



Involving landholders in the protection of biodiversity

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in a nutshell

- An extensive biodiversity survey undertaken in the Murray Land and Water Management Plan (LWMP) area has identified a total of 273 native species – 203 birds, 33 reptiles, 28 mammals and 9 frogs – in the region
- The survey involved 150 sites on 106 farms across 960,000 ha of the irrigation areas in southern NSW between Mulwala and Swan Hill
- There has been strong community support, motivation and involvement in the project which has been jointly funded by landholders and government
- The longer term impacts include elevating the profile of biodiversity in the region and an increased involvement in vegetation management by landholders to improve habitat for native wildlife

In 2005 the Murray Land and Water Management Plans (LWMPs) initiated the most extensive biodiversity survey ever undertaken in the region.

There was a dual motivation for the project. One was to address public perceptions that irrigation areas, as a highly modified environment, were relatively barren of wildlife by showing that they did in fact provide habitat to a significant range of wildlife. The other was to improve the understanding of biodiversity and increase the uptake of native vegetation incentives and vegetation management across the Murray.

The specific project objectives were:

1. to determine the distribution, habitat and local status of birds, reptiles, mammals and frogs
2. to raise awareness about wildlife ecology
3. to promote conservation of the remaining species.

Albury-based ecologist Matthew Herring of Murray Wildlife was engaged to conduct the wildlife surveys between June 2005 and April 2006. The project required interaction with landholders on private property in selecting sites and conducting surveys.

As the project unfolded a series of field days and seminars was held to promote both the surveys and the importance of biodiversity. At the conclusion of the surveys information books were published and provided to all landholders outlining species identified and best management practices to improve their habitat and improve local populations.

Implementing the project

Murray Irrigation Limited is the implementation agency for

the Murray LWMPs, and has helped to provide the framework for the successful negotiation, implementation and promotion of the project by linking individual landholders, LWMP working groups, the wildlife surveyor, funding sources and implementation staff.

The involvement of the four Murray LWMP working groups – Berriquin, Cadell, Denimein and Wakool – was essential to the development and success of the survey. They provided a vital link between landholders and other groups in developing the implementation and outcomes of the project.

Historically some landholders have been cautious about the identification of wildlife, particularly rare or endangered species on their properties, because of potential legislative impacts on their ability to farm. There were several endangered species discovered during the survey. Emphasis on the regional biodiversity sample, rather than individual site results, has proved to be a crucial approach.

The support of landholders is reflected in the large number of sites they nominated for possible inclusion in the survey and also in the participation in field days and seminars.

Through the LWMPs, landholders effectively felt they had ownership and control of the survey project, and that it would enhance their farming and environmental efforts. The project was funded through the Murray LWMPs, with 50% of the \$160,000 budget provided by landholders. The remaining 50% has been provided by the Murray Catchment Management Authority, with State Government and Federal Government National Action Plan for Salinity funding.



Findings

The survey identified 273 different native species, including 203 birds, 33 reptiles, 28 mammals and 9 frogs. Some highlights of species found include:

- the gibber gecko and beaked gecko, which have never been found south of the Murrumbidgee River
- three pairs of the endangered bush stone-curlew
- the endangered southern bell frog found at 10 sites
- a platypus in the Edward River near Moulamein.

The sites selected for survey included both those which had been well managed and those which had not. A range of vegetation types were included – black box, boree and grass box woodlands, river red gum forest, sandhill woodlands, revegetation sites and constructed wetlands.

Survey techniques included:

- bird surveys
- log rolling for reptiles and frogs
- spotlighting for mammals, reptiles and nocturnal birds
- Elliot traps for small mammals and reptiles
- pitfall traps for reptiles and frogs
- anabat recordings for bats
- call broadcasting to attract birds.

A total of 24 field days and seminars were held across the region outlining progressive results of the work with each event located in a different part of the region. The response from the farming community was excellent with a total of 1293 attendees. This averaged over 50 people per event.

The field days and seminars were advertised by flyers as well as media releases in local papers and in newsletters. There was strong media interest across the region, from Albury to Swan Hill, and even Shepparton, with a number of articles and follow up interviews published or broadcast, particularly through ABC radio. Community interest in the survey project also resulted in Matthew Herring providing a 2006 Australia Day address to 300 people at Mathoura, at the request of landholders keen to promote the project to a wider audience.



Figure 1: The project included a program of 24 field days and seminars (including family barbeques) at locations throughout the region. The response from the farming community was excellent with a total of 1293 attendees. Photo MIL.

Outcomes

In a region dominated by agriculture, biodiversity often receives little interest and this project has elevated the profile of biodiversity through local wildlife to be a topic of interest amongst many landholders. However, the survey has engendered a more positive attitude among landholders about the value of biodiversity and the beneficial co-existence of wildlife and agriculture. Landholders who provided sites reported that they were surprised by the diversity of wildlife found on their properties.

The Murray LWMPs offer a range of incentives to landholders, most of which are aimed at improving water efficiency and best management practices on farm. The program also has a range of incentives to protect and enhance existing vegetation, and establish new native vegetation areas. The survey project has provided clear links between vegetation and biodiversity, providing information to landholders about vegetation management techniques which will improve biodiversity.

As a result of the survey project, interest in vegetation incentives has increased significantly. During the period of the survey LWMP vegetation incentives increased 170% compared to the previous 12 months. Since the completion of the survey in June 2006 incentives for vegetation have continued to climb.

