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Contents

Introduction	<i>Alison Roach</i>	51
Wednesday walks	<i>Ros Cornish & Jo Walker</i>	52
Redesigning a native meadow	<i>Ros & Ben Walcott</i>	57
Statistics on the Wednesday walks	<i>Martin Butterfield</i>	64
Observations on the status of rare and threatened plants in the ACT and surrounding areas	<i>Dr Roger Farrow</i>	70
Southern Tablelands Regional Botanic Garden	<i>Andy Russell</i>	84
Field trips – highlights of ANPS Canberra 2006–2014	<i>Dr Roger Farrow</i>	88
New book: <i>Australian Plants for Canberra region gardens</i>	<i>An Van den Borre</i>	92

Front cover: Bush Capital, Canberra. Photo Adrian Kelson

Back cover: *Leucochrysum albicans ssp alpinum*, *Podolobium alpestre* and *Brachyscome spathulata*, Mt Franklin, The Brindabellas. Photo: Lucinda Royston

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Australian Plants articles

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ANPS Canberra Region: Introduction

Alison Roach, President, Australian Native Plants Society Canberra Region

Alison, a society member for about 10 years, is passionate about helping people to appreciate their bush surroundings and to grow more native plants.

Welcome to the Australian Native Plants Society (ANPS) Canberra Region edition of *Australian Plants*. Established in 1962, our society has about 300 members, and incorporates a varied and vibrant range of activities. The following articles have been selected to showcase our region and society, from its unique bushland surrounds and gardening challenges, to the contribution we make to science, education and people's gardens. We welcome you to the Canberra region for the ANPSA Biennial Conference in November 2015.

One of the difficulties all cool climate gardeners face is sourcing plants that will cope with our very cold winters (frost hardy to us means it has to cope with -7 °C). Our very popular and twice-yearly plant sales are supplied by our propagation groups and member growers. We are justifiably proud of annually selling 10–14,000 plants suited to our region – a great contribution to promoting native plants!



Spring plant sale – before the gates open; Photo: Anne Campbell



Spring plant sale – the rush of customers; Photo: Anne Campbell



Wednesday walks

Ros Cornish and Jo Walker

Jo Walker is an inaugural member of the Wednesday Walkers. Ros Cornish joined the group in 1996. Both are Life Members of ANPS Canberra Region.

The Wednesday Walks began in the late 1980s when one of the authors – Jo Walker – and Merren Sloane had a midweek afternoon free and decided to spend Wednesday afternoons identifying the local flora. The first site chosen was the ACT end of Sutton Road where several weeks were spent discovering interesting plants and recording their findings, making many lists for different parts of the roadsides. There were white-painted wooden posts along the roadside back then, and they marked numbers discreetly on the back of them as they went along to give some indication of where the plants occurred if they ever needed to find them again – only to find the posts removed several months later and replaced with plastic posts!



Leucochrysum albicans, *Pultenaea procumbens* and *Rytidosperma pallidum* amongst *Eucalyptus rossii* on Sutton Road. One of the areas almost totally destroyed during roadworks; Photo: Jo Walker

Altogether they found 113 different species of Australian plants along the roadside, including two Spider Orchid plants. These were probably the rare *Arachnorchis armata*, the Majura Spider Orchid, discovered in 1998 on the Majura Firing Range, which extends along the west side of Sutton Road for several kilometres. The plant has recently been found near Molonglo Gorge near the south end of the road.



Bald Hill Fire Trail; Photo: Lucinda Royston

The plant lists had some influence in the placing of conservation signs purporting to protect roadside native vegetation in the ACT. Unfortunately, roadworks seem to have priority and much of the original roadsides have disappeared or been damaged – a common problem everywhere.

Soon after the Sutton Road forays, Jan Simpson, Pauline March and Barbara Daly joined in and extended the wanderings to Molonglo Gorge, the long escarpment to the east of Queanbeyan and other nearby areas. By the time Jo retired in 1993, the Wednesday Walker numbers had increased and we would venture further afield on day-long trips towards the coast or Cooma, or out past Yass and Goulburn and into the Brindabellas and Namadgi National Park – interspersed with shorter walks in the Canberra Nature Parks.

In those early days, not many of us were in possession of computers, so walks were organised (and sometimes, due to weather or other misfortunes, re-organised) over the phone. Plant lists were typed up, copied and distributed on the next walk. With the advent of general computer ownership, these arrangements have become easier and more efficient, enabling fast contact with the increasing number of members now enjoying the Wednesday Walks. We have an email group managed by ANPS which allows all members to receive reports of





the walks, reminders about the next walk and exchanges of information about relevant topics. Our email group currently has 88 members, which is quite remarkable and would prove challenging if even half turned up for a walk. Many are just content to read about our activities.

As membership grew, we wrote some guidelines about the walks – what people should expect on a walk and what responsibilities they have to the group. These now reside on our website at http://phyla.com.au/anps_canberra/ and are drawn to the attention of any new or prospective members.

We always have fun on our walks but we also contribute to botanical knowledge. Over the years we have found several plants new to the ACT and have extended the range of others. It is always exciting when one of the more experienced members says, “What’s that?” We all gather to see what it is and listen to the discussion that ensues. A good example of this was in 2005, two years after the devastating Canberra bushfires. On a walk to Booroomba Rocks to look at the regeneration, we observed a plant among the then bare granite boulders which we didn’t recognise, despite many visits in the past. It turned out to be *Dampiera fusca* – a new genus for the ACT. Another example was our discovery in 2006 of a daisy bush in Ginini Swamp which we had never seen before. It took a return visit in 2008 to get flower samples before it was identified as a newly named plant (in 2004) – *Cassinia monticola*. This was the first recording of it in the ACT although there is a plant not too distant over the border in NSW.



Cassinia monticola, Ginini Swamp; Photos: Julie Lindner

On a number of occasions we have found a new population of a species – in some cases quite rare species. In the Mayfield locality not far from Tarago, NSW, we found a small, new population of *Pomaderris delicata*. It is a critically endangered species under the NSW *Threatened Species Conservation Act 1995* (NSW TSCA). Most of the plants are on narrow roadsides which are graded frequently. However, recently



Big Badja; Photo: Pamela Finger

the Pomaderris Nature Reserve has been established and it contains a small population which we hope will flourish. We have found another endangered pomaderris – *Pomaderris pallida* – in so many locations now that it is becoming an in-house joke. This species is listed as vulnerable under the Commonwealth’s *Environment Protection and Biodiversity Conservation Act 1999* and also as vulnerable under the NSW TSCA.

Another extension of range was our finding of the endangered (NSW TSCA) *Dillwynia glaucula*. It was previously only known from three areas – near Windellama, Michelago and Numeralla. We found a fairly large population in the southern part of the Googong Dam area. Most recently, we found a new population of *Bossiaea grayi* which is endemic to the ACT and declared by the ACT Flora and Fauna Committee in 2012 as endangered.

Since the late 1990s, we have been keeping lists of species we find on our walks. These have been used on occasion by interested parties and, since 2008, they have been made available to anyone by putting them on the ANPS Canberra Region website. Taking it one step further, we have been fortunate to have a member, Martin Butterfield, who has a background in statistics and understands the importance of our records and making them available. He has worked out how to upload them to the *Atlas of Living Australia*. See the article on page 64.





We would recommend that other groups start similar walking groups to explore their local flora, keep active and forge new friendships. It's certainly working for us. Please visit our website at phyla.com.au/anps_canberra to see descriptions of our walks and some pictures of what we've found.



Eucalyptus rossii, Campbell Park; Photo: Brigitta Wimmer

Redesigning a native meadow

Article: Ros Walcott Photos: Ben Walcott

Ros and Ben Walcott have been gardening for many years starting with a large garden in New York for 30 years before moving to Canberra in 2003. Here they established a new native garden and became active in ANPS Canberra Region. Ben is the Leader of the Garden Design Study Group and Ros is the Editor of the quarterly Garden Design Study Group Newsletter.

