

# Coordinating the DEH Malleefowl Monitoring Program in the South Australian Murray Darling Basin 2008/2009

### **Final Report**

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Kevin Smith, Friends of Riverland Parks, Grant Geyer, Community Land Management volunteers, Birds Australia (Gluepot) volunteers, Bruce Gotch, Scientific Expedition Group volunteers, Henry Short, Michael Weinel, Peter Johnston & Dennis Matthews.

### Contents

| 1.0          | INTRODUCTION   | 1     |
|--------------|--|-------|
| 2.0          | MONITORING RESULTS FOR THE 2008/2009 BREEDING SEASON             | 2     |
| 2.1          | COOLTONG CONSERVATION PARK (S03) GRID                            | 2     |
| 2.2          | DANGGALI CONSERVATION PARK (S05 & S15) GRIDS                     | 2     |
| 2.3          | POOGINOOK CONSERVATION PARK (\$06) GRID                          | 2     |
| 2.4          | BAKARA CONSERVATION PARK (S07) GRID                              | 2     |
| 2.5          | SHORT'S HERITAGE AGREEMENT (S08) GRID                            | 3     |
| 2.6          | CHOWILLA REGIONAL RESERVE (S09) GRID                             | 3     |
| 2.7          | FERRIES MACDONALD CONSERVATION PARK (S10) GRID                   | 3     |
| 2.8          | PEEBINGA CONSERVATION PARK (S44) GRID                            |       |
| 2.9          | KARTE CONSERVATION PARK (\$45) GRID                              | 3     |
| 2.10         |  | 4     |
| 2.11         | BANDON (BURDETT'S HERITAGE AGREEMENT) (S67) GRID                 | 4     |
| 2.12         |  |       |
| 2.13<br>2.14 | MURRAY BRIDGE ARMY TRAINING RANGE (MBAR) (S69) GRID              |       |
| 3.0          | TRENDS IN BREEDING ACTIVITY FOR EACH GRID                        |       |
|              |  |       |
| 3.1          | COOLTONG CONSERVATION PARK (S03) GRID                            | 6     |
| 3.3          | POOGINOOK CONSERVATION PARK (SUS & STS) GRIDS                    |       |
| 3.4          | BAKARA CONSERVATION PARK (S07) GRID                              | 0     |
| 3.5          | SHORT'S HERITAGE AGREEMENT (S08) GRID                            | 0     |
| 3.6          | CHOWILLA REGIONAL RESERVE (S09) GRID                             |       |
| 3.7          | FERRIES MACDONALD CONSERVATION PARK (S10) GRID                   |       |
| 3.8          | PEEBINGA CONSERVATION PARK (\$44) GRID                           |       |
| 3.9          | KARTE CONSERVATION PARK (\$45) GRID                              |       |
| 3.10         | GLUEPOT STATION (\$52, \$54, \$56, \$57, \$59, \$60, \$63) GRIDS | 11    |
| 3.11         | BANDON (BURDETT'S HERITAGE AGREEMENT) (S67) GRID                 | 11    |
| 3.12         | ETTRICK (FULLSTON'S HERITAGE AGREEMENT) (\$68) GRID              |       |
| 4.0          | COLLATION & VALIDATION OF 2008/2009 MONITORING DATA              |       |
| 5.0          | CONTRIBUTIONS TO STATE & NATIONAL RECOVERY TEAM ACTIVITIES       | 12    |
| 6.0          | PROMOTING THE ADOPTION OF THE STANDARD SURVEY PROTOCOLS          | 12    |
| 7.0          | VOLUNTEER TRAINING   | 12    |
| 8.0          | PROVISION OF INFORMATION & ADVICE TO OTHER MALLEEFOWL PROJECT    |       |
|              | OFFICERS   |       |
| 9.0          | ISSUES RAISED DURING THE 2008/2009 SEASON                        |       |
| 9.1          | MURRAYLANDS VOLUNTEER NETWORK                                    |       |
| 9.2          | COLLECTION OF ENVIRONMENTAL DATA                                 |       |
| 9.3          | UPDATING MONITORING KIT EQUIPMENT                                |       |
| 9.4          | USE OF HANDHELD UHF RADIOS                                       | 14    |
| 10.0         | RECOMMENDATIONS FOR THE CONTINUATION OF THE PROJECT              | 14    |
| 11.0         | REFERENCES   | 15    |
| APPEN        | DIX 1: SUMMARY OF SURVEY RESULTS FOR THE 2008/2009 BREEDING SEA  | SON16 |
| APPEN        | DIX 2: MURRAYLANDS MALLEEFOWL DATA SUMMARY 1989 - 2008           | 17    |
| APPEN        | DIX 3: MOUNDS REQUIRING NEW STAKES AND/OR TAGS                   | 18    |
| APPEN        | DIX 4: SUMMARY OF RAINFALL DATA SOURCES UTILISED IN GRAPHS       | 19    |
| APPEN        | DIX 5: 2008/2009 "AROUND THE MOUNDS" ARTICLE                     | 20    |

### 1.0 Introduction

In 2004, the Department for Environment and Heritage (DEH) initiated a project in the Murraylands Region to implement best practice monitoring of their existing network of malleefowl grids in the South Australian Murray Darling Basin (SAMDB). The intention was to adopt the monitoring system developed by the Victorian Malleefowl Recovery Group (VMRG). This system is now recognised as the national standard and, as part of the DEH commitment to the National Malleefowl Recovery Plan, has since been adopted throughout South Australia.

