

# Wildflower Society of Western Australia Newsletter

Australian Native Plants Society (Australia), W. A. Region



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# WILDFLOWER SOCIETY OF WESTERN AUSTRALIA

The newsletter is published quarterly in February, May, August and November by the Wildflower Society of WA (Inc).  
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## Contents

From the Vice President	5
Call for Nominations for Awards 2016	6
Banksias, Dryandras & Hairy Fish	7 & 38
ANPSA Conference	8
Of Sweeping Plains ...	11
New members	15
A Leeuwin-Naturaliste Branch?	16
Bushland Plant Survey	17
Sandpaper Wattle	18
Plant Life of Western Australia	23
Plant Life of SW Australia: A Review	23
Dung Beetles and Fungi	24
SW Wildlife – three new books	25
Branch Reports	26
Armadale	26
Darling Range	27
Eastern Hills	28
Murdoch	29
Northern Suburbs	30
Perth	32
Branch Contacts and Meeting Details	34
Northern Suburbs Branch Workshop	36
Wildflower Events	37
Wildflower Society Open Gardens	38

**Front cover:** Kata Tjuta and *Allocasuarina decaisneana*.

**Inside Front cover:** some Mistletoe species: **Left** - *Lysiana murrayi*; **right** - *Amyema maideni* and *Lysiana spathulata*.

**Back cover, top row:** *Eremophila* near Eridunda and *Prostanthera striatiflora*.

**Middle row:** Gibson Desert landscape. **Bottom row:** *Dicrasyllis* with native bee and *Macrozamia macdonnellii*. See story pages 11 to 15. **Photos:** Geoff Corrick.

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## Society Management

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**Honor Venning Library** at Perry House is open on the first Saturday of the month (except January) from 1 - 3 pm

**Website:** <http://members.ozemail.com.au/~wildflowers/>

<http://www.wildflowersocietywa.org.au/> (Work in progress)

### Membership subscriptions

Category	Australian Plants		memberships that fall outside this common renewal date and we will keep an eye on them and align them as and when we can.
	Without	With	
Single	\$45	\$60	Those members wishing to renew by Visa, Mastercard, save yourself postage by using our Email membership form on the WSWA website OR Direct payment to WSWA Bankwest BSB 306-058 a/c 4197355 WITH a reference with deposit: YOUR NAME + TYPE OF PAYMENT (in this case: m'ship). Please advise the WSWA Office separately if you have changed your details (e.g. address).
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\* Fulltime students, and seniors' card holders

Membership subscriptions now fall due on 1st October each year. Depending on when you joined, your subscription could be pro-rated. There remain some

## From the Vice President

During the first six months of my vice presidential tenure I have attended a meeting of five of our Branches in the Perth area. In all cases I found a keen group of members hearing interesting speakers and taking part in animated discussions afterwards. In a couple of cases my visit coincided with Annual General Meetings of Branches, and it was encouraging to see good attendance and volunteers stepping up to fill committee positions without too much arm-twisting. I wish all our Branches success in your activities during the coming year.

On behalf of the Society I attended two thought provoking events towards the end of the year. The first was the RAC President's Reception. The RAC has recently purchased campgrounds at Monkey Mia, Exmouth and Coral Bay as part of its strategy to retain affordable family accommodation for driving holidays in Western Australia. Also we have our State Government tourist arm promoting driving holidays in WA, often featuring pictures of our wildflowers including the Wreath Leschenaultia (*Lechenaultia macrantha*) which thrives in disturbed roadsides. Unfortunately we have other arms of government, State and Local, intent on clearing our roadside vegetation which makes for rather stark, wide and bare roadsides, even out on the Great Central Road (see my trip report pages 11 to 15, photos front and back cover and central spread).

The second event of interest was an annual forum for non-government groups to discuss topical issues with the Environmental Protection Authority. Brian Moyle (Chair of our Conservation Sub Committee), Kerry Smith (Hon. Gen. Secretary) and myself attended on behalf of the Society. We were invited to put forward three issues of importance. Our three were:

- The Perth-Peel Strategic Assessment with biodiversity properly conserved;
- Retention and conservation of geomorphological and biodiversity heritage of the banded iron formations (BIFs) in WA;
- New Biodiversity Conservation Act that protects native flora, fauna and their habitats.

The first item takes as a given that Perth's population will grow to 3.5 million by 2050. The economist Herbert Stein said that "*If something cannot go on forever, it will stop*". However he was a proponent of the free market finding the stop sign rather than any planning for an arguably more gentle slow down. My belief is that thoughtful planning should include a population target.

Progress has been made on two important administrative issues for the Society. Thank you to Richard Curry (Northern Suburbs) and Robert Atkins (Eastern Hills) for undertaking a review of our insurances. They have found us to be satisfactorily covered, except for some minor matters with assets for which feedback has been requested from Branch Presidents. It has also been found that we have a responsibility to advise our insurers if we hold an event which might attract more than 500 people, or an event which continues overnight such as excursions or plant surveys.

The second issue is completion of audits of the Society's accounts. I am pleased to report, at last, that the audit for 2013-2014 was completed in late December. We have found that an audit of our relatively small organisation by a large firm has not been



handled expeditiously. The Management Committee will be considering alternatives for the future more suited to the scale of our affairs.

I am writing this at the beginning of January so although you may not be reading this until February let me add my good wishes to you for the year ahead. May wildflowers bring enjoyment to you throughout the year.

**Geoff Corrick**

## Call for Nominations for WSWA Awards 2016

There are three categories of Awards presented at the Society's AGM, which will be held on Saturday 25th June 2016 and hosted by the Darling Range Branch at Lesmurdie, WA. The closing date for nominations is Tuesday 3rd May 2016. Please mark your nominations CONFIDENTIAL and forward them to the Honorary General Secretary, Wildflower Society of WA (Inc.), PO Box 519, Floreat, WA 6014. Members should consider resubmitting a previous nomination if it was unsuccessful.

### *Wildflower Society Award*

The criterion for this award is that the person or group should have advanced the aims of the Society. The recipient does not necessarily have to be a member of the Society but most are. Nominations should be no more than two pages long. A nomination may be made by an individual or by a Branch Committee. A sub-committee of the Management Committee is established specifically for this award after the deadline for nominations. None of this sub-committee's members can be nominators or potential recipients.

### *Honorary Life Membership*

This award is not restricted to one member per year nor is it necessarily made annually. A member nominated for this award should have rendered special or meritorious service to the Society and must be nominated by a member of the Society. The nomination is approved by the Management Committee. Honorary Life Members do not pay the annual fee but are entitled to the benefits and privileges of an Individual Member. Nominations should not be more than one page in length.

### *Meritorious Award*

Nominations for this award are made by Branches and are for services to the Society at a Branch level. The nomination is approved by the Management Committee. There is no restriction on the number of Meritorious Awards given each year, and Branches may nominate more than one member.

**Kerry Smith**, Honorary General Secretary

## NOTICE OF MOTIONS TO BE PRESENTED TO THE 2016 AGM

The Notice Convening the 2016 Annual General Meeting will be included in the May 2016 edition of the Society's Newsletter. Please note that any motions to be dealt with at the AGM need to be included with the Notice Convening the AGM and should, therefore, be forwarded to the Honorary General Secretary, Wildflower Society of WA (Inc.), PO Box 519, Floreat 6014 or wildflowers@ozemail.com.au to arrive no later than March 24, 2016.

**Kerry Smith**, Honorary General Secretary

## On Banksias, Dryandras, and Hairy Fish

Classification has always been about putting similar things in the same box. It is how one defines "similar" that changes. The earliest classifications were presumably pragmatic: things you could eat in one box, things you couldn't eat in another, things you could use for medicines in yet another. In modern classification the idea of evolution determines what is thought to be similar. Hence, one criterion is that all the organisms in the one box should have evolved from a recent common ancestor. No problem there: both Banksias and Dryandras can be assumed to have a recent common ancestor. It is the second criterion that is tricky: all the descendants of a recent common ancestor should be in the same box. Dryandras can be assumed to have evolved from within the Banksias and therefore this criterion requires that they both be in the same genus.

Let us see what happens if we apply these criteria to humans. The mnemonic for remembering the higher classifications is: King Philip Came Over For Good Soup. (Kingdom, Phylum, Class, Order, Family, Genus, Species.) We are in the Kingdom Animalia, Phylum Chordata, Sub-Phylum Vertebrata, and Class Mammalia. Other Classes at the same level are: jawless fish (lampreys and the like); cartilaginous fish (sharks and rays); bony fish; amphibians; reptiles; and birds. Reptiles includes lizards and snakes, crocodiles, turtles and dinosaurs.

The first problem is that birds certainly evolved from dinosaurs. The reptile class therefore does not include all the descendants from the one ancestor; birds must go into the dinosaur box. The next problem is that mammals must have evolved from primitive reptiles, so by the same logic, mammals must also go into reptiles. Those of you who think that Dryandras should be sunk into Banksias must therefore think of themselves as hairy lizards.

