' Ordinary People Doing Extraordinary Things '

An outline of the processes used by volunteers to collect malleefowl data in northwest Victoria

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The Victorian Malleefowl Recovery Group (VMRG) is a volunteer group of interested people who monitor approximately 900 malleefowl mounds annually in 24 established grids in the Mallee and Little Desert National Parks and Reserves of NW Victoria. The group currently comprises approximately 50 people who come together because of their mutual specific interest in malleefowl conservation, and their love of the mallee country in general. The members of the group come from diverse backgrounds, with slightly more than half living and working in the Mallee, and the remainder from regional and metropolitan towns and cities to the south of the Mallee. Those who don't reside in the Mallee have had long associations with the area, either as past residents or as frequent visitors for recreational purposes. It would be fair to say that individuals have a passionate interest in a range of environmental activities and are willing to devote considerable time and concentrated effort to be involved in the data collecting processes that are outlined in this paper in order to contribute in a significant way to the National Malleefowl Recovery Plan from a Victorian perspective.

The data collection process for the established Victorian grids has recently undergone dramatic changes with the use of technology. Previously paper entries and gridline searches were used almost exclusively until three years ago, when all known mounds were searched using grid lines, but were given a GPS position during this search. The following year, all mounds were located from GPS locations and data for many grids was entered onto a palm held computer, and later downloaded to the database from the palm. In this current breeding season (2003/04), all grids were monitored and recorded using the new technology of Palm, GPS and Digital Camera.
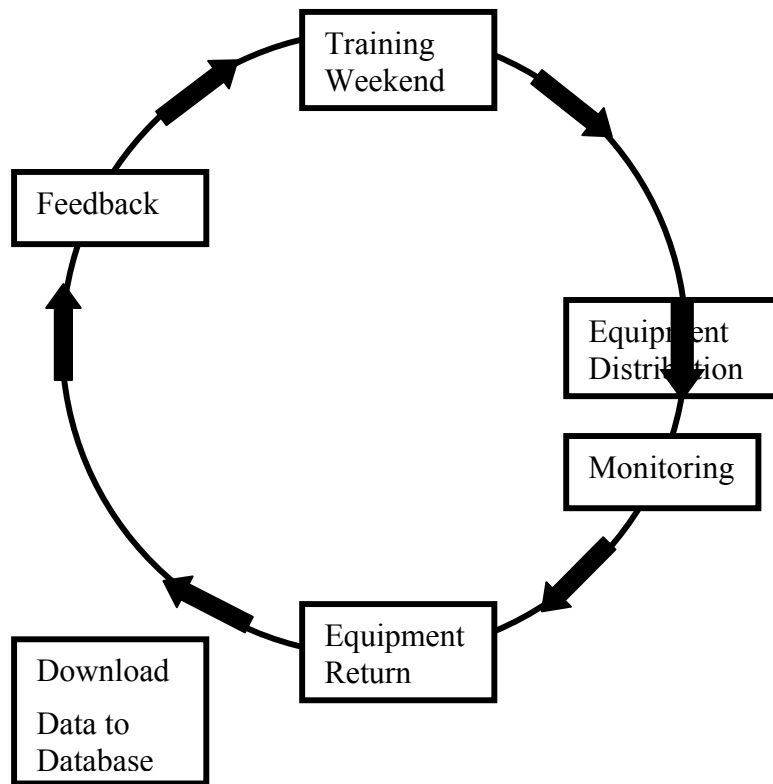
This paper outlines the processes that were adopted to ensure the success of changing our methodology of collecting and collating data from a tried and trusted system of paper and manual spreadsheet data entry to an electronic system that was generally unfamiliar and challenging to the volunteers of the VMRG. The process involved restructuring the annual training weekend, distributing monitoring equipment from a central source, gathering information in an electronic format, returning the equipment to the central source where the data was downloaded and then transferred to the central database. Monitors are given the opportunity to provide and receive feedback on the strengths and weaknesses of the system, and then the process is modified before the next training weekend.

