# Narpulungup News

August 2016 Volume 3


# A weekend on the Hamersley

By Rosemary Jasper

We all know we can't do anything about the weather but the resultant uncertainty does add a particular tension to organising a weekend of outdoor activities. So as we approached August 13th and 14th when we had planned a weekend of canoeing and 'moth-ing' at Hamersley Inlet, we were tentatively hopeful that the forecasts for fine weather would be correct. As it turned out the weather on both days was indeed, fine, warm and relatively still. So we were off to a good start!

On Saturday, 13 people paddled up-stream and back, on the Hamersley Inlet. Andrew Chapman led the excursion. On the way up the inlet, Sarah McKie, a local geologist, gave us a potted geology lesson about sediments, the movement of Antarctica, time and pressure, folding and faulting, schist and quartzite. It was a very clear explanation of the rock formations we were looking at and it is an awe-inspiring story.

At the top of the inlet, rocks fill the river channel which makes canoeing impossible so we stopped there and had lunch sitting on some flat rocks with a back-drop of the massive quartzite cliffs. After our picnic lunch, Andrew told us some things about the inlet including water levels, breaking of the bar, salinity measurements, birdlife, fossil shell beds and what they indicate, and fish and invertebrates found in the water. It was very interesting and it gave more meaning to our activity and its setting.

Some of the detail was that the inlet broke through its bar on 28th March 2016 after 120 – 130 mm of rain in the catchment the previous week. In February the mean inlet/ river salinity (using Electrical Conductivity as a salinity surrogate) was 146 mS/cm (noting that seawater

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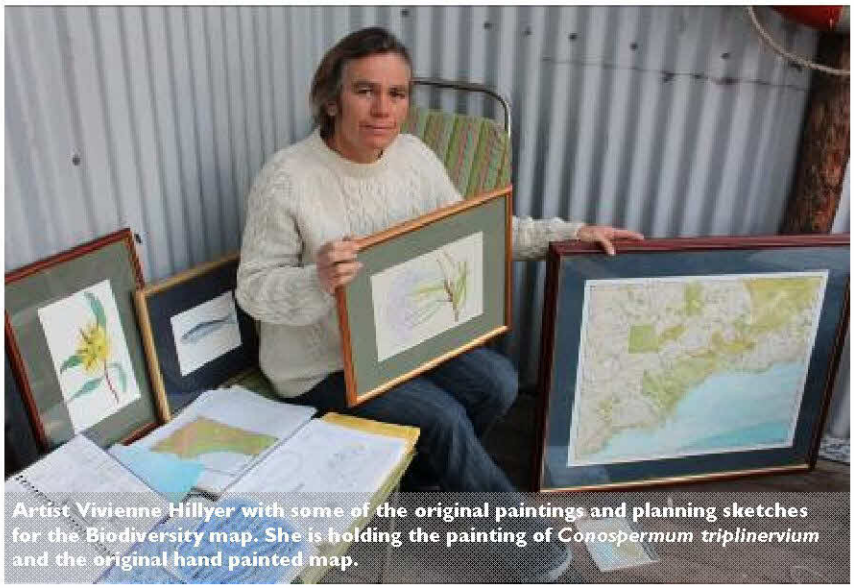
# The making of the Friends Biosphere map



Artist Vivienne Hillyer with some of the original paintings and planning sketches for the Biodiversity map. She is holding the painting of *Conospermum triplinervium* and the original hand painted map.

It was a decade ago this September that the Friends' Biosphere map was launched at Quaalup Homestead amid much celebration.

I recently caught up with the map designer and illustrator, artist Vivienne Hillyer, who reflected on the steps leading up to the day of the unveiling by then Friends president Andrew Chapman and Dr (now Professor) Stephen Hopper.

Vivienne and her partner Mark Jeffery first suggested the idea of a Biosphere map to the Friends committee in 2004.

Then began the two years of research, planning and work. As Vivienne recalled the steps to producing the map, it brought home how much technology has changed even in ten years. It was made before there was access to Google Earth and before broadband internet was available in the area (the latter bringing to mind the limitations of dial up).

Vivienne made the decision to use hand drawn cartography rather than computer generated images for aesthetic reasons.

The 104 species of flora and fauna that make up the border were selected by Vivienne, Mark and the map sub-committee because their distribution is within the Biosphere. They researched widely to gather information and images about the species and Vivienne then hand drew and painted each of them. She recalls her first illustration; *Banksia baxteri* measured about 45cm by 30cm! Successive images got progressively smaller as time dictated.

