

5. Malleefowl Conservation in SA: activities from 2007 – 2011

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Abstract

Malleefowl occur across South Australia in isolated mallee remnants, in both public reserves and on private land. In public reserves, the Department of Environment and Natural Resources (DENR) conducts a number of activities that benefit Malleefowl conservation, including prescribed burns, and feral predator and competitor control. Several patches of mallee on private land are protected under Heritage Agreement covenants, which also offer benefits to Malleefowl.

In 1989, DENR commenced the implementation of a Malleefowl survey and monitoring system instigated by Benshemesh (1989) in Victoria. This system now consists of forty sites in four regions across the state, which is largely coordinated by DENR or contracted staff, and monitored by both volunteers and staff. Malleefowl are also tracked in the arid far west corner of SA, using other monitoring methods.

Since 2008, Malleefowl monitoring has dominated conservation activities for this species in South Australia, with all data now collected electronically and entered into the national database. This has remained steady over the last three/four years, with each region in SA continuing to provide monitoring data for the national database, and working through issues as they arise. Across the regions, more volunteers have become involved in the monitoring process, taking up particular sites each season, although still more volunteers are needed.

There is a challenge to maintain coordination of the monitoring at a regional and state level, with uncertainties in continued funding of contractor positions and through changes in DENR support staff positions. Within the scope of regional and National Recovery Plan objectives and the existing staff and volunteer base, there are opportunities to further drive recovery actions for Malleefowl, particularly at the regional level.

Introduction

Malleefowl occur across South Australia in isolated mallee remnants, in both public reserves and on private land. In public reserves, the Department of Environment and Natural Resources (DENR) conducts a number of activities that benefit Malleefowl conservation, including prescribed burns, and feral predator and competitor control. Several patches of mallee on private land are protected under Heritage Agreement covenants, which also offer benefits to Malleefowl.

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In South Australia (SA), the period from 2004 – 2007 saw considerable progress made in conservation initiatives for Malleefowl, including the adoption of the National electronic monitoring method and collecting, validating and converting all historic Malleefowl data to an electronic format. The setup of the National Malleefowl Database provided a central storage area for all data, and opportunities for feedback and reporting. The funding of contract project officer positions in the Murraylands, South East and Adelaide during this period was also a significant development in driving and supporting Malleefowl recovery efforts, utilising volunteer and agency assistance. The two year multi-regional project funded by the Natural Heritage Trust was another highly significant event, providing an enormous opportunity to

implement key components of the National Malleefowl Recovery Plan across three states. For SA, this enabled fencing of over 5,260 ha to protect significant Malleefowl habitat; two regional training workshops for volunteers and new grids established. Community groups, individuals and agency staff were actively involved and showed great enthusiasm in furthering Malleefowl conservation initiatives.

The momentum created during this very exciting period (2004 – 2007) continued into 2008, albeit at a steadier pace, with the multi-regional project finished, and central project officer position ended. A good foundation had been set, however, for monitoring the established sites across SA; the prospect of an Adaptive Management Plan in the pipeline to further guide Malleefowl recovery; and funding approved to begin a major research project into Malleefowl genetics. This pace has remained steady over the last three/four years, with each region in SA continuing to provide monitoring data for the national database, and working through issues as they arise.

This paper outlines Malleefowl conservation activities in SA from 2007/08 to 2010/11.

Activities over the past 4 years: 2007/08 to 2010/2011

Monitoring

In 2007, forty monitoring sites, or grids, were operational in SA. These grids are located in representative areas of Malleefowl habitat across the southern half of SA. Table 1 shows the total number of grids within each of the four regions across SA, and how many of those grids were monitored in each of the four breeding seasons since and including 2007. In 2007, five grids were not monitored due to wildfires; and another grid (Murray Bridge Army Range, monitored through the Department of Defence) was not monitored due to lack of funds. In 2008, six grids in the Murraylands were not monitored by Community Land Management (CLM) volunteers due to changes in management under the Australian Landscape Trust; the Murray Bridge Army Range grid was once again not funded; and three grids on Eyre Peninsula (EP) were not monitored due to fire and the lack of coordination/volunteers. One more grid (Mt Boothby) was established in the South East (SE) region, giving that region a total representative sample of five grids, and a statewide total of 41. In 2009 ten sites that were regularly monitored by the CLM group were not and are no longer surveyed, leaving the total number of grids in the Murraylands at 20, and all coordinated by DENR contracted staff. In 2009, 30 out of the 31 grids were monitored – one grid on EP was burnt in 2006 and not surveyed. In the 2010 season, once again all grids except the one involved in a wildfire in 2006 on EP were monitored.

Table 1: Number of grids monitored over 4 Malleefowl breeding seasons in each region in SA.

