



Newsletter No.26
August 2013



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.

Artificial reef trial underway

The first trial of purpose-built reefs for recreational fishing in the South West has begun with two artificial reefs installed in Geographe Bay off Bunbury and Dunsborough. The \$2.38 million trial, titled the South West Artificial Reefs Project, is being funded through the Royalties for Regions program and the Recreational Fishing Initiatives Fund, collected from boat fishing licence fees.

The reef locations, chosen for their accessibility by small recreational boats, had to meet strict State and Commonwealth environmental guidelines. The Department of Fisheries worked with Recfishwest and local fishers and agencies to identify suitable locations.

Each reef is formed of 30 ten-tonne reinforced concrete modules placed in six clusters over a four hectare area. The modules were designed and built by Haejoo Pty Ltd at MJB Industries in Australind using locally supplied concrete and materials.

The benefits

The reefs are designed to create complex spaces and habitat for nearshore species such as silver trevally (skippy), pink snapper and Samson fish.

Similar reefs outside of Western Australia have demonstrated environmental benefits including the capacity to support a diverse range of marine life. Over time, these reefs will provide recreational fishers with new and accessible fishing spots.

Monitoring the reefs

Our researchers will monitor the artificial reefs to assess how effective they are at creating habitat for recreationally targeted fish, their impacts on the

Artificial reef modules being installed in the South West trial.



surrounding area and how they stand up to the elements.

A scientific reference group, including independent experts, has helped design monitoring and evaluation strategies. We will use multiple survey techniques including baited video and diver surveys every six months for four years. Changes in diversity and abundance of species at the reefs will be assessed and compared with the diversity and abundance at surrounding natural reefs at varying distances away.

The first surveys have been carried out, less than two months after installation. At the Dunsborough reef, large schools of slender bullseyes (*Parapriacanthus elongatus*) were seen taking refuge within the reef modules and a school of large Samson fish (*Seriola hippo*) was seen circling the modules.

Ten more species, including pink snapper (*Pagrus auratus*), footballer sweep (*Neatypus obliquus*) and globefish (*Diodon nictemerus*), were recorded. Recreational fishers are already reporting catches of pink snapper and large Samson fish at the reefs.

Schools of slender bullseyes among reef modules.



Tell us about it

In addition to the scientific monitoring, fishers are encouraged to report their catches and experiences at the artificial reefs to help determine their effectiveness and assess the benefits to the community. You can do this on Facebook (facebook.com/SouthWestArtificialReefs) or by recording details of days fished on the reefs in your Research Angler Program fishing log book.

For more information on the artificial reefs, including a map and regular updates on the research, visit www.fish.wa.gov.au/Fishing-and-Aquaculture/Recreational-Fishing/Pages/Artificial-Reefs.aspx

Warm response to species on the move

Redmap Australia has been given a warm reception here in WA with 44 logged sightings in the first six months. Redmap, or the Range Extension Database and Mapping Project, invites the community to **Spot, Log and Map** any unusual or uncommon marine species they come across at the Redmap website www.redmap.org.au

Each report is a piece in the puzzle to help reveal whether our marine species are shifting their range (where they live) due to warming ocean temperatures and extreme climatic events.

What's been spotted?

So what has been on the move in WA waters? Reports don't get much bigger than a 4.4 metre blue marlin (*Makaira mazara*), first spotted beaching itself at Little Beach near Albany.

This species is synonymous with tropical and sub-tropical oceanic waters. Marlin observed in our southern waters is a good example of how pelagic (surface-dwelling) fish swim with their preferred water temperature even though it takes them to much higher latitudes than normal.

After the marlin perished at the scene, research staff already in the area took measurements and DNA samples from the impressive specimen. The marlin's head was sent to the Western Australian Museum for further biological analysis.

