

3. How we have progressed as measured against the National Recovery Plan for Malleefowl and Resolutions from Renmark

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Abstract

This presentation will provide an update on Recovery Team progress toward objectives detailed in the National Malleefowl Recovery Plan as well as resolutions determined at the 2011 Renmark National Malleefowl Forum.

It is generally recognised that best business practice requires a business plan to guide an organisations direction forward. In the case of the National Malleefowl Recovery Team, the Recovery Plan fills this purpose. In the Recovery Plan, we have 16 objectives, each with a number of proposed actions. The National Forum is an ideal opportunity for the Recovery Team to report to the broad Malleefowl community on how we are progressing toward achieving these objectives.

Introduction

In this presentation I will provide a brief update on our progress toward objectives detailed in the National Malleefowl Recovery Plan as well as resolutions determined at the 2011 Renmark National Malleefowl Forum.

It is generally recognised that best business practice requires a business plan to guide organisations. In the case of the National Malleefowl Recovery Team, the Recovery Plan fills this purpose.

When reporting on our progress against all of the plan's objectives we need to keep in mind that the objectives are not just the responsibility of the Recovery Team. Malleefowl recovery is a task that involves a huge effort from many agencies and organisations across Australia. The current political climate is such that environmental issues are seen as a lesser priority by all governments in terms of funding and resources than was the case three years ago. Also, it is important to recognise that most of the objectives are the responsibility of individual states, but in every case, the states have experienced a reduced capacity to deliver outcomes and report on them. Because of this reduced capacity to report, many of the outcomes discussed below are assumptions rather than fact.

We need to also be mindful that a Recovery Plan describes the actions needed to take a species from a threatened status to non-threatened. This requires a massive effort and in the case of Malleefowl it requires a massive effort in five states and territories (NSW, VIC, SA, NT and WA). Achieving some of the objectives, for instance increasing net available habitat, are nigh on impossible but that doesn't mean we won't recognise the needs and strive toward them.

Summary of Recovery Plan

The Recovery Plan has an overall objective to "Down-list Malleefowl from Vulnerable to a lower category based on IUCN criteria"

With two Recovery Criteria to measure success:

- Breeding densities remain stable or increase above those at present over a ten-year period or three generations (whichever is longer) at a representative sample of at least 40 monitoring sites across the species' range. These monitoring sites should be located in representative habitats in both large and small (<5,000 ha) habitat fragments.
- The existing distribution is shown to be stable or increasing over a ten-year period or three generations (whichever is longer).

Following the criteria we have 18 Specific Objectives, under three broad headings:

- *Managing populations*
- *Planning, research and monitoring*
- *Community involvement and project coordination.*

and each of these objectives has one or more performance criteria and actions. The objectives are:

Managing populations

1. Reduce permanent habitat loss
2. Reduce the threat of grazing pressure on Malleefowl populations
3. Reduce fire threats
4. Reduce predation
5. Reduce isolation of fragmented populations
6. Promote Malleefowl-friendly agricultural practices
7. Reduce Malleefowl mortality on roads

Planning, research and monitoring

8. Provide information for regional planning
9. Monitor Malleefowl and develop an adaptive management framework
10. Determine the current distribution of Malleefowl
11. Examine population dynamics: longevity, recruitment and parentage
12. Describe habitat requirements that determine Malleefowl abundance
13. Define appropriate genetic units for management of Malleefowl
14. Assess captive breeding and re-introduction of Malleefowl
15. Investigate infertility and agrochemicals

Community involvement and project coordination

16. Facilitate communication between groups
17. Raise public awareness through education and publicity
18. Manage the recovery process.

Summary of Resolutions from the 2011 National Malleefowl Forum

At the conclusion of the 2011 National Malleefowl Forum, a review of discussions and presentations was conducted. A list of Resolutions was drawn up from this review. They are:

Managing Populations

1. Seek opportunities to identify, protect, improve, and re-establish large areas of contiguous habitat for Malleefowl over the long term (under the Malleefowl Adaptive Management Framework).

Planning and Monitoring for Recovery

2. Collate a list of priority research questions to guide the recovery effort and engage others.
3. Secure funding to ensure the uploading and analysis of WA community data is equal to the rest of the country.
4. Secure funds and implement a national Malleefowl Adaptive Management Framework (MAMF) for national Malleefowl conservation recovery.
5. Establish a national fire project under the auspices of the Recovery Team (and MAMF) to consolidate existing information/learning including available traditional burning knowledge, identify priority applied research and opportunities to learn i.e. on the back of government prescribed burning programs and stimulate further research and funding.
6. Seek funding to appoint a National Malleefowl Recovery Coordinator that reports to the National Recovery Team to drive the application of the MAMF, supports national coordination, drives the Plan's implementation, supports and recruits database coordinators and seeks additional funding for Malleefowl conservation nation-wide.
7. Prioritise Recovery Team activities and national reporting to be more closely aligned to the national Recovery Plan.

