



# around THE MOUNDS

NEWSLETTER OF THE NATIONAL MALLEEFOWL RECOVERY TEAM SPRING 2013 EDITION FOUR

## NATIONAL MALLEEFOWL RECOVERY TEAM

BY SHARON GILLAM, CHAIRPERSON



MELANIE AND SHARON AT A MOUND IN GOONOO NP

In this edition we bring to you the latest in aerial technology for detecting mounds; share another interesting tit-bit from the archives in our 'Mallee Post' segment; and let you find out a little more on our Recovery Team members. Informative signs have gone up in country Victoria; and three previously unknown mounds have been found on the Cowell site in SA, after a 3-day thorough site research took place in August. Find out what the Western Australians are up to, with a visit from our new National Coordinator, Tim Burnard; and what's happening on the Malleefowl front in Gluepot Reserve. We also pay tribute to long-serving and devoted volunteer Stan Cornish, from SA.

On a recent trip to Dubbo, NSW, I caught up with Recovery Team member Melanie Bannerman (left, above) and we visited a number of mounds in Goonoo NP/SCA. The forest was alive with the cackle of Noisy Friar Birds and the flashing red-yellow tail feathers of Glossy Black Cockatoos, plus the brilliant colours of spring blooms. Whilst the mounds

were not prepared for nesting this season and no Malleefowl were seen, there was recent scratching. See Melanie's article on page 8 for a synopsis on this important area.

I also dropped in to Round Hill and Nombinnie Nature Reserves, remnant patches of Malleefowl habitat located in central-western NSW, both of which were bursting with bird-life and flower. These reserves are bordering the Yathong Nature Reserve and 'Mawonga', also home to Malleefowl and the Winangkirri people, who are working to protect 'their' birds - see page 9.

We say farewell to loyal and committed Recovery Team member representing the Commonwealth, Andrew Chalken, who has moved to the Ecological Communities Section in his workplace. Andrew's advice, input and knowledge on Threatened Species recovery planning and legislation has been very much appreciated during his time with the team. The National Recovery Team members wish Andrew all the best.

The breeding season is about to take off once more, with birds in SA expectantly taking advantage of good conditions, as we have experienced widespread well-above average winter rainfall across the State.

Training sessions in various regions have been or are being undertaken by volunteers refreshing their monitoring skills, with gps's, mobile-mappers, maps and measuring sticks dusted off and ready to go.

With the warm weather settling in, I'd like to wish everyone a safe and happy festive season, and we look forward to more inspiring Malleefowl news in 2014.

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Early Notice  
**5th National  
Malleefowl Forum**  
12-15 Sept 2014  
Dubbo.  
Details in next issue

## NATIONAL MALLEEFOWL RECOVERY PROGRAM COORDINATOR

BY TIM BURNARD



TIM PRESENTING AT VMRG TRAINING WEEKEND

You may well ask what a national coordinator is meant to do. It has taken me a little while but I reckon I've got a handle on what's expected now!

The Malleefowl is listed nationally as Vulnerable and for every threatened species in Australia there is a Recovery Plan. Our Recovery Plan sets out all of the actions necessary to stop the decline of, and support for the recovery of Malleefowl. Basically, my role is to assist in implementing actions from the National Malleefowl Recovery Plan.

In the short term this will include assisting people across Australia in the National Monitoring Program. Over the years, the number of people involved in Malleefowl monitoring has grown to hundreds of volunteers that gather data from over 3000 mounds each year. One of my jobs is to ensure data is gathered in a uniform way and fed into the National Malleefowl Monitoring Database. This underpins the Adaptive Management Project, which will use database information to help answer the question of why a population might have gone up or down. Assisting the Adaptive Management Team to implement experiments will be another big part of my work.

An example of how I am doing the job is my recent trip to Western Australia. My main aim on the trip was to assure all the WA volunteers that their monitoring work was a valuable component to the Australia-wide effort to help Malleefowl. It is important that we continue to have monitoring data

entered into the database each year. While in WA I also met with several land managers (both mining companies and environment agencies) and identified several sites where we could undertake experiments on management (eg fox control methods) for the Adaptive Management Project.

So far the job has taken me on the WA tour (including great place names like Ongerup, Koolyanobbing and Dalwallinu), Eyre Peninsula in SA and a VMRG meeting in Vic. With the upcoming monitoring season upon us, I'll be doing a lot more poking about Malleefowl mounds and catching up with volunteers where possible.

One thing I'm learning as I travel around the various Malleefowl areas is that each region has its own concerns. Some people are fighting government fire programs, some are erecting road signs, some are fox baiting or goat shooting and some are undertaking habitat restoration. Apart from all of these activities, nearly everyone is also undertaking Malleefowl monitoring.

I believe that it's the monitoring part of the job that unites us all; luckily, it is also probably the most fun part. Going bush for a weekend to check how the mound building is going is such an excellent way for us to get back in contact with the environment. And to know that it is working toward a long-term solution through the Adaptive Management Project means we can be confident that all the hard work is also highly valued.

I'd like to take this chance to thank everyone heading out on monitoring over the coming months. Please take care out there and enjoy being involved in this Australia-wide effort to assist our great bush mate the Malleefowl.

Anyone wanting to contact Tim Burnard can use email [tim.burnard@birdlife.org.au](mailto:tim.burnard@birdlife.org.au) or phone 03 5581 2205



TIM AND JOE BENSHEMES WITH MOBILEMAPPER IN THE BRIGHT SUN!

### VMRG TRAINING WEEKEND, WYPERFELD NATIONAL PARK OCTOBER 12-13, 2013



PETER STOKIE ADDRESSING SOME OF THE 85 PARTICIPANTS, INCLUDING OUR NEW COORDINATOR



NMR TEAM LEADER SHARON SAMPLING THE CAMP OVEN EVENING MEAL WITH WENDY AND MICHAEL



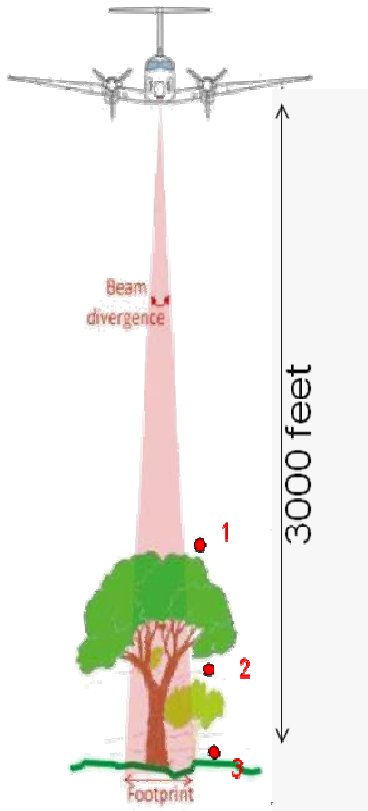
SOME 'LOCALS' DIDN'T SEEM TO NEED THE SAFETY AND GPS INFORMATION!

