

## BBB BioBlitz Bulletin Number 3 Beach to Boomanjin and Birrabeen 4<sup>th</sup> November 2016

*This third update of arrangements and involvements for the first Fraser Island (Kgari) BioBlitz from 28<sup>th</sup> November to 4<sup>th</sup> December emphasizes that **Decision Time** has arrived. There aren't supermarkets, pubs and other elements of logistical just across the street or around the corner on Fraser Island. Advance planning is essential and that requires clear commitment from participants at least two weeks ahead of the event.*

### Three weeks to “GO”

Almost all participants are planning to arrive on Monday 28<sup>th</sup> November. There will be 17 in a small convoy leaving Brisbane at 8.30 picking up people on the way. The convoy is expected to arrive back in Brisbane about 7.00 pm on Sunday 4<sup>th</sup> December.

Until now numbers have been fluid as some have nominated and then not proceeded or withdrawn. However now it is crunch time

### The organization

The Fraser Island Defenders Organisation (FIDO) is an entirely voluntary organization with a very meagre budget. FIDO has no paid staff. That is why this pioneering BioBlitz is operating on a shoestring budget. It relies the on goodwill and voluntary effort to achieve the desired outcome of a more comprehensive stocktake of all the biological resources in a discreet study area. We appreciate the contributions of all participants towards meeting their own costs and in contributing their time and expertise. Collectively this amounts to tens of thousands of dollars

FIDO undertook this challenge because it is so much easier to study and survey the biota on the mainland and closer to resources, support services and laboratories there. The same logistical challenges that we are confronted with to stage the BioBlitz have deterred Fraser Island from the scrutiny of its biological resources in the past. For the above reasons, FIDO believes that Fraser Island biological resources have been insufficiently studied and deserving of closer study.

Being a voluntary organization which already has many voluntary programs operating on Fraser Island, FIDO was attracted to the idea of making greater use of citizen science and that is how this first BioBlitz concept evolved.



### World Heritage Value

Fraser Island is inscribed on the World Heritage List as meeting three of the four natural criteria. For this BioBlitz we are focussing on gaining a much better knowledge Fraser Island's biological processes.

### World Heritage Significance

*(From the Statement of Outstanding Universal Value)*

**Criterion (ix):** *The property represents an outstanding example of significant ongoing biological processes. These processes, acting on a sand medium, include biological adaptation (such as unusual rainforest succession), and biological evolution (such as the development of rare and biogeographically significant species of plants and animals).*

*Vegetation associations and succession represented on Fraser Island display an unusual level of complexity, with major changes in floristic and structural composition occurring over very short distances. Both heathland and closed forest communities provide refugia for relict and disjunct populations, which are important to ongoing speciation and radiation. Evolution and specialised adaptation to low fertility, fire, waterlogging and aridity is continuing in the ancient angiosperm flora of the heathlands and the associated vertebrate and invertebrate fauna. Since listing, patterned fens have been discovered on the property, which along with those at Cooloola, are the only known examples of sub-tropical patterned fens in the world. These fens support an unusual number of rare and threatened invertebrate and vertebrate species.*

*The dynamic interrelationship between the coastal dune sand mass, hydrology, the ongoing processes of soil formation and the development of plant communities is remarkable in its scale and complexity given the uniform substrate. In particular, the development of rainforest vegetation communities, with trees up to 50 metres tall on coastal dune systems at the scale found on Fraser Island, is not known to occur elsewhere in the world. There is clear zonation and succession of plant communities according to salinity, water table, age and nutrient status of dune sands, exposure and fire frequency. The low shrubby heaths ('wallum') are of considerable evolutionary and ecological significance. Fauna including a number of threatened species of frog, have adapted to the highly specialised acidic environment associated with wet heathlands and sedgeland in this siliceous sand environment*

***We urgently need to know just who is coming including when and how. These details can't be left to the last minute. We need to organize transport, accommodation and how everyone will fit into the full program. Because Dilli Village is off the beaten track and there aren't supermarkets on Fraser Island, the University of the Sunshine Coast needs confirmation of any accommodation booking and upfront for catering. No meals can be provided for anyone who has failed to register and paid before 14<sup>th</sup> November.***

## University of the Sunshine Coast sponsorship

A vital partner in the BioBlitz is the University of the Sunshine Coast. The University's contribution is very significant. It includes:

- The University has invested heavily in Fraser Island (K'Gari) with its largest single investment being the continued upgrading of Dilli Village as an educational and research centre;
- The input of staff to help gather data, librarians to collate and store the data and an IT advisor to assist BioBlitzers to access electronic data. The University is establishing a Fraser Island repository and are collecting as much data as possible about Fraser Island for general reference;
- The Vice Chancellor has also generously agreed to provide a free Barbeque on the night of 3<sup>rd</sup> December