8. Reinststate 'Around the Mounds' (or equivalent) to provide project updates, monitoring feedback and show how data is applied to achieve recovery to the Malleefowl conservation community in particular volunteers – suggestions received this could be achieved by a newsletter or national website.
9. Convene a national remote camera (web cam) working group under the auspices of the Recovery Team to look at existing use, best opportunities to use the technology to further recovery and to establish guidelines for use with minimal impacts on the birds.

Engaging communities

10. Establish under the national database a database of interested individuals, volunteer groups and their activities so that groups can better share information and promote their volunteer opportunities.
11. Pursue options for links with volunteer organisations to increase access to volunteers particularly for low populated regional areas e.g. city, scouts, CVA.
12. Secure resources to enable a further print run of the VMRG Malleefowl Education Kit in a format that can be distributed to other regions.
13. Follow up on the Regional NRM Malleefowl Guide and establish working partnerships with all key NRM/CMAs across the Malleefowl's range.

Results of review

In this review I have combined the 18 Recovery Plan objectives, the respective performance criteria and the 13 Resolutions from 2011. Specific actions have not been included. Each Recovery Plan objective also has the results from the 2011 review conducted by Peter Copley and presented at the 2011 National Malleefowl Forum to allow a quick reference to our progress since 2011.

Managing populations

Performance Criteria: P1.1 The total area of Malleefowl habitat protected in reserves, conservation covenants and similar management agreements, increases over the life of the plan.

From the 2011 review. This increase in protection appears to have occurred in WA, SA, Victoria and NSW. For example, in Victoria there have been several private properties with new conservation covenants. However, no statistics have been collated to demonstrate the extent to which this has occurred, either in total, or by reserve type.

2014 Comment: It is likely that the area in reserves, conservation covenants and similar has increased simply because we are unaware of any losses whilst being aware of some increases. However, there has been no attempt to document this. This is perhaps understandable because it would require gathering data on all new reserves, covenants, etc. and then going over each one to determine if they contain Malleefowl habitat and how much. At this stage the Recovery Team lacks the resources to undertake this work.

Performance Criteria: P1.2 No decline in the known area of occupied or mapped potential Malleefowl habitat over the life of the plan.

From the 2011 review. There does not appear to have been any collation of data on loss of known or suspected Malleefowl habitat since the recovery plan was first drafted (or over any time-frame for that matter). The data almost certainly exist in people's heads or various databases, and it should be possible to report against this target. A start year and baseline measure would need to be agreed upon as a starting point.

2014 Comment: To establish this, a baseline is required detailing what area is occupied or mapped as potential Malleefowl habitat, and this does not exist. Following the establishment of a baseline, extensive survey work would be required and at this stage the Recovery Team lacks the resources to undertake this work. There has almost certainly been a decline because we know that clearing continues.

Performance Criteria: P2.1 Goat and sheep are removed or in low numbers in conservation reserves.

From the 2011 review. While there has been some goat control work on Gluepot Reserve in South Australia, there are many areas within the Malleefowl range where feral goats are an ongoing issue. Feral deer are also an increasing problem in a few conservation reserves. While there are feral goat (and deer) control programs in conservation reserves in each state, the outlook for ongoing and improved levels of control does not look positive.

2014 Comment: There are very good examples where goats have been removed in reserves and attempts to control them have taken place over the past three years e.g. in Mount Hope (NSW) region and numerous reserves in SA. As for recording and reporting this, it is considered a possibility but has not been done across the total Malleefowl range. The Recovery Team lacks the resources to undertake this work but would be keen to obtain data where it already exists.

Performance Criteria: P2.2 Artificial sources of water in conservation reserves are closed or fenced.

From the 2011 review. Closure of artificial waters has happened in a major way on Gluepot and on Calperum and Taylorville Reserves in South Australia and more water closures are proposed on the latter two properties. Similar actions have occurred through the closure of irrigation channels as a result of the Wimmera / Mallee pipeline project.

2014 Comment: There are examples of where this work continues but again, there has been no national recording and at this stage the Recovery Team lacks the resources to undertake this work.

Performance Criteria: P2.3 The area of known Malleefowl habitat protected from stock grazing (e.g. through fencing) increases over the life of the plan.

