Government of Western Australia
Department of Fisheries

RESEARCH ANGLER PROGRAM

Newsletter No. 30
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Welcome to the RAP Newsletter, providing feedback on the data you are collecting and keeping you informed about what is happening at the Research Division of the Department of Fisheries.

What is aquatic biosecurity and why is it important?

Aquatic biosecurity is all about protecting the environment, economy and community from the problems created by aquatic pests and diseases. The main focus is on preventing any new pest or disease from entering our aquatic ecosystems. Prevention is critical, because once a pest or disease enters the environment, they become very difficult and costly to manage and, unless detected and dealt with very early, impossible to remove completely. Costs can quickly run into the millions.

Sadly, freshwater fishes are amongst the most commonly introduced species, as people dump unwanted pets. Ornamental fish account for a majority of the recent exotic fish introductions to WA's freshwater ecosystems. Over the past 20-30 years there has been a steady increase in exotic freshwater ornamental fish species that have become established in Australian waterways. Introduced species can compete for resources, alter habitat and predate on native species.

The Department of Fisheries is the state government's lead agency for aquatic biosecurity issues. In 2010, we conducted a survey of 114 (of the over 4,000 listed) permanent lakes and swamps in the southwest coastal plain and found that the majority of lakes surveyed were dominated by non-native species. This survey found two new non-native fish species and a new location for a previously detected species, proving that a more comprehensive survey program was needed.

In 2012, the Freshwater Biosecurity Research Unit (FBRU) was formed to undertake detailed surveys, respond to pest fish reports and use control measures of introduced freshwater species where required. Our staff across all divisions – management, research and compliance – now work together to prevent new introductions and manage established pests within our freshwater ecosystems.

Fyke nets being deployed in lakes by Department of Fisheries staff.

Fyke nets being deployed via kayak.

The FBRU has done some significant work. A comprehensive survey of permanent lakes within the Perth metro region has been under way for the past two years. Over 400 lakes have been surveyed, with another 300 planned by the end of 2014. Initial results suggest that more than 80 per cent have introduced fish in them, while between 5 and 10 per cent contain a mix of native and feral species. The data from the survey will be analysed and help management to prioritise necessary actions.

This survey work is proving incredibly useful and timely. At Lake Marmion in Myaree, the eel-tailed catfish (*Tandanus tandanus*), an Eastern States species, was not only detected, but laboratory testing revealed it carried a bacterial disease never before seen in Australia. Control measures began immediately with a 'fish down', in which thousands of catfish were caught in nets. A further successful eradication attempt using the fish-specific toxin rotenone was carried out. A second treatment late this year removed the final few catfish and we hope that the lake can be restocked with native species in the near future.

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Removing introduced species is one way of dealing with the problem but prevention is the goal in aquatic biosecurity. Since their first detection in 2004, the introduced pearl cichlid has spread rapidly throughout the Swan Coastal Catchment. Recently, pearl cichlids were detected in the Southern River very near to the neighbouring Peel-Harvey Catchment, which is free of pearl cichlids. Normally neighbouring catchments are not linked, but in this case the two catchments were linked artificially by the Birrega drain. The FBRU raised concerns over the potential spread into the Peel-Harvey Catchment and considered that this spread could be avoided. The Department and several key stakeholders (Department of Water, Serpentine Jarrahdale Shire, Water Corporation and the land-owner) moved quickly to block the Birrega drain near the Wungong Brook junction, and separated the catchments.

Introduced pearl cichlids.

One of the main risks to our aquatic ecosystems is the inadvertent introduction of new pests and diseases by the general public, this being the likely origin of the two pest fish examples above. You can help to make a difference. We have launched the *Don't dump that fish* campaign to raise awareness about protecting our waters by correctly and responsibly re-homing or disposing of unwanted fish. Ornamental fish hobbyists emptying their aquarium tank into the nearest lake or river can spread feral fish and disease. We have also developed a tool to help the public fight aquatic pests and diseases; *WA PestWatch*, a mobile application for smartphones and tablets, is free to download. Use it to report suspected aquatic pests and do your bit to keep our oceans and rivers healthy and beautiful.

