

FRIENDS of the GREAT VICTORIA DESERT PARKS

Newsletter Number 48 June, 2017.

SUCCESSFUL EXCURSION TO HINDMARSH ISLAND

On 26th March a small group from the Friends visited Karen and Chris Lane on their property at Hindmarsh Island.

Chris initially provided an overview of his Phantom 3 drone and then demonstrated its manoeuvrability and ease of use by manually flying it around the property. He then demonstrated a programmed flight using a new 'ap' just released which enables instructions to be given to the drone to fly to particular places at a particular height and record or take images. It was an extremely interesting introduction to this new technology and varied discussions took place as to the use our group may be able to make use of a drone in the desert.

Karen then took us on an extensive walk over the property and explained the revegetation history of this once bare grazed property. The transformation is truly amazing and the group were in awe of Karen's work over such a short time. The couple plan to build a completely energy self sufficient new home on the site. We looked at the plans and found information about aspect, window glazing, power generation, solar, water storage and recycling very interesting.

Thanks to both Karen and Chris for their hospitality and to Chris for his ongoing help and support.



Photos - top right: Manfred Jusiatus and left David White hold 'the Phantom'. Centre: Chris Lane brings the drone into land. Left: the drone in flight. Right above: saltbush and above and right: some of the plantings on the property including lignum (right).

IN THIS ISSUE

- Hindmarsh Island excursion
- A word from the President
- Mavic Pro - what's in the bag?
- Team Quandong report
- May 2017 report
- Vegetation photography using a drone!
- A Public Talks Program BCSEA
- Diary Dates and Websites.



President: Jan Forrest OAM president@fgvd.org.au

Vice President: Peter Wilson

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Membership fees are \$25 annually, due on 1st January each year.

Newsletter Editor: Jan Forrest OAM janforrest02@gmail.com Articles may be posted to Editor, Friends of the Great Victoria Desert, C/- South Australian Museum, North Terrace, ADELAIDE, 5000

Meetings: three meetings are held annually in Sports SA Industry Skills Centre on Military Rd at West Beach (across the road from the West Beach Caravan park)

Webmaster: C/- secretary@fgvd.org.au

Field Trip Logistics: vacant

Our book: 'Field Guide to Shrubs and Trees of the Great Victoria Desert' may be obtained from Peter Facy see email address above.



This newsletter mainly contains information from Peter Facy's recent trip to the Maralinga area, Emu, Lake Meramangye and the Anne Beadell Highway photographing vegetation sites.



Following the successful excursion to Hindmarsh Island when we were hosted by Chris and Karen Lane and in particular, the demonstration by Chris of his drone. Discussion took place regarding the use of drone technology for different projects and particularly for use in photographing vegetation sites.

We had already raised the possible use of a drone in the desert with members of the local community and at the last formal meeting of members with, general acceptance. So, we thought we would include the request to use a drone to photograph the vegetation in the application for access to the Woomera Prohibited area. When this was granted your executive decided to go ahead with its purchase.

We purchased a MAVIC PRO drone the latest in the DJI range. It has folding arms and packs into a small bag. The obstacle avoidance system is a big plus. Peter Wilson has agreed to take responsibility for this new acquisition.

During the recent desert trip we made over 40 flights and took over 300 photos. In the following article I have described the process used, provide more information about the drone and show some of the images taken.

I would like to record with appreciation the support received from the MT Lands council in allowing us to access the Emu Road and to Clayton Queama and Thomas Sandimar Cultural Advisers from the Oak Valley Community who accompanied us along this portion of the track.

Thanks go also to Brett Backhouse for his support and the Department of Environment Permit group for approving our application to fly in Tallaringa CP especially as the application was lodged so late as well as Bruce Macpherson (Manager Community Engagement, DEWNR) and Vaughn Waye (Business Manager Maralinga Tjarutja) who organised Clayton and Thomas to come with us and our Ceduna liaison Pia Richter.

Peter Facy of course was the ultimate trip leader (even if he did lead me astray over some sand dunes) however that is what happens when the track becomes indistinct.

Plans are in hand for two more trips this year with Geoff Rishworth working with Harald Ehmann and Peter Wilson looking at Quandongs and Camel damage.

