

# Pinniped turnover in the South Pacific Ocean: New evidence from the Plio-Pleistocene of the Atacama Desert, Chile

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Modern pinnipeds distributed along the coasts of continental South America consist almost entirely of otariids (sea lions and fur seals). In contrast, phocids (true seals) are present only on the southernmost extreme of Chile. This recent biogeographic pattern is consistent with the zooarchaeological record (~8-2 ka), but it is incompatible with the pinniped fossil record during the Neogene. From the middle Miocene to the Pliocene, true seals exclusively dominated pinniped assemblages, and they were only replaced by the fur seals and sea lions sometime after the early Pliocene. Here, we describe pinniped material collected from two new localities in the Atacama Desert, northern Chile, that clarifies this marine mammal faunal turnover. Specifically, these finds provide records of the first occurrence of Otariidae (late Pleistocene) and the last occurrence of Phocidae (early Pliocene) in Chile, which in turn constrain the timing of this turnover to between the early Pliocene and late Ple