## FIDO thanks the USC for its strong support of this BioBlitz



## Lists Worth Noting K'Gari species already known

The Queensland Parks and Wildlife Service has compiled a list of known species that have been identified and confirmed for K'Gari. These have been compiled into two lists. The larger list shows every record of species recorded from Fraser Island. FIDO has compressed this into a PDF file (50 x A4 pages) and placed it on the BioBlitz web site: [www.fido.org.au/bioblitz](http://www.fido.org.au/bioblitz)

The study site is roughly a 50 km<sup>2</sup> elongated triangle with Eurong at the northeast corner, Lake Birrabeen on the Northwest corner and Dilli Village near the southeastern corner. A smaller list identifies those species recorded from inside the study area this has also been placed on the web site. (11 x A4 pages).

Bioblitzers may wish to print and carry one or both of these lists in the field with them. Then species identified can be either ticked off against the lists or noted as a new record.

Wildnet will only take Butterflies and dragonfly invertebrate data at this stage. All other invertebrate data will be better sent to ATLAS for state-wide access. It is anticipated that there will be many invertebrate species recorded on Fraser Island (K'Gari) for the very first time.

## The Barbeque

University of the Sunshine Coast Vice Chancellor, Prof Greg Hill has generously agreed to provide a barbeque for BioBlitz participants on Saturday 3<sup>rd</sup> December which will be our last evening together. Please note that there will not be a bar and that the Barbeque is BYO. It is noted that there is a high proportion of people who are non meat-eaters participating in the BioBlitz. The chef, Graham MacPherson needs to know if this extends to the barbeque before he starts shopping on 16-17 November.

## Some of the Participants

With just three weeks to go the BioBlitz is gathering momentum with specialists covering a number of areas often overlooked such as the study of invertebrates and fungi. We are blessed in those areas and this is how the team is shaping up.

Invertebrates. We are going to be very strong in this area. There has been a huge deficiency of data on invertebrates got the island and this Blitz will redress that to some extent and provide a basis for future studies. We have a team coming from Victoria who specialize in soil zoology particularly ants and springtails. On Monday 28<sup>th</sup> Dr Penelope Greenslade will make a presentation on this topic. She was involved in the monumental study in Cooloola in the 1970s that identified 280 species of ants.

There will be two teams from the Queensland Museum also working on invertebrates and others studying everything from flies, dragonflies, and butterflies to spiders, native bees and dung beetles. We are excited by the potential new discoveries that they may make.

There will be a team of mycologists studying the fungi both the obvious and the unseen and we hope to hear more of the critical symbiotic role fungi play in helping to generate the biomass on Fraser Island.

One of the three specialist zoologists Rod Hobson from the QPWS has surveying and studying the fauna of Fraser Island for as long as it has had World Heritage status will be returning to his old haunts to see what he can discover on anything that hops, runs, slithers, swims or flies. He will be working in collaboration with the USC's Dr Scott Burnett and the legendary "Long Nose" (aka Ian Morris who is coming down from the Northern Territory to lend a hand.

There are a number of specialist birdos but it isn't only the more expert ornithologists who can report their observations because sometimes it isn't the experts who are in the right place at the right time to see things.

We are still not as strong as we would like to be in the botany department although there are a number of people who have nominated plant bothering as their preferred interest.

This BioBlitz doesn't aim to restrict the interest of participants to one particular field unless they choose to themselves. However we need to be able to verify the data that is collected.

While there are a number of specialists there will be a number of gophers who will also be on the lookout as they ferry the specialists without transport to and from their destinations. There will be tasks assigned to the non-expert. We need to know a lot more about the cyanobacteria on Fraser Island which is suspected of playing a much larger role in the Fraser Island ecosystem than has been previously recognized. We need samples for identification,

FIDO has provided the Acoustic recorders to assist the QPWS identify some fauna by call. It is important that these recordings be carefully monitored to help us access data well away from the beaten track

## In Search of the Elusive Ground Parrot

Article and images contributed by Linda Behrendorff  
Queensland Parks and Wildlife Service, Great Sandy  
National Park (First published in recent FINIA Newsletter)



Sound recorder listening for the elusive Ground Parrot  
(Photo Linda Behrendorff)

Queensland Parks and Wildlife Service rangers on K'Gari (Fraser Island) recently deployed five Bioacoustics remote listening posts purchased by FIDO (Fraser Island Defenders Organisation) in swamp/heath areas across the island. These devices allow for scheduled activation times, making surveys for species with distinct calls, such as frogs and birds, easier.