To stay up-to-date on all things freshwater in WA, subscribe to the Freshwater Guardian e-newsletter. It is published seasonally and covers all our freshwater activities including trout stocking and marron fisheries.

New state record for oldest fish

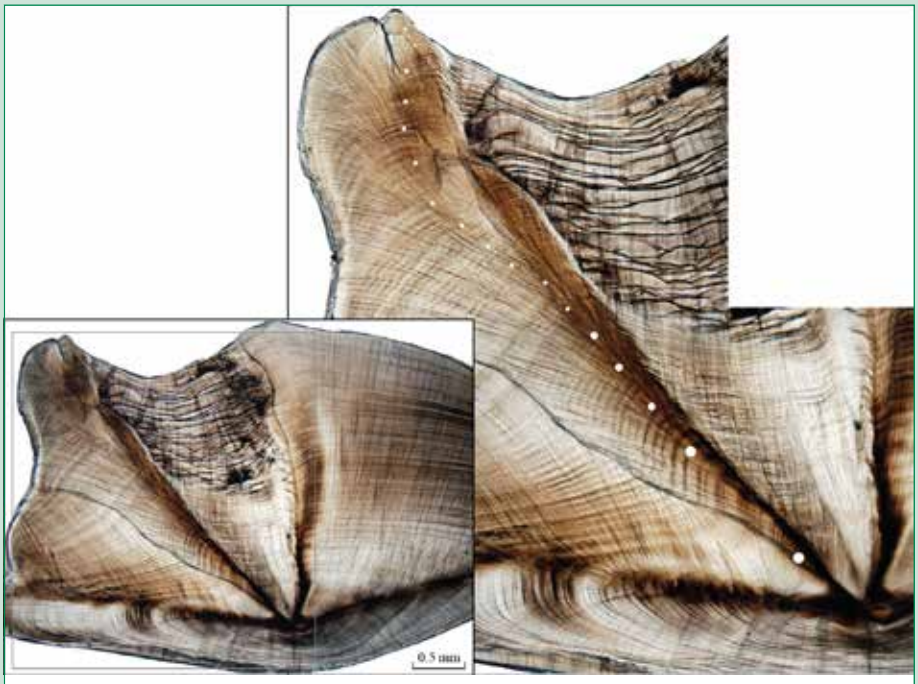
Jeff Norriss

A Bight redfish.

A new longevity record for a Western Australian fish has been set by a Bight redfish (*Centroberyx gerrardi*) caught from the deep waters of Two Peoples Canyon off Albany: age 84 years. The 60 cm female was caught in November 2013 by hook and line.

Her age was determined by counting the annual growth rings on the fish's otolith, located just behind the brain. The frame (skeleton after filleting) of the 84-year-old fish was one of many collected for a research project assessing the health of south coast demersal finfish stocks by ascertaining their age structure.

The new state record of 84 years surpasses the previous record of 78, held jointly by the western foxfish (*Bodianus frenchii*) and the bass groper (*Polyprion americanus*). Other long-lived WA species include the western blue groper (*Achoerodus gouldii*) at 70 years and the sea sweep (*Scorpis aequipinnis*) at 68 years.



Cross section of an otolith of an 84 year old Bight redfish, with the inset expanded in the right photo. A white dot identifies the first, last and every fifth growth ring.

Catch the fishing news

Have the latest WA recreational fishing news delivered straight to your inbox – subscribe to the Department's *Catch!* e-newsletter at **www.fish.wa.gov.au/catch**

Saving the herring

In 2013, we released the findings of the most comprehensive stock assessment of Australian herring ever undertaken[1]. The work was done in response to serious concerns about the status of this important stock, prompted by a decade of declining catches and poor recruitment.

