Response Strategies for the Common (Indian) Myna

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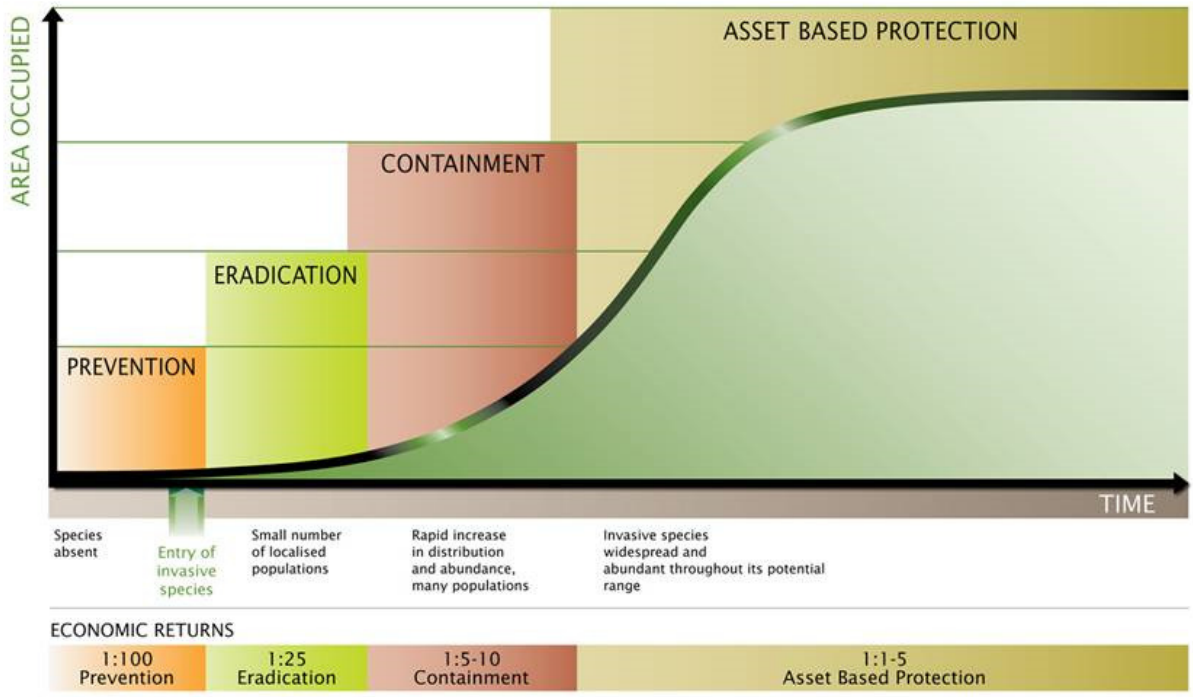
Australia has experienced numerous invasive animal, weed and disease incursions with significant environmental, economic and public health impacts. Governments, landholders and the general community have expended much effort and resources in responding to many of these incursions.

Responses to invasive pest animals, weeds and disease – "prevent", "eradicate", "contain" or "protect assets / manage the impacts" - differ depending on: the assessed negative impact of the pest or disease; the incursion phase or stage it is at; the ecology and characteristics of the invasive pest or disease; the cost of any response; and the likelihood of success. The response strategy varies, depending on these aspects.

A critical factor in developing the response strategy relates to the phase or stage the pest is at in its progress to becoming totally established. The response strategy by governments is also influenced heavily by an assessment of the economic, environmental, social and human health risk that an incursion poses. This is best demonstrated by the following diagram:

Fig 1: Invasion curve & management responses, *Invasive Plants and Animals Policy Framework 2010,* Vic Dept Primary Industries



Pre-Incursion:	*pest not present*	*= Prevent entry*
Stage 1 Incursion:	*small number of localised populations*	*= Eradication*
Stage 2 Incursion:	*pest becoming more widely established*	*= Containment*
Stage 3 Incursion:	*pest widespread and abundant*	*= Asset protection/ manage impacts*

The application of these two considerations can be observed in a number of familiar examples. The perceived threat from the global SARS epidemic some years ago, resulted in significant effort by government at **prevention** of the disease actually entering into Australia, as its perceived impact to human health was considered extreme (Pre-incursion Stage). The incursion of Red Fire Ants elicited an aggressive governmental response as the pest was still at a very early incursion phase and

amenable to **eradication**. Similarly, outbreaks of Newcastle Disease in poultry elicit urgent and intense responses (involving mass slaughter of hens) to avoid the disease becoming more widely established in the avian (Stage 1). For disease not amenable to eradication that has become entrenched within a region, the only response strategy may be to limit its spread: **containment** examples are *phytophthora cinnamomi* in Western Australian forests where vehicular movement is severely restricted, and Ovine Johne's disease where restrictions on movement of stock apply (Stage 3). Where a pest has become fully established the only response strategy may be to **protect assets / manage its impacts** (Stage 4). For example, in the case of horticultural pest birds, the asset protection response may be to net the orchard to exclude the pests.

While much of the response strategy to pest and disease incursions involves public monies, and often large amounts of it, private investments are significant. This is particularly the case by landholders on weed management, fox and rabbit control, but also by private domestic householders – on rats, mice, cockroaches etc.

