Population dynamics of an endangered endemic seabird of Réunion Island, the Barau's Petrel (Pterodroma baraui): implications for conservation

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Abstract

Island biodiversity is threatened by many factors, such as alien species and habitat destruction. These threats are particularly worrying on islands because a large proportion of island biodiversity consist of endemic species. Réunion Island is the only island in the world where two endemic species of petrels breed, the Mascarene Petrel (Critically endangered) and the Barau's Petrel (Endangered). Both species are threatened by light pollution which attract and disorientate hundreds of fledglings each year and predation by invasive mammals at breeding colonies. Several conservation actions are implemented since several years to reduce both threats: rescue campaigns to save fledglings attracted by lights and cat and rat control at breeding colonies. The goals of our study was to investigate the population dynamics of Barau's Petrel in order to assess the efficiency of these conservation actions. The study was based on 15 years of mark-recapture data and breeding success monitoring implemented at two breeding colonies. Our model suggests that both predator control and rescue campaigns of fledglings attracted by lights, have positive effects on population dynamics. Thus the Barau's Petrel is a conservation dependant species. It's therefore necessary that the conservation actions continue in order to ensure the survival of this species. Our study also shows that coupling population monitoring and conservation actions is crucial to evaluate the efficiency of these actions and to adapt conservation strategies to changes in population dynamics.

Keywords: endemic seabird, conservation, CMR, extinction risk, Indian Ocean

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