One of the current objectives for these devices is to assess the presence/absence of the elusive Ground Parrot (*Pezoporus wallicus*), endemic to Australia, with the eastern subspecies found in coastal southeastern and eastern Australia (Higgins 1999). In this localised area of Queensland, the vulnerably listed parrot is restricted to the southeast coastal regions of Cooloola, Fraser Island and some adjoining mainland habitat near Maryborough. It occurs mostly in coastal heathland or sedgeland with thick dense cover making it a very difficult species to observe in the field. These highly sensitive recorders produce excellent sound quality enabling detection of species without spending days in the field or risking disturbance to the sensitive areas and fauna. Not to mention reducing the observers time in mozzie and sand-fly infested areas.

The first deployment of around two months will include areas within the up and coming K'Gari Bioblitz survey area between Eurong and Dilli Village to assist with overall species presence (birds, frogs and invertebrates). They are scheduled to record for 5 minutes every hour as well as an extended period (15-20 minutes) at dawn and dusk to capture calling frog, bird and invertebrate species. All recordings collected will be filed for analyses and future research and will hopefully fill some of the knowledge gaps regarding species present at these sites.

A huge thank you to Harry Hines (Senior Conservation Officer) for assistance with purchase, set-up, deployment and mozzie repellent.

Harry listened to a recording taken at 01:00hrs on 06 Oct 2016 and heard the following species (if not others!):

Cooloola sedgefrog *Litoria cooloolensis*  
wallum sedgefrog *Litoria olongburensis*  
emerald spotted treefrog *Litoria peronii*  
wallum froglet *Crinia tinnula*  
Australian owl-nightjar

**Listening to these recording is one BioBlitz task**

## What to bring

**Dilli Village** has adequate 240 volt power to recharge any electronic devices. It has great amenities. These will doubtless be appreciated by everyone. All of the accommodation has now been booked and any late registrants will need to camp. There are both powered and unpowered sites but campers will need to be self-sufficient for camping and if self-catering self-sufficient in food, food storage and utensils.

**Smartphones or Tablets.** These will be useful to capture images of anything needing more detail for identification. The latest devices also can help record the location for any species that may need to be re-investigated. GPS are also useful to establish locations and to track the areas surveyed

**Beverages:** Any supply of beverages, although tea and coffee will be available in the dining hall, to those who are registering for the catering package. However it may be a long week for some if they haven't equipped themselves with an adequate supply of alcoholic or other preferred drinks.

**H2O:** Don't forget to fill water bottles to be self-sufficient with water throughout the day in the field

**Getting there:** Most people are anticipating getting there on Monday 28<sup>th</sup> November when there is a 1.30 pm low-tide (the optimum time for beach travel) especially if they are travelling from Brisbane or the Sunshine Coast. See the tide tables for the rest of the week

### For those without a 4WD

We believe that we have been able to cater for everyone who has notified us that they are seeking transport to and from and on the island. They will be notified in a separate Email about the rendezvous arrangements. Due to the tides, we can't guarantee to get those seeking a lift back before 7.00 pm on Sunday, 4<sup>th</sup> December.

### For those driving their own 4WDs

If we have the make, model and vehicle registration numbers by 14<sup>th</sup> November we will seek exemption from Queensland Government RAM fees

### Registration on arrival

It is a requirement that every person is given a safety briefing on arrival at Dilli Village. Therefore Dianne and Graham Creighton will be setting up a registration desk that you will be directed to on arrival at Dilli Village. There you will receive a package with relevant keys and information. Make registration your first priority on arrival.

### Permits

The process of applying for the permits to conduct this BioBlitz began months ago. In the interim the approval has changed from the Department of Environment and Heritage Protection to the Department of National Parks Sport and Recreation. There has been a difference in the interpretation of the regulations that have delayed the issuing of the permits applied for. However several bioblitzers do have permits and the event is planned to proceed irrespective of whether the DNPSR issues the permit in time



**The Study Area**

We are confident that there are more species to be found in other parts of Fraser Island but the above map describes the limit of the study area. It is hoped that this is the area on which all observations and research is focused. It covers all six dune systems identified in the CSIRO study of Cooloola’s dune systems. It contains the full range of K’Gari ecosystems except for the tidal wetlands and mudflats of Great Sandy Strait. It contains areas disturbed by sandmining and the urban area of Eurong, which is the busiest hub on all of Fraser Island as reflected in visitor statistics. It also has an amazing array of lakes, creeks and wetlands. It is very representative of K’Gari as a whole and could help reveal much more about K’Gari’s biota.