This report concludes the fifth year of the project. The focus of the project has progressed from the implementation of the new monitoring system to consolidation, the collection of related environmental data & the continued development of a volunteer network. As in previous years, this also included the annual survey of all regularly monitored grids, using volunteers wherever possible. The resultant monitoring data was collated, validated & prepared for entry into the new internet based national database, which is currently under development.

This report details the achievements of the latest stage of the project and includes summaries of the 2008/2009 breeding season monitoring results & volunteer hours contributed. The objectives of this latest stage of the project are addressed separately & recommendations for the continuation of the project are included in closing.

### 2.0 Monitoring results for the 2008/2009 breeding season

The following section has been split into subsections relating to the individual grids monitored this season in the project area. The identification numbers for each grid, as allocated under the national database, have been included in the subsection titles. A summary of the monitoring results for the 2008/2009 season has been included in Appendix 1.

### 2.1 Cooltong Conservation Park (s03) grid

The survey of the Cooltong grid was conducted by the Friends of Riverland Parks (FORP). The survey was conducted on 4 November 2008, during a biodiversity survey of the park. Survey kits were delivered to Kevin Smith prior to the survey and collected afterwards.

A total of 40 mounds were surveyed at Cooltong & none of these mounds were active. This season was the fourth consecutive season where no active mounds have been recorded on this grid, although a malleefowl was sighted on the grid during the survey.

### 2.2 Danggali Conservation Park (s05 & s15) grids

The two Danggali grids were surveyed on 3 January 2009 by Community Land Management (CLM) volunteers, supervised by Grant Geyer. The CLM volunteers used their own monitoring kits & the survey data & photos were subsequently forwarded to us by Grant.

A total of 17 mounds were surveyed & 1 of these mounds was active (on the s05 grid). Breeding activity was up on last season, when no active mounds were recorded.

### 2.3 Pooginook Conservation Park (s06) grid

The survey of the Pooginook grid was also conducted by the FORP. The survey was conducted on 8 November 2008, during a biodiversity survey of the park. Once again, survey kits were delivered to Kevin Smith prior to the survey and collected afterwards.

A total of 33 mounds were surveyed at Pooginook & none of these mounds were active. The Bookmark fires of November & December 2006 burnt this grid after it was monitored in the 2006/2007 breeding season, so no active mounds were expected this season. At this stage, FORP have agreed to continue monitoring the grid on an annual basis to take advantage of the opportunity to record how the vegetation on the grid regenerates after the Bookmark fires.

### 2.4 Bakara Conservation Park (s07) grid

The survey of the Bakara grid was conducted on 8 November 2008 by members of the Scientific Expedition Group (SEG), supervised by Mallee Eco Services. This was the first time that this Adelaide based volunteer organisation has been involved with the monitoring program. A total of 15 new volunteers were trained over the course of the weekend, which also included a survey of the nearby Short's grid.

A total of 56 mounds were surveyed at Bakara & none of these mounds were active. The number of active mounds was down on the 2007/2008 season, when 1 active mound was recorded.

### 2.5 Short's Heritage Agreement (s08) grid

The survey of the Short's grid was conducted on 9 November 2008 by members of the SEG, supervised by Mallee Eco Services.

A total of 41 mounds were surveyed at Short's & 1 of these mounds was active. The same number of active mounds was recorded in the 2007/2008 season.

### 2.6 Chowilla Regional Reserve (s09) grid

The Chowilla grid was surveyed on 3 January 2009 by CLM volunteers, supervised by Grant Geyer. The same arrangements were in place for this survey as for the Danggali survey.

A total of 18 mounds were surveyed & 2 of these mounds were active. Breeding activity was up on last season, when no active mounds were found.

### 2.7 Ferries MacDonald Conservation Park (s10) grid

The Ferries MacDonald grid was surveyed on 19 December 2008 by Mallee Eco Services, Peter Johnston, Michael Weinel & Dennis Matthews.

A total of 61 mounds were surveyed & 3 of these mounds were active. Breeding activity was up on the previous season, when no active mounds were recorded.

### 2.8 Peebinga Conservation Park (s44) grid

Mallee Eco Services surveyed the Peebinga grid over 2 visits, on 1 December 2008 & 2 January 2009.

A total of 53 mounds were surveyed, of which 8 mounds were active. The same number of active mounds was recorded last season, which was the highest level of breeding activity ever recorded for this grid. Unfortunately there was also unprecedented evidence of predation of eggs, chicks & possibly adult birds in the vicinity of mounds on the grid this season.

Unlike last season, the vegetation on the grid did not seem to be in any better condition than the vegetation in other areas of the region. The one noticeable difference was the very heavy seed crop on acacia shrubs in the understorey, which can probably be attributed to the good rains in the area in January to July 2007.

### 2.9 Karte Conservation Park (s45) grid

Mallee Eco Services conducted the survey of the Karte grid on 21 October 2008.

A total of 24 mounds were surveyed & 1 of these mounds was active. Breeding activity was down on last season, when 3 active mounds were recorded, which was the highest level of breeding activity ever recorded for this grid.

