RESEARCH ANGLER PROGRAM

RAP Newsletter No.21 – September 2011

Welcome to the RAP Newsletter, giving you feedback on the data you are collecting and keeping you informed about what is happening at the Research Division of the Department of Fisheries.

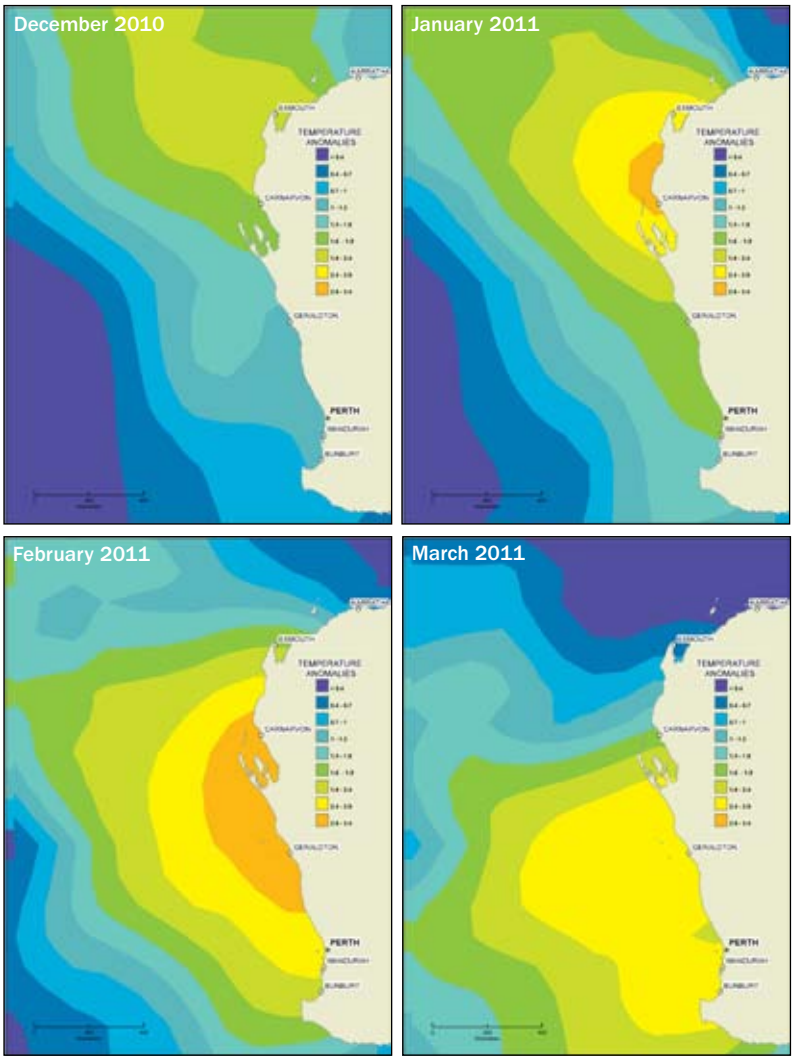
The 'marine heat wave' during the summer of 2010/11

A warming event, termed a 'marine heat wave' was experienced in the waters off the south-western coast of Western Australia during February and March 2011, when water temperatures rose to unprecedented levels. Surface temperatures were more than 3°C above the long-term monthly average over an extended area in February 2011, while the temperature anomaly in coastal waters exceeded 5°C for periods of a day or two in late February/early March in some localised areas.

On 5 May 2011, a scientific workshop was held at the Western Australian Fisheries and Marine Research Laboratories to review the oceanic processes and biological/fisheries consequences of the heat wave, and to create an opportunity to capture much of the anecdotal information that would otherwise have been lost.

This heat wave coincided with an extremely strong La Niña event and a near-record strength Leeuwin Current that constituted a major temperature anomaly, superimposed on the underlying long-term ocean-warming trend in waters off the Western Australian coast. While sudden changes in water temperature have been recorded in waters off the Western Australian coast in the past, there have been no previous records of such strongly elevated temperatures. Higher up along the mid-west coast, some coastal areas experienced temperatures some 5°C above average, resulting in a number of fish kills. There were also observations of whale sharks and manta rays much further south of their normal range.

