

## **Eradication of invasive birds from tropical oceanic islands: lessons learned from studies of common mynas *Acridotheres tristis***

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### **Abstract**

Many tropical oceanic islands host unique taxa that have evolved in isolation from non-indigenous influences. Some of these endemic taxa are now threatened by man-induced changes that include the introduction of predators, competitors, vegetation and seed dispersers. While considerable progress has been made to eradicate alien mammals from islands, methodologies for the eradication of alien birds lag behind. This paper will discuss findings of recent and on-going attempts to develop eradication techniques for common mynas *Acridotheres tristis*, invasive birds that have been widely introduced on tropical oceanic islands and are suspected of negative impacts on endemic and indigenous fauna and flora.

During the course of these studies, features of common myna behavior and demography on small islands have been discovered that can influence preferred control methodologies; these discoveries also highlight the lack of available basic knowledge of alien invasive bird biology at the inception of most eradication attempts. On Denis Island, Seychelles, mensural and age/sex data have been collected from all caught mynas, revealing new demographic information about the population on this small island, and supporting inferences made from indirect information elsewhere. Experiences with different control methods will be described, highlighting their benefits and disadvantages and how these may vary between island types, and possible risks to endemic taxa from their use.

These studies have revealed fundamental requirements for the eradication of populations involving hundreds of mynas and will contribute to the further development of appropriate methodologies, but how widely applicable they will be for other invasive bird species remains to be determined.

Keywords: *Acridotheres tristis*, common myna, eradication, invasive birds, tropical oceanic islands

### **Introduction**

Common mynas have been introduced, deliberately or accidentally, to many oceanic islands in the tropics. In addition to damaging crops, they are alleged, with some evidence, to have negative impacts on some endemic bird species and to be involved in the dispersal of plants, especially alien invasives. Techniques are needed to eradicate common mynas where they are demonstrably compromising biodiversity.

### **Materials and methods**

Traps and toxicants have been investigated as potential eradication methods on some islands in the Indian and Atlantic Oceans, and inferences have been made from behavioral and morphological data obtained from living and dead mynas on the efficacy of different control techniques and on the demography of small island populations.

### **Results**

Trapping, using a variety of techniques, appears to be the most efficient technique for achieving a sustained depletion of numbers, can be selective and provides large samples of birds for subsequent analysis. The avian toxicant 'Starlicide' is toxic to common mynas but it promotes bait aversion after repeated exposure and has even been seen to promote aversion to the site where most birds on one island

exhibited symptoms of illness before dying. The toxicity of Starlicide to non-target taxa, especially herpetofauna, is unknown.

Various measures of population age structure suggested that myna productivity on small tropical islands is low but we still do not know whether reduction in numbers relieves constraints on productivity. On Denis Island, Seychelles, > 90 % of the myna population has now been removed by trapping and the impact of this removal on the productivity of endemic birds will be assessed.

### **Discussion**

These projects have revealed fundamental requirements for the eradication of populations involving hundreds of mynas: adequate highly motivated staff devoted to eradication, unqualified open-ended support of island owners, and the acquisition of demographic and behavioral data to improve eradication prospects of these projects and future attempts elsewhere. These studies will contribute to the development of island myna eradication methodologies but how widely applicable they will be for other invasive bird species remains to be determined.