saunders, John Stewart, Simon Nicol and Brent Wise (eds) 2018, Status of Australian fish stocks reports 2018, Fisheries Research and Development Corporation, Canberra.
QFISH 2020	QFish, Department of Agriculture and Fisheries, www.qfish.gov.au
Lovett et al. 2020	Lovett, R, Leigh, G and Litherland, L 2020, Stock Status Summary - 2020, Tailor (Pomatomus saltatrix) Australian east coast, Unpublished Fishery Report.
Schilling 2019	Schilling, H. T. (2019). Ecology of tailor, Pomatomus saltatrix, in eastern Australia. PhD thesis, University of New South Wales.
Schilling et al. 2019	Schilling, HT, Smith, JA, Stewart, J, Everett, JD, Hughes, JM, & Suthers, IM 2019. Reduced exploitation is associated with an altered sex ratio and larger length at maturity in southwest Pacific (east Australian) Pomatomus saltatrix. Marine environmental research, 147, 72-79.
Schilling et al. 2020	Schilling, HT, Everett, JD, Smith, JA, Stewart, J, Hughes, JM, Roughan, M, & Suthers, IM 2020. Multiple spawning events promote increased larval dispersal of a predatory fish in a

	western boundary current. Fisheries Oceanography.
Fishing Victoria Forum 2017	Fishing Victoria Forum discussion post, accessed on 20/10/2020
Day 2017	Day, J, 2017, Taming the mighty Tyers, Victorian Fishing Monthly Magazine, May 2017 edition.
Wiki Fishing Spots 2020	Wiki Fishing Spots website, 2020, McLoughlins Beach Victoria entry, last accessed 22/03/2021
Wiki Fishing Spots 2020	Wiki Fishing Spots website, 2020, McLoughlins Beach Victoria entry, last accessed 22/03/2021
Teixeira et al. 2021	Teixeira, D, Janes, R, and Webley, J 2021, 2019–20 Statewide Recreational Fishing Survey Key Results. Project Report. State of Queensland, Brisbane.