### 2.10 Gluepot Station (s52, s54, s56, s57, s59, s60, s63) grids

Once again Kevin Smith coordinated these surveys, although we did provide a number of kits which were delivered prior to the surveys & collected afterwards. The surveys were conducted between 26 & 28 October 2008.

A total of 102 mounds were surveyed in the 7 grids & none of these mounds were active. One new (not active) mound was found, but no data or GPS coordinates were recorded, so it could not be included in the Murraylands mound database. This season was the second consecutive season where no active mounds have been recorded on these grids.

The majority of grids s52 & s54 were burnt in the Bookmark fires of November & December 2006, so little or no breeding activity was expected on these grids. At this stage, Kevin is continuing monitoring these grids on an annual basis to take advantage of the opportunity to record how the vegetation on the grids regenerates.

Kevin also organised the complete re-searching of the s57 grid & part re-search of the s59 in October 2008 as part of the annual monitoring effort. No new mounds were found during these searches.

### 2.11 Bandon (Burdett's Heritage Agreement) (s67) grid

The Bandon grid was surveyed by Mallee Eco Services over 2 visits, on 7 November & 22 November 2008.

A total of 59 mounds were surveyed, one of which was a new mound, & 5 of these mounds were active. Breeding activity was up on last season, when 2 active mounds were recorded.

### 2.12 Ettrick (Fullston's Heritage Agreement) (s68) grid

Mallee Eco Services & Michael Weinel conducted the survey of the Ettrick grid on 14 December 2008.

A total of 26 mounds were surveyed & 1 of these mounds was active. The same number of active mounds was recorded last season.

### 2.13 Murray Bridge army training range (MBAR) (s69) grid

No surveys were conducted in the 2008/2009 season. We have since been advised that no funding will be available for monitoring in the 2009/2010 breeding season either (Nicole McCarron, pers.comm.)

### 2.14 Summary of volunteer hours contributed

The total volunteer hours contributed during the 2008/2009 monitoring season were as follows:

Ferries MacDonald - 24 hours (Peter Johnston, Michael Weinel, Dennis Matthews)
Pooginook - 30 hours (FORP)
Cooltong - 30 hours (FORP)
Ettrick - 7 hours (Michael Weinel)
Danggali & Chowilla - 90 hours (CLM)
Gluepot - 66 hours (Kevin Smith, Birds Australia volunteers)
Gluepot (re-searching grids) - 184 hours (Kevin Smith, Birds Australia volunteers)
Bakara - 120 hours (SEG)

Total 2008/2009 season - 599 hours

Short's - 48 hours (SEG)

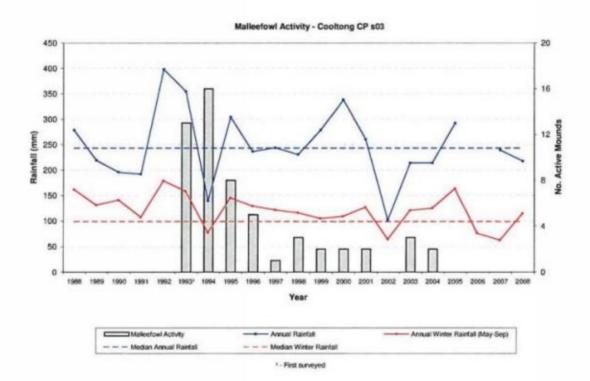
(Total 2007/2008 season - 424.5 hours)

### 3.0 Trends in breeding activity for each grid

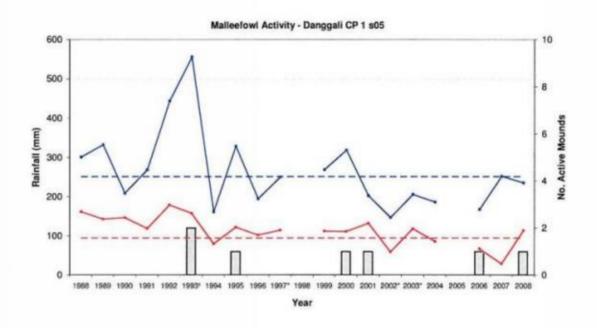
A comprehensive analysis of the trends in breeding activity for each grid was included in the final report for the 2007/2008 breeding season. As the inclusion of only 1 additional year's data makes it difficult to expand on the trends discussed at the end of the 2007/2008 season, we have not included a detailed written analysis for each grid this year. Instead, we have included updated graphs showing breeding activity trends for each grid, compared with the corresponding rainfall data.

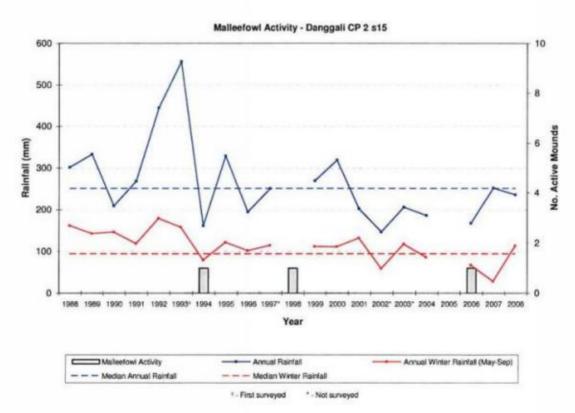
Where no new breeding activity &/or rainfall data has been available for a grid, an updated graph has not been included. Please refer to Appendix 2 on page 17 for the historical monitoring results for the grids that do not have a graph. Work is still required on collating monthly rainfall totals for some of the grids, so that a complete set of graphs showing breeding activity & rainfall can be done.

