

Community involvement and the National Recovery Plan for Malleefowl

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The National Recovery Plan for Malleefowl (Benshemesh 2000) was commissioned and guided by the by the National Malleefowl Recovery Team with the view of providing a framework for directing conservation of the species over the subsequent decade or so. The plan was funded by the four main public zoos in southern Australia (Perth Zoo, Royal Zoological Society of SA, Zoological Parks and Gardens Board of Victoria, and the Zoological Parks Board of NSW). The recovery plan has two main objectives:

- Secure existing populations, and
- Downlist Malleefowl from Vulnerable to a lower risk category using IUCN criteria

Achieving these objectives requires a range of actions that address the need for both improved management and better information on Malleefowl ecology and threats. The most important of these actions are discussed below. While the ultimate aim is to remove Malleefowl from threatened categories (such as vulnerable and endangered), to do this we will have to demonstrate that the distribution and breeding densities of the species is at least stable across its range over a suitably long period of three generations. While we do not yet know the average generation length for Malleefowl (ie. the average age at which breeding birds are replaced) this may be 10-15 years or even more. Thus, to downlist the species we shall probably have to show its populations are stable for the next 30 years or so.

Community groups and individuals have an important role in the recovery of Malleefowl. Community involvement can substantially reduce the cost of many actions, and thus increase the benefits to Malleefowl that can be achieved from scant funds. Perhaps just as critically, community programs can provide a degree of continuity in field work that is often difficult for agencies to equal. And finally, community groups across Australia have clearly shown that they are capable and willing to undertake conservation works for Malleefowl; in fact the achievement of community groups in recent times in regard to monitoring, education and awareness, and predator control has been remarkable.

Why do we need a Recovery Plan?

A recovery plan was needed for Malleefowl primarily to provide a national perspective for management and research. This national perspective is particularly important for Malleefowl because the species has a wide, scattered and fragmented distribution across Australia. This presents numerous challenges because issues and priorities change across this vast landscape, but it also highlights the need for a national approach so that important issues are identified and addressed within a planned and logical framework.

The other function of the recovery plan is to provide a concise background briefing of Malleefowl conservation issues. As such, the plan is hopefully a useful resource for managers, researchers and community groups, especially in regard to planning work and completing funding applications.

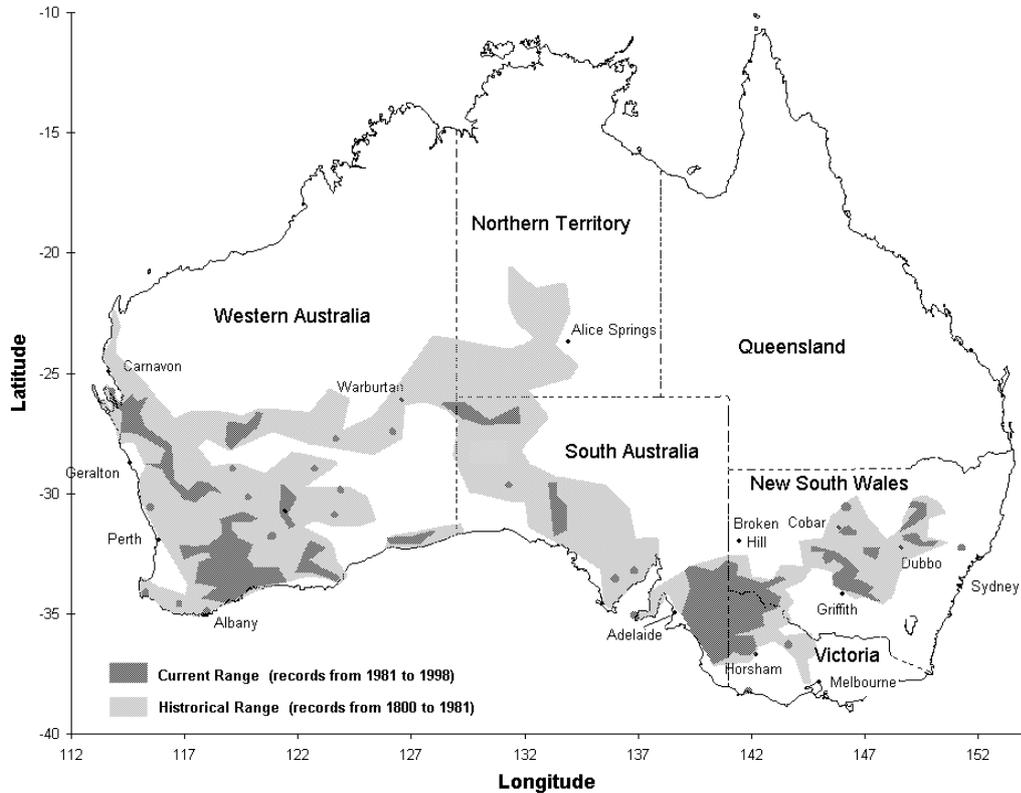


Figure 1. Historical (light grey) and current (dark grey; 1981-1998) distribution of Malleefowl across Australia.

