

THE BABBLER



News from Gluepot Reserve Summer 2025

The Looper story continues.....

In recent years significant defoliation of the Gluepot Mallee eucalypt trees has occurred due to infestation by a caterpillar - an undescribed native species of *Arhodia* moth dubbed the mallee looper. In an effort to understand the behaviour of this moth, and thereby perhaps combat it in some way, the Australian Landscape Trust, BirdLife Gluepot Reserve, the Department of Environment Water (DEW), and the Murraylands and Riverland Landscape Board (MRLB) have commenced exploratory research on this mallee looper to better understand its biology, ecology and impact on the ecosystem during outbreaks.

This investigation has been lead by Dr. Peter McQuillan, an entomologist from the University of Tasmania and Toby Galligan from Landscapes SA. They have been ably supported by an enthusiastic and dedicated group of Gluepot volunteers who have undertaken to capture caterpillars and moths, try to rear them in captivity, record observations of their behaviour both in captivity and in the wild, and record observations of tree health. Dave Georg, Alistair Bestow, Ian and Deidre Kerr, Andrew Humpage, Sandy Dickson, Marg Evans and Greg Johnston are to be commended for their efforts.

The project was supported by the Murraylands and Riverland Landscape Board and received funding through the Australian Government National Landcare program and Landscape Board levies. Results from the 2023/2024 were collated and the final report written by Toby Galligan. The following points of interest are taken from Toby's report.



Male Looper Moth
Photo Toby Galligan

The mallee looper is a geometer moth (Family: Geometridae). The moth is nocturnal and drawn to light sources. The pupa is subterranean and therefore largely overlooked. The larva is arboreal and, like all geometer moths, has a gap between its legs and prolegs, making it walk in a looping motion. The mallee looper is a medium-sized moth. The larvae range from tiny after hatching (4 mm long) and relatively large before pupating (50 mm long). As a moth, it is plain but attractive and, as a late larval instar, is bold and active. In large numbers, the late instar larvae are very conspicuous



Late instar Looper Larva
Photo Bronwyn Mart

Eggs are ellipsoid and less than 1 mm tall. They change colour from light to dark grey as the embryo develops. After hatching the eggs are white.

Newly hatched **larvae** are 4 mm long and the final instar larvae can be more than 50 mm long. Like the moths, larvae exhibit a variety of colours, including individuals that are largely yellow or orange, yellowish green with orange heads and final segments, and red with wide black lateral lines.

Fresh **pupae** are brilliant green for less than a day and then dark brown for 10 months. They are sessile but can flex their abdomens. They are about 2 mm long.

Mallee looper **moths** emerge in clusters from their pupae underground, and tunnel to the surface as a moth. In 2023, at Gluepot Reserve, the majority of moths were captured in 1 week in December. Egg-laying behaviour was observed in captivity. The average number of eggs laid was 100 and the range of number of eggs laid was 16 to 243.

Moth **predators** and predation seemed rare at all sample sites. The mallee looper has been superabundant at Gluepot Reserve for at least three years yet nocturnal moth-predators do not appear to be taking advantage of this bonanza. Predation by ants and birds on Looper larvae has been observed, but infrequently. Possibly parasites, viruses, bacteria and fungi will also kill the larvae.



Looper Eggs
Photo Mark Hura

A diversity of birds inhabits the mallee and together they form one of the main cohorts of insectivores in the ecosystem. It is possible that mallee looper larvae are toxic to some degree. They may store eucalyptus oils in their bodies. Mild toxicity might deter individual birds of many species from eating more than one or a few larvae per day. If this is the case, birds are unlikely to make an impact on mallee looper larvae populations once they reach superabundance.



Defoliation of epicormic growth. Photo Bronwyn Mart

A survey initiated by Bec Boulton to assess the extent of the defoliation has involved the ongoing examination of 4236 trees. Started in 2021 and undertaken every year since by Bec and/or Interns from the Adelaide University, this is the best record we have of defoliation over time. In 2023, approximately one third of these trees (35%) were estimated to have greater than 80% defoliation in their canopy; another third (28%) exhibited 79-20% defoliation and a final third (37%) had less than 19% defoliation. About one half of the trees measured had epicormic regrowth.

Measurements confirm that defoliation damage was less last year than previous years. They also show that some trees can be severely defoliated over successive years and yet survive to regrow foliage. This is cause for some optimism.

Loopers have been active again in 2024/2025. The peak moth emergence occurred around the 8th-9th December 2024, with Looper larvae being detected from late December. By mid January 2025, large caterpillars 4-

5cm long could be easily seen with obvious eucalyptus tree defoliation and collections of mallee looper excrement under these trees.

