A recreational angler based tagging program to understand the movements of Victorian King George Whiting to their spawning areas.

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King George Whiting caught by fishers in Victorian bays are juveniles up to the age of 4 years that are too young to spawn. Whiting older than this move out of the bays onto the coast, and tend to be older and larger in western Victoria. Until recently the only known spawning area for Whiting was the Investigator Strait area, north of Kangaroo Island in central South Australia (SA), where Whiting are up to nearly 20 years of age. An important question for the sustainability of the Victorian King George Whiting fishery is whether Victorian fish migrate to the known South Australian spawning ground, and are therefore subject to fishing pressure from the targeted fishery for large whiting in that area. Computer modelling studies have suggested that King George Whiting larvae drift to Victorian Bays from an area approximately between Portland and Beachport in south-eastern SA, suggesting that Victorian Whiting may be spawning in that area.

A current research project on stock structure of King George Whiting based on otolith (earbone) chemistry and genetics funded by the FRDC and the RFL has provided strong evidence that Victorian Whiting are not spawned in the known Investigator Strait spawning area in SA, and that our adults are not migrating to that area for spawning. A new spawning ground for King George Whiting was found off the coast of north-west Tasmania, but these fish are genetically distinct from Victorian Whiting. The results of the study support the original modelling in suggesting that the most likely scenario is that Victorian Whiting are spawning in far western Victoria to south-eastern SA. Otolith chemistry of larger whiting from western Victoria is consistent with what might be expected of fish from Victorian Bays.

There is now an opportunity to partner with recreational fishers in a tagging program to confirm the movement of Whiting from Victorian bays to the likely spawning area. This project will partner with fishing clubs that have active whiting fishers and there will be a coordinating person within each club. There is an increasingly active recreational fishery for larger Whiting along the coast from far western Victoria into south-eastern South Australia, so that chances of recapturing tagged Whiting are much higher than in the past. Based on pre-recruit sampling, a large cohort of Whiting that were spawned in 2013 is currently available in the fishery, and fishing for Whiting in the two bays is expected to be very good in the 2016/17 financial year, providing strong prospects for tagging significant numbers of 3 year old fish.

Recreational fishers will tag whiting using T-bar tags, which have been successfully used to tag King George Whiting in South Australia. T-bar tags are applied with a tagging gun, and are positioned in the flesh beneath the first dorsal fin. The tag is inserted on an angle about 10-15 mm from the start of the dorsal fin so that the tag streams backward and the T-bar is under about the 3rd or 4th dorsal spine (Figure 1). More detail on the tagging procedure is given at the end of this document (Technical notes 1). Tagged fish may be kept in a holding tank until the end of the fishing session if the fisher is concerned that the released fish will take the school away with it.

Fishers tagging Whiting will need to record the tag number for each fish tagged, as well as the date and location (general location and ideally lat. and long. from GPS) and the length of the fish (fork length (preferably) or total length) (Table 1). Along with reporting the tag number, recaptures will

include information on re-capture date and location, as well as fish length (fork length (preferably) or total length). Tagging and recapture information can be communicated through a dedicated project email address: whitingtag@gmail.com or by phone (03) 52583686 or mail (G. Jenkins, VMSC, PO Box 114, Queenscliff Vic 3225). If possible, the frozen frame of the recaptured fish will be retained to be collected so that project scientists can assess the age and reproductive condition of re-captured fish. For fishers aware of the program there is also the option of returning a tagged fish to the water after recording details of tag number location etc (especially if caught in Port Phillip or Western Port). A prize lottery (fishing tackle) will also be established for re-capture returns as an additional incentive. A dedicated web-page will be developed tracking the progress of the project and detailing the movement results as they come in (http://blogs.unimelb.edu.au/fisheries-ecology/king-george-whiting-tagging-project/).

The results of the project will contribute greatly to our understanding of the biology and life history of King George Whiting, potentially for the first time confirming the spawning area for Victorian whiting. In addition, the results will contribute to the sustainable management of the King George Whiting fishery by providing further information on the relationship between the Victorian and South Australian fishery stocks, and whether the sustainability of the Victorian fishery is affected by the activity of the South Australian fishery. Finally, as well as the research and management value of the project, there is a great science extension opportunity where recreational fishers can contribute substantially to the research and at the same time learn about the biology and life history of this iconic species.