In the resulting border, iconic and well-known plants such as the Royal Hakea *Hakea victoria* are represented equally with far lesser known species such as the triangle spider *Arkeys walckenaeri*. One of Vivienne's personal favourites was the Tree Smokebush *Conospermum triplinervium* which grows near their property. Each image was scanned and photo-shopped to remove the background before being positioned around the map.

The map itself was hand painted in painstaking detail using high quality satellite imagery sourced from Landgate (then the Department of Land Information). Mark built a light table so that Vivienne could trace the custom-made satellite images with great precision. This she did throughout a winter made memorable by periods of flooding. The humidity in the air meant the behaviour of the paper was 'interesting'. Keeping it stretched to the exact extent required for accuracy was a challenge, Viv said. (She also recalls that she required glasses after finishing the job!)

Vivienne and Mark also quality tested a range of stock before settling on a high quality, environmentally produced paper on which to print the map. Likewise with the inks used.

Funding for the project came from LotteryWest and the Shire of Ravensthorpe.

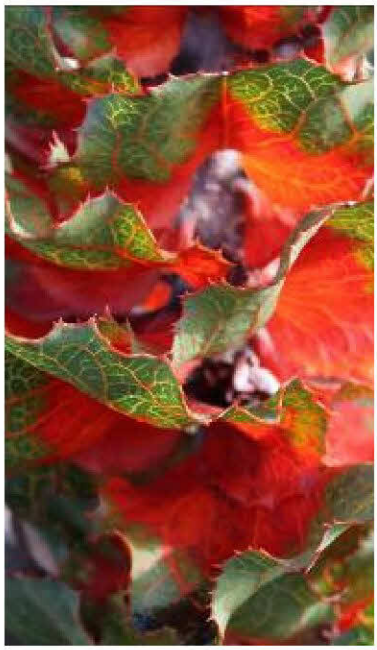
The resulting map is both a work of art and a comprehensive resource. It includes information about the Biosphere, a key to the species represented on the border (including Noongar names), historical and heritage sites and Gondwana Link properties in addition to places of interest and amenities required by visitors.

Vivienne said at the launch: "It was my desire to produce a map that combined aesthetic, archival and educational aspects, a map that was both decorative and useful, in the hope that it could contribute to furthering the understanding and appreciation of the extraordinary biological diversity of this region, and to thereby reinforce the need to do all we can to conserve it."

**Copies of the Biosphere map are available for sale ($10)** at local outlets including Community Resource Centres. They can also be purchased through the Friends website. To do this please go to www.fitzgeraldfriends.org.au and place an email query in the contacts section. The maps measure 84 cm x 59 cm and are available either folded inside a plastic cover (22 cm x 15 cm) or flat.

Leonie McMahon

# Fitzgerald River NP added to National Heritage list



In May this year the Fitzgerald River National Park was added in the National Heritage List for "its outstanding diversity of native plant species, including many plants that are unique to the local area."
The park was nominated by the Humane Society International in December 2006. The official listing describes the park as "one of the most important places in Australia for demonstrating species richness and endemism in several plant families and genera including: the Myrtaceae family, including the genera of *Eucalyptus*, *Melaleuca* (paper barks) and *Verticordia* (feather flowers); the Fabaceae family, including the genera of *Acacia* (wattles), *Gastrolobium* (poison peas) and *Daviesia* (bitter peas); the Proteaceae family, including the genera of *Banksia*, *Hakea* and *Grevillea*; and the Ericaceae family, including the *Leucopogon* (beard heath) genus.
"The national park also contains outstanding species richness and endemism in the plant families of Thymelaeaceae (pimeleas) and Rutaceae (boronia)."
Other areas of the state that have previously received National Heritage listing include the Porongorup, Stirling Ranges and Lesueur National Parks, Shark Bay, Ningaloo Reef, the Dampier Achipelago, the West Kimberley and Purnululu National Park.

