



Fisheries science update – June 2022

Australian herring



Key points: 2021 stock assessment outcomes

- The latest weight of evidence stock assessment for Australian herring indicates that management arrangements introduced in 2015, combined with suitable environmental conditions, have led to the recovery of the resource.
- The Department of Primary Industries and Regional Development (DPIRD) tracks our aquatic resources by undertaking weight of evidence stock assessments every three-five years.
- DPIRD has undertaken four contemporary weight of evidence stock assessments of Australian herring since 2000.
- The 2000 assessment (22 years ago) indicated the catch was sustainable. However, by 2013 the Australian herring stock status had become high risk and ‘unacceptable’, and new measures were introduced.
- In 2021 the catch was assessed as sustainable and recovered.
- Commercial and recreational fishers and their representative organisations (the Western Australian Fishing Industry Council and Recfishwest) played a key role in herring’s recovery by supporting management arrangements over the past seven years.
- This science update follows on from the previous Australian herring update in 2018.
- Detailed information on the latest stock assessment is available in *Fisheries Research Report No. 319*.

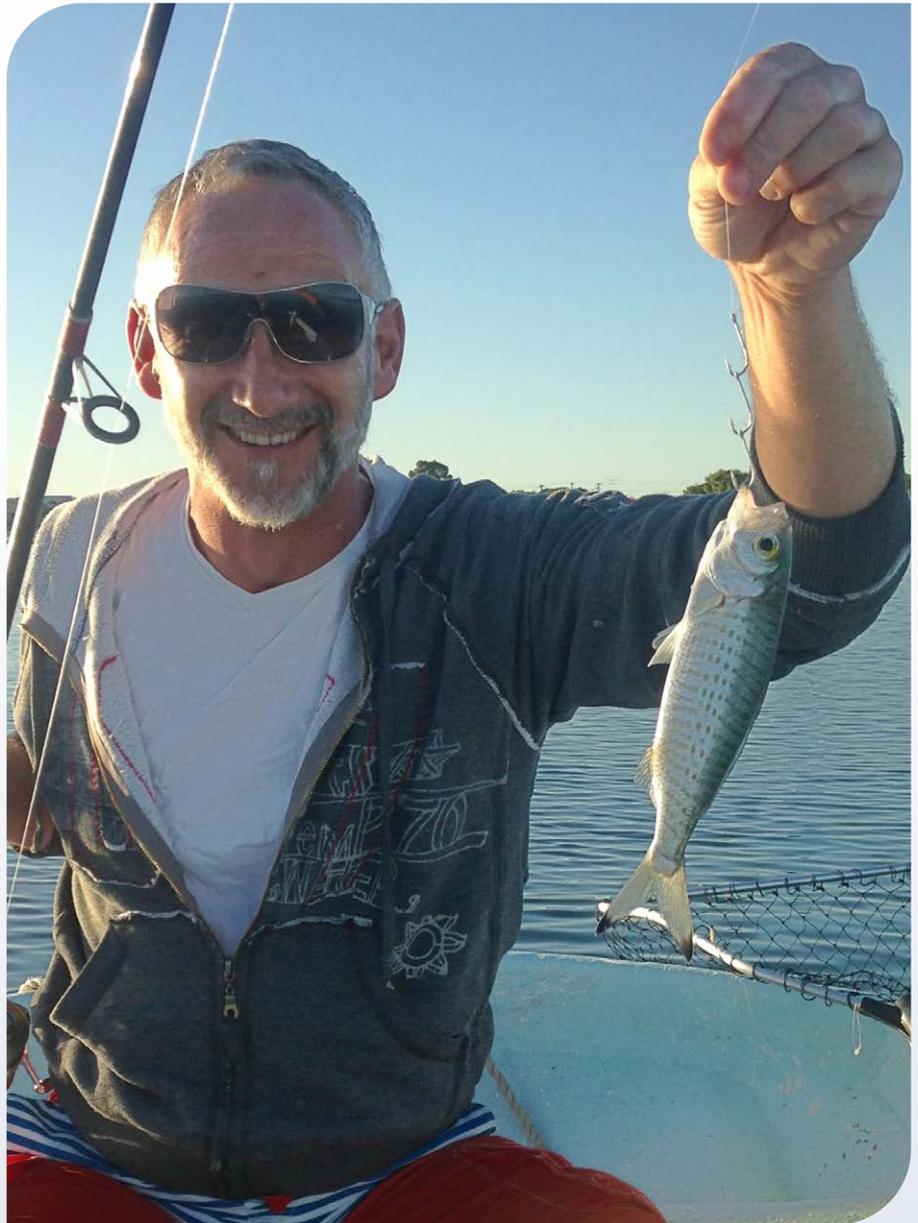
Recovery background

2013

- An Australian herring stock assessment indicated there was a high risk to the sustainability of herring.
- After considering the science and the views of the peak commercial and recreational fishing bodies, and the wider Western Australian community, the Minister for Fisheries decided to reduce fishing pressure on herring through changes to both recreational and commercial fishing.
- A range of measures were implemented to reduce the total herring catch by 50% for both the commercial and recreational sectors.