### 3.1 Cooltong Conservation Park (s03) grid

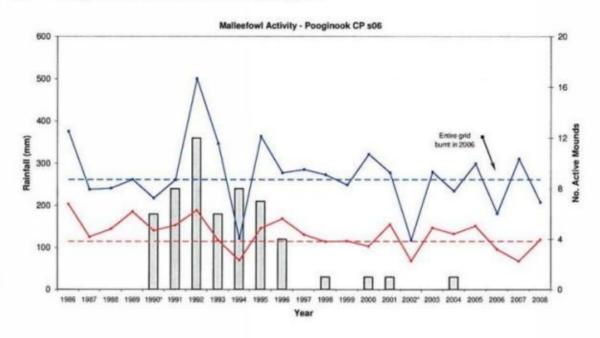


### 3.2 Danggali Conservation Park (s05 & s15) grids

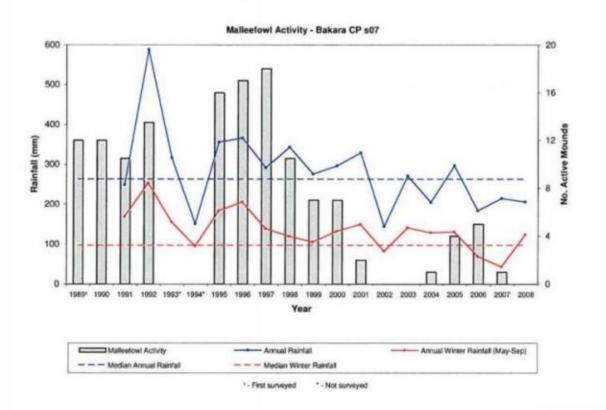




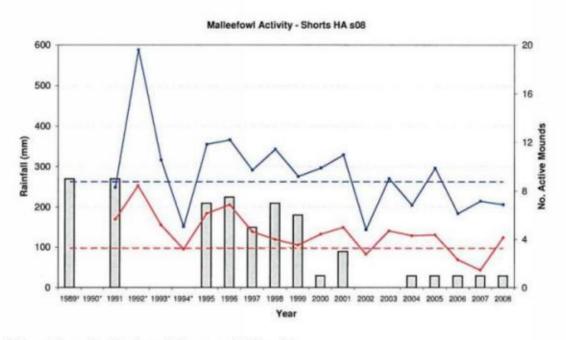
### 3.3 Pooginook Conservation Park (s06) grid



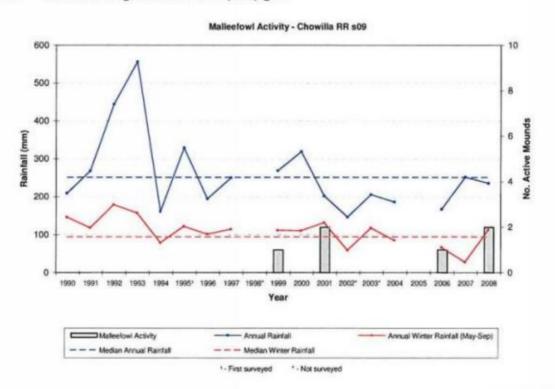
### 3.4 Bakara Conservation Park (s07) grid



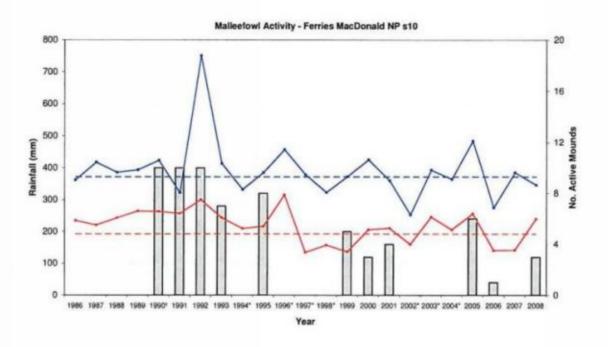
### 3.5 Short's Heritage Agreement (s08) grid



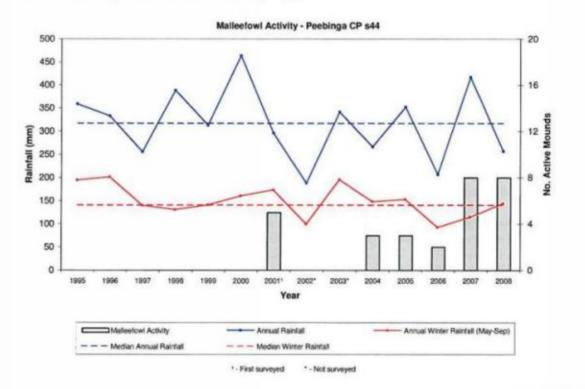
### 3.6 Chowilla Regional Reserve (s09) grid



### 3.7 Ferries MacDonald Conservation Park (s10) grid



### 3.8 Peebinga Conservation Park (s44) grid



### 3.9 Karte Conservation Park (s45) grid

There are no BOM rainfall gauges within 20 kilometres of the park, but we do have a list of neighbouring landholders who we will be able to contact in relation to rainfall figures. This still needs to be pursued.

