

THE BABBLER



News from Gluepot Reserve Spring 2024

Rare Sandstone Landforms on Gluepot Reserve (by Ian Falkenberg)

In September we were fortunate to have Mr John English and his wife Beryl, accompanied by Steve English and his partner Rose visit Gluepot. For those that are unaware, John English was the first Chairperson of the Gluepot Management Committee and was instrumental in transitioning the Gluepot pastoral lease to conservation reserve in 1997 and 1998. In June 1997 an appeal for contributions was launched and this was the first land purchased for conservation purposes by the then Birds Australia. When John became involved in the establishment of Gluepot, he also became engaged in the study of habitats and in particular Black-eared Miners.

In 1998 John identified a sandstone landform, situated westward of the Hideaway paddock in Calperum, which was significantly lower topography and forming a basin more than 25 meters lower than the surrounding landscape.

At the time, John also observed the presence of a heavy dew formation on the plants while travelling within the basin and this coincided with a suspected sea breeze. The Bureau of Meteorology Adelaide have since confirmed the presence of these sea breezes which extend well inland several hundred kilometres (Gluepot on the edge) and reportedly contribute to about 0.2mm of rainfall per annum (Clark 1965).

Within this basin John observed kangaroos licking the moistened tops of the sandstone rock during dry periods (An important survival strategy for many animal species during drought times).

I also suspect that at times the natural cavities and depressions in the sandstone rock were an important water supply for indigenous people moving through the area.



Beryl and John English, on R, in 1998 observing the sandstone landform.



David Baker-Gabb (far left) with overseas students observing the sandstone land forms in 1998



The sandstone landform dominates the landscape

Rare sandstone landforms at Gluepot Reserve *Contd*

The purpose of John's visit in September 2024 was to revisit the significant sandstone land form feature near the eastern boundary of Gluepot Reserve. A number of walking transects were undertaken through the mallee where John had previously observed these land forms in 1998.

Helping locate the features were John Rideout and Barbara Howard, who were the Rangers at Gluepot during August and September, John and Steve English and myself.

Unfortunately we were not successful in locating the landform features. Much had changed over 25 years as GPS units were not in use back then and certain landmarks used to locate the features were no longer present. However the accompanying photos show these unique sandstone landform features. Further surveys will be considered in the near future to help John revisit these unique landform.

Clark, R.H., (1965), Aerological Study of Sea Breezes east of Adelaide 225km from Goolwa. (unpublished report).



Left. The depressions in the sandstone rock quickly fill with water even during small rainfall events

Right. The deep cavities in the sandstone rock become an important source of water for wildlife during dry periods.





Christmas Celebration

Our Christmas function was held on Saturday 9th November in the beautifully decorated Education Centre. Committee members, who participated in the final meeting for the year, were joined by many of the volunteers who have undertaken a range of tasks over the last 12 months.

Delicious salads accompanied the Bar-B-Que, and were followed by an amazing array of desserts. Many thanks to the cooks who contributed, especially organisers Margaret Falkenberg and Anne Morphett.

There is always good camaraderie amongst the attendees, and it provides a perfect opportunity for our Chairman, Ian Falkenberg, to thank every one for their efforts over the year. A highlight was seeing a video recording of Kate Millar and Sean Dooley from BirdLife Australia. They also appreciate the work that the volunteers do at Gluepot.

The guest speaker was Dr Rebecca Boulton, who has over 25 years of experience working on programs associated with the conservation of rare and endangered birds in Australia, New Zealand and the USA. Dr Boulton obtained a PhD in ecology in 2006, and is currently a visiting Research Fellow, School of Biological Sciences, at the University of Adelaide. Rebecca has been on the Gluepot Management Committee since 2016, and heads the Research and Conservation sub-Committee.

Her talk was entitled *Threatened Mallee Birds*, and since 2014 she has been the Coordinator/Chairperson of the "Threatened Mallee Birds Conservation Action Plan". She highlighted the importance of utilising a broad range of scientific tools and evidence to support observational data collection. A common theme throughout Rebecca's informative talk was utilising grant monies to maximise positive change for both targeted species as well as other endangered species.

