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Dryandra bipinnatifida subsp. *bipinnatifida*

Margaret Pieroni

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DRYANDRA STUDY GROUP

LEADER

Mrs. Margaret Pieroni
 22 Ravenhill Heights
 DENMARK
 WA 6333
 Email: mpieroni@bigpond.com
 Phone: (08) 9848 3331

NEWSLETTER EDITOR

Mr. Tony Cavanagh
 16 Woodlands Drive
 OCEAN GROVE
 VIC. 3226
 Email: tonycav40@hotmail.com
 Phone: (03) 5255 1180

Hello and welcome to our first Newsletter for 2019.

After the dramas of our last Newsletter, I hope that everything comes out as expected in this one and you enjoy it. I must thank Margaret and Erica Shedley for their articles which provide a huge amount of information about Dryandras, with Erica's article also giving us suggestions for many fantastic areas to visit in WA to see not only Dryandras but also many others of our great flora. Margaret tells us about her plants of *D. bipinnatifida* which originated in her former garden in Perth and were dug up and transported to Denmark when she moved. Who says Dryandras can't be shifted? They are apparently very shy flowerers even in the wild and what I found especially intriguing was the fact that her plant apparently died for several months before reshooting and flowering. So it is perhaps worthwhile to leave apparently dead plants in the garden for some months, you just never know! Does anyone else have experience with *D. bipinnatifida*?

Another intriguing plant is *D. lindleyana* which grows widely around Denmark but apparently is very variable in habit, forming mounds or being nearly prostrate, depending on conditions. It appears that the mound forms may be the result of plants growing in hard or rocky soil while those in softer soils can send their branches through and on the ground and are fairly prostrate. Margaret has been observing many Dryandras in the wild since the early 1970s and details in an excellent article her observations that too frequent intervention by humans in the form of "controlled burns" is leading to a rapid decline in the wild populations of many species that depend on seed to regenerate after a fire. Another consequence is the proliferation of hybrids, such as between *D. squarrosa* and *D. subpinnatifida*, so that it is now very difficult to find "pure" stands of the latter in the wild. All in all, very depressing and it is to be hoped that the authorities will act to perhaps reconsider just how much burning is needed in National Parks. And lastly, Margaret reports on a particularly colourful form of *D. brownii*.

Erica Shedley's great article shows just what you can achieve in five days if you know where to go! She and Margaret must have seen hundreds of species and we are fortunate that she documented so many of them with wonderful photos. I must admit that I was unfamiliar with many of the locations mentioned but if it is possible, I will see if we can produce a map for the next newsletter. In the meantime, I hope that you learn as much about the WA flora from this article as I did.

I was disappointed that no one took up my challenge from the last newsletter to tell us about old Dryandras they are growing and what species and forms do best for them in their gardens. This sort of information is of use and interest to old and new members alike and its dissemination is part of what Study Groups are all about. So please, it's not too late to give us your information over the next month or so and I will publish it in the next Newsletter.

URGENT. If you are planning to attend the ANPSA Conference in Albany, 28 Sept. to 4th Oct., this is your last chance to book with Margaret for a proposed field trip, probably before the Conference. It is a busy time and Margaret must make bookings now. Please ring her on 0898483331.

Tony

Dryandra bipinnatifida in Cultivation

On the 6th of September, last year, on a brief visit during the "Hakea Crawl" with members of the Hakea Study Group, to my place here in Denmark, I showed my plant of *D. bipinnatifida* subsp. *bipinnatifida* to the Dryandra Study Group members who were with us. We noticed a flower head in bud with its grey/ light brown bracts which was raised a little off the ground.

A week later, I discovered that there were 7 open flower heads. All but the one we'd already noticed which was lying on top of another, were well camouflaged - half-buried in leaf litter and gravel. There were 4 on the east side and 3 on the west side of the plant. Buds are produced under the ground at the ends of the underground stems. All seven were at the same stage of flowering.



