

Spatial genetic structure and demographic inference of the Patagonian squid *Doryteuthis gahi* in the south-eastern Pacific Ocean

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Doryteuthis gahi is a small squid species that has a wide distribution in South America. This species is characterized by coastal and benthic spawning, and its ontogenetic vertical migration is associated with upwelling zones, features that may restrict its dispersal potential. It has also been proposed that populations of these neritic squid are structured by the influence of local processes which act as barriers to gene flow. Based on this background, we evaluate the geographical structure of genetic diversity in *D. gahi* along its distribution in the south-eastern Pacific Ocean. We used 116 COI mtDNA sequences of squid collected from different sites in Peru and Chile and calculated genetic diversity, the population structure index F_{st} , and performed analysis of spatial molecular variance and exact tests to detect differences among localities. To infer demographic history we carried out tests of neutrality and Bayesian skyline analysis. Although there was little molecular divergence b