As both Neil and I will be away now for a few months, if you are interested please contact either of these two trip leaders directly, as soon as possible. See last page for contact details.

THE MAVIC PRO DRONE - what's in the bag

We purchased the combo unit which includes the items pictured above.

They include:

- The drone itself which has a built in camera mounted on a 'gimbal'. When you fly you remove the protective plastic cover and mount which keeps the camera in place when travelling. The drone also comes with a battery and a mini SD card to which the images and video footage are recorded. The four arms of the drone fold in making a very small package.
- Two spare Batteries. Each battery has around 20 minute life and takes about 35 minutes to charge.
- Controller and cable which attaches to phone or tablet.
- A couple of different cables for different phones
- Two sets of additional propellers.
- Instruction booklets
- Very small Case into which the drone, spare batteries and controller all fit.
- DC charger to charge one battery in the car off the cigarette lighter
- AC charger which will charge all three batteries at the same time.

Additional items include:

- Tablet or iPad. (due to cost we purchased a Samsung tablet however in hindsight we probably should have got the iPad as there are still some glitches with using alternative tablets see additional notes).
- White board and marker on which to write the vegetation survey name and photograph prior to take off. This was an excellent idea to identify each batch of photos.
- A new purchase of a cover to reduce light on the tablet



- On order, a holder for the tablet. This drone model is primarily geared for using phones so the holder is not large enough for a tablet. So we used a small table.
- Mat on which to use as a take off and landing pat to minimize dust being blown up into the drone especially when landing. Plus an additional mat on which to place bag etc. to minimise sand getting into everything.
- Visible markers for the two vegetation posts - we used fluorescent hats and a safety vest - see further notes.

TEAM QUANDONG REPORT

Bill Dowling

Following discussions with the Maralinga Tjarutja Community Council, the Friends were asked to contribute to an extensive survey of camel damage to quandong trees in the Great Victoria Desert. Training in the method used for the survey was provided by Brett Backhouse, Regional Ecologist at Natural Resources Alinytjara Wilurara in Ceduna. Clayton Queama and Thomas Sandimar, cultural advisers from the Oak Valley community, accompanied us along the Maralinga to Emu track.

Participating in this survey was quick and easy. Brett provided simple mobile phones (without SIM cards) for data entry and all we had to do was to find a quandong tree, enter information about its condition, take a photo and use the phone's GPS to record the position. The hardest part was picking out quandong trees while driving – the presence of Clayton and Thomas proved to be essential for this. We were in awe of their powers of observation and knowledge of the country. As we went north, they also introduced us to bush tucker from several plants and commented on various aspects of Anangu culture.



Melaleuca nanophylla Photos: Bill Dowling



Previous quandong surveys further west had been able to record more than 100 trees, but we only found 30 – all of them along the Maralinga to Emu track and north of Emu itself. This is consistent with Australia's herbarium maps - quandongs do become scarce the further to the north-east one travels in SA. See Australia's Virtual Herbarium at:

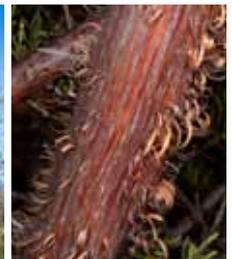
http://avh.ala.org.au/occurrences/search?taxa=Santalum+acuminatum#tab_mapView

A quandong tree (*Santalum acuminatum*) showing extensive camel damage. Note the broken branches and the lack of leaves within the reach of a camel.

Photo: Bill Dowling

Brett also asked us to record weed locations. We saw no

Ward's Weed on the trip, but we did find a couple of Buffel Grass patches and we have passed on those positions.



Acacia cyperophylla Photos: Bill Dowling

records of this tree on the ABH or this far west in SA. There was only one tree and it was in poor condition - see photo above.

Team Quandong (Phil Prust, Bob Baxter and Bill Dowling) thoroughly enjoyed the trip and our thanks go to Peter Facy for his excellent organisation and leadership.



Buffel grass on the Ann Beadell Highway Photos: Bill Dowling

We saw no signs of malleefowl and no bustards (though we've seen them along the ABH before). There were a few wedgies, falcons and mulga parrots.

