

# Australian Herring (2023)

*Arripis georgianus*



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## STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Western Australia, New South Wales, Victoria, South Australia	Southern Australia	Sustainable	Catch, CPUE, age and length composition, fishing mortality, spawning biomass

## STOCK STRUCTURE

Australian Herring occurs around southern Australia from Shark Bay (Western Australia) to Forster (New South Wales), although it is uncommon east of Bass Strait. A single biological stock spans the full distribution [Ayvazian et al. 2004, Smith and Brown 2014]. Spawning occurs in late May/early June in the south-west of Western Australia, with eggs and larvae being dispersed southwards and eastwards by the Leeuwin Current [Ayvazian et al. 2004]. Fish grow and mature in each jurisdiction before migrating back to the spawning area where they remain as adults. There are no records of spawning by this species along the east coast.

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

## STOCK STATUS

**Southern Australia** The cross-jurisdictional biological stock has immature juvenile components in New South Wales, Victoria, South Australia and Western Australia. The adult spawning stock resides in Western Australia. The status presented here for the entire biological stock has been established using evidence from all jurisdictions.

The New South Wales commercial catch for the period 2015–22 averaged approximately 2 tonnes (t) per year, and Australian Herring is not a major

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component of recreational landings [West et al. 2015; Murphy et al. 2020; Murphy et al. 2022].

In Victoria, Australian Herring are mostly harvested by haul seine, with most of the harvest historically being from Port Phillip Bay and Corner Inlet-Nooramunga. Total commercial harvests of Australian Herring in Victoria peaked at approximately 32 t in 2002 [VFA, unpublished data]. More recently, annual catches have been much lower at less than 10 t. This is largely a result of changes to management arrangements for the Port Phillip Bay commercial fishery, particularly the phasing out of commercial netting, and does not indicate changes in stock availability. Commercial net fishing ceased in Port Phillip Bay in 2022 and catches of Australian Herring are expected to be low and largely restricted to Corner Inlet-Nooramunga in the future. Recreational take of Australian Herring is unknown in Victoria, but thought to be low, as it is not a popular target species.

In South Australia, the levels of fishing effort and catch of Australian Herring have declined substantially over the past three decades, particularly following the implementation of netting closures in 2005. Since 2005–06, State-wide commercial catch of Australian Herring has plateaued at an average of 114 t per year, with a total catch of 108.7 t in 2021–22 [Smart et al. 2023]. Catch rates within the hauling net sector of the commercial Marine Scalefish Fishery have been highly variable with no clear trend [Smart et al. 2023]. Catches from the charter boat sector have remained consistently low since 2007, with this species contributing to 3.6% of the number of fish retained in 2020–21 [Durante et al. 2022]. Australian Herring is popular with South Australian recreational fishers and accounted for 14% of all marine finfish retained by this sector during the 2021–22 recreational fishing survey [Beckmann et al. 2023]. The estimated harvest for the recreational sector was 39.7 t in 2021–22 [Beckmann et al. 2023]. The Traditional take of Australian Herring in South Australia has not been quantified.

In Western Australia, Australian Herring were taken in relatively large quantities, near 1,500 t, in the early 1990s. The vast majority of the catch was taken on the south coast, facilitated by the highly efficient herring trap net method that captures mature and maturing fish migrating west for spawning. Since the closure of the herring trap net fishery in 2015, the average catch has been about 75 t (commercial), of which the majority was taken by 5 fisheries: South West Beach Net (28%), Cockburn Sound Fish net (27%), Open Access Fishing on the South Coast (18%), South Coast Estuarine managed fishery (18%), and West Coast Estuarine Managed Fishery (7%) (percentages are approximations). Herring is also an important recreational species; it has consistently been the most-caught shore-based species by recreational anglers in the metropolitan region (approximately 9 t in 2021) [Tate et al. 2022] and is the 2<sup>nd</sup> and 3<sup>rd</sup> most caught species by boat in the West Coast Bioregion and the South Coast Bioregion respectively (approximately 20 t in 2020–21) [Ryan et al 2022].