APPENDIX 2

Monitoring Kit 7 Check List

Item	Check out	Return	Check in
Field intention Logbook sheets			
Field notebook			
Malleefowl scat/feather bags			
Fox scat plastic bags			
Fox scat ID sheet			
Battery charger with charged batteries			
Digital camera and Case			
*CD and documents for camera			
*Spare rechargeable batteries for camera			
*Spare photo memory cards			
Palm and GPS			
*Spare rechargeable batteries for Palm			
* GPS Manual			
Laminated instruction cards for			
* Camera			
* Palm			
* Cybertracker			
* GPS			
* Battery charger			
* Safety			
* Photo Sizing card			
* Trunking Radio contact numbers			
* Trunking Radio Keypad model			
Lerp Tool			
Lerp instruction sheet			
Expense claim form			
Return address label			
Registered Post and Insurance form			
Parcel Post satchel			

- *Do not rely solely on the charged batteries in this package. Take some extra AA and AAA batteries in case of battery failure.*
- *NOTE: If you are going to a designated remote grid you must have a trunking radio from Parks Victoria with you.*
- *Please contact the appropriate ranger prior to visiting your grid to inform them of your plans whilst in the grid. It is important that rangers know when and where you are in the park for emergencies and as a matter of courtesy.*

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                    ┌──────────┐
                    │ Training │
                    │ Weekend  │
                    └──────────┘
            Feedback              Equipment
                                  Distribution

                                      Monitoring

            Download
            Data to        Equipment
            Database       Return
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Diagrammatic representation of monitoring cycle

The Training Weekend

The training weekend is the most crucial element of the monitoring cycle as it is here that skills are revised, and experiences are shared.   Held in early October, the members of VMRG who wish to monitor a grid in the coming season share in a series of activities, *(Refer to appendix 1 for a typical agenda)*, designed to cover both theoretical and practical aspects of monitoring. As this is one of the few times that this group come together, there is a tremendous spirit of friendship and good will and much sharing of the year's personal and work events.

As members of the group have a common interest in the fate of malleefowl and a commitment to success of this monitoring program, the level of enthusiasm and motivation for the weekend's activities is assured. When introducing the new technology to the group, this sense of common purpose was instrumental in a decision taken to trial the system, despite a general distrust and even intimidation of such technology.

Monitors could see how the system as explained could improve the monitoring outcomes, and as most had only recently experienced monitoring using gridlines, they were willing to try another system. One of the strengths of the group is the mutual support that exists, and an unspoken understanding that nobody would be put under pressure if they could not manage palms and GPS's and the like. In fact many offers were made to support each other to make the new way work.

An interesting feature of the cooperative nature of the group is the open informal sharing of information and skills during the non-formal parts of the weekend program. With such a diversity of skills and backgrounds, and a generosity of people prepared to share such skills, fascinating discussions about mallee plants, birds, farming practices, stars and various encounters with malleefowl are common. Generally these interactions are just as informative and probably more interesting than the formal program. The lengthy discussions around the campfire and other small group interactions over cuppas and the bbq are an integral part of time spent together.

At the end of the training weekend, all grids are allocated to monitors and each monitoring team is given all the basic non-technical equipment such as grid maps, gps maps, the previous year's monitoring sheets and measuring equipment. Each monitoring team also indicates a preference for the dates when they think they will monitor. Some negotiation may occur here if too many want to monitor at the same time.

Old hands have revised their skills and new monitors have the necessary background to decide if they want to proceed. There is a general understanding that new people will be matched with an experienced person, at least for their first day of monitoring in a new grid. There is also an increasing belief that it should be compulsory for monitors to attend the training weekend each year if they intend to monitor.

Distribution of Equipment

The development of recent technology allowing incredible information to be contained within a handheld computer has dramatically altered the way the VMRG monitors collect data within the malleefowl grids. As a result of the decision to use the technology, it has been necessary to centralise the distribution of essential items of equipment. There is a limit to the number of Palms, GPS's and digital cameras to which the VMRG has access, so a distribution system had to be developed to ensure monitors have the equipment when they need it. A member of the VMRG committee has taken on this task, and with the efficiency of Australia Post and the cooperation of monitors, equipment is moved back and forth between the coordinator and monitors.