Two interesting plant species were found.

We may have found a stand of *Melaleuca nanophylla* not previously been recorded. It is a rare plant and will be checked with the State Herbarium. The second plant was *Acacia cyperophylla*, the red mulga. I'm not aware of any



Emu camp. Camels foraging along a dune top at sunset. Photo: Bill Dowling

FIELD TRIP REPORT MAY 2017

Peter Facy Team Leader

The trip consisted of 3 distinct "Teams"

The Quandong team led by Bill Dowling with Bob Baxter & Phil Prust who were joined by our cultural advisors from Oak Valley, Clayton Queama & Thomas Sandimar. The Drone photographing team led by Jan Forrest with Margaret Mead assisting and the vegetation site photographing team led by myself with Ian Jackson.

The trip was reduced to 4 vehicles from the start as Jan de Wit's vehicle suffered an engine failure at Streaky Bay on the way over and had to be trucked back to Adelaide.

The Quandong and the Drone team reports are covered separately by Bill & Jan.

The three teams left Ceduna on Thursday 18th May and travelled to the Maralinga camping ground which has been set up by Robin Matthews complete with two full amenities blocks. Robin was insistent that we camped there rather than just outside the southern gate on the Lake Dey-Dey road. No surveys were carried out on the Ceduna / Maralinga road.

On Friday we were joined by Clayton & Thomas and after a short drive around the Maralinga village and the airstrip we moved as a group north on the Emu road.

When we reached our first Veg site to photograph, Bill's Quandong team moved ahead and with the assistance of Clayton & Thomas began finding trees.

At each Vegetation site Ian and I photographed from the surface and Jan & Maggie photographed the site from above with the drone. We visited 6 sites before camping 6 Kms south of Observatory Hill.

The same procedure was followed to our second camp at Emu except we were treated with some lessons on where to find "Bush Tucker" by Clayton and Thomas and some stories about their heritage which were very enlightening. We photographed 9 sites along the way.



Photos top: Robin Matthews provides the group with an overview of Maralinga and it's history. Below: Ian Jackson, Margaret Mead and Peter Facy at Maralinga Airport. Peter inside the 'airport'. Above: Margaret Mead, Ian Jackson, Peter Facy, Clayton Queama, Thomas Sandimar, Phil Prust. Bob Baxter, Bill Dowling and Jan Forrest at Emu campsite. Photos: Jan Forrest.



The following morning we said goodbye to Clayton & Thomas as they were to drive home back to Oak Valley and we continued north on a shot line from Emu along the eastern side of Lake Meramangye visiting 4 sites before camping north of the lake.

We camped 2 nights at this campsite but used the rest day to photograph 5 sites down an almost impassable shot line on the western side of the lake while the Quandong team searched around the campsite and further along the road.

We decided it was impossible to reach the Anne Beadell Highway using the western shot line and after a few false tracks were followed we eventually found the Highway after travelling 15 Kms west along a barely distinguishable shot line. We then travelled east along the highway to our camp site 6 Kms west of Tallaringa Well. Some of the party visited the remains of the Emu town & the 2 bomb sites. 10 Veg sites were visited today.

Our last day out in the desert, we looked around the Well and visited 3 veg sites, at one of which we all had a go at the controls of the drone under the supervision of Jan.

We then travelled to Coober Pedy and a Pizza meal after a welcome hot shower.

Altogether a very successful Field Trip having relocated 2 "missing" veg sites and photographing 37 sites in all.



Photos top left: Ian, Thomas, Clayton and Peter share breakfast. Top right: some unwelcome visitors to the desert. Photos: Margaret Mead. Below: Observatory Hill. Photo Below Ground zero. Both photos: Bill Dowling. Above right: Bill's flat = one wrecked tyre. Photo: Jan Forrest. Above: the desert near Tallaringa CP and Right water in Lake Hart. Photos: Margaret Mead.



VEGETATION PHOTOGRAPHY USING A DRONE!

For the last ten years the Friends of Great Victoria Desert Parks have undertaken a rotation program of re-photographing existing vegetation photo points rotating around the different segments of the desert to ensure each photo point is re-photographed every three to four years.

