



Department of
Primary Industries



NSW Research Angler Program

Newsletter No. 1 – December 2013

Welcome to the first ever NSW Research Angler Program newsletter – providing you, the research anglers and spearfishers of NSW, feedback on the data you are collecting by donating your frames to research.

“Kick off”! – September 2013



Julian Hughes records data from a donated mulloway frame in the laboratory.

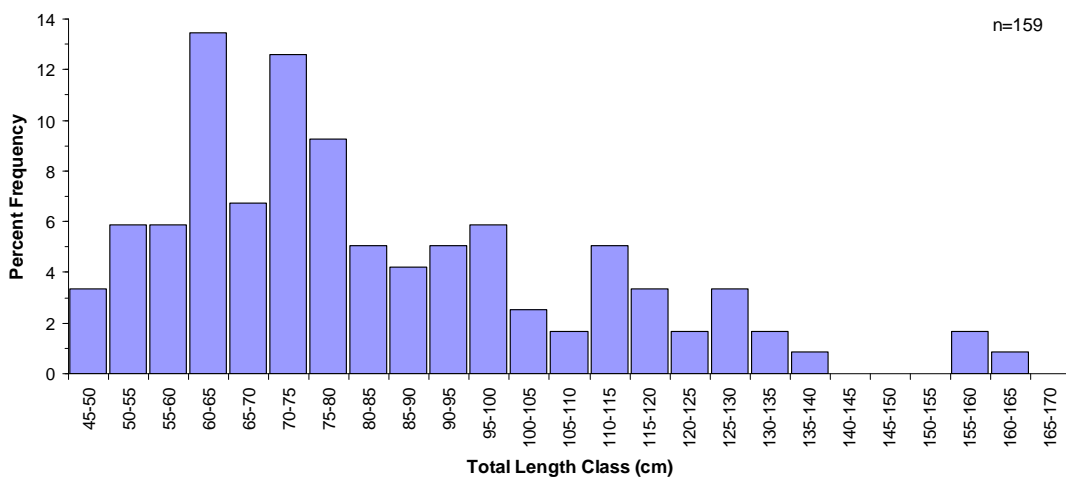
After almost 9 months of behind-the-scenes organisation, the NSW Research Angler Program officially commenced at the start of September 2013.

This innovative new program is generously funded by the Recreational Fishing Trust and aims to improve our understanding of important recreational fish populations by encouraging the estimated one million recreational fishers in NSW to donate the frames of fish they catch to research.

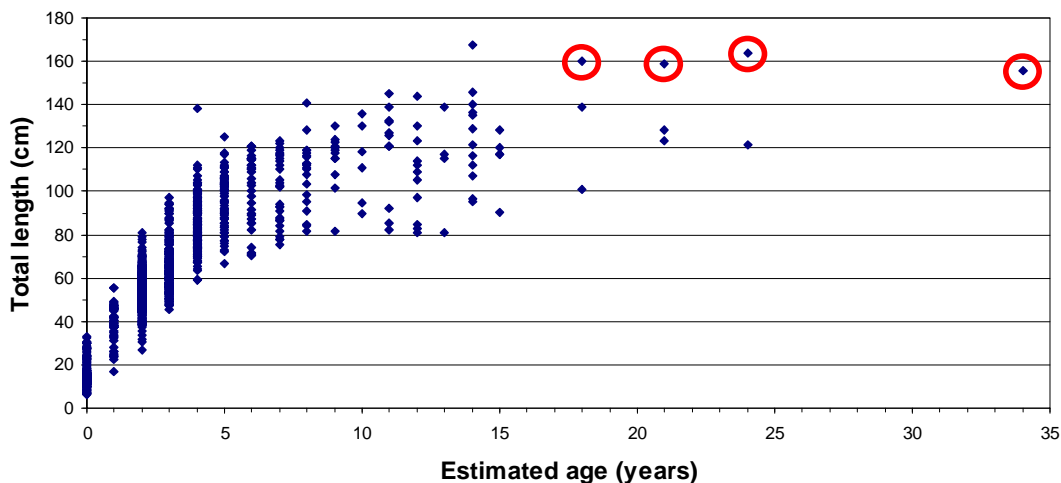
The program enables passionate recreational fishers to be actively involved in the collection of data which will ultimately be used in the assessment and monitoring of their favourite species.