## FINDING MALLEEFOWL MOUNDS REMOTELY

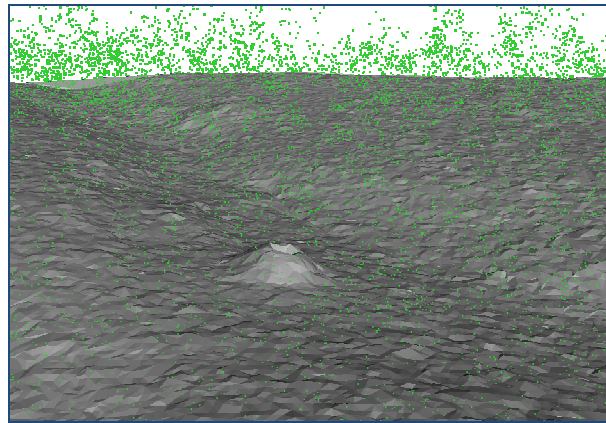
BY DR STEPHEN SWABEY, ANDREW GOODWIN, CATHY GALLI, DR VI SAFFER & TRAVIS PEAKE  
FROM UMWELT, NSW, WA & ACT



WA, NSW and ACT based environmental consultancy Umwelt has developed a new approach that assists Malleefowl mound searches over very large areas of bush. Light Detection and Ranging (LiDAR) data is collected from aircraft and processed to reveal the location of objects on the ground that look like Malleefowl mounds. These specific sites can then be visited during field-based Malleefowl surveys to examine the characteristics of the mounds. LiDAR data is obtained when laser light is sent from an aircraft towards the ground and the time it takes for the bounced light to return is used to determine the height and location of objects such as vegetation, buildings and the ground. Several 'returns' may be observed for each laser pulse.



Umwelt ecologists and spatial scientists realised that such datasets would include information about Malleefowl mounds - they just needed to be able to discern mound 'signatures' within the billions of LiDAR points returned in a typical survey. To give a sense of how difficult this is, there are typically two million to five million LiDAR points in each 1 km<sup>2</sup> of data. A Malleefowl mound typically is represented by just ten points to twenty-five points and there may be vegetation covering the mound.



AN OBLIQUE VIEW OF LIDAR VEGETATION POINTS (GREEN) OVER A TERRAIN MODEL GENERATED FROM LIDAR GROUND POINTS, INCLUDING A MALLEEFOWL MOUND WITH A CENTRAL PIT

Umwelt has completed searches for potential Malleefowl mounds using LiDAR data in areas up to 1000 km<sup>2</sup>. Manually examining billions of LiDAR points in such a large area would be infeasible, so Umwelt has developed software to search through the data for mounds, even those covered by vegetation. The software automatically ranks mound-like objects, with the most likely mounds then presented visually to the user one by one. The user can then determine if the identified object is likely to be a mound or not.

Locations of the highest ranked mounds are then placed in a GPS so that they can be visited in the field to examine whether they really are mounds or not. At one site in the Yilgarn region (WA), Umwelt's software identified 102 potential mounds, of which 99 turned out to be mounds in the field. This approach provides a substantial time saving when searching for Malleefowl mounds within large areas.

Umwelt's algorithm doesn't discriminate between recently active mounds and those that were last used several years ago. However, the software provides information on the height and diameter of each mound, plus an indication of whether a central 'pit' was present when the LiDAR was collected.

LiDAR data should ideally have at least 2 points per m<sup>2</sup> to find Malleefowl mounds, although studies in heavily vegetated areas will benefit from higher resolutions, to be certain that the ground has been defined adequately by the laser. With good data, both megamounds and mounds as low as 0.1m in height have been observed in LiDAR data.

Umwelt is discussing its new approaches to identifying potential Malleefowl mounds with agencies across Australia that deal with Malleefowl in

their work programs either as land managers or as regulators. Umwelt also assists companies needing to identify the location of Malleefowl mounds on their project sites using LiDAR and ground-truthing.

Further details of Umwelt's work on Malleefowl mounds and on the uses of LiDAR data can be found on its website at [www.umwelt.com.au/lidar](http://www.umwelt.com.au/lidar) or by contacting Dr Stephen Swabey or Travis Peake in NSW [sswabey@umwelt.com.au](mailto:sswabey@umwelt.com.au) or [tpeake@umwelt.com.au](mailto:tpeake@umwelt.com.au), 02 4950 5322, or Cathy Galli in WA [cgalli@umwelt.com.au](mailto:cgalli@umwelt.com.au), 08 6260 0700).

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Submissions for Edition Five of  
Around the Mounds close on  
**Friday 14/3/14.**

For editing, articles are best sent by email as attached documents with photos also as attachments.

This Newsletter is available in colour at <http://database.malleefowlvictoria.org.au/Start.aspx> (copy/paste this link), or from the National database section of [www.malleefowlvictoria.org.au](http://www.malleefowlvictoria.org.au) website.

Other important websites for news, information and photos include [www.malleefowl.com.au](http://www.malleefowl.com.au) [www.malleefowl.net.au](http://www.malleefowl.net.au)

## VMRG MALLEEFOWL INTERPRETIVE SIGNAGE PROJECT

BY RALPH PATFORD

The VMRG recently completed its Malleefowl Interpretive Signage Project. Ten signs in all were designed, manufactured and erected in sites across the Malleefowl habitat of the Victorian Mallee.

Four signs were erected in National Parks (Murray-Sunset NP [3] and Hattah NP) and six in towns scattered around the region (Rainbow, Hopetoun, Patchewollock, Ouyen, Murrayville and Robinvale). The Patchewollock sign was erected adjacent to the giant Malleefowl sculptures commissioned by the local community and well worth a visit.

Funding for the signs was obtained after a detailed submission was made to the Malleefowl Management Committee, the committee that allocates funds from the Iluka mining offset funds.

