
The forgotten fauna: native seed predators on islands

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Abstract

Seed predation by alien rodents is frequently seen as a major threat to "naïve" island floras. However, studies examining seed predation by alien rodents on islands only rarely present their findings within the evolutionary and ecological context of historical seed predation by native species. Here, we demonstrate that islands have actually lost many native seed predators—such as parrots and finches—and these would have exerted considerable evolutionary and ecological pressures in insular pre-human ecosystems. Using examples from three iconic island groups—New Zealand, Hawaii, and the Mascarenes—we illustrate how these lost species could have shaped and influenced pre-human environments. We argue that these important interactions must be recognised if we are to truly understand the role of alien seed predators on islands, and whether they are replacing predation pressures once exerted by extinct species, or introducing truly novel seed predation pressures. More broadly, the loss of negative interactions like seed predation receives very little attention compared to the loss of positive interactions such as seed dispersal and pollination mutualisms. However, we argue that negative interactions are an integral part of any ecosystem, and must be acknowledged as such if we are to achieve holistic restoration frameworks for insular ecosystems.

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