This program has provided the herbarium, Department of Environment staff and NRM ecologists as well as the local community Boards an overview of the vegetation changes taking place in different localities over time.

For the first time we decided to introduce new technology by using a drone to photograph existing photo points from the air as noted by me in my President report on page 2. So, the Friends purchased a new age drone to do this, the Mavic Pro.

The jury is still out if the images taken from the drone will be useful as we have yet to consult with specialists at the Herbarium and Department of Environment however during the recent trip we tried to adopt a standardised approach so that the images can be repeated over time.

Whilst the majority of photo points have a star dropper with a vegetation tag noting the name of the point some have a marker in the ground. Sometimes there are two posts, the second post providing the direction of where to take the photo, other times only one post.



For each photo point we have a copy of the original 'mud map' including directions of where to locate the marker and the compass direction of the second marker, this is particularly helpful if there is no second marker!

THE TRADITIONAL APPROACH

This is to stand at the main marker, place a post with the name of the site marked on it at the second post located ten metres away and take three photos. The first with the marker in the centre and the other two to the right and left. In this way you get overlapping images of the vegetation in front. The disadvantage of this system is that sometimes a large bush has grown up in between and all you can see is the bush! However, in the desert this is usually not too much of a problem.



Peter Facy and Ian Jackson line up the two markers for the traditional photo of each site. Photo: Margaret Mead

A NEW PROCEDURE

We agreed that however we set the drone images up that it had to be 'repeatable' in the future. So to ensure the two markers could be seen from the air we placed a fluorescent orange hat on the main post and a second yellow fluorescent hat on the second marker. As the



orange marker was difficult to locate on the screen of the tablet we then added a folded safety jacket at the base of the main post into a square making the main marker much easier to locate.

After some trial and error the following procedure was adopted.

The 'pilot' stood 30 metres behind the main post. Firstly a photograph was taken from the drone of the white board which had the site name written on it. This was a good move because over 300 images were taken from the drone and it would have been difficult to work out which images related to which site if an introductory photo had not been taken.



The next essential step was to orientate the drone. This entails rotating the drone 360 degrees in a vertical then horizontal position. This ensures if you loose it and press the 'come home' button that it will come back to the place where it took off. Not to the previous place where you last orientated the compass!

We then took the drone up to around 20 - 30 metres, angled the gimbal (camera) to around a 45 degree angle and took an overview of the site, trying to keep the two posts in the centre front.

A majority of the desert sites from the air appear to be relatively sparse so time will tell if this approach will work in more vegetated sites.

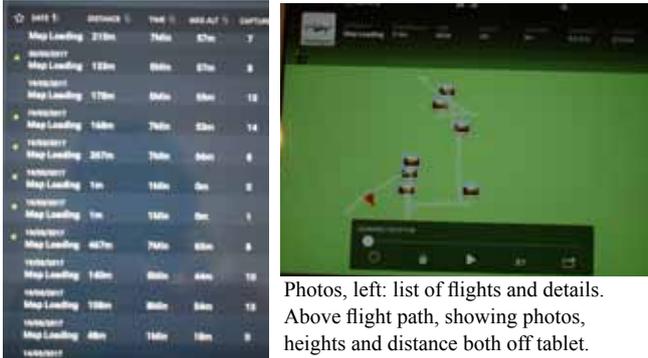
The next approach was to direct the gimbal (camera) facing down, and take the drone to directly above the posts to take a series of photos at different heights. Mainly at 50 metres and when wind permitting at 100 metres above the site.

It is the practice of our Friends group to all wear safety vests in the field however additional yellow 'dots' on the screen was confusing so the drone operators (Margie and Jan) did not wear our vests and asked other team members to move out of view where possible.

DATA RETRIEVAL

So far we have not been able to work out how to obtain a printout of the flight record as it would be good to be able to definitely tell at what height each photo was taken. It is all there as there are several text files however when printed out they are all symbols. More research and web browsing plus questions to DJI will resolve this I am sure.