The primary aim of the signs is to provide basic but accurate information on the life cycle, the habitat and the future survival of the Malleefowl. The secondary aim is to



KEITH PATFORD, RON WISEMAN, AND JEFF HIGGINBOTHAM AT RAINBOW

promote engagement in the work of the VMRG. The language is geared for mid-primary and upwards, partly in recognition of the need to engage young people in Malleefowl recovery and preservation.

The outstanding information panel, designed by Robyn Adderly, and the unusual but striking stand, designed and manufactured by Challis Design, complement each other superbly and blend in with the environment.

## MALLEEFOWL KIDS AT VMRG TRAINING

BY MADDIE JOHNSTON, PHOTOS BY MAAIKE JOHNSTON



### What the kids did

While most of the adults went out in the field to do the Malleefowl training, the kids: Emma, Madelief, Mazie, Joed, Jazmine, Celie and Emily did kids activities.

We divided into three groups and we had to find hidden objects that had been geocached. Each group was given a GPS. Group 1 was Emma and Joed, Group 2 was Mazie and Jazmine, and Group 3 was Maddie, Emily and Ceile. We were also given a piece of paper with 3 GPS cache numbers on it eg. 123, 231, 312, so that we all went to a different point first.

My group (group 3) went to Wonga Hut first. The GPS pointed to the rain water tank so we looked there then we figured out that we should go into

Wonga hut. It was a bit scary at first but we found the geocache quickly. Inside the geocache were questions about Malleefowl. As we had read the Malleefowl book before we started we answered them quickly. Our next point was at the Visitor centre, which I did not know was there. The other group that was there had not found it either, so we looked together. We nearly gave up but then someone leaned on the door and we discovered it was open - the two groups rushed inside, but the other group found it first (it was under an echidna skin) so we all did the task (which was to make up a song about Malleefowl) which was quite fun!

After that we rushed off to find the last of the geocaches which was near the horse statue and old whip-pump station. We were with the other group, both looking furiously, but while my group was looking away the other group found it and did the questions and dashed off to look for their last one!

Finally Emily made the discovery and we did the task that was in the geocache. We had to collect the

geocache so that the parents didn't have to go out and find them again.

We were running back to be the first group back. We reported back to the judges and showed them our findings and had to sing them our song.

The second activity was constructing a Malleefowl with natural materials. Below is a photo of what we made.

The kids would like to thank all the parents that volunteered to do the kids activities.



## RECORD ROLL-UP FOR MPG MONITORING WEEKEND, WA

BY LEONIE MCMAHON, MPG EDITOR



PARTICIPANTS AT THE BABAKIN MONITORING WEEKEND PHOTO: ALAN THOMPSON

Western Australia's fifth annual monitoring workshop attracted 53 participants to the small Wheatbelt town of Babakin recently. As always tends to be the case, the training weekend drew people from as far afield as Albany on the South Coast to Yalgoo on the desert fringe.

This year for the first time, seasoned monitoring volunteers were joined by an enthusiastic university student contingent from Perth and members of the 'Bush Rangers' environmental group from the high school in the neighbouring town of Corrigin.

A special guest from Victoria was Tim Burnard, the recently appointed National Malleefowl Program Coordinator. It was an invaluable opportunity for people to meet Tim and introduce him to their work. After the weekend, Tim and his partner Donna travelled around the State, getting a feel for the size and scope of the bird's range in WA, visiting Malleefowl sites as far north as Mount Gibson, 400km north north-east of Perth, and meeting people involved in Malleefowl conservation. Tim will be providing a more detailed report of his visit in the November edition of *Malleefowl Matter*.

The 2013 monitoring program was drawn up after the training weekend. The monitoring season will run from October to February when approximately 35 volunteers will record mound activity at 15 sites (in approximately 14,000 ha) during this time.

The weekend was hosted by the Malleefowl Preservation Group (MPG).

Since the distribution of Malleefowl in WA covers a huge area, the group aims to hold training workshops at a

central location each year and Babakin has worked well in this regard. Sincere thanks to the Babakin community and the Bruce Rock Shire for their support.

The MPG's AGM and a strategic planning session were also held during the monitoring weekend. All in all, a very busy time for the group, with more to come.

MPG's 21<sup>st</sup> celebrations were held on the last weekend in September. The group's patron, Australian folksinger and songwriter John Williamson, and his wife Meg, were there to help celebrate and cut the 21<sup>st</sup> birthday cake! John presented the 'Malleefowl Awards'. These awards have been especially created to recognise members and land owners from across Australia, including a nomination from South Australia. They aim to acknowledge individuals who have contributed so much to Malleefowl conservation and volunteering over the years. Read about it in *Malleefowl Matter*!



LEARNING MOUND MONITORING, BABAKIN, WA

## NORTH CENTRAL MALLEE FOWL PRESERVATION GROUP, WA

BY GORDON MCNEILL, PRESIDENT

NCMPG hosted Tim Burnard (National Malleefowl Recovery Coordinator) and his partner Donna September 8-10, in the Dalwallinu Shire (WA) & surrounding areas.

Tim & Donna attended a NCMPG dinner at which Tim addressed those attending to outline the work of the National Malleefowl Team in implementing the Recovery Plan and the National Data Base.

During his visit Tim also attended the NCMPG AGM and was shown around the area which included a visit to Mt Gibson Conservation Reserve (owned by Australian Wildlife Conservancy) and nearby Charles Darwin Reserve (owned by Bush Heritage). He met the managers of both of those reserves which are in an area which might prove to be one of the strongholds of Malleefowl in WA, being just outside the agricultural area.



GORDON AND TIM, EAST OF WUBIN, WA



MEETING AT MT GIBSON RESERVE



WORKING THE MOUND, AUGUST, EAST OF MAYA, WA

## VALE! STAN CORNISH, SA

BY JIM AND LORRAINE WALFORD, SHARON GILLAM AND ANDREW FREEMAN



Stan Cornish, a long-time Malleefowl volunteer from the small town of Cowell on the north-east coast of Eyre Peninsula, SA, passed away in May 2012 at the age of 83.

Stan was actively involved in the survey of the Cowell heritage blocks and often spoke of the trials of dragging the chain through the scrub in a straight line to set up the markers along each surveyed line. The blue tags serve as a reminder to Stan's preferred work clothes, the faithful blue overalls.

Stan welcomed new volunteers into the group searching for the Malleefowl mounds using gridlines, compass bearings and paces. He had access to the secret files that identified where the nests were and would stop the line if someone had missed a nest location.

