



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.

Recreational fishers get on board Department of Fisheries' fish frames campaign



Avid fisho Glen Jakovich shows a deft touch with a filleting knife at the Department of Fisheries fish frame collection event at Hillarys Boat Harbour. Photo: Matthew Terwey

Recreational fishers are getting behind the Department of Fisheries call for donations of fish frames of key species for research with a chance to win a fantastic fishing trip to the Montebello Islands along with other fishing prizes.

Fisheries scientists are able to obtain critical biological information from fish frames (skeletons with the heads and guts in tact) to determine the 'stock status' of fish species and establish whether a fish stock is in a healthy state or not.

The Department of Fisheries is continuing its appeal to recreational fishers for the key demersal species; Western Australian dhufish, pink snapper and baldchin groper from the West Coast Bioregion (north of Kalbarri to east of Augusta) to help monitor the recovery of the West Coast demersal stocks.

In addition, the Department's research division is also asking recreational fishers to donate their frames for nearshore species too, including Australian herring, tailor, whiting (all species) and garfish from the West Coast Bioregion and from the South Coast Bioregion (Black Point to the WA/SA border).

The good news for fishers is that there are a host of fantastic fishing-related prizes to be won in a prize draw for all those who donate frames and provide their contact information and details of their fish captures (date and general location).

The top prize, generously donated by Montebello Island Safaris, is a week-long charter fishing trip for two to the Montebello Islands, and along with the other prizes on offer, is already increasing community interest in the campaign. A recent filleting service provided by the Department at Hillarys boat ramp, featured the filleting skills of AFL commentator and avid fisho, Glen Jakovich, which saw around 20 anglers donate nearly 100 assorted fish frames in the space of just four hours.

Department of Fisheries finfish scientist Joshua Brown said the response to the event and the campaign from the recreational fishing community and industry had been "excellent."

"It was great to see how enthusiastically fishers responded to the filleting event. Many we spoke to on the day pledged their ongoing support with the donation



Department of Fisheries research scientist Joshua Brown with Murdoch University masters student Elena Sulin with a large King George whiting. Photo: Matthew Terwey

of more frames in the future. We are also continuing to get good support through our RAP program." said Joshua.

"It's also been great to see many in the recreational fishing industry supporting us by donating prizes for the fish frame prize draws. The stock assessment we are doing through studying these fish frames is absolutely vital if we are to build up a good picture of what's going on out there and ensure there's fish for the future. I think that's something we all want and many people are playing their part in that."

For more information about how and where to donate fish frames and for more details about the competition log on to www.fish.wa.gov.au/frames or call **9203 0111**.

S.I.R.F.S. up!

After two months of regional and metropolitan preliminary work, the Statewide Integrated Recreational Fishing Survey (SIRFS) steps up a level this month. The study is the most wide-ranging of its kind, covering boat fishers along the entire length of the Western Australian coast. The SIRFS has several important related components – an individual fishing diary that is ‘uploaded’ by phone interview on a regular basis, video monitoring of selected boat ramps to assess activity patterns, an ‘on-ramp’ interview where fisher catches are measured and weighed, and a recall survey at the end of the year for a subset of fishers. All these methods of quantifying recreational fishing will be brought together and integrated to provide the best estimate yet of species caught, and the level of fishing effort expended.

The selected diary holders will already be aware of their participation in the SIRF study, however anybody who retrieves a boat at any of the major ramps around the state is likely to encounter an interviewer at some stage. He or she will be dressed in a blue shirt with the word RESEARCH in large letters on the back, and be carrying an ubiquitous clipboard!