# Canoeing on the Hamersley

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Above: Geologist Sarah McKie (in purple) describes the geology of the quartzite cliffs. Front page: Canoeing on the river. Photographs courtesy Geraldine Janicke

Taking a break. Photograph courtesy Geraldine Janicke

is 52 mS/cm). In May it was 30 mS/cm and in August at the time of our kayak trip it was 29 mS/cm. The river was freshest where we had lunch, it was slightly more saline where the river enters the inlet and it was most saline in the inlet itself. This is probably due to seawater intruding into the inlet over the bar during high, spring tides.
In spite of the freshening up of the inlet, bird utilization has diminished substantially since February. This is because the mud flats and exposed shorelines, which birds use for both feeding and loafing, have been inundated and therefore are no longer available to them.
We then paddled back and finished off with a hot drink and some very appetising sushi that one of the party had made for lunch but omitted to take on the water. That oversight was the group's gain and a great way to finish off a very good day.

The Hamersley weekend was supported by Ravensthorpe Agricultural Initiative Network and Friends thanks the group for its support.

R.a.i.n Ravensthorpe Agricultural Initiative Network

# Micro-moths and Boronia: an intricate association

**The second part of the Hamersley weekend was a visit from entomologist Andy Young, who is part of a moth research team. In the following article he elaborates on the many new discoveries the team has made in the last six years.**

What do we know about the Heliozelid moths? Well, prior to our project, very little. There were thirty-seven described Australian Heliozelids when we started, still a significant number when you consider that the known world fauna is around one hundred and thirty species.
We are still working on the taxonomy of the material we have collected over the last six years, but it would be safe to say we now have at least four hundred species that are new to science - well over twenty new genera - and we will describe them in at least three previously undescribed subfamilies. Just in the last week I have collected several new species to science from the eastern section of Fitzgerald River National Park. Within this huge body of new moths, we have a whole raft of new biologies that were previously unknown for this family. We have moths that are feeding in seeds, flower heads and inside galls. We have evidence that the group, previously thought to exist only in the moist coastal belt, can be found in the middle of the Nullarbor. We also have evidence that the actual physical number of these moths that are found in heath-land landscapes in early spring outnumbers all other moths flying at these times within these areas by an order of magnitude, so they are likely involved in many biological relationships and may be important to landscape integrity. One example of this are the so-called 'Boronia-pollinator moths'. This is a genus of moths that was previously undescribed, though it would be fair to say others have noticed the clouds of tiny, silver moths to be seen around the Brown Boronia, (*Boronia megastigma*) throughout the south-west of WA. What we are now proving is that not only are these moths, and related moths on related *Boronia* species, important pollinators of these plants, but in fact they are the ONLY pollinators of these *Boronia* species.
In return, the moth lays a single egg at the base of the stigmal column, which is how the pollen transfer is effected, and the tiny caterpillar eats one of the four seeds that are initiated by pollination. A very special and close relationship exists between the plants and their moths, described as a 'mutual-obligate' relationship: neither plant nor moth can exist without the other being present!
These tiny iridescent moths, with their shining golden, purple and silver scales, are like tiny sparks swarming around their host plants in spring.
The fact we know so little about these tiny animals that are so prolific (after six years of intensive research, there is no slowdown in our rate of new species discovery) tells us much about the number of discoveries that still await us in our wonderful, post-Gondwanan landscapes of southern Australia.

**Male of the East Mt Barren *Leucopogon* gall-moth. Photograph courtesy Andy Young**

***Boronia albiflora* at East Mt Barren being pollinated by a Boronia moth. Photograph courtesy Andy Young**

"On the Sunday of our Hamersley weekend, virtually a new group of 11 people, met to indulge our attention on the insect world: specifically the relationship between a group of tiny moths and specific plants, mainly Boronia and Leucopogon species.
"Although these moths are tiny their role in the world is undoubtedly significant, due to the function they serve (pollination or breaking down detritus) but their real significance hinges on the absolute number of these moths.
"It is not surprising that mammals and beautifully plumaged birds more easily attract attention from us humans, but Andy encourages us to think in terms of population numbers, not the size of the individual, and then get interested. It helps of course to see these tiny moths magnified – they are superb creatures too."
Rosemary Jasper, Friends' President

"Andy used a large hooped net to sweep around the Boronia plants to collect the moths. His method of examining the contents of the net was amusing and effective.
"He showed us a *Leucopogon* (possibly *L. parviflorus*) with spiky galls (picture below left). On another trip to the south coast of WA, he had noticed pupae emerging from the centre of these Epacrid galls. He collecting them and discovered that they hatched out into golden Heliozelid moths whose larval biology had been a mystery. He went on to explain that these galls on the Leucopogon (pictured below right) at Hamersley Inlet would most likely be another species of golden Heliozelid new to science and probably restricted to the Fitzgerald River National Park. Andy indicated that these moths were 'inquiline', that is, they are secondary users of the gall.
Geraldine Janicke, Friends' member and photographer