Stan was passionate about the Cowell grids and would visit his favourite mounds to check on progress before taking visitors to the site. He spent hours and days at the Cowell Malleefowl grid as a volunteer searching this grid and revisiting known active mounds to keep an eye on what was happening.

Stan's visit to the Western Australian wheat belt for the National Malleefowl Forum in Katanning, WA was a highlight that he remembered with admiration for the volunteers who support the Malleefowl there. Stan thought the conference was incredibly informative and very worthwhile.

In early 2007, Stan volunteered to help with a Malleefowl nest-excavating project with Sharon Gillam. Sharon recalls that he had a spring in his step and lively enthusiasm that belied his true age. He was a truly genuine character with a very big heart and simple needs, who gave generously of his time to support things that mattered to him, including the conservation of Malleefowl.



Stan was a true environmentalist. He was one of the reasons Andrew Freeman became interested in Malleefowl conservation, but it was the other things that Stan did that really impressed Andrew and everyone that knew Stan. He went to

the shows and other like events all over Eyre Peninsula and set up a stall about Malleefowl and why they should be helped.

Stan ensured that the teachers knew when he was available to work with school students. He was involved across the age groups, from primary classes looking at endangered species to the Year 12 Geography students who used grid searches as their project.

Stan was actively involved in and leading Landcare, propagating plants for revegetation projects and assisting in planting mangroves to saltbush. He was a champion cactus and boxthorn eradicator, pulling out any boxthorn bushes that he saw on the mound searches, and controlling both agricultural and environmental weeds on public land in the Cowell district.

Stan became less mobile as time passed. He took part in nest searches at the Munyaroo grid as well as his beloved Cowell grid but the time came when he could no longer make the trek through the scrub. Stan would visit or phone to hear the results of checking the nests, keen to know how his birds were doing this season.

If there were more people like Stan in the world it would be a much better place, and there would be a heck of a lot more Malleefowl on it as well.

Stan is survived by four sons and two daughters.



## COWELL MALLEEFOWL SITE GETS A MAJOR CHECKUP

BY IGGY HONAN

Natural Resources Eyre Peninsula staff and volunteers recently completed a full grid search of a Malleefowl site near Cowell, South Australia. This laborious task was last carried out in 2003 and it was interesting to get a near complete view of this 480 hectare site.

In total the group found 73 mounds which ranged in size from 12 m<sup>3</sup> to almost flat, with three of these being new locations.

While the weather on the three days was very kind, most of the crew found the going quite tough through some dense mallee and melaleuca, so the survey was carried out over a three



SEARCHERS IN JULY AT COWELL, SA

week period.

All-up a mix of nine volunteers and four staff were thrilled to see this task completed.

Local stalwart Lorraine Walford, who has been working on this site for 15 years, said "The grid search went really well. I'm very happy with the

number of volunteers and staff we had on the ground and everyone really enjoyed themselves".

This block of vegetation which has eight sandhills running through it is in great condition this year, and the group saw a couple of mounds that already look like they are receiving attention.

## GLUEPOT AERIAL SURVEY OF MALLEEFOWL MOUNDS, SA

BY ELLEN RYAN-COLTON, REGIONAL ECOLOGIST

For the period of Malleefowl monitoring on Gluepot Reserve, 2004 to present, the number of active mounds and thus breeding pairs has been consistently low. Out of 90-107 mounds surveyed within the grids each year a maximum number of three active mounds per year was recorded in 2012. In recent years, some active Malleefowl mounds have been found outside monitoring grids.

Many volunteer hours are spent each year monitoring the grids, but the grid method, which was developed in higher rainfall and more fragmented landscapes, may not be as suitable for a more arid and continuous landscape such as Gluepot and the wider Bookmark Mallee area. In comparison, in semi-arid and arid areas of NSW, with equivalent rainfall to Gluepot, aerial surveys are employed to monitor Malleefowl mounds. Also, in arid central Australia and the Nullarbor region of SA, persistence of birds is used by recording Malleefowl tracks, as breeding is very sporadic in response to rainfall.

We aim to survey inaccessible parts of Gluepot, outside of grids, to have a record of all old and active Malleefowl mounds within the Reserve. After this we can decide how best to keep track of our sparse Malleefowl population. Aerial survey is one method we choose to find inaccessible mounds, and we are also investigating the use of aerial photography, which Gluepot already has, to detect mounds in high resolution pictures.

We used a 4-seater helicopter on 25/06/2013 to survey for Malleefowl mounds over parts of Gluepot Reserve. In four hours of survey time we covered a total of 6000 hectares (60km<sup>2</sup>), which is 1/9<sup>th</sup> the total area of Gluepot Reserve (54 000 hectares, 540km<sup>2</sup>).

Aerial surveys detected one active mound, one Malleefowl bird, and 18 old Malleefowl mounds in the 6000 ha survey area (see picture). This equates to one old/new mound per 3.15km<sup>2</sup>, which is a density 21-fold less than in Gluepot Malleefowl grids of one old/new mound per 0.15km<sup>2</sup>. Some mounds were clumped within 250 metres of each other, while others were separated by a maximum of 2.3km. Some of the old mounds were within habitat burnt in the 2006 fire, and some of the north western portions of the transects (around Diesel Dam) crossed Black Oak

woodland, which is not deemed suitable habitat for Malleefowl. Thus, not all the area searched was suitable for active or old mounds.