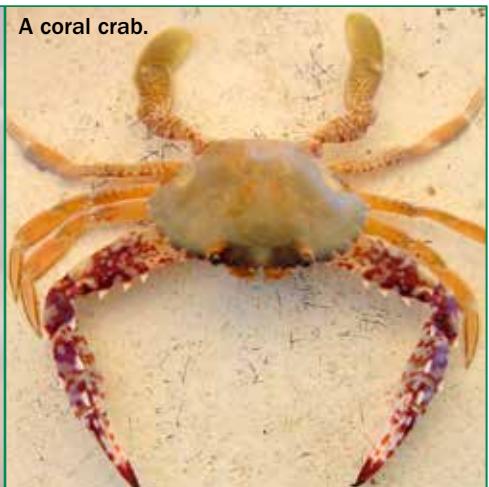
Many of the reports have been of finfish, with a good spread received from recreational fishers, divers and snorkellers.

Recreational fishers on the lower west coast contributed seven reports of redthroat emperor (*Lethrinus miniatus*), making this demersal (bottom-dwelling) finfish the highest-reported species in WA. Our researchers snapped one swimming past their camera while carrying out Baited Remote Underwater Video (BRUV) field work off Margaret River.

Remember, all marine species can be reported. WA's first mammal report – of an elephant seal – came in from Eyre near the South Australian border, and our first crustacean was a colourfully patterned coral crab caught in the Swan River.



4.4 metre
blue marlin
(*Makaira mazara*),
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near Albany.



Wish list

- Mud crabs in Perth, Mandurah and Bunbury
- Spanish mackerel observed on the south coast
- Whale sharks showing up further south, such as in waters off Perth, Rockingham, Dunsborough and Albany
- North-West blowfish (silver toadfish) in the Albany area
- Turtles in southern WA waters
- Threadfin salmon in the Mid-West

rumour, whispers and newspaper reports that have come our way. If you have any photos in your collection, see if you have anything that could be logged on the Redmap website over the winter months – we'd love to hear from you.

Supporting Redmap is easy. The most important thing is to keep your eyes peeled and have a camera or mobile phone camera on hand while you're doing all the things you enjoy doing around our coast.

It's the quality photo uploaded to the website that enables Redmap's scientists to complete the task we have given them – to verify the species you have spotted. If you haven't already, sign up to Redmap Australia's e-newsletter and keep in touch through Facebook. Any technical issues and queries can be directed to wa@redmap.org.au.

How you can help

Just like fish when you're fishing, a few reports have 'got away'. In addition to our 'species of interest' profiles on the Redmap website we've started to compile our own unofficial 'wish list' based on

What's on the move in WA waters?



Redthroat emperor (*Lethrinus miniatus*)

Eight sightings between Lancelin and Margaret River. In Western Australia, log if observed in the south-west or off the south coast.



Common dart (*Trachinotus botla*)

Three sightings between Perth and Bunbury. In Western Australia, log if observed south of Perth.



Rankin cod (*Epinephelus multinotatus*)

One Rankin cod report from Busselton. In Western Australia, log if observed south of Geraldton.



Japanese devilray (*Mobula japonica*)

One report from Cheynes Beach east of Albany. First ever report in Western Australia. Log all observations.



Common lionfish (*Pterois volitans*)

One sighting from the Busselton Jetty. In Western Australia, log this species if seen south of Perth metropolitan area.

Which whiting?

The whiting family (Sillaginidae) is important to recreational fishers in WA, having been identified as the most or second-most retained finfish category in several surveys. But with 10 different whiting species known in WA, six of them found in south-west waters, we're keen to know which whiting species are the most important to recreational fishers.

To help us find out, recreational fishers donated whiting frames through our *Send us your skeletons* program. From July 2010 to December 2012 more than 230 fishers gave us nearly 10,000 whiting samples caught in the West Coast Bioregion (WCB) and South Coast Bioregion (SCB). This was fantastic support for research.

So why do we need to know? Apart from King George whiting (*Sillaginodes punctata*), the largest and most easily recognisable, whiting species are often collectively known as 'sand whiting'. However, while they may look similar, they are different in their distribution, life cycle, growth, and the maximum ages and sizes they reach, so it's important to know which whiting recreational fishers are catching so we can best manage the stocks.

Which and where?

The WCB runs from near Kalbarri to east of Augusta and the SCB runs from east of Augusta to the South Australian border.

