Indian Mynas - Can the problems be controlled?

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Abstract

Indian Mynas (*Acridotheres tristis*) are increasing in numbers and spreading in Australia (and many other parts of the world), with consequent risk to amenity, human and livestock health, and survival of native wildlife. Control is clearly desirable, but can it be done safely, humanely and cost-effectively? This paper includes a discussion of research into Indian Myna biology, the development of control methods, and a demonstration of trapping techniques.

Origin and introduction of Mynas to Australia

The English name Myna comes from *maina*, a Hindi word meaning a bird of the starling family – and a term of endearment, especially for young girls. Mynas are popular birds in their source countries of India and some surrounding regions of Central and southern Asia, because of their role as predators of crop pests, as symbols of undying love due to their habit of pairing for life, and because they adapt readily to captivity, where they can become competent mimics of human speech (Sengupta 1982). The popularity of Mynas has led to feral populations becoming established through direct human agency in many parts of the world, either as supposed controllers of crop pests – or as escaped or liberated cage birds (Craig and Feare 1998). Mynas were first released in Australia in 1862 to combat pests in Melbourne market gardens; from there birds were taken to Sydney and, subsequently, to parts of Queensland, Tasmania and South Australia (Long 1981). Mynas subsequently died out in Tas and SA, but thrived when they were introduced to Canberra in the late 1960's (Davey 1991; Veerman 2002).

Present and future distribution of Mynas in Australia

The present range of Mynas is eastern Queensland, NSW, Victoria and the ACT, although not (yet) in Tasmania South Australia, Western Australia or the Northern Territory (Barrett et al 2003). There can, however, be little doubt that Mynas are capable of expanding well beyond this area because of their broad climatic (Martin 1996) and habitat tolerances (Feare and Craig 1998) and their extreme adaptability. Across the world, mynas avoid closed forest, but occupy habitats including desert oases, grasslands, woodlands (especially for nesting), secondary forest and mangroves – from sea level to 3000 masl. Mynas are strongly commensal – attracted to human habitation and modified habitats (with attendant food supply) - but they are highly adaptable and perfectly capable of existing without humans. The highest densities of Mynas in Australia can be found in tropical cities (eg, Cairns 1,000 birds per km^2), but they are far from being just urban birds, becoming increasingly common (Barrett et al 2003) in the modified woodlands that dominate much of settled Australia (Barson et al 2000).

Climate modelling indicates that Mynas are capable of establishing feral populations in much larger areas of eastern mainland Australia – and parts of SA, Tas, NT and WA (Martin 1996; Tidemann unpublished). Mynas have inherently low mobility (which is why they are relatively slow to spread), but there is a strong probability that they are still deliberately being moved by people who like them – or inadvertently by hitchhiking. In the last few years Mynas have reached Perth (by boat and probably truck) and ports in northern Tasmania and Port Adelaide (by boat). These incursions have been spotted, and summarily dealt with by wildlife management agencies in these States - WA, Tas, SA (M. Massam, M. Holdsworth, R. Sinclair personal communications), but no doubt, such movements occur elsewhere, but go unremarked because of the prevalence of Mynas in many areas. Consequently, it will be unsurprising if Mynas, left unchecked, continue to expand their range in Australia.

Why are Mynas a problem in Australia?

