

News of Friends of Grassy Ecosystems

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Fauna in the Grasslands

The Pink-Tailed Legless Lizard

Aprasia parapulchella

There has recently been a wide range of publicity on the legless lizard of Canberra and its role in holding up development of new suburbs. This press has resulted in a lot of confusion about legless lizards in Canberra, leading people to believe that there is only one species of legless lizard in the National Capital. There are at least four species of Pygopodids or legless lizards in Canberra. They are better called flap footed lizards, as they still retain remnant limb flaps where their hind legs used to be. Flap footed lizards can be recognised as being different from snakes because they have a round tongue (snakes have forked tongues), an external ear opening (snakes have none) a voice box (flap footed lizards and geckos are the only reptiles which can produce audible sound), limb flaps where their hind legs used to be and a long tail (in proportion to total body length) which can be dropped.

The species found in Canberra are the Striped Legless Lizard, *Delma impar*, the Olive Legless Lizard, *Delma inornata*, Burtons Legless Lizard, *Lialis burtonii* and the Pink Tailed Legless Lizard, *Aprasia parapulchella*. The Striped Legless Lizard, *Delma impar* is a vulnerable species which is found in the Gungahlin area and occupies a range of lowland grassland sites dominated by species such as Spear Grass, *Stipa falcata* and Kangaroo Grass, *Themeda triandra*. The Olive Legless Lizard is considered to be common and is found in open woodland and grassland sites, often in rocky areas. Burtons Legless is another widespread common species which is usually found in woody sites. The Pink Tailed Legless Lizard is considered to be vulnerable and has received attention in the media as a result of the recent upgrade of the Lower Molonglo Sewage Treatment Plant. This article will discuss this little-known, fascinating species.

Pink tailed legless lizards are very small, with a maximum snout-vent length of about 14 cm, and a total length of about 24 cm and more

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closely resemble worms than snakes. Their snout is round and the tail is short and blunt (shorter than the body length). The ear opening is absent and the hind limb flaps are reduced to a single scale. The body colour is grey to grey-brown becoming pink or reddish brown beneath the tail and dark brown to black at the head region. The body appears to have faint longitudinal lines on the upper surface because of the presence of a dark dot or longitudinal bar at the centre of each scale.

The species was described relatively recently by Arnold Kluge in 1974 from 20 specimens collected from the type locality at Coppins Crossing in the Australian Capital Territory (A.C.T.) and one specimen from Tarcutta in New South Wales (N.S.W.). *A. parapulchella* was named because of its close similarity to *A. pulchella* from Western Australia. It is in fact almost identical in external appearance to *A. pseudopulchella* from South Australia.

Pink tailed legless lizards are known from three areas of eastern Australia: near Canberra in the A.C.T., and from Tarcutta and Bathurst in N.S.W. In the Canberra region the species is widespread but patchily distributed within the corridors of the Murrumbidgee and Molonglo Rivers, and adjacent hill slopes amongst Canberra Nature Park where specimens have been recorded at over 80 small sites. By contrast, the species is known from two small sites at Tarcutta and from a single location at Bathurst.

There are at least four species of legless lizard in Canberra

Although *A. parapulchella* is apparently widespread in the Canberra region, the extent of suitable occupied habitat is estimated to be less than 16 km². The sparse patchy distribution and the fact that the species is found in such a small total area is one aspect which has led to conservation concern for the lizards.

In the Canberra region *A. parapulchella* typically occupies relatively open grassland sites on hill sides or river valley slopes where there is a substantial cover of partially buried rocks derived from decomposing rhyodacite or other Silurian volcanic rock types. Near Tarcutta the species is found beneath large fragments of granodiorite. The habitat of the species at the single Bathurst site is similar to that of the A.C.T. populations.