From the 2011 review. Significant areas of Malleefowl habitat continue to be fenced as part of various national and state funding schemes. However, as for many other objectives in this plan, there are no readily available statistics to report on the scale of this activity.

2014 Comment: There are examples of where this has been achieved but again no national recording. The Recovery Team lacks the resources to undertake this work but would be keen to obtain data if it is available.

Performance Criteria: P2.4 Rabbit numbers are reduced where they are abundant in or near Malleefowl habitat.

From the 2011 review. There does not appear to have been any significant action on this objective and, in fact to the contrary, recent rabbit population increases after the good rains over much of the Malleefowl range are likely to have negated any such works many times over. It seems unlikely that reduction of rabbit numbers is a sustainable activity at the scale of areas required to support viable Malleefowl populations. However, strategic rabbit control efforts around a selected number of active Malleefowl 'nesting territories', or broad-scale control in selected years may be adequate to encourage increased recruitment of Malleefowl.

2014 Comment: This work is assumed to continue in many reserves and on private land but again no national recording and at this stage the Recovery Team lacks the resources to undertake this work.

Performance Criteria: P3.1 Fire management plans which consider the habitat requirements of Malleefowl are developed and implemented for all reserves in which Malleefowl occur.

From the 2011 review. Increasing numbers of fire management plans are being prepared for areas/reserves occupied by Malleefowl and most of these plans do address issues of risk to Malleefowl. However, the implementation of these plans, especially where pro-active habitat protection burns are proposed, does not occur in many areas or very often. An example of where such plans are implemented for the protection of Malleefowl habitat is the South East of South Australia. The assessment of achievability (above) is based on the likelihood of resources being provided to implement the conservation-based actions for at least half of the fire management plans for reserves where Malleefowl are known to occur over a 5-year period. In fact, the Victorian Malleefowl Recovery Group has concerns that annual prescribed burn targets, for example in Little Desert National Park (Victoria), has very little unburnt habitat left, yet is a park with ongoing prescribed burn targets.

2014 Comment: Fire management plans are in place for many areas/reserves occupied by Malleefowl and most of these plans do address issues of risk to Malleefowl. However it appears that in Vic and NSW at least, environmental outcomes are eclipsed by government policies to burn areas based on area targets and asset protection. This goal is also severely impacted by increased wildfire e.g. in the Victorian and SA Mallee during the 2013 summer. There has been no attempt to establish if all relevant reserves are covered by these plans and at this stage the Recovery Team lacks the resources to undertake this work.

Performance Criteria: P3.2 Broad-scale agricultural burning is reduced in areas that harbour Malleefowl.

From the 2011 review. It is not clear where this is an issue and who needs to address it.

2014 Comment: The practice of broad-scale agricultural burning in areas that harbour Malleefowl is no longer promoted and thus not thought to threaten Malleefowl habitat in the form of bushland on private land. There has been no attempt to establish if all relevant reserves are covered by these plans and at this stage the Recovery Team lacks the resources to undertake this work.

Performance Criteria: P3.3 Fires in Malleefowl habitat are mapped and their effects monitored to inform future planning.

From the 2011 review. Fire-scar mapping data are now very good in each jurisdiction. However, not all Malleefowl habitat has been identified and mapped in each state and the effects of mapped fires on Malleefowl and their habitat are seldom monitored. The fire data exist; the Malleefowl habitat data either exist or could be extrapolated. However, analyses of spatial and temporal effects of fires on Malleefowl are not undertaken. The point is, the analyses could be done.

2014 Comment: Fire mapping does occur and often of high quality. Mapping this against Malleefowl habitat is not done. At this stage the Recovery Team lacks the resources to undertake this work, however it is anticipated that the Adaptive Management Project will include fire in future experiments and analyses.

Forum Resolution 5. Establish a national fire project under the auspices of the Recovery Team (and MAMF) to consolidate existing information/learning including available traditional burning knowledge, identify priority applied research and opportunities to learn, i.e. on the back of government prescribed burning programs, and stimulate further research and funding.

2014 Comment: This project was considered to be over ambitious for the Recovery Team. There are a number of projects being conducted (Western LLS and Hawkeye are two) and the Adaptive Management team will be including fire as a future component in experiments.

Performance Criteria: P4.1 Fox control efforts are adequately documented near monitoring sites.

From the 2011 review. Fox-baiting data are now recorded in a more systematic manner where this activity occurs on, or in the vicinity, of Malleefowl monitoring sites. However, there is considerable room for improvement, especially in terms of working this in with an active Adaptive Management monitoring program. This is still proposed for the near future. As the VMRG point out, there is also a need to coordinate any baiting programs across neighbouring properties to improve efficacy and efficiency.