In the previous issue of *Australian Plants* we described the continuing development of our garden in Canberra (Vol 28, No 222). This article describes in more detail the redesign of our native meadow. The original design for our garden, completed in 2003 by landscape architect Helen Cohen, included a large native meadow approximately 1100 square metres in area. This space was where all the heavy equipment was parked during the nine months of construction of our house and garden and by the end of that process the soil was packed down as hard as a rock. To our surprise our garden company, Able Landscaping, did not rip this area to make it more acceptable for planting, but planted directly into the rock-like soil using a drill. Their explanation was that in their experience ripping only resulted in a myriad of weeds taking the opportunity to grow in the disturbed soil.

The planting of the meadow was an amazing process involving three people over three days planting over 20,000 viro tubes of grasses,



The meadow in January 2012 with the *Ammobium alatum* in bloom





forbs and lilies. They drilled a hole with an electric drill, dropped in a gel containing water-retaining crystals and fertiliser, then planted the viro tube and moved to the next hole very efficiently. The meadow plants grew quite quickly in the first six months, especially the grasses. Particular favourites were *Themeda australis*, *Microlaena stipoides* and *Themeda australis* 'Mingo'. *Bulbine bulbosa* prospered in the meadow, as did *Chrysocephalum apiculatum* and *Wahlenbergia communis*. Some plants appeared only in the first few months then disappeared. Others never appeared at all. Some of the plants stipulated in the planting plan were not available and were substituted by other varieties. In 2007, four years after the original planting, the meadow was refreshed with new plants. Over the 11 years we had the meadow we scattered seeds of *Xanthorrhoea australis*, *Austrostipa elegantissima* and *Austrostipa mollis*, and added many plants such as *Austrostipa scabra*, *Austrostipa verticillata*, *Bulbine glauca*, *Bulbine semibarbata*, *Chrysocephalum semipapposum*, *Joycea pallida* and *Leucochrysum albicans*.



Ammobium alatum or Tall Ammobium was a special case. There were only six of these plants provided in July 2003. I was very excited at the idea of this one metre high winged grey-leaved plant with white papery flowers and checked the small patch of plants every morning to note progress. Imagine my horror when I saw six Sulphur Crested Cockatoos pulling out the plants and munching on the roots. I went complaining to Ben that I would never have any ammobiums as the birds had eaten them all. However, I began to notice grey-winged

plants popping up everywhere, not only in the meadow but also in the path and adjacent beds. Not only did I have ammobium, I had perhaps too many ammobium. Those of you who have been to our garden will know that we still have many ammobium plants and some of them not in very appropriate places, but I continue to love the plant and just pull it out when it gets too obstreperous.

The meadow was a source of conflict over the years that we maintained it. It was beautiful when in bloom, in December, with the ammobium providing the main show. Red-Browed Finches loved the ammobium seeds, as did the Crimson Rosellas. We had numerous nests of Red-Browed Finches in the nearby Bunya Pine. These elegant grass nests provided plenty of interest while in operation both for nesting and roosting. Many species of butterflies also were attracted to the meadow, even the spectacular Orchard Swallowtails.

However, weeding of the meadow was always a problem. We had several infestations of weeds such as Couch Grass and Vetch. We were forced to abandon one section of the meadow because couch grass was impossible to eradicate without poisoning all plant material in that area. This section was redeveloped as a general garden bed several years ago after ridding ourselves of the couch.

If we watered the meadow enough to make the meadow plants thrive, this was also enough water to ensure that the exotic weeds gifted to us



The clearing of the meadow





by the birds also thrive. I have seen successful meadows, Christopher Lloyd's at Great Dixter in Kent springs to mind, but I warn anyone thinking of establishing one that they are very hard work.

Early in 2014 we finally got permission from the ACT Planning and Land Authority to remove eight large pine trees (*Pinus radiata*) from our property that were planted circa 1930. These trees were beginning to senesce after 80–85 years, drop limbs and generally become a nuisance. We wanted to remove them before we ever started our garden in 2003, but were unsuccessful in our request, even though this was Dr Robert Boden's recommendation and he was the one who wrote the tree guide for the ACT. Removal of the trees necessitated a 100 tonne crane being used and the only place to park such a crane was on the meadow. The consequent trashing of the meadow was an impetus to us to either decide to keep it and replant it, or get rid of it.

I was very happy to redevelop the meadow in another guise and Ben was less so. He really enjoyed the unstructured appearance of the meadow. I was tired of explaining to many visitors that we were not ignoring this space and developing it later, but had indeed already put major effort into planting and maintaining this garden area. There were really only two reactions to the meadow 'I love it' or 'when are you going to start to garden in this area?'



The new garden area dug over and the paths laid out



The last load of the new topsoil being delivered

After the removal of the pines in April/May 2014 we then had to redesign and redevelop the meadow, an area of about 600 square metres. We poisoned the grasses, forbs and lilies that we had put in over a decade (more than 20,000 plants in all), skinned off the top soil and plant material, then mechanically churned up the soil with a digger, added more light and friable soil then churned it up again. The soil added was the same sort that is used under turf and we had used it before when filling in a pond. I then walked around with sticks and mapped out new paths. I had a good idea of the general curved and hooked paths I wanted. We created swales around each new bed and filled the swales with large river pebbles for drainage. We used a gold-coloured gravel mulch in this area to contrast with the dark mulch used elsewhere in the garden and also with the narrow mulched wheelbarrow paths through the new garden. The paths are made from crushed granite and were rolled and compressed mechanically.

We wanted rocks in one section of the new garden. Newline Quarry, Queanbeyan, where we sourced rocks for other sections of the garden, has been closed. We managed to find suitable rocks at Bundanoon, but due to a chapter of accidents, with floods, bogged tractors, impassable roads and sickness of the owner, we were unable to obtain them in a timely fashion. It was disappointing, but I decided to build myself a barchan dune where the rocks were supposed to be placed. A





barchan dune is a crescent-shaped sand dune produced by the action of wind predominately from one direction where the crescent tips point downwind. Some of these dunes can reach heights of 30 metres and widths of 350 metres, but mine is a modest affair only a metre high and 15 metres long. It is now anchored by a specimen of *Eucalyptus caesia magna* 'Silver Princess'.

The beds are irrigated with sprays about 0.75m high. We will not use drip irrigation again in our garden as we have found it much too difficult to maintain. The ants climb into the dripper and block them at every turn. The first time that you know that the dripper is blocked is when you notice the plant is dead. Sprays can be raised as plants grow so that they continue to give good coverage. We irrigate at night so evaporation is limited.



The completed new garden before planting

We were able to save all the trees that we had put in over the years so the area still has much-needed light shade and frost protection. We attended a marvellous afternoon visit to John Weatherstone's property in Gundaroo in 2006 where he had planted 100,000 trees of all kinds to mitigate the effects of drought on his property. He found that the shade from these trees encouraged grass to grow to feed his stock, quite against the common farming practice and belief of the time. We came home inspired to plant more trees, even in the meadow area, which was originally full sun. We planted *Eucalyptus camphora*, *E. gunnii*, *E. luehmanniana*, *E. polyanthmos*, *E. maidenii* and *E. stricta*, and we



The new garden in March 2015

had previously planted *E. sideroxylon rosea* to make the new house 'sit down' in its environment.

We then had to find enough plants to fill up the beds and are still working on that. We are concentrating on plants one metre high by one metre wide or smaller. We want to keep the original design of relatively open space in front of the house.

I see the doubt in some visitors' faces when they see the large expanse of gold pebbles where the meadow used to be. I encourage them to come back in two years to see that the plants will have grown to cover the pebbles. We just have to wait patiently for the plants to grow. You can visit our garden this year as part of the ANPSA Biennial Conference in Canberra, November 15–20, 2015.

