



Newsletter No. 34
July 2016



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.

A big year for salmon in 2016

So far, 2016 has been an amazing year for Western Australian salmon, with the highest number of fish seen along the West coast in living memory. Huge numbers have been seen in the Perth area, including the extraordinary sight of a school in a feeding frenzy in the Swan Estuary. A video of the water seething with salmon was uploaded to the internet, attracting a huge viewing audience and comments from around the world.

This year, salmon were seen (and caught) at Exmouth, which is the furthest north that this species has been recorded! All this suggests that the salmon stock is pretty healthy at the moment and apparently enjoying the environmental conditions along the west coast in 2016.

Latest research

Sampling of the age structure of commercial and recreational catches during 2012-2015 to assess the stock's status has confirmed that it is in good condition. Our sampling found a full range of age classes: from four years, which is when fish first recruit into the fishery (they become vulnerable to capture), up to 11.9 years (12 years being the maximum recorded age of the species) (see Figure 1).

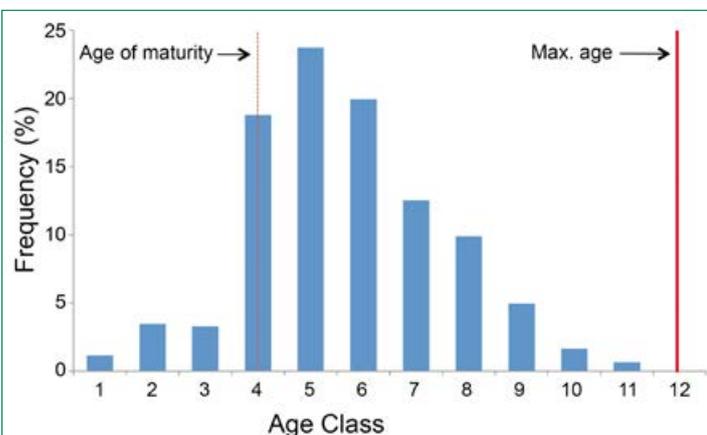


Figure 1. The current age composition of Western Australian salmon catches.

The age structure data was used to estimate the rates of total mortality (Z), fishing mortality (F) and natural mortality (M) currently relevant to the stock. Mortality is described by the simple equation $Z = M + F$.

We estimate Z to be roughly equal to M at the moment, which indicates that F is very low. In other words, fishing pressure is currently having a minimal impact on the stock. That's great news for salmon fishers.



Mike Braimbridge caught this salmon at Bunker Bay.

Biology

Western Australian salmon occur across south-western Australia from WA's west coast to Bass Strait. Adults spawn only in south-west WA (usually between Perth and the Capes area) in April/May. Many of their eggs and larvae are transported south and east by the Leeuwin Current. The juveniles settle into coastal and estuarine nursery sites across the species range, where they remain until reaching maturity at 3-5 years. Mature fish migrate back to WA to spawn. Young fish migrating from Tasmania can travel a whopping 4,000 km! After spawning, adult salmon remain in WA.

Our recent sampling found most salmon reaching sexual maturity at about 55 cm total length and four years old, with females and males growing at a similar rate. Salmon are reported to reach a maximum size of 96 cm, or 9 kg, and live until at least 12 years.

Family connections

The *Arripidae* family is restricted to southern waters of Australia and New Zealand and has only four species:

1. Western Australian salmon (*Arripis truttaceus*) – occurs in WA, SA, Victoria and northern Tasmania.
2. Eastern Australian salmon (*Arripis trutta*) – occurs in south-east Australia and New Zealand (also known as Kahawai in NZ).
3. Giant kahawai (*Arripis xylabion*) – occurs in northern New Zealand.
4. Australian herring (*Arripis georgianus*) – occurs in WA, SA and Victoria.

The family name comes from the Latin, *arripio* and *arripere*, meaning to take something suddenly (such as snatching bait) and was given because they are known as gamefish or sportfish.

Picking the difference

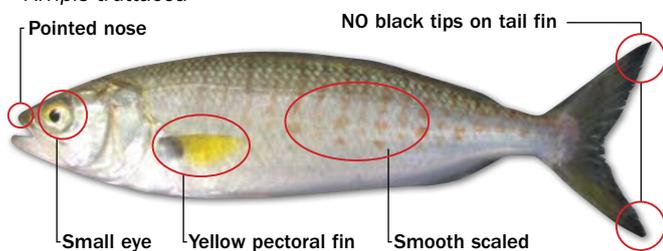
In autumn, schools of WA salmon migrate along the south coast from the Great Australian Bight to spawn in WA's southern waters. The annual 'salmon run' is closely followed by the herring spawning run along the south-west coast.