Project Progress – Spring 2013

To date, data from 159 mulloway (*Argyrosomus japonicus*) have been collected from recreationally-caught individuals donated to the program ranging in size from 46.3 to 164.0 cm. Excitingly, donations of frames to the program has provided data from the four oldest and largest mulloway so far recorded in NSW including the second oldest individual recorded in Australia; a 34 year old fish caught in the Shoalhaven River in February 2012! The data this program will collect from the large (and potentially old) individuals recreational mulloway fishers are so good at targeting will dramatically improve our overall understanding of the mulloway stock in NSW.



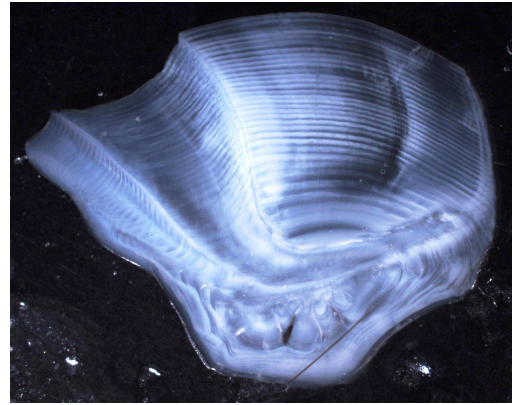
Length frequency of mulloway donated to the NSW Research Angler Program in September, October and November 2013.



Size-at-age data for mulloway in NSW: despite the program running for just three months, recreational donations of mulloway frames have resulted in access to information from the four oldest mulloway so far recorded in NSW (circled points).

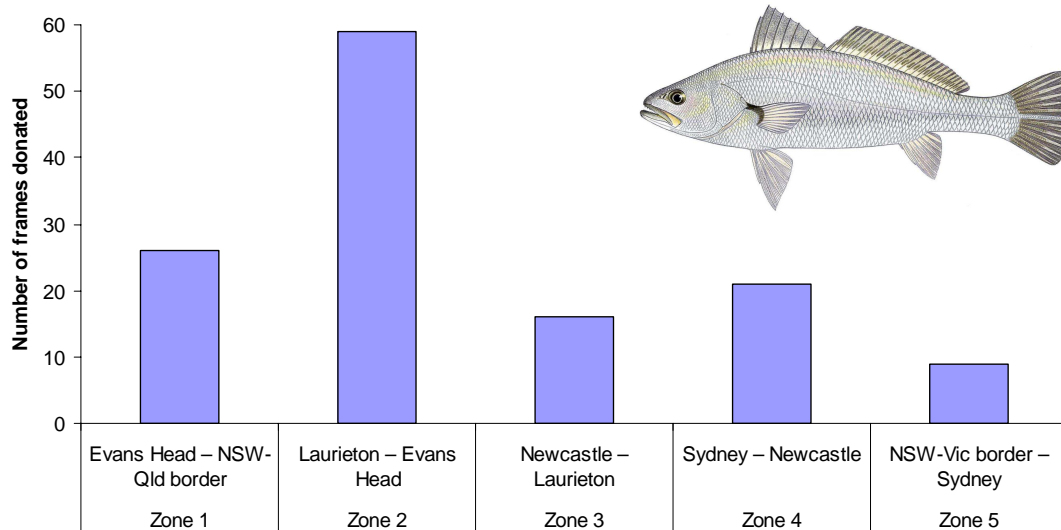


Vaughan Little with his 47.5 kg mulloway caught from the Shoalhaven River in February 2012. Photo: Fishing World



Microscope image of the sectioned otolith from this fish showing clearly the 34 growth rings used to estimate its impressive age.

The graph below shows the number of mulloway frames donated to the program by recreational fishers to the end of November 2013. The graph shows that the program has proven very popular with keen mulloway fishers from the outset, particularly on the Mid-North Coast where almost 60 frames have so far been donated; over 40 from the area around Coffs Harbour alone. We aim to collect data from at least 300 frames from each of the sampling zones along the NSW coast by the end of September 2015. Not surprisingly, we are on track to collect adequate numbers of mulloway frames from Zone 2 (Laurieton – Evans Head) but more frames are needed from Zones 1, 3, 4 and 5.