This article was first published in a longer form in Garden Design Study Group *Newsletter*, No. 89, February 2015, pp. 2–9.



Australian Native Plants Society (Australia)

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Cultivation and propagation information, extensive photo gallery, ANPSA events, online magazine and much more.





Statistics on the Wednesday walks: From the past through the present and into the future

Martin Butterfield

Martin joined ANPS and the Wednesday Walkers in 2007 to learn about plants so that he could identify the plants on his block. He is particularly interested in orchids and tries to identify the birds seen on the walks.

The Wednesday walks started in the 1980s. Some plant lists were made in the early days but more regularly from the late 1990s. The oldest date in the database of species lists is 20 November 1966. Since 2008 plant lists from each walk have been included on the ANPS Canberra Region website, and in the redesign of that site in 2013 an index of the lists, including links to the available photographs was created. This provides an interesting way for those familiar with the walks to “get into” what has been seen at various sites.

In 2012 the author raised with Wednesday Walkers the idea of putting the plant lists and a few other attributes of the outings into the Atlas of Living Australia (ALA).

The idea was to make the data available to the community generally in a way which might, at the biggest picture level, enable whole-of-environment analysis. It would also enable researchers looking at plants access to our records in a spatially referenced way, both for plants in general or specific species.

The idea was accepted and some historic records were entered and each walk is now added soon after the walk is done. From time to time members have been advised of progress on the project and shown a number of analyses through articles in the ANPS Canberra Region journal or blogposts with links circulated by email.

The article:

- outlines the processes including quality control measures followed in inputting data to a database and then to the ALA;
- notes some basic statistics about what has been done; and
- suggests how the data set, both ALA and the underlying database, might be used in the future.

Data management

The initial data entry is done on a Wednesday walk where plants seen are listed and later transferred to a Word document which eventually lodges on our website. I receive the file in .docx format which I copy to

an Excel spreadsheet. After some manipulation this is imported to an Access database as a species by site by day table.

Separate tables exist for the sites visited and the days of visits. They are then updated. Where the outing is a car crawl, rather than a walk as such, a number of separate sites are defined with geo-coordinates for each. For example, we have visited seven sites along the Woodleigh Fire Trail in Monga National Park.

In the early stages of the project the composite species lists for all visits to a site were entered as one document, rather than attempting to unravel the various updates. With more recent records each visit is entered separately and thus the start and finish dates are the same.

I have established a reference table of accepted taxon names. A first element of quality control is to check for unmatched entries using the Plantnet website at plantnet.rbgsyd.nsw.gov.au, initially to check spelling. A benefit of Plantnet is that the maps on species pages of that site give a good indication whether a ‘new species’ is likely in the area found. It also covers our entire ‘territory of interest’ – see Figure 1 below – not just the ACT. But Plantnet does not recognise a range of changes in some species (notably orchids) and sometimes lags behind the Australian Plant Names Index (APNI) in accepting Council of Heads of Australasian Herbaria (CHAH) rulings. When such issues arise they are resolved by reference to ACT Plant Census, APNI or other online resources.

Every six months’ data from database tables are brought together and consolidated into the form of a data submission template for the ALA.

As well as what is submitted to ALA I have added a few other elements to the database I use. These include the families to which each taxon relates; the key taxa relating to various habitat types and an indicator of Management Units, which is essentially a combination of nearby sites that are under similar environmental controls.

Basic statistics

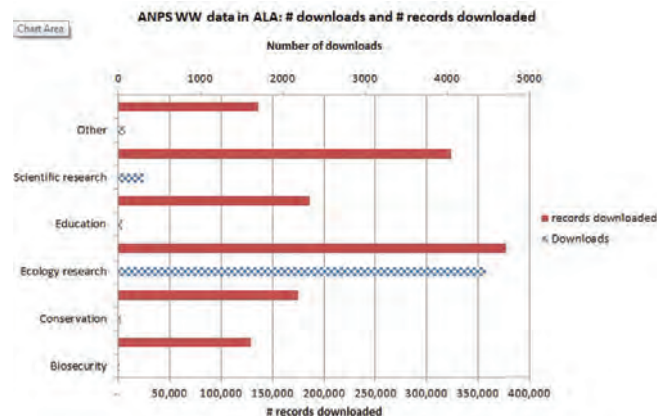
Information in database

Records in database	27,116	Number of sites	244
<i>Uncertain records (ie containing ‘sp.’)</i>	2,193	<i>Maximum number of taxa per site (Cypress pines)</i>	178
<i>Certain records submitted to ALA</i>	24,923		
Number of taxa	1,128	Number of visits	337
<i>Maximum sites per taxa (Hibbertia obtusifolia)</i>	178	<i>Single date visits</i>	267



Data usage through *Atlas of Living Australia*

In the 12 months to January 2015 1,327,502 records were downloaded from the Atlas of Living Australia through 4,934 downloads. The number of records downloaded and number of downloads by type of usage are shown in the following chart. The labels are truncated from those used by the Atlas of Living Australia for ease of presentation.



It is noticeable that the vast majority of downloads, about 90%, are for ecology research while three categories – ecology research, scientific research and education – are significant in the number of records downloaded. The records have been accessed and classified to various usage categories as part of the data input to the new photographic guide to ACT plants.¹

Usage now and in the future

I have used the dataset several times to support articles for the ANPS Canberra Region journal and in compilation of posts to my blog. The following paragraphs look at three fairly straightforward analyses.

Sites by type of habitat

All sites we have visited are depicted in a screenshot from Google Earth shown in Figure 1. The area ranges from Berridale in the south to north of Yass and east to Tianjara Falls. I have used material from Ocean Shores to Desert Dunes² in conjunction with species recorded at each site to classify sites to habitat types. For illustrative purposes the green icons represent Southern Tablelands grassy woodland and the red icons other habitat types.

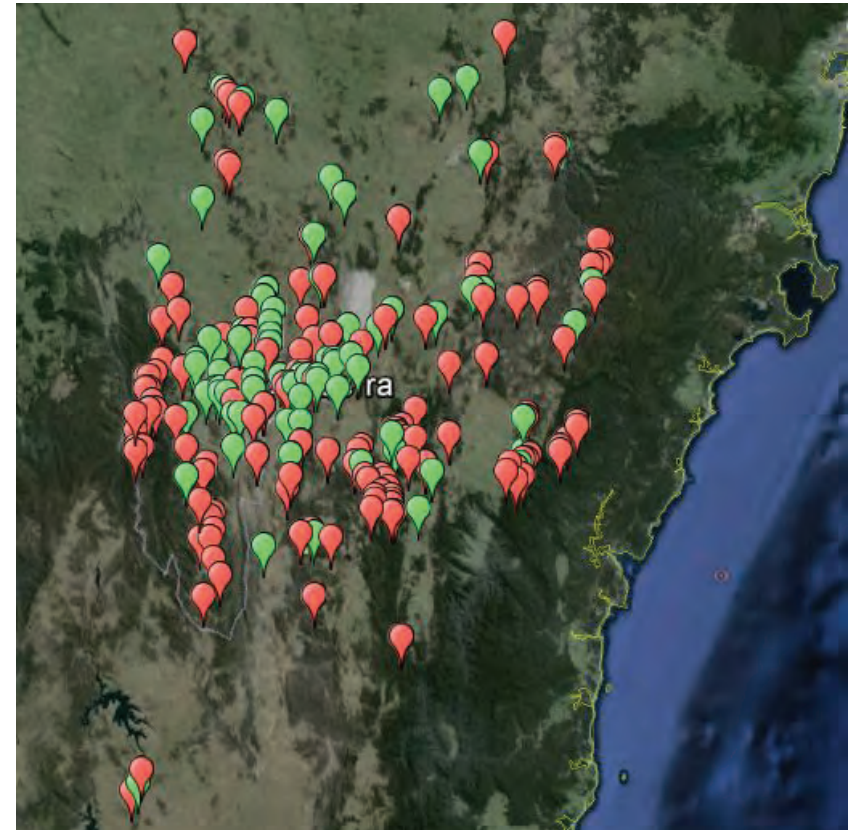


Figure 1: Location of sites and broad habitat type

Diversity of plant life by Management Units

I have allocated each site to a Management Unit (MU) according to my knowledge of the processes responsible for environmental control in the site. This is an initial attempt at such a classification and should be taken as a convenient way of providing an indicative higher level view of the data compared to the detail of the data for sites.