The Murray LWMP has a target for the area of land managed for vegetation and biodiversity values, set in line with the Murray Catchment Blueprint. In June 2005 the LWMPs had 5859 ha recorded as being managed for these values. The target for July 2013 is 54,925 ha. The increase in interest from landholders, improved understanding of the value of vegetation and the continuing provision of incentives through the Murray LWMPs and the Murray Catchment Management Authority are all expected to contribute towards successfully reaching the 2013 target.

As an outcome of the survey a significant amount of data on species numbers and frequency has been gathered. This information serves not only as useful data to develop current best management practices but will form an essential



Figure 2: The survey project has provided clear links between vegetation and biodiversity, providing information to landholders about vegetation management techniques which will improve biodiversity. Photo M. Herring, D. Webb (inset).



Figure 3: Good quality river red gum forests along the Murray River boom with wildlife, and are considered among Australia's greatest ecological assets. Photo M. Herring.



Figure 4: The southern bell frog was recorded at 10 sites, and notably, in good numbers in the Cadell irrigation storage dam because of good stands of cumbungi. Photo D. Webb.



Figure 5: Community involvement was a highlight of the program, with locals involved in surveys – including hands on experience with a southern blind snake. Photo MIL.



Figure 6: A high quality black box-lignum habitat, which is an ideal habitat for woodland birds, and when flooded, frogs, bats and wetland birds. Photo M. Herring.



Figure 7: An emu nest in a high quality boree stand, which is only crash-grazed then rested for months at a time. Photo M. Herring.



Figure 8: Most brolga breeding sites are large (> 50 ha) open wetlands covered in water plants like canegrass, but brolgas will also breed in small constructed wetlands. Photo P. Merritt.



benchmark for monitoring future change in biodiversity in the region. Additional projects stimulated from this wildlife survey and supported by landholders in the region include mapping wetlands in the Denimein and Cadell LWMP areas and a creek restoration project in the Wakool area. Plans include a future wildlife survey using a similar model to the current project with a focus on improving wetland biodiversity and integrating biodiversity with agriculture.

This wildlife survey also provides a model for other community groups or organisations who are considering implementing a similar project in other community areas. The process aims to initiate involvement, actively engage community and build interest and enthusiasm.

Attracting more wildlife

The information brochures produced for landholders provide suggestions for improving biodiversity. Key steps include identifying the most significant remnant vegetation sites and managing them in a way that will maintain or improve the quality of the habitat, including:

- not "cleaning up" – leaving fallen timber or other debris (even a sheet of tin)
- ensuring shrubs and young trees are included within the vegetation site
- ensuring areas of revegetation are at least five hectares to support greater diversity
- creating shallows with water plants and mudflats on storage dams will also attract more wildlife

- not grazing these areas continuously. 🌱

Further information

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Further reading

The project has produced five brochures:

Wakool Wildlife - Murray Land & Water Management Plan Wildlife Survey 2005-2006

Denimein Wildlife - Murray Land & Water Management Plan Wildlife Survey 2005-2006

Cadell Wildlife - Murray Land & Water Management Plan Wildlife Survey 2005-2006

Berriquin Wildlife - Murray Land & Water Management Plan Wildlife Survey 2005-2006

Murray Wildlife - Murray Land & Water Management Plan Wildlife Survey 2005-2006

Copies of the wildlife brochures are available from the LWMP section of Murray Irrigation's website

www.murrayirrigation.com.au

The images in this article are supplied by the authors of the brochures

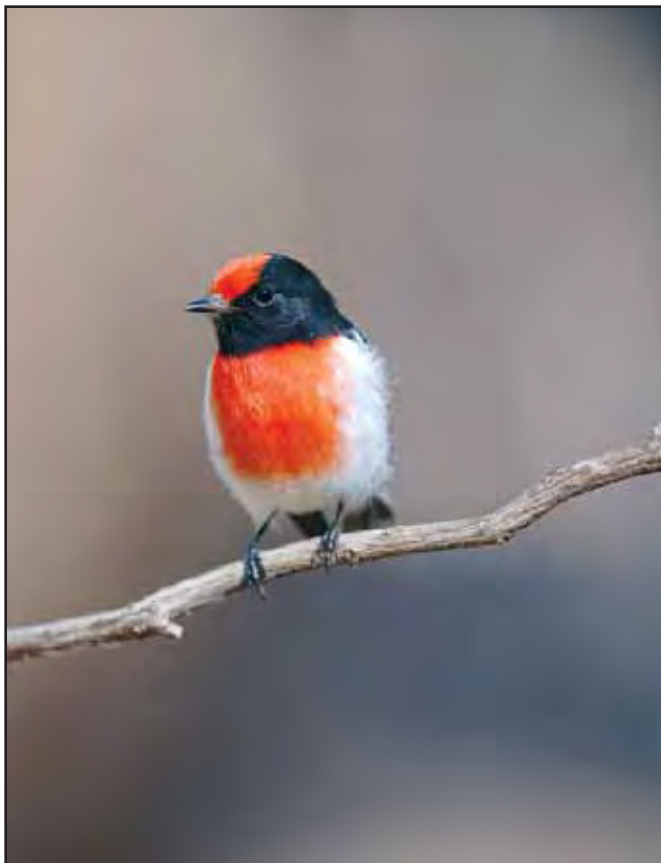


Figure 9: Two hundred years ago the red-capped robin was a common bird throughout the Murray Valley but is now locally rare – however this bird will readily colonise revegetation patches and restored remnant vegetation. Photo P. Merritt



Figure 10: The superb parrot (listed as threatened in NSW) and found at less than 10% of the survey sites, breed in river red gum forests but rely on other vegetation types, such as boree woodlands to feed in. Photo D. Webb.