Vulnerability to climate change of essential habitats for pelagic resources of economic importance in Chile

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The distribution of eggs, landings, fishing effort and CPUE abundance index, and the sea surface temperature, chlorophyll concentration, winds and sea height are analyzed. The description of the essential habitat is based on bibliographic references along with the aforementioned fisheries and satellite information, generating information matrices with suitability ranges. These matrices are used to generate conceptual maps of the essential habitat for the resources. The importance of the habitat is categorized based on the matrices and conceptual maps, with environmental variables classify in ranges from 1 to 5. Then, conceptual models are elaborated and predictive models associated with regionalized climate change are developed. For jack mackerel (Trachurus murphyi), a Maxent model was developed that shows losses of area of the most suitable habitat for adults in summer and gains during the rest of the year, until 2055. Artificial neural networks estimate a increase in landings, which would be due more to a change in availability than abundance, since there would be a loss of the suitable habitat for their eggs. Swordfish (Xiphias gladius) would move further the coast as climate change develops. For anchovy (Engraulis ringens) the model shows loss of area of the most suitable egg habitat in august, and notably in september and october, to 2055; and a annual loss of desirable habitat for adults until that year, as would be the case for common sardine (Strangomera bentinki). It is necessary to refine the regionalization of climate change, consider its effect on the entire life cycle of the species and develop a regional transdisciplinary research program. Key words: climate change, pelagic resources, Chile, habitats, projections.