But wait, there is more. Where did reptiles evolve from? Surely from bony fish. So reptiles and fish should not be at the same level: reptiles, together with birds and mammals, all must go into the fish class. You are not hairy lizards after all: you are hairy, air-breathing fish.

Or we could decide that it was rather silly and abandon the second criterion.

**Jim Barrow**

## Australian Native Plant Society (Aust) Conference

Canberra ACT Sunday 15 November to Friday 20 November 2015

Australian Native Plant Society (Australia, ANPSA) Meetings

The Conference began with a day of meetings on the Sunday. The Wildflower Society as a member regional group has two delegates with voting rights at these meetings. Kerry Smith was one and our other was Christina Birnbaum who is also Secretary of the Murdoch Branch. However Christina had to pull out because of a friend's wedding on that day (and she flew over that night on the red eye to be at the Conference for the rest of the week), so here are Kerry's notes on the meetings.

The first meeting was the ANPSA Annual General Meeting where the formal handover of the ANPSA national committee from Queensland to the ACT was undertaken. Ben Walcott (also the Leader for the Garden Design Study Group) took over as President, and the remaining positions were verified at the Council meeting which followed: John Carter as Secretary; Neville Page as Treasurer; and Jane Fountain came on board as Study Group Coordinator. John Carter is also the Publicity Officer.

Issues discussed at the ANPSA Council meeting held after the AGM included the following.

- (a) Consideration of a national policy for the use of native flora for ceremonial occasions, possibly based on the Wildflower Society policy.
- (b) The role of the Australian Cultivar Registration Authority, noting that it had recently employed someone to undertake outstanding work.
- (c) Thinking about using professional public relations assistance on an as needs basis.
- (d) ANPS(A) document storage. It would seem that not a great deal has been done to organise and preserve relevant documentation since Tasmania had the National Committee in 2003-2005. I undertook to try and work out what had been handed on, and what ANPS(A) might do next;
- (d) ANPS(A) Publicity Officer Nicky Zanen is organising a tour to the Kimberley in May 2016.
- (e) Conservation Officer Neil Marriott commented on, and I also fielded conversations at the conference, on the very poor roadside conservation that is happening in Western Australia and how it impacts on tourism. Discussions are underway on what ANPS(A) might do about this.
- (f) Other regional groups are undertaking strategic planning exercises including Tasmania and New South Wales.

### ANPSA Conference Days Monday to Friday

**From Kerry** - There were nine delegates from "Western Australia" including one Wildflower Society member from New Zealand (the only one I did not catch up with). Others were: Christina Birnbaum; Margaret Matthews; Bev Lockley and her sister Margo McGurk from Katanning "twig" (they are not a Society Branch, yet); Margaret Pieroni;

Jennifer Mills; Chris Pidd; and Kerry Smith (see photo page 10). We all appreciated the layout of the programme: talks for half a day and excursions for the other half. The Conference programme covered a wide range of issues including: the opening presentation setting the historical scene for Canberra: the Bush Capital; ACT wetlands; the development of the national Rock Garden (given by Brad Pillans, who with his wife Sue, opened their garden as one of the excursions); the Australian National Botanic Garden (which we also visited); a comparison of floras of Black Mountain and the Simpson Desert; the Daisy family in Australia; flora response after fire; alpine plants; Australian orchids; weeds; grassy ecosystems; and a saving our flora initiative. Angus Stewart of Gardening Australia fame and the winner of the 2013 ANPSA Professional Award gave the Swaby Lecture on *Australian plants in cultivation: the balance between wild sourced plants and cultivars*. The Conference also gave attention to the work of Study Groups, in particular: *Acacia*; *Bonsai*; *Dryandra*; *Eremophila*; *Garden Design*; *Grevillea*; *Isopogon* and *Petrophile*; and *Waratah* and *Flannel Flowers*. *Dryandra* Study Group coordinator Margaret Pieroni spoke on the *Dryandra conferta* Research Project they are undertaking.



### Views of gardens in Canberra

**Left:** Some of WA's Banksia species in pots on the verandah of Ben and Ros Walcott's garden.

**Inside back cover:** a view of the Pillans garden in Jerrabomberra.

Photo: Kerry Smith

**From Christina** - Thanks to the Wildflower Society Murdoch Branch I was able to attend this year's ANPSA conference in Canberra, ACT. The conference attracted nearly 200 delegates from across Australia and it was held at the Australian Institute of Sport and spanned over five days. The conference was broken up into morning sessions with presentations by local scientists, practitioners and study group leaders and afternoons filled with interesting tours to explore Canberra's vegetation and sightseeing attractions. Ben Walcott and his team did an excellent job in organizing the conference. I particularly enjoyed the talk by Dr Rosemary Purdie, *A Tale of Two*

*Floras: Black Mountain, Canberra and the Simpson Desert.* In her talk, she gave an overview of the vegetation in both places and her extraordinary trip by foot and camels through the Simpson Desert. Roger Farrow gave an interesting overview of Alpine plants of Australia. For example, I found out that Australia and New Zealand share 34 alpine species and there has been two-way long distance alpine species dispersal between the two countries.

My favourite trip of the conference was to the Kowen Travelling Stock Reserve. The walk traversed through dominant vegetation of the Southern Tablelands namely Dry Sclerophyll Forest and Grassy Box Woodland. The guides showed fascinating knowledge on the local flora and helped participants to get through several locked gates that were presumably originally established for stock. It was great to see woodland floors covered with many daisies, including Yam daisies and *Podolepis jaceoides*, and *Lotus australis*, *Goodenia hederaceae*, *Wahlenbergia communis*, *Stylidium graminifolium* and many grasses, for example from the genera *Poa* and *Rytidoserma*.

In view of continuity of Australian botanical societies I would like to see bigger participation of next generation botanists at future ANPSA conferences. Subsidies such as one provided by Murdoch Branch could be adopted by other groups across the States and Territories.

**Kerry Smith, Society ANPSA representative**

**Christina Birnbaum, Society Murdoch Branch Committee member**



Standing: Margaret Pieroni; and sitting left to right Kerry Smith, Margaret Matthews and Christina Birnbaum (Photo Kerry Smith).

## Of sweeping plains, ragged mountain ranges and drought

### Where and why

Perth to Cairns by road is a long way. The idea for our trip began with Wendy's desire to attend the 50th birthday of Gordonvale State High School where she was in the first year 8 when the school opened in 1965. Gordonvale, still a sugar mill town, is rapidly being overrun by the southerly suburban growth of Cairns along the narrow coastal plain. By driving we were able to see some of the features in central Australia to which we had long promised ourselves a visit. The section from Laverton to Winton in Queensland is promoted as Australia's longest short cut, called the Outback Way (1).

### Distance

From Laverton the Outback Way follows the Great Central Road which runs north east past Warburton and Warakurna (beside Giles Meteorological Office) to the Northern Territory border. The route then passes Kata Tjuta (front page) and Uluru (centrefold) and through to the Stuart Highway at Eridunda, 200km south of Alice Springs. The road surface from Laverton to Kata Tjuta is unsealed. Just north of Alice Springs a turn eastwards on the Plenty Highway leads you to Western Queensland, first town Boulia. After the first 100km from the Stuart Highway this section is also mostly unsealed. The next 400km to Winton is a single lane sealed road. The suggested route to Cairns continues through Hughenden and Mount Garnet. We followed the suggested route on the way east except for detours into the Helena and Aurora Range in the Great Western Woodlands and into Cravens Peak Reserve (see volunteering below). Total distance 5000km. On the way back we came down the coast to Townsville, then through Charters Towers and Longreach to Winton. After Alice Springs we went west among the West MacDonnell Ranges (centrefold) and around the Mereenie Loop (also called Red Centre Way) to visit Kings Canyon, for a return distance of 5500km. We spent about three weeks in each direction and were away from the end of August to the middle of October 2015.

### Far horizons

Whether you are interested in the flowers, other wildlife, geology, Aboriginal culture or dinosaurs the grandeur of the landscape is always with you. The Outback Way section passes through 10 bioregions. First come the Great Victoria and Gibson Deserts (back cover) in Western Australia. These deserts are not the bare windswept sand dunes of popular imagination. Rainfall averaging less than 250mm a year is sufficient to define a desert. Much like the rest of inland WA they retain a vegetation cover which has adapted to hot dry periods. Neither has the land been completely flattened by eons of erosion. Gentle rises and the occasional breakaway or residual stony hill reveal wonderfully varied views to far horizons. The Central Ranges bioregion (back cover) spans the border into NT with boldly sculpted hills. The south eastern end of the Great Sandy Desert gets a focus when the rounded red rocks of Kata Tjuta and Uluru loom out of the sand. Closer to Alice Springs the MacDonnell Ranges have ragged crags and shadowed gorges with

added interest brought by changing light through the day. Crossing into Queensland, bio-regions include the Channel Country and the Mitchell Grass Plains. Add in the woodlands out from Perth, and the dry woodlands and wet rainforests into Cairns and it is all a fascinating slice of Australia. Perhaps the grazing country around Boulia and Winton where there has been three years of drought, the cattle have eaten the grass down almost to the dirt and bush in which to walk was rare is, the only time we wished distances were a little shorter.