It is important that the distribution process be coordinated from a single source, as this is the link between the collection of data in the field and the transfer of data to the central database. The equipment needs some preparation before it is sent out, as the palm, GPS and digital camera need to be prepared to ensure that they contain the appropriate grid details, and that each machine has a synchronised time and date. The process of downloading data is well documented and follows a set pattern that is easily managed with limited computer knowledge and gets easier every time it is done. When the machines are set, they are then sent through the post, with some additional non-technical equipment, to the home address of the monitor. Care must be taken to ensure that all equipment that is sent will be working, contains the correct data and nothing is missing. A checklist *(refer to appendix 2)* that covers technical

equipment, instructions, notes and safety reminders has been developed, so that the monitors can be certain that everything they need has been provided.

The monitoring period covers a 10 –12 week period from mid October until early January. With 24 grids to be monitored and limited equipment, it is necessary to prepare a timeline in negotiation with the monitors, and this starts at the training weekend. The timeline needs to cater for unexpected hold-ups such as adverse weather, illness, or whatever that requires monitors to change their intended monitoring time. The timeline needs to cater for a two-week turn around with equipment, and in our case no more than three groups monitoring at any one time.

Timelines could be more or less flexible depending upon the equipment available. Based on two years' experience, we have needed seven sets of equipment to monitor our 24 grids over the time span of twelve weeks.

Communication and trust between the monitors and the coordinator is essential for this distribution process to be effective and phone and email contact help tremendously. There are responsibilities in this system for both the monitors and the coordinator, and occasional stuff-ups occur. No matter what the cause, the isolation or the heat of the day at the time, patience and an agreed 'no blame' approach resolve these matters.

Gathering Data

Location of mounds and the recording of data using the palm and GPS are considerably different to the old ways of following gridlines and using paper entries.

The efficiency of locating mounds by GPS makes walking through mallee scrub an easier and quicker task, and also increases the opportunity to observe the surroundings for other things of interest. Occasionally new mounds are found because identical tracks are not always used. The palm provides screens to replicate all the information that was previously recorded on paper.
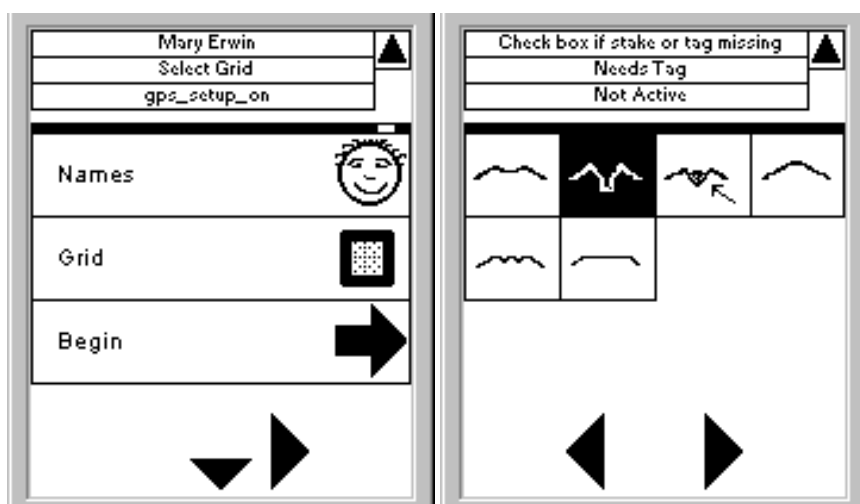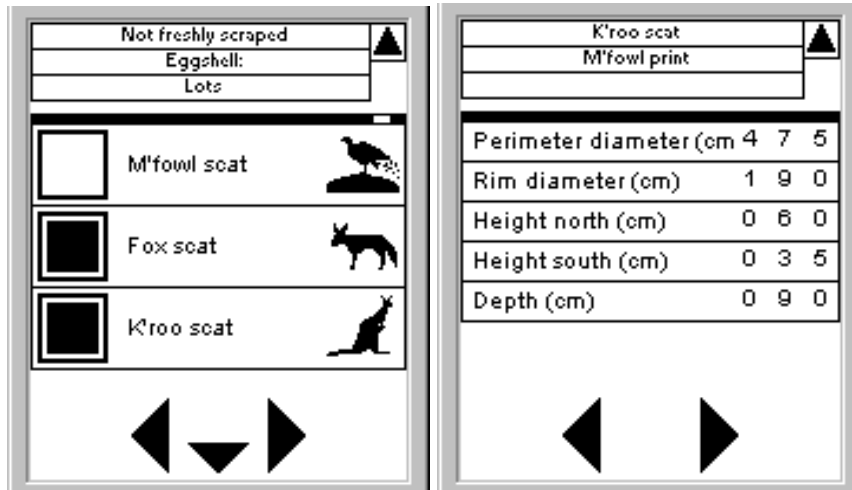
Sample screens from Cybertracker program on Palm