2014 Comment: Documentation occurs at most reserves near monitoring sites but is not gathered nationally and at this stage the Recovery Team lacks the resources to undertake this work at a national scale. However, there will be an increased data gathering effort at Adaptive Management sites as experiments progress.

Performance Criteria: P4.2 Fox numbers are reduced where Malleefowl show decline and fox predation is a likely explanation for this decline.

From the 2011 review. This objective is still difficult to define realistic activities and targets for. The active Adaptive Management Project aims to clarify these issues.

2014 Comment: The link between fox control and Malleefowl trends has recently been shown to be very weak, but nonetheless the issue is now being thoroughly examined by carefully designed experiments in the Adaptive Management Project. We expect the results from the Adaptive Management experiments to clarify this issue, and these experiments will involve increased fox control in many areas. Until these results are available and in light of recent studies, there is little justification for wide scale fox control to conserve Malleefowl.

Performance Criteria: P5.1 Habitat links between remnants are increased in priority areas as identified in regional Malleefowl conservation plans.

From the 2011 review. This objective does not appear to have been addressed.

2014 Comment: There are several examples of this occurring e.g. in the Mount Hope region (NSW), Gondwana link (WA), Habitat 141 (Vic/SA). Establishing the criteria for prioritised links will also be informed by work being presented at the 2014 Forum from the project conducted by Geoffrey Allen and Ian Sluiter.

Forum Resolution 1. Seek opportunities to identify, protect, improve, and re-establish large areas of contiguous habitat for Malleefowl over the long term (under MAMF).

2014 Comment: There have been some significant steps in this direction (Western LLS and Gondwana link are mentioned).

Performance Criteria: P6.1 Increased adoption of asynchronous following by farmers in areas adjacent to Malleefowl habitat.

From the 2011 review. There does not appear to have been any strategic action on this objective. However, there are isolated examples of farmers who do consider the needs of Malleefowl, when they are working in paddocks adjoining known Malleefowl habitat.

2014 Comment: Unaware of a strategic approach to this but know that some farmers adopt this approach. There is no national recording and at this stage the Recovery Team lacks the resources to undertake this work.

Performance Criteria: P7.1 Occurrence of road kills is recorded each year, patterns analysed and frequency reduced.

From the 2011 review. While there have been EPBC Act conditions placed on proposed road upgrade developments likely to increase risks of road mortalities of Malleefowl, no systematic recording system has been established to monitor road kills and, as such, there are no data to analyse for patterns.

2014 Comment: This does happen at some sites e.g. mines and the importance is discussed by NCMPG in their poster presentation at the 2014 Forum. There is no national recording and at this stage the Recovery Team lacks the resources to undertake this work.

Performance Criteria: P7.2 Signs are erected where needed to warn drivers that Malleefowl may be on the road ahead.

From the 2011 review. A few road signs have been erected in South Australia, Victoria and Western Australia but there has been no monitoring of their effectiveness. While there are several further areas where more signs could be erected, it would seem prudent to assess their usefulness and to determine site priorities.

2014 Comment: Certainly this does happen (note the prompt signage response to canola spills that attracted Malleefowl to roadsides near Ouyen in 2013) but others that have been proposed (Eyre Peninsula) are yet to be achieved.

Planning, research and monitoring

Performance Criteria: P8.1 Regional conservation plans for Malleefowl are prepared.

From the 2011 review. In early 2008, Joe Benshemesh's "Advice to Regional Natural Resources Management Bodies regarding Management and Monitoring of Malleefowl" for each of the 15 NRM and CMA regions across the Malleefowl's range was printed and forwarded to contacts in each of these regions. While there have been no regional conservation plans prepared for Malleefowl, per se, there have been increasing incidences of the National Recovery Plan and the National Monitoring Manual being used as a basis for more localized management plans – especially, associated with new mine site operations.

2014 Comment: Partially achieved with the 2008 'Advice to Regional Natural Resource Management Bodies regarding Management and Monitoring of Malleefowl', local plans are not in place across the range. This is considered a task for the national coordinator as relationships are developed with NRM agencies across the Malleefowl range.

Forum Resolution 13. Follow up on the Regional NRM Malleefowl Guide and establish working partnerships with all key NRM/CMAs across the Malleefowl's range.

2014 Comment: There are already close relationships with a number of NRM (note that Western LLS are a sponsor of the Forum). This is especially so in SA and Vic where NRM agencies fund the National Coordinator position. National Coordinator is working to include all NRMs in monitoring.

Performance Criteria: P9.1 Monitoring data is analysed and reviewed and national Adaptive Management design is developed through collaboration by 2008.