I have taken the number of taxa within each MU as an indicator of the diversity of plant life with each MU although in some cases small numbers simply mean we have not spent long in the site.

The green icons shown in Figure 2 on the following page are MUs with 140 or more taxa recorded. Interpreting this image is risky due to different levels of activity but tends to show the sites with higher diversity are in the less intensively developed areas, especially those of higher elevation.





Figure 2: Number of taxa by Management Unit

Distribution of mistletoes

As well as presenting information comparing sites, the dataset can look at the distribution of individual taxa or combinations thereof. Figure 3 shows where the Wednesday Walkers have identified two species of mistletoe in the genus *Amyema*. Yellow icons are *A. miquelii* and green icons are *A. pendula*.

A feature of this map is the absence of the genus from the high country. While there has been discussion of the reasons for this we have not yet come to a conclusion. It has however increased the effort devoted to looking for mistletoes, resulting in one clump identified as this genus at Shanahans Mountain (1200m above mean sea level) in a walk not yet entered to the database.

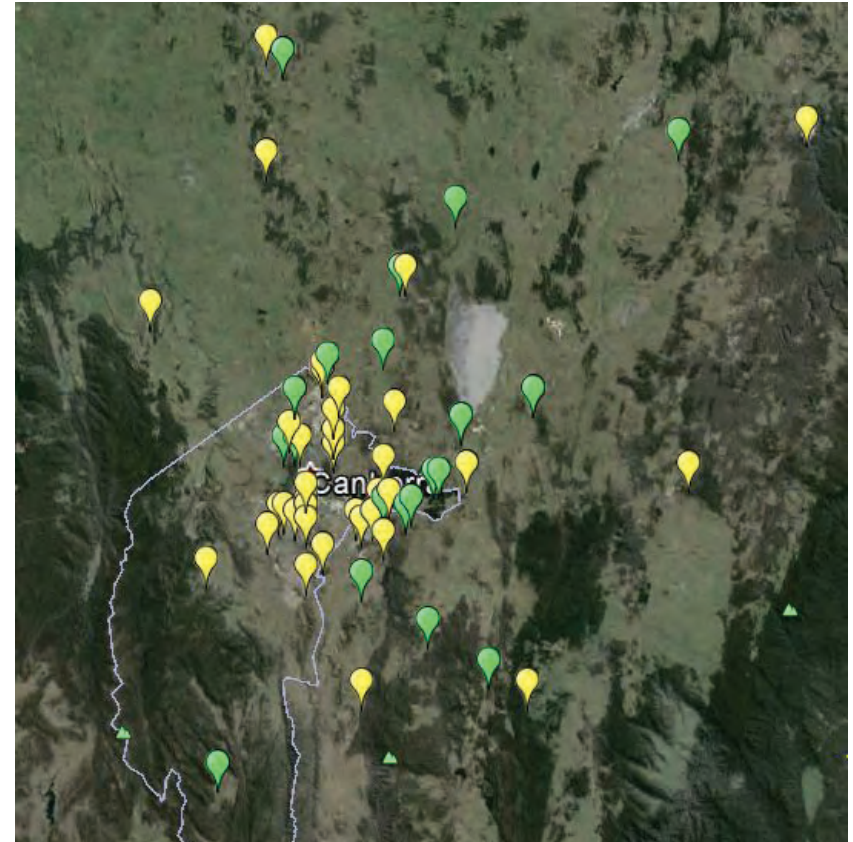


Figure 3: Location of sites in which two *Amyema* species were observed

Final thoughts

With a dataset of nearly 25,000 records relating to 1,500 species over 300 sites there are as many questions that could be looked at as far as logic permits your imagination to go. I hope that those accessing the records via the Atlas of Living Australia are exploring some of these issues. I will continue to publish – one way or another – analyses that interest me, and subject to the approval of the group I am very happy to provide data to assist others.

References:

1. Cosgrove, M. (2014) *Photographic Guide to Native Plants of the Australian Capital Territory*, Meadow Argus
2. Keith, D.A. (2004) *Ocean Shores to Desert Dunes*, NSW Department of Environment and Conservation





Observations on the status of rare and threatened plants in the ACT and surrounding region by members of the ANPS Wednesday Walkers

Dr Roger Farrow

Roger spent 35 years as an entomologist at CSIRO in Canberra travelling widely throughout Australia on different projects but always maintaining a strong interest in the local flora and fauna. After 'retirement' he joined ANPS and has been a regular member of the Wednesday Walkers group as well as a field trips organiser and has continued writing on plants and insects.

The number of rare or threatened plants in the ACT and surrounding region depends firstly on the geographic limits of the region under discussion which is considered to be roughly equivalent to the Southern Tablelands meteorological district. If we examine the Federal, NSW and ACT threatened plant lists for this region there are currently a total of about 45 species shown in the Appendix plus seven rare and localised species. I have selected 27 of these species and assigned them to eight categories and discussed the attributes of 21 of these in more detail. Each Wednesday the members of the walking group, Wednesday Walkers (WW), visit areas of botanical interest throughout the ACT and surrounding region, compiling plant lists and studying the identity and ecology of different plant species including many of those on the threatened species lists.

1. Endemic and listed for the ACT

<i>Caladenia (Arachnorchis) actensis</i>	Canberra spider orchid
<i>Bossiaea grayi</i>	Murrumbidgee leafless pea
<i>Corunastylis ectopa</i>	Brindabella midge orchid
<i>Lepidium ginninderrense</i>	Ginninderra peppercress
<i>Muehlenbeckia</i> 'Tuggeranong'	Tuggeranong lignum

2. Listed for both ACT and NSW

<i>Prasophyllum petilum</i>	Tarengo leek orchid
<i>Rutidosia leptorrhynchoides</i>	Button wrinklewort
<i>Swainsona recta</i>	Small purple pea

3. Listed in NSW but not ACT although they occur there

<i>Dampiera fusca</i>	Kydra dampiera
<i>Eucalyptus aggregata</i>	Black gum
<i>Eucalyptus pulverulenta</i>	Silver-leaved mountain gum
<i>Pomaderris pallida</i>	Pale pomaderris
<i>Swainsona sericea</i>	Silky purple pea

4. Listed in NSW (Southern Tablelands) but absent from ACT

<i>Dilwynia glauca</i>	Michelago parrot pea
<i>Dodonaea procumbens</i>	Creeping hopbush
<i>Eucalyptus recurva</i>	Mongarlowe eucalypt
<i>Pomaderris delicata</i>	Delicate pomaderris
<i>Rulingia prostrata</i>	Dwarf kerrawang
<i>Rutidosia leiolepis</i>	Monaro golden daisy

5. Federal listing but common in NSW or ACT and not listed there

<i>Pultenaea setulosa</i> (NSW)	Ragged bush-pea
<i>Leucochrysum albicans tricolor</i>	Hoary sunray (ACT & NSW)

6. Localised or rare in the ACT and NSW but not listed in either

<i>Acacia costiniana</i>	Tinderry wattle (NSW Tinderry Mountains)
<i>Eucalyptus cinerea var triplex</i>	Argyle apple (ACT near Boroomba Rocks, NSW Yanununbeyan NR)
<i>Eucalyptus glaucescens</i>	Tingaringy gum (ACT Mt Tidbinbilla, NSW Tinderry Summits)
<i>Olearia montana</i>	Montane daisy bush (NSW Tinderry Range)
<i>Pomaderris costata</i>	Veined Pomaderris (NSW Mulloon, ACT Bendora)