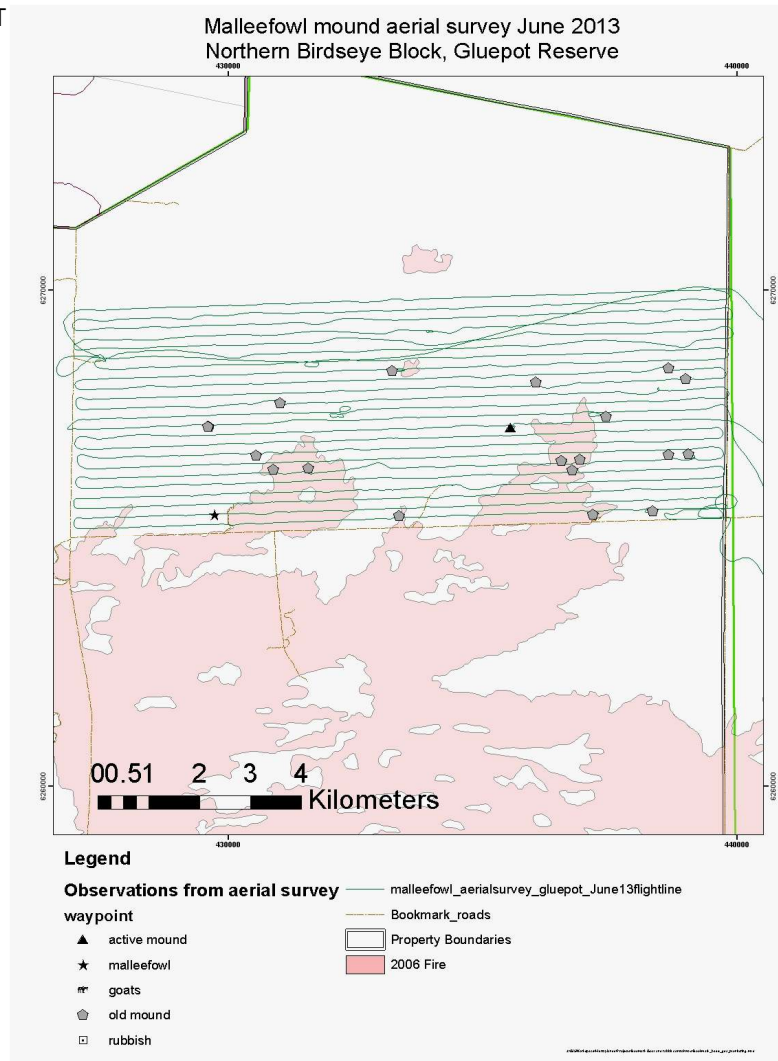
When spotted from the air, mounds looked relatively wide relative to 60-90 metres altitude. This gave the impression that mounds were relatively easy to spot, although the much lower density of old mounds (1 mound per 3.15km<sup>2</sup>) in the searched area compared to the Gluepot grids (1 mound per 0.15km<sup>2</sup>), suggests: (a) that there were detectability issues with this helicopter survey and that we detected a lower number of mounds than were actually present; or (b) this northern Birdseye Block area has a lower density of old mounds than other areas of Gluepot.

Both scenarios are likely, given that a Malleefowl grid was never placed in this area, it is likely that the area has a lower density of old mounds than other areas that were finally chosen for monitoring. In addition, this helicopter was the first survey for the observers; shadows became more prominent during the day; as did

weariness and an increase in speed to cover more area. We need to test the accuracy of this type of survey by flying over an area of known mound density, such as an existing Malleefowl Grid. Knowing the accuracy of the method will help us decide whether this is the best method to locate mounds, especially active mounds, which is the priority aim for managing Malleefowl at Gluepot Reserve.

In terms of efficiency, 6000 ha in four hours of survey time completed the task in a much quicker time frame than by surveying the area on foot. Aerial surveys by helicopter provide the ability to turn back and hover over mounds to obtain a more accurate coordinate, which is essential in large continuous areas. The downside of helicopter surveys is the cost, especially with ferrying time charged at the same hourly rate as survey time.

Thank-you to additional observers Luke Ireland and Dave Setchell, and to Helifarm from Naracoorte for conducting the surveys and providing the GPS data.



## MALLEEFOWL IN GOONOO NP AND SCA, NSW

BY MELANIE BANNERMAN, RANGER

Goonoo Forest is approximately 40km north-east of Dubbo in the Central West Slopes and Plains of NSW. The forest is made up of three National Parks estates – Goonoo National Park, Goonoo State Conservation Area\* and Coolbaggie Nature Reserve, which together cover an area of approximately 65,000 hectares of cypress/ironbark forest amongst an otherwise cleared agricultural landscape. The area contains many ephemeral streams but has no permanent water except for a number of man-made ground tanks that still exist throughout the reserves.

The Goonoo Forest, as it is commonly referred to, was a NSW State Forest for over 100 years and has been heavily logged during that period, initially to provide timber for the main railway line through the State but later also to provide charcoal for fuel during the Second World War and to provide firewood for surrounding communities.

On 1<sup>st</sup> December 2005, Goonoo State Forest was declared as Zone 1 (National Park) and Zone 3 (State Conservation Area) and the management of the forest was handed over to the NSW National Parks and Wildlife Service and a new era in the forest's history began.

Unfortunately the creation of the reserves has created some confusion in the community as to the purpose of the reserves and still many believe that the areas are not true national parks but recreational reserves to be used as they had been under the state forests regime. This continues to be a challenge to NPWS staff and supporters of the reserves, with firewood collection, illegal trail bike riding, rubbish dumping, and wildlife poaching and illegal hunting continuing in the forest.

In January 2007, following many years of prolonged drought, a major bushfire ravaged through the centre of the Goonoo Forest, burning almost 23,000 hectares and effectively portioning up the forest into four remaining unburnt corners. One of the two known active Malleefowl mounds at the time was burnt and the birds from that mound have not been seen since and it is assumed that they perished in the fire.

Since the fire, two Malleefowl have been found dead alongside the main road that runs through the forest from Dubbo to Mendooran. This is a major thoroughfare for trucks, travellers and locals, and has a high number of native animals killed along it. One of

the dead Malleefowl was found close to the only unburnt active mound left, and ever since, this mound has been inactive.

Fortunately, two new active mounds have been located, following a re-visit to all known mound records compiled since the 1950's. A third active mound was discovered on adjacent private property. These three active mounds out of a total of 23 known mounds are now the focus of monitoring and camera surveillance. All three mounds have been actively worked every year for the past three breeding seasons until this recent season (2012/13) when two became inactive, for reasons unknown. The remaining active mound has been the subject of a mound excavation project run by Marc Irvin, Threatened Species Officer based in Dubbo, and has so far proved that the birds are laying eggs, although hatching success has not been shown.

A comprehensive fox baiting program is run in and around the Goonoo Forest with the cooperation of the NPWS, Pest Authority and neighbours surrounding the Goonoo Forest. In the reserve over 350 baits are laid on a monthly basis year round, with bait-take being around 3-4%. On surrounding properties baits are laid twice a year, mainly to coincide with lambing and juvenile fox dispersal. Camera monitoring of foxes is being undertaken throughout the reserve and on neighbouring properties to determine fox numbers inside the baited area compared to unbaited areas, as part of the NSW Fox Threat Abatement Plan 2. Results are yet to be analysed.