From the 2011 review. Monitoring data for Victoria and South Australia have been reviewed and analysed and more data from Western Australia and New South Wales have been reviewed and are gradually being incorporated into the national database in readiness for development of the Adaptive Management Project. The ARC Linkage Adaptive Management Project has recently been funded by ARC and other partners, so the project can now proceed.

2014 Comment: The monitoring data was initially analysed in 2007 to produce the Trend Analysis paper by Joe Benshemesh. A similar project is currently being undertaken with results expected in 2015. The monitoring database is also being utilised to develop modelling as a foundation for the Adaptive Management Project currently underway.

Performance Criteria: P9.2 Monitoring continues at existing sites across Australia according to national standards, with:

- monitoring completed in each state by 1 February each year (data for each monitoring site recorded as described in manual, entered in database, and provided to Birds Australia in electronic format);
- monitoring data analysed by state and nationally by 31 May each year; and
- summary report distributed to participants by 30 June each year.

From the 2011 review. While the annual time-frames for completion of these tasks are usually later and nearer June, they are up to date for Victorian and South Australian sites. There are still some issues around catch-up for WA and NSW monitoring data. (The database is not managed by Birds Australia). Annual summaries are usually completed by the end of June each year. This is happening reasonably effectively in most areas, with reports distributed to volunteers in Victoria and South Australia, to National Recovery Team members, and to others with an interest through the VMRG web-site and/or in Western Australia, through the Malleefowl Preservation Group's newsletter, Malleefowl Matters. The VMRG also hold an annual reporting-back meeting for their volunteers.

2014 Comment: Results are similar as those discussed in 2011 (above). The work is ongoing with variable outcomes each year depending on available resources. The most notable outcome in past last three years is that all data from WA is now uploaded to the database. New sites are being established. More work is needed to produce timely national annual reports and distribute the information.

Performance Criteria: P9.3 Effectiveness of fox baiting at increasing Malleefowl breeding density is adequately tested.

From the review by PC (2011). Effectiveness of fox-baiting is still to be tested however, this is intended to be a significant aspect of the ARC Linkage Adaptive Management design project.

2014 Comment: As stated in P4.1 and 4.2 (above) the link between fox control and Malleefowl decline has recently been examined and is being even more thoroughly examined by experiments as part of the Adaptive Management Project.

Performance Criteria: P9.4 The Malleefowl monitoring effort is facilitated, standardised and coordinated at a national level.

From the 2011 review. This has been a very significant focus of volunteer groups across the range. States of the Malleefowl, and the level of facilitation and coordination within each jurisdiction is a credit to all involved. However, seamless facilitation and coordination of a standardized approach across four States and many regions remains an issue while there is no national coordinator/facilitator role.

2014 Comment: This remains a core activity for the Recovery Team because the data are essential for understanding threats and the effectiveness of management actions. The outcomes are remarkable for the effort involved. Improvements are expected as increased training such as the recent NCMGP project occurs. There is room for improvement with more work by the National Coordinator required in all states except Victoria where the effort is extremely well managed by the VMRG.

Forum Resolution 3. Secure funding to ensure the uploading and analysis of WA community data is equal to the rest of the country.

2014 Comment: This has been achieved largely through Iluka MMC funds and a grant from Gunduwa RCA. All available WA data has been standardised and is now on the NMMD.

Forum Resolution 4. Secure funds and implement a national Malleefowl Adaptive Management Framework (MAMF) for national Malleefowl conservation recovery.

2014 Comment: Funding for the Adaptive Management Project has been achieved and the project is currently being implemented.

Performance Criteria: P10.1 The distribution and status of Malleefowl in remote areas is clarified and local involvement is encouraged.

From the 2011 review. While there has been some progress on this activity; there are still many gaps in survey coverage.

2014 Comment: Progress has been made in the Maralinga Tjarutja Lands with new monitoring guidelines developed by Joe Benshemesh specifically designed for remote areas. Examples of increased local involvement will be discussed in a presentation by Adam Pennington at the 2014 Forum. Prospects exist for more work through the recently established Great Victoria Desert Biodiversity Trust.

Performance Criteria: P10.2 The distribution and status of Malleefowl in settled rural areas is clarified.

From the 2011 review. There has also been ongoing progress for this activity across much of the Malleefowl's known range, although there are almost certainly sites where Malleefowl are assumed to still occur, but may well now be locally extinct.

2014 Comment: There are still significant gaps in knowledge of distribution and status of Malleefowl in settled rural areas. Large gaps in monitoring in NSW are hoped to be addressed by the National Coordinator over the coming years.