The species is thought to be a grassland specialist because it is nearly always found in sites which have not been pasture-improved and where there is a moderate to extensive cover of native grasses, particularly kangaroo grass (*Themeda triandra*) which is an indicator of less-disturbed sites. My research on the species has found that *Themeda triandra* was an indicator species of *A. parapulchella* sites, particularly if it occurred in high abundance and dominated a site. The lizards generally do not occur in areas where there is a cover of trees or tall shrubs although many of the sites where the lizard thrives are now secondary grasslands, having most of their tree cover removed. It is possible that the lizards survived in open rocky sites where tree cover was sparse and have moved out from these sites since clearing.

Pink tailed legless lizards are found by turning rocks. The species is fossorial, living beneath rocks in burrows which have been constructed by and are often inhabited by ants. Ants are usually present with the lizards and frequencies of co-occurrence have been recorded up to 95 percent, depending on climatic conditions. This is one of the most fascinating aspects of the species biology as very few species are able to live with ants. Part of my research on the species has determined that they live with at least eleven species of ants and one species of termite. The species is also a dietary specialist, feeding exclusively on the larvae, pupae and adults of at least five species of small ants. Ants from three subfamilies are eaten, including both seed harvesters and scavengers.

The lizards are not found under all types of stones and the particular stones used as homesites are generally small averaging less than 500 cm², and are usually partially embedded in the soil. The lizards may be faithful to the same homesite over an extended period of time, with some individuals being found beneath the same rock at different times of the year. Shed skins are also frequently present with lizards, indicating longer residency at a homesite. Beneath these stones the activity of the lizards is apparently affected by temperature and soil moisture. Individuals are not found during dry summer weather, or when daily temperatures exceed about 25 °C. It is likely that they seek shelter in burrows during unfavourable weather conditions. They may therefore occur in an area and not be surveyed because of this aspect of their biology. Some authors have suggested that this behaviour influences the perception of their conservation status, suggesting that the species is rarely found because its habits are poorly known.

Like other members of the Pygopodidae, *A. parapulchella* is egg laying with a clutch size of two. Gravid specimens have been collected in December but nothing is known of the egg laying site or the number of clutches laid in each season. Information on sex ratios, recruitment, longevity and age at maturity is also lacking. It is not unusual to find adults, subadults and juveniles sheltering beneath the same stone, indicating that the species may be social.

Nothing is known of the movement frequency or patterns of *A. parapulchella*. Observations suggest that lizards do move occasionally away from their burrows as they have been collected from roadsides and urban areas and have been captured in pitfall traps. It is possible that *A. parapulchella* is seasonally active and that males move in search of mates. Collections of animals from roadsides and houses surrounding reserve areas indicate that lizards may be trying to move between localised populations in search of mates.

Pink tailed legless lizards are a fascinating member of our grassland fauna and have some very interesting and unique characteristics. Although they are quite small and inconspicuous they have a valuable role in our grassland communities and provide another example of why grassland conservation is so important.

Only 16km² of suitable habitat occurs in the Canberra region

The lizard may need to move between localised populations to find mates

.....*Sandie Jones*

Grassland flora profile
***Dodonaea procumbens* F. Muell.**
Creeping Hopbush

Family - Sapindaceae - a large family with many Australian genera including, apart from the various hop-bushes, tall rainforest trees (e.g. Native Tamarind *Diploglottis australis*) and the arid-adapted Rosewood (*Alectryon oleifolius*).

Field description - Easily identified in its grassland habitat by its mat-forming habit, *Dodonaea procumbens* can nevertheless be mistaken for some *Pultenaea* species with a similar habit, especially in woodlands (although I have yet to see both species growing together). The leaves of *D. procumbens* are however quite distinct, clearly showing two or three teeth toward the tip - the leaves of the procumbent *Pultenaea* species are never toothed. All doubt is dispelled of course in the spring, when *D. procumbens* mats may be covered with distinctive staminate flowers, or later when these are replaced by papery capsules - the "hops" that give members of the genus their vernacular name.