The incredible advantage of using the palm is the electronic storage of data and the ease of transferring the data at a subsequent time to the database. Confidence with manipulating the palm increases with usage. The palm was introduced as an optional method two years ago and exclusively for this monitoring season. The palm requires entries on all screens, which ensure that all relevant data is collected, and has an inbuilt back-up system to lock in data. Monitors are still provided with paper data forms for backup in case of equipment failure. This has been required on a few occasions. Monitors have the option of filling in the paper forms as well, and in most cases this occurs, as monitors have an apprehension that the electronic data will disappear into the ether before it is downloaded. Digital photos are taken to record observations at each mound and they are instantly retrievable. Records of personal observation that are outside the scope of the palm, such as the sighting of interesting vegetation and birds, other photos taken, or other interesting sightings are entered into a small grid logbook, which will be taken into the field each year and over time will be a valuable resource regarding other activities in each grid.

None of our monitors have 'retired' because they couldn't handle the system. The same understanding of the need to collect accurate and scientifically valid data exists, and the same degree of 'ownership' of particular grids has been maintained. Monitors become attached to grids and generally request to return to the same grid each year. It doesn't seem to matter if monitors live locally, or come from another locality, a similar attachment to a grid develops.

The use of technology in collecting data does not necessarily improve the quality of the data. We still need the same level of enthusiasm and commitment to observation and care in recording what we see. What is different is the ease and speed of movement around the grid. More importantly, no longer does the data need to transferred to the database by incredibly time-consuming manual spreadsheet entries,

but the data is instantly transferable to the database in the format in which it was collected.

Return of equipment and data download

Once monitoring is completed, it is understood that the package sent through Australia Post will be returned promptly to assist with the turn-around of the equipment to other monitors. Monitors use the checklist (refer to appendix 2) to ensure that all essential items are returned, and any equipment failure or other problems are duly noted.

It is possible for the coordinator to download the data from the grid just monitored, and install the next grid's details in a few hours and have the next package back in the mail the same day it arrives. However this is rarely the case, and the coordinator can take time to complete the three tasks that are required to get the process under way again. Initially the data collected needs to be transferred from the palm to a home computer that contains the cybertracker spreadsheet, using a cradle interface. If there is some reason that data collected in the field has not been retained on the palm, it is an easy, and not too time-consuming, task to manually enter the data back into the palm from the paper nest sheets if they have been filled out in the grid. This is the only benefit of completing the nest sheets as a backup to the palm. The cybertracker spreadsheet has a useful review panel, which enables the coordinator to easily check the entered data if necessary.

Photos of mounds are downloaded to 'my pictures' and labelled according to the grid name. Later all photos are transferred to a CD where they are held for future reference.

Once the data and photos are saved, the old data is deleted from the equipment and all the necessary details for the next grid are installed onto the GPS and palm. The steps needed for this to occur are clearly documented and become routine after following the document a few times.

The electronic download process for the 24 grids is not overwhelming as the data entry is spread over 8-12 weeks, and each grid takes just a few minutes. Compared to the old way of manually entering 36,000 pieces of information onto a spreadsheet from the paper sheets for the 900 mounds monitored, the new way just requires the palm to be placed in the computer cradle 24 times and everything happens with the push of a button.

Transfer to database

The data download to a home computer and later transfer of data to the central malleefowl database is a simple process that doesn't rely on vast computer skills. Several clever programs have been devised that are incorporated into the cybertracker spreadsheet where the monitored details are held. When selected, these programs transfer the data automatically to the central database by zipping the spreadsheet to a manageable size and preparing it to be sent as an email. Once the data is transferred to the central database analysis of the data can commence and reports generated.