D. bipinnatifida subsp. *bipinnatifida* One flower head in 2008, MP

D. bipinnatifida subsp. *bipinnatifida* and *D. bipinnatifida* subsp. *multifida* are in their own subgenus (Diplophragma), in *Dryandra*. The large seeds, surrounded by a light brown, papery wing are attached at the base to a similar wing which forms a separator. The capsules are a mid - brown and flexible. Buds usually form under the ground at the ends of the underground stems as with so many other prostrate dryandras.

D. bipinnatifida subsp. *bipinnatifida* occurs in forests east and south of Perth. On the Darling Range scarp, on the outskirts of Perth, the much-divided, fern-like leaves have wider, flat lobes. It's range in the southern forests is between Dunsborough on the west coast inland to Perup. It

is common in the Jarrah woodland, north of Boyup Brook where sp. Boyup Brook was found. *D. lindleyana* subsp. *sylvestris* is also found in the same locations. The plants of this species in the southern part of its range have leaves of uniform length and narrow lobes, unlike those on plants closer to Perth.



The plant in 2018, MP



Flowers in 2018, MP

D. bipinnatifida subsp. *multifida* has smaller, hairier leaves and the flower heads are also smaller. It is common in heathlands between Muchea and Eneabba, north of Perth. It grows in sandy soils so I was able to grow it well in Perth.

D. bipinnatifida subsp. *bipinnatifida* is rarely seen in flower in the wild. After several years of searching, back in the eighties, Shirley Loney told me that she'd found one plant with one flower head near Gidgegannup about 40 km east of Perth. We went back the next day only to find that the flower had disappeared. We looked in vain for flowers on

nearby plants. I have often wondered whether they are eaten by the bobtail skinks.

Finally, I asked a member of the Darling Range Branch of the Wildflower Society, who had it growing on her property, to let me know as soon as it flowered. She rang me one morning in November 1988 and I drove up to Kalumunda to photograph it. The resulting photos of the plants and flowers that were growing in shade and not very presentable appear in *The Dryandras*. Until my plant flowered, I never did see another plant flowering. I once met a woman who lived opposite a reserve, near Boyup Brook where there were lots of plants and she'd never seen it in flower. I doubt if she was even aware that it was a dryandra. I have found seed heads on plants in the wild but my plant has failed to produce any, so far.

My plant has an interesting history. It was one of several different plants that had failed to thrive in my garden in Perth. Among the others were *D. viscida*, *D. pseudoplumosa* and *D. longifolia* subsp. *archeos*. The plants were still very small so I dug them up and put them into large, plastic pots without adding any other soil to the sandy soil they were growing in. While my house, here in Denmark, was being built, during 2004, I left the plants with Kevin Collins at the Banksia Farm at Mount Barker which is about 50 km north of here. They all began to grow as soon as I potted them up and just as I moved in, the *D. bipinnatifida* produced its first flower head. I did a painting of it before planting it out in the garden where it was in full sun.

After planting out, all of the plants took a while to settle in and then grew and flowered very well. I still have *D. viscida*, which flowers beautifully, every year. Both it and the *D. bipinnatifida* are about 18 years old except that the latter had a period of "dormancy" which proved, much to my surprise, not to be permanent. In 2011, I was very sad to discover that the plant, which was beginning to produce buds, was dead. It had flowered sporadically over the years, usually at the expense of the leaves, most of which would die at the time of flowering. This time, though, all the leaves were dead. After about three months, I noticed something grey and furry in the middle of the plant and to my delight, it turned out to be new leaves re-shooting. The leaves were lush and dense and, as I expected, it didn't flower that year but the following year it

produced a record 9 flower heads. They all opened at the same time and after only a few days, they were finished.



Plant re-shooting in 2012, MP

With 7 flower heads, last year's was the second best flowering and fewer leaves died at the time.

Margaret Pieroni 4/1/19

***Dryandra lindleyana* in Denmark**

The type location of *Dryandra lindleyana* subsp. *lindleyana* var. *lindleyana* is close to where I used to live – in Attadale, growing in sand and limestone at Point Walter, on the Swan River. It is common in bush reserves around Perth, including Kings Park.