The flowers and fruits are variable in colour. In one small population of *D. procumbens* that I have examined, the flowers ranged from lemony-yellow through to orange and bright crimson-red. The hops are also similarly coloured, though in more muted tones. See Harden (1991) for a detailed botanical description.

Range - This species has a very interesting disjunct distribution. Three isolated populations are known - one in the Mt Lofty Ranges of South Australia, one in the Grampians in Victoria and one on the South east New South Wales (Rowell 1996). In NSW it is most common in the Michelago - Bredbo area of the Monaro District, though new populations have been discovered - most notably at Bobundara (Rowell 1996), Dry Plains (J. Dorrough pers. comm.) and Lake Bathurst (I. Crawford pers. Comm.). I turned up a population at Numeralla.

Habitat - Harden (1991) states that *D. procumbens* occurs in open woodland on sandy soil of flat low-lying areas in South-eastern NSW. This is somewhat misleading as I have never seen this species in habitat that matches that description, though apparently the Lake Bathurst population is in woodland on

low-lying land. On the Monaro, Creeping Hopbush occurs on skeletal or clayey soils on ridges or hill slopes - either in open woodland or natural grassland. The best place to see this species is on exposed road cuttings in the Bredbo area. This species grows on tilted shales at wind-swept sites - these seem to be the common environmental variables where it occurs on the Monaro.

Status - *D. procumbens* is listed as Schedule 2 (vulnerable) in the NSW *Threatened Species Conservation Act 1995 No 101*. It occurs sparsely, in widely scattered localities and is under threat from weed invasion and pasture improvement in the grasslands where it is still holding on. It appears to be vulnerable to heavy grazing as well, and rabbits and shading associated with tree-planting are also potential threats (Rowell 1996). This species is not found in any conservation reserves.

Notes - The Creeping Hopbush *Dodonaea procumbens* is a very interesting species - both because of its unusual and attractive habit and its disjunct distribution pattern. This species appears to be a coloniser, and while being a threatened species, it nevertheless appears to colonise bare patches, as can be seen on exposed road and rail cuttings within its range.

This plant has great horticultural potential - attractive and able to tolerate severe conditions. An interesting feature of old specimens is that they often have the appearance of gnarly old weather-beaten trees, with bare branches sprawling across the ground with tufts of glossy green foliage at their ends. Because of its toughness, *D. procumbens* may also have potential in rehabilitating roadsides and other similar landscaped areas and may also be of use under electric fencing, as this mat-forming shrub rarely grows taller than a few centimetres, while covering areas up to a metre and a half across.

Finally, populations of this rare plant, a significant feature of grassy ecosystems of the South-east, need protection under some form of conservation measure - whether that is in a National Park, Nature Reserve or by Voluntary Conservation Agreement, as no known reserve currently contains this species.

References

Harden, G.J. (1991) *Flora of New South Wales* vol. 2. Royal Botanical Gardens, Sydney

Creeping Hopbush is a vulnerable species under threat from weed invasion and pasture improvement

Older specimens may look gnarly and weather-beaten but their toughness makes them suitable for roadside rehabilitation

Rowell, A. (1996) *A study of the native grasslands of the Monaro District*. A report for the NSW NPWS and DUAP (Heritage Assistance Program).

.....*Rainer Rehwinkel*

Just a few words

Our last meeting was held during December 1996. We met as a group with high spirits following a well organised and successful grasslands conference. In retrospect with Christmas coming up this was probably the last quiet weekend many of us had for some time. Hopefully you all had a safe and happy holiday period. Now we have settled back into the work/school routine it is a good time to renew our interests in grassy things.

The December meeting heralded much change for FOG as shown by the following. Sandie Jones has stepped down and I have taken on the role of convenor. We have a new name - Friends of Grassy Ecosystems (we still keep FOG). We have changed the structure of the group, hopefully sharing the load a bit. We are well on the way to having a formal constitution which will enable us to become incorporated. This is a formidable list but lets look at each of these in greater detail.