*Leucopogon* (possibly *L. parviflorus*). Photograph courtesy Geraldine Janicke

A gall peeled open to expose a golden Heliozelid moth pupae. Photograph courtesy Geraldine Janicke

Female of the East Mt Barren *Leucopogon* gall-moth. Photograph courtesy Andy Young

Andy Young examining the contents of the net used for capturing micro-moths. Photograph courtesy Geraldine Janicke

## Twertup busy bee

### 15th – 16th October

Join Friends for a weekend busy bee at Twertup. The main job to be done is preparing and cementing the pads for the toilets but there may also be some work to do on the walk trails.
For more information please contact Rosemary Jasper on 0428123400 or email at rosemary.jasper @bigpond.com or Gil Craig on 98381071 or email at ripicasa@wn.com.au

### Verandahs are next

In July, Friends learned that we were successful in obtaining a grant for $24,000 from Great Southern Development Commission (Community Chest Fund) to concrete the verandahs at Twertup. The Twertup building sub-committee is currently planning this stage, which will probably involve a working bee to mix and pour concrete on site. Further information will be available in due course.

### Membership reminder

If you've not done so already, please remember now is the time to renew your annual membership to the Friends of the Fitzgerald River National Park.

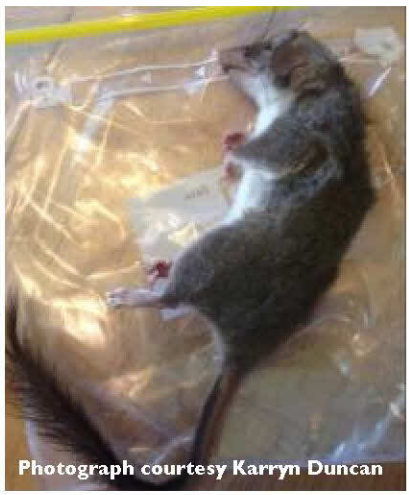
**Membership Rates**
**Family $30**
**Individual $20**
**Concession $12.**

Renewal details can be found at www.fitzgeraldfriends.org.au. We appreciate your ongoing support and look forward to seeing you at future events.

# Red-tailed phascogale found at West River

Red-tailed Phascogale. Photograph courtesy Greg Barron

In June this year one of the Fitzgerald Biosphere Group's project officers, Karryn Duncan, brought in small mammal (pictured right) her husband had found dead near the sheds on their farm near West River. Angela Sanders, ecologist for Bush Heritage, identified it as an adult male Red-tailed Phascogale *Phascogale calura*. Learning that it isn't very common to see them added to the excitement of the find.
Once widely distributed from Western Australia through to the Murray-Darling Basin in NSW, the range of Red-tailed Phascogales is now far more restricted. According to the Department of Environment and Energy: "It was previously found in most arid and semi-arid regions of Australia. However, it suffered a significant range contraction following European settlement and is now known to occur only in the central and southern wheatbelt areas of Western Australia, an area which receives an annual rainfall of between 350 and 600 mm…"
Red-tailed Phascogales were



Photograph courtesy Karryn Duncan

trapped by researchers between 2005 and 2009 in remnants around Darkin, Wagin and Katanning and they have been recorded as far north as Beverley. Both Andy Chapman and Angela have trapped them in the Fitzgerald River National Park: Andy in 1985 and Angela in the 1990s. Andy has also trapped them near Kulin in 2010. They have also been recorded in Bremer Bay in 1984.
This particular phascogale was passed on to Sarah Comer, Department of Parks and Wildlife's regional ecologist.

# Spring activities in the Biosphere

**There is a lot of activity at both ends of the Biosphere throughout September and October, with the Ravensthorpe Wildflower Show and Spring Festival happening at the eastern end and Bloom Festival events on at the western end and to the north.**

### Guided Wildflower Bush Walk at Ravensthorpe

On Sunday 18th September Andy Chapman will be leading a bush walk at Mt Short as part of the Ravensthorpe Wildflower Show.
The walk is 7-8 km of medium difficulty on a path with the first 900m being the ascent of Mt Short on a moderately steep incline; the remainder is relatively easy. Finish time will be approximately 2.00 –3.00pm. For more information contact Andy on 0428 383 498.