D. lindleyana subsp. *lindleyana* var. *mellicula* occurs on the Darling Scarp, east of Perth. It forms a small bush with erect or spreading flowering stems held above ground. The other subspecies have underground stems. The resprouting leaves on the ends of the branches after fire, often appear to be separate plants. In the southern forests, around Cranbrook and Perup, there is a form of *D. lindleyana* with very short leaves that spreads like a carpet. Keith Alcock called this one "Little Tufty".



“Little Tufty” at Perup, MP

I have often wondered which subspecies it is that grows around here and Albany and north to the Porongurups. My one acre block has two dryandras - *D. serra* as well as the *D. lindleyana*. The growth habit of *D. lindleyana* is variable, most of the plants are not prostrate but neither are they as bushy as var. *mellicula*. They come in a range of flower colours and I have propagated several plants from seed collected from them.

I think I might have found the answer as to why the habit of the plants is variable. Some have branches held well above ground but spreading, while others have branches lying just on top of the ground. The former are growing among thick undergrowth and partly shaded by tall eucalypts.



***D. lindleyana* flowering in semi-shade, MP**



Plants in semi shade, 2018, MP

I planted out some of the seedlings in places where the topsoil was largely washed away when my house was built, leaving just the laterite gravel and clay. One of the plants, growing in full sun, formed a dense mound, presumably because the stems couldn't spread out through the hard ground. In other, more shady spots, the plants are more or less prostrate and less tidy-looking. The mounded plant flowered profusely, although the densely packed flower heads were well hidden. It looks more like a miniature *D. nivea*.



Mounded plant of *D. lindleyana*, MP



Flowers on mounded plant, MP

A plant of *D. blechnifolia*, which is normally prostrate and spreading from underground stems, has also formed a neat mound with hidden flowers, presumably for the same reasons.



***D. bechnifolia* in my garden, MP**



***D. blechnifolia* in the Stirling Ranges, MP**

D. lindleyana subsp. *lindleyana* var. *lindleyana* grows in pockets of limestone in places along the coast north to Eneabba and south to Dunsborough. The branches are forced to grow above ground

where the rock blocks their spread under the ground. I think that the plants here are this taxon and that the growth habit varies considerably according to the conditions.

Together with the "mound" dryandras and when grown in rocky soil and in full sun, this dryandra would be a worthwhile "no prune" plant in the garden or rockery.

Margaret Pieroni 7/1/19

Fire and Biodiversity

Since my first visits to the Stirling Range National Park, in 1973 and the Fitzgerald River National Park, in 1982, I have been observing, with great concern, the decline of a number of plant species and the general degradation of these precious biodiversity 'hot spots', due to disturbance caused mainly by too frequent burning.

As an amateur botanist, specialising in the genus, *Dryandra* and a botanical artist, I have had cause to visit these two areas and many others, in search of plants. I have observed the effects of fire, clearing for firebreaks, tracks and drains and die-back (*Phytophthora cinnamomi* and other fungal diseases) on particular plant populations, over many years and the devastation is most distressing.

After fire, plants that re-sprout, lignotuberous species, with roots already deep in the soil, recover and the area looks fresh and green. Those that are killed by fire, however, the re-seeders (non-lignotuberous species) are disadvantaged, given that rainfall is decreasing, year after year. Below the car-park at Bluff Knoll, in the Stirling Range, before the climbing track starts to ascend, there used to be a good population of *Dryandra concinna*, a Priority 4 Conservation species, confined to the Stirling Range area. Several years after the devastating fire in the autumn of 1991, (a 'controlled burn' that got completely out of control), I visited the area to see whether there was a regeneration of this species, a re-seeder. I couldn't find any seedlings where the plants were growing previously, but further back, towards the car-park, I found quite a number, about half of them twice the size of the rest, representing two successive years of germination. Except for two, on the very edge of the track, they were all dead, probably because of

the lack of adequate rain. A few plants grew to about 50cm and flowered before they were destroyed by another fire in 2000. After this fire, the amount of weeds and seedlings of species not indigenous to the Stirlings, that had been planted, then removed in the past, was all too obvious around the car-park.