Ongoing research has produced interesting data this year. Female moths call using pheromones shortly after emerging. They lay eggs on dead twigs, dead eucalyptus trees or other trees or shrubs that are dead. The tiny first instar larvae use silk threads to float on the wind to a food plant. At Gluepot Toby collected 40 virgin female moths and extracted pheromones from them when they were calling. These samples will be analysed in the laboratory. Each moth species has a cocktail of pheromones, and once we know the mallee looper's recipe we can consider trailing pheromone traps for males as a possible method of population control.



Eggs laid on dead twigs Photo Mark Hura

iNaturalist and Loopers

Hi all,

I hope everyone's 2025 is off to a go start.

If you see a mallee looper, and/or leaf damage, tree defoliation, and/or patch defoliation of mallee (or non-mallee) eucalypts in your travels, take a few record shots and upload them to iNaturalist to help plot the distribution of the mallee looper and its impact this year.

We have set up a *Looking for Loopers* project on iNat <https://inaturalist.ala.org.au/projects/looking-for-mallee-loopers> Consider becoming *Looking for Loopers* project member. As a project member, whatever you identify something as "Genus *Arhodia*" or "Pink *Arhodia*" it will be automatically collected by the project (note: it is best to use "Genus *Arhodia*" for actual or suspected mallee loopers). You can also read more about the project and what we are looking for in the "About" and "Journal" sections.

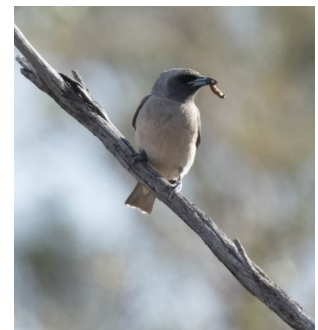
We also want your records of leaf damage and tree defoliation caused by mallee loopers. If the larvae are visible in at least one photo, then identify the record as "Genus *Arhodia*". If the larvae are not visible or were not present, identify the record as "Genus *Eucalyptus*" (or to species level if you know this) and write "mallee looper" in the "note" and/or "tag" section. This will help me find your record among the 118K+ *Eucalyptus* records on iNat. The project can't automatically collect "Genus *Eucalyptus*" with a "mallee looper" note/tag; so, I need to do it manually, which is easy enough to do if "mallee looper" is noted/tagged. Even if you are not sure what caused the leaf damage and tree defoliation, note/tag "mallee looper". We are confident that we can identify most leaf damage and tree defoliation caused by mallee looper...

Thanks for your help in advance. Feel free to share this email further.

Thanks,
Toby

Toby Galligan, Regional Ecologist, Landscape Ecology,
Murraylands and Riverland Landscape Board
Ph: 0448 699 514

Citizen scientists are being encouraged to be involved, and Toby Galligan has set up a "Looking for Loopers" project and is looking for members. Please see his letter on the left.



Masked Woodswallow (above) and Crimson Chat (below) with looper larvae.

Photos Diana Georg

Behind the Scenes

Gluepot has up to 800 visitors a year. Facilities are provided for our visitors who are welcome to explore the Reserve as they wish. The facilities that can be used include designated camp sites with toilets and picnic tables, 5 bird hides, many walking paths, an informative Visitors Centre with merchandise for sale and now limited access to the internet.

Many volunteer hours go into making sure that these facilities are well maintained, and the people who put in the most effort and time are the Gluepot Reserve Rangers. They have a regular schedule of duties which includes greeting visitors and being available for queries, managing the Visitor Centre, reading the weather observations every morning at 0900, cleaning toilets and bird hide water troughs, managing the solar electricity system and backup generator as well as regular checking of fences for trapped animals and vehicle maintenance.

They are also responsible for overseeing financial transactions regarding visitor fees and the sale of merchandise and doing the regular banking. They support the educators who conduct the Environment Courses, and make sure that the Education Centre, the kitchen, and accommodation are up to standard. These areas are also readied for Interns, Volunteers and Committee members as required. Then there is always something to fix....

Our Rangers usually stay for 2 months at a time, and many come back year after year. Not all Rangers are South Australian - some come from interstate and some from overseas. We are truly fortunate to have such a dedicated group of people who care so much for the Gluepot environment.



Painting picnic tables



Checking the electric fence



Clearing tracks of vegetation



Managing Homestead area water supplies



Checking termite traps



Track maintenance



Repairing signs

And....How good are our Volunteers

Article and photos by Ian Williams

In the above article we highlight the contributions that the Reserve Rangers make to Gluepot. Also very important to Gluepot are our Assistant Rangers, Friends of Gluepot and other volunteers who undertake an array of tasks on the Reserve. They have a range of experience from past employment - librarians, electricians, plumbers, IT and building skills to name a few. Others have self taught expertise. Volunteers can also develop new skills at Gluepot simply by working with other volunteers on tasks that interest them.

Recently, new outdoor toilets were constructed at the Visitor Centre and the Campgrounds. The framework for these structures was made by husband and wife team Fred and Petra van der Heiden. Fred was a carpenter by trade and remains a highly skilled craftsman. We are privileged to have both as part of the Gluepot Team.

