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TITLE: Seabird mortality induced by land?based artificial lights

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ABSTRACT:

Artificial lights at night cause high mortality of seabirds, one of the most endangered groups of birds globally. Fledglings of burrow-nesting seabirds, and to a lesser extent adults, are attracted to and then grounded (i.e., forced to land) by lights when they fly at night. We reviewed the current state of knowledge of seabird attraction to light to identify information gaps and propose measures to address the problem. Although species in families such as Alcidae and Anatidae can be grounded by artificial light, the most affected seabirds are petrels and shearwaters (Procellariiformes). At least 56 species of Procellariiformes, more than one-third of them (24) threatened, are subject to grounding by lights. Seabirds grounded by lights have been found worldwide, mainly on oceanic islands but also at some continental locations. Petrel breeding grounds confined to formerly uninhabited islands are particularly at risk from light pollution due to tourism and urban sprawl. Where it is impractical to ban external lights, rescue programs of grounded birds offer the most immediate and employed mitigation to reduce the rate of light-induced mortality and save thousands of birds every year. These programs also provide useful information for seabird management. However, these data are typically fragmentary, biased, and uncertain and can lead to inaccurate impact estimates and poor understanding of the phenomenon of seabird attraction to lights. We believe the most urgently needed actions to mitigate and understand light-induced mortality of seabirds are estimation of mortality and effects on populations; determination of threshold light levels and safe distances from light sources; documentation of the fate of rescued birds; improvement of rescue campaigns, particularly in terms of increasing recovery rates and level of care; and research on seabird-friendly lights to reduce attraction.

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