

Genetic population structure in the Chilean jack mackerel, *Trachurus murphyi* (Nichols) across the South-eastern Pacific Ocean

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Abstract

The Chilean jack mackerel *Trachurus murphyi*, is a pelagic fish from the Carangidae family that is distributed in the South Pacific Ocean. Because this species constitutes an important economic resource across the South Pacific and plays an important ecological role in this ecosystem there is a growing interest in determining its population structure. In this study, we used molecular markers (mitochondrial DNA sequences and microsatellites) from Chilean jack mackerel samples to investigate its genetic population structure across the South Pacific Ocean. The mitochondrial DNA did not detect a genetic structure in *T. murphyi* populations in the Pacific Ocean, but revealed very low haplotype diversity and a short genealogy history compared to other small-pelagic species. The same general pattern of a lack of genetic structure was found with microsatellite loci; however, a large genetic diversity was revealed with microsatellite markers. The present results did not support the existence of different stock units for *T. murphyi* across the South Pacific Ocean but a more holistic approach will be necessary to determine an adequate management strategy for this fishery.