

Eastern Australian Salmon (2020)

Arripis trutta



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
New South Wales, Victoria, Tasmania	Eastern Australia	Sustainable	Depletion estimates, Age and size composition, Catch, Effort, Catch rates, Fishing mortality

STOCK STRUCTURE

The Eastern Australian Salmon (*Arripis trutta*) biological stock is distributed from southern Queensland down the east coast of Australia to western Victoria and Tasmania [Macdonald 1983]. This Eastern Australian biological stock overlaps with the closely related Western Australian Salmon (*Arripis truttaceus*) in Victorian and Tasmanian waters; however each species has differing life-histories [Stanley 1978]. Both species have spawning areas that allow eggs and larvae to be dispersed by the prevailing currents—southwards and then eastwards by the Leeuwin Current (Western Australian Salmon) and southwards by the East Australian Current (Eastern Australian Salmon). The fish then grow and mature before moving back towards their spawning areas which occur at the northern (up-current) parts of their distributions. The two species are morphologically very similar; however landings of “Australian Salmon” can be partitioned into species based on where they are caught (Macdonald, 1983).

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

STOCK STATUS

Eastern Australia This cross-jurisdictional biological stock has components in New South Wales, Victoria and Tasmania. Each jurisdiction assesses the part of the biological stock that occurs in its waters. The status presented here for the entire biological stock has been established using evidence from all jurisdictions.

In New South Wales, commercial landings are influenced largely by market demands and as such have varied substantially since the mid-1990s in response to these demands [Stewart 2020]. Catch rates (median catch per day hauling) have increased steadily during the past decade [Stewart 2020]. Results of

modified Catch-MSY analyses [Martell and Froese 2013, Haddon et al. 2018] using commercial landings data since 1936 from the entire biological stock (NSW, QLD and TAS combined) indicated that the biomass declined following the early 1980s when landings regularly exceeded the estimated MSY of approximately 1 600 tonnes (t) per year. Lower landings during the past decade have seen the biomass start to increase, and in 2016–17 the depletion estimate was 0.36 which is well above the limit reference point of 0.2 [Stewart 2020]. Stability in size and age composition between the 1960s and the early 2000s, during which time biomass was estimated to have declined considerably, also suggest that the biomass has not declined below any lower threshold [Stewart et al. 2011, Stewart 2020]. The above evidence indicates that the biomass of the NSW part of the stock is unlikely to be depleted and that recruitment is unlikely to be impaired.

Eastern Australian Salmon in northern New South Wales are lightly fished commercially as fishing in this area is restricted to servicing the commercial bait market with an annual catch limit of 224 t in place. Fishing effort by beach hauling targeting Australian Salmon has continued to decline steadily since 2009–10, noting that purse-seining also reports substantial quantities. The size and age compositions in the landed catch in NSW indicate no obvious changes to the adult part of the stock since the 1960s, suggesting that fishing has not markedly altered the population structure. During 2008–09, estimates of overall fishing mortality were similar to estimates of natural mortality [Stewart et al. 2011] and recent landings have declined.

Catch-MSY analyses using data for the entire biological stock estimated that the mean harvest rate regularly exceeded F_{target} during the early 2000s but has since declined to be well below the level that would ultimately drive biomass below the limit reference level [Stewart 2020]. The reported landed commercial catch across the entire biological stock has been below the estimated MSY of approximately 1 600 t per year. for the previous 7 years. The above evidence indicates that the current level of fishing pressure is unlikely to cause the NSW part of the stock to become recruitment impaired.

In Victoria, Australian Salmon are taken in the Ocean Fishery, the Gippsland Lakes Fishery which closed to commercial fishing following a licence buy out in 2020, and the Corner Inlet Fishery. Total commercial landings have varied between 210 and 745 t annually, with peaks in 2007 and 2012. The annual catch in 2017 was relatively low (321 t) compared with 2012 (around 730 t). Catch is also taken in the Ocean Purse Seine Fishery but not published due to confidentiality. The most recent assessment of the Victorian component of this stock indicates that ocean purse seine fishing effort has remained relatively consistent since the development of the fishery in the mid-1990s [Conron et al. 2020]. Australian salmon landings from the eastern stock have been variable [Conron et al. 2020] with fluctuations likely driven by market demand and purse seiners targeting a variety of other schooling pelagic species.

During the early years of the Ocean Purse Seine Fishery, CPUE was high before fishing ceased temporarily between 1988 and 1995. When fishing recommenced, CPUE was lower than it had previously been, and remained consistently below the reference period average for around a decade. During the last decade CPUE has been above the average for the reference period [VFA 2020]. Reasons for the period of low CPUE are likely to be related to the larger number of operators who may have been less efficient and were targeting species apart from salmon. In recent years gear efficiency and specific targeting are likely to have resulted in CPUE remaining above the reference average. These changes in fishing behaviour make interpreting CPUE trends within the context of biomass problematic, particularly because this species schools heavily and purse seine shots are only undertaken when a school is located. Nevertheless, the fact that large quantities are being taken in each shot (10–20 t) indicates that the size of Australian salmon schools has not declined noticeably since the development of the fishery in the 1980s, implying that biomass is likely to still be relatively high. The above evidence indicates that the biomass of this part of the stock is

unlikely to be depleted and that recruitment is unlikely to be impaired. The above evidence also indicates that the current level of fishing mortality is unlikely to cause this part of the stock to become recruitment impaired.

The available evidence indicates that Eastern Australian salmon biomass has remained relatively stable in Victoria since around 2005 and landings have been low to moderate during the last seven years, presumably due to low market demand for this species, which is predominantly used for rock lobster bait. Based on this evidence the Eastern Australian salmon stock in Victoria is considered to be sustainable.