Malleefowl distribution

Malleefowl once occupied a huge range across Australia (Figure 1). In the settled regions, where recent distribution data is most accurate, its range has since contracted mostly due to clearing for agriculture. In this regard, Malleefowl have actually persisted remarkably well despite huge changes since European settlement that have included introduced predators and competitors, changed fire regimes, and landscape fragmentation. This pattern is markedly different from that shown by other similar sized ground dwelling animals, such as the medium sized mammals that all disappeared in these habitats within a few years of settlement. This persistence demonstrates a resilience of Malleefowl that augurs well for conserving them with appropriate management.

In the more remote regions of central Australia the past and current range of this elusive species is less well known, and contractions of range are most easily explained by habitat changes (eg. changed fire regimes, grazing, etc) and predation by introduced foxes and cats.

In both settled and remote areas a range of actions are needed to mitigate threats to the species, improve our knowledge and coordinate our approach. In the following discussion I will overview some of the most important actions that are detailed in the recovery plan, and provide an indication of the potential role of community involvement in these actions.

Mitigating Threats

1. Clearing & Fragmentation

Effects

Clearing for agriculture has had catastrophic effects for Malleefowl as much of their habitat, and most of the prime habitat, was removed. The after-effects of this clearing are just as detrimental as the initial clearing because the remaining habitats have been left fragmented and in many areas Malleefowl persist only in small, isolated remnants (Figure 2). A large body of theoretical and empirical work indicates that the outlook for small isolated populations is grim even if the remnant habitats are pristine. However, fragmented habitats cannot remain pristine when surrounded by agricultural land and become degraded at their edges due to a variety of effects.

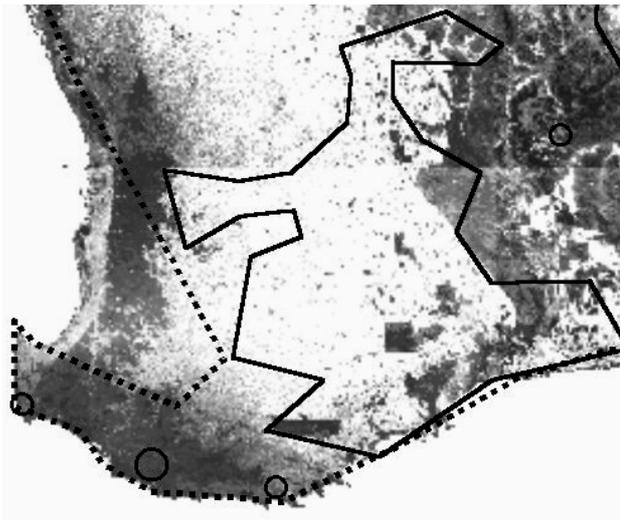


Figure 2. SW Western Australia showing the likely original distribution of Malleefowl (dotted line) and distribution since 1981 (solid line). Most of the area in which Malleefowl still occur is in fact cleared (pale) and the species persists in numerous small and isolated remnants. This degree of fragmentation will inevitably lead to local extinctions unless management intervenes.

What can be done?

Many of the detrimental effects of small, isolated populations can be overcome by linking habitat patches with habitat corridors that allow Malleefowl to move into/out of habitat patches. These need to be carefully planned to achieve the desired result. Where dispersal corridors are not feasible, maintaining Malleefowl in isolated patches will eventually require translocations.

Intensive habitat management will probably be required to maintain habitat condition and to control predators and competitors.

Potential for community involvement

High: community groups are already actively involved in revegetating links between isolated remnants.

2. Fire

Effects

The initial effects of large fires are similar to clearing in that habitat is removed. However, habitat recovers from fire over several decades and many food plants used by Malleefowl require fire to regenerate. The threat to Malleefowl is due to BIG fires that suddenly kill or displace birds over vast areas, and may even eliminate the species from large reserves. Small, patchy fires are beneficial to Malleefowl both because they reduce the chance of a subsequent big fire, and allow regeneration to occur without disturbing too many birds.

What can be done?

Identifying and preferentially protecting the key areas where Malleefowl are most abundant would provide insurance against big fires. In general, any actions that prevent or disrupt big fires and encourage patchiness in habitats would probably benefit Malleefowl.