7. Very localised in the ACT but present or common in NSW and not listed in the ACT

<i>Cassinia monticola</i>	Mountain cassinia
<i>Pomaderris prunifolia</i>	Plum-leaved pomaderris

8. Very localised to one known plant in a nearby area of NSW and not listed

<i>Podolobium alpestre</i> tall	Tinderry pea
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Not all listed species are rare in the region or appear to be under threat to their survival. Rarity and threat depend on a number of factors. The most obvious is habitat loss and change which is the most frequent reason for listing. The ecological communities in which they live may also be listed as endangered, namely Natural Temperate Grassland and Grassy Box Woodland in the Southern Tablelands. Local rarity may also be related to the fact that some species are at the edge of their range and are limited by climatic factors, such as the low winter temperatures and heavy frosts encountered on parts of the Tablelands whereas others from more alpine areas cannot withstand the warmer conditions and lack of snow cover in the winter. For example, *Cassinia monticola* is at the northern edge of its range in the ACT, where only





one plant has been found although it is common in the main range to the south, whereas Black Gum, *Eucalyptus aggregata*, is at the western edge of its distribution and only exists as a couple of trees in the eastern ACT.

Other species have been found to be dependent on the incidence of catastrophic fires that remove competition so they briefly flourish and are rare or absent during inter-fire periods, such as *Dampiera fusca*. Flooding rains and extended droughts associated with the El Nino Southern Oscillation meteorological phenomenon also affect plant survival and population dynamics causing populations to vary. Taxonomic investigations have also resulted in the splitting of species to include new species found to be localised and rare resulting in their nomination for listing, such as *Bossiaea grayi*. Survey data for some species are inadequate and do not reflect their actual abundance as found in recent surveys, such as *Pomaderris pallida*. Finally we have some very localised plants that little is known about, such as the Tinderry Pea, *Podolobium* aff *alpestre* tall. Examples from each of the above groupings are discussed below.

Group 1. Despite its small size the ACT has five endemic species, all rare and all listed although the threats to their survival are not always well understood. The rarest of all is the Brindabella Midge Orchid, *Corunastylis ectopa*, with less than 100 plants in the wild on a steep slope subject to erosion, in a woodland of broad-leaved peppermint, *Eucalyptus dives*.



Corunastylis ectopa,
Bendora ACT



Bossiaea grayi, Paddy's River ACT



Caladenia actensis, Mt Majura ACT

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Pre-Conference Field trip: NSW South Coast

Monday 9 November returning on Friday 13 November

The trip will take you from the tablelands of the ACT down the escarpment of the Great Dividing Range to the South Coast of NSW. We will see a range of ecosystems, including wet and dry sclerophyll forests, rainforest and heathland, taking in the South East Corner and Sydney Basin bioregions. Leaders will be John and Sue Knight, Phil Trickett and Catriona Bate.

Pre-Conference One Day Excursion: Brindabella Mountains

Saturday 14 November 9am to 5pm

Ian Fraser will lead a one day excursion up into the Brindabella Mountains on the western edge of the ACT and into NSW. Travel will be by a small bus which takes you on minor roads into the heart of the Namadgi National Park in the ACT and the Bimberi Nature Reserve and Brindabella National Park in NSW.

Conference Program

Sunday 15 November

10am to 4pm a **free** culture bus will run from the AIS to areas in the parliamentary triangle such as Old Parliament House, Portrait Gallery, National Museum of Australia, National Gallery and War Memorial

Monday 16 to Thursday 19 November

9am to lunch: Speakers and Study Group presentations

Lunch at the AIS and after lunch, excursions

Friday 20 November

Excursions in the morning then lunch at the AIS

Afternoon: Talks and closing remarks followed by plant sale

Conference Excursions

Each day of the conference, there will be five different excursions to:

- Australian National Botanic Gardens
- National Arboretum, Southern Tablelands Ecosystem Park, National Bonsai Collection and National Rock Garden
- Pillans Garden and Queanbeyan Nature Reserve
- Kowen Traveling Stock Route and associated grasslands
- Walcott Garden

Post-Conference Field Trips

One Day Excursion to Brindabella Mountains with Ian Fraser

Saturday 21 November 9am to 5pm

This will be a repeat of Ian's pre-conference trip.

Post-Conference Field Trip: To the High Country

Saturday November 21 to Thursday November 26

From Tablelands to Mountains, an exploration of flora from Monaro grasslands (1000m) to alpine herbfields (2000m) with Roger Farrow and Jo Walker

Accommodation

The Conference organising committee has made arrangements for people to stay at the Australian Institute of Sport (AIS). Cost is \$90 for bed and breakfast per person. Further information is available on the Conference Website: anpsa.org.au/conference2015.

The committee has also compiled information about alternative accommodation. A larger list is available on the Conference website of ACT-wide accommodation provided by the Canberra and Region Visitors Centre. This has contact details, star rating and available facilities.

Accommodation providers can be contacted direct or through the Canberra and Region Visitors Centre. Ph: 1300 554 114; www.visitcanberra.com.au

Registration

Forms will be distributed to all regions and societies and will be available on the Conference Website (anpsa.org.au/conference2015), by email request via the website or by mail to: Registrar, PO Box 187, Deakin West, ACT 2600.

Early Bird Registration until 1 July:	\$355	
Regular Registration until 1 November:	\$395	
Day trip to Brindabellas including lunch:	\$75	
Pre-Conference trip to coast:		
Twin/double share per person:	\$595	Single \$795
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Twin/double share per person:	\$610	Single \$873



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The small populations of the Canberra Spider Orchid, *Caladenia actensis*, are threatened by rabbit grazing on Mt Majura although the installation of protective fencing has kept other grazers such as kangaroos out, resulting in increased competition by grasses and forbs.

Our most recent endemic to be listed is the Murrumbidgee Leafless Pea, *Bossiaea grayi*, which was recently separated from the *Bossiaea bracteosa* complex and is confined to the banks of the Murrumbidgee, Cotter and Paddy's rivers, often among boulders. It has survived wholesale reclamation of land for pine plantations and the 2003 fire, but its main threat now appears to be competition from other native shrubs. The WW group discovered a new population of this species in the Woodstock nature reserve near the border with NSW.

The Ginninderra Peppercress is restricted to a natural grassland reserve while the Tuggeranong Lignum has a precarious existence on river terraces of the Murrumbidgee where only a few plants exist. These were badly impacted by the 2003 bushfires and recent attempts at re-establishment were thwarted by river floods that stripped the vegetation.

Group 2. Three species listed in the ACT are also found in neighbouring parts of NSW and are restricted to two endangered ecological communities. The Tarengo Leek Orchid, *Prasophyllum petilum*, is restricted to grassy box woodland in Hall cemetery in the ACT where it is threatened by the vagaries of mowing and herbicide application while Button Wrinklewort, *Rutidosia leptorrhynchoides*, is restricted to dry natural temperate grassland dominated by wallaby grasses, *Rytidosperma* spp., and Everlasting Daisy, *Chrysocephalum apiculatum*. Its main threat is its own genetic structure and incompatibility.



Prasophyllum petilum, Ilford Cemetery



Swainsona recta, Burra Reserve



Rutidosia leptorrhynchoides in a vulnerable roadside site near Foxlow





The Small Purple Pea, *Swainsona recta*, is found in grassy box woodland and is in a precarious position in the ACT because of competition from grasses, probably because of lack of biomass reduction. In neighbouring parts of NSW its decline is associated with grazing by sheep but it survives in travelling stock and other reserves and along railway easements where native vegetation persists although the cessation of the former burning practices along the railway line means that grass competition is becoming an increasing problem.