One feature of the ap. is that you can watch, in real time, the flight path of each flight on the tablet. It shows when photos are taken, the height of the drone and the angle of the gimbal. However, as the screen is small and some photos show bunched together on the screen sometimes it is difficult to tell which photo was taken when.



Photos, left: list of flights and details. Above flight path, showing photos, heights and distance both off tablet.

It was also a challenge to work out from the list, which flight was which site and that was worked out by comparing dates of the flight list with the photos dates although the addition of a start time would have helped here.

WHERE TO FLY

One thing to be aware of is that the regulations regarding flying of drones are quite strict. By downloading an ap. called 'Safe to Fly?' where you can work out where airports are located and where other no-fly zones exist such as in the vicinity of a helipad. This rules out much of the suburbs as helipads are located on the tops of most hospitals. Interestingly flying near the east/west railway line near telecom towers was prohibited however there were no problems in the desert although we were required to obtain permission from the Woomera Prohibited area and from the Department of Environment to fly in Tallaringa CP.

THANKS

Thanks to all the team for their support especially Peter Facy and Ian Jackson for their patience and to my copilot Margaret Mead who was able to keep track of the drone when I was looking at the screen and provided verbal directions and information such as "You are going the wrong way", "It is going backwards!", "You are too far over" and who kept a watchful eye on the one and only Wedge tailed eagle we saw, ready to say "bring it down quick.....". However this was not necessary as the eagle stayed well away however we understand they can tear a drone apart in very quick time once they spot it. I thoroughly enjoyed this experience. Margaret also took extensive notes on photo heights and this is what I have used for this record.

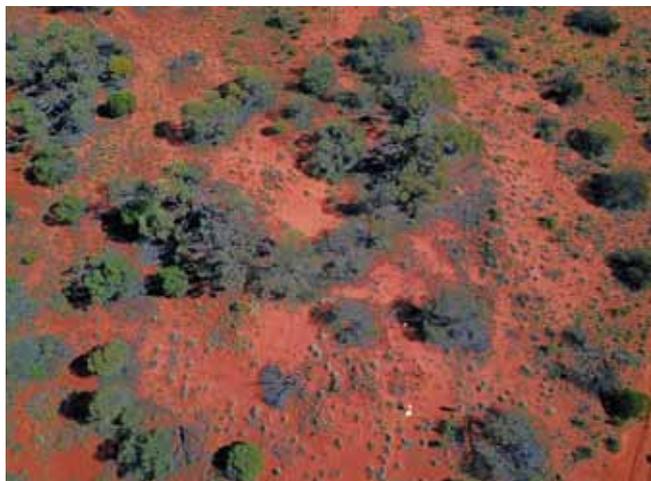
Jan Forrest



Photos Top: The drone team, Jan Forrest and Margaret Mead. Below: The team taken from the drone. Below: "It has to be around here somewhere" - looking for a marker. Far left: Margie orientates the drone. Centre: Jan at the controls. Above: Mavic Pro. coming home! Photos: Jan Forrest and Margaret Mead.



The photos taken from the drone are with the camera at around a 45 degree angle from behind the main vegetation marker:
Top row: OBH002 @ 25m. and 'ground' photo. Second row: OBH001 @ 43m 'ground' photo.



Four above taken from drone position above the vegetation sites with camera pointing straight down. The distance between the posts is 10 metres.
Top row: TAL 008 @ 50 metres (left) and 97 metres (right) Above: TA013 @ 50m (left) and 104m (right). See 'ground' images for these sites Right (pg. 9).



Top row: MER004 @ 50m. and 'ground' photo.
Second row TAL003 @ 20m. and 'ground' photo.



Two Photos Above: Taken from ground level TAL008 and TA013. See two photos taken from the air from different heights left, on page 8.

Photos Top right: some galahs took a passing interest in the drone. Below : Tourist shot along the Emu road.

www.butterflygardening.net.au

Butterfly Conservation South Australia Inc.

presents

a PUBLIC TALKS PROGRAM

on the first Tuesday of the month March to November at 6.15pm for a prompt 6.30pm start.

At the Clarence Park Community Centre
72-74 East Avenue, Black Forest.
Bus route W91/W90: stop 10.
Noarlunga Train service: Clarence Park Station.
Glenelg Tram: Forestville stop 4, 9min walk south.