In 1986, a population of a then un-named *Dryandra* was re-discovered on Stirling Range Drive. It was on the edge of a disused gravel pit. During the next five years, the entire population was gradually killed by die-back. Meanwhile, two or three other populations of the plant, by then described as *D. anatona*, had been re-located. They are in an almost inaccessible part of the National Park but despite that, Dept. of CALM staff carried out a program of spraying each plant regularly, to control die-back. The plants had regrown from seed after fire and most were flowering for only the first or second time when another fire killed all but half of the plants in one population.

Dryandra montana, of which only a few plants now remain, near the summit of Bluff Knoll, has suffered a similar fate through the combined effects of die-back and fire.

The rare *Banksia cuneata*, east of Quairading, was deliberately burned, in summer, in an attempt to regenerate the roadside population (see *Managing Your Bushland*, Hussey and Wallace, published by CALM). It failed because the resulting seedlings died during the following dry summer from lack of water and weed competition. Several years ago, I saw a small group of plants of this species, on private land, where fire has been excluded. There were plants of various ages and sizes and, around a very old, dead tree were dozens of healthy seedlings. On the dead tree, however, about half of its seed capsules remained closed. In the event of the first seedlings dying, presumably, there would be a reserve of seeds released later. To me this was one of innumerable examples of nature managing better than we do when we intervene in a natural process. Scenes of *Banksia* and similar seed capsules opening after a fire to release their seeds on to the ash bed, make good television but such plants do not **depend** on fire – they have adapted to cope with it. A widespread fire, destroying the food plants of such as honey possums would surely cause the death of any animals that survived the fire.

Concern for their survival because of the effects of die-back seems absurd, in comparison.

The magnificent *Hakea victoria*, in the Fitzgerald River National Park is killed by fire. It takes many years for plants to reach their full glory, as the variegated leaves turn from yellow, through orange to red in successive years. With so many fires having occurred in the last 20 years, the number of mature plants has declined and only a few good stands can be seen today – mostly outside the National Park borders.

Another consequence of disturbance, especially fire, is hybridization. More and more, we are finding hybrids in *Dryandra* and, in at least one case, this is putting a species, *Dryandra subpinnatifida*, particularly the rare variety *imberbis*, in danger of extinction. It grows together with *Dryandra squarrosa*, a more robust, fast-growing, colonising species which is dominating in hybrid 'swarms'. In populations of *Dryandra subpinnatifida* var. *imberbis*, pure plants are very few where there has been disturbance.

My observations have led me to conclude that so-called 'management' by fire is not viable and is usually destructive of the natural balance and thus, of biodiversity. I believe the 'precautionary principle' should apply and nature be allowed to restore the balance. Many fires are caused by lightning and by arsonists but planned burns that so often get out of control and cause widespread wildfires are exacerbating an already disastrous scenario.

In *Australian Geographic*, Issue no. 73. in an article titled 'Why Did Canberra Burn', Jim Kohen, Dept. of Biological Sciences, Macquarie University, writes: 'But if Australians believe that the way to protect houses and infrastructure from bushfires is to carry out massive annual hazard-reduction burns in our national parks, then the whole rationale for the parks is undermined; if we're to destroy their biodiversity, then what's the point of having them?'

Dr. David Horton, in *The Pure State of Nature* (Allen & Unwin, Sydney, 2000) writes: 'If you want to practise control burning in order to protect houses or farms, then do it in the same way as you would use a bulldozer to clear a fire break, but

don't pretend that you are doing anything but damage to the environment.'

Margaret Pieroni 20/4/04

An unusual *Dryandra brownii*

During the "Hakea Crawl" last year, in early October, we found a plant of *D. brownii* with unusually deep blue-green leaves. They looked almost metallic. The colour of the leaves of *D. brownii* is normally bluish but this particular plant really stood out in contrast to the green of the surrounding vegetation.