Most of the whiting samples were caught by boat-based fishers (94 per cent) in the WCB (84 per cent).

King George whiting.
Photo: Henrique Kwong



Recreational fishers caught all six species of whiting known in the WCB, and all three in the SCB. The main species caught in south-western WA were southern school whiting (*Sillago bassensis*) and King George whiting.

The catch composition varied, however, between bioregions, zones and habitat/depth (shore and boat-based fishing). For example, yellowfin whiting (*S. schomburgkii*) were caught mainly (89 per cent) by shore-based fishers, which fits with our knowledge of the species living mostly in shallow waters (<5 m).

Stout whiting (*S. robusta*) on the other hand, lives mainly in deeper waters (>15 m), so was only caught by boat-based fishers.

Boat-fishing catches

The graphs below show that if you catch a whiting while fishing from a boat in the metropolitan zone (WCB), it is most likely to be a southern school whiting (85 per cent of the catch), followed by western school (nine per cent) and King George whiting (six per cent), with yellowfin, stout and western trumpeter whiting making up less than one per cent.

In the South West zone (WCB), King George whiting was the most caught (71 per cent) from boats, with southern school whiting at 28 per cent. The figures were similar in the SCB, where King George and southern school whiting made up 66 per cent and 34 per cent of the boat catch, respectively.

From the shore

For shore-based fishers, the catch composition differed, with fishers catching only two per cent of all King George whiting samples.

In the metropolitan zone (WCB), southern school whiting was the most caught species (74 per cent), followed by yellowfin (11 per cent), western school (eight per cent), western trumpeter (four per cent) and King George (four per cent) whiting.

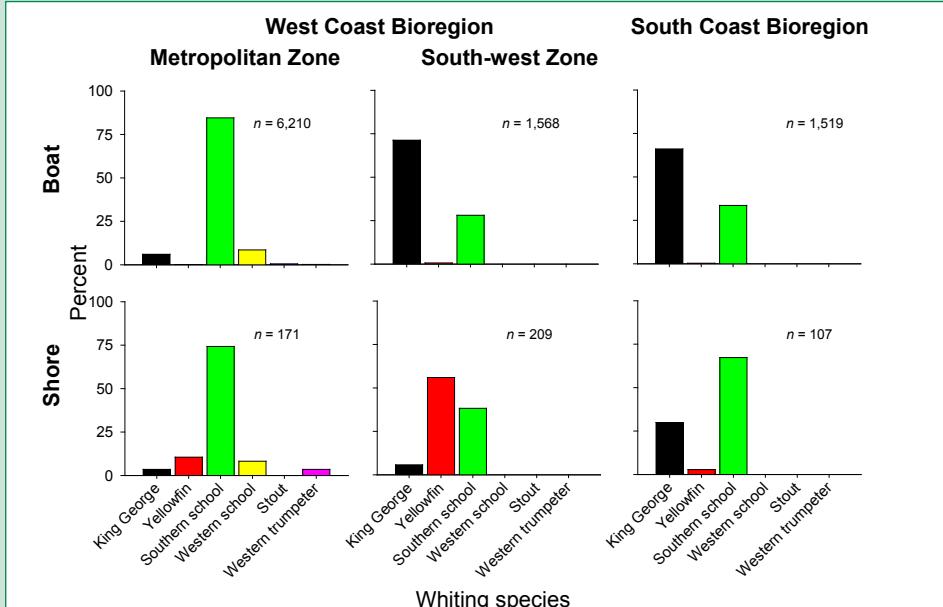
In the South West zone (WCB), yellowfin and southern school whiting were the main species caught – 56 per cent and 38 per cent respectively.

In the SCB, southern school (67 per cent) and King George (30 per cent) whiting were the main shore-based catches.

The terrific two

This work has identified the main recreationally caught whiting species in the south-west of WA as the southern school and King George whiting. For this reason, these two species are the focus of a stock assessment report that will help us with future stock management.