### 3.10 Gluepot Station (s52, s54, s56, s57, s59, s60, s63) grids

Each of these grids has its own rain gauge, which is checked monthly & almost 10 years of rainfall figures have been recorded (K Smith, pers. comm.). This data may be available but it is yet to be confirmed if it is in electronic format. We recommend that this be pursued, as these grids are the only ones in the project area that have a rain gauge located onsite.

There is also a BOM rain gauge at Gluepot which could be used for monthly rainfall totals.

### 3.11 Bandon (Burdett's Heritage Agreement) (s67) grid

There is a BOM rainfall gauge located on this property, which is referred to as the Copeville station. While rainfall data is available, no figures have been sent to the BOM since July 2007. We need to pursue this with the landholder to see if up to date monthly rainfall totals are available.

### 3.12 Ettrick (Fullston's Heritage Agreement) (s68) grid

No progress has been made with accessing rainfall figures for this grid. Initially we thought that there was a rain gauge on the landholder's property, but we have since found out that the rain gauge is nearby & is not managed by the landholder himself. This needs to be pursued.

### 4.0 Collation & validation of 2008/2009 monitoring data

All the monitoring kits were collected after each survey & the data was downloaded to Cybertracker on a desktop computer. The only exception was the data from the Danggali & Chowilla surveys, which was submitted in Excel format by Grant Geyer. The data was then imported into an Access database, where it was checked for completeness & accuracy. The monitoring data is ready for entry into the national database once it is in Access format & has been validated.

The mound photos were downloaded from the digital cameras & relabelled with the grid & mound numbers. The mound photos from the Danggali & Chowilla surveys were submitted on CD by Grant Geyer. The complete set of photos was collated & then burnt to a CD for forwarding to DEH & the national database.

All the monitoring data, including mound photos, was submitted to DEH in May 2009 on a CD. Two copies were also supplied for distribution by DEH.

### 5.0 Contributions to State & National Recovery Team activities

In August 2008, a set of proposed specifications for the development of an internet based national database was circulated for review & feedback. Mallee Eco Services provided comments on the specifications, then participated in a subsequent telephone conference, during which the initial development phase of the national database was discussed.

During the 2007/2008 breeding season, samples of feathers were collected during grid monitoring for the National Malleefowl Conservation Genetics Study. Since then, no feedback or progress updates have been forthcoming, so no further samples have been collected at this stage.

### 6.0 Promoting the adoption of the standard survey protocols

This objective has been largely achieved over the course of the last 4 years. All the main groups & individuals involved in regular malleefowl monitoring across the SAMDB are using the new standard monitoring procedures.

Due to a lack of funding, there was no monitoring conducted at the Murray Bridge Army Range during the 2008/2009 breeding season, so no further progress has been achieved on that front.

In April 2009, a group of local residents in the Monarto area applied for a permit from DEH to conduct a search of the Monarto Conservation Park for malleefowl mounds. We provided monitoring kits to ensure that the survey was conducted according to the standard survey protocols.

### 7.0 Volunteer training

Mallee Eco Services trained an additional 16 new volunteers in the standard survey protocols during the 2008/2009 breeding season. Most of these volunteers are members of the SEG, who were trained during the annual surveys of the Bakara & Short's grids.

Refresher training was also provided for existing volunteers as required.

## 8.0 Provision of information & advice to other malleefowl project officers

This role was relatively minimal compared to previous years. The bulk of this time was spent providing input to the development of the national database.

DEH Murraylands Region now distribute copies of the monitoring data & final report at the conclusion of each breeding season, so we now play a lesser role as providers & disseminators of information.

During the latter half of 2008 we provided information & advice on a number of occasions to the federal Department of the Environment, Heritage, Water & the Arts in relation to the proposed upgrade of Ferries MacDonald Road by the Murray Bridge Council.

In October 2008, we provided advice to DEH on revegetation priorities for the River Murray Forest project, in relation to malleefowl conservation & habitat enhancement.

During the 2008/2009 breeding season we also provided information on the location of malleefowl mounds to DEH Murraylands Region in relation to prescribed burn planning. Feedback was also provided on draft fire management plans in relation to the potential impacts on malleefowl.

An article, which summarises the 2008/2009 breeding season results, has also been included with this report for inclusion in the "Around The Mounds" newsletter.

### 9.0 Issues raised during the 2008/2009 season

### 9.1 Murraylands volunteer network

As has been the case in previous years, it was again evident that if DEH wishes to expand the network of volunteers for malleefowl monitoring in the Murraylands Region, then the majority of effort should be directed towards Adelaide. It is obvious that there is considerable local interest in malleefowl conservation, but it is proving difficult to translate that interest into people volunteering their time for grid monitoring.

This year we were able to involve the SEG in monitoring for the first time. The level of involvement & enthusiasm already shown by this group has vindicated our focus on recruiting Adelaide based volunteers & more specifically, organised volunteer groups.

