



Research & Education

Movement patterns and habitat preferences of black bream in the Gippsland Lakes

Jeremy Hindell, Primary Industries Research Victoria, DPI

7 January 2005

FN 0583

ISSN 1440-2254

PIRVic researchers are tracking black bream throughout the Gippsland Lakes and its tributaries to predict how changes in environmental conditions influence this fish's choice of habitat and location.

The recreational and commercial fisheries for black bream in the Gippsland Lakes are considered to be among the most important for this species in Victoria and possibly even Australia. Over the past two years, however, catches of black bream in this system have decreased dramatically. The reasons for this decline are likely to be complex and include such things as changes to the environment, a lack of strong recruitment in recent years, and the effects of fishing, but the relative importance of different factors is uncertain. Fish may also have simply moved into areas where they are less likely to be caught.

The key to understanding more about the fishery decline, therefore, is to understand the movement patterns of black bream in and around these lakes, including their use of different habitats under a range of environmental conditions. The inflowing rivers in particular are thought to be potential refuge areas into which fish may have moved.

With support from Fisheries Victoria, a team of PIRVic scientists, lead by Dr Jeremy Hindell, will electronically monitor the movements of both juvenile (<3 years old) and adult (>3 years old) black bream using novel acoustic technology. To do this, a system of 27 'listening' stations (acoustic receivers) has been strategically placed within the main basin of the Lakes and its rivers.

Black bream caught in the Mitchell, Nicholson and Tambo Rivers, as well as from Jones Bay and Lake King will be implanted with small electronic tags (acoustic transmitters). Each tag emits a unique signal that enables

the researchers to identify individual fish and their location when they swim within the range of a listening station.

"The distance at which fish can be detected from the listening stations will vary depending on such things as the degree of wave action and turbidity," Jeremy says, "but our fish should be detectable at distances up to 500m from the listening stations."

To help fishers identify which black bream have been implanted with an electronic tag, scientists have tagged each fish with a yellow t-bar tag. These external tags are also individually coded and have a number to call for further information," says Jeremy. "If you are lucky enough to catch a tagged black bream, we encourage you to handle it gently and return it to the water as soon as possible so that the fish can continue to tell us where they go."

"The placement of the listening stations enables us to track the movements of fish throughout the lakes, including in and out of major tributaries such as the Mitchell, Tambo and Nicholson Rivers," Jeremy said. "This will not only provide information about where black bream go but will also tell us when and perhaps why they are on the move."

Understanding the timing of these movements is important so that researchers can determine whether they are triggered by changes in the environmental conditions experienced by the fish.

Salinity, turbidity, water temperature and dissolved oxygen in the vicinity of each listening station will also be measured periodically over the 2 year field component of the project. This information is collected with help from Fisheries Officers and the East Gippsland Catchment Management Authority.



Movement patterns and habitat preferences of black bream in the Gippsland Lakes

Results from this project will be incorporated into black bream stock and habitat assessments and will contribute to the sustainable management of the Gippsland Lakes' black bream resource.

For more information about this project, please contact Dr Jeremy Hindell at PIRVic Queenscliff on (03) 5258 0231.

Fisheries Research and Education Notes are available on the web at the following address: www.dpi.vic.gov.au... Follow the prompts to Fishing and Aquaculture and then to Publications and Fisheries Notes. The notes are listed under the heading Research and Education.

The advice provided in this publication is intended as a source of information only. The State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.