Community contribution

Community groups could help identify the most important areas for Malleefowl breeding in large reserves. Fire management is not an option for community involvement. Fire is a risk for people working in the mallee and safety issue for volunteers who should have good communication systems in place.

3. Foxes

Effects

Foxes are known to eat Malleefowl eggs, chicks and adults, but their effects on Malleefowl populations are still unclear. Captive reared chicks that are released in the wild benefit from fox control, and accordingly such release programs should always be accompanied by fox control. But whether wild Malleefowl populations require reduction or removal of foxes in order to maintain themselves is still uncertain, though much discussed. There has simply not been a clear demonstration of a positive effect of fox reduction on Malleefowl populations, partly because fox control is usually undertaken at the same time as habitat is improved (by removing goats/sheep, maturing habitat after fire, etc). Clarity in this issue is important because fox control is costly and might have undesirable effects in some areas (eg. benefiting cats, rabbits and other herbivores, poisoning wildlife). Most likely, the effect of foxes on Malleefowl is greatest in small reserves.

What can be done

Baiting with 1080 is the most effective method of fox control within Malleefowl reserves. However, effective control of foxes requires careful planning, collaboration and execution and usually needs to occur at a large enough scale to prevent immediate reinvasion. There is clearly a need to document the effect of foxes on Malleefowl populations, and the benefits of fox control for conserving Malleefowl.

Community contribution

Groups can make a major contribution to both reducing fox abundance and clarifying the effect of foxes on Malleefowl populations. In particular, community groups have already shown themselves to be especially good at coordinating landholders for large scale baiting campaigns. Community groups would also be well suited to monitoring the effects of control measures on foxes (have they actually been reduced?), and on Malleefowl (have breeding densities increased?).

4. Grazing by sheep and goats

Effects

Grazing by sheep is known to reduce Malleefowl abundance enormously. Sheep, goats and other herbivores probably compete with Malleefowl for food, but an even greater threat may be in causing long term habitat changes. It's for this reason that grazing by sheep in mallee communities has been called "de facto clearing".

What can be done?

Remove stock and goats from Malleefowl sites, and close/fence unnatural water sources.

Community contribution

Landholders can make major contribution by reducing grazing pressure on Malleefowl habitat under their control.

Information for Management

1. Monitoring

Why?

Knowing the trends of Malleefowl populations is fundamental for conservation, and is a key criteria for assessing their status. Monitoring also provides a means of gauging effectiveness of management (eg. measuring the benefits of fox control).

How?

Breeding density is the best measure of Malleefowl population trends.

Community contribution

Community groups can and have made a major contribution to Malleefowl conservation by undertaking monitoring programs. In fact, community involvement is essential for on-ground survey of monitoring sites, and the continuity provided by community involvement is a great benefit for on-going monitoring programs.

2. Distribution

Why?

The distribution of Malleefowl is poorly known in many areas, especially the more remote areas. This is because Malleefowl are actually rather elusive birds and rarely show up in general animal surveys unless they are very common in an area.

How?

Postal surveys are useful in settled areas, and have been used to great effect, although it is also true that without follow-up checking the results can be misleading. In drier, remote areas, searching for Malleefowl footprints (“tracking”) is the most effective means of detecting their presence in suitable habitat, especially in combination with local knowledge (if any exists). Incidental sightings can be very useful too, particularly if these are of breeding mounds or pairs of birds.

Community contribution

Community groups make a very important contribution to obtaining distributional information, both by collecting information in the field, and by passing on information they hear from locals. Groups and remote communities can also plan and conduct surveys with little supervision or instruction because the techniques are easily learnt.

3. Population Dynamics

Why?

Understanding population turnover, recruitment of young and longevity of adults is crucial, and this is perhaps the biggest gap in our knowledge of Malleefowl conservation ecology.

How?

This project involves capturing and marking adults and perhaps chicks and then identifying these birds at mounds in subsequent years. Some recent work (Priddel and Wheeler 2003xx) achieved this for a population of adults in NSW by visually identifying birds with colour bands, but this is enormously labour intensive and can only be done on adults. New technology used in zoos and on livestock and pets allows animals to be identified much more efficiently and automatically on both adults and chicks. A closed (isolated) population of birds is required for this study, and after catching and marking the birds the routine work would involve moving equipment from mound to mound during the breeding season. This is a long-term project and should run for at least ten years to provide useful data.

Community contribution

Community involvement would be of great assistance in setting up this project as catching adults and chicks is labour intensive. Once the birds are marked, community groups could run this project with little more supervision than regular monitoring of breeding densities.

4. Habitat requirements

Why?

Describing what Malleefowl habitat requirements are would enable us manage habitat better and to identify sites that would be suitable for re-introductions. Understanding Malleefowl habitat requirements is especially important now that global climate appears to be changing as habitats will change substantially in the future.