A few of the studies that she has been involved in included :-

- Analysing the genetic spectrum of hybridisation within the **Miner population** which indicated that within a colony of ten, there may be two Black-eared, one Yellow-throated and seven hybrid individuals. "Pure" Black-eared Miners are still present at Gluepot and Calperum. The strategy of Gluepot closing its dams has positively impacted the Black-eared Miner population.
- Assessing the number and characteristics of tree hollows through aerial observations indicated that these critical nesting sites are often over-estimated and that **Regent Parrots** can only utilise those hollows that are suitable.
- Translocation and breeding in captivity are strategies that are currently being employed to address the critically endangered **Mallee-Emu Wren**.
- Analysing the impact of fire and grazing on distribution and frequency of sighting of the **Murray Mallee Striated Grasswren**.



Dr Rebecca Boulton



Enjoying the evening



Lining up for Dessert

Fire history impacts on *Triodia*-dependent Murray Mallee Striated Grasswren (*Amytornis striatus howei*) in the Riverland Mallee

The Murray Mallee Striated Grasswren (*Amytornis striatus howei*) has experienced an 88% decline in reporting rates in the Murray-Darling Depression Bioregion. Listed as endangered in 2023, the species has been significantly impacted by land-clearing, drought, heatwaves, and altered fire regimes.

A key element of the grasswrens habitat is *Triodia scariosa*, a type of spinifex grass that forms dense hummocks. These hummocks create complex structures that provide nesting sites, predator protection and help to buffer ambient temperatures. The structure of *Triodia* hummocks is closely linked to time-since-fire. Over time, dome-shaped *Triodia* begin to senesce in the centre and form spreading ring and crescent structures, which require fire to rejuvenate.



Fire prevention and suppression have largely been implemented to protect both human and animal life from wildfires. However, excluding fire from grasswren habitat can negatively affect *Triodia* structure, which in turn impacts the presence of grasswrens.

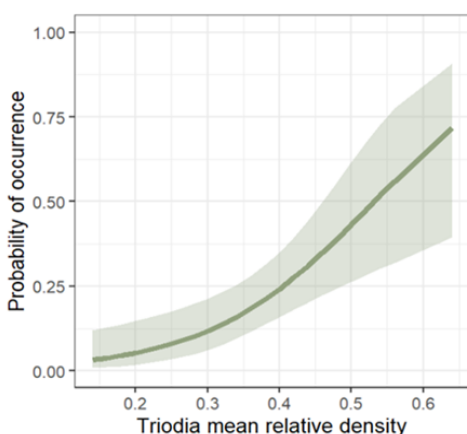
Previous surveys in the region have not included detailed vegetation studies to link grasswren occurrence with specific habitat features. This knowledge is vital to understanding the post-fire successional responses and habitat preferences of the grasswren, which can inform future fire management strategies.

My research aimed to explore the relationship between habitat features and time-since-fire and assess how these factors influence grasswren occurrence. To achieve this, we conducted grasswren and vegetation surveys across Birdlife Australia's Gluepot Reserve and Australian Landscape Trust's Calperum Station. We surveyed across different fire scars (10-18 years post-fire) and in unburnt habitat (>50 years post-fire) outside of the relevant fire scars.

Key Findings:

Grasswren occurrence was significantly higher in burnt habitat compared to unburnt habitat. The odds of a grasswren being present at a site was 18 times lower in unburnt compared to burnt habitat. This suggests that *Triodia* growth form, which changes through the post-fire chronosequence, is a critical factor in habitat suitability and highlights the importance of fire in rejuvenating grasswren habitat.

Grasswren occurrence was strongly associated with relative *Triodia* density. For every 10% increase in *Triodia* density, the likelihood of grasswren occurrence more than doubled. This suggests that higher *Triodia* density provides more resources for the species.



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