The water temperatures have now returned to normal, and the Department of Fisheries is currently preparing a report on the scientific workshop held specifically to examine the so-called heat wave and its consequences for marine life of Western Australia.



The size and movement of the marine heatwave from November 2010 to March 2011. The yellow and orange areas indicate water temperatures 2.5-3.5C. above normal.

Measuring a fish

Garfish are one of the most frequently caught species in WA. They have a very distinctive large beak on their lower jaw. No size limits apply to garfish but when measuring them to record the length in your recreational fisher's log book please measure from the tip of the smaller upper jaw to the tip of the top lobe of the tail (i.e. end of the caudal fin).

How to correctly measure a garfish.

Point Walter Tailor Recruitment

2011 proved to be a year of strong tailor recruitment. With a catch of 1,215 fish, the 17th season of the Tailor Angling Recruitment Survey had the third highest catch since the program began.

From February to April, once a week volunteers and fisheries staff meet at Point Walter jetty and fish the Swan River for juvenile tailor using standardised fishing methods. The fish that are caught are measured and then released, providing Fisheries' scientists with a recruitment index – information on the youngest age classes of fish.

The catch rate for this year was 3.6 fish per fisher hour, higher than the average catch rate of 1.6 fish per fisher hour. Recently there have been a number of very strong recruitment years for tailor – 2008, 2010 and now 2011 all have had high catches and catch rates – a great sign for WA tailor stocks (see Figure 1).

The 2011 February length frequency graph shows two groups of fish – a cohort of smaller (i.e. shorter) fish and a cohort of larger (i.e. longer) fish (see Figure 2). In March you can see that the larger cohort disappeared, leaving only the smaller cohort. Tailor didn't seem to remain in the river once they reached a certain size – they moved out into the ocean, no longer needing to use the Swan River as a nursery once they are able to compete and fend for themselves.

The length frequency data from Point Walter also reveals the amazingly fast growth rate of juvenile tailor. The average length of the smaller cohort increases by 10 mm between March and April.

One of the components of the recently completed State National Resource Management (NRM) funded research project was to investigate the stock structure of tailor. Thanks to that research we now know that the two different size cohorts come from different places and have different birth dates (the larger cohort is older). This was determined from looking at Point Walter data in conjunction with environmental data and reproductive data from donated fish frames. As well as otolith (fish ear bone) analysis.

The larger cohort spawned in summer with these fish coming from the south. The smaller cohort spawned in the following winter and came from the north.

We now have more knowledge than ever before on WA tailor and the Point Walter research has been integral to that. Thank you to all those that volunteered this year.

Amber Howard

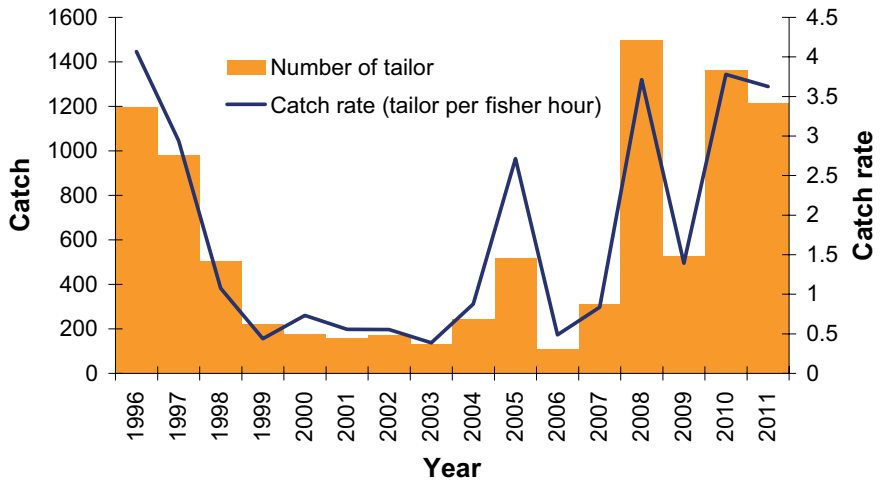


Figure 1. Catch and catch rate graph (Feb to April).