How?

The existing monitoring sites across Australia provide a invaluable resource showing breeding densities and trends of Malleefowl in a range of different habitats. What

needs to be done now is to measure a range of habitat variables and find which of these best explain differences in Malleefowl densities.

Community contribution

Volunteers could help measure habitats. This would require careful planning to ensure that these measures were repeatable.

5. Genetics

Why?

Understanding the genetic variability of Malleefowl across their range is important in order to determine appropriate management units. If there are distinct genetic populations, then these should be managed separately. There is also the possibility of identifying individual birds from moult feathers which could be useful in determining how long individuals live and how strongly monogamous the pairs are.

How?

Samples of tissue and feathers have already been collected from around Australia, and some genetic work has been completed. However, further genetic markers need to be developed before the conclusions can be drawn or new techniques developed.

Community contribution

Volunteers in some areas routinely collect feather samples, but further development in this area is dependent on detailed genetic studies.

National Coordination

1. Community Involvement

Why?

Community volunteers have shown to be instrumental, effective and enthusiastic agents in Malleefowl conservation. They have already taken lead role in surveys, monitoring, education/awareness, revegetation, and predator control, and their involvement is essential for many projects in the recovery plan.

How?

Newsletters and webpages are already in effect and these should be supported to maintain a degree of communication across Australia and raise public awareness. Community groups have developed some excellent websites (see www.malleefowl.com.au and www.malleefowlvictoria.org.au). Forums, such as this meeting, are of great value in bringing people together and foster collaboration and national perspective.

2. National Recovery Team

Why?

A national recovery team is needed to coordinate and manage the recovery plan, provide national perspective and priorities, and to foster collaboration between community groups, agencies and other interested parties. Fragmentation and isolation threatens the recovery effort as much as it does the species, and a lot more can be achieved by working together than separately.

How?

A national Malleefowl recovery team needs both community and government representation from across the range of the species. The original team that was in place during the preparation of the recovery plan has not met for some years, although there is a clear need for its resurrection in some form. The recovery team has to decide for itself the fine details of its composition, meeting schedule, and agenda.

Actions Summary

The foregoing discussion on the community involvement in Malleefowl recovery is summarised in Table 1 which shows the actions that would benefit most from community involvement.

Table 1. Summary of likely community contributions to different actions in the Malleefowl recovery plan. Actions in which community groups could potentially contribute the most are given more Malleefowl symbols.

Category	Action	Community Contribution
Mitigate Threats	Fragmentation	
	Fire	
	Foxes	
	Grazing	
Information for Management	Monitoring	
	Distribution	
	Population dynamics	
	Habitat requirements	
	Genetics	
National Coordination	Community involvement	
	Recovery Team	

Where to from here?

1. Malleefowl need the support and efforts of the community

While government agencies have made and continue to make enormous contributions to improving the conservation of Malleefowl, often without due acknowledgment, resources are thinly spread and it is clear that community groups have an important role in benefiting Malleefowl. This community effort would be optimised by groups sharing the solutions they have found to various problems and challenges. For example, different community groups have developed a range of projects involving

education kits, coordinated fox baiting processes, sightings databases, and monitoring systems to name a few. Sharing the experiences, processes and knowledge that have been gained amongst all groups would strengthen the national effort and prevent time being wasted in 're-inventing the wheel'.

2. The community needs direction and support from a National Recovery Team

Community groups provide an energetic and capable work force, but need help and expertise to design, standardise and synthesise projects. The recovery plan provides a framework and direction, but this is not a substitution for a dedicated team that would foster collaboration and oversee implementation of projects outlined in the plan. Many of these projects can (and should) be divided up across continent, and one role of the recovery team is to ensure that necessary standards are met. Another important role of the recovery team is to review and if necessary modify the recovery plan as new information comes to light.

3. Greatest resource is community, but some funding and support is necessary

Community groups can achieve a great deal with relatively few funds, but nevertheless require some funds to operate and cover necessary costs involved in administration and coordination, travel and materials. State and federal governments may not always be able to meet these costs, and groups should consider alternative sources such as corporate sponsorship and local councils and businesses to ensure their survival. Another possibility is for community groups to enter into contractual agreements with government agencies for the provision of information (such as monitoring data) over several years.

Concluding remark

The importance of community involvement in the conservation of Malleefowl can hardly be overstated. Community groups provide a work force for mitigating threats and for obtaining crucial information for management. They also represent a powerful lobby group for improving land management generally under the banner of Malleefowl conservation. The achievements of groups across Australia have already been considerable and would be even greater with increased coordination and collaboration at a national level.