The most recent assessment of the adult spawning stock of Australian Herring was completed in 2021 [Duffy et al 2021]. The assessment follows the Western Australian Department of Primary Industries and Regional Development's risk-based Weight of Evidence approach, which considered catch (including catch-MSY analyses), effort, catch distribution, nominal and standardised catch per unit effort (CPUE), vulnerability and susceptibility to fishing (PSA) analysis, age and length composition data, catch-curve estimates of (long-term average) fishing mortality, age- and length-based estimates of female spawning potential ratio (SPR) and relative female biomass (Brel) from per recruit analyses, stock-recruitment-environment relationships, and a dynamic, age-structured model.

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Australian Herring is a relatively short-lived (around 10 years) species that has experienced more than a decade of low catch, well below that of estimates of MSY derived from several different methods (Catch-MSY analysis produced an estimate for MSY of 1,199 t (95% CLs = 960–1431 t) for Australia, 218 t (95% CLs = 175–253) for the west coast, and 667 t (95% CLs = 525–807) for the south coast). The very low commercial effort in recent years, lack of a declining trend in standardised CPUE, low catches relative to MSY, and estimates of female SPR and Brel at or above target levels, provide strong evidence that the stock is not currently experiencing overfishing. Estimates of relative female biomass from a preliminary dynamic age-structured model indicate stock recovery in recent years (following management changes to reduce fishing effort) to at least the threshold level.

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 current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

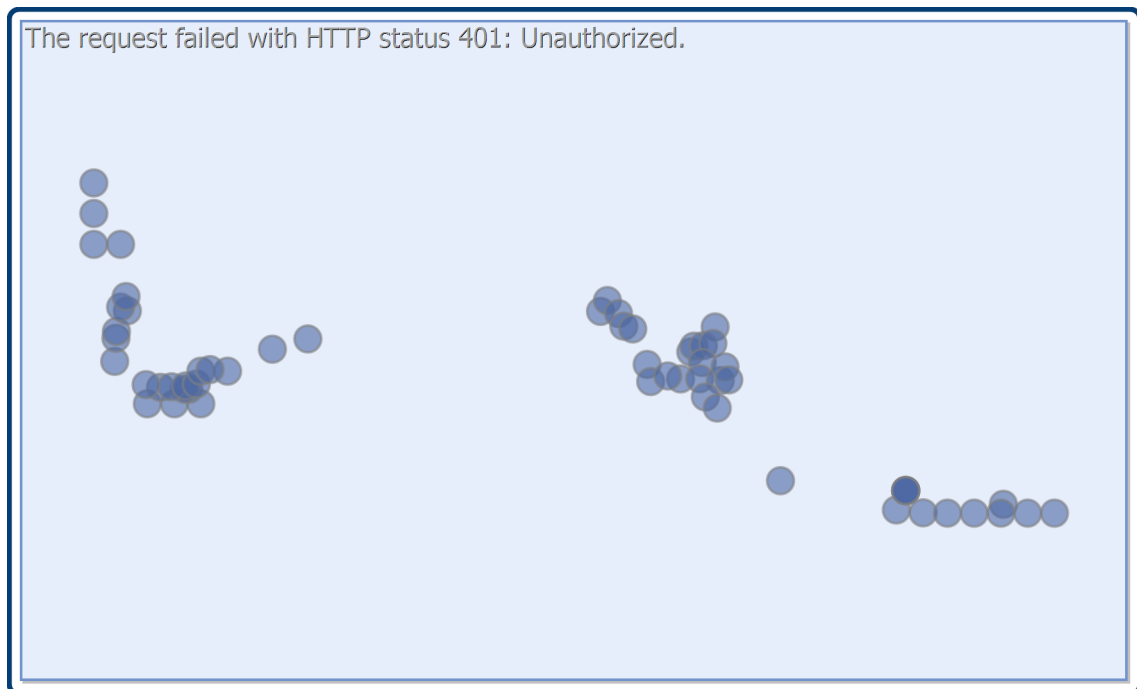
On the basis of the evidence provided above, the Southern Australia biological stock is classified as a **sustainable stock**.

