Phylogeography and species distribution modelling reveal the effects of the Pleistocene ice ages on an intertidal limpet from the south-eastern Pacific

Pardo-Gandarillas, María Cecilia

Ibáñez, Christian M.

Torres, Felipe I.

Sanhueza, Víctor

Fabres, Alejandra

Escobar-Dodero, Joaquín

Mardones, Fernando O.

Méndez, Marco A.

 Aim: The distribution and genetic composition of marine populations is the result of climatic and oceanographic factors as well as life history strategies. Studying species with wide distributions and high dispersal potential in sites that were differentially affected during the Pleistocene glaciations provides an opportunity to evaluate the genetic and distributional effect of glaciations on marine populations, such as the limpet Siphonaria lesonii. The aim of the present study is to evaluate the differential effects of glaciations on areas covered and not covered by ice sheets during the Pleistocene glaciations. Location: Intertidal zone of the south-eastern Pacific covering approximately 5,000 km of coastline of Peru and Chile. Methods: We performed molecular analyses of mitochondrial and nuclear data jointly, as well as environmental niche modelling (ENM) of populations of the limpet Siphonaria lessonii. Using ENM, we modelled the potential distribution