### Signs or objects

It has been written that when Aboriginal people walk the land they see signs, from the simple observation of animal tracks, to the changing of the seasons and specially to the passage of the spirits in shaping the land. In contrast whitefella science sees objects that need to be named and classified and is slow to learn about time and relationships in the land. On our trip I found the most moving moment was the Mala walk for a short distance at the base of Uluru which we made time for on our return journey. Over a couple of hours a ranger told us some of the Aboriginal stories of the area, how some of the features in the rock faces were interpreted in the stories, and how the caves and shelters along the base were used in Aboriginal ritual and ceremony. In the course of the walk it became clear why the aboriginal custodians would prefer that you didn't climb the rock. Also, being a ranger who has to clean-up after climbers, it was clear why the rangers too would rather you didn't. Most of all the session confirmed for me the vast linkages to, respect for and knowledge of the land that Aboriginal people have. After driving through drought and stock ravaged land in Western Queensland it emphasised to me that white man's short time in Australia has seldom been kind or caring for the land. Caring for Country needs to be taken seriously!

### Drought

Another consequence of drought conditions was the concentration of kangaroos along road reserves in Western Queensland where there was still some grass remaining. While they were fairly inactive as we passed during the day, the roads in some places were still a scene of kangaroo carnage. We met one traveller in a caravan park in Longreach who we remembered having overtaken us at speed the previous evening. We were just about to stop for the night. He carried on into the night to Longreach, about three hours away. At the campground he was unbending the front of his car after colliding with four kangaroos during the remainder of his trip.

What would the country be like if the cattle hadn't been allowed to graze the grassy plains to expose dust and stones, if innumerable Gidjee trees (*Acacia* spp.) had not been harvested for sturdy fence posts, if the kangaroos had been allowed to wander instead of being caught in fences or mown down in the road reserves and maybe harvested as the source of protein more suited to the land.

### Wildflowers

There were plenty of scattered flowers to see from the road, and as wildflower enthusiasts know, a stop and short walk into the scrub always revealed something of interest. The *Capparis lasiantha* (centrefold) was in flower beside the road in the driest part of Queensland, and occasionally an *Eremophila* would be found alone in a parched paddock with a few sparse flowers. One inauspicious place we stopped for lunch in the eastern Northern Territory revealed three different mistletoes in nearby trees (inside front cover - *Lysiantha murrayi*, *L. spathulata* and *Amyema maideni*) and three different *Senna* species amongst the surrounding shrubs. The shadier south side of Uluru had an attractive patch of an orange and crimson pea flower amongst other things around a pool and damp water course. We didn't see any massed displays of wildflowers. Occasional exceptions were patches of snowy *Ptilotus obovatus* and *Dicrasyllis exsuccosa* subsp. *cinerea* (back cover) with yellow hairs giving a patch of colour. The gullies of Kata Tjuta had showy shrubs including *Prostanthera striatiflora* (back cover) and *Pandorea pandorana* (centerfold). The photo of the latter has an orange caste from reflected sunlight off the red rocks. *Pandorea* has thin tangled vine-like stems which the Aboriginals harvested in long lengths, and straightened to make light but strong spear shafts. A number of plants are endemic to this small area of rocky domes and cool gullies and it is well worth taking the longer of the two designated walks in this area. Talking of domes, the English language translation of Kata Tjuta is Many Heads.

Much of the dune country around these prominent features had benefited from some winter rain with the remains of flowers on various *Asteraceae* and other herbs and small shrubs. The Desert Thryptomene, *Aluta maisonneuvei*, photographed at Uluru (center fold), was also noticed in the Great Victoria Desert not far from Laverton, and occurs in much of the central interior of WA and across southern NT almost to the Queensland border. The attractive Desert Oak *Allocasuarina decaisneana* (front cover) starts to appear as you enter the Central Ranges from the west, and is a distinctive feature of the NT landscape south west of Alice Springs, growing on deep sands (cover picture). It is notable for its large cones which can be the size of a fist.

Likewise the Gibson and Great Victoria Deserts were scattered with flowers from genera including *Ptilotus*, *Dicrasyllis* and *Lachnostachys*, *Grevillea*, *Acacia*, *Senna* and *Petalostylis*, and the *Asteraceae* family.

The wildflower experience was enhanced by a visit to the Olive Pink Botanic Garden in Alice Springs, a comfortable walk across the Todd River from the centre of town if it is not too hot. Olive Pink was a feisty proponent and long-time worker in establishing the Garden, living for many years on site in a tent. A small booklet leads you through a number of short walks around representative examples of Central Australian flora. It was there we saw a Caper White Butterfly (centrefold) hatching out on a wild orange tree. Not a citrus, but a member of the *Capparis* genus, to which capers also belong. The butterfly is notable for making massed migrations, at least in SE Australia. (2)

The Cairns Botanic Garden must be mentioned too. It has a collection including tropical plants from around the world. A recently redesigned screened shadehouse contains a collection of local butterflies, and interesting groups of plants such as tropical orchids,

carnivorous plants and tassel ferns. Plants of the region can be seen on a walk through local wetlands, a forest walk relating cycads to the history of life and an area of bush tucker plants.

### Ancient life

Cycads pop up in the landscape in various places. In the West MacDonnell Ranges *Macrozamia macdonnellii* (back cover) is an endemic survivor of wetter times. In the wet side of the Dividing Range at Jourama Falls we found *Cycas candida* (centrefold) with distinctive nuts, and many fresh new green plants following a small fire on the hillside. Apparently flourishing, research back home reveals it is threatened flora because of limited distribution.

Maybe browsing on the cycads 80 - 100 million years ago were some of the dinosaurs whose fossilised remains we saw at the Australian Dinosaur Museum near Winton. At Lark Quarry two hours south of Winton evidence of a dinosaur stampede is preserved in an area of rock the size of a tennis court. Both places well worth a visit. Other well advertised displays in the region are at Richmond and Hughenden.

### Pests

A trip report from someone who takes part in Bushland Plant Surveys wouldn't be complete without a note on the weeds. Once away from the roadsides and heavily used paths, most areas were pristine. However Buffel Grass is intruding in many areas across all states, and we saw Ruby Dock along the Great Central Road in many places where the grader had made drainage cuts. Of the animals, camels perhaps present the biggest challenge to land managers. We saw a couple of flocks of camels along the Great Central Road, saw their tracks often beside the road, and heard about the damage wrought on fences at Cravens Peak. We saw feral pigs in Blackbraes NP, feral horses near Boulia and shared grassy campgrounds with rabbits at Yulara and elsewhere.

### Volunteering

Just before we set out from Perth a request for help came from Bush Heritage Australia (BHA) (3) at their Reserve at Cravens Peak in Western Queensland abutting the NT border. Since we were almost passing the doorstep (a mere 90km away) we adjusted our schedule so that we could be there for a week on the way east. Much of the area is in the Simpson Strzelecki Dunefield bioregion (Simpson Desert). The homestead is situated on the eastern side of the property just before the dunes begin. We helped with a number of maintenance tasks and our presence enabled another volunteer with fencing expertise to bounce over the dunes (a two hour trip!) and spend some days attending to camel damage to the fence along the NT border. BHA destocked the property years ago and is managing it for conservation, which means in dry times there is some feed left to stir the camels into pushing down fences to get to it. We also spent a couple of days pulling down internal fences, which is where we could see kilometres of hardy Gidjee posts still standing after . . . who knows, 50 years, 80 years? With grazing pressure and changed fire regimes it is my contention that tree density has been much reduced since

the cattle arrived, to the detriment of the land and local climate.

### Sunset clause

After all of this there is lots left out. Birds: Butcherbird alarm clocks, raptors on the road kill, unfamiliar honeyeaters in the tropical forest, Bustards and Brolgas striding unhurriedly on the plains, Budgerigars flashing colour as they wheel in flight and the Willie Wagtail that seemed to accompany us everywhere. Lots of lizards; The Qantas Founders Museum and Stockman's Hall of Fame in Longreach; the Min Min Lights Show in Boulia (a gem of local folklore); flat tyres; lovely campsites; starry nights; Kings Canyon scenery. We were blessed with fine weather throughout, so were not confronted with the terrors of flooding rains, nor of bushfires. Next trip we'll move the balance of time from sitting and driving towards walking on our sunburnt country. This will allow appreciation of both her near and far horizons at a more reflective pace.