Performance Criteria: P11.1 The feasibility of automatic recorders for identifying Malleefowl is examined and efficient capture techniques are developed, with a report available by 30 June 2008.

From the 2011 review. This action did not eventuate, except through the deployment of trip cameras at nest mounds in a few separate locations.

2014 Comment: Considered a low priority action and no action taken since the 2011 Forum. Developments in camera-traps and genetic 'finger-printing' technology may provide less labour intensive and expensive alternatives to the proposed automatic recorders.

Performance Criteria: P11.2 The longevity of breeding Malleefowl and the turnover of the breeding population is measured for areas with and without fox control.

From the 2011 review. Not implemented.

2014 Comment: Considered a low priority action and no action taken since the 2011 Forum. (see comment at 4.1 & 4.2).

Performance Criteria: P11.3 Recruitment of young into breeding populations is measured for areas with and without fox control.

From the 2011 review. Not implemented.

2014 Comment: Considered a low priority action and no action taken since the 2011 Forum. However recent development in remote camera technology may advance this work.

Performance Criteria: P12.1 The habitat requirements and preferences of Malleefowl are described, critical habitat components are identified, and a habitat suitability model is produced.

From the 2011 review. Not implemented.

2014 Comment: At this stage the Recovery Team does not have the resources to pursue this work however the Adaptive Management Project is expected to address this question at some level.

Performance Criteria: P13.1 Genetic structure of Malleefowl populations is determined at a national level.

From the 2011 review. Taneal Cope's research project addresses this objective; thanks in no small part to all who assisted by collecting feather samples from across the Malleefowl range.

2014 Comment: Anticipate that the work being presented at the 2014 Forum by Taneal Cope will address this objective.

Performance Criteria: P14.1 Past and current translocation, captive-rearing and breeding programs are reviewed; studbook and husbandry manual produced, and the future directions are clarified.

From the 2011 review. Translocation / reintroduction project details have now been published. A stud book and captive-rearing / husbandry manual were prepared as a basis for the re-introduction trials conducted over many years by Priddel and Wheeler (NSW NP&WS). These still need to be revised and made web-accessible. Current captive management within the zoos system should also be reviewed in light of Taneal Cope's research findings on population genetics.

2014 Comment: Translocation, captive-rearing and breeding programs are considered to be a very low priority for the Recovery Team compared to actions such as habitat improvements. This subject will be addressed during the 2014 Forum more by Taronga Western Plains Zoo and SA Zoos presentations.

Performance Criteria: P15.1 The extent of infertility of Malleefowl in small reserves is investigated.

From the 2011 review. Some measures of egg fertility / infertility have been obtained through Taneal Cope's genetics research project and a few other smaller projects monitoring egg-laying and egg-hatching rates in active nest mounds on some monitoring grids.

2014 Comment: The Recovery Team has not had the resources to specifically address this objective however some answers are expected from the presentation by Chris Hedger at the 2014 Forum.

Forum Resolution 2. Collate a list of priority research questions to guide the recovery effort and engage others.

2014 Comment: Considered that relevant research questions are detailed in the Recovery Plan and have been prioritised in the implementation of the Adaptive Management Project, however, a formal prioritised list has not been developed.

Forum Resolution 9. Convene a national remote camera (web cam) working group under the auspices of the Recovery Team to look at existing use, best opportunities to use the technology to further recovery and to establish guidelines for use with minimal impacts on the birds.

2014 Comment: The rate of technology overtook the need to have a working group to look into this. Before we knew it, everyone was using cameras. Joe Benshemesh will be talking about camera work and how he has developed a process that involves volunteers at this 2014 Forum.

Community involvement and project coordination

Performance Criteria: P16.1 A national Malleefowl community forum is held every three years and the national newsletter continues to provide a national perspective.

From the 2011 review. The fourth national Malleefowl forum has occurred at Renmark (SA). The national newsletter 'Around the Mounds' has not been produced for several years and needs to be either revived or replaced.

2014 Comment: The 2014 Forum is evidence that this objective is a high priority and is being met. The National Newsletter 'Around the Mounds' has been produced and distributed twice a year since autumn 2012.

Forum Resolution 8. Reinstate 'Around the Mounds' (or equivalent) to provide project updates, monitoring feedback and show how data is applied to achieve recovery to the Malleefowl conservation community in particular volunteers – suggestions received this could be achieved by a newsletter or national website.

2014 Comment: both the magazine and website provide project updates, monitoring feedback and make the link between monitoring and the Adaptive Management Project.

Forum Resolution 10. Establish under the national database a database of interested individuals, volunteer groups and their activities so that groups can better share information and promote their volunteer opportunities.