Region	2007		2008		2009		2010	
	Monitored	Total	Monitored	Total	Monitored	Total	Monitored	Total
Murraylands	25	30	23	30	20	20	20	20
Eyre Peninsula	4	5	2	5	4	5	4	5
Yorke Peninsula	1	1	1	1	1	1	1	1
South East	4	4	5	5	5	5	5	5
Total	34	40	31	41	30	31	30	31

Table 2 shows the number of active and inactive mounds within each of the four regions in SA, across the last four breeding seasons from and including 2007. Since 2007, the percentage of active mounds across the regions has risen from 5 to 9 percent, however, it should be stated that this is a generalised observation, as the number of grids monitored per region has varied over the last four years; each of the regions (and grids) has other environmental factors at play; and a marked change in activity in one grid can skew results for that region. For example, the 2-3% increase in breeding activity in the Murraylands has occurred within the grids located south of the River Murray, whilst the grids north of the Murray show little to no breeding activity – rainfall is a significant factor here; one grid on EP showed no breeding activity at all in 2007, while the other three grids remained steady, and that one grid has since resumed its previous ‘average’ breeding activity. Any further deductions in trend should take into account the full history of each grid.

Table 2: Number of active and inactive mounds per region in SA, across 4 Malleefowl breeding seasons.

Region	2007			2008			2009			2010		
	Inactive	Active	Total									
Murraylands	557	16 (3%)	573	539	22 (4%)	561	562	21 (4%)	583	548	35 (6%)	583
Eyre Peninsula	166	7 (4%)	173	79	7 (8%)	86	153	14 (8%)	167	163	14 (8%)	177
Yorke Peninsula	38	9 (19%)	47	38	9 (19%)	47	37	10 (21%)	47	37	10 (21%)	47
South East	123	16 (12%)	139	158	27 (15%)	185	156	30 (16%)	186	163	29 (15%)	192
Total	884	48 (5%)	932	814	65 (5%)	879	908	75 (8%)	983	911	88 (9%)	999

Without the energy and enthusiasm shown by volunteers across the regions, many of the recovery initiatives for Malleefowl in SA could not and would not take place. This in particular applies to monitoring. Other activities include the collection of genetic material (mainly feathers) for Taneal Cope’s genetics research project. During the last 4-5 years, dedicated volunteers that have been involved for many years in the monitoring process have steadfastly continued to monitor their sites, albeit at times in challenging conditions. This includes not only the physical challenge of extreme heat which brings with it the threat of fire, but also the disappointment that comes with finding no activity within a grid, or equipment that fails. New volunteers have also become involved in the monitoring process, taking up particular sites each season, although still more volunteers are needed. Table 3 shows the number of volunteer hours for each region in SA over the last four years.

There is a challenge to maintain coordination of the monitoring at a regional and state level, with uncertainties in continued funding of contractor positions and through changes in DENR support staff positions. Whilst annual training to volunteers in SA is available through the Victorian Malleefowl Recovery Group, this is not often a viable option due to time, costs and distances involved. Training is provided by regional coordinators in SA, however, there is a need for improvement in equipment, training methods and data transfer in some regions.

Whilst the focus has been on monitoring the breeding activity of Malleefowl across the regions, many volunteers would like to see some use of the results derived from the monitoring data, and would like to become involved in other Malleefowl recovery activities.

Table 3: Number of volunteer hours per region in SA over the last 4 years.

	Murraylands	South East	Eyre Peninsula	Northern & Yorke	Total hours
2007/08	424.5	204	214	17.5	860
2008/09	599	199	50	21	869
2009/10	483	139	95	32	749
2010/11	511.5	275	110.5	27	924

South East Region

The South East Region of DENR has developed a Regional Action Plan for Malleefowl, which identifies a number of recovery initiatives and which are given a priority score. Many if not all of these recovery actions are mirrored in the National Recovery Plan. As a high priority, annual mound monitoring has been carried out on the grids in the SE over the last four seasons, coordinated by part time Project Officer Vicki Natt. This position has now come to an end as of July 2011. It is anticipated that annual monitoring continue to occur under the auspice of the SE Threatened Species and Habitat Recovery Team, however, the program plan of this unit is under review.

During the last two years (at least), fox baiting has occurred annually in reserves of the Upper SE containing Malleefowl, including Mount Scott Conservation Park (CP) and Gum Lagoon CP. Deer control has also occurred in these parks and others containing Malleefowl, over a number of years.

A grant was secured to erect Malleefowl awareness/warning signs to motorists on the Princes Highway adjacent to the Coorong National Park Grid, and has since been completed. There are plans to install signs on secondary roads running close to Malleefowl habitat and to install interpretive signs at the entrance of several (up to 5) parks that host important Malleefowl populations. This should be completed in 2011.

The Threatened Species and Habitat Recovery Team have worked with the NPWS to implement a burning program to protect Malleefowl habitat. Key Malleefowl-inhabited reserves have been patch-burned over the past four years, including Messent (132 ha 2009, 160 ha 2011), Mt Scott (47 ha 2008) and Gum Lagoon CP's (22 ha 2008, 70 ha 2011). For interest, Messent CP is 11,583 ha, Mt Scott is 1267 ha and Gum Lagoon is 8906 ha in total size. It is important to mosaic burn in these parks to minimise the risk of a catastrophic wildfire resulting in the local extinction of Malleefowl. Such prescribed burning is a high priority in the Action Plan.