As well as looking at the trends in fishery catch rates and juvenile recruitment, the project also extensively sampled recreational and commercial catches during 2009/10 and 2010/11 and re-analysed archived biological samples of herring collected in the 1990s and early 2000s. These samples were used to determine the composition (age, length and sex) of herring catches and the rate of mortality.

We found evidence of a decline in herring abundance and recruitment since 2000 and determined that the current condition of the stock was "unacceptable". In particular, we found that the annual rate of fishing mortality (F) affecting herring in recent years was extremely high and would need to be reduced by a substantial amount to ensure the long-term sustainability of the stock (Fig. 1). Our conclusion was supported by an independent expert review[2] of the assessment commissioned by the Department.

Since the publication of the initial assessment report, we have continued to monitor[3] and assess herring. The latest assessment (based on data collected in 2011/12 and 2012/13) was completed in 2014 and again indicated that the rate of fishing mortality was too high and a catch reduction was needed (Fig. 1).

The F values that were estimated for each sampling period are shown in Figure 1, along with the reference points and decision rules used by the Department to determine the level of management action required. These reference points are based on internationally accepted values that are widely used to manage fisheries.

Australian herring.

The decision about how to reduce fishing pressure was made by the Minister for Fisheries. With an important species like herring that is popular with both recreational and commercial fishers in WA, South Australia and Victoria, the decision was not going to be an easy one.

The Minister, Ken Baston, commissioned a second independent expert review of our assessment, and considered the findings of a private consultant's report to commercial herring fishers, before making a decision. The Minister's statement of 20 December 2014 can be found on our website at www.mediastatements.wa.gov.au/Pages/Ken-Baston.aspx

The new rules to help rebuild herring stocks include:

- A daily bag limit of 12 herring for recreational fishers, in effect from March 1, 2015.
- The commercial South Coast G-net Fishery closing on March 1, 2015 and commercial fishers having an opportunity to sell licences back to the government.

1 Fisheries Research Report No. 246, 2013. Status of nearshore finfish stocks in south-western Western Australia Part 1: Australian Herring. NRM Project 09003 Final Report.

2 Fisheries Occasional Publication No. 116, 2013. Review of report on the 'Status of nearshore finfish stocks in south-western Western Australia: Australian herring and tailor'.