**Missing from the lists**

Amongst the species missing from Wildnet are liverworts. *Bryophytes* are small, non-vascular plants, such as mosses, liverworts and hornworts. Although they play a vital role in regulating ecosystems because they provide an important buffer system for other plants, which live alongside they only mosses appear to have been included on the Wildnet list for K’Gari. However there has been a recording of some of the Liverworts n Fraser Island by QPWS Ranger Gordon Murrell.

Physciaceae	<i>Amandinea</i>	<i>insperata</i>
Physciaceae	<i>Amandinea</i>	<i>punctata</i>
CYANOPHYCEAE	<i>Anabaina</i>	
CHLOROPHYCEAE	<i>Ankistrodesmus</i>	<i>falcatus</i>
CHLOROPHYCEAE	<i>Arthrodesmus</i>	<i>octocornis</i>
CHLOROPHYCEAE	<i>Asterococcus</i>	<i>superbus</i>
CHLOROPHYCEAE	<i>Asterococcus</i>	
RHODOPHYCEAE	<i>Batrachospermum</i>	
CHLOROPHYCEAE	<i>Botryococcus</i>	<i>braunii</i>
PHYSICIACEAE	<i>Buellia</i>	<i>dissa</i>
PHYSICIACEAE	<i>Buellia</i>	<i>bahiana</i>
TELOSCISTACEAE	<i>Caloplaca</i>	<i>sp.</i>
CHLOROPHYCEAE	<i>Closterium</i>	
CHLOROPHYCEAE	<i>Cosmarium</i>	<i>moniliforme</i>
CHLOROPHYCEAE	<i>Cosmarium</i>	
CHLOROPHYCEAE	<i>Cylindrocystis</i>	
hornwort	<i>Dendroceros</i>	<i>crispatus</i>
CHLOROPHYCEAE	<i>Desmidium</i>	
CHLOROPHYCEAE	<i>Desmids</i>	
CHRYSOPHYCEAE	<i>Dinobryon</i>	<i>cylindricum</i>
CHRYSOPHYCEAE	<i>Dinobryon</i>	<i>sp.</i>
BACILLARIOPHYCEAE	<i>Frustulia</i>	<i>rhomboides</i>
CHLOROPHYCEAE	<i>Gonium</i>	
CYANOPHYCEAE	<i>Hapalosiphon</i>	<i>intricatus</i>
HYMENOPHYTACEAE	<i>Hymenophytum</i>	<i>flabellatum</i>
CHLOROPHYCEAE	<i>Kirchneriella</i>	<i>lunaris</i>
LEUCOBRYACEAE	<i>Leucobryum</i>	<i>sp.</i>
ORTHOTRICHACEAE	<i>Macromitrium</i>	<i>sp.</i>
CYANOPHYCEAE	<i>Merismopedia</i>	
CYANOPHYCEAE	<i>Microcystis</i>	<i>aeruginosa</i>
CHLOROPHYCEAE	<i>Mougeotia</i>	
CHLOROPHYCEAE	<i>Nephrocystium</i>	<i>lunatum</i>
CHLOROPHYCEAE	<i>Nitella</i>	<i>tasmanica</i>
CHLOROPHYCEAE	<i>Oocystis</i>	
CHLOROPHYCEAE	<i>Palmogloea</i>	<i>protuberans</i>
DINOPHYCEAE	<i>Peridinium</i>	
CHLOROPHYCEAE	<i>Pleurotaenium</i>	
CHLOROPHYCEAE	<i>Sphaerocystis</i>	
CHLOROPHYCEAE	<i>Spirogyra</i>	
CHLOROPHYCEAE	<i>Staurastrum</i>	
CHLOROPHYCEAE	<i>Staurodesmus</i>	
BACILLARIOPHYCEAE	<i>Surirella</i>	<i>spiralis</i>
EUGLENOPHYCEAE	<i>Trachelomonas</i>	
CHLOROPHYCEAE	<i>Trentepohlia</i>	<i>bossei</i>
CHLOROPHYCEAE	<i>Trentepohlia</i>	<i>peruana</i>
CHLOROPHYCEAE	<i>Trentepohlia</i>	<i>rigidula</i>
CHLOROPHYCEAE	<i>Triploceras</i>	<i>gracile</i>
BACILLARIOPHYCEAE	<i>Urosolenia</i>	<i>eriansis</i>
CHLOROPHYCEAE	<i>Xanthidium</i>	
CHLOROPHYCEAE	<i>Zoochlorella</i>	<i>parasitica</i>

While this BioBlitz won’t have the expertise to record every taxa that may be found on Fraser Island (K’Gari), it represents a very significant effort to get a start. Further it is planned for the area close to the University of the Sunshine Coast Educational and Research Centre at Dilli Village that offers great opportunities to build on the foundations of the data base that is about to be comprehensively established.