### Notes

- (1) [www.outbackway.org.au](http://www.outbackway.org.au) has extensive trip planning advice, and points to maps and pamphlets and future smart phone apps to help you on the way.
- (2) <http://australianmuseum.net.au/caper-white-butterfly>
- (3) <http://www.bushheritage.org.au/>

### Acknowledgements:

- To Dorothea Mackellar whose poem "My Country" has enriched our language for describing Australian landscapes with many memorable descriptive phrases. Find the poem at <http://www.dorotheamackellar.com.au/>. Disappointingly, in regard to my comments above, Mackellar includes cattle in the scope of her treasured country.
- Philip Moore "A Guide to Plants of Inland Australia", Reed New Holland, 2005. For information about the plants this book is a goldmine.
- Florabase (<http://florabase.dpaw.wa.gov.au/>) for WA plants and succinct descriptions of WA bioregions in the help menu. I have not been able to find similar bioregion descriptions, beyond the names and map boundaries, for the rest of Australia.
- Australian Virtual Herbarium (<http://avh.chah.org.au/>)

### Geoff Corrick

## New members

Kerry Brown	Merreden	Helen Clarke	Wembley
Renae Claire Boyd	Wembley Downs	Lesley Macauley	Como
Christopher Lampard	Mandurah	Laura Anderson	Tuart Hill
Sally Marshall	Booragoon	Rachel and Mike Green	Kelmscott
Shannon Murphy	Morley	David Jamieson	South Lake
Sasha Poli	Currambine	Kirke Montgomery	Margaret River
Michael Schultz	Mandurah	Kyoko Oakley	Karawara
Rachel Milford	Hamilton Hill	Ian Crombie	York



## A Leeuwin-Naturaliste Cape to Cape Region Branch?

### Richard Clark

In October, the Society office kindly sent out an email (see below) to known past and present Society members who live in the Cape to Cape region inviting Society members to let us know if they would be interested in the formation of a new branch of the Society (Leeuwin-Naturaliste Capes Branch). As yet the response to the email was small, but we have been very encouraged to find that we have a handful of enthusiastic members, and we are planning to arrange a first meeting in March-April. **This leaves time for any other interested people who read this article and are curious about the region and/or live in the area (part and fulltime) to learn more about our plans for the first meeting. Contact details are given below.**

The email: *Hello, I'm Richard Clark and live in Quindalup-Dunsborough. I help to manage the Geographe Community Landcare Nursery in Busselton, collecting seed under licence for the nursery, and propagating from cuttings. I've been a member of the Wildflower Society for some years, but have never participated in branch activities as there isn't a branch here within travelling distance.*

*I am asking you as Wildflower Society members, or past members, if you would be interested in forming a country branch of the Wildflower Society for the Busselton-Dunsborough-Margaret River-Augusta region (and possibly including other localities like Nannup and Capel).*

*At the moment, we don't have enough numbers to form separate branches for all of our localities/towns, but I'm confident that we could form a branch for what we might call the Cape to Cape region.*

*My thinking is that if we obtain enough people saying yes, then we would organise a meeting to propose asking the Wildflower Committee if we could form a new branch of the Wildflower Society in our region.*

*The focus of a new branch here would be to further the aims and objectives of the Wildflower Society of Western Australia, and I presume our activities would be similar to other branches, with occasional or regular meetings during the year, and other activities like garden visits, bushwalks, etc.*

*I think that if we reached the stage of forming a branch, it would be an encouragement for other local people interested in our Western Australian flora to join the Society.*

*I am urging you to give serious consideration to this idea, and would like you to contact me on 0427 385 551 or [rmc@swisp.net.au](mailto:rmc@swisp.net.au), or the Society office or by post to Richard Clark PO Box 784 Dunsborough WA 6281 or the Wildflower Society of Western Australia Inc. PO Box 519 Floreat, WA 6014*

## Bushland Plant Survey

### Christmas Gathering

Each year the Survey group Committee and Wednesday workers take a break over Christmas. For the last few years we have marked the beginning of the break with a Christmas lunch. See picture below.

### Field Survey in 2016

Bushland Plant Surveyors keep your eye on the Newsletter and your email for events in 2016. If you have been on our volunteer list but seem to be not getting the information each year, please contact the Office.

### Wednesday Identification Workers

Each year this group complete the identification of specimens gathered in the field program. FloraBase and Nature Map are used in this work. By joining this group on a regular, or irregular basis you can be guided through each of these.

### Database group

Many of the quadrats we have recorded are yet to be placed in a format suitable for use on NatureMap. In 2016 we plan to start a group to enter this data into a suitable database.

**If you would like to join the Wednesday Herbarium workers, Database group and/or join the field program, send your details to the Office.**



Bushland Plant Survey end of year lunch at the Secret Garden in South Perth. (Photo Kerry Smith.)

Sandpaper Wattle, *Acacia denticulosa*

**Alex George**

Among the hundreds of species of *Acacia*, *Acacia denticulosa*, Sandpaper Wattle, is one of the most striking (see opposite page). The species was first collected near Mt Churchman by Jesse Young, a member of Ernest Giles' expedition across the Great Victoria Desert in 1875. Young (1852–1909) was the astronomer and principal plant collector (assisted by William Tietkens). With the consent of Thomas Elder, sponsor of the expedition, he passed his specimens to Ferdinand Mueller, Government Botanist of Victoria (remember, there was no botanist in WA then). The collection totalled about 400 species, of which some 63 were new. Mueller named many of these, including this species, published in 1876. The name refers to the toothed margins of the phyllodes but perhaps the more unusual feature of these is the very rough surface from which the common name is derived. This is due to short, conical outgrowths with gland-like tips that are scattered over the lamina and edges of the phyllodes. The phyllodes and young branchlets (also rough at this stage) are slightly sticky.

In the wild the plant is a shrub up to 4 m tall (bottom right) but in the garden it grows to 6 m and can spread to 8 m wide (bottom right). It has an open, rather ungainly habit. Its bark is almost smooth, pale greyish brown, or brown when wet (bottom left). In full flower the tree appears covered with large, golden, woolly caterpillars (top left).

I bought my plant as a small seedling in April 2008. It grew quickly and by August 2010 was already 3 metres tall. Since 2010 it has flowered well, starting in July and continuing to the end of August. One reason for its colourful show is that it usually has several spikes per axil. They have a faint 'wattle' scent. The fruit is relatively inconspicuous, being a narrow, undulating pod up to 7.5 cm long and 3–4 mm wide, holding small, dark brown shiny seeds (top right).

The species has no close relatives. The plant has no lignotuber, hence is killed by fire and regenerates from seed. Given adequate space it does not require pruning. Should this be necessary it should be done progressively as the plant grows, never cutting below the foliage.

Sandpaper Wattle is rare in the wild, known mainly from granite outcrops from near Mt Churchman south-east to Nungarin, with a record near Wongan Hills. It is a Declared Rare Flora (Threatened). Like another rare species from granite rocks, *Eucalyptus caesia*, it is proving amenable to cultivation. A plant in the garden of the previous WA Herbarium grew to a large size.

**References**

Brooker, Lesley (2015), *Explorers Routes Revisited: Giles 1875 Expedition*, Hesperian Press, Carlisle.

Maslin, B.R. & Cowan, R.S. (2001), *Acacia denticulosa* F.Muell. in A.E.Orchard & A.J.G.Wilson (eds), *Flora of Australia* 11A: 238, 368, 370, 481, ABRIS, Canberra, & CSIRO Publishing, Melbourne.

Photos by Alex show the habit, bark, flowers and young pods.





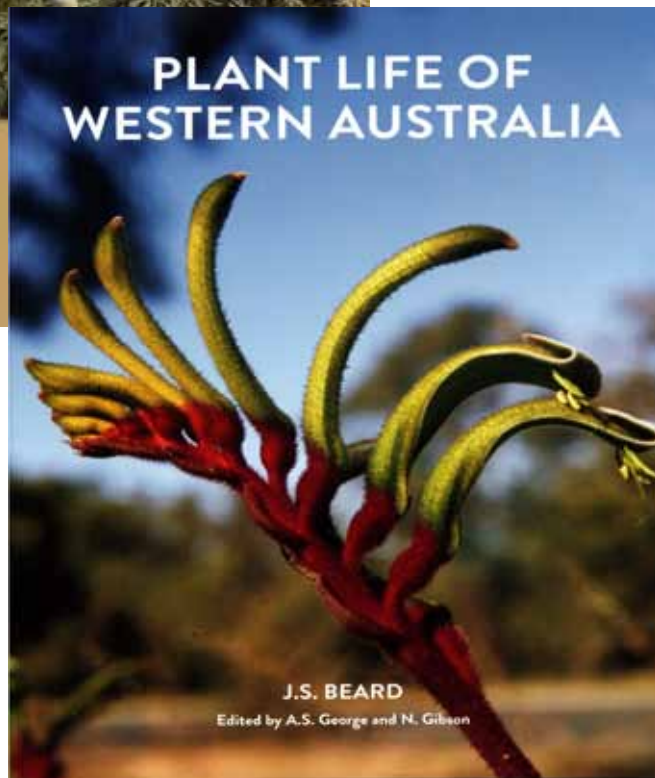
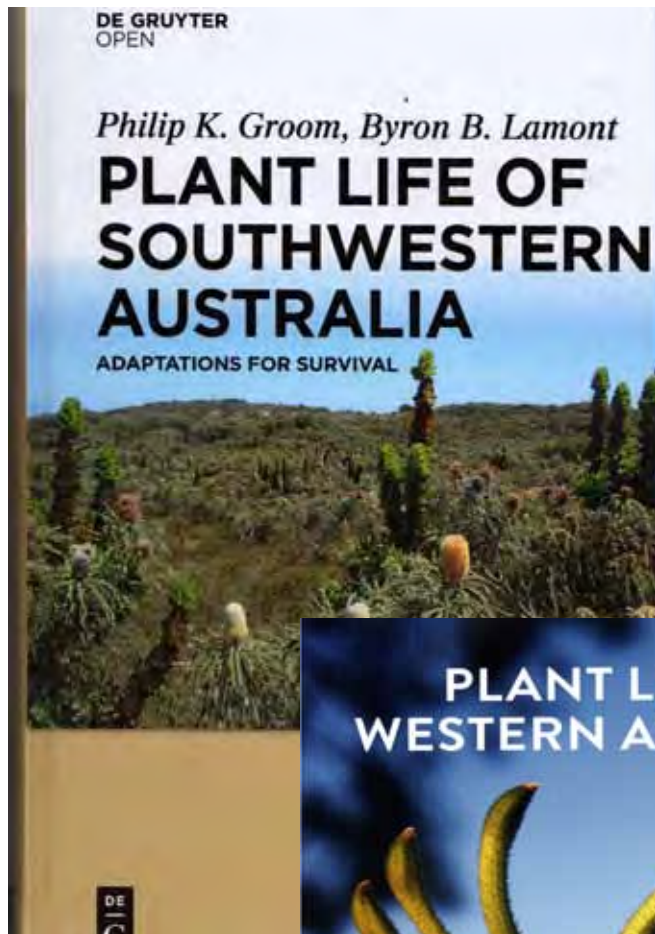