Number of mulloway frames donated by recreational fishers to the NSW Research Angler Program from the start of the project to November 2013. Mulloway image © Bernard Yau

The collection of a sufficient number of samples from each zone is crucial in developing the age-composition data that is required to assist Fisheries NSW in monitoring the NSW mulloway stock. It is also critical that we get a good ‘snapshot’ of the sizes and ages of mulloway collected from the different habitats where mulloway are caught – in estuaries, from the shore (beach, rocks, breakwalls) and offshore. To date, most of our donations have come from fish caught from shore (79%) or from estuaries (20%), so we really need your help to increase the numbers of frames from

mulloway caught in the offshore fishery. If you fish for mulloway offshore, please don't hesitate to contact us (research.angler@dpi.nsw.gov.au) and we will direct you to your nearest drop-off point (or personally collect the frames if practicable). Hopefully some good weather through summer will contribute to some good offshore mulloway catches and frames donated.



Novice spearfisher and keen research angler Heath Folpp with a 33 kg mulloway from the Mid-North Coast.

The enormous popularity of mulloway with spearfishers has been well demonstrated with more than 20 donations to the program made by enthusiastic members of the NSW spearfishing community, including two of the largest fish (see below).

Special mention must be made of the contributions of the North Shore Underwater Club, Sans Souci Dolphins Spearfishing Club and the South Sydney Amateur Fishing Association; all of whom have hosted presentations on the program by researchers at their monthly meetings.

If you are a member of a fishing club (spearfishing or angling) and are interested in having a presentation on the program made at your club, please don't hesitate to get in contact with us (research.angler@dpi.nsw.gov.au) and we'll organise for someone to come 'revv up' your fishing club!



Weigh-in and raffle at the 21st annual Hawkesbury Classic.

On November 10, the Research Angler Program team attended the weigh-in of the 21st annual Hawkesbury Classic fishing tournament at the Pitt Town Sport & Rec Club. The Hawkesbury River is the spiritual home of mulloway fishing in NSW and didn't disappoint this year with our team measuring and removing otoliths from some fine specimens up to 107.0 cm caught over the 3 day event.

Despite the rain, we spoke to a lot of keen mulloway anglers on the day and were also lucky enough to be interviewed by Hawkesbury Community Radio!



Thanks to the Pitt Town Fishing Club for getting us involved in such a great event and to all the competitors who let us collect data from their catches; you will all receive one of our Research Angler Program research feedback certificates.

Left: 107 cm mulloway caught by Craig Williams at the 21st annual Hawkesbury Classic.

What do we do with your frames?

From each donated frame, we can measure the length of the fish and by removing the otoliths (also known as earbones or jewels) from the skull and analysing them, we can estimate the age of the fish. These two simple pieces of biological data on each fish provide Fisheries NSW scientists with much of the information required for age and length-based monitoring of the stock.

Donated frames are periodically collected by Fisheries NSW staff from one of the 26 participating tackleshop

and Fisheries Office drop-off points between Tweed Heads and Bermagui.

Once in the laboratory, the length, sex and reproductive state of each donated fish are recorded. The dissected otoliths are prepared for age estimation by cutting a very thin slice (called a section) through the core of the otolith, mounting it on a glass slide and then viewing it under a microscope. We then count the number of growth rings in the section to estimate for how many years the fish has been alive.



Extracting otoliths from a donated 63.0 cm mulloway in the lab.

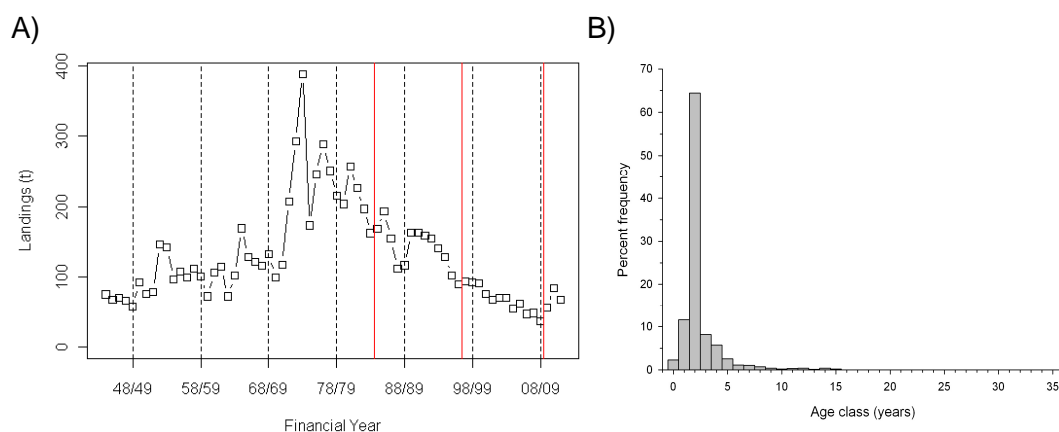
Age data from collected fish is then used to build a picture of the age structure of the overall population. These combined data detail how many fish there are of each age in the stock, which helps us evaluate the health of the species. By collecting data over time we can also see how the age structure of the stock may be changing.