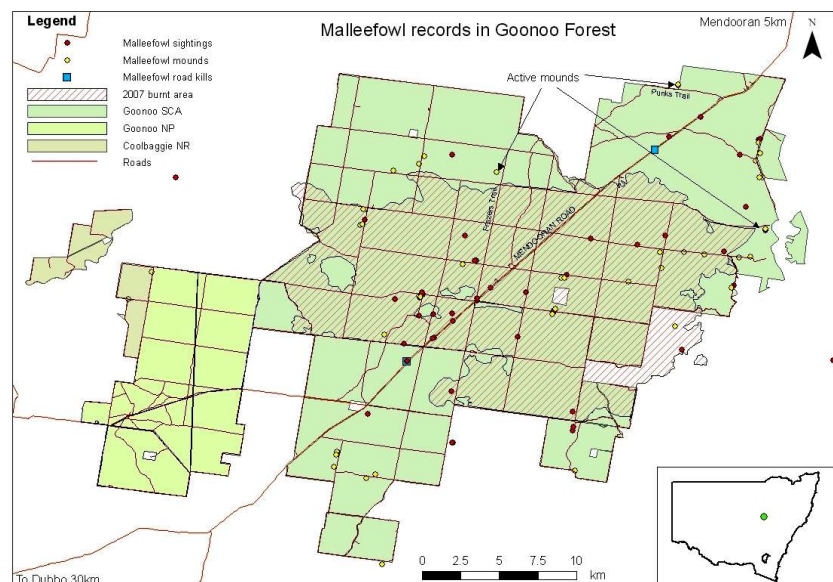
Many other factors threatening the survival of the most easterly population of Malleefowl remaining in the State include other predators

including goannas (observed on camera excavating mounds); further loss of habitat and resources through fence-line clearing, fires, road construction, firewood collection and road kills.

Despite what appears to be many Malleefowl records and mounds in the reserve, very few of these records are recent (last 5 years). Only the three active mounds with six birds in the north part of the forest have been observed and one, maybe two, other birds observed 20km to the south. Very little is known about these birds including their age, sex, ancestral relationships, home ranges, food sources, refuge habitat, breeding success, recruitment rates, threats, and responses to fire and hazard reduction activities in the forest.

Much time, effort and money is being spent on monitoring the three active mounds in the Goonoo Forest but little is being done to plan for the long term persistence of the population in the reserve, with very little knowledge regarding their habitat requirements, threats and the likelihood of success in maintaining this very small population. Managers and ecologists need to seriously consider whether the time, effort and money would be better spent either on the 30 other threatened species in the reserve or on another viable Malleefowl population in the State that has a better chance of survival. The question to be asked is "Have we passed the point of having a viable population of Malleefowl in the Goonoo Forest?"

\*State Conservation Area is managed under the same principles and regulations as a National Park, with the exception that mining and mineral exploration may be permitted.





## MAWONGA JUNGKAI (MALLEEFOWL), NSW

BY MICHELLE HINES, LACHLAN CMA AND STEVE MEREDITH, WINANGKIRRI ABORIGINAL CORPORATION



NGIYAMPAA DESCENDANT HELPING SET UP REMOTE CAMERA TRAPS AT MAWONGA MOUNDS



HCO ScoutGuard  
GOATS ON MOUND

The Winangkirri Aboriginal Corporation is working on their property 'Mawonga' near Mt Hope in the western rangelands of NSW to protect their Malleefowl. Through the Lachlan CMA's Malleefowl project that has been running since 2009, Malleefowl have been discovered on many properties in the Mt Hope region including Mawonga, by aerial surveying. Three mounds were found on Mawonga, two of which were active last breeding season and adjoin the southern area of Yathong Nature Reserve where there are also active birds. Jungkai (Malleefowl) are culturally important to Ngiyampaa Wangaaypuwan people as it is part of their social structure. The Winangkirri Aboriginal Corporation feel that the ongoing population restoration project at Mawonga, and long-term management of Jungkai is their responsibility and moral obligation.

These culturally significant birds are competing for survival in their habitat with huge numbers of feral goats, and directly under threat from foxes and feral cats. All of these feral species have been captured on camera traps that have been set up and monitored by the Lachlan CMA.

Through a highly collaborative active partnership the Lachlan CMA and Winangkirri are working

on building the knowledge, skills and capacity of the Indigenous community to care for, protect and manage the Mawonga Malleefowl. Winangkirri have commenced an Indigenous ranger trainee program, creating opportunity for community to learn, gain capacity and work on country. Landscape-scale fencing with one-way gates is being built and will be managed by the trainees to remove and eradicate feral goats

from the Malleefowl habitat, protecting and improving the condition of the vegetation for the Malleefowl. Camera trapping will help the trainees and community monitor their birds, gain knowledge on the birds' 'intimate lives', and inform effective and adaptive planning of on-ground conservation efforts such as fox baiting.

Projects such as this from Lachlan Catchment Management Authority benefit the communities enormously.



HCO ScoutGuard  
MALLEEFOWL COURTSHIP DISPLAY

10.15.2012 07:00:55



## THE MALLEE POST ATM HISTORICAL ARTICLES

BY GRAEME TONKIN

It is interesting and somewhat amusing (with the benefit of hindsight) to read some of the early opinions on the habits of Malleefowl. Enjoy!

### Australian Town and Country Journal Saturday 20 March 1886

#### The Naturalist.

#### THE MALLEE HEN.

Referring to Mr. M'Cooley's article on the "brush turkey" which appeared in the TOWN AND COUNTRY JOURNAL of February 27, he alludes to the mallee hen as being closely allied in its habits and mode of incubation to the brush turkey. My experience in connection with the former, if not of service to Mr. M'Cooley, may be of interest to some of your readers. About nineteen years since I took six eggs from a mallee hen's nest, with the view of hatching them. Being midsummer I embedded the eggs in a mound of hot sand. The following morning noticing an indentation in the mound I uncovered the eggs and found one hatched and the young bird nowhere to be seen. It must therefore have made its own way out of the mound, and gone off to forage for itself. Taking the precaution of encircling the mound with a box frame, a week elapsed, when unfortunately rain fell, saturating the mound, rendering the sand cold. Then, with the view of obtaining evidence from the appearance of the unhatched chicks how often a mallee hen lays, I uncovered the eggs, and found a chick just emerging from the shell. Being chilled, it was weakly at first, but on being warmed it got strong, and picked up the crumbs of bread given it. After a time it was presented to the Adelaide Zoological Gardens, a half grown bird. In addition to the fact that just one week elapsed between the hatching of the two eggs alluded to, I have reason to believe that a mallee hen only lays once in seven days, for, finding a nest with only one egg in it, I watched, and a week transpired before another egg was laid, and thereafter I obtained an egg each week so long as I had an opportunity of visiting the nest. I should like to know if my opinion is confirmed by the observation of others interested in the matter.