Due to the similar appearance of juvenile WA salmon and Australian herring, Fisheries officers have been encountering some fishers who have mistaken an undersized salmon for an adult Australian herring, which can not only be costly for the fisher, but also puts unnecessary fishing pressure on WA salmon stocks, as juvenile salmon have not yet had a chance to spawn.

Juvenile WA salmon are silvery white, smooth scaled, have a yellow pectoral (side) fin and have several rows of golden or brown spots on their backs and sides. An adult WA salmon is a darker greyish green, with more pronounced spots.

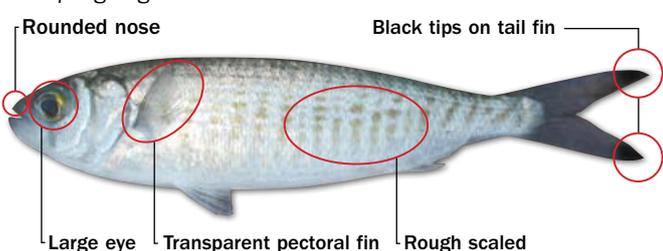
Western Australian salmon – juvenile

Arripis truttaceus



Australian herring

Arripis georgianus



Australian herring are silvery in colour with vertical rows of golden spots on the upper side of the body and black tips to the caudal (tail) fin. The scales on the body are slightly rough in texture. Australian herring have a larger eye and more rounded head than a juvenile WA salmon.

WA salmon have a minimum size limit of 30 cm and a bag limit of four and fall into a state-wide mixed bag of 16 per fisher, per day. Australian herring have no size limit, an individual species daily bag limit of 12, and fall into a state-wide mixed bag of 30 per fisher, per day.

For further information on the fishing rules please refer to the Recreational Fishing Guide 2016. Copies are available from your local Department of Fisheries office, participating retail outlets, or you can download a copy from www.fish.wa.gov.au

Species identification is vital to following the fishing rules and regulations. Don't risk getting fined for undersize or over-possession of WA salmon.

For further information on WA salmon biology see: www.fishesofaustralia.net.au/home/species/407

For further information about WA salmon fishing rules see: <http://rules.fish.wa.gov.au/Species/Index/128>

Recipe

Contrary to popular belief, WA salmon can be a very tasty eating fish. Once caught it needs to be humanely killed and then bled and stored immediately on ice. Fisheries staffer and keen recreational fisher Andrew Cribb shares his favourite salmon recipe below.

SALMON CAKES

Ingredients

500g fresh WA salmon, filleted, skinned & deboned -
375g light meat, 125g dark meat

Zest of 1 lime

1 tbsp Thai fish sauce - substitute light soy for a less 'fishy' flavour

2 tbsp chopped fresh coriander leaf and stalk

1-2 fresh green or red chillis, deseeded and chopped

1 tspn dark brown sugar

2 tbsp red curry paste

80g French beans, finely sliced into rounds

1 egg, beaten

Peanut oil for frying

Method

Put all the ingredients into a food processor, except the beans, and grind into a stiff paste. Mix through the finely sliced beans, cover and refrigerate for 1 hour or overnight.

Form into small patties with a desert spoon and wet hands. Shallow fry on a low heat until golden brown on one side, turn over and repeat. Drain on kitchen paper before serving.

Brace yourself for the blowies!

The weeping toadfish (*Torquigener pleurogramma*) also more affectionately known as the 'blowie' has been recorded in high numbers at two of our recruitment monitoring sites for juvenile fish in the 2015/16 sampling season. Mangles and Koombana bays have seen a spike in the blowfish recruitment with over 50 fish been caught per shot of a 60 m seine net on average (see Figure 2). While we have seen similar high catches at Mangles Bay, the number of blowies recorded is unprecedented at Koombana Bay in the 11 seasons we have sampled the site. We expect recreational anglers over the coming year to encounter more than the usual numbers of blowies when fishing in estuaries and sheltered coastal waters.

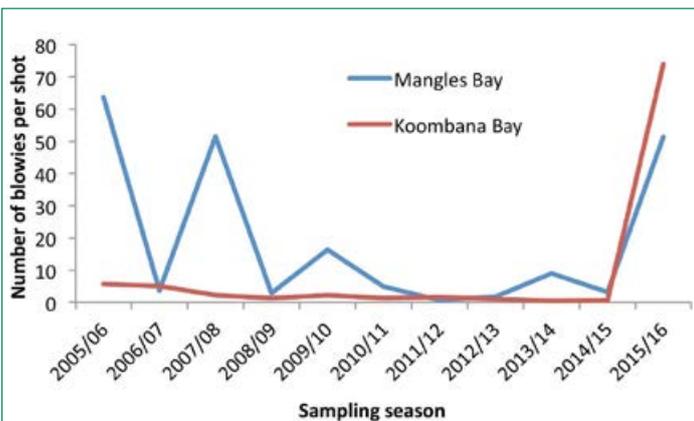


Figure 2. The number of blowfish per shot at Mangles and Koombana Bay per season.