Members of the WW discovered one of the largest known populations of *Swainsona recta* in the Burra Reserve and these plants have been used as a seed resource for re-establishing the species in surrounding areas.

Group 3. Five species that are listed in neighbouring parts of NSW are not listed in the ACT. Of these *Dampiera fusca* has the most intriguing story because it turned out to be a fire-dependent opportunist. Until 2003 it had been rarely seen in the ACT and was confined to a few mountain tops among boulders and was rarely seen in NSW, mostly in the Kydra region. On 18 January 2003 an intense firestorm crossed the



Dampiera fusca, Gulwan Peak, Tinderry Nature Reserve, November 2012



Pomaderris pallida, Wallaby Track, Googong, among rocks above the Queanbeyan River

Brindabella range razing the vegetation to the ground. In the following years there was a spectacular flowering of herbaceous plants. In 2005 the WW visited Booroomba Rocks where we found a carpet of blue flowers from a plant that we had never seen before occupying areas that were formerly dense shrubberies of golden shaggy pea, *Oxylobium ellipticum*. This was our first view of *Dampiera fusca* in the ACT. Over the next two summers the plants flourished reaching a peak in 2007.

By the time of our next visit in 2012 there was not a *Dampiera* to be seen and the thickets of *Oxylobium* were covering the rocky terrain. On 17 December 2009 a wild fire burnt out much of the Tinderry Range. Three years later in November 2012 one of our members visited the summit of Gulwan and to his surprise found a carpet of *Dampiera fusca*. Again the dominant shrubbery of *Oxylobium* and *Leptospermum juniperinum* had been razed to the ground and was replaced by a herbaceous covering of *Dampiera*, Tufted Lily, *Thelionema caespitosum*, and Wild Parsnip, *Trachymene anisocarpa*.

The inference is that the *Dampiera* persists in a seed bank below the shrub layer until there is a fire when there is mass germination, followed by flowering and seed production over a three-year period before the shrubs take over the environment again. So whether this plant should even be on the endangered list is a moot point since its main habitat is in remote rocky terrain where controlled burns and wild fires are a





regular occurrence. Once this population was located our member returned with a party from the Australian National Botanic Gardens to collect seed for the National Seed Bank in Canberra.

Like many trees growing in farmland, the Black Gum, *Eucalyptus aggregata*, is threatened by the lack of recruitment due to grazing by sheep and trees need to be fenced off to allow for their progeny to survive. *Eucalyptus pulverulenta* is in a different position growing on rocky outcrops on isolated hilltops where its main threat is again lack of recruitment due to grazing by feral goats. *Pomaderris pallida* is listed in NSW but only a few populations appear under threat in the ACT and neighbouring parts of NSW, mostly from blackberry invasion. A massive recruitment of plants occurred after the 2003 fires resulting in a large population increase in the ACT and our group has extended the range and abundance of this species in the local area from our surveys.

Group 4. There are five listed species found in parts of neighbouring NSW but not the ACT that present some interesting attributes related to their conservation. The Michelago Parrot Pea, *Dilwynia glaucula*, exists in four known small and isolated populations although our society discovered a new location in April 2013 at Googong that is technically part of the ACT as the reserve is managed by ACT Parks & Conservation. The roadside site at Michelago on a rocky ridge is threatened by future road-widening while in the adjacent paddock the scattered plants are damaged by stock. It appears most secure near Oallen as well as at Googong although prescribed burns to reduce fuel in the latter area may have unintended consequences for this species.



Dilwynia glaucula, on a rocky ridge in natural temperate grassland near Michelago



Pomaderris delicata, Cullulla Rd

Creeping Hopbush, *Dodonaea procumbens*, is confined to bare ground in natural grasslands and is vulnerable to changes in land use. However it has proved to be a good coloniser of roadside cuttings and scalped roadside easements next to its natural habitats in the Monaro that appear to sustain its populations. Observations of populations at Michelago over 10 years by our group have shown little change.

One of our rarest eucalypts is *Eucalyptus recurva*, the Mongarlowe Mallee that was only discovered in 1985. Only five clonal plants exist in four widely separated locations on private land and do not reproduce from seed and are threatened by a range of unregulated human activities such as vegetation clearing and the potential introduction of *Phytophthora*.

Pomaderris delicata is in an equally precarious state known only from a few roadside plants at Cullulla and Bungonia. Although a reserve was set up at the Bungonia site to protect some plants in a neighbouring woodland, the plants have declined from unknown causes although competition from casuarinas may be involved. Like many roadside plants, *P. delicata* is threatened by poorly supervised council road





Rows lagoon where several thousand *Rulingia prostrata* sometimes grow on the water's edge



Rulingia prostrata, in a temporary pond in Nadgigomar East Nature Reserve

operations despite signage. Our group has been monitoring this population since it was first discovered.

Dwarf Kerrawang, *Rulingia prostrata*, grows in the edges of ephemeral lakes and the largest population occurs in Rows lagoon on private land near Collector. The main threat is trampling by stock accessing water in these lagoons and the owners have fenced off part of the lagoon to assist the survival of this species. Our group confirmed the presence of another population in a swamp in Nadgigomar Nature Reserve.



Rutidosia leiolepis, Dry Plains Road

The Monaro Golden Daisy, *Rutidosia leiolepis*, is unthreatened in the eastern part of Kosciuszko National Park but other fragmented populations occur on the treeless plains of the Monaro mostly in reserves or along roadsides where they are threatened by poorly timed mowing operations and chemical weed control. The plant is preferentially grazed by sheep and has disappeared from adjacent paddocks. Our group has provided the Threatened Species officer at NPWS with the coordinates of all the remnant populations of this species along Dry Plains Road.

Group 5. Two species that are listed under the federal SPRAT, Species Profile and Threats Database, are actually common and appear largely unthreatened in our area. The first example of this group is the Ragged Bush-pea, *Pultenaea setulosa*, that our group has found to occur quite commonly to the west of our area in remnant grassy box woodlands in the Dalton district. The reason for its federal listing appears to be its status in Queensland in the Marlborough area where it is threatened by mining activities.

The second is the Hoary Sunray, *Leucochrysum albicans* var. *tricolor*, which is abundant in our area along roadsides and in natural temperate grasslands and grassy box woodlands as long as they are not heavily grazed. It readily colonises scalped roadsides by seed after grading



Above: *Leucochrysum albicans* var. *tricolor*,
Photo: Christine Kendrick

Left: *Leucochrysum albicans* var. *albicans*
yellow form, Kings Highway near Doughboy.
The plants near the roadside have since
been destroyed by herbicide application by
Council.

and its only threat is the use of herbicide by some councils to eliminate roadside vegetation. The reason for its federal listing appears to be its endangered status in Tasmania. The bright yellow colour form found in the east of our area and subalpine areas is *L. albicans* var. *albicans*.

Group 6. Five rare or localised species that are not listed as threatened are included. The Tinderry Wattle, *Acacia costiniana* grows among granite boulders on the southern ridges of the Tinderry Range where it is quite common but localised. The intense 2006 fires burnt existing shrubs to the ground but a mass germination of seedlings occurred in the following years during visits by our group.

In the same area the Tinderry Daisy Bush, *Olearia montana*, grows as a forest understory. This species is included by CSIRO in the Rare or Threatened Australian Plants list. It does not appear to be threatened and we found that it readily re-sprouted from the high intensity 2006 fires as well as reproducing from seed.

Eucalyptus cinerea var. *triplex*, a montane subspecies of Argyle Apple is recorded from one summit in the ACT plus a small stand in the Yanununbeyan Nature Reserve where our observations suggest that it is secure apart from the possible effects of a high intensity fire. The ACT population was severely impacted by the 2003 fires and its status is uncertain.



