



NEWTAG BULLETIN

July 2006



Bass and Estuary Perch DNA project to get underway

ANSA NSW has been asked to once again to support a research establishment in much the same the way we assisted the University of Tasmania and FRDC in the recently completed Flathead Survival Project.

Kim Shaddick, a PhD student from Macquarie University (Sydney) is working on conservation-oriented study of the evolutionary history of perches and basses. The project focuses on the catadromous estuary perch and Australian bass and uses DNA markers to clarify the population genetic structure of both species. The use of a DNA approach will enable the researchers to distinguish between natural population structures and those affected by stocking activities. This information will be used to suggest management strategies aimed at preserving the genetic integrity of the two species. This project is a collaborative effort that involves the Molecular Ecology Laboratory at Macquarie University (headed by Dr Luciano Beheregaray, and the DPI Fisheries conservation program at Narrandera (NSW), headed by Dr Dean Gilligan.

It has been suggested that the these two fish species are geographically structured along the coast and that even though they have the ability to disperse over long distances you don't see too much mixing between the populations. However, for a proper understanding of population structure, Kim needs to analyse samples from the entire range where the species are distributed.

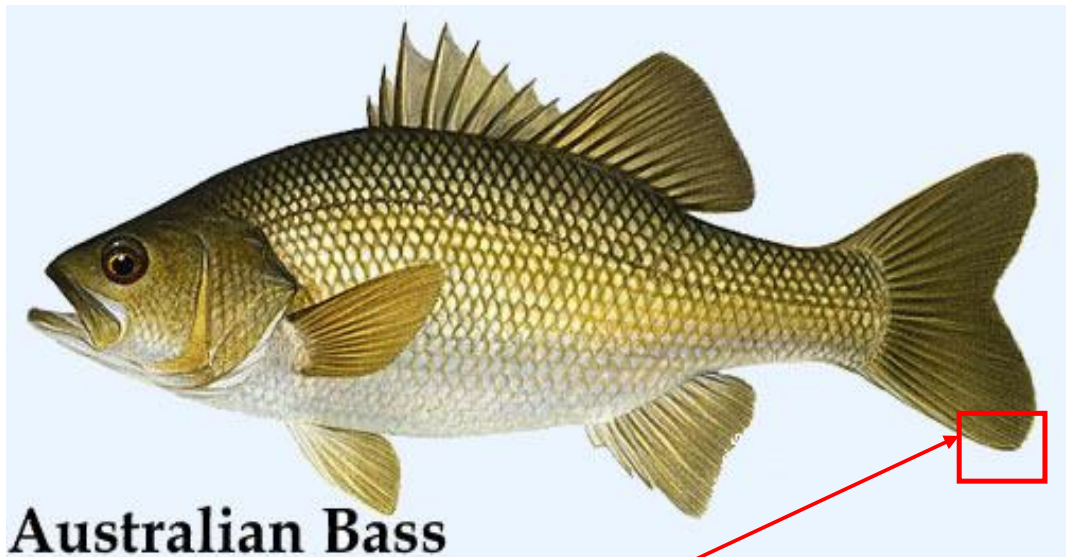
Kim is after fin clippings from specific location in NSW and Victoria. Specimen vials and work instructions will be provided to participating anglers by NEWTAG and collected. The critical and most significant part of the project is the correct labelling of the samples with regard to location and date of capture.

NEWTAG is looking for anglers and clubs to collect the 25 Bass and 25 Estuary Perch DNA samples from 14 sites in NSW and Victoria. Log sheets, vials and equipment will be sent out to participating anglers and clubs, and with the project due for completion in early 2007 anglers will be presented with many opportunities to sample both the bass and estuary perch in all ensuing months. Provision has also been made to sample the hybrid species, a species that displays both characteristics and one that more DNA samples are needed for further research

How to take a DNA sample

Taking a DNA sample is a relatively easy process that only involves using a pair of scissors to take a fin clip of the tail or pelvic fins and placing the sample in the numbered vial and recording the details, wash the scissors to prevent cross contamination and catch the next fish. The samples need to be of the fin rays rather than the spines, so try to avoid dorsal and anal fins that have these spines. A 1 cm X 1 cm sample from the tail of an adult bass or estuary perch all Kim needs to work with, but also suggest reducing the sample size in smaller fish. The fins grow back quite quickly.