2015

- From 1 March 2015, the daily recreational bag limit for herring was reduced from 30 to 12.
- The WA Government also prioritised the use of the herring resource for recreational and human consumption purposes.
- Consequently, the G-net Fishery on the south coast (which predominantly caught herring to supply the low value bait market) was closed on 1 March 2015, and a voluntary buyback scheme was established to remove herring G-net access.
- Since the closure of the herring G-net fishery in 2015, the average WA commercial catch has been about 75 tonnes.
- In the recreational sector, shore-based recreational anglers caught about 9 tonnes in 2021, and boat-based fishers about 13 tonnes in 2019.



2017

- A scientific workshop held in November 2017 found that while the herring stock was recovering under current management arrangements, it had not fully recovered. As a result of the workshop a 2018 assessment report was completed.
- The commercial and recreational sectors were advised there would be no change to herring arrangements whilst the resource was in recovery.

2022

- The herring weight of evidence stock assessment in 2021 indicated the catch was now sustainable and at low risk.
- Any future management of Australian herring would need to be based on agreed sharing of the resource.

Using latest science to take stock of the recovery

Stock assessments for Australian herring occur every 3-5 years, with four assessments completed since 2000.

Stock assessments undertaken by DPIRD are based on world class fisheries science.

They use a weight of evidence approach, whereby all the lines of available data (evidence) are evaluated.

Scientists collect the data for stock assessments in a number of different ways such as:

- field sampling
- lab analysis of fish frames and otoliths (a bone found in the ear of fish that can be measured for age like tree-rings)
- commercial catch returns
- recreational fisher surveys.

In the latest Australian herring stock assessment, the collected data was analysed using the following methods:

- measurement of commercial and recreational catches and catch trends
- representative sampling of catches to derive biological information, e.g. age data, length data, spawning activity, length-at-maturity, etc.

- analysis of lengths and ages of fish in catches to evaluate trends in population characteristics and comparison of these with international standards
- construction of population models to evaluate trends in fishing pressure and biomass (relative abundance) of stocks and comparison of these with international standards
- analysis of the relationship between recruitment, environmental conditions, and stock levels.

Regular stock assessments are important as they add to our comprehensive databases and provide fishery managers with the information needed to understand the stock status, and inform management arrangements to ensure that WA's aquatic resources are used sustainably.



2021 Australian herring stock assessment outcomes

- The latest assessment indicates that the risk to the Australian herring stock is low and that the stock can be considered to have recovered.
- There has been an increase in spawning biomass with an increasing number of spawning females in the population and multiple successful recruitment years since 2015.
- There is also an increased number of older fish in the population. In 2015, the majority of sampled fish were 2 years old or younger, however there are now a greater number of individuals between 3-5 years old.
- Australian herring fishing mortality rates have decreased from previous assessments.
- Herring is a short-lived and productive species that has experienced more than a decade of low catch. Increased biomass and decreased fishing mortality since the last assessment allows for a moderate increase in herring catch.

Detailed outcomes are available in the Australian Herring *Fisheries Research Report No. 319*.



Next steps

It is important to note that the low risk level for Australian herring is under current management arrangements.

The current herring risk score of low allows for a moderate increase in catch. Increased catch would result in a medium risk status, and therefore an appropriate way to test the response of the herring fishery is with an adaptive management framework.

This would involve incremental increases in catch over time, and the completion of an interim stock assessment prior to the next full assessment in 2026.

Recovery of the stock provides an opportunity to take a new, resource-based approach to management, focused on sharing of the resource between Aboriginal fishers and the commercial and recreational fishing sectors, and best use of the resource.

It is vitally important that everyone continues to work together to ensure the herring stock remains sustainable into the future, while at the same time allowing for optimum return and community benefit.

Disclaimer The Chief Executive Officer of the Department of Primary Industries and Regional Development and the State of Western Australia accept no liability whatsoever by reason of negligence or otherwise arising from the use or release of this information or any part of it.

Copyright © State of Western Australia (Department of Primary Industries and Regional Development) 2022

Department of **Primary Industries and Regional Development**

+61 1300 374 731 | enquiries@dpird.wa.gov.au | dpird.wa.gov.au

ABN: 18 951 343 745

dpird.wa.gov.au