Above: *Eucalyptus cinerea* var.
triplex, Yanununbeyan Nature
Reserve

Left: *Pomaderris costata*, Bendora

The Tingaringy Gum, *Eucalyptus glaucescens*, is restricted to granite boulder fields on the peaks of the Tinderry Range and to a single summit in the ACT, Mt Tidbinbilla, but is common further south in NSW and in Victoria.

The Veined Pomaderris, *Pomaderris costata*, is rare and localised in NSW and several colonies have been found by our group in Tallaganda Nature Park along the Mulloon Fire Trail. In October 2014 our group found the first specimens in the ACT in the Bendora region and this species is now listed in the ACT plant census.





Cassinia monticola, Ginini Flats, a localised plant in the ACT now possibly extinct.

Group 7. A single plant of an unusual daisy bush was found by members of Wednesday Walkers in December 2006, growing in a swamp at Ginini Flats. It was subsequently identified as *Cassinia monticola*, and it is now listed in the ACT plant census and the Atlas of Living Australia. During a return visit by our group to the same spot in March 2009 the plant could not be found so it is possibly extinct in the ACT, although there are other swamps in the area where it could be present but its size makes it quite conspicuous and not easily overlooked.

Members of our group have prepared a profile on the genus *Pomaderris* that is particularly rich in terms of species in our area. One of the species included is *P. prunifolia*, Plum-leaf Pomaderris, and there is one record for the ACT in the Gudgenby area from the Atlas of Living Australia. With the help of the coordinates for this record our group made an intensive search of thick scrub for this plant in 2013 but to no avail. It may have been lost in the 2003 fires but in our experience different *Pomaderris* species readily regenerated from seed after this fire so we suspect the coordinates may be erroneous and further research is needed on its location.

Group 8. The mysterious case of the Tinderry Pea has been previously reported in our journal of March 2009. A single stand of a tall, suckering pea was found by members of our group in a forest understory at Round



Podolobium alpestre, tall suckering form at Round Flat, Tinderry NR



Flat in the Tinderry Nature Reserve in December 2007. It resembled an *Oxylobium* or *Podolobium*. A sample was identified as *Oxylobium arborescens* by the Sydney Herbarium but in our opinion this did not concur with the glabrous leaves of the Tinderry Pea. The plant was followed over the years but during our last visit in December 2014 it had been overwhelmed by other shrubs and was only about 50 cm high compared with nearly 200 cm in 2008 at its peak. Our consensus is that it appears to be an unusual form of *Podolobium alpestre* which can be tall in Victorian alpine areas, whereas the local *P. alpestre* are all prostrate and non-suckering. Despite intensive searches of the area no similar plants have been found although the prostrate form is common.

Acknowledgements

I would like to thank Martin Butterfield for drawing my attention to the conservation status of *Pultenaea setulosa* and to Ros Cornish for reviewing the manuscript and making valuable suggestions. Tony Wood is thanked for providing the pictures of the Canberra orchids.





Southern Tablelands Regional Botanic Garden

Article and photos by Andy Russell

Andy Russell, a retired Cootamundra farmer and grazier, was active in Landcare and other local organisations while in that district. Now living in Canberra, he is actively involved with Southern Tablelands Ecosystems Park which designed and manages Forest 20 at the National Arboretum Canberra.

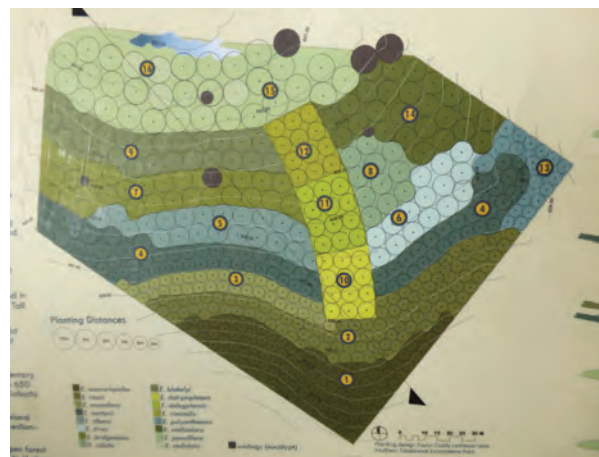
In December 2001 an arsonist lit a fire that burnt grassland and 500 ha of the Stromlo pine forest and finished on the western shore of Lake Burley Griffin. This burnt what is now the National Arboretum Canberra site. In January 2003 the much larger fires devastated Canberra homes, forests and grasslands. In the following reconstruction a 250 hectare site overlooking the western end of Lake Burley Griffin was set aside for an arboretum. The ACT Government ran an Australia-wide competition for the design of the arboretum. The winning design was by landscape architects Taylor Cullity Lethlean in which they proposed 100 forests and 100 gardens of threatened, rare and symbolic trees from around the globe. This is now the National Arboretum Canberra, which is open seven days a week.

Southern Tablelands Ecosystems Park (STEP), a not-for-profit association set up in 2003, had been looking for a site for a regional botanic garden in the Canberra area. In 2007 we were offered a single forest known as Block 100, now called Forest 20, at the Arboretum which we were pleased to accept. John Nightingale, formerly Curator Living Collection, Australian National Botanic Gardens, worked on our concept design. In planting Forest 20, STEP was permitted to vary from the usual one tree species per forest design and has 16 different eucalypt species. The other reason Forest 20 differs from other forests at the Arboretum is that nearly all the work is done by volunteers. We have working bees each Thursday morning that are well attended.

Planting commenced in March 2009 when the ACT Chief Minister Jon Stanhope MLA planted the first tree. He was joined by other dignitaries and STEP members in tree planting on this day. Planting continued through 2009 and 2010 and we now have over 500 trees. The planting and general maintenance is done by STEP volunteers while the Arboretum supplies mulch and mows the open areas.

Funding

STEP has been assisted by ACT Environment Grants through the ACT Government. We also received a grant through the Dahl Foundation enabling us to produce a colour leaflet describing the eucalypts growing at Forest 20. STEP has benefited from tax deductible donations through



Tree layout at Forest 20, north and lowest elevation at top of picture

its association with the Friends of the National Arboretum Canberra and from generous donations from members. We have a number of ACT and NSW businesses as corporate members.

Tree species

Trees are planted in bands across the landscape which is a gentle slope with the north-west the lowest point where the ephemeral pond has been constructed. The two Snowgum species *Eucalyptus pauciflora* and *E. stellulata* are shown nearest the pond. Dry forest species make up the species on the higher ground such as *E. macrorhyncha*, *E. rossii* and *E. mannifera*. Open woodland species make up the middle section. Included in this section are *Eucalyptus albens*, *E. bridgesiana*, *E. blakelyi*, *E. polyanthemos* and *E. melliodora*. Species from wetter and montane areas such as *E. dalrympleana* and *delegatensis* are planted in the central area which receives the most run-off from the local catchment. As well as eucalypts we do have small numbers of *Allocasuarina verticillata*, *Callitris enderlicheri*, *Brachychiton populnea* and *Banksia marginata*.



Eucalyptus mannifera





Understory plantings

The second stage at Forest 20 has been the design and planting of the understory. STEP has been fortunate to have had the services of landscape architect Barbara Payne of Quandong Designs who has worked on a pro-bono basis. One hundred different understory species have now been planted in small plots in an arc from the apex down towards the ephemeral pond. Plants have been sourced through the Australian Native Plants Society Canberra Region and local native plant nurseries. The understory now includes numerous native grasses such as *Themeda*, *Bothriochloa* and *Austrostipa*, grasslike species such as *Lomandra*, *Dianella* and *Carex* and herb species such as *Bulbine*, *Arthropodium*, *Stylidium* and *Goodenia*. Larger woody species include *Leptospermum*, *Grevillea*, *Daviesia*, *Bursaria* and *Indigofera*. A number of *Acacia* species have also been used.