My photos didn't reproduce the colour at all well so Alva Teague has supplied the photos which are rather better. The flowers were almost finished but their dusky pink colour can still be seen.

Margaret Pieroni 11/1/19



***D. brownii* on Cape Riche Road, Alva Teague**

Dryandra reccie trip 30th July to 3rd August 2018

I met up with Margaret Pieroni at Banksia Farm in Mt Barker and we headed off early in a northerly direction towards Woodanilling where we navigated our way into Strathmore Hill Nature Reserve off Orchard Rd and Links Rd. Here we found some large old bushes of *Dryandra proteoides* in the north-east corner growing in hard lateritic ironstone caprock in open wandoo woodland. The plants had finished flowering and the bracts of the pollinated flowers were closed, looking like a flower head in bud. Some seeds were evident in a few old flower heads.



***Dryandra proteoides* at Strathmore Hill Nature Reserve**

Then we headed up to Dryandra Woodland north of Narrogin where we drove along Kawana Rd east of the Wandering-Narrogin Rd. At the first patch of magnificent heath on laterite we found the last few flowers out on *Banksia sphaerocarpa* var. *caesia*.



***Banksia sphaerocarpa* at Kawana Rd**

Here we also saw an enormous plant of *Dryandra columnaris* that had fallen over and sent up many strong upright branches. This species has long columnar branches with fine leaves, especially surrounding the flower heads where it looks hairy, and usually only one seed per flower head.



Dryandra columnaris at Kawana Rd



Dryandra stiposa at Kawana Rd

This site also had large healthy plants of *D. nobilis* with many beautiful flowers out along the columnar stems, and *D. stiposa* also in flower with terminal flower heads on upright branches. *D. stiposa* has slightly broader, more robust blue-grey leaves than *D. columnaris*, and shorter leaves than *D. nobilis*. *D. nivea* clumps were quite common but no flowers or fruit were evident. This was a wonderfully diverse native 'garden' with numerous *Isopogon*, *Petrophile*, *Conospermum filifolium* and *Acacia* in flower and plenty of honeyeaters enjoying the nectar.



Dryandra nobilis at Kawana Rd

A few hundred metres further up the road we explored another similar patch of heath and found the stunning *Dryandra subpinnatifida* var. *subpinnatifida* in flower with its long narrow, almost entire adult leaves and forming dense, very attractive clumps. The yellowish juvenile leaves that surround the pink bracts have many fine teeth. *D. squarrosa* was flowering well here, as well as *Petrophile heterophylla*, *Acacia celastrifolia*, *Beaufortia incana* and *Conospermum filifolium*. A third site revealed similar species with more *D. stiposa* in flower. Margaret noted that *D. squarrosa* sometimes hybridizes with *D. subpinnatifida* and the offspring have more teeth along the adult leaves.



***Dryandra subpinnatifida* var. *subpinnatifida* and *Dryandra squarrosa* at Kawana Rd**

We drove on to Perth and enjoyed our comfortable rooms in a city lodge, a bit apprehensive about the weather forecast for the next two days!

We stopped the next morning along Brand Highway about 1km south of Red Gully Rd at a ridge with Wandoo woodland and an interesting understory. Here we found *Dryandra lindleyana* subsp. *pollostata* that had been recently burnt but were recovering well, though not in flower, with very fine leaves and teeth. Margaret pointed out the beautiful pink *D. carlinoides* unfortunately with very few flower buds, and the showy *D. echinata* in bud. We also saw *Boronia ramosa* subsp. *anethifolia* with its delicate pale blue flowers, and a robust *Pimelea floribunda* in flower bud. This site has been disturbed but still supports many species not seen in wandoo woodlands further south.

Just opposite the Red Gull Rd turnoff, we stopped briefly to see a large bush of *Banksia laricina* with its short fine leaves and quite small flower heads but very large follicles producing odd and intriguing shaped cones. *B. menziesii* was here along with *Adenanthos* sp. and purple flowering *Calytrix lechenaultii* all growing in yellow sand.