**From top left** - Caper White Butterfly pair (hatched on *Capparis* sp.), *Capparis lasiantha* and cattle country near Boulia.

**Center** - Central Ranges landscape and *Aluta maisonneuvei*.

**Right** - Breakaway country in Great Victoria Desert near Laverton, *Cycas candida* and *Pandorea pandorana*.





## Plant Life of Western Australia

review of a reprint and update of a key book

*Plant Life of Western Australia* by John Beard 2015 edition, edited by A.S. George and N. Gibson.

Since 1990 when John Beard's *Plant Life of Western Australia* was first published, it has been an indispensable part of my trips around the state and I suspect with many other plant lovers and those who want to understand the vegetation along with the flora and landscapes of Western Australia.

John Beard's book is an amazing summation of his work across a third of Australia all done in the days before computerisation and air-conditioned four wheel drive vehicles.

Unfortunately the book has been out of print for many years and this has been a source of frustration to many. Fortunately this has been remedied with the publication of a second edition of *Plant Life Of Western Australia* with Alex George and Neil Gibson as editors. They have made few changes in this new edition, keeping to the spirit of John Beard and the changes they have made are explained in their preface. In appendices they have named where possible the people in the photos and in another, plant name changes adopted for this edition. An index of place names is also included after the main index. There was one printing error with captions missing from four photos. A loose leaf errata has remedied this.

Whilst the Department of Parks and Wildlife published an updated Vegetation Map of WA in October 2013, this was based on John Beard's initial work and his "Plant Life" is as relevant today as when it first came out. It is very fitting that the state's floral emblem *Anigozanthos manglesii* has been used to illustrate the front cover of this new edition.

I very much welcome this new edition and I am sure it will become a useful addition to many people's travels. It is so much more useful in the field than sitting on a book shelf.

Brian Moyle

## Plant Life of Southwestern Australia: A Review

Over more than 40 years the knowledge of the biology of our native plants for life in the Southwest has hugely benefitted from the work of a group of research botanists trained by Byron Lamont (then at Curtin University). One of these students, Phillip Groom, who has been pivotal in much of this research for 20 years has worked with Byron on producing *Plant Life of Southwestern Australia. Adaptations for Survival* (De Gruyter, Berlin 2015, 258 pages). This book commenced in 2010, focuses on plants of the Southwest.

It is clear that *Plant Life* benefits having two such knowledgeable authors in Phillip and Byron, demonstrated in more than 100 papers authored by either or both in the

reference list. They have assembled a diverse range of information and generalised comment about the outcomes of this information on a single group of organisms, vascular plants.

The book expands on the Southwest's recognition as Australia's only biodiversity hotspot, one of 25 recognised internationally (biodiversity is the variability in genes, species and communities). Each of the Southwest's major environmental constraints is discussed alongside particular plant adaptations. The constraints include: a flat landscape, nutrient impoverished soils, drought and fire. Other related topics include the plant-animal interactions related to the unique range of pollinators, and intensive herbivory (general plant eating) and granivory (seed eating). Particular plant groups, such as the Proteaceae, have met these challenges have proliferated to a remarkable extent, resulting in the Southwest's species richness and endemism.

Strategies and morphologies plants use to cope with the above factors are covered in 11 chapters: Evolution and Diversity of the Flora; Fire Adaptations; Drought Response; Carnivory; Parasitic Plants; Specialised Nutrient uptake; Pollination Strategies and Syndromes; Leaf Properties; Seed Release and Dispersal and Seed Storage; and Germination and Establishment. Each topic typically has a case study to illustrate the generalisations. An intriguing example of a case study is that on dispersal of fungi by marsupials and, briefly, by native dung beetles (see below). We found the particular strengths of the book (a focus of Phillip's and Byron's research) are the sections on fire adaptations, seed biology and the biology of leaves.

Overall the book is an excellent introduction to what makes our plants successful at home and unique at a world scale and leaves one desiring to understand more. Plant Life is available from the Wildflower Society Bookshop and online as an Open Access book at the De Gruyter website.

**Bronwen and Greg Keighery**

## Dung Beetles and Fungi

Somewhat intrigued by the comment of the dispersal of Fungi by native dung beetles I followed this line and found a fascinating paper (Houston, T.F. and Bougher, N.L. 2010. *Records of hypogeous mycorrhizal fungi in the diet of some Western Australian bolboceratine beetles* (Coleoptera: Geotrupidae, Bolboceratinae). *Australian Journal of Entomology* 49: 49-55.). The paper suggests that these beetles are as important dispersers as the better known marsupials.

**Greg Keighery**

## Southwest Wildlife – three new important books

Over a little more than a year a wealth of books about the Southwest has been published for a variety of interest and knowledge levels these being: Laurie's *The SOUTHWEST: Australia's Biodiversity Hotspot* by (University of Western Australia Press Press, 2015), Groom and Lamont's *Plant Life of Southwestern Australia. Adaptations for Survival and Plant life on the Sandplains in Southwest Australia* (see Newsletter review page 23); and *Plant life on the Sandplains in Southwest Australia. A Global Biodiversity Hotspot* edited by Hans Lambers (UWA Press, Crawley 2014. 332 pages).

*The SOUTHWEST: Australia's Biodiversity Hotspot* by Victoria Laurie is for the most general readership. This book is a beautiful homage and introduction to the Southwest's wonderful plants and animals. A reader commented to a Wildflower Society member that it was an excellent book to keep at hand and read and enjoy, chapter by chapter while learning about the Southwest.

The other two books are focussed on the review of plant species level research and how they survive and proliferate in the Southwest. These books are: Groom and Lamont's *Plant Life of Southwestern Australia* and *Plant life on the Sandplains in Southwest Australia* (Kwongan book). The Kwongan is a vegetation type which occupies about 40% of the land surface of Southwest.

The Kwongan book has contributions from a range of authors who have a detailed knowledge of their topics. The book is an update for *Kwongan Plant Life on the Sandplains* (1984) produced some 30 years ago and aims to assemble current knowledge on particular topics...*identifying gaps or inadequacies in knowledge and future research needs of the sandplain* (Kwongan).

The book, benefits from contributions from a range of authors but at times the diversity of topics means there is lack of unification of some of the themes. While there is some overlap with *Plant Life of Southwestern Australia* a number of the topics in *Plant life on the Sandplains* are only found in this publication these being: origins of the sandplains; mammal digging; detailed reviews of plant species conservation and genetics; fluoroacetate containing plants; honey possums; and human usage.

All three books have originated in Perth and principally by Perth based writers and research workers. For the Wildflower Society this is a cause to celebrate as each book raises the profile, knowledge, and (we trust) the conservation of the state's wildflowers. Each author and editor has kindly shared their work with Society members through talks at a number of Society organised events, and we trust, will continue to do so. All three books deserve a place in our libraries and we suggest several more could be written on the roles of Fungi and Invertebrates in the Southwest.

**Greg Keighery**



## Branch Reports

### Armadale

#### Sue Radford

Armadale Branch had a busy and successful year last year. We have many ongoing projects to keep us busy in 2016, as well as our usual schedule of talks, walks and excursions. After being inspired by the Great Moodja Hunt for our WA Nuytsia, the Branch started a survey of them in our local area, to follow up on one done by the City of Armadale in the 1990's. This made a fun wind up activity prior to an excellent Christmas lunch at the Elizabethan pub. We only covered a small part of our area, but will continue during this year. We also intend to make a pamphlet for the local Visitor Centre to show all the new people to the area what they have on their new doorsteps.

This extension to the thousands of new people in our area will be a focus for this year. Part of this will be the running of some kind of garden advice event to show people how to use Western Australian plants in their gardens – preferably local ones.