## BIOLOGY

**Australian Herring biology** [Smith and Brown 2014]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Australian Herring	12 years, 410 mm TL	180–200 mm TL, 2 years

## DISTRIBUTION



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Distribution of reported commercial catch of Australian Herring

**TABLES**

<b>Fishing methods</b>				
	<b>New South Wales</b>	<b>South Australia</b>	<b>Victoria</b>	<b>Western Australia</b>
<b>Charter</b>				
Rod and reel				✓
<b>Commercial</b>				
Beach Seine				✓
Gillnet		✓		✓
Hand Line, Hand Reel or Powered Reels				✓
Handline		✓		
Haul Seine				✓
Hook and Line		✓		
Net			✓	✓
Seine Nets		✓		
Unspecified	✓	✓		
<b>Recreational</b>				
Handline	✓	✓	✓	✓
Hook and Line	✓			

<b>Management Methods</b>				
	<b>New South Wales</b>	<b>South Australia</b>	<b>Victoria</b>	<b>Western Australia</b>
<b>Charter</b>				
Gear restrictions	✓			
Licence	✓			
Spatial zoning	✓			
<b>Commercial</b>				
Effort limits		✓		
Gear restrictions	✓	✓	✓	✓

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Limited entry	✓	✓	✓	✓
Spatial closures	✓	✓	✓	✓
Temporal closures		✓		
Vessel restrictions	✓			
<b>Recreational</b>				
Bag limits		✓	✓	✓
Gear restrictions	✓		✓	
Licence	✓		✓	
Licence (Recreational Fishing from Boat License)				✓
Marine park closures	✓			
Possession limit				✓
Spatial closures	✓		✓	

Catch				
	New South Wales	South Australia	Victoria	Western Australia
<b>Charter</b>				0.025 t
<b>Commercial</b>	0 t	108.251 t	6.33475 t	100.102 t
<b>Indigenous</b>	Unknown	Unknown	Unknown (No catch under permit)	Unknown
<b>Recreational</b>	Unknown	39.7 t (in 2021–22)	Unknown	20.4 t (2020–21) Boat-based only

**Western Australia - Recreational.** Catch estimated in 2020/21, for boat-based fishing only [Ryan et al. 2022]. Current shore-based catch is unknown.

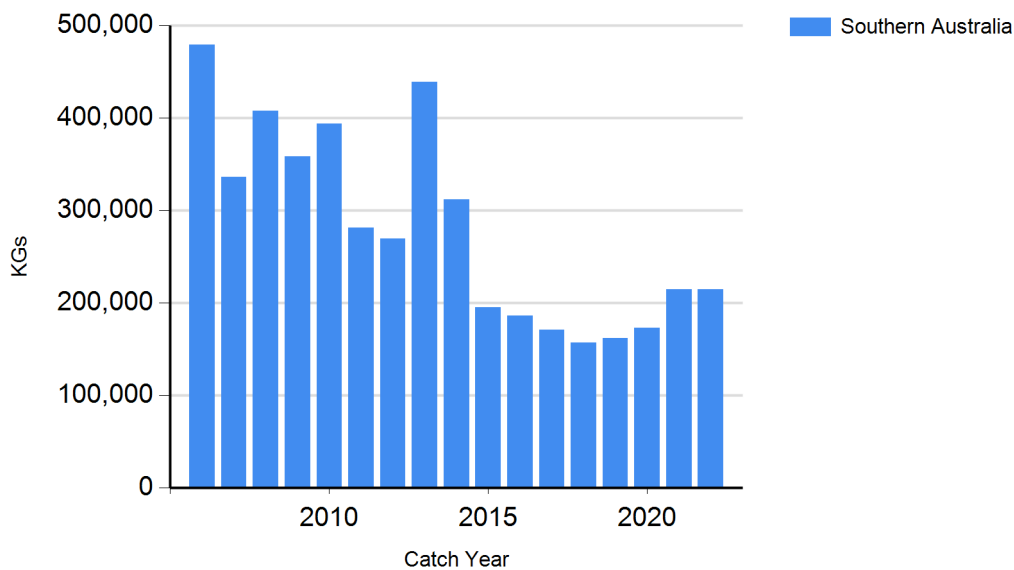
**New South Wales – Recreational (Catch).** Murphy et al. [2022]

**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*.

## CATCH CHART



Commercial catch of Australia Herring - note confidential catch not shown.

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