Why start with mulloway?

The program has “kicked off” with one of NSW’s most iconic recreational fish species, the mighty mulloway. Mulloway were identified as a priority species for collection of biological data from fish caught by the recreational fishing sector

because of both their enormous popularity amongst anglers and spearfishers, as well as ongoing concerns for the health of the mulloway stock. These concerns for the status of the mulloway stock in NSW stem from several pieces of information:

- Routine monitoring by Fisheries NSW has shown that commercial landings of mulloway have been steadily declining since the mid-1970s with current landings amongst the lowest recorded for this species.
- Anecdotal reports from anglers and spearfishers has also suggested that the number of large individuals encountered has dramatically decreased in the last 20 years
- The species is currently assessed as being “overfished” in NSW, which means that the mortality rate due to fishing of juveniles and adults is too high and there are too few large fish in the population to maintain sufficient recruitment for future sustainable harvesting.
- While mulloway can live for more than 30 years, the majority (~98%) of the individuals Fisheries NSW have so far collected age data from are less than five years old. For a species with this longevity as well as relatively fast growth, a healthier stock would have more old individuals than we see.



A) Commercial landings (including available historical records) for mulloway in NSW from 1945/45 to 2012/13. B) Age structure for mulloway in NSW: despite being able to live for over 30 years, 98% of the mulloway so far collected by Fisheries NSW are less than 5 years old.

The concerns for the status of the mulloway stock in NSW have culminated in the recent changes to the management of mulloway in NSW and the Research Angler Program will also provide useful data for evaluating the effects of these changes on the mulloway stock. For full details of these changes, please go to:

<http://www.dpi.nsw.gov.au/fisheries/recreational/saltwater/sw-species/mulloway/rules>

How do I donate my frames to research?



Mulloway frame and label bagged and ready for donation.



Mulloway head bagged and ready for donation. Remember, to be useful for research, the length of the fish must be recorded on the label containing capture details for all otolith or head-only donations.





It's so easy! Just fillet your catch and place the rest into a plastic bag or similar. Frames can be donated fresh or frozen, but must be accompanied by a label containing some basic capture details:

- **Who** caught the fish – name and contact details (phone number, postal or email address) so we can provide research feedback and enter you into the monthly prize draw
- **When** the fish was caught – date.
- **Where** the fish was caught – just so we can determine a rough geographic location and whether the fish was caught in an estuary, from the shore (rocks, beach or breakwall) or offshore.

If you are unable to keep the entire frame, you can just donate the head or the otoliths as long as information on the total length of the fish is included with the capture details.

Every mullet frame donated to the program entitles the donor to be entered into a monthly draw to win some great fishing prizes!

Research Feedback

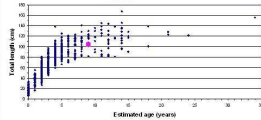
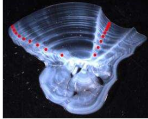
NSW Research Angler Program
Frame Donation Certificate – Research Feedback

Species : *Argyrosomus japonicus* (Mullet)

Donor name : ... Barry Mundi.....

Your fish was estimated to be ...9... years old

Your fish was ...104... cm total length

This is the sectioned otolith from your fish which we used to estimate its age. Annual rings are marked with red dots

Additional comments :

This is where your fish fits into the data we currently have for mullet in NSW. Your fish is represented by the purple point

For every mullet frame donated to the program, we will also send the donor a Research Feedback Certificate detailing the biological information (length, estimated age and sex) collected from the fish they caught as well as information on how their fish fits into the data Fisheries NSW currently have for mullet.

Left: Example Research Feedback Certificate.