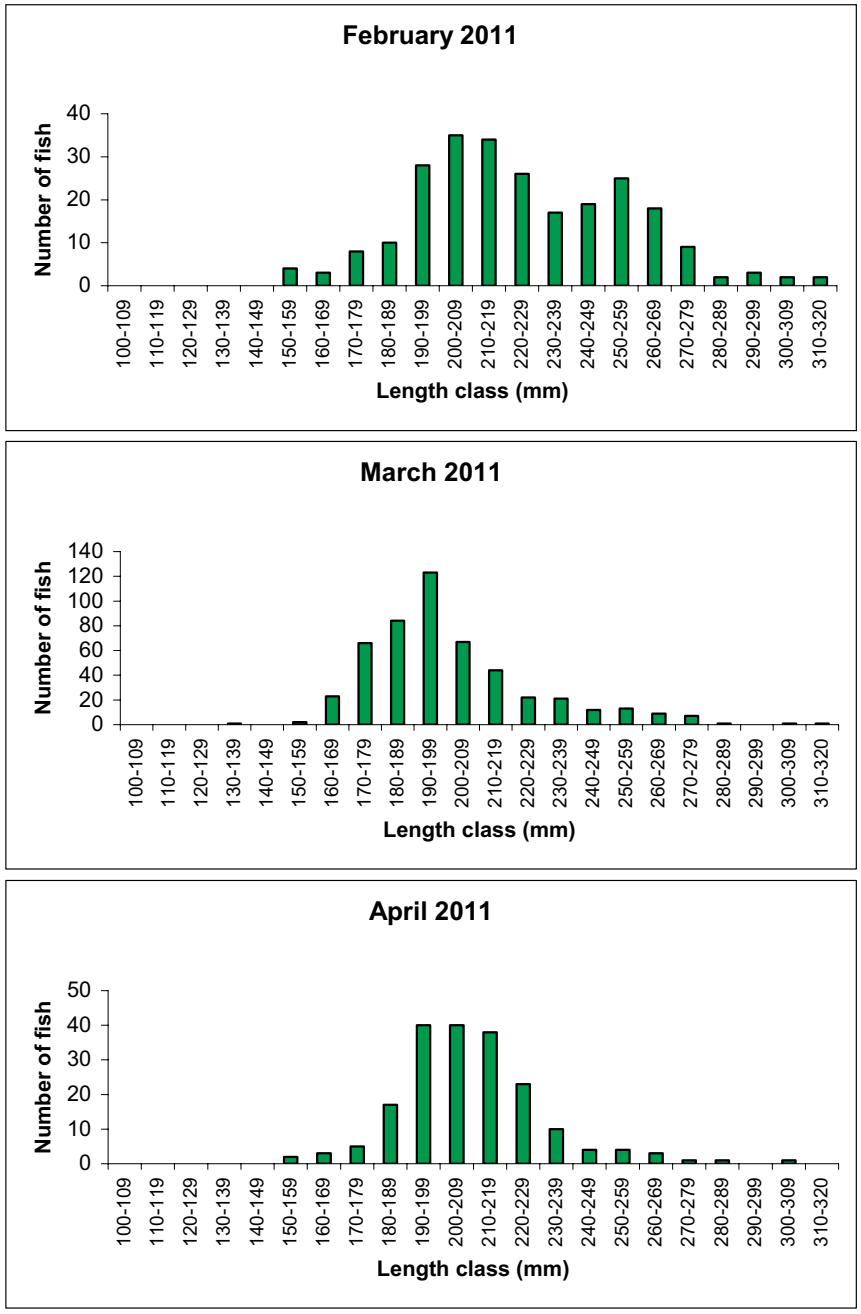


Figure 2. Length frequency graph.