The impact of deer on Malleefowl mounds in Gum Lagoon CP is being investigated by a local landholder and DENR Ranger staff. This could be done via sensor cameras.

Several Malleefowl research topics were suggested at a research priority workshop held in DENR SE Region in May 2011. It is hoped that these topics can be addressed in the future, in conjunction with research organisations. This is a medium priority action.

The DENR SE Region also held a workshop to identify priority conservation projects in the SE. Two of these were directly related to Malleefowl conservation, including purchasing an addition to Mt Scott CP and linking Bangham CP to Little Desert NP in Victoria. It is also planned to identify other areas in the SE that can be prioritised for restoration which will also benefit Malleefowl conservation in the future. Key areas of existing and predicted Malleefowl habitat are mapped in the Biodiversity Plan for the SE (Croft *et al.* 1999). This is a low priority in the Action Plan.

Yorke Peninsula Region

Malleefowl occur within remnant coastal mallee woodland communities on southern Yorke Peninsula. A mound monitoring grid was established on Innes National Park in 1992 (Grid 11; 2.6km²). This grid was monitored somewhat sporadically up to 2005, however, is now in full operation under the National Monitoring regime. Between 1992 and 2005, the average number of active mounds observed was 6.2 (range = 5 to 8). As with many areas across southern Australia, the Yorke Peninsula was affected by low rainfall patterns for much of 2000 to 2009. In 2004, an intensive fox control program commenced on Innes NP, prior to the reintroduction of Mainland Tammar Wallabies to the park. 1080 baits are laid at 0.5 km intervals along all roads and service tracks within the park, on a fortnightly basis. Following two years of intensive fox control, the average number of active mounds rose to 9.8 (range = 9 to 11) and has remained stable since. Fox control activities were further enhanced in 2009 with the establishment of a community-based fox control program on southern Yorke Peninsula (28 participants, 60,000 ha). The low density fox environment within Innes NP is providing a haven for a range of other threatened species, including Western Whipbirds, whose presence in the park initiated its proclamation. The success of the fox control program is best highlighted by the recording of a Bush Stone-Curlew in the reserve in early 2009; a species which hasn't been recorded on the Yorke Peninsula for more than 40 years. Subsequent sightings of the birds have also been recorded (J Swales, pers. comm. 10 Oct 2011).

Murraylands Region

Murraylands DENR received \$22,000 of funding from PIRSA in 2010 to carry out research into the effects of Locust spraying on Malleefowl. Mallee Eco-Services and Joe Benshemesh were contracted, and worked together with volunteers, Rangers and DENR staff to undertake the project. See Ellen Ryan-Colton's report for further details.

See report from Dave Setchell for an update on monitoring and related activities in the Murraylands.

Eyre Peninsula Region

The Eyre Peninsula (EP) NMR Board has been running a large-scale 1080 baiting program to control fox numbers on EP since 1999, as part of the West Coast Integrated Pest Management Program. The program was established to support reintroductions of Brush-tailed Bettongs and Greater Bilbies to Venus Bay CP. Due to community motivation to protect biodiversity and livestock in the region, the program was expanded significantly in 2002 with additional monitoring measures in place. By June 2004, there were 400 participating landholders, with properties totalling over 15,000km². Analysis of the monitoring data from this ongoing project has shown that fox populations in most areas have decreased over the survey period 2002 – 2009; and on average, observations of foxes were 55% lower in 2009 than in 2002 (Coventry 2010), keeping in mind, however, that this was also a period of drought. Anecdotal reports from across EP suggest an increase in sightings of native fauna, including Malleefowl (Coventry 2010). Further research is required to draw any conclusive relationships between the decline in foxes and the increase in native species.

The EP NRM Board continues to fund fencing on private land to exclude stock from native vegetation. This is often Malleefowl habitat and would total over 1000 ha in the last four years.

Aboriginal Lands

See report from Matt Ward on the Status, monitoring and management of Ngan̄amara in South Australia's Aboriginal Lands, this volume.

Conclusion

The past four years has seen the consolidation of the national Malleefowl monitoring system across 30 consistently monitored grids in SA, including entry of data into the national database. The challenge now is to utilise and explore the range of information provided by the monitoring data, in conjunction with management and other research results.

Within the scope of regional and National Recovery Plan objectives and the existing staff and volunteer base, there are opportunities to further drive recovery actions for Malleefowl, particularly at the regional level.

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References

- Coventry R. (2010) 'Analysis and interpretation of long term spotlight monitoring in relation to fox (*Vulpes vulpes*) populations on Eyre Peninsula.' Natural Resources Management Board, Eyre Peninsula.
- Croft T., Carruthers S., Possingham H., and Inns B. (1999) 'Biodiversity Plan for the South East of South Australia.' Department for Environment, Heritage and Aboriginal Affairs, Adelaide.