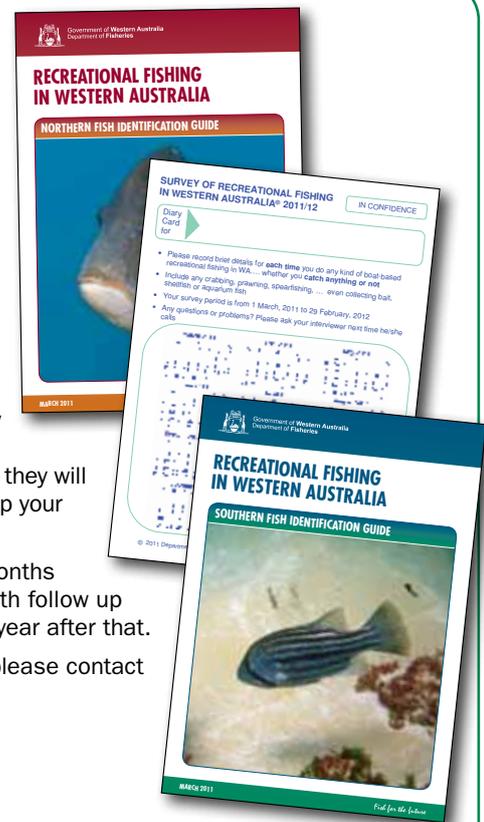
The Department will also be trialing a number of up-to-date electronic means of collecting data. Depending on the particular survey method, you will either be asked a few simple questions about your fishing, or asked questions AND requested by the

interviewer if they can measure and weigh each fish, crab or lobster in your catch. It is this vital information that will allow research statisticians to compare the type, size, seasonality and location of captures to those figures reported by the commercial sector. If measuring the catch the interviewers will try to be as quick as possible so as not to hold you up and they will have ice on hand to help keep your catch as fresh as they can.

This SIRFS will run for 12 months (until end February 2012) with follow up work planned every second year after that.

For any further information please contact Brent Wise on **9203 0111**.

Tim Leary



Release of the resource assessment framework (RAF) for finfish resources in Western Australia

The Research Division of the Department of Fisheries WA has outlined its consolidated approach to monitoring and assessing the entire State's finfish resources (scalefish, sharks and rays) in a newly published document, *The Resource Assessment Framework (RAF) for Finfish Resources in Western Australia*. This document distills the Department's approach to monitoring and assessing more than 3,000 species of finfish in the State's waters, including fishes in estuarine, nearshore, demersal and pelagic waters, and from inland to the Exclusive Economic Zone (200 nautical miles from shore).

Capturing accurate information on the resource status and threats to the sustainability of such a highly diverse range of species spread over more than 12,800 km of coastline, poses a significant challenge for the Department. Most national fishery agencies typically manage far fewer species along significantly smaller stretches of coastline.

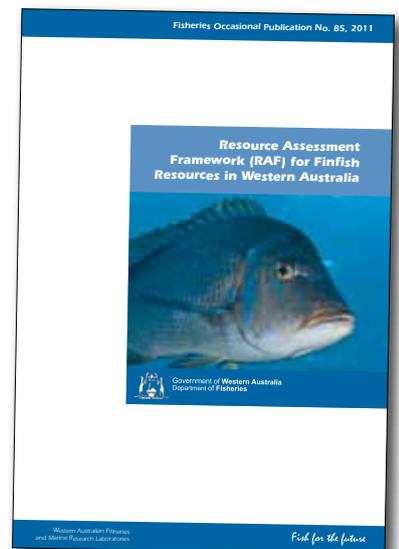
To manage this broad scope, the Department divides the State into 'bioregions' – four marine bioregions, plus two inland bioregions. Within each marine bioregion, each species of fish is allocated a single 'suite' – estuarine, nearshore, inshore demersal, offshore demersal or pelagic. 'Indicator species' from each suite are then selected, based on a range of biological, ecological, social and economic considerations, allowing the Department to focus its resources on a manageable number of species.

For example, West Australian dhufish, pink snapper and baldchin groper were selected for monitoring to determine the status of more than 130 species in the West Coast inshore demersal suite of fishes. Two independent scientific reviews of this approach have validated the use of indicator species to assess the status of this important fishery resource.

Nevertheless, the status of each suite within each bioregion assessed in this way is only one factor in the Department's management and prioritisation processes. External impacts to the stock, the risk to the commercial value (the Gross Value Profit) of fisheries exploiting the resource and the risks to the social amenity value provided by the resource, all go into the mix for fishery managers when making management decisions.