Sexing a fish

A commonly asked question by RAP members, is how can you tell the sex of a fish? Except for the odd exception such as some wrasse, weed whiting and dhufish, there are generally no differing external characteristics between the sexes. However, internally, things are a bit different. The gonads vary between the sexes and here at the Department we use these to determine the sex and reproductive stages of the fish.

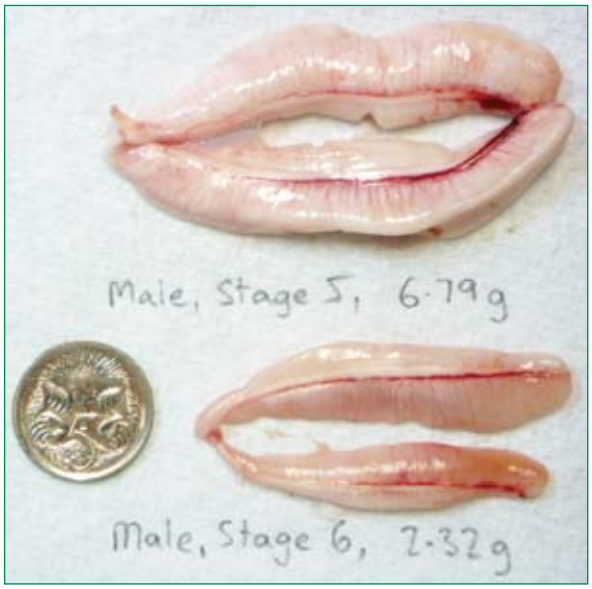
The gonads are found in pairs, within the body cavity with one on either side of the swim bladder. Male gonads are known as testes, the female as ovaries.

Below are the male testes and female ovaries from an Australian herring.

These gonads are enlarged and well developed as the herring were caught during their spawning period. The male gonads are white in colour with an obvious, red blood vessel running the length of the gonad. Male gonads are generally smaller and flatter than the female at a similar reproductive stage, and more fragile. The female gonads are generally yellow in colour, round in cross section and once they are developing, eggs can generally be seen at first as small, white grains of sand, then increasing in size and becoming more rounded and clear as spawning time approaches.

Outside of spawning time, the size of the gonads is greatly reduced. Male gonads are generally thin and straplike, usually less than half the length of the body cavity. Female gonads retain their roundness but are no longer swollen and no eggs can be seen, they are usually half the length of the body cavity.

Silas Mountford



Stage five and six male testes from an Australian herring.

Stage four (top) and five (bottom) female ovaries from an Australian herring.

Send Us Your Skeleton prize night a success

On Wednesday 17 August 2011 the Department hosted the inaugural Send Us Your Skeletons prize night to congratulate the twelve recreational angler winners who donated required fish frames to research during the last financial year.

The evening was held to present the prizes to the winners and to show appreciation for those who have supported the campaign.

The lucky grand prize winner was recreational fisher Henry Boogaard from Quinns Rocks who received a week-long charter fishing trip for two to the magical Montebello Islands, an incredible prize generously donated by Montebello Island Safaris. With return flights to Exmouth included by the Department the grand prize was worth over $6,000.

Some of the other great prizes up for grabs included fishing gear from BCF, a Bluewater tackle voucher and charter vouchers from Mills and Port Bouvard Charters. Other fishers won fishing rods from Fishing WA and Shakespeare and BriCap Distributors.

Chief Executive Officer Stuart Smith gave the opening speech on the night, saying, “This year has been one of the most successful for the collection of fish frames so far, with over 7500 fish frames donated by recreational fishers in 2010/2011.

Around 2,500 demersal frames (dhufish, baldchin groper and pink snapper) were donated in 2010/11, and it was also a really encouraging year for nearshore species (herring, tailor, garfish and whiting) frame donations, with over 5000 fish donated – a fantastic result.”

Fisheries ambassador Glen Jakovich with grand prize sponsors Liz and Jim Bungey (from Montebello Island Safaris) and the lucky winner Henry Boogaard from Quinns Rocks. Photo: Stephen Emery

The presentation night at Hillarys was a huge success and it was great to see recreational fishers, sponsors, Department staff, and members of the recreational fishing media who have helped spread the Send Us Your Skeletons message to the community, all come together for the one common goal – to ensure there’s *fish for the future*.