2014 Comment: The 'Important Links' on the website provides links to all groups identified. The list can be added to at any stage. The newsletter also exists precisely to share information and promote volunteer opportunities and the National Coordinator is another way for people to connect.

Forum Resolution 11. Pursue options for links with volunteer organisations to increase access to volunteers particularly for low populated regional areas e.g. city, scouts, CVA.

2014 Comment: Where possible, this is done by National Coordinator, however it has to be driven locally. The National Coordinator is a good contact when people want to discuss how to involve volunteers.

Performance Criteria: P17.1 Increased public awareness of the Malleefowl recovery effort, beneficial management practices, and the contributions made by community groups.

From the 2011 review. There has been ongoing raising of public awareness about Malleefowl biology and conservation needs across the four States. This has focused largely on the contributions made by community groups and their many volunteers.

2014 Comment: On a national level this is being achieved through the website and visitation by the National Coordinator to many regions across the Malleefowl range. (3 WA visits, 2 NSW and numerous in Vic and SA). This is also achieved through the efforts of many regional groups such as information boards installed by VMRG, training days by NCMRG, VMRG and MPG, and publications such as "Malleefowl Matters" and "Lowan Behold".

Forum Resolution 12. Secure resources to enable a further print run of the VMRG Malleefowl Education Kit in a format that can be distributed to other regions.

2014 Comment: VMRG still have copies available and this is being further publicised on the national website 'Library' page but only as a reference to VMRG as supplier of discs (it's too big for the website in current format).

Performance Criteria: P18.1 Recovery process is coordinated and managed effectively by the Recovery Team, which:

- meets at least annually;
- ensures that all key stakeholders are aware of, and support, planned actions, and are kept informed of progress; and
- ensures that the results of actions in this plan are assessed, reported and reviewed.

From the 2011 review. The National Malleefowl Recovery Team has met on a 2-3 times per year basis through phone link-ups. The ongoing success of the national monitoring effort and in achieving the fourth National Malleefowl Forum is testament to this. Peter Sandell has coordinated and chaired the team, and these meetings, in an efficient and effective manner now for many years. For these efforts the rest of the Recovery Team is extremely grateful. The recent forum in Renmark has provided several issues which the National Recovery Team should now look at addressing. This review paper has also identified a range of issues for the National Recovery Team to consider. National Recovery Team members inform some, but not all, stakeholders of progress being made with recovery efforts. The national newsletter 'Around the Mounds', which used to keep all interested persons up-to-date, has not been produced now for several years and it, or a new version, needs to be re-instated as soon as possible. In the meantime, the VMRG web-site has acted as the main repository of national Malleefowl project updates. The draft performance review presented here is the first such review undertaken for the current National Malleefowl Recovery Plan. It is now up to the National Recovery Team to guide the improvements and new directions indicated.

2014 Comment: The Recovery Team continues to meet regularly via phone linkup and is extremely well managed by current Chair Sharon Gillam. The appointment of a part time National Coordinator is another step in the right direction to engaging relevant stakeholders. This review, the second of its nature satisfies the third sub-objective.

Forum Resolution 6. Seek funding to appoint a National Malleefowl Recovery Coordinator that reports to the National Recovery Team to drive the application of the MAMF, supports national coordination, drives the Plan's implementation, supports and recruits database coordinators and seeks additional funding for Malleefowl conservation nation-wide.

2014 Comment: Funding has been achieved and a part time Coordinator is in place.

Forum Resolution 7. Prioritise Recovery Team activities and national reporting to be more closely aligned to the National Recovery Plan.

2014 Comment: This review satisfies this resolution.

Review Summary

Managing populations

The Recovery Plan identifies a range of measures aimed at physical management of habitat for the benefit of Malleefowl and in almost all cases this is being achieved to some extent. This includes:

- the area in reserves, conservation covenants has increased
- goats have been removed in reserves and attempts to control them have taken place
- artificial sources of water have been closed
- habitat has been protected from stock grazing through fencing
- rabbit numbers reduced
- fire management plans are in place in many areas/reserves
- documentation of fox control occurs at most reserves near monitoring sites
- there are examples of Malleefowl habitat links being established
- occurrence of road kills is recorded at some sites and signage that warns of Malleefowl presence does happen

However, mapping of fire occurrence against Malleefowl habitat has not been undertaken nor has a national fire project as suggested in resolution 5 from 2011 been established. Also, in Victoria and NSW at least, environmental outcomes are eclipsed by government policies to burn areas based on

quotas and hectare targets aimed at asset protection. This goal is also severely impacted by increased wildfire such as those in the Victorian and SA Mallee during the 2013 summer.