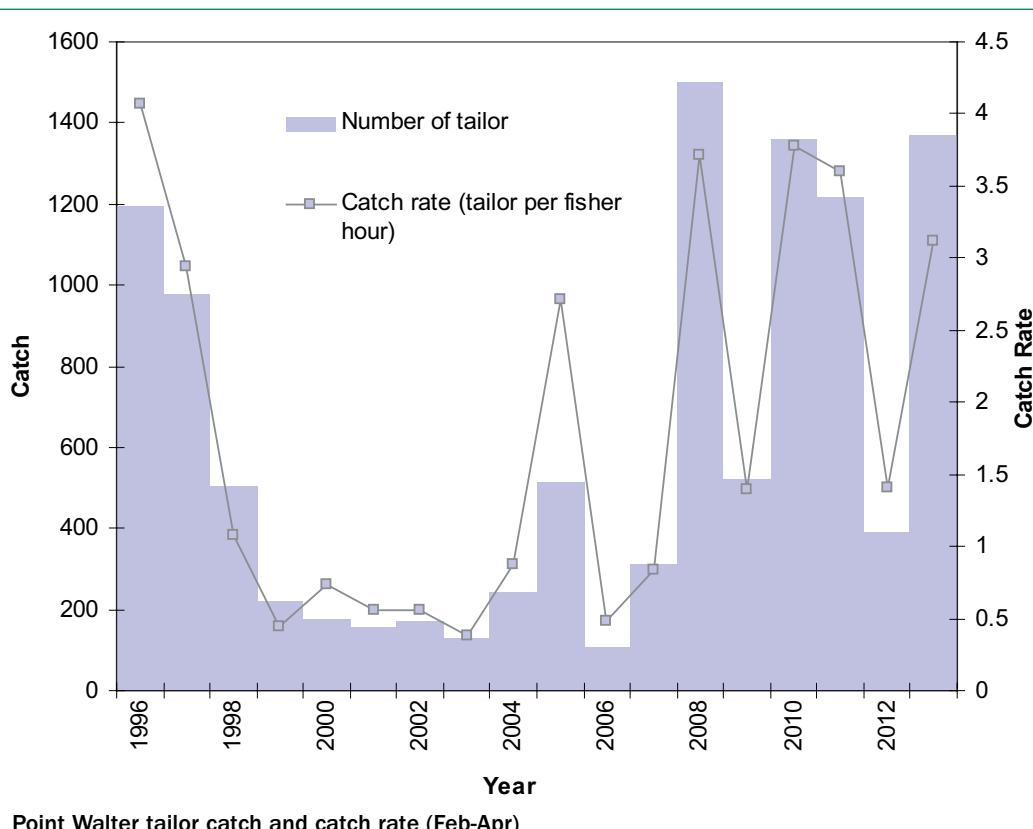
With the support of the recreational fishing community and funding from the State Government's Natural Resource Management program, we have improved our knowledge of the whiting catch composition, which is essential to ensuring whiting are managed sustainably and continue to be enjoyed by recreational fishers in the future.



Catch composition of whiting species donated by recreational fishers (boat and shore-based) from the south-west of Western Australia.

Little bites

- A big welcome to the new log-bookers who were recruited to take part in the blue swimmer crab research in the Swan-Canning, Leschenault Inlet and Geographe Bay. Remember, we'd love you to record all of your fishing activity in your log book, not just your crab catches. Please contact us with any questions you may have.
- In 2013, the nineteenth year of the tailor angling recruitment survey, juvenile tailor numbers were high, with 1,368 fish caught, the second-highest number caught in the long-running program's history.



Point Walter tailor catch and catch rate (Feb-Apr)

A juvenile tailor.



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':

September	Bob Longmore	(West Coast Bioregion)
October	Kim Meldrum	(West Coast Bioregion)
November	Tony Fanowrios	(West Coast Bioregion)
December	Jacintha Page	(Gascoyne Coast Bioregion)
January	John Hodder	(West Coast Bioregion)
February	Tony Sheehan	(West Coast Bioregion)
March	Craig Bibra	(West Coast Bioregion)
April	James Hart	(South Coast Bioregion)

Each winner will receive a stubby holder and water bottle.

Thank you for your ongoing support and happy fishing!

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Fish for the future