I would like to thank Sandie Jones for all of the effort she put in for FOG over the last couple of years. During 1996 as convenor she managed to keep things rolling along pretty well. The change over of convenor from Edwina to Sandie caused FOG to evolve as it learnt to exist on a part time basis. However, these changes were inevitable for a group of our size. Having a full time person at the helm is rather unusual for a community organisation. To Sandie's credit at the same time she was also pursuing her PhD, an academic career and planning her wedding. Sadly for us, Sandie is moving away from Canberra to follow her professional ambitions. She is taking up a lecturing position with Melbourne University. I suggested to her that she might like to open the Victorian branch of FOG. As yet she has not given me a reply ! Good luck with the new job Sandie.

As I said, you now have a new convenor. I must stress from the outset that I am taking on this role solely on a part time basis, as did Sandie. Like many of you I have professional

commitments that I must attend to. These along with my family responsibilities will always take priority over other matters. I hope that in the future the new group structure (see below) will allow work to be shared throughout the group rather than by the faithful core. Remember that the greatest cause of community group demise is from burnout. Lets not let this happen to us. Where possible I ask you to contact me at home rather than at the office. There is a answering machine on this number (see contact info).

The choice for a new group name was driven by both scientific and political considerations. There was some concern that it isn't just grasslands that need community protection but a number of other grassy ecosystems (for example grassy woodlands). The last FOG meeting thought that it would be more correct to direct attention to the pressures on all these systems rather than just one. I have given this a lot of thought and have come to disagree with this decision. While the "ecologist" within me understands the need for scientific accuracy my "media ego" suggests this is a backward step. Over the last two years we have developed a lot of respect and credibility as "Friends of Grasslands". Over this time our full name has become more widely known than our acronym (FOG). With a change of name we would be losing this recognition. Besides, "Friends of Grassy Ecosystems" is such a mouthful. I believe that within our new constitution we should define our area of interest as all grassy ecosystems. However, I don't think the public and more importantly the politicians initially want to know about the technical differences between grass communities. Let's get them fired up with a simple focus and slip in the detail when we have got their interest. I would appreciate some more discussion about this at the next meeting.

The other major move for FOG is our new structure. I wrote about this in the previous newsletter. It is a flatter approach having removed the committee system. Basically specific people take the responsibility for coordinating our efforts in particular directions (See contacts info). Note the key word is "Coordinate". For this system to work these people must have helpers (see help wanted section). If you wish to take on a coordinator role or help out a coordinator please contact me or the relevant person. We will also use the list of personal interests recorded with your membership details as a source of potential helpers. There is still plenty of jobs to be done. It is your group, you should keep it running !

Thanks Sandie for a job well done

**Constitution and
incorporation for
FOG**

Graeme Evans has put in a lot of hard work to develop a draft constitution that will enable the group to become incorporated. There are many reasons why we need to formalise our existence, here are two. First, it is far easier to seek government funding from the base of an incorporated organisation. Second, without incorporation we cannot purchase insurance and individuals who organise group outings are personally responsible if accidents occur during the outing. More discussion will occur about this document at the next meeting. To save costs (\$100) we are not sending everyone a copy. Loan copies are available from me and I encourage those of you who are interested in the future of FOG to take a look prior to the meeting.

There are a number of other things on the agenda but space prevents me from writing in full about them. Just to wet your appetite; on the horizon are: a permanent base for the group to meet, reduced membership fees, a database of people who have expressed support for the group, a web page, a stewardship program to support your local grassland and regular article by FOG in the local newspapers.

Don't forget the group won't survive without your input!

.....*Art Langston*

FOG business

If you are interested in any of the following business items please contact the convenor.

The Conservation Council of the South-East Region & Canberra is publishing an environmental directory which will include information about FOG. The directory will be a who is who of environmental people. It will list community organisations, business and government departments who are engaged in environmentally friendly activities in the ACT and surrounding region.