For the Tasmanian part of the biological stock, the most recent assessment investigated catch and effort (but not biomass) up to the end of June 2019 [Krueck et al. 2020]. There are two distinct sectors in the commercial fishery: a small number of large vessels specifically equipped to capture and store large quantities of Eastern Australian Salmon, and a large number of smaller vessels which target the species on an opportunistic basis or take them as by-product, usually in small quantities. Typically, the majority of the landings (more than 85 per cent) have been caught by the large vessel sector using beach seine methods. However, over the last 6 years, catch and effort for this sector has been at historically low levels, likely reflecting shifts in target species and low market demand for Eastern Australian Salmon rather than changes in abundance. In the 2018–19 fishing season, the commercial catch of Australian Salmon in Tasmanian State waters was 36 t [Krueck et al. 2020]. Recreational catch is likely to be similar (35 t in 2017–18). This total combined fishing pressure is well below historical levels in Tasmania, which reached up to 500 t in the late 1990s and early 2000s. The above evidence indicates that the biomass of this part of the stock is unlikely to be depleted and that recruitment is unlikely to be impaired. The above evidence also indicates that the current level of fishing mortality is unlikely to cause this part of the stock to become recruitment impaired.

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

BIOLOGY

Eastern Australian Salmon biology [Kailola et al. 1993, Stewart et al. 2011]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Eastern Australian Salmon	12 years, 810 mm FL	2–4 years, 300–400 mm FL

DISTRIBUTION



Distribution of reported commercial catch of Eastern Australian Salmon

TABLES

Fishing methods			
	New South Wales	Tasmania	Victoria
Charter			
Hook and Line	✓		✓
Commercial			
Fish Trap		✓	
Gillnet		✓	
Hook and Line			✓
Net			✓
Unspecified		✓	
Various	✓		
Recreational			
Gillnet		✓	
Hand held- Implements			✓
Handline		✓	
Hook and Line	✓	✓	✓

Management Methods			
	New South Wales	Tasmania	Victoria
Charter			
Bag limits	✓		✓

Gear restrictions	✓		✓
Licence	✓		✓
Marine park closures	✓		
Possession limit	✓		
Size limit			✓
Spatial closures			✓
Spatial zoning	✓		
Commercial			
Effort limits			✓
Gear restrictions	✓	✓	✓
Licence			✓
License		✓	
Limited entry	✓	✓	✓
Size limit		✓	✓
Spatial closures	✓	✓	✓
Vessel restrictions	✓		
Recreational			
Bag and possession limits		✓	
Bag limits	✓		✓
Fishing gear and method restrictions		✓	
Gear restrictions	✓	✓	✓
Licence	✓	✓	✓
Marine park closures	✓	✓	
Possession limit	✓		
Size limit		✓	✓
Spatial closures	✓		✓

Catch			
	New South Wales	Tasmania	Victoria
Charter			Unknown
Commercial	1006.67 t	38.7026 t	17.0065 t

Indigenous	Unknown	Unknown	
Recreational	83 t (2017-18)	35 t (2017/18)	Unknown

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

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

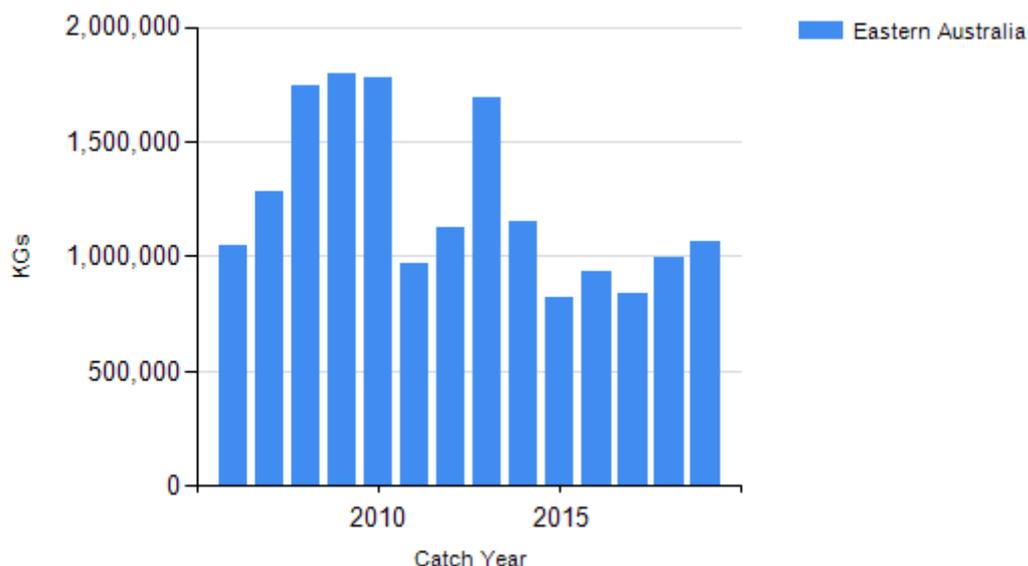
Victoria – Indigenous (Management Methods) A person who identifies as Aboriginal or Torres Strait Islander is exempt from the need to obtain a Victorian recreational fishing licence, provided they comply with all other rules that apply to recreational fishers, including rules on equipment, catch limits,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

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://dpiw.tas.gov.au/Documents/Policy%20for%20Aboriginal%20tags%20and%20allotting%20an%20UIC.pdf>).

Tasmania – Commercial (Catch) 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 – 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 minimum size limit of 200 mm total length is in place for Eastern Australian Salmon in Tasmanian waters. A bag limit of 15 individuals and a possession limit of 30 individuals is in place for recreational fishers.

CATCH CHART



Commercial catch of Eastern Australian Salmon - note confidential catch not shown

References

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Eastern Australian Salmon (2020)

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