Mynas were initially regarded as a beneficial species in Australia, as evidenced by widespread releases. Hall 1907 remarked that "The Myna makes cheerful the environment and, except for a slight damage to fruit, is generally to be commended". For a short time, Mynas were on the protected species list in NSW (Lever 1987). Little notice appears to have been taken of the Myna's potential to cause damage until much later in the 20th Century, by which time expanding feral populations were well established in many areas of Australia – and numerous other parts of the world. Hone (1978) and Davey (1990) documented (with alarm, because of observed attacks on nesting native birds) the spread and growing numbers of Mynas in NSW and the ACT. Komdeur (1996) reported Mynas reducing the breeding success of the Seychelles Magpie Robin and Pell and Tidemann (1997a,b) reported Mynas reducing the breeding success of Rosellas and Red-rumped Parrots in the ACT. In the year 2000, Mynas were listed among the World's 100 Worst Invasive Species by the World Conservation Union (IUCN 2000). So far, the ranges of most threatened species in Australia have not been invaded by Mynas, but given the clear trend toward range expansion, it is probable that this will occur in the near future. Over the last few years, Mynas have begun to invade the breeding range of the hollow-nesting (and Vulnerable) Superb Parrot in NSW to the north of the ACT (Murrumbateman, Yass).

Over the past few years, Mynas have come to be recognized and strongly disliked by a growing part of the Australian community (even though others, oblivious to their identity or otherwise, continue to feed them, advertently or inadvertently). Mynas were recently ranked by respondents to the ABC's Wildwatch Survey as the "Most Significant Pest" in Australia (ABC 2004). Much of this (sometimes violent) dislike of Mynas is generated by people who have observed Mynas harassing native wildlife, especially birds in nesting hollows. There is also concern, especially in areas where Mynas are at high densities, of risk to human and livestock health from fouling. The propensity of Mynas to steal food from domestic animals and from humans at outdoor eating areas means that there is a high likelihood of pathogen transmission – if infective birds, livestock, or people come into juxtaposition. Possible risks to human and livestock health from Mynas, although poorly quantified, should not be taken lightly, as recent experience of zoonosis transmission (eg, SARS, bird flu, West Nile Virus) suggests (Daszak et al 2000). Many people equate Mynas with overall loss of amenity and quality of life. Mynas, if present, are difficult for "sensitized" individuals, to ignore.

What can be done to control Mynas?

Control of Mynas in Australia (and other parts of the world where they cause problems) is clearly desirable, but can it be done safely, humanely and cost-effectively? Eradication of such a widespread and well-established species seems beyond the realm of possibility, at least at present, but there may be methods that could be used to reduce Myna numbers to an acceptable level and perhaps prevent the spread of Mynas to presently uninfested areas. Much is known about the basic biology of Mynas in Australia (Pell and Tidemann 1997a) and elsewhere (Feare and Craig 1998), whichwhich can be used to inform development of control methods, but much remains to be learnt.

It is clear that Mynas are highly intelligent and adaptable – and their behaviour is correspondingly variable, depending on the conditions in which particular sub-populations exist. Research on Mynas at the ANU has been concentrated on investigating unexplored aspects of their behaviour as a route to better control.

Biological control of Mynas, ie, the introduction of parasites or pathogens from countries of origin, has been considered and discarded, at least for the time being, as impractical because of very high development costs and risks to non-target species. Similarly, fertility control, ie, the deliberate release of agents that induce sterility on a broad scale, has also been discarded for the present (see Bomford and Sinclair 2002). Poisoning with alpha chloralose has been used to control small numbers of Mynas, as has shooting (R. Sinclair personal communication), but neither method is considered to be effective and safe for humans and non-target animals in broad-scale use, particularly in built-up areas. An additional problem with poisoning is that Mynas, like commensal rats, exhibit neophobia and may develop conditioned aversions if exposed to non-lethal doses of poison. Mynas also learn by observation, so shooting of more than a few birds can become progressively more difficult, as others observe and learn to avoid. Restricting access of Mynas to food (primarily invertebrates, food discards, domestic animal food and carrion, sometimes small vertebrates) and other resources, eg nesting hollows and roost sites, has been deemed impractical to effect control in most circumstances, simply because food sources are usually diffuse, and the great adaptability of Mynas means that they are usually able to move nests or roosts to other sites (see also Yap et al 2002).