### Bloom Festival events

The towns of Ongerup and Bremer Bay are both hosting Bloom Festival activities this year.
The **Bloom Festival launch** on Friday 16th September will be at Tozer's Bush Camp near Bremer Bay and a **Long Table Lunch** will follow on Wednesday 21st September at the Bremer Bay Sports Club.
The **Bloomin' Arts and Crafts** exhibition will be at the Old Telegraph Station Café for the duration of the festival.

The **Ongerup Wildflower display** will be on from 12th September to 2nd October and an art exhibition '**Out of the Box'** will be showing from 22nd September to 16th October at the Yongergnow Centre.
For more information about the Bloom Festival go to www.hiddentreasures.com.au
For more information about the Ravensthorpe Wildflower Show and Spring Festival go to www.wildflowersravensthorpe.org.au

## *Unique to the Fitz* *Lerista viduata*

There is only one known vertebrate species endemic to the Fitzgerald Biosphere and that is a skink, *Lerista viduata*. It has a very restricted distribution, only known to occur around the Ravensthorpe Range, from which it derives its common name; the Ravensthorpe Range Slider. It lives in the topsoil amongst leaf litter and small rocks.
To better appreciate the significance of the species' presence there, biologist Andy Chapman says it is very unusual for there to be endemicity of vertebrate fauna on relatively small topographic isolates in WA.
The Fitzgerald Biosphere Recovery Plan notes that the Ravensthorpe Range, geologically referred to as the Greenstone landscape unit, has a high diversity of vegetation communities due to its varied geology, soils and terrain. Of the importance of the Biosphere to vertebrate species it says: "As with most Mediterranean areas, the diversity of vertebrate taxa in the Fitzgerald Biosphere is not as rich as its flora diversity, with 29 mammal, 51 reptiles, 14 frogs and 209 bird species (DEC 2009). However, FRNP supports more vertebrate species than any other conservation reserve in south-western Australia. The FRNP is at a faunal crossroads in a north-south and east-west direction and includes both arid and mesic adapted species (Chapman et al. 1995)."
The name viduata is derived from the Latin for widowed, referring to the species' lack of a white mid-lateral stripe.
With thanks to Andrew Chapman, and Paul Doughty and Brad Maryan from the WA Museum. Photograph courtesy Brad Maryan.

## Friends with feathers

Each year the Friends hold stalls at market days on both sides of the park to raise awareness about the group and its objectives. In the summer of 2017 the theme will be 'Feathers'. If you or anybody you know has feathers and photos of the bird species they are from that we could use in a display, please let us know by the end of September. Either email to admin@fitzgeraldfriends.org.au or phone Leonie McMahon on 98366021.
Then find us at the main summer market days in Bremer Bay and Hopetoun and see how many bird species you can identify from their feathers alone.


## Narpulungup News

is the newsletter of the Friends of the Fitzgerald River National Park. It is produced quarterly (February, May, August and November). For further information contact Leonie McMahon. Phone: 98366021 Email: southernedits@iinet.net.au


# 2016 FFRNP office bearers and committee members

President: Rosemary Jasper; Vice President: Andrew Chapman. Treasurer: Liz Utting. Committee members: Steve Janicke, Bernard De Bunnetat, Louise Lodge.
Narpulungup News Editor: Leonie McMahon
Twertup Building Management Representative: Gillian Craig
Twertup Building Sub-committee: Ric Pepper, Bill Thompson

## Thank you Vicky

Vicky Bilney was voted in as secretary at the AGM and fulfilled this role until July 2016, when she had to step down due to other commitments. First and foremost, the Friends Committee would like to thank Vicky for her wonderful contribution to the group during her time as secretary, and wishes her all the best in the future.

## Are you a secretary in waiting?

Vicky's resignation means....**there is an opportunity NOW for someone else to step into the secretary's role.** The perks of the job are many and varied: four meetings a year at which you get to learn about all the stuff happening within the group; the opportunity to contribute your ideas about events and decisions that impact on the park; be the first to learn about successful grants and other news. You only get to take minutes at the meetings if you really, really want to (ie this role is filled).
Need we say more?
Just that the role of secretary is an extremely important one and your contribution would be highly valued. The Friends Committee will support and mentor anyone who is interested in taking it on. For further information please contact Rosemary Jasper on 0428 123 400 or email her at rosemary.jasper@bigpond.com.

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