

Applications of the Atlas of Australian Birds

Monitoring Birds in Gluepot Reserve

Gluepot reserve is a large area of mallee scrub with high conservation value that was purchased by Birds Australia to aid in the conservation efforts of several threatened species. To ensure that the conservation value of this property is maintained, it is essential that managers can monitor the “health” of the reserve.

Birds are good indicators of environmental health (see over), and monitoring changes in their populations within the reserve provides an ideal way to track changes in the ecosystems within the reserve. Monitoring endangered species usually requires a targeted approach, but a good way to monitor bird populations as a whole is to use the methods of the Atlas of Australian Birds.

Why monitor using Birds?

- Birds are relatively easy to observe
- Birds are good indicators of environmental health (see over)
- Birds have widespread popular appeal and thus schemes that aim to help birds readily gain community and government acceptance
- The popular appeal of birds means that monitoring can often be carried out by volunteers

What Birds can tell you about the environment?

The numbers, diversity, and types of birds found in an area can tell you much about the habitat and its health:

- How well areas are recovering from fire—e.g. species composition and diversity changes as the vegetation recovers
- Whether grazing pressure is affecting an area—e.g. ground nesting and foraging species will show changes
- Maturity of the vegetation—e.g. Black-eared Miners and Red-lored Whistlers are found only in mature mallee
- Whether management actions are effective

Management actions that can be informed through monitoring of birds

- Revegetation programs
- Weed management
- Eradication of feral animals
- Fire management
- Dam closures

Why use the methods of Birds Australia’s Atlas?

- Standardized and proven technique
- Easily repeatable and statistically sound
- Produces fine resolution geo-referenced data
- Baseline data are available from Atlas database
- Large numbers of volunteers are familiar with the procedures



Image © Dean Ingwersen

What is the Atlas of Australian Birds?

The atlas is the largest continent-wide survey of birds in the world. The first atlas ran between 1977 and 1981. The new atlas has been running since 1998 and has collected **over 7 million bird records**. By analysing these two databases, Birds Australia can measure which birds have declined, increased, or changed their range over that 20 year period. By continuing the new atlas indefinitely, we will be able to better monitor the state of Australia's birds into the future.

The atlas is driven by an army of volunteer birdwatchers called atlasers. Atlasers record the bird species seen in specific areas, along with the date, time and type of survey. In the past this data was sent to Birds Australia on special record forms. But with the introduction of Birdata, atlasers can now enter their data online.

The atlas database is currently growing by about 500–600 surveys per week, or about 30–40 thousand records per month.

What is Gluepot reserve?

Gluepot Reserve is a 50,000 ha area of virgin mallee scrub that contains no less than six nationally endangered bird species and a unique flora and fauna. Purchased by Birds Australia in 1997 and managed by volunteers, it is located in the semi-arid South Australian mallee and forms part of the larger Bookmark Biosphere Reserve system. It has become a centre for scientific research, and has won many awards in recognition of its efforts in conservation, research, tourism and community involvement. Its accessibility means it is one of the few areas in Australia where both birdwatchers and researchers can relatively easily observe otherwise hard-to-find species.



Image © Chris Tzaros

Why are birds good indicators of environmental change?

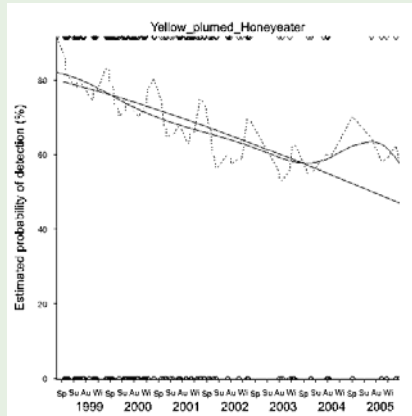
- they live in almost every type of environment in Australia and in almost every niche within those environments
- they are often at the top of the food chain
- they have varied diets
- their taxonomy is reasonably well-known
- their distributions and general biology are relatively well documented compared with other taxa, providing a good baseline

How is monitoring carried out at Gluepot?

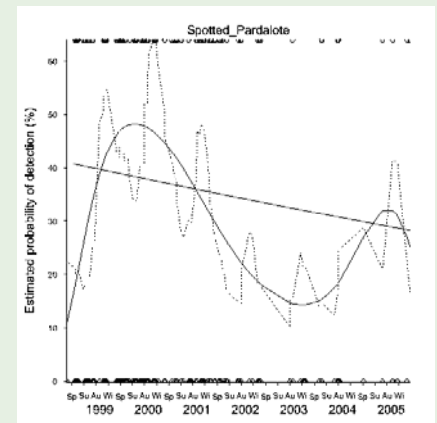
In 1998, 75 bird Atlas sites were established in representative samples of all vegetation communities. Each site has been accurately mapped and surveyed for vegetation. In 1998-99 Gluepot Reserve was the leading data contributor to the bird Atlas scheme. As well as the data collected by research personnel, many visitors to the Reserve also Atlas at these sites.

What results have come from the monitoring?

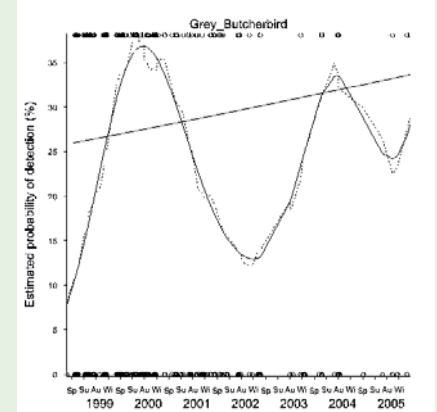
In 2006, data from monitoring efforts at Gluepot were analysed, resulting in a series of graphs illustrating trends in species occurrence. The following are some examples.



Yellow-plumed Honeyeater showed a significant decline over the monitoring period.



Spotted Pardalote presence fluctuated greatly over the monitoring period, but appeared to show an overall decline.



The presence of Grey Butcherbirds also fluctuated greatly over the monitoring period, but appeared to show an increase overall.

Like many of the species analysed, both the Spotted Pardalote and the Grey Butcherbird showed a marked dip during the peak of the drought of 2002–2004.

Other Applications of the Atlas that may be of interest

- Assessing Fragmented Landscapes
- Monitoring Revegetation
- Monitoring Birds in the Rangelands
- Development of indices to track large scale change in birds

These, and other case studies, are available for download from the Birds Australia website

For more information on the Atlas of Australian birds visit:

www.birdsaustralia.com.au

Atlas data can be requested from Birds Australia:

Atlas of Australian Birds
Birds Australia
Suite 2-05
60 Leicester St
Carlton
Vic. 3053
email: atlas@birdsaustralia.com.au

Or from the Birdata web site:
www.birdata.com.au



For more information on Gluepot Reserve visit:



Birds Australia Gluepot Reserve

<http://www.riverland.net.au/gluepot/>

References:

- Cale, B. (2007) Monitoring manual for the birds and vegetation on Gluepot Reserve a framework and procedures. Working Draft. Birds Australia Gluepot Reserve.
- Cunningham, R. (2006) A Statistical Analysis of Temporal Trends in Detection Rates of Birds in Gluepot, Atlas Data 1998-2005. Unpublished Report, Statwise Pty Ltd.