Following a proposal by NSW NPWS for the state listing of *Tympanocryptis lineata pinguicolla* the eastern earless dragon has now been listed as endangered in NSW. Hopefully the funding and protection associated with this listing will improve its conservation prospects. FOG through its membership of the TLP regional recovery team has been actively seeking this action.

FOG is also participating in the development of a National Recovery Plan for *Tympanocryptis lineata pinguicolla* (eastern earless dragon).

FOG has been asked to participate in a series of workshops investigating Plans of Management for Canberra's open space.

Art Langston attended the general meeting of the Conservation Council of the SE Region & Canberra where their policy on animal welfare was discussed.

Isabel Crawford attended a meeting to address funding of community programs through the National Heritage Trust. She and others are following this up with ACT Parks & Conservation.

Dates to remember

The following dates should be of interest to FOG members. Please let me know of any dates that you think should be included.

All March 1997
National Landcare Month
Theme - Revegetation

22nd March 1997 2:00pm -
Seminar - *Rutidosis leptorrhynchoides*
NSW NPWS
6 Rutledge St, Queanbeyan
RSVP John Wilkes (06) 238 2490
by 18th March

20th April 1997 1:00pm - 7:30pm
LandcareFest. A display of the activities of
Landcare and environmental organisations
City Walk

23-27th June 1997
Australian Network for Plant Conservation
Third National Conference
Coffs Harbour
Jeanette Mill (06) 2509509

14th September 1997
Green Up Day
Environmental organisations are asked to
initiate an activity which raises the awareness
of Australia's natural environment

16-19th September 1997
Landcare: Changing Australia Conference
Adelaide Convention Centre
Andrew Curtis (08) 3039339

9-12 December 1997

The Other 99% Symposium - Conservation and Biodiversity of Invertebrates

Sydney

Coordinator (02) 3206224

Mail

We receive newsletters and information papers from a number of sources. All papers are held and are available for interested members to read.

Newsletter - Environmental Defenders Office
No.1 - January 1997

Newsletter - ACT Park Care

Newsletter - Bushlines (Environment Australia)
November 1996

Paper - Plans of Management for Canberra's urban open space

Newsletter - ANIC News
Official newsletter of the Australian National Insect Collection
No. 9 - October 1996

Newsletter - Sustainable Times
Newsletter of the Environment Centre and Conservation Council
February 1997

Can you help ?

If you would like to help out with any of the following FOG activities please call the coordinating person. Contact details at the back of the newsletter.

National Heritage Trust -

Any ideas for projects that would be suitable for FOG to apply for funding under the NHT should be directed to Isabel Crawford (see contacts). The deadline for submissions is early April.

LandcareFest -

FOG will be presenting a stand outlining the activities of the group at the Canberra LandcareFest (part of the Canberra Science

Festival). People are required to prepare promotional material and staff the stand. Contact Sandy Kay (after hours please).

Plans of Management for Urban Space -

FOG has been asked to participate in workshops investigating options for the management of Canberra's open space. A discussion paper is available for reading. Contact Art Langston.

Green Up Day -

Environmental organisations are asked to initiate an activity which raises the awareness of Australia's natural environment. Any suggestions or people wanting to take this on ?

Grassland Info -

O'Connor Ridge Parkcare Group is seeking information and references about grassy ecosystems that may be effected by the John Dedman Parkway. Anyone with knowledge please contact Art Langston. Deadline is 20th March.

Next Meeting

Sunday 6th April 1997 1:30pm
Grassland walk at Woden Property
Meet on western side of Monaro Highway one paddock south of the model aeroplane club. Look for Art Langston's white Toyota Hilux (YXQ-371) parked on the edge of the road. Access is over a fence.

General meeting to follow at the Education Center on Mugga Mugga. Entrance road is opposite National Standards Laboratory on Narrabundah Lane

Help needed

Facilitator contact details

Convenor and treasurer:

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Sandy Kay
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