Rydal, March 8. E.A.HARRIS.

### Australian Town and Country Journal Saturday 17 April 1886

#### MALLEE HENS.

As I am a diligent and delighted reader of your interesting Journal, I cannot avoid noticing the remarks of your correspondents in the Naturalist column. I have been anxiously awaiting for the last three weeks some observations from Mr. M'Cooley, whose pronouncements I accept as those of an authority. May I ask Mr. M'Cooley if it is within the bounds of reason and common sense to adopt the suggestion of a correspondent that a mallee hen deposits only one egg weekly, in what I may call the incubator? I am perfectly aware that this is doubtful, as I have had ample opportunities of proving. About the end of August or beginning of September the blacks on the Murray used to go out to the mallee to make observations, and when a new mound was discovered indicating occupation, they

returned, and in a week afterward proceeded to the spot and unearthed from six to seven eggs. On one occasion I accompanied a small party for the purpose of robbing a mound, and found six or eight fresh eggs, which were with some difficulty unearthed, the shell being so very thin and brittle, so tender is it. The shell is of salmon color, and the eggs have to be roasted on the spot, to coagulate the albumen, before they can be deposited in the net for removal. As incubation proceeds from the start, it is quite absurd to suppose that only one chick appears weekly, as would undoubtedly be the case if only one egg were deposited weekly. Moreover, when the young are first seen, they are very much of a size.

### Australian Town and Country Journal Saturday 22 May 1886

#### THE MALLEE HEN

The great authority upon natural history in Australia has spoken again in his usual positive manner. He believes with Senex that the **mallee hen** lays more than one egg a week. He says he has 50 arguments in favor of it, but he does not advance one sufficient to upset a fact, and it is a fact that these birds only lay one egg a week. I am one of the many that have rooted their nests out year after year, and always with the same results. In odd nests I have got two eggs weekly, but very rarely.

Forbes, May 10. C. P. W.

### Australian Town and Country Journal Saturday 5 June 1886

#### THE MALLEE HEN.

Some time back I saw in the T. and C. JOURNAL a very accurate description of the mallee hen and its mode of breeding. The writer was attacked by other writers, "Senex" and Mr. M'Cooley, in an unreasonable manner, because he stated that the hen laid once a week. Well, all the bushmen that I have spoken to on that point say the birds lay once a week, and I have known them to go to the nest once a week regularly. Mr. M'Cooley says "We do not look for the mythical, mysterious, or fanciful; nor do we look for exaggerated fable. We simply look for clear, unembellished truths of natural science. If the mallee hen occupied ten weeks in laying ten eggs, it is equally certain that the incubation would occupy the same time, and this I deny to be the case. Were such the case, the first bird hatched would be ten weeks old before the last-laid egg was hatched." Still Mr. M'Cooley, that is how they are hatched, and here is the proof and the unembellished truths you seek for: I stripped a mallee hen's nest at Nymagee, and found thirteen eggs and the shells of two showing there had been fifteen in it, and that two birds were hatched out. One egg that broke on the road home contained a well developed bird, full

## ATM HISTORICAL ARTICLES (CONTINUED)

feathered, but not sufficiently matured to live. I made a present of two of the freshest-looking eggs of the lot, and they proved to be fresh. I dug a hole in the garden, and put some heated horse dung into it, then a layer of sand, in which I placed the eggs, then put a heap of sand on them and the eggs hatched out, the last one being a month in the sand. If the mallee hen laid once a day she would have been domesticated long ago. I know several men that caught birds coming out of the mound while stripping it, but I never met anyone that saw coveys of young birds in the bush. They are far too shy, both old and young, to be readily seen. Mr. M'Cooley says this laying once a week would outrage the laws that govern such cases. Possibly those birds make their own laws, and they are not likely to alter them.  
AUGUSTIN FITZGERALD.

**The Register**  
**Tuesday 26 October 1909**  
**MALLEE HENS.**

From - John McGillivray, Frances:  
I notice in an article 'Among the Ornithologists' in The Observer of October 23 a reference to the nest of the mallee hen which is not quite correct. It is true that the nest is a large mound from 8 to 10 ft. in diameter, cone shaped, and from 2 to 4 ft. high. Many help to build and lay in the one nest. An extraordinary instinct

guides the birds in building. They first of all scoop a hole in the sand, in which they place a layer of intermixed green and dry leaves and grass, over which is laid a layer of eggs. Then follow more leaves and grass, then a layer of quartz and pieces of flint, followed by more leaves and a layer of eggs. This continues until the nest is finished. I have never found the mallee hens nest where flint and quartz, were unprocurable. The quartz is evidently required to allow a certain amount of moisture to percolate and cause the leaves to ferment. When the young are hatched they do not struggle out themselves, but are scratched out by the old birds. In some instances the eggs are broken by the old birds to let them out. I have never been able rightly to determine how the old birds know when the period of hatching is completed, but I am of opinion that they can hear the chicks in the eggs. I know that the nest is constantly visited by the old birds. The hatching is not completed at once. The top layers are first hatched, and there is sometimes a considerable period between the two. There are often eggs in the bottom layers that do not hatch at all, but in the end the old birds scoop the nest out to the bottom."

An excerpt from Harold Buckingham's report to Sunraysia Naturalists Research Trust, April 1969.

The report is available on the archive/historical section of [www.malleefowlvictoria.org.au](http://www.malleefowlvictoria.org.au)

All chicks emerge in the morning. Although it is rash to postulate any definite rule where nature is concerned, all my observations confirm this. The record of one mound, given here, is typical of all:- the first chick of the season, in early November, emerged at 7.45 am. On the following days the next four were within half an hour either way of this time. As the season progressed they began to emerge earlier, until in mid and late summer the times were from a little before sunrise to half an hour later, the earliest seen emerging at 5.15am. It may be entirely co-incidental but this advancement of emerging times corresponded roughly with the progression of egg-laying times, which I had noted earlier. The first eggs, in early September, were laid between 10 and 11.30am, the time gradually advancing until the last eggs, in late December, were laid not later than 6.30am.