Drop-off Locations

Many thanks must go to all participating drop-off locations for their enthusiastic involvement in the program. This program would simply not be possible without your continued support. The list of drop-off locations for donated frames is changing regularly as more tackle retailers become involved in the program. Our most recent addition to our list of participating tackleshops is North Haven Bait & Tackle (Shop 1 / 559 Ocean Drive North Haven, T: 6559 5644), so if you're picking up a few mulloway around the rivers, beaches and headlands of the Camden Haven area please drop in and visit Brooke or Lindsay at the shop. They are ready to receive your frames!

For the full and up-to-date list of places where you can drop-off your frames, please visit:

<http://www.dpi.nsw.gov.au/fisheries/recreational/researchangler/drop-off-locations>

The Top Fives!

Our sincerest thanks to the following dedicated mulloway Research Anglers who have made it into our "Top Five" list of frame donors for Spring 2013. Northern NSW seemed to be the place to be through spring with five out of six "Top Five" donors coming from the Mid-North Coast.

Top Five Frame Donors (as of 9 December 2013):

| Donor | Region | No. frames donated |
|------------------------|----------------|--------------------|
| Paul Blade | Coffs Harbour | 14 |
| John St. Vincent Welch | Evans Head | 12 |
| Cameron Doak | Port Macquarie | 7 |
| Mitch Burns | Coffs Harbour | 6 |
| Scott Thornton | Batemans Bay | 5 |
| Paul Butcher | Coffs Harbour | 5 |

Sydney Northern Beaches spearos Adam Price and Rob Clark have donated frames from some impressively large (and old) mulloway, but our oldest mulloway (and the second oldest so far recorded in Australia!) remains Vaughan Little's 34 year old from the Shoalhaven River.

Top Five largest fish donated and associated ages (as of 9 December 2013):

| Donor | Total length (cm) | Estimated age (years) | Region |
|----------------|-------------------|--------------------------|-------------------------|
| Adam Price | 164 | 24 | Northern Beaches Sydney |
| Mark McCabe | 159 | 21 | Hawkesbury River |
| Vaughan Little | 156 | 34 | Shoalhaven River |
| Rob Clark | 140 | 14 | Northern Beaches Sydney |
| Warren Forbes | 133 | <i>Not yet processed</i> | Mylestom |
| Paul Blade | 133 | <i>Not yet processed</i> | Coffs Harbour |

Monthly Prize Draw Winners!

The lucky monthly NSW Research Angler prize winners for spring were decided by randomly drawing one frame donor from each month.

Congratulations to the following Research Anglers:

| | | |
|-----------|-----------------------|-----------------|
| September | Evan Leeson | (Sydney) |
| October | Mischka Cuzius | (Coffs Harbour) |
| November | Scott Thornton | (Batemans Bay) |



Each winner will receive either a \$50 gift voucher generously donated by MO Tackle Coffs Harbour (for use in-store or online) or a mulloway-ready lure pack worth \$50

Future winners will be published in upcoming newsletters and on our website. Don't forget to include your contact details (phone number, postal or email address) on the label accompanying your donated frame to ensure your chance of winning!

Remember, if you're going to catch and keep a mulloway for a feed, please fillet your fish and donate the frame to research – WE NEED YOUR SKELETONS!

**THANK YOU FOR YOUR ONGOING SUPPORT.
KIND REGARDS AND HAPPY FISHING!**

The NSW Research Angler Program is part of the Resource Assessment & Monitoring Unit of the Fisheries NSW Research Branch and is generously funded by the NSW Saltwater Recreational Fishing Trust and the NSW Department of Primary Industries.

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Email: research.angler@dpi.nsw.gov.au

NSW GOVERNMENT | Department of Primary Industries

Donate your Mulloway frames Help ensure there's fish for the future

If you are a recreational Mulloway fisher we need your help to collect crucial biological information for use in assessing the stock of this great fish. All you need to do is send us your Mulloway frames (skeletons with the head and guts intact). This research is critical for science based management to ensure high quality fishing opportunities for Mulloway into the future. By donating your frames you can do your bit for Mulloway in NSW and you could also win some great fishing prizes.

Further information: For full details on how and where to donate your frames visit www.dpi.nsw.gov.au/fisheries/recreational/researchangler or contact us direct via email at research.angler@dpi.nsw.gov.au.

Recreational Fishing Trusts

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