The paper, *The Resource Assessment Framework (RAF) for Finfish Resources in Western Australia* was developed in conjunction with scientists and staff from the Department's Finfish Branch, Stock Assessment and Data Analysis Branch and Division of Aquatic Management. The full document can be downloaded from the Department's website at (www.fish.wa.gov.au/docs/op/op085/index.php?0706).

Brett Molony



Fisher of the month prize!

The RAP 'fisher of the month' prizes for May, June, July and August were decided by randomly drawing one log sheet returned in each month.

Congratulations to the following 'fishers of the month':

September	Chris Gislingham
October	Jacinta Booth
November	Anthony Aris
December	Jeff Empson

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!

Whiting identification

Whiting (Family: Sillaginidae)

The whiting family is common throughout the Indian Ocean and the western Pacific Ocean (McKay 1992). There are 31 different species of whiting currently known, with at least 10 of these found in WA waters. These species, while similar in appearance, are often quite different in either the habitat they occupy (estuarine, nearshore and offshore waters to a depth of about 180 metres), the size they grow to, how long they live and the length/age at which they first reach maturity. Understanding these characteristics is important to sustainably manage this family.

In WA, whiting are one of the most common fish caught by recreational anglers. If fishing in the West Coast Bioregion (Kalbarri to Augusta) there are six different whiting species that you could potentially catch. There is the much-loved King George whiting, the largest of the whiting family reaching a length of over 70 cm and obtaining a maximum age of around 15 years in WA. Of the other whiting species, these are often grouped together and referred to as sand or school whiting, but from careful examination, it is easy to distinguish these species from one another. Understanding which species of whiting are the most commonly captured by fishers will allow the Department to better focus its monitoring programme.

Josh Brown

Whiting species in the West Coast Bioregion

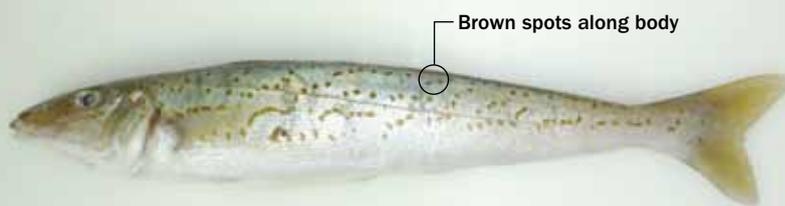
King george whiting

Sillaginodes punctata

Identification: Numerous small brown spots on side. Largest of all whiting.

WA Distribution: South of Jurien

Maximum Size: 72 cm



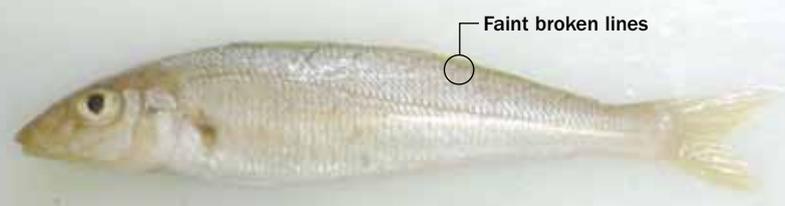
Southern school whiting

Sillago bassensis

Identification: Diagonal faint, broken brown bars along upper side. No spots on pectoral fin base.

WA Distribution: South of Geraldton

Maximum Size: 36 cm



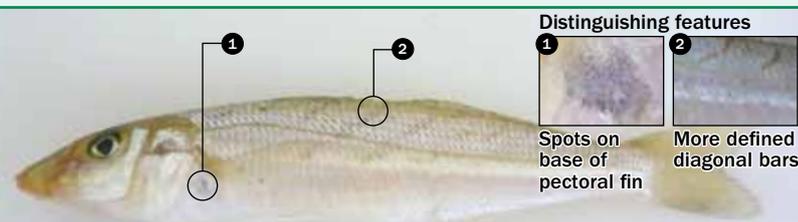
Western school whiting

Sillago vittata

Identification: Well defined brown bars along upper side. Dark spots on pectoral fin base distinguish this species from southern school (see insert).