Program Supporters



Australian Bass

Cut a 1 cm x 1 cm fin clip from the tail of an adult sample

Sample of data recording sheet

Vial No.	Box No.	Vial lid colour	SPECIES Bass/Estuary perch/Hybrid	Date	Site Name	Catchment	Name
1	1	Purple	Bass	1/7/06	Georges River	Sydney Basin	Stan Konstantaras
2	1	Red	EP	2/7/06	Georges River	Sydney Basin	Stan Konstantaras
3	1	Red	EP	2/7/06	Georges River	Sydney Basin	Stan Konstantaras
4							
5							
6							

There is provision for 25 samples of each species per box of vials and 1 box has been allocated to each catchment with a total of 15 catchments to sample.

Locations

The locations are spread across NSW and Victoria and target specific basins and areas.

1. Sydney Basin
2. Karuah Catchment (Mid north coast)
3. Hastings Catchment (North coast)
4. Manning Catchment (Mid north coast)
5. Barham River
6. Mitchell River (Victoria)
7. Glenelg River (Victoria)

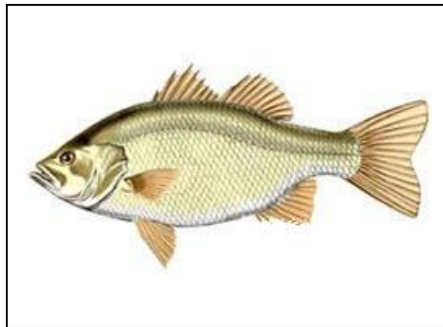


Locations cont.

8. Macquarie Tuggerah Catchment (Central coast)
9. Clyde River (South coast)
10. Moruya River (South coast)
11. Tuross River (South coast)
12. Bega River (South coast)
13. Towamba River
14. East Gippsland Basin (Victoria)
15. Shoalhaven River

NEWTAG is specifically looking for clubs and individual anglers that are based or fish these areas to do the DNA sampling.

Characteristics

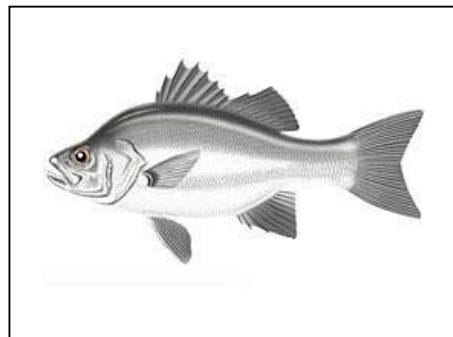


Bass

Distribution - Bass are found in fresh and saltwater, in eastern draining rivers from the Mary River in Queensland to the Gippsland Lakes in Victoria.

Size - Maximum of 4kg and 65cm in length.

Characteristics - Bass vary in colour from silver, green and bronze. The fish migrate downstream to the estuaries to breed between May and August. Females are much larger than males. Adult fish are general-purpose carnivores. The bass has a back profile that is arched from above the eyes to the tail with only very slight tapering of the snout. They are sought after sport fish with bait, fly and artificial lure. Although considered excellent eating, the majority of fish are returned to the water unharmed.



Estuary Perch

Distribution - The estuary perch is confined to coastal rivers and lakes of south eastern Australia from the Richmond River in NSW to the Murray River in SA. The species has been known to enter waters that are almost

Characteristics - The Estuary Perch looks similar to the Australian Bass (*Macquaria novemaculeata*) but can be distinguished by a straight dorsal head profile, has white anterior pelvic fin rays and is less silvery overall. Juvenile fish can be found with a dark spot behind the eye. The overall colour of the estuary perch is grey with a silvery sheen on its sides with white colouring below. The fins are a slight brown colour and darker than the body.

If you would more information on the project or participate in the DNA collection, just drop me an email

Stan Konstantaras

pastelli@netspace.net.au