### 9.2 Collection of environmental data

The best method of collecting environmental data for monitoring grids is still to be determined. The National Malleefowl Monitoring Manual included draft surveys for local landholders & land managers that had been trialled in Victoria on a limited basis. The same surveys have been previously trialled in the SAMDB to a very limited extent. Feedback to date has indicated that it is worth looking at modifying the surveys for use in the SAMDB. In the absence of other alternatives, pursuing this method of data collection is still the best available option.

### 9.3 Updating monitoring kit equipment

On a national level, investigations are still continuing into options for upgrading the Palm units that are used in the monitoring kits. The original Palm 3xe units that are used in the Murraylands kits will also need to be replaced at some stage.

### 9.4 Use of handheld UHF radios

The 2008/2009 breeding season has seen the use of handheld UHF radios during monitoring become the norm. Multiple groups are able to survey a grid simultaneously, reducing the time taken to monitor each grid. From an efficiency perspective, we advise that handheld UHF radios become standard monitoring equipment. The use of these radios also has occupational health & safety benefits.

### 10.0 Recommendations for the continuation of the project

- Modify draft VMRG landholder/land manager surveys for collecting environmental data for monitoring grids for use in the SAMDB.
- Consider implementation of a simple uniform system for collecting fox baiting data across the SAMDB for all groups conducting fox baiting for malleefowl conservation eg. GPS & Palm system.
- Continue contacting established Adelaide based volunteer groups to recruit volunteers for monitoring in the SAMDB.
- Continue liaison with the DOD to try & involve their malleefowl monitoring & fox baiting programs in this project on an annual & ongoing basis.
- Continue to identify a network of rain gauges in the project area which can supply
  accurate figures for all existing grids. This should include landholders if their gauges
  are closest to the grids. Rainfall figures should indicate monthly totals as a minimum
  level of detail.
- 6. Continue efforts to collect & collate historical rainfall figures.
- 7. Purchase handheld UHF radios for the Murraylands monitoring kits.
- DEH should actively pursue potential adaptive management opportunities to progress
  the National Recovery Plan at a regional level. This would be a natural progression
  from the work done to date, which has mainly focussed on monitoring.

### 11.0 References

Benshemesh, J; Barker, R and MacFarlane, R (2006) "Trend Analysis of Malleefowl monitoring data" (Milestone 3 report to the Mallee CMA, Victorian Malleefowl Recovery Group (VMRG), and multi-regional "National Malleefowl Monitoring, Population Assessment and Conservation Action Project" steering committee).

Bureau of Meteorology (2009), Monthly rainfall totals for 2008 provided from Renmark Irrigation, Murray Bridge, Monarto Zoological Park, Danggali Conservation Park (Canopus), Waikerie, Waikerie Council Depot & Peebinga rain gauges.

McCarron, N (2009), Environment Officer, Department of Defence, personal communication.

Short, H (2009), Monthly rainfall totals provided from back gauge on his property.

Smith, K (2007), Friends of Riverland Parks/Gluepot Station, personal communication.

# Appendix 1: Summary of survey results for the 2008/2009 breeding season

| Grid                        | Mounds Visited | <b>Active Mounds</b> | <b>New Mounds</b> | Sightings |
|-----------------------------|----------------|----------------------|-------------------|-----------|
| Bakara CP s07               | 56             | 0                    | 0                 | 0         |
| Bandon (Burdett's HA) s67   | 59             | 5                    | 1                 | 0         |
| Chowilla RR s09             | 18             | 2                    | 0                 | 0         |
| Cooltong CP s03             | 40             | 0                    | 0                 | 1         |
| Danggali CP 1 s05           | 10             | 1                    | 0                 | 0         |
| Danggali CP 2 s15           | 7              | 0                    | 0                 | 0         |
| Ettrick (Fullston's HA) s68 | 26             | 1                    | 0                 | 0         |
| Ferries McDonald CP s10     | 61             | 3                    | 0                 | 0         |
| Gluepot 11 s59              | 12             | 0                    | 0                 | 0         |
| Gluepot 12 s60              | 14             | 0                    | 0                 | 0         |
| Gluepot 15 s63              | 13             | 0                    | 0                 | 0         |
| Gluepot 3 s52               | 23             | 0                    | 0                 | 0         |
| Gluepot 5 s54               | 15             | 0                    | 0                 | 0         |
| Gluepot 7 s56               | 15             | 0                    | 0                 | 0         |
| Gluepot 8 s57               | 10             | 0                    | 0                 | 0         |
| Karte CP s45                | 24             | 1                    | 0                 | 0         |
| Peebinga CP s44             | 53             | 8                    | 0                 | 1         |
| Pooginook CP s06            | 33             | 0                    | 0                 | 0         |
| Shorts HA s08               | 41             | 1                    | 0                 | 0         |