Entry by donation (minimum of \$2).

Bring supper to share, tea/coffee will be supplied.

Meetings should conclude by 8.30pm.

At the start of each meeting a ten minute presentation on a 'Butterfly of the Month' will be given by a BCSA committee member.

Photo Robert H Fisher: Common Brown *Heteronympha merope*

PUBLIC TALKS PROGRAM 2017

4th July: Acacias. Martin O'Leary from the State Herbarium has spent a lifetime researching this numerous and important Australian plant group.

1st August: 6.30pm BCSA AGM **7.00pm Public Talk Changes in native animal behaviour in our region.** Dr David Paton will explore the changes taking place in our community.

5th September: Spring is here. ABC Gardening Australia presenter Sophie Thomson will charm the audience with her bright personality and gardening knowledge. **NOTE different venue** - to be held at: **St Peter Claver Hall, Stuart Road, Dulwich.**

3rd October: 'Protection of native grasslands in Council reserves' Liam Crook. Grasses are critical to the survival of many native species. Liam will provide an insight on how local councils are conserving grasses in their reserves.

7th November: 'Wildlife of Greater Adelaide' James Smith from Faunature is the author of this comprehensive book. He will talk about some of the more interesting Adelaide animal species he discovered while working on this book.

In the case of an advertised speaker not being available, a speaker of similar interest will replace that advertised.

2017 will mark the sixth consecutive year that Butterfly Conservation SA will conduct a Public Talks Program in the Clarence Park Community Centre on the first Tuesday of the month March to November. Contact: Secretary, Jan Forrest 08 82978230 for more information.

DIARY DATES

MEETINGS

NEXT GENERAL MEETING: Our next meeting will be at **7:30 pm on Friday 9th June** at the Sports SA Industry Skills Centre on Military Rd at West Beach (across the road from the West Beach Caravan park). All members and prospective members are welcome. The agenda will be available before the meeting in the member's area of the website <http://www.communitywebs.org/fgvd/>

2017 MEETING DATE: Friday 10th November at the Sports SA Industry Skills Centre as above.

2018 AGM: Possibly Friday 9th February 2018 AGM and General Meeting. Check out the website for full details.

2017 FIELD TRIPS:

20th AUGUST - 9th SEPTEMBER

Similar format to that of 2016. Proposed that members come for the first two weeks or the second two weeks.

Location: MT Lands with two main camp sites.

Projects: Marble Gum, Wyola Mallee, Marsupial Mole, Long-tailed Parrots & Bird and reptile studies.

Science Leader Harald Ehmann

Trip Leader Geoff Rishworth. Ph: 03 9749 8231 Mob: 0438 045791 Email: c7753540@bigpond.com

Either 28th AUGUST TO 8th SEPTEMBER or 4th SEPTEMBER to 15th SEPTEMBER - dates chosen will depend on DEWNR staff (Brett Backhouse).

Location: MT Lands. Vokes Hill Track and BMR (Rodinia track). East/West Business Road.

Projects: monitor and record damage to Quandong trees caused by Camels. Locate and map buffel grass and wards weed infestations.

Trip Leader Peter Wilson: Ph: 83395937 mob: 0457913916 email petwil@adam.com.au

NOTE: As both Neil Matthews (Secretary) and Jan Forrest (President) will be away during June, July and into August please contact either Geoff or Peter directly to ensure the appropriate permit applications and OHS&W forms can be completed and lodged. They will need your contact details, vehicle info. and emergency contact details. Please complete DEWNR form 5 for each participant.

COMMITTEE MEMBERS

Jan Forrest OAM	President	president@fgvd.org.au
John Wilson	Vice President	
Neal Matthews OAM	Secretary	secretary@fgvd.org.au
Peter Facy	Treasurer	treasurer@fgvd.org.au
vacant	Logistics officer	

WEB LINKS

DEH information on Mamungari Conservation Park:
<http://www.parks.sa.gov.au/mamungari/index.htm>
Friends of Great Victoria Desert:
<http://www.communitywebs.org/fgvd/>