WA Distribution: Geographe Bay to Exmouth

Maximum Size: 35 cm



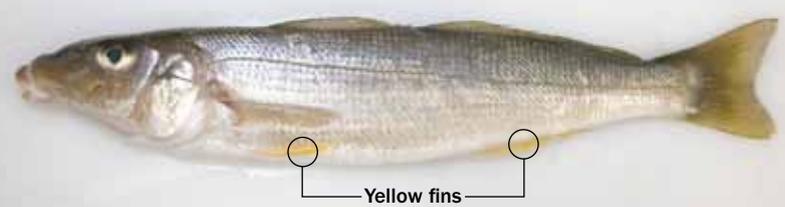
Yellowfin whiting

Sillago schomburgkii

Identification: Yellow ventral and anal fins. Weakly forked tail.

WA Distribution: South of Shark Bay

Maximum Size: 42 cm



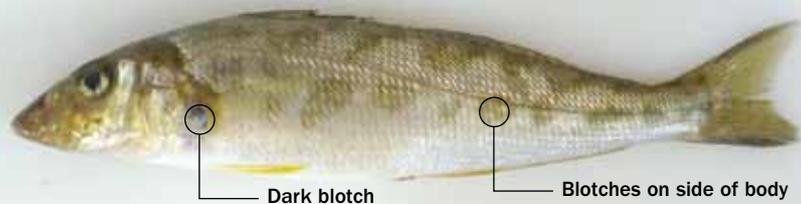
Western trumpeter whiting

Sillago burrus

Identification: Dark blotches on side of body. Dark blotch on pectoral fin base.

WA Distribution: North of Geographe Bay

Maximum Size: 31 cm (usually < 25 cm)



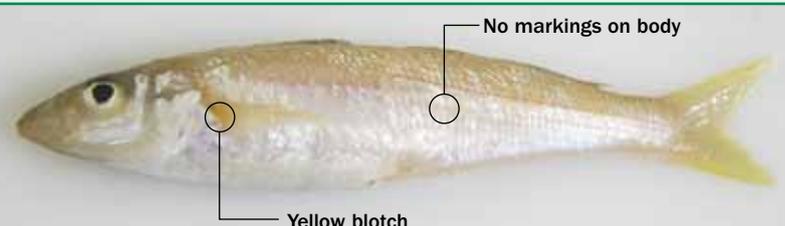
Stout whiting

Sillago robusta

Identification: May be a yellow blotch behind the pectoral fin. No other distinguishing markings. Strongly forked tail.

WA Distribution: Fremantle to Shark Bay

Maximum Size: 30 cm (usually < 25 cm)



Monitoring the status of the West Coast Demersal (WCD) Scalefish Fishery

In 2009/10, the Department of Fisheries' Research Division collected from recreational fishers, 623 dhufish, 484 snapper and 311 baldchin frames at fishing competitions, boat ramps and by donations across the West Coast Bioregion. In addition, a total of 1,718 frames were collected from commercial fishers. From each fish frame, we collected length and sex data and removed its otoliths. The age of each fish was then determined.

As an example, the age structure for dhufish from all frames/otoliths provided by recreational fishers in 2009/10 is shown in Figure 1. The blue circle shows that there were no fish in our samples that were below five years of age. Those fish haven't reached the minimum legal length (MLL) of 500 mm yet and are not retained. Therefore, they are not represented in our samples. You can also see that the number of fish in our samples tend to increase from age 5 to 8. That's because, as those fish get bigger, they become more susceptible to being caught and are then retained.

There are a relatively large number of 8 and 11 year olds in the age structure from 2009/10 (Fig. 1). In fact, they each represented about 18 % of all samples. This suggests that better than average spawning occurred 8 and 11 years ago, i.e. in 2002 and 1999. In other words, more young were produced in those years relative to other years. These are often called strong recruitment years. However, we need to wait a couple of years before we can be sure that 2002 was a strong recruitment year, as those fish are still becoming susceptible to fishing. Dhufish are fully susceptible to fishing by about 10 years of age, in other words when all dhufish of that age have reached the MLL.