Murraylands Malleefowl Data Summary 1989 - 2008 Appendix 2:

|                          | Grid         |      |      |        |            |        |        |  |         |         |         |           |             |        |       |                     |       |       |        |             |       |
|--------------------------|--------------|------|------|--------|------------|--------|--------|--|---------|---------|---------|-----------|-------------|--------|-------|---------------------|-------|-------|--------|-------------|-------|
| Grid                     | Area<br>(ha) |      |      |        |            |        | Total  | Total number of mounds visited (number of active mounds) | r of mo | iv sbru | sited ( | numbe     | r of ac     | tive m | spuno | •                   |       |       |        |             |       |
|                          |              | 1989 | 1990 | 1991   | 1992       | 1993   | 1994   | 1995   | 1996    | 1997    | 1998    | 1998 1999 | 2000        | 2001   | 2002  | 2002 2003 2004 2005 | 2004  | 2005  | 2006   | 2007        | 2008  |
| 03 - Cooltong CP         | 400          |      |      |        |            | 36(13) | 36(16) | 40(8)  | 43(5)   | 41(1)   | 43(3)   | 43(2)     | 43(2) 43(2) | 43(2)  | 41(0) | 41(3) 40(2)         |       | 41(0) | 40(0)  | 39(0)       | 40(0) |
| 05 - Danggali CP 1       | 100          |      |      |        |            | (2)    | (0)    | (1)  |         | SN      | (0)     | (0)       | (1)         |        | SN    | 82                  | (0)   | (0)   | 10(1)  | 10(0)       | 10(1) |
| 06 - Pooginook CP        | 400          |      | (8)  | (8)    | (12)       | 27(6)  | (8)    | (2)  | (4)     | 33(0)   | 33(1)   | 33(0)     | 33(1)       | 33(1)  | SZ    |                     | 33(1) | 32(0) | 33(0)  | 33(0)       | 33(0) |
| 07 - Bakara CP           | 420          | (12) | (12) | (10.5) | .5) (13.5) | NA     | SN     | 58(16)   | 2       | 58(18)  |         | 56(7)     | 53(7)       | 55(2)  | 55(0) | 56(0)               | 55(1) | 56(4) | 56(5)  | 56(1)       | 56(0) |
| 08 - Shorts HA           | 250          | (6)  | ş    | (6)    | AN         | NS     | SN     | 42(7)  | (7.5)   |         | 45(7)   | 41(6)     | 40(1)       | (3)    | 42(0) | 42(0)               | 41(1) | 41(1) | 41(1)  | 41(1)       | 41(1) |
| 09 - Chowilla RR         | 200          |      |      |        |            |        | SN     | 18(0)  | 19(0)   | 19(0)   | 19(0)   | 20(1)     | 20(0)       | 20(2)  | SN    | 2                   | 18(0) | 18(0) | 18(1)  | 18(0)       | 18(2) |
| 10 - Ferries McDonald CP | 350          | PS   | (10) | 41(10) | (10)       | 49(7)  | SN     | (8)  | PS      | NS      | NS      | (2)09     | 60(3)       | 59(4)  | SN    | 2                   | 31(3) | 62(6) | 61(1)  | 61(0)       | 61(3) |
| 15 - Danggali CP 2       | 100          |      |      |        |            | (0)    | (1)    | (0)  | (0)     | NS      | (1)     | (0)       | 0           | 0      | SZ    |                     | 0     | 0     |        | 6(0)        | 7(0)  |
| 44 - Peebinga CP         | 400          |      |      |        |            |        |        |  |         |         |         |           |             | 61(5)  | SN    |                     | 50(3) | 47(3) |        | 53(8) 53(8) | 53(8) |
| 45 - Karte CP            | 200          |      |      |        |            |        |        |  |         |         |         |           |             | 21(0)  | SN    | SE                  | SN    | 18(1) | 18(0)  | 24(3)       | 24(1) |
| 46 - Billiatt CP         | 400          |      | Г    |        |            |        |        |  |         |         |         |           |             | 13(0)  | SN    | SE                  | SN    | 9(1)  |        | SN          | SN    |
| 47/48/49 - Ngarkat CP    | 1200         |      |      |        |            |        |        |  |         |         |         |           |             | 34(1)  | SZ    | 2                   | SN    | 17(0) | SN     | SS          | SS    |
| 52 - Gluepot 3           | 200          |      |      |        |            |        |        |  |         |         |         |           |             |        |       |                     | SN    | 6(0)6 |        | 23(0)       | 23(0) |
| 54 - Gluepot 5           | 200          |      |      |        |            |        |        |  |         |         |         |           |             |        |       |                     | 16(1) | 15(0) |        | 15(0) 15(0) | 15(0) |
| 56 - Gluepot 7           | 200          |      |      |        |            |        |        |  |         |         |         |           |             |        |       |                     | 10(0) |       |        | 15(0)       | 15(0) |
| 57 - Gluepot 8           | 200          |      |      |        |            |        |        |  |         |         |         |           |             |        |       |                     | 10(1) | (0)6  | 9(0)   | 9(0) 10(0)  | 10(0) |
| 59 - Gluepot 11          | 200          |      |      |        |            |        |        |  |         |         |         |           |             |        |       |                     | 11(0) | 12(0) | 12(1)  | 12(0) 12(0) | 12(0) |
| 60 - Gluepot 12          | 200          |      |      |        |            |        |        |  |         |         |         |           |             |        |       |                     | 15(0) | 14(0) | 14(0)  | 14(0) 14(0  | 14(0) |
| 63 - Gluepot 15          | 200          |      |      |        |            |        |        |  |         |         |         |           |             |        |       |                     | 13(0) | 13(0) | 13(0)  | 13(0) 14(0  | 14(0) |
| 67 - Bandon              | 675          |      |      |        |            |        |        |  |         |         |         |           |             |        |       |                     |       |       | 58(5)  | 58(2)       | 58(5) |
| 68 - Ettrick             | 155          |      |      |        |            |        |        |  |         |         |         |           |             | 1000   |       |                     |       |       | 26(2)  | 26(1)       | 26(1) |
| 69 - Murray Bridge AR    | 375          | Ī    |      |        |            |        |        |  |         |         |         |           | SN          | SZ     | SZ    | NS 48(7) 49(7)      | 49(7) | 2     | 48(6)* | SN          | SS    |

NA = data not available
NS = not surveyed
PS = partial survey only (less than 10 mounds)
Partial survey - not all mounds visited

NOTE: Where the number of active mounds in brackets is the only figured included, these figures have been taken from the 2006. Trend analysis of monitoring data."