There is a new part of the Armadale Settlers Common garden to plant in winter and a grant from the Bush and Environmental Working Group to pay for the plants.

We will also doing a series of visits to well established native plant gardens so that we learn by example ourselves.

We have a series of speakers to approach on the gardening/landscaping theme and details will be put in our Talks and Walks on the website.

We look forward to seeing as many people from the Society as possible in 2016. To start the ball rolling I have been asked to book a table at the new Wildflowers restaurant in the Treasury building for those who would like to come. This initiative comes via the precentor at St Georges Cathedral, who enabled us to decorate the Cathedral solely in WA wildflowers in honour of the Queen. These displays were happily still in place at the service for Geoffrey Bolton. I will book a table for February when the landscaping on Elizabeth Quay is open to view. As both these venues are supposed to be a celebration of the Western Australian flora, I think we should go and see them.

Last year ended with sadness for our Branch and our area.

In December, Rob Harrington, long time leader and supporter, in the Armadale Branch and the local area, passed away. Our sincere condolences to Roger, our Vice President, on his loss. Rob also grew the plants for Bungendore Park revegetation and inspired the local area with his enthusiasm for our flora. A full obituary will be written for the next newsletter.

In October our area, Western Australia and the world lost Dr Ian Colquhoun, dieback and revegetation expert. He was far too young, and the frustration he felt at not being able to achieve all he wanted after retiring, was evident until the day he died. When I worked with the Environment team at ALCOA in the early 1980's, everyone was committed to doing the best job of rehabilitation possible. Many of the mine revegetation

techniques were being developed as they went along and the world took note. The ALCOA program has been described as an environmental success in the book *Wild Hope* by Dr Andrew Balmford of Cambridge University. Getting the plants in those days also meant setting to and having their own nursery. Ian was always passionate about working to get the small understorey species, as well as the 'major bones' in the rehabilitated mined areas. When running the ALCOA nursery, he was responsible for carrying out 'cutting-edge research in rare-plant propagation'. This included many of the understorey species in the millions of plants they produced each year.

His last initiative was to start a propagation facility with Roleybushcare, of which he was the founder, in order to grow the local provenance understorey species in Roleystone for the ongoing conservation program. This will continue and grow.

So not only did Ian do so much to make people and government aware of the urgent need to control dieback, but has also been responsible for large areas of revegetation and conservation. While revegetation can never replace undisturbed bush, hard work by people like Ian can mean that we can still work to recreate a viable ecosystem that then continues the work to heal itself.

Armadale Branch wishes you all a happy and successful 2016.

## Darling Range

#### Lynda Tomlinson

Beware – Gumnut Overload! With such a heavy flowering of the Marri last year; (perhaps forecasting a drier winter and even drier summer), the tree has gone into reproductive mode. The Red-tail Forest Cockatoo parents have brought their young one to feast; plus the Baudins have stopped by to feed as well. Lookout below – it's raining gumnuts! In fact there seems to have been heavier, and earlier, flowering than usual of many of the plant species.

One of the members of our Group, Elaine Sargent, who is a Friend of Poison Gully in High Wycombe, was involved with the Kalamunda Shire and 43 children who together with their parents, explored the creekline learning about the little "critters" and the plants that go together to create a healthy environment.

Also two of our other members are involved in collecting seed from Piesse Brook under the guidance of a SALP funded company, then having them grown professionally with APACE, so that we are only revegetating with Local Provenance plants. We were disappointed to find that one species, the *Hypocalymma angustifolium*, had not flowered at all this year, the ground was just too dry.

We have been assisting the Shire in investigating any remnant rare Flora left on Shire verges. No luck so far. This is an ongoing project.

We have been able to assist a school teacher identify some of the local bush plants surrounding her school.

Our AGM was held in November with a changeover of Committee members.

Planning is well underway to hosting the Annual General Meeting for the State Wildflower Society of W.A. It will be held over the weekend of 25/26 June at Kanyana Wildlife Rehabilitation Hospital (the old Guide Camp site - Paxwold) Gilchrist Road, Lesmurdie.

Our bush walks will not resume until March. Please contact Lynda for further details.

## Eastern Hills

### Lee Roberts

Last year was a year of transition as the Branch re-established some of the true and tried activities with members and implemented some new ways of meeting the Society's objectives of Know, Grow, Conserve and Enjoy WA Wildflowers. At the Branch AGM in November Marilyn Myers retired from the committee and was recognized with the awarding of a Certificate of Appreciation for her work at Eastern Hills over many years. A Certificate of Appreciation was also presented to Sue Birney for her work in mentoring member growers in a Propagation Group that was based at her home for many years.

The committee received nominations from 4 members to join the committee for 2016. We are looking forward to discussion of ideas and their implementation over the year.

This year is the 40<sup>th</sup> Anniversary of the Eastern Hills Branch and there are a number of celebrations being planned. The first will be a Free Public Lecture by Professor Kingsley Dixon on the 14<sup>th</sup> April 2016. Please put the date in your diary now and watch for further information in promotions as the event gets closer.

The Branch plans to increase its attendance at the local Mundaring Rotary Markets this year from one to three. The primary purpose is to promote our local branch and sell WA plants grown by members. Our primary focus will however still be the Annual Plant Sale at 52 McGlew Rd, Glen Forrest, that will be held on Saturday 7<sup>th</sup> May 2016.

The Eastern Hills Branch has developed a facebook page to promote our activities. It has been a great way to make contact with the community beyond the walls of the Octagonal Hall. Congratulations to those managing the Society facebook page; it has been an inspiration and great success.

Members of the Society who affiliate themselves with the EHB now have the opportunity to have the branch logo on a shirt. The Branch logo will be embroidered on a plain coloured shirt of member's choosing. The cost of applying the logo to the shirt will be met by the Branch. Information of how and where to get this done was presented at the AGM. Please refer to the first Branch newsletter in February for these details.

*Poa fax* at six letters is the shortest plant name, beating three species of the genus *Aa* (e.g. *Aa rosei*) at seven letters. (*Aa* is a genus of Hawaiian orchids.)

## Murdoch

### Pawel Waryszak

#### Last Walk for 2015

On 31<sup>st</sup> October 2015, Murdoch Branch proudly joined representatives and supporters of The Rethink the Perth Freight Link Alliance for a delightful walk along the proposed Roe 8 route. Government was advised to redirect the freight to the Kwinana outer port instead of bulldozing through our remnant bushland at Beeliar Wetlands and through our suburbs – please talk to your local dignitaries and voice your opinion. Murdoch Branch is an organizational member of the Alliance and we are at the moment involved in opposing the construction of Roe 8. Please help us to form a critical mass and express your opinion directly to the Minister for Transport, D. Nalder, and the Minister for Environment, A.P. Jacob.

#### November 2015

We were visited by renowned WA ecologist Prof. Hans Lambers who gave an insightful and entertaining talk about the species richness in WA Kwongan ecosystems. Prof. Lambers, from the School of Plant Biology at UWA, is also a core founder of the Kwongan Foundation that aims at listing South Western Australia as a UNESCO World Heritage area. The evening was buzzing with chatter and laughter as it was an evening with the highest attendance ever.

#### Australian Native Plants Society Australia (ANPSA) Biennial Conference

On 15-20<sup>th</sup> November 2015, our Secretary Christina Birnbaum attended the ANPSA Biennial Conference in Canberra (ACT). Murdoch Branch regularly supports financially its delegates to attend so please come to Christina's presentation on 2<sup>nd</sup> June 2016 to see why it is worth applying for a grant next year.

#### AGM on 10 December 2015

A very warm **Thank You** to everyone who attended our Murdoch Branch Annual General Meeting. Following the President's and Treasurer's report and election of new 2016 Murdoch Branch team, Eddy and Neil shared their colourful stories and images from the exciting trips they did this year to Kulin and Kalbarri. Best New Year Wishes from New 2016 TEAM - President: Pawel Waryszak; Vice-President: Ben Sims; Secretary: Christine Allen; Treasurer: Mathew Woods; and general Committee Members: Eddy Wajon, Christina Birnbaum, Diana Corbyn, Gus King, Ross Young, Neil Goldsborough (Photo inside top back cover).

The daisies ( Asteraceae) are easily the largest family of flowering plants with about 24 000 species. Orchids are a close second with about 20 000 and the legumes come third with about 18 000 species. Together these three families comprise about a third of all flowering plants.

## Northern Suburbs

Christine Curry

Happy New Year everyone! Northern Suburbs Branch is looking forward to another busy year, with a variety of guest speakers, a number of Plant Sales and a weekend Propagation Workshop similar to the very successful event run in 2014. First up will be the annual April Plant Sale at our nursery at Landsdale Farm School on Saturday 23 April between 9am and 2pm. This sale is held each year at peak planting season and our tubestock will be ready to go into gardens as soon as the rains arrive. Next major event to be noted is the bi-annual Weekend Propagation Workshop on the 6-7 August, again at Landsdale Farm School. Earlybird interest can be registered now – see details elsewhere in this newsletter – with complete information to be emailed or posted shortly. There will be an accommodation option at the Farm School and the workshop will include meals and an information pack. So, watch this space!