One avenue for safe, humane and effective control of Mynas that does seem to have potential is selective trapping, thereby eliminating risk to non-target wildlife. Mynas can be trapped selectively with nest-box traps (eg, http://users.bigpond.net.au/ozbox), although only in small numbers and only during the breeding season (centred on northern wet season, southern spring). Traps that selectively catch Mynas at feeding areas by means of valves have also been developed (http://www.mynamagnet.com). Valve traps catch Mynas selectively by special entrance valves (Figure 1) that restrict access to most species, except Mynas and European Starlings (closely related to mynas and cause similar problems). The tendency of Mynas to walk, rather than hop (as do most other birds) toward a food source means that they – and more or less only they – gain access to the base section of the trap (Figure 2). Once inside the base section of the trap, Mynas can enter the protected roost capsule (Figure 3), via a second valve (Figure 4). Captives can be euthanased whilst held in the roost capsule by immersing the roost capsule in a gassing sleeve. It is imperative that any form of live capture be used in conjunction with an acceptable method of euthanasia (gassing with Carbon Dioxide is one such method). The use of decoy birds greatly enhances the performance of these traps; in some circumstances they can generate catches of hundreds of birds per year (Tidemann unpublished). Present research on Mynas at ANU is aimed at developing systems for catching Mynas in their communal roosts – with potential for catching hundreds or thousands of birds at a time.

Valve traps for Mynas will be on display during the breaks.

Acknowledgements

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List of Figures

Chris Tidemann

Chris Tidemann has pursued a lifelong interest in wildlife biology and management in Indonesia, Papua New Guinea and many parts of Australia. His research in these areas has involved collaboration with rural communities; his most recent work has involved assisting communities and local governments to manage wildlife in urban areas. Chris is a senior lecturer in wildlife conservation and management at the Australian National University. Chris was a member of the ACT Flora and Fauna Committee from 1999-February 2004 and is a member of three of the World Conservation Union's Specialist Groups: Bats; Sustainable Use of Wildlife and Invasive Species.

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Figure 1: Entrance valve for Myna Trap (Scale: mesh = 25 mm)

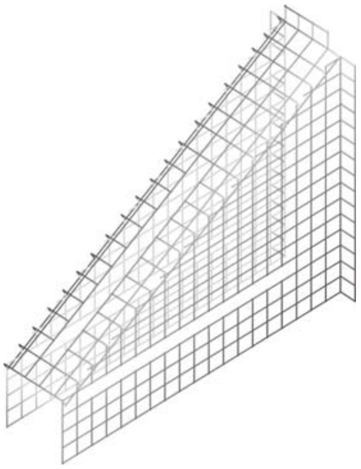

Figure 2: Base section of valve trap for Myna Trap (Scale: mesh = 25 mm)

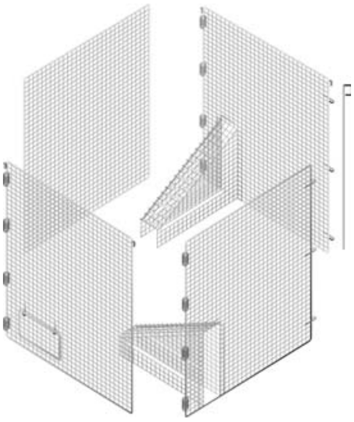

Figure 3: Roost capsule for Myna Trap (Scale: mesh = 25 mm)

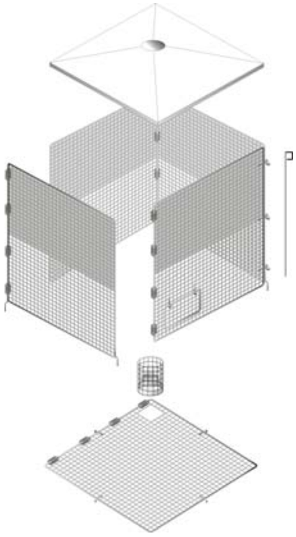

Figure 4: Entrance valve to roost capsule for Myna Trap (Scale: mesh = 25 mm)

Notes