Caught a Blowfish Recently? Do You Collect Your Own Bait?

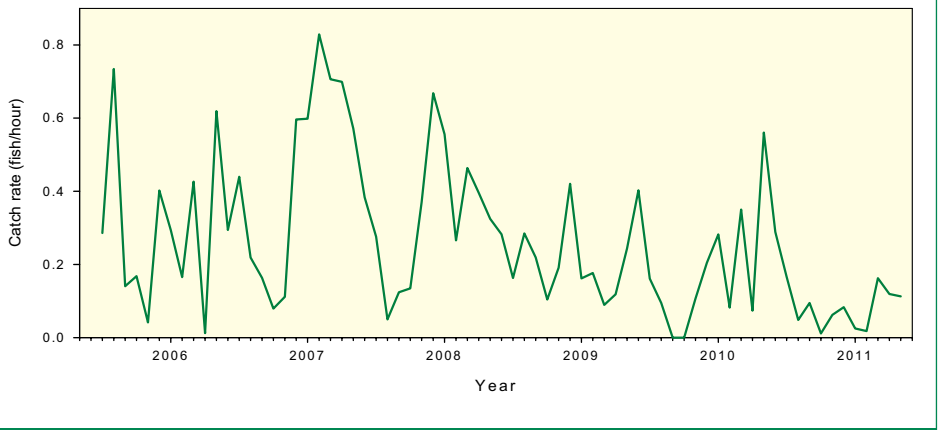
A school of adult blowfish in the sea off Fremantle. Photo: Henrique Kwong

Blowfish from Mangles Bay.

Remember fellow fishers, we like you to record everything you catch. Whether it is a prize fish or not, try to measure it or at least keep a count of how many you catch.

It appears the number of blowfish being reported by RAP fishers has declined recently. To determine whether this is a real or perceived decline we, at the Department, need to have as much data as possible. This means that we need you, RAP fishers, to remember to record your catch of blowfish in your logbooks.

It would also be great to have an idea if anyone is still collecting his or her own bait. So whether you're catching crabs, throwing a net for baitfish, digging for worms or collecting pippies, put it down in your logbook entries as a fishing activity.



Log book fishers, metro catch per unit effort (CPUE) of common blowfish.

Fisher of the month prize!

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':

January	Daniel Bedo	(West Coast)
February	Luke Dooley	(West Coast)
March	Don Howe	(West Coast)
April	Kevin Blacker	(West Coast)
May	Tony Fanowrios	(West Coast)
June	Mike Spencer	(South Coast)
July	Steve Downs	(West Coast)

Each winner will receive a RAP floating key ring and stubby holder together with a family pass to the Naturaliste Marine Discovery Centre. Future winners will be published in upcoming newsletters. Make sure you fill out your log book and get your returns in to ensure your chance of winning!

THANK YOU FOR YOUR ONGOING SUPPORT.

THE RESEARCH ANGLER PROGRAM IS RUN BY THE NEARSHORE AND ESTUARINE FINFISH RESEARCH TEAM

Dr Kim Smith – **Kim.Smith@fish.wa.gov.au**
Joshua Brown – **Joshua.Brown@fish.wa.gov.au**
Amber Howard – **Amber.Howard@fish.wa.gov.au**
Paul Lewis – **Paul.Lewis@fish.wa.gov.au**
Chris Dowling – **Chris.Dowling@fish.wa.gov.au**
Silas Mountford – **Silas.Mountford@fish.wa.gov.au**

Mail: Research Angler Program, Department of Fisheries, PO Box 20, North Beach WA 6920
Phone: +61 (08) 9203 0111 **Fax:** +61 (08) 9203 0199 **Website:** www.fish.wa.gov.au
Deliveries: 39 Northside Drive, Hillarys, Western Australia 6025 **ABN** 55 689 794 771

Department of **Fisheries**

Fish for the future

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