Seasonal changes in environmental conditions are not driving migration in seabirds

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April 14, 2021

Abstract

Migration is often thought to be driven by poor environmental conditions during one season and to permit avoidance of harsh weather or resource shortage and tracking of more favourable conditions. Here, we tested this hypothesis in seabirds at the global scale by quantifying niche occupancy during the breeding and non-breeding periods over multiple marine ecoregions and exploring whether the niche dynamics reflects changes in environmental conditions at the breeding and non-breeding grounds. We demonstrate that migratory species exhibit more divergent seasonal niches than resident and dispersive ones. In most cases, migratory status was not related to unavailability of favourable conditions at the breeding or non-breeding grounds, suggesting that niche availability is not the main driver of migration. We hypothesize that this unexpected pattern might arise from strong constraints imposed on seabirds by scarcity of suitable sites breeding which constrain the range of environments available for optimizing reproductive success.

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