



Spawning of the southern hake *Merluccius australis* (Pisces: Merlucciidae) in Chilean fjords

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Abstract

The southern hake *Merluccius australis* constitutes an important fishery in southern Chile, but its reproductive biology is scarcely known, and until now the Chilean fjords have not been considered as potential spawning zones. Oceanographic surveys carried out during austral spring and summer of 1995–2002 in the Chilean fjords (43°30'S–47°S), are used to describe for first time the spawning of *M. australis* in the inland sea of southern Chile. Large patches of eggs with undeveloped embryos (<4 days old, >150 eggs per 10 m²), eggs in late development and abundant southern hake larvae (up to 385 larvae per 10 m²) were observed inside Chilean fjords during austral spring season. Eggs and preflexion larvae (<9 mm) were scarcely detected in open ocean-influenced waters (<30 ind per 10 m²). This pattern of horizontal distribution may be determined by spawning events of inland resident stocks and/or by inshore migration of adult hakes during austral spring. The higher frequency of small larvae inside fjord waters, and the presence of postflexion larvae outside fjords are indicative that fjords are used also as nursery areas for early stages of southern hake. Finally, inter-annual variability in egg size (i.e., diameter) was detected, despite the relatively constant seawater temperature (10–11 °C). Further investigations are needed to determine the maintenance and the health of this spawning and early nursery area in a zone highly disturbed by salmon culture activity.

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