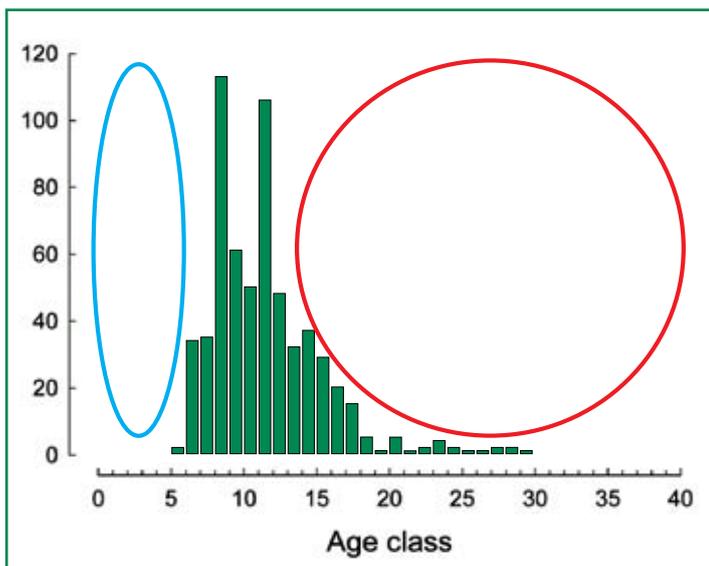


Figure 1. Age structure for West Australian dhufish collected from recreational fishers in the West Coast Bioregion in 2009/10. The blue circle highlights the age of fish below the MLL and the red circle indicates the small number of old fish.

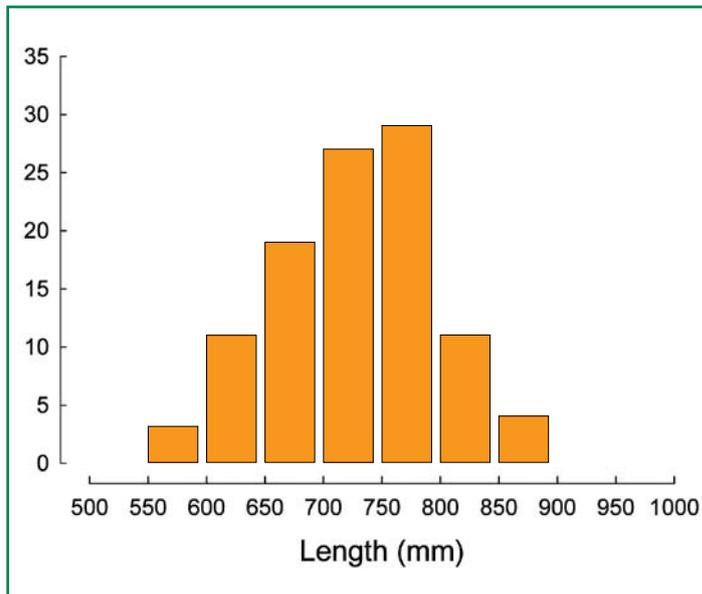


Figure 2. Length-frequency histogram of West Australian dhufish born in 1999 and donated by rec. fishers in 2009/10.

Dhufish from the 1999 year-class have now all reached the MLL, but they range substantially in length (from 550-900 mm; Fig. 2). As 1999 was a strong recruitment year, you might have found that the dhufish you were catching in 2009/10 were often in that range, because those fish were (and still are) relatively abundant.

Dhufish can reach about 40 years of age. However, there were very few dhufish above the age of 15 in the samples from 2009/10 (Fig. 1). In fact, 90 % of the fish collected were less than 16 years old. That's akin to not many people living longer than 30 years if most people live to about 80; we'd be worried if that was the case. Similarly, that's why we have ongoing concerns about the status of stocks of dhufish and other demersal species in the West Coast Bioregion and why significant changes in management occurred. Our ongoing role is to continue to monitor stock status and recovery so please continue to help by donating your fish frames. The ongoing support of rec fishers is essential for us to be able to monitor the recovery of these important fish resources. We thank you again for your contribution in 2009/10 and look forward to your ongoing support.

The West Coast Demersal Team

(Dr David Fairclough, Ian Keay, Brett Crisafulli, Rhys Allen and Kim Clayton).

THANK YOU FOR YOUR ONGOING SUPPORT.

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Fish for the future