3 Herring donated by recreational fishers via SUYS are critical part of this monitoring.

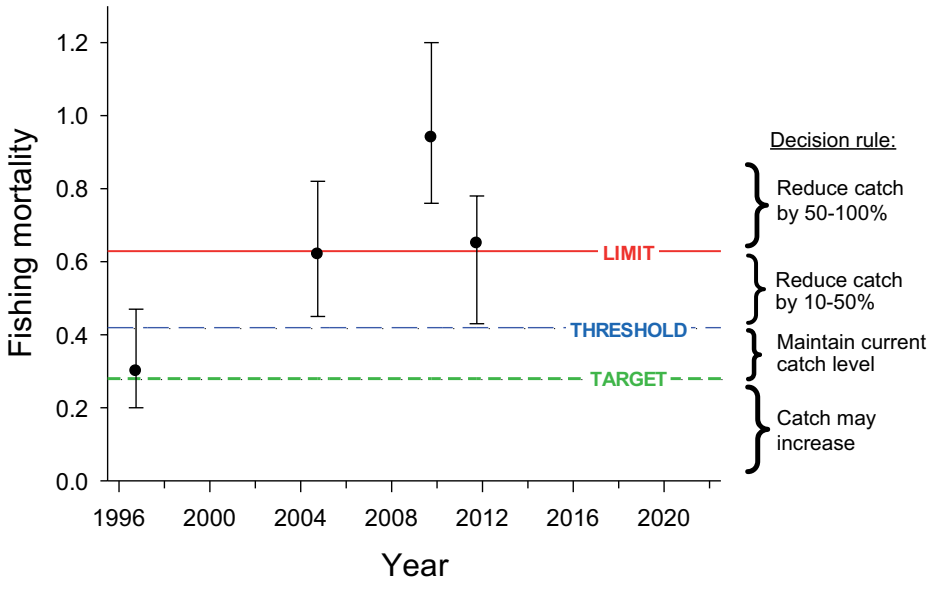


Figure 1. Estimates of fishing mortality (F) affecting the Australian herring breeding stock during 1996/97–1997/98, 2004/05–2005/06, 2009/10–2010/11 and 2011/12–2012/13. (Each data point represents the average of 2 years of data, with 95% confidence interval of each estimate displayed).

Bring out your dead!

We are continuing to ask for herring frames from recreational fishers. We did not receive any herring frames for October, November or December 2014 in the metro area.

Donations from recreational fishers are vital to research so please donate any herring frames and go into the draw to win some fantastic prizes.

Go to **www.fish.wa.gov.au/frames** for more information on our Send Us Your Skeletons program.

Winner

Mike Wallingford was the lucky 2013/14 Send Us Your Skeletons (SUYS) grand prize winner – winning a six-night charter trip for two to the Montebello Islands courtesy of Monte Bello Island Safaris. Mike donated the skeletons of a baldchin groper and two dhufish to go into the draw.

Kim Clayton presenting Mike Wallingford with the grand 2013/14 prize.

Monte Bello Island Safaris have kindly donated the 2014/15 grand prize – give us your fish frames and you could win a charter trip for two to the Montebello Islands worth more than $6,000.

There are also prizes to be won every quarter – including Western Angler magazine subscriptions, BCF vouchers, White Salt restaurant vouchers and many more. Congratulations to Matt Hoad, Andrew Wilson, Kevin Beeck and Steven Pink who won the first 2014/15 quarterly prizes. There are many incentives to 'send us your skeletons' including giving our researchers a very strong foundation for assessments of some of WA's fish stocks. This, in turn, provides the information necessary to manage them sustainably.

In 2013/14 nearly 7,000 nearshore and demersal frames were donated on the west and south coasts. Let's see if we can beat this number in 2014/15!

Premier's Award finalist

Our *Send Us Your Skeletons* program was recently a finalist in the 'Managing the Environment' category of the 2014 Premier's Awards for Excellence in Public Sector Management. The Premier's Awards were established in 1996 to formally recognise and reward the achievement of excellence in management practice by WA public sector agencies. They aim to stimulate highly innovative projects and displays of creative leadership leading to better service to the community. A big thank you to all of the recreational fishers who have donated fish frames to the program and to all the businesses who have provided prizes and drop-off points for fish frames.

Fisher of the month

The RAP 'fisher of the month' prizes were decided by randomly drawing one log sheet returned in each month.

Congratulations to the following fishers of the month:

March 2014	**Phil Porter**	**(West Coast)**
April 2014	**David Scott**	**(South Coast)**
May 2014	**Steve Downs**	**(West Coast)**
June 2014	**Dick Shore**	**(West Coast)**
July 2014	**Warwick Crouch**	**(West Coast)**

Each winner will receive a floating key ring and a stubby holder.

Thank you for your ongoing support and happy fishing!

The Research Angler Program is run by the Nearshore and Estuarine Finfish Research Team:
Dr Kim Smith – **Kim.Smith@fish.wa.gov.au** Amber Quinn – **Amber.Quinn@fish.wa.gov.au**
Douglas Anderson – **Douglas.Anderson@fish.wa.gov.au**

Telephone: (08) 9203 0111 **Facsmile:** (08) 9203 0199
Post: Research Angler Program, Department of Fisheries, PO Box 20, North Beach WA 6920
Deliveries: 39 Northside Drive, Hillarys, Western Australia 6025

ABN: 55 689 794 771

www.fish.wa.gov.au

Fish for the future

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