As stated, we have achieved many of the goals identified in the Recovery Plan but what we have not been able to do is to record this work on a national scale. This is due mostly to the lack of resources to do this work.

Planning, research and monitoring

Regional conservation plans are not in place across the range but is a goal for the National Coordinator as relationships are developed with NRM agencies across the Malleefowl range in the coming years.

The monitoring data was initially analysed in 2007 to produce the "Trend Analysis" paper by Joe Benshemesh, and the fox and Malleefowl data was re-analysed and published by Jessica Walsh *et al.* A similar project is currently being undertaken with all the data collected to date and results expected in 2015. The monitoring database is also being utilised to develop modelling as a foundation for the Adaptive Management Project.

Annual monitoring summaries are usually completed by the end of June each year. This is happening reasonably effectively in most areas, with reports distributed to volunteers in the national newsletter 'Around the Mounds'. The VMRG also hold an annual reporting-back meeting for their volunteers. The most notable outcome in the last three years is that all data from WA is now uploaded to the database. More work is needed to produce timely national annual reports and distribute the information.

Malleefowl monitoring effort is facilitated, standardised and coordinated at a national level and remains a core activity for the Recovery Team and outcomes are remarkable considering the effort involved. Improvements are expected as increased training such as the recent NCMPG project occurs. There is room for improvement with more work by the National Coordinator required in all states except Victoria where the effort is extremely well managed by the VMRG.

Progress has been made in understanding distribution and status of Malleefowl in remote areas in the Maralinga Tjarutja Lands with new monitoring guidelines developed by Joe Benshemesh specifically designed for remote areas. Prospects exist for more work through the recently established Great Victoria Desert Biodiversity Trust.

There are still gaps in knowledge of distribution and status of Malleefowl in settled rural areas. Large gaps in monitoring in NSW are hoped to be addressed by the National Coordinator over the coming years.

There is more that can be done to understand:

- the longevity of breeding Malleefowl and the turnover of the breeding population
- recruitment of young into breeding populations
- the habitat requirements and preferences of Malleefowl.

At this stage the Recovery Team does not have the resources to pursue these directly. However the Adaptive Management Project is expected to address some of these questions.

The work being presented at the 2014 Forum by Taneal Cope will increase our understanding of genetic structure of Malleefowl populations.

Translocation, captive-rearing and breeding programs are considered to be a low priority for the Recovery Team compared to actions such as habitat improvements. This subject will be further addressed during the 2014 Forum by Taronga Western Plains Zoo and SA Zoos presentations.

The Recovery Team has not had the resources to specifically address the extent of infertility of Malleefowl in small reserves, however some answers are expected from the presentation by Chris Hedger at the 2014 Forum.

The rate of technology overtook the need to have a national remote camera working group (resolution 9 from 2011). Joe Benshemesh will be talking about camera work and how he has developed a process

that involves volunteers at the 2014 Forum and Rosanna van Hespen will be talking about how these data will inform the Adaptive Management Project.

Community involvement and project coordination

The 2014 Forum and the resurrection of the National Newsletter 'Around the Mounds' provide strong evidence that community involvement is a very high priority for the Recovery Team.

Around the Mounds has been produced and distributed twice a year since autumn 2012 and we now have a website. Between them they provide a comprehensive round up of project updates, monitoring feedback, an avenue to share information and promote volunteer opportunities and make the link between monitoring and the Adaptive Management Project. The 'Important Links' on the website provides links to all currently recognised stakeholders, but the list can be added to at any stage.

Increased public awareness of the Malleefowl recovery effort, beneficial management practices, and the contributions made by community groups is being achieved on a national level through the website and visitation by the National Coordinator to many regions across the Malleefowl range. Mostly however, this is achieved through the efforts of many regional groups such as information boards installed by VMRG, training days by NCMPG and publications such as "Malleefowl Matters" by the MPG.

As requested in Resolution 12 from 2011, VMRG Malleefowl Education Kit is still available and is being further publicised on the national website 'Library' page.

The Recovery Team continues to meet regularly via phone linkup and is extremely well managed by current Chair, Sharon Gillam. The appointment of a part time National Coordinator is another step to improving engagement of relevant stakeholders.

Finally, this review, the second of its nature, satisfies the final sub-objective in the National Malleefowl Recovery Plan to review and report on progress.

In conclusion, we can say that actions to manage populations are occurring around Australia but we don't have the capacity to gather the data. The Recovery Team is improving planning, does extremely well with monitoring and continues to implement impressive research projects. The Recovery Team can be proud of achievements in community involvement and project coordination.

References

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