Incubation times also show a progressive reduction during the season. Again, the record of one mound may be taken as typical. This mound was selected for the purpose and the closest observation was maintained in order to avoid any possibility of error. The writer was present at the laying of every egg and the emergence of every chick:- the first egg was laid on the 10<sup>th</sup> of September, the first chick emerging on the 10<sup>th</sup> November, 61 days later. The next took 60 days and thereafter chicks emerged in the successive order of 59, 57, 56, 54, 52, 51, 51, 51, 47 and 46 days, the incubation time for the last five remaining steady at 46 days.

The eggs were laid at 5 and 6-day intervals throughout the season but, due to the progressive reduction of incubation time, the first seven chicks emerged at irregular intervals of 3, 4 or 5 days. From the first week in December the remainder came at predictable intervals, corresponding to the egg-laying intervals already known - ie. every 5<sup>th</sup> or 6<sup>th</sup> day - with one notable exception, which for a chaotic hour seemed to destroy all belief in the validity of the record.

The last three chicks had arrived on the 4<sup>th</sup>, 10<sup>th</sup> and 16<sup>th</sup> of December, at 6-day intervals from eggs laid respectively on the 14<sup>th</sup>, 20<sup>th</sup> and 26<sup>th</sup> of October; incubation time in each case being 51 days. The record showed that the next egg was laid on the 31<sup>st</sup> of October, five days later. It was assumed that the chick would arrive in five days time, but next day, on the morning of the 17<sup>th</sup> December, I found myself staring unbelievably at a chick's head protruding above the surface of the mound, twenty-four hours after the previous one. The explanation was simple but it did not become clear for some time. The chick had arrived in 47 days. Incubation time had been reduced by four days in one step. I had earlier thought that a situation like this could be possible, but I was totally unprepared for the demonstration. The shortening of incubation periods is apparently resultant from (a) the observed and measured increase in mound temperature as the season advances and (b) the lower and waning fermentation heat of the litter forming the egg chamber, as it is superseded by the stored solar heat daily worked into the mound above and around the eggs.

Until the rhythm of hatching became stable and predictable a constant daily watch had to be kept, beginning in late October, fifteen days before the first chick appeared and continuing until late December. This entailed being at the mound, twenty miles away from home and breakfast, for over sixty consecutive dawns. Commenting, on this, a friend caustically pointed out that "You don't HAVE to be mad - but it helps!" What did help was the fact that the observation provided an invaluable foundation for subsequent studies.

## NATIONAL MALLEEFOWL RECOVERY TEAM MEMBERS



### LISA FARNSWORTH, WA

I am currently the Mt Gibson Sanctuary Wildlife Ecologist, employed by the Australian Wildlife Conservancy (AWC), a not-for-profit conservation organisation. In this role I am responsible for the design and implementation of flora and fauna survey work, threatened species management and the preparation and implementation of strategies (eg. feral animal control strategy) relating to the maintenance of the ecosystem

health of the Sanctuary.

I originally resided in country Victoria, growing up in the small alpine town of Omeo and then shifting to the north-east of the State to complete my secondary schooling in Wangaratta. As a lover of the outdoors and of getting my hands dirty, I went on to pursue my interest in biology and completed an undergraduate degree in Biological Sciences at Latrobe University, Bundoora. I then went on to complete Honours at Deakin University, studying the diving behaviour of Australian Fur Seal pups on an island just south of Wilson's Promontory in Bass Strait. As I have always wanted to remain a 'generalist' when it comes to ecological studies, I then undertook a PhD as part of the Mallee Fire and Biodiversity Project, studying the response of reptile communities to fire regimes in the Murray Mallee region of south-eastern Australia. My first experience with the elusive Malleefowl

was during PhD work in Murray Sunset and Hattah-Kulkyne National Parks, in which I sighted many birds and a number of their impressive mounds.

After completing the doctorate, my husband and I made the long journey across the Nullabor, to Western Australia in the summer of 2010/11 in order to take up our positions at Mt Gibson Sanctuary, 400kms north-east of Perth. Mt Gibson Sanctuary is home to a relatively large population of Malleefowl and I feel privileged to be able to regularly see the species and monitor their nests on the property. It is hoped that in constructing a large feral-proof enclosure at Mt Gibson (as part of the Mt Gibson Endangered Species Restoration Project) that we can create a stronghold for Malleefowl within the region and ensure the species ongoing existence within Western Australia.

I look forward to working with you all and the recovery team to create a better future for this unique species.



### GRAEME TONKIN, SA

I was born at Cowell, on the east coast of Eyre Peninsula, living there for 47 years and raising a family of three. Our family owned and operated a rural service business, selling John Deere farm machinery and Holden cars. I am a diesel mechanic by trade

but have done a variety of work since, from 14 years farming oysters in Franklin Harbour at Cowell to working for Flinders University as facility manager at the Lincoln Marine Science Centre in Port Lincoln.

The Lincoln Marine Science Centre gave me the opportunity to get involved with scientific field work, where I took scientists to offshore islands to undertake their field of study, anything from Seagulls to Seals to White Pointer Sharks.

My first contact with Malleefowl was as a lad in the local area around Cowell, when we would go rabbiting on our pushbikes and see the occasional bird.

My first real involvement was in the 1990's when Helen and Rod Martin set up Bush Heritage Agreements on their property and an adjoining property, eight kilometres NE of the Cowell township. Two grids were established on these properties and have been monitored ever since. Back then grid searches were undertaken with a hand-held compass, working from established grid lines 200 metres apart and marked for their entire length at 25

metre intervals with aluminium tags hanging from bushes and trees. As you can imagine a lot of time was required to locate all the mounds! Thank goodness for the GPS!

Nowadays I live in Adelaide and assist Sharon Gillam and others with monitoring grids on Eyre Peninsula, Yorke Peninsula and the south east.

Over the past three years I have developed a passion for Camera Trapping of Malleefowl and have a couple of cameras set up on Ferries McDonald Conservation Park. Camera Trapping offers a unique opportunity of monitoring Malleefowl at close range over long periods of time in a manner that would otherwise be impossible.

I have the pleasure of representing SA volunteers on the National Malleefowl Recovery Team, a task which I take very seriously. Without the enthusiasm and dedication of volunteers right across the Malleefowls' range, the task of annual Malleefowl monitoring would be extremely difficult, and given the Government's current cost-saving measures, would be an almost impossible task.