The question arises as to what should be the response strategy to the Common (Indian) Myna. There had been a lack of scientific evidence as to whether the myna has a deleterious environmental impact, however the recent research by *Grarock et al* – which found that mynas did have a negative impact on a range of cavity nesting and small native birds - has now provided the scientific basis to underpin an ecological motivation for intervention. Prior to the Grarock research being published the Victoria Scientific Advisory Committee concluded that the lack of rigorous scientific research on myna impacts inhibited its assessment of mynas as a threatening process.

However, the general community through its lived experience has assessed this particular invasive bird as having serious negative impacts. These impacts are perceived to be:

- environmental - in terms of its competition with native birds over nesting hollows, its predation of nestlings, small reptiles and rare & endangered insects; its aggression which is perceived to result in small birds vacating gardens;
- economic – in terms of horticultural and viticultural losses;
- human health – as a result of the pathogens it carries and the fouling of patios and backyards, outdoor eating areas; and
- social – in terms of its raucous calls, fouling of backyards and patios.

As a consequence of such community reaction, local governments are under pressure to respond.

Furthermore, irrespective of the state of scientific research into the impacts of mynas, two overarching principles need to apply when considering an appropriate response to the Common (Indian) Myna: firstly the precautionary principle that is the fundamental underpinning of the conservation ethic; and secondly, the principle that the full suite of biodiversity that naturally occurs in an area is conserved and not sacrificed on the grounds that the species is abundant elsewhere.

The consideration of the appropriate response strategy to mynas also needs to be cognisant of the characteristics of mynas that make them amenable to population control, containment and even eradication in certain circumstances.

In this regard, mynas exhibit characteristics which make them readily amendable to active control measures, such as trapping, netting, shooting (at roosts), and baiting:

- they are commensal birds closely tied to human settlements. As birds of urban and semi-urban environments they are largely in defined areas, albeit now stretched across large parts of the eastern seaboard. They do not inhabit forests or wilderness areas: this assists targeted control;
- they are slow to disperse into new areas. This means that it is possible to concentrate control efforts in an area which will significantly reduce their numbers, and further reduce the population pressure that forces dispersal to new areas;
- they are social, occurring in groups rather than as individuals, readily flock and concentrate in large communal roosts. This behaviour and their raucous calls make them easy to detect and their flocking behaviour assists control. Their social attributes means that a bird in a trap will bring others to and into the trap;
- their perceived aggression to other birds, their fouling of backyards, their raucous and noisy roosts and their "in-your-face" presence make them unpopular. This assists in galvanising community action to participate in control and culling activities; and
- they are conspicuous, so readily identifiable by the general community.

These characteristics mean that control measures, such as trapping, can be highly effective and thus have a marked impact on myna numbers, thereby reducing their impact.

It has been argued that due to limited pest management resources, it is a poor allocation of funds to spend money on myna control. This viewpoint assumes that the risks associated with mynas are of a low magnitude, such that funding for control is not warranted relative to the risk; that substantial funds that substantial funds are required for control activities, and that control measures are primarily or exclusively to be funded by governments.

Because of the characteristics of mynas, control measures – such as trapping - can be very effective and low cost. The experience is that broad community-based and funded backyard trapping programs are efficient (in terms of capital and labour costs) and effective (in terms of significant reduction in population size) to allay any concerns that large scale public funds are required for the task. While governments, because of resource constraints, need to allocate pest control funding to species that have been assessed as carrying a high risk (whether it be economic, environmental or human health) and are readily susceptible to control measures, this is not a consideration for private individuals.

There is also a view that a more effective and sustainable control measure than culling is habitat restoration so as to reduce the environment favoured by mynas and increase that preferred by native birds: in essence this proposes revegetation of cleared land in urban and peri-urban areas. As mynas are birds of urban areas or peri-urban areas, vineyards, orchards, horse studs and dairies etc this argument is highly naïve. It is not feasible to restore urban areas and cleared farmland to their former heavily vegetated state – which would be required to make the areas less favourable to mynas. Cities and towns by their very nature involve open areas, gardens and parklands, road verges, and structures which provide nesting and roosting sites, and sources of food for an omnivorous and highly adaptive pest.

The experience of community trapping in Canberra and elsewhere has demonstrated that the Common (Indian) Myna can be effectively controlled at low cost through community action.

However, doing so in broader metropolitan areas - where myna population numbers are high and well entrenched – would be difficult to achieve. Nonetheless, this should not be an excuse to discourage community groups to develop action programs – with facilitation support from local government as needed – to deal with mynas at a local level. Such activity can have a positive impact on native wildlife and on social amenity at the local level.

Control effort should be encouraged – and facilitated – where myna incursions are at the early formation stage: such as inland towns and villages along the eastern seaboard, in the peri-urban environments, and woodlands across eastern Australia. This is where native birdlife is still abundant and the interface with the natural environment is still high.

The precautionary principle alone should lead environmentalists and bird-watchers to clamour for and participate in activities to limit the expansion of this highly invasive, highly adaptive and highly intelligent bird. To do less would be imprudent.

May 2014