

Otolith shape as a stock discrimination tool for ling (*Genypterus blacodes*) in the fjords of Chilean Patagonia

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ABSTRACT

Genypterus blacodes, in terms of its fishing history and local economic importance, is an emblematic species harvested in Chilean Patagonia (41°00'–57°00'S). Most of the current fisheries and biological knowledge of this species come from the open ocean, whereas information about the species in fjords and inner channels is fragmentary. In 2018, two research surveys targeting *G. blacodes* were conducted in the fjords and inner channels of Chilean Patagonia. A total of 253 pairs of sagittal otoliths were sampled at three different localities, and their contours were modelled using wavelet analysis as a tool for stock discrimination. Contours were compared using canonical analysis, and classification was performed using linear discriminant and Random Forest analyses. The results indicated that the wavelet method is efficient in modelling otolith contours, and the discriminant analyses showed differences among fishing grounds across the latitudinal gradient, thus confirming the hypothesis that *G. blacodes* conform to at least two separate stock units in Chilean Patagonia. Fishing grounds that were closer in space showed higher levels of misclassification. The discussion focuses on how environmental variables and the geography of fjords shape stock differences and how this information can be used for the sustainable management of *G. blacodes*.