We turned to a couple of very active members for guest speaker presentations in the latter part of 2015. In October, Judith Harvey gave a very interesting talk, based on her PhD research, on *Floristic Patterns in Salmon Gum Woodlands in the Great Western Woodlands*. Judith's talk included an overview of salmon gum distribution in the Great Western Woodlands, particularly around the Coolgardie/Kalgoorlie region, identified as the driest, still largely intact, woodlands on the planet. Nine field trip surveys were undertaken over several years, with assistance from WSWA members, to a wide variety of locations, with the purpose of the study to look at floristic patterns in salmon gum woodlands and how they are different from those in adjacent wheatbelt locations. Judith took us through the survey process, outlining differences in species distribution by rainfall patterns and soil type. This was a particularly interesting talk for those of our members interested in the annual plant surveys.

At the AGM in November, Eddy Wajon attracted a large audience to hear about the work he is involved with on his property at Chingarrup near the south coast. The Gondwanalink project is supported by Bush Heritage, with the aim to create a 1,000km link from Karri to Kalgoorlie across southern WA. Eddy and Donna's Chingarrup Sanctuary is a privately owned piece of this link, and they have worked with Bush Heritage and a range of other groups and volunteers, including Northern Suburbs Branch, to revegetate and restore the property to its former natural beauty. The range of flora and fauna found on Chingarrup to date includes a large number of fauna species, from birds to reptiles to mammals, and a wide range of flora which includes the threatened ecological community: Proteaceae-dominated kwongan shrubland on deep yellow to white sands, with *Isopogon* and *Melaleuca* species. Restoration work so far has been quite amazing, with very impressive 'before and after' photos giving an indication of just how much has been achieved by Eddy and Donna in just a few years.



## Coates Wildlife Tours

*Specialists in Nature Tours since 1986 (Small groups 10–12 passengers)*

### **Pilbara Reef & Ranges Expedition**

#### **15 Day Camping tour – Departs 5th April 2016**

Experience Ningaloo Reef, Abrolhos Islands & Karijini National Park. Join us as we explore the wildlife of the Western Australian coast including the Abrolhos Islands, Shark Bay and the Ningaloo Reef before travelling inland to experience the spectacular Karijini National Park.

### **Kimberley Discovery**

#### **15 Day Camping / Accom Tour – Departs Broome 4th June 2016**

Enjoy a wonderful outback experience as we discover the Kimberley's wildlife, spectacular outback scenery, and many wonderfully refreshing waterholes as we explore Purnululu N.P, the many gorges of the Gibb River Rd, El Questro and Mornington Stations.

### **Kimberley Wonders**

#### **12 Day Camping Tour – Departs 25th June 2016**

A different twist on the Kimberley, we include the best of the Gibb River Road but add a visit to the Mitchell Plateau. On the plateau experience the spectacular Mitchell and Mertons Falls plus great examples ancient rock art along with the regions wonderful flora and fauna.

### **Kununurra to Alice Springs Expedition**

#### **14 Day Camping Tour – Departs Kununurra 14th July 2016**

This trip is packed with highlights including a Lake Argyle cruise, the Keep River National Park, Duncan Highway, Wolf Creek Crater, Lake Stretch, the Tanami Road, New Haven Sanctuary and the West MacDonnell Ranges

### **Lake Eyre Basin and Flinders Ranges Expedition**

#### **15 Day Camping Tour – Departs Alice Springs 3rd August 2016**

This tour covers some of South Australia's most historic outback locations in the Lake Eyre Basin and the spectacular Flinders Ranges. Both regions offer vastly different examples of our great country and offer an opportunity for a wide range of wildlife sightings.

### **Great Western Woodlands and Helena Aurora Ranges**

#### **12 Day Camping Tour – Departs Perth 17th September 2016**

Join us and experience the diverse wildlife and spectacular wildflowers of the world's largest temperate woodland, including the historic woodlines (where timber cutters operated from 1899 to 1964) and the ironstone Helena Aurora Ranges which are currently under threat of being mined.

**Contact us for our full 2016 tour program: Free Call: 1800 676 016**

## Perth

### Brian Moyle

The final event of the year was a very enjoyable Christmas get together with the Northern Suburbs Branch at the Henderson Centre North Beach. It was unseasonably cool but this did not detract from the occasion. There were a good number of members present from across the Society and it was a fitting way to end the year. We thank the Northern Suburbs Branch for organising and hosting the event.

Since the last report, Allen Lowrie spoke at our October meeting on Carnivorous Plants. This is a topic which seems to be of particular interest to members and non-members alike and there was a good attendance. They appreciated a very interesting presentation with wonderful photographs.

Bronwen Keighery spoke at the November meeting. This was preceded by the Branch AGM. The AGM was quite routine with the new committee comprising most current members, Secretary Nina McLaren, Treasurer Ross Cockerell, Marta Rossignoli, Mark Brundrett, Greg Keighery, Bronwen Keighery, Jim Barrow, Lin Barrow, Lyn Roberts and Jolanda Keeble. We thank Katherine Downes for her work and she will be occupied in her new role as mother of Jessica.

Bronwen's talk was on the vegetation and flora of the Swan Coastal Plain. Despite the poor soils, there are more than 1300 species of plants. Bronwen's talk covered bushland protection, so necessary with the expansion of settlement across the plain. She also included a very interesting section on the vegetation around the Swan Estuary.

At its December meeting the Committee drew up a programme for 2016 and the details of the first four meetings are in the events section of the Newsletter.



Members of Perth and Northern Suburbs branch being welcomed to the joint Christmas function at the Henderson Centre. (Photo: Kerry Smith).

### A Christmas branch mingle

Northern Suburbs and Perth Branch traditionally join for their end of year Christmas gathering. In 2015 it was hosted by Northern Suburbs at the Henderson Environment Centre in Star Swamp Bushland on Saturday 5th December. Members from other Branches also joined us. David Pike led a walk commence at 6pm, followed by dinner at 7pm. A sumptuous feast was followed by the presentation of quiz prizes and some plant pictures. The prizes were Northern Suburbs 30th year commemorative mug, festooned with some of the branch's favourite flowers.

The Proteaceae family is well down on the league table with 1000 to 1250 species (depending on who is counting). Of these, nearly 700 occur in WA.

### Our wonderful Southwest

Some fascinating books on the Southwest are reviewed in this Newsletter. The books cover the Southwest with its flat landscape, nutrient impoverished soils, low rainfall and fire prone plants. These should be major environmental constraints for plants combined with highly efficient herbivores, seed eaters and a unique range of pollinators (birds & solitary bees). Those plant groups that have been successful in coping with these factors have proliferated giving the Southwest its species richness (see reviews pages 23 to 25). There is also comparative species richness in a number of animal groups. Examples from the Millipedes and Dung Beetles groups are added here for interest.

#### Tiny but mighty Millipedes

There are 14 genera (7 undescribed) and 87 (72 undescribed) species of Millipede in the Southwest, most endemic and unnamed, and more continue to be discovered. Many are highly restricted in range and are concentrated in 4 areas: Cape Arid, Cape Le Grand, Stirling Range, Porongurup Range and Walpole. They are thought to be vulnerable to loss of habitat by Dieback disease, frequent fire and climate change. The effect of introduced Millipedes such as the Portuguese Millipedes is unknown. Millipedes feed on soft parts of plants and decaying vegetation and may be important for nutrient cycling and as a major food source for Wolf and Trapdoor spiders.

#### Greg Keighery

Moir, M., Brennan, K.C. & Harvey, M.S. 2009. Identifying Important areas for conserving short range endemic Millipedes in south-west Western Australia. Information Sheet 24/2009. Science Division, DEC.

## Branch Contacts and Meeting Details

The Wildflower Society delivers a comprehensive yearly program principally through the activities of 10 branches spread throughout the Southwest. Generally each Branch organizes its own program on a monthly basis and all members (and visitors) are welcome at any of the events. Some of these events are listed on page 37. For possible unlisted activities contact each Branch.