\* Additional 39(7) opportunistic mounds outside grid

17

### Appendix 3: Mounds requiring new stakes and/or tags

| Grid                      | Nest | Needs Stake | Needs Tag |
|---------------------------|------|-------------|-----------|
| Bandon (Burdett's HA) s67 | 10   | 0           | 1         |
| Bandon (Burdett's HA) s67 | 11   | 0           | 1         |
| Bandon (Burdett's HA) s67 | 57   | 0           | 1         |
| Bandon (Burdett's HA) s67 | 59   | 0           | 1         |
| Bandon (Burdett's HA) s67 | 62   | 1           | 1         |
| Ferries McDonald CP s10   | 13   | 1           | 1         |
| Ferries McDonald CP s10   | 50   | 0           | 1         |
| Ferries McDonald CP s10   | 60   | 0           | 1         |
| Ferries McDonald CP s10   | 61   | 0           | 1         |
| Karte CP s45              | 22   | 0           | 1         |
| Karte CP s45              | 23   | 0           | 1         |
| Karte CP s45              | 24   | 0           | 1         |
| Karte CP s45              | 25   | 0           | 1         |
| Karte CP s45              | 26   | 0           | 1         |
| Pooginook CP s06          | All  | 1           | 1         |

# Appendix 4: Summary of rainfall data sources utilised in graphs

| Grid                         | Bureau of Meteorology Station Station Name No. | Station Name                         | Details  |
|------------------------------|--|--------------------------------------|--|
| Cooltong CP s03              | 24003  | Renmark Irrigation                   | All data and median rainfall figures   |
| Danggali CP 1 s05            | 20044  | Danggali Conservation Park (Canopus) | All data and median rainfall figures   |
| Ponninook CP e08             | 24029  | Waikerie (Eremophila Park)           | Data from 1986 – 2008     Median rainfall figures  |
|                              | 24038  | Waikerie Council Works Depot         | <ul> <li>Rainfall figures for Apr, May 2006 &amp; Jun, Aug, Dec<br/>2008 which was missing from Eremophila Park data</li> </ul>              |
| Bakara CD e07                | n/a  | Henry Short's Back Gauge             | All data   |
| Dahala Cr so/                | 24535  | Swan Reach                           | Median rainfall figures used only  |
| Shorts HA 200                | n/a  | Henry Short's Back Gauge             | All data   |
| Sub ATA 800                  | 24535  | Swan Reach                           | Median rainfall figures used only  |
| Chowilla RR s09              | 20044  | Danggali Conservation Park (Canopus) | All data and median rainfall figures   |
| Ferries MacDonald NP s10     | 24508  | Callington                           | Data from 1986 — August 1997     Also used rainfall figure for Sept 2000 which was missing from Monarto Zoo data     Median rainfall figures |
|                              | 24582  | Monarto Zoological Park              | Data from September 1997 - 2007  |
| Danggali CP 2 s15            | 20044  | Danggali Conservation Park (Canopus) | All data and median rainfall figures   |
| Peebinga CP s44              | 25023  | Peebinga                             | All data and median rainfall figures   |
| Murray Bridge Army Range s69 | 24521  | Murray Bridge Comparison             | All data and median rainfall figures   |

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### Appendix 5: 2008/2009 "Around the Mounds" article

The 2008/2009 breeding season marked the fifth year of a project to implement best practice monitoring of DEH managed malleefowl grids in the SA Murray Darling Basin.

A total of 12 grids were monitored this season, which involved the surveying of 427 mounds. A further 7 grids (103 mounds) were monitored by Birds Australia volunteers at Gluepot Station, with equipment & data processing support provided by DEH contractors.

A total of 22 active mounds were recorded in the region, despite the ongoing dry conditions, compared to 16 active mounds in the 2007/2008 season. Only 3 active mounds were recorded north of the Murray River, but this was also an improvement on the 2007/2008 season, when no active mounds were recorded in that area. A total of 599 hours of volunteer time was contributed to the monitoring effort & DEH would like to thank all the individuals & groups involved.

The Murraylands malleefowl monitoring volunteer network also received a welcome injection of new blood this season, with the Scientific Expedition Group involved for the first time.

We are still looking for volunteers to help with monitoring, particularly in the Murray Mallee area. If you would like to become involved with the Murraylands monitoring program, please contact:

Leanne Mladovan, Threatened Species Ecologist, Murraylands Region, Department for Environment and Heritage

Phone: 08 8595 2111

Or

Dave & Heidi Setchell, Monitoring coordinators, Mallee Eco Services

Phone: 0428 873 090

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