Ecological Impacts of Australian Ravens on Bush Bird Communities on Rottnest Island

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Abstract

The Australian Raven *Corvus coronoides* is a predator of the eggs and nestlings of bush birds on Rottnest Island, Western Australia. Nest predation is a threatening process of island birds, and when combined with other threatening processes, such as habitat fragmentation and degradation, sustained nest predation can cause declines in bush bird communities. The terrestrial habitats on Rottnest Island have been historically fragmented through land clearing, so concern was raised by the Rottnest Island Authority regarding the impact of the Australian Raven on bush bird communities. The aims of this study were to describe the ecology of the Australian Raven on Rottnest Island, in particular the feeding ecology, and to evaluate how important bush birds are in the diet of the Australian Raven.

To determine the rate of nest predation by the Australian Raven, an artificial nest experiment was conducted over four months from August to November, over six study sites. The diet of the Australian Raven was analysed by laboratory examination of raven stomach samples. In addition, observational data collected at the study sites during the study period was used to quantify the behaviour, abundance and distribution of ravens, and compared to bush bird distribution on Rottnest Island.

During this study, ravens predated 20% of the artificial nests, indicating a high capacity for potential population impacts. Nest predation was confirmed by the presence of birds in the stomach contents of ravens from Rottnest, but plant material and invertebrates were found to be more important in the diet. The Australian Raven prefers the disturbed and urban habitat areas of Rottnest Island for feeding, roosting and breeding. Bush birds avoid these areas, and prefer remnant and revegetated areas.

The results of this study have identified the Australian Raven as a potential predator of nesting bush birds on Rottnest Island. However, restoration of island vegetation may be having a positive effect on bush bird communities that outweighs losses of eggs and nestlings to ravens. In view of these results, continued management of the raven population is recommended as a precautionary approach so that the impacts of nest predation on bush birds are limited. Meanwhile, the population dynamics of selected bush

birds can be assessed to confirm that they are recovering in response to habitat restoration programs.

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