**Albany** Albany Regional Herbarium  
3<sup>rd</sup> Tuesday 7.30 pm (Entry of corner Moore and Hymus Streets)  
President: Val Cooper 9844 1036  
Secretary: Wendy Minchin 9845 1220 (albanyherb@dpaw.wa.gov.au)  
PO Box 937, Albany, WA 6331  
Herbarium: Tues and Wed 9am to 12noon

**Armadale** Field Study Centre Armadale Settlers' Common, Triton Rd.  
2<sup>nd</sup> Thursday 7.45pm for 8pm,  
President: Sue Radford 0438 134 278 (suepr22@yahoo.com)  
Secretary: Steve Aldersea 9399 3649 (stevealdersea@hotmail.com)  
PO Box 859, Armadale WA 6992

**Avon**  
President: Eric Ayling (ayfo@wn.com.au)  
Secretary: Cheryl Warburton (ethel@westnet.com.au)  
PO Box 60, York WA 6302

**Darling Range** Old Guide Hall (Paxwold), 5 Sanderson Rd, Lesmurdie  
President: Lynda Tomlinson 9291 8753 (lktom555@gmail.com)  
Secretary: Rosemary Johnston (rmjohnston3@bigpond.com)  
Herbarium: Joan Francis (joan.francis7@gmail.com)

**Eastern Hills** Octagonal Hall, 52 McGlew Rd, Glen Forrest  
4<sup>th</sup> Friday 7.30pm for 8pm  
President: Lee Roberts (lee.roberts205@gmail.com)  
Secretary: Sandy Stone (sandyroger.stone@gmail.com)

**Kulin** Herbarium, Resource Centre, Johnston St, Kulin  
1<sup>st</sup> Tuesday 12 noon  
President: Sandra Murray 9880 1268 (dragonfire7177@gmail.com)  
Secretary: Sandra Murray  
PO Box 56, Kulin WA 6365

**Merredin**  
Vice President: Mal Harper 9041 1421 (mhharper@comswest.net.au)  
Secretary/Treasurer: Tracy Scott  
PO Box 698, Merredin WA 6415

**Murdoch Branch** Cockburn Wetlands Education Centre, Hope Rd, Bibra Lake 6163  
1<sup>st</sup> Thursday 7.30pm for 7.45pm  
President: Pawel Waryszak (pawel.waryszak@gmail.com)  
Secretary: Christine Allen 0468676933 (christineallen85@gmail.com)

**Northern Suburbs** Henderson Centre, Groat St, North Beach  
4<sup>th</sup> Tuesday 7.30pm  
President: Richard Curry 9447 2983 (randccurry@gmail.com)  
Secretary: Christine Curry 9447 2983 (randccurry@gmail.com)  
PO Box 25, Greenwood WA 6024

**Perth** Subiaco Community Centre, Bagot Rd, Subiaco (just east of Rokeby Rd)  
2<sup>nd</sup> Tuesday 7.30pm for 8pm  
President: Brian Moyle 9330 1754 (moyleb@bigpond.com)  
Secretary: Nina McLaren 9448 5419 (wildflowers.perth@ozemail.com.au)  
PO Box 34, Melville WA 6956



### WILDFLOWER TOURS LESUEUR AREA

Joy and Don Williams

will be conducting wildflower tours  
in the Lesueur, Alexander Morrison,  
Coomallo, Badgingarra, Eneabba and  
'Hi-Vallee' areas again this wildflower  
season.

All size groups; 1 to several days.  
Explore with knowledgeable local  
guides. All interest groups - wildflowers,  
birdwatchers,  
nature lovers, photographers  
and bushwalkers - catered for.  
Accommodation and transport can be  
arranged. Camping available.  
Further information and bookings:  
Ring Joy or Don on 08 9652 3035  
Mob 0427 230 345 OR write to  
'Hi-Vallee', Badgingarra WA 6521  
E-mail: hivallee@westnet.com.au



### EREMOPHILA NATIVE NURSERY ORANGE VALLEY NURSERY

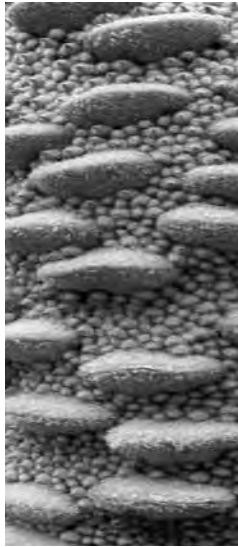
Open by appointment only

Phone 08 9293 2569

Mob 0429 325 693

Email: phil@eremophila.com.au





## ***Northern Suburbs Branch Workshop***

### **Weekend Propagation Workshop**

**6 -7 August 2016**

Register your Earlybird Interest and for further information contact Christine Curry at: [randccurry@gmail.com](mailto:randccurry@gmail.com) or 0430 013 364



## **Quaalup Homestead 1858 Wilderness Retreat**

### **Your perfect place to stay in the Fitzgerald River National Park**

With over 1800 plant species, including some rare or endemic species like the Qualup Bell and Hakea victoria, abundant birdlife, famous Point Ann beach with its Southern Right Whale Nursery and the beautiful scenery of heathland and mountain ranges, this National Park is really worth a visit.

On our 40 acres of native bushland surrounded by the National Park we offer:

- cosy s/c ensuite accommodation (2 pers units, 2 bedroom chalet, 3 bedroom cabin)
- nature camping area (for caravans or tents)
- botanically signposted nature walk with stunning views
- kayak/canoe hire to explore the beautiful Gairdner River
- heritage listed Homestead from 1858, open for visitors as Guest Lounge and Cafe

The Retreat runs its own environmentally friendly solar power system.

Bookings and more information: Ph: 08 9837 4124

Website: [www.whalesandwildflowers.com.au](http://www.whalesandwildflowers.com.au)

## **Wildflower Events**

<b>Feb 4</b>	Phil Ladd: <b>Patagonia Flora</b>	Murdoch
<b>Feb 9</b>	Mark Brundrett: <b>Restoring Perth's Banksia Woodlands</b>	Perth
<b>Feb 14</b>	<b>TBA Meet 10am Old Guide Hall</b>	D'Range
<b>Feb 23</b>	Bevan Buirchell: <b>Eremophilas</b>	N Suburbs
<b>Feb 26</b>	Neil Gibson: <b>100 years of vegetation mapping in WA</b>	E'Hills
<b>Mar 3</b>	Adam Ross: <b>Borneo Plants</b>	Murdoch
<b>Mar 8</b>	Greg Keighery: <b>Perth's Rare Plants</b>	Perth
<b>Mar 22</b>	John Bartle: <b>Salinity Management in the Wheatbelt</b>	N Suburbs
<b>Apr 7</b>	Charles Otway: <b>Perth edible weeds</b>	Murdoch
<b>Apr 12</b>	Hazel Dempster: <b>Flora in Perth's streetscapes</b>	Perth
<b>Apr 26</b>	Adam Cross: <b>Growing Carnivorous Plants from Seed</b>	N Suburbs
<b>May 10</b>	John Viska: <b>A History of Perth's Native Plants in Gardens</b>	Perth
<b>May 24</b>	TBA	N Suburbs
<b>June 28</b>	Bronwen Keighery: <b>25 Years of WSWA Plant Surveys</b>	N Suburbs

## **Special Events**

- Feb 27, 28** **Garden Clubs & Societies Fair** (Sth Perth Community Centre)
- Mar 20** **Society Open Garden** (City Beach, see article page 38)
- Apr 14** **Kingsley Dixon: Public Lecture** (Eastern Hills)
- Apr 23** **Northern Suburbs Plant Sale**  
(9am – 2pm Landsdale Farm School, Evandale Rd, Darch)
- Apr 28-May 1** **Perth Garden Festival** (McCallum Park, Vic Park)
- May 7** **Eastern Hills Plant Sale** (52 McGlew Rd, Glen Forrest)
- June 25 & 26** **Society State Conference/AGM**  
(Kanyana, Gilchrist Rd Lesmurdie)
- Aug 6 to 7** **Northern Suburbs Weekend Propagation Workshop**

## Wildflower Society Open Gardens

Whilst attending the ANPS(A) conference in Canberra in November 2015, a few of we WSWA members (Margaret Matthews, Christina Birnbaum and Kerry Smith) hatched a plan to open member gardens to other members in an attempt to build more contacts and relationships between the Branches as well as encourage native gardens. As she slowly indexes past issues of the Society's Newsletter (she's up to 1983 and pdfs of the indexes will eventually appear on the Society's new website) Kerry can see that such garden visits were undertaken in times past. We are aware that Branches do these at a Branch level, and were very pleased when Margaret said she would be more than happy to host the first open garden for the whole membership in 2016.

Please join us at Margaret's Open Garden, 5 Penryn Ave, City Beach WA at on Sunday afternoon 20<sup>th</sup> March 2016 from 2-5 pm with afternoon tea available (gold coin donation). Information about the Wildflower Society and Branches will be available and we are hoping that we will have some merchandise for sale, and perhaps some plants.

As we would like an idea of numbers, please rsvp to the WSWA Office : email wildflowers@ozemail.com.au or phone 9383 7979 (leave a message if we are not in attendance) by Tuesday 15 March 2016.

If you would like to offer your garden in the future for this initiative, then please let the Office know. We are aiming for a geographical spread of visits.

### More on hairy fish

Alex George, acting as a proofreader, has drawn my attention to an article published in December 2015, in it, the author, Damien Aubert, criticizes the "Hairy Fish" model, which he calls "Cladism" and which only reflects the branching order of the lineages on the tree of life. He argues that the length of the branches, that is the degree of modification, should also be taken into account. He calls this "Evolutionism". He argues that cladism is part of a more general philosophical movement ... characterized by anti-realism and a metaphysical way of thinking. He identifies biologically unrealistic assumptions on which cladism is based and argues that they have been empirically falsified. In other words, we are not hairy fish and Dryandras are not Bank-sias. I wonder if he will be listened to!

**Jim Barrow**

**Photos right above** Murdoch 2016 committee (see page 29, photo Pawel Waryszak); and **below** a view of the Pillans garden in Jerrabomberra (see pages 8 to 10, Photo Kerry Smith)