***Banksia laricina* flower and fruit at Red Gully Rd Turnoff on Brand Highway.**

50km south of Badgingarra we pulled off the road onto a firebreak to what Margaret said was ‘The Patch’. This was an area of low heath on sandy gravel and where *Dryandra prionotes* was found by Fred Hort in 2001 and is a Priority One species only known from this area. Only two open flower heads were seen at this time, as it usually flowers earlier in July. According to Margaret, the seed is not viable in this species as the pollen presenters don’t pick up the pollen.



***Dryandra prionotes* shrub and flower seen at ‘The Patch’.**

Several large clumps of *Dryandra shuttleworthiana* were observed at this site with short fine leaves but no new flowers. *D. bipinnatifida* subsp. *multifida*, *D. lindleyana* subsp. *pollosta*, *D. kippistiana* and *Banksia sphaerocarpa* are present at this site, along with the startling *Calectasia narragara*, *Hibbertia hypericoides*, *Lambertia multiflora* and *Isopogon asper*.



Dryandra shuttleworthiana



Calectasia narragara

Our next stop was Yandin Hill Nature Reserve on Yandin Rd about 2km south of Cataby. This wonderful reserve sits up high on the plateau breakaway with great views of surrounding countryside. On the road up to the lookout we saw *Grevillea uncinulata* subsp. *florida*, with cream-coloured woolly flowers and orange and yellow pollen presenters all along the upright stems of this low shrub. *Dryandra hewardiana* was seen here, a bit like *D. polycephala* but with long spiny leaves that hang down markedly. *Eucalyptus macrocarpa* grows here but there were few flowers out. Other flowering species included *Grevillea drummondii* with its white turning pink flowers, *Cryptandra intermedia*, a red *Astroloma* sp. and a pink *Lambertia* sp. The diversity of flowering plants at this site was surprising.



Dryandra hewardiana



Grevillea uncinulata subsp. *florida*



Eucalyptus macrocarpa



and *Grevillea drummondii* at Yandin Hill Reserve



Dryandra lindleyana subsp. *pollostata* at Yandin Hill Reserve

We headed back to the brand Highway and along Bibby Rd to the west. There we stopped to see large clumps (about 1m H x 2m W) of *Banksia candolleana* with very upright leaves and rather messy dead foliage that covered up the old flowers and fruiting cones. *Calothamnus sanguineus* (?) was in full flower on these lower slopes.



Calothamnus sanguineus



Banksia candolleana

At Jurien we met John and Chris Cullen and John led us to a patch of *Dryandra lindleyana* subsp. *lindleyana* var. *lindleyana*! We only found one poor flower out and a few flower buds. This was growing on limestone sand with *Grevillea preissii*, *Templetonia retusa* and masses of what looked like *Hibbertia hypericoides*. This was a surprise to me seeing the last species growing so well in such an alkaline environment compared to where it grows in acidic gravelly loam in Jarrah forest in the south-west. Perhaps it was a different species. (It is *H. hypericoides*, M.P.,ed).



Dryandra lindleyana subsp. *lindleyana* var. *lindleyana* at Jurien



Hibbertia hypericoides and *Grevillea preissii* growing on limestone at Jurien

We finally arrived at Hi Vallee farm, home of the inimitable Joy and Don Williams, as the storm clouds gathered. Don chatted about the history of the farm which he bought as a conditional purchase lease when he was just 22 years old and proceeded to clear it with his own bulldozer. The WA Premier of the day, Charles Court, dictated that they clear 10% of their land each year and have it established in five years. Fortunately, Don left about 400ha of land uncleared along the very diverse breakaway country, that was no good for farming, and to reduce soil erosion. Don and Joy clearly love having people visit their farm. They know their landscapes and flora and fauna species intimately, and have all manner of people come to view, do research and lead tours around their bush block. Most of the area has not been burnt since 1965 so many very mature specimens can be seen.