Well, they have been busy again, this time repairing amenities for our visitors. During a December visit to the Reserve, they replaced some worn out timberwork—entry steps to the Chris and Don Lill bird-hide and table-tops at Babbler and Bellbird campgrounds. Great work Fred and Petra.



You never know.....

It was late in the afternoon on a hot January day, the sun still shining bright as it headed towards the horizon. Hot enough for struggling ravens, currawongs and magpies to seek shelter under man-made covers during the day.....in the workshop, under verandas.....anywhere where there was relief from the direct sunlight.

I said to the perspiring Ranger, 'The birds will be thirsty this evening. I am going to a bird-hide to check out the action. Possibly yellow-plumed honeyeaters, spiny-cheeked honeyeaters, ringnecks, mulga parrots, bronze-wings, galahs.....maybe even regent parrots.....they've been around lately.'

Thirty minutes later, as I strode towards the hide, I heard the unmistakeable call of the willy wagtail. Not the usual pauses between the calls, not as melodious as usual, but continuous, rapid calling. What's going on at the hide, I thought to myself.

From the hide, I immediately understood the wagtail's dilemma. At the water's edge was a collared sparrowhawk (or maybe a brown goshawk. I'm a reptile lover, not a birdo of great competence), with three wagtails demonstrating extreme nuisance value to their new acquaintance....little aggressive swoops, emphatic squawking and using every other tactic to get the bigger bird to move away. Alas, without success. But, in a show of defiance they retreated, but only slightly.....to remain as neighbours. As if to say, 'Watch out mate, we haven't finished with you yet.'

Time for the second act of this show. With a flash of pink and white, a pink cockatoo glided in, wings wide, and landed immediately next to the raptor. A quick serious stare at each other. Presumably they were thinking about using size to intimidate one another, because immediately in synchrony both opened their wings wide. What a wonderful sight. But it did not turn into a prolonged exhibition. Wings returned to side, the pink cocky nonchalantly took a drink. And then gently flew off to be with a mate perched some five metres away.



I've visited Gluepot's bird-hides many, many times. If I were a betting man, I would never have bet on those three species being the first observations at a hide. A bookmaker would have made a fortune on this result. A smiling bookies trifecta!

Nature observation. Sometimes no show, sometimes the unexpected, sometimes beautiful, sometimes educational, sometimes producing watery eyes with joyful emotion, sometimes.....

But you never know. You just never know what you are going to see.

Article and photo by Ian Williams

You never know....

When our current Ranger, Tim, was looking through the photos on a remote camera he was very surprised to discover this wombat wandering through the Reserve.



Opportunity to join the Bird Atlas Team

To continue long-term data collection of bird species abundance, Gluepot is looking for bird-watchers with previous experience in identifying mallee bird species to regularly undertake 2-hectare, 20-minute bird surveys at a set of predetermined sites.



Access to facilities, including accommodation is available to volunteers, but the use of a private vehicle may be required.

Gluepot Management has safety procedures in place to support the welfare of all volunteers. An induction session followed by field support to accurately access satellite GPS points will be scheduled.

Please contact Tim Pascoe via gluepot@gluepot.org to submit an “Expression of Interest” before February 28th 2025.

2025 Working Bee Friday April 11 until Monday 14th April

Planning for this years Working Bee is well under way.



Activities concerning construction, species monitoring, infrastructure maintenance and environmental protection will be undertaken.

If you would like to be involved and have not yet expressed your interest, please contact Sue Nettlefold on

jdsmnett@gmail.com.



If you have already put your hand up to participate, further information and Registration forms will be emailed in early March.

2025 Environmental Education Courses

These courses will be offered again this year– keep an eye on our website www.gluepot.org for further information.

If you are planning a trip to Gluepot, why not plan your visit so that you can attend one of our courses and learn more about our special mallee environment.



Participating in the Insect Course



Up close in the Bird Banding Course

GLUEPOT RESERVE

Gluepot Reserve is a Reserve of Birdlife Australia. ABN: 75 149 124 774

Ranger Contact details: Email: gluepot@gluepot.org Telephone: (08) 8892 8600

Postal address: PO Box 345, Waikerie, SA 5330 Website: www.gluepot.org On Facebook.

Gluepot is a not-for-profit conservation reserve, managed and operated entirely by volunteers.

It is funded through donations and bequests from its supporters, and by grants for capital works and projects.

If you wish to support the Reserve by being a donor or providing a bequest, please contact the Chairman:

Ian Falkenberg E-Mail: hawknest2@bigpond.com Phone: 0428842873

This ‘Gluepot’ Newsletter is produced as an e-newsletter, and is not available as a printed version.

Contributions, comment, and feedback may be forwarded to the editors—Sue Nettlefold and Bronwyn Mart

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