Solanum linearifolium



Xerochrysum species



Viola hederacea



Lomandra longifolia

Education

Education is a primary theme for our organisation. With this in mind we have created an outdoor education space within Forest 20 called "The Clearing" which was launched earlier this year. At this stage the



Constructing The Clearing



The Clearing completed

facility is in the open air, however in the future we hope to be able cover it with shade sails. We had sufficient crushed granite gravel when The Clearing was constructed to use this on some of our paths which is an improvement compared with the previously mulched paths. School groups have used this facility through the Arboretum education program as well as other community groups.

Other features

An ephemeral pond is planted with a number of wetland species, which attracts the Wood Duck. At our working bees we hear a variety of bird calls. Yellow-tail Black Cockatoos and the Grey Butcher Birds can sometimes be heard while Red-rumped Grass Parrots and the Willy Wagtails are often present.

For further information on STEP and Forest 20 please visit our website at www.step.asn.au. STEP produces a newsletter four times a year and is available by contacting membership@step.asn.au.





Field trips – highlights of the Australian Native Plants Society Canberra Region 2006–2014

Dr Roger Farrow

ANPS Canberra Region has a long history of undertaking botanical field trips near and far. Since 2006 the trips have been organised on a monthly basis depending on the availability of organisers and leaders and an annual program is devised at the start of each year by the regular members in the field trip group. The main object of these trips has been to identify and record photographically the plants seen in flower and to distinguish the different vegetation types across our landscape. The places visited include a combination of local and more distant areas of botanic interest in national parks and nature reserves.

The trips are generally undertaken on the third weekend of each month and activities are arranged around all-day walks on the Saturday and Sunday. There is generally one extended trip each year to a more distant part of the country and has included places like the Red Centre and the Flinders Ranges. Participants either camp or stay in local accommodation where available. The trips are timed to coincide with the peak flowering in the areas visited as far as possible so there is a trend from winter to summer to move from coast to the tablelands and finally the alpine zone following the seasonal shifts in flowering, although there are generally less trips over the winter period.

Although our focus is on the plants and vegetation our members take a great interest in the other wildlife seen, including both vertebrates and invertebrates and many a visit is enlivened with an encounter with a snake, funnel-web spider, leech or tick that we take in our stride. The evenings following the day's activity are enlivened by a shared happy hour when we discuss the events of the day and solve the world's and our nation's problems. After the trip one of the organisers compiles a photographic record of the trip and attempts to identify any remaining plants whose identity was in doubt and then circulates the results to participants.

Some special trips 2006–2014

Of the six trips in **2006** perhaps the most memorable was the search for the elusive anemone buttercup, *Ranunculus anemoneus*, at Club Lake in the Snowy Mountains where we were beset by plagues of March flies. In **2007** there were five trips. The December trip to Nungar in the Tantangara area was particularly interesting as we located the endangered Max Mueller's Burr Daisy, *Calotis pubescens*.



Left: *Ranunculus anemoneus*, Club Lake.

Below: Finding *Calotis pubescens* on the bank of Nungar Creek



In **2008** we undertook our first big trip to northern Tasmania, taking our vehicles across on the ferry. We visited Ben Lomond, Ben Nevis, the Central Plateau, Cradle Mountain and the Tarkine. We were ably assisted in finding and identifying plants by members of the Launceston Branch of APS Tasmania and Dick Burns from Penguin. We also had trips to Coolangubra National Park (Bombala), where we were able to see the endangered *Westringia kydrensis* and *Dampiera fusca* in flower, and a day trip along the Mulloon fire trail through Tallaganda National Park, where we saw a spectacular flower display from several species of *Pomaderris*.





Mt Naman, a rarely visited summit in Warrumbungle National Park. The rest of the party are waiting below while this intrepid band made the ascent.

In **2009** we organised seven trips including an extended trip to the Pilliga Scrub and Warrumbungles led by Anthony O'Halloran from Bilby Blooms. We also visited the coastal heathlands at Shipwreck Bay (Mallacoota) to see the newly-described *Banksia croajingalongensis*.

In **2010** we also had seven trips to the coast and mountains with an extended trip to Mungo National Park where our campsite was almost washed away by rain and runoff. We also visited the pagoda country at Dunns Swamp (Rylstone NSW) where we saw the rare *Grevillea evansiana*, with a side trip to Ilford cemetery to see the endangered Tarengo Leek Orchid, *Prasophyllum petilum*.



In **2011** we ran seven trips covering the coastal heathlands and the Snowy Mountains including an extended trip to the Flinders Ranges in South Australia where we saw a whole new flora for us including resurrection plants like Camel Dung, *Actinoble uliginosum*.

Weeping pittosporum, *Pittosporum angustifolium*.

In **2012** there were eight trips including Victorian High Plains but our most ambitious project yet was a three-week trip to the Red Centre including the east and west MacDonnell Ranges, Uluru and Kata Tjuta. In **2013** there were eight trips including Mt Buffalo in Victoria and the Newnes plateau in NSW where we located the endangered *Leucochrysum graminifolium* in the pagoda country.



Walking the Ormiston Gorge Circuit, Glen Helen



At the entrance to the glow-worm tunnel, the former railway line to Newnes shale oil industrial complex

In **2014** we held eight trips, including the Alpine National Park at Falls Creek, Goonoo Nature Reserve near Mendooran NSW where the wattles were at their peak and Wilsons Promontory in Victoria where there was an exceptional display from the various tea-trees.



A carpet of billy buttons, *Craspedia aurantia*, Falls Creek



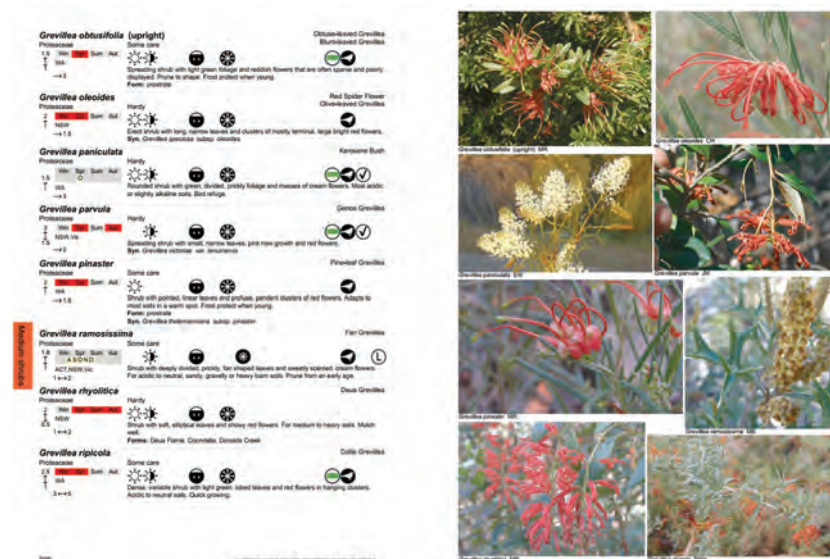




names, and other features, such as suitability as a hedge, drought hardiness, bird attraction and local occurrence, where appropriate.

For gardeners who would like to use local species and attract wildlife to their garden, the book contains more than 300 species that occur in the Canberra region. The bird attraction symbol is a good indicator of those plants especially appealing to birds.

Plants from outside the Canberra region have been selected from every state and territory, but mainly from NSW. Many of these are frost tolerant. There are also many cultivars and forms included, some are described in their own entry, while others are listed with their relevant species.



Sample pages of the medium shrubs section

This edition, published by the society, was put together by the members of the society – a labour of love by the many contributors of images and other content, and by the ANPS Book Working Group, who compiled, revised and edited it over the past seven years.

The society's intention was to keep the price low, with a recommended retail price of \$30. The book can be obtained from local nurseries and book shops. It will also be available from the society at our plant sales and at the ANPSA Biennial Conference in Canberra from 15–20 November 2015.

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