The morning proved to be very wet, cold and windy as a major cold front was passing through. We still managed to visit several areas on Margaret's wish list and take photos, without getting our cameras and notebooks too wet. Don knew where to go to find each target species and drove all around their block. Their Hi Vallee photographic Field Guide booklet was also invaluable to help us identify many other species seen along the way. There were too many interesting species in flower to be covered here.

Dryandra catoglypta, a declared rare flora species, was located on the breakaway. It had just finished flowering but was good to see. Another DRF species in flower was *Petrophile nivea*, a lovely neat bush with terminal flowers. *Dryandra stenoprion* was in flower as was the stunning *Dryandra speciosa* subsp. *macrocarpa*, a Priority 3 species! Our photos were taken in the rain so are not ideal, but we were so happy to see these beautiful plants.



***Dryandra speciosa* subsp. *macrocarpa* at Hi Vallee**

Banksia grossa was in fruit on large bushes and *Dryandra kippistiana* was lovely to see with its distinctive foliage and terminal flowers nearly out, albeit through a foggy car window. The stunning *D. nobilis* subsp. *fragrans*, a Priority 3 species, was in full glory. *B. incana*, *B. chamaephyton* and *D. sessilis* were also observed. Other beautiful flowering species here included *Conostephium pendulum*, *Diplolaena eneabbensis*, *Conostylis aurea* and *Acacia drummondii* subsp. *drummondii*.



Dryandra kippistiana (above)



Dryandra nobilis subsp. *fragrans* (above)



Conostephium pendulum



Diplolaena eneabbensis

We returned to the homestead quite wet and bedraggled, but Joy soon had our wet clothes and boots drying out and hot soup on the table. After lunch with the rain easing slightly, we ventured out to Big Soak Plain, a large 15,000ha area of Unallocated Crown Land with very sandy soil and wide firebreaks. One quarter of this area is burnt every four years to reduce the fire hazard. Here we found *Banksia leptophylla* with very large cones on the edge of the firebreak, *Dryandra nana* with clumped blue short leaves, and *D. cypholoba* with longer green tough leaves that are curled back, but only one flower was seen. Margaret hunted for fresh flowers of *D. catoglypta* to photograph but none were found. We returned to enjoy the warm hospitality of Don and Joy and slept through a wild stormy night in their accommodation.

After breakfast we headed south via the North West Highway to Moora. We called into a gravel pit along this section and Margaret was very upset that the gravel pit had been extended and several of the *Hakea* and *Dryandra* species that she had been monitoring over the years were gone. Many other interesting species were present, but we didn't spend time there to survey the whole area.

Then onto Wannamal Rest Area where there was a wonderful display of *Hakea myrtoides* flowering in some recently burnt and unburnt patches, with graceful arching stems and eye-catching pink inflorescence spikes. This is one parent of the popular Burrendong Beauty hybrid. Numerous plants of *Dryandra fraseri* var. *fraseri* looked very pretty with their pastel pink styles and were responding well to the recent burn.



***Hakea myrtooides* after a regeneration burn at Wannamal Rest Area**



***Dryandra fraseri* var. *fraseri* in full flower at Wannamal Rest Area**

Nearly back in Perth and we visited Keith Alcock and his native garden in Kalamunda before he headed off to the UK. This was a special treat for us but a bit sad to know we were losing a great Banksia and Dryandra enthusiast to the other side of the world. We collected a few seeds and cuttings from his plants and drove down to our lodgings in Perth. On our final day we called into West Wandering Rd south of Bannister to check on some *Dryandra praemorsa* but only one plant and a few seedlings remained, along with a few *D. sessilis* and *D. lindleyana*. Our last stop was at Banksia Farm where we toured the garden and nursery and enjoyed lunch before heading our separate ways.

My thanks to Margaret for a wonderful trip around some great wildflower sites and for sharing all her amazing knowledge, and to Don and Joy Williams for their warm and generous hospitality at Hi Vallee and for taking us out to see their bushland in very un hospitable weather!

Erica Shedley

06.02.2019