Feedback

The final process in the monitoring cycle is the mutual sharing of information amongst monitors and the data analysts. This feedback is both formal and anecdotal, and everybody's opinions and observations are valued.

The database generates a global report outlining the complete results of the season's monitoring, as well as a report for each grid. Reports cover past records and findings, and a detailed activity statement of all malleefowl and predator observations. These reports are published and made freely available to members of the VMRG.

Collected data and photographic records are stored on two CD's, and are able to be easily retrieved for educational and publication purposes, as well as for our web page, and as a general record of our achievements.

Group communication is constant using email, phone, newsletter and the web page. Digital photos taken by monitors can be returned to them on CD, and an annual survey "What worked, What didn't" is conducted at the end of the monitoring season to provide an opportunity for positive feedback and suggestions for improvements. All suggestions made are taken seriously, and acted upon, or discussed if not able to be implemented.

A formal "Reporting Back" membership meeting is held in March after the data reports and the survey analysis are completed. At this meeting Joe Benshemesh's Annual Report on Malleefowl in NW Victoria is tabled, and recommendations about future directions and monitoring process are recorded for the consideration of the VMRG committee. The meeting ends with a celebratory meal and camp-out back in the mallee country where this process began.

Concluding observations

We, the authors of this paper, believe that members of the Victorian Malleefowl Recovery Group have implemented the outlined system of monitoring malleefowl in an extraordinarily effective manner. The system is easy to follow when supported by a basic training program, so long as the training is thorough and provides practical, hands on experiences. The monitoring format is suitable to be used by non-technically trained people. In fact it is suitable for use by anyone who has goodwill, enthusiasm and appropriate training. The volunteers who belong to the VMRG are exactly these types of people and have proved that the system works.

The benefit of using a programmed technological process is not only time saving, but also helps to maintain the scientific integrity of data collected. All data is collected in an identical way. Hence the data collected by several different people is comparable. Members of the VMRG understand that they are part of a rigorous scientific project, and undertake their monitoring accordingly. They are proud of their achievements, and know that they are making significant contributions to the malleefowl recovery project.

A further compelling factor that supports the adoption of the system on a broad scale is the easily managed data control provided by electronic transfer of data. The benefits of storing and transferring data in this way, together with faster data analysis and more effective archiving of results for later reference are immeasurable.

Reference to technology, however, can detract from the ultimate strength of this monitoring program. It is people who make it work, volunteers who love malleefowl and enjoy days in the bush. Our volunteers make it quite clear that they get more out of the experience than what they put in, and would continue to monitor no matter what system is used.

APPENDIX 1

VMRG Training Weekend Agenda
Wonga Hut Campground, Wyperfeld National Park
11 – 12 October 2003
1.00pm Start

DAY 1 – Theory & paper work

Start 1.00 pm

1. Welcome
2. Introductions
3. Previous years summary
4. Aims of the monitoring program
5. Safety procedures
   - Remote locations
   - Use of trunking radio (demonstration)
   - Procedure for logging in and out of grids
   - Essential items to take
   - Insurance
6. Monitoring procedure
   - Explanation of grid and map translation
   - Locating a grid
   - Brief introduction to GPS
   - Finding nests (various methods)
   - Data recording/Cyber Tracker
   - Protocol on/at nests
   - Scat Collection
   - Digital Camera
7. Monitoring Kit
8. Data entry procedure
9. Timing
10. AGM (Agenda attached)
11. BBQ (<u>BYO Drinks & eating utensils, plate, mug & bowl etc….)</u>

DAY 2 – Practical demonstrations

Start 8.00 am sharp – Meet at Wonga Hut Camp Ground

1. Safety Procedure – fill out log sheets
2. Depart Camp Ground to selected grid
3. GPS demonstration
4. Finding a nest
5. Recording data

Back to camp

6. Confirmation of grids to volunteers
7. Distribute kits & datasheets
8. Summarise process
9. Close 1.00 pm
10. BBQ Lunch