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Snapper nurseries in our bays and inlets

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Scientists at the Marine and Freshwater Resources Institute at Queenscliff are investigating the location and characteristics of habitats used as nurseries by baby snapper (2 to 8 cm in length) across Victoria's major bays and inlets.

Major nursery areas for baby snapper in Victoria have been identified in Port Phillip Bay, the Gippsland Lakes, Corner Inlet/Nooramunga and Mallacoota Inlet. Western Port Bay does not appear to be a major nursery area for baby snapper as very low numbers were caught.

Smaller Gippsland inlets and estuaries that remain open during the summer spawning season, such as the Snowy River estuary, also act as nursery areas for baby snapper. The baby snapper that are found in these estuaries are spawned in adjacent coastal waters. Snapper only use these smaller estuaries as juvenile nurseries, with most snapper migrating out to the ocean before they reach 2 years of age.

Few estuaries along the west Victorian coast are permanently open and none have been identified as important snapper nurseries.

The study has highlighted that baby snapper can utilise a variety of habitats and that habitat use can vary between different bays and inlets. For example, baby snapper can be found over seagrass beds in the Gippsland Lakes, Corner Inlet/Nooramunga, Mallacoota Inlet and the Snowy estuary. However in areas such as Port Phillip Bay, baby

snapper are found in the deeper waters (of 10 to 18 m) on sandy to muddy bottoms with patchy algal cover.

Newly-settled baby snapper feed on microscopic bottom dwelling crustaceans. As the snapper grow, their food preferences broaden to include a wider variety of larger benthic organisms. Within Port Phillip Bay as the juvenile snapper grow they become more mobile and utilise a range of habitats including reefs.

The numbers of baby snapper found in each bay and inlet varied from year to year. The Gippsland Lakes had the most consistent recruitment of baby snapper to nursery habitat, while Port Phillip Bay exhibited the largest variation, with 10-fold differences in recruitment from year to year. The strong recruitment of baby snapper to nursery habitat in Port Phillip Bay in summer 2001 is responsible for the large numbers of undersized snapper currently in the Bay and along the west Victorian coast.

Recent research by MAFRI scientists has included a new method of tracking snapper by using natural chemical tags in their earbones (otoliths). Using this method it is possible to determine where the snapper go once they migrate from the nursery areas, and, therefore, which nursery areas contribute most to large juvenile and adult snapper stocks. This research has demonstrated that a large proportion of the juvenile snapper (15-25 cm in length) inhabiting the waters of Port Phillip Bay and the west Victorian coast are derived from the Port Phillip Bay nursery area. This has highlighted the importance of the Port Phillip Bay nursery area to the maintenance of snapper stocks in western Victoria.

The results of this study will be used by Fisheries Victoria to identify important snapper nursery habitat in Victoria and manage Victoria's snapper fishery sustainably.

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