While many recreational anglers are frustrated by blowies constantly nibbling and gobbling baits, they are native to the southwest of Australia and play an important role in keeping the ecosystem clean by eating discarded bait, burley and food scraps. We are still uncertain about what drives these strong recruitment events, but they appear to be natural phenomena, with evidence that there have been periods of high abundances since the 1930s. The good news is that other fish do eat blowies. They have been

found in the stomachs of tuna, snapper, mulloway, tailor, herring and flounder (see below).



A smalltooth flounder that was found to have eaten two small blowfish.



A net full of blowfish.

For more information on blowfish, follow the link below to our blowfish fact sheet:

www.fish.wa.gov.au/Documents/recreational_fishing/fact_sheets/fact_sheet_blowfish.pdf

Send Us Your Skeletons winners

Congratulations to the Oct-Dec 2015 and Jan-March 2016 quarterly *Send Us Your Skeletons* winners – Steve Mcrae, Michael O'Mara, Col Smith and Ashton Mills. The prizes included a White Salt restaurant voucher, McCarthy soft plastics and Shakespeare Ugly Stik fishing rods.



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':

July 2015	Harrison Heyes	(West Coast)
August 2015	Ross Tate	(West Coast)
September 2015	Tony Moore	(West Coast)
October 2015	Les Saxey	(West Coast)
November 2015	Neville Steward	(West Coast)

Each winner received one of our stylish RAP beanies.

SUYS snippets

Garth and Susan Griffiths, who recently acquired the Green Head general store, have been amazed (when chatting to customers who pop in for fuel and bait) by the number of fish being caught in the area. This influenced their decision to become a fish frame drop-off location for the Department of Fisheries *Send Us Your Skeletons* program. Garth wants to keep our kids fishing for many years and thinks it is everyone's responsibility to help keep fishing sustainable. Garth said 'I want to see the fish resources being looked after because I personally love fish and fishing.'

The Green Head general store is open 7 days a week 6 am–6.30 pm which makes it very convenient for fishermen to get fuel and drop off skeletons. For other drop-off locations see www.fish.wa.gov.au



Garth Griffiths, owner-operator at the Green Head general store.

Technical Officer Kim Clayton is a well-known face among fishers of the South West. She often pops up at fishing competitions, boat ramps, jetties and fishing clubs seeking fish frames for the *Send Us Your Skeletons* program.

Kim's main role is to collect frames from recreational and commercial fishers. She ensures that 'drop-off location' fish find their way to Fisheries research. She either brings them to Perth to be processed

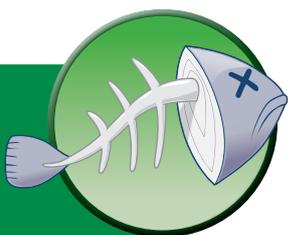


Kim Clayton.

or processes them in her shed at home – dedication to the job indeed! Kim has the critical job of spreading the research message to recreational fishers.

One of Kim's most generous donors – Michael O'Mara said "I met Kim at the King of the Cape Fishing Competition. I decided to donate skeletons because I've noticed herring numbers are really low and I wanted to help. I think the reduced bag limit for herring is a good thing to help keep numbers sustainable."

Kim can be contacted on **0419 192 101** and is based in Busselton, but travels throughout the South-West.

SEND US YOUR SKELETONS

Researchers at the Department of Fisheries need your fish frames (skeletons with heads and guts intact) to assess the status of fish stocks.

If you are in the Bunbury to Augusta area, call Kim on **0419 192 101** for skeleton collection.

Species required from the West Coast Bioregion
 (just north of Kalbarri to Black Point, near Augusta)

		
Snapper (pink snapper)	Australian herring	
		
Redthroat emperor	Tailor	
		
Bight redfish	King George whiting (Over 35 cm in length)	
		
Baldchin groper	West Australian dhufish	

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HELP ENSURE THERE'S FISH FOR THE FUTURE
www.fish.wa.gov.au/frames

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

Chris Dowling – Chris.Dowling@fish.wa.gov.au

Research Angler Program

Research Angler Program, 39 Northside Drive, Hillarys, Western Australia 6025

Telephone: +61 (08) 9203 0111

ABN: 55 689 794 771

www.fish.wa.gov.au



Fish for the future