

Top End

Native Plant Society

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## April 2014 Newsletter

### General Meeting Times

The next TENPS meeting will be held on *Thursday April 17<sup>th</sup> 2014*. Meetings are held at 7:30 pm on the third Thursday of each month at Marrara Christian College, on the corner of Amy Johnson Avenue and McMillans Road. The meeting is followed by a chance to meet with other members and access the TENPS reference Library over a cuppa. Bring your plants along to swap, sell or have identified. The guest speaker presentation commences around 8pm. All are welcome.

Field trips are usually on the weekend following the Meeting, details provided in the newsletter or at the meeting.

### What's in Flower?



Ipomoea photographed during the February field trip to Dundee by Russell Dempster.

*Natives mean more!*

[www.topendnativeplants.org.au](http://www.topendnativeplants.org.au)

### Upcoming TENPS Speakers

**April 17<sup>th</sup>:** **Diego Cortes & Michael Stauder** **TWP surveys and Old Growth Forest.** CDU students Diego & Michael will share their 2013 presentations for the Diploma of Conservation and Land Management.

**May 22<sup>nd</sup>:** TBC Tom North – National Seed Bank.

**June 19<sup>th</sup>:** Michael Braby – topic TBA

### TENPS Field Trip & other events

**April 26<sup>th</sup>:** Darwin River Conservation Agreement Blocks – hosted by the Ebsworth's, Spiers' and Phil Hickey. **NB** A Joint Field trip with NT Field Naturalists.

**May 10-11:** Open Garden and plant sale at the Artists Retreat (Jasmine Jan's).

**May 26<sup>th</sup>:** Howard Sand Sheet with Dave Liddle.

**May 31- June 1:** Tropical Garden Spectacular – plant sale.

**June:** Katherine TBC

**July:** Lyons streetscapes TBC

**August 23-24:** Open Garden and plant sale at Howard Springs.

### NT Field Naturalist Club Events

**Monthly Meetings** are held at **Charles Darwin University**, in **Blue Building 1, Room 1.54** Business Faculty, usually on the second Wednesday of every month (except January), starting at 7:45 pm.

**Field Trips** are a great way to explore the best of Darwin area's nature spots in the company of like-minded people. These are usually held on the Sunday following the monthly meeting and often related to the topic of this meeting. Additional outings are held from time to time, and everyone is welcome.

### Atlas Moth Forum Saturday February 22nd

Top End Native Plant society members were involved in the Atlas Moth Recovery Network Forum. The public forum provided up-to-date information on the conservation of the Atlas Moth, plans to restore its habitat and reintroduce the species back into Darwin, and the establishment of the Network.

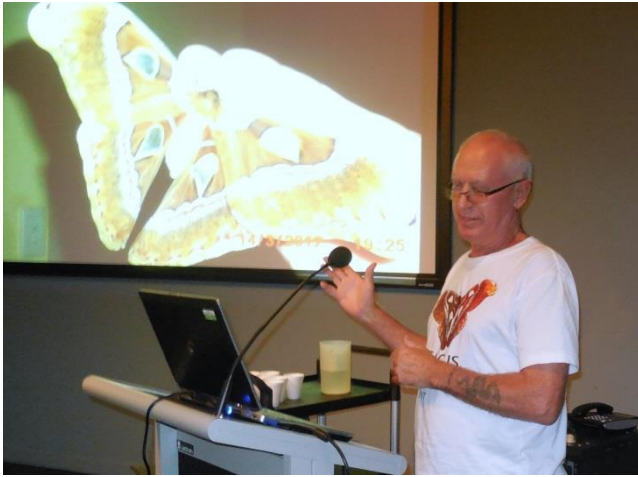
It was held at Museum Theatre, MAGNT, Bullocky Point and speakers included Dr Don Sands AO (Richmond Birdwing Conservation Network, Brisbane), Dr Michael Braby (Department of Land Resource Management), Geoff Martin (Entomologist), Dr Greg Leach (Greening Australia) and Helen Haritos, Louise Finch and Deb Hall (representing local landcare groups).

Don Sands (*below*) gave the keynote address on the history and development of the Richmond Birdwing Conservation Network (*see the March TENPS newsletter*).



Michael Braby spoke on the conservation status of the Atlas Moth and Geoff Martin (*below*) discussed the biology and captive breeding of Atlas Moths. (*Highlights of these and other presentations are in the report following this article.*)





This was followed by an afternoon tour of three revegetation sites at Casuarina Coastal Reserve (below), Ludmilla Creek and East Point Reserve led by the various Friends and Landcare groups.

The forum was well attended with a good number of people expressing interest to being part of the continuing process.

*Article and photos by Russell Dempster.*

## Atlas Moth Forum Report – Part 2

### Atlas Moth Habitat – Dr Michael Braby

Existing Atlas Moth records indicate that the Moth requires a minimum habitat patch of between 8-20 hectares and to date all records have been in coastal areas suggesting similar habitat inland is not suitable perhaps due to moisture or humidity. The Moth appears to use the ecotone or patch edged for breeding as this is where the host plants *Croton habrophyllus* and *Litsea glutinosa* grow with both being pioneer species. Since the Moth first was first recorded suitable Atlas Moth habitat has reduced considerably (~88%) and is now quite patchy in the Top End with individual patches also reducing in size by around 80%.

Threats to this habitat include:

- fire and especially hot and frequent fires which scorch pupae
- invasion of African grasses as these increase fire intensity
- habitat loss and fragmentation
- light pollution is a potential threat in suburban areas as males are attracted to lights

Research is required to map the actual distribution of suitable habitat patches and this

will require targeted surveys in likely areas. Further work is also needed to determine minimum patch size and patch connectivity required by the Atlas Moth. Specific work is required on host plants to find preferred tree age (height) and leaf toughness.

Initial steps to reduce the known threats could start immediately (with several Landcare group already working on aspects of this) once we can get these messages out to the community. These include:

- minimising clearing of Atlas Moth habitat
- control of weeds especially African grasses
- fire control through establishing firebreaks and fuel reduction burning if necessary
- and start turning off lights late at night in keys areas

Michael recommends that future progress should follow the following steps:

1. Research (on habitat and moth)
2. Conservation of habitat and revegetation of areas already lost
3. Captive breeding program
4. Translocation and reintroduction
5. Monitoring

### Atlas Moth Biology – Geoff Martin

Geoff Martin has personally undertaken significant work to determine the biology of the Atlas Moth. It is known that a female may lay up to 130 eggs. The eggs take 9-10 days to hatch and larvae feed for around 7 weeks. Larvae make a cocoon form 1-3 leaves inside which they pupate. The pupae may hatch in as little as 4 weeks during the Wet Season or may enter diapause and remain there until the following Wet.

The habitat is, as noted by Michael Braby, restricted to coastal areas with *Croton habrophyllus* and *Litsea glutinosa*. *C. habrophyllus* produces a dry seed but up to 90% of seed are predated by a wasp so significantly reducing recruitment potential. *L. glutinosa* produces a fleshy fruit which is favoured by birds and so more widely distributed. *Litsea* also produces suckers if damaged and especially after fire.

A major concern is that all current know populations of Atlas Moth are from areas of

unprotected land tenure Cobourg Peninsula and this really needs to be addressed.

### **Atlas Moth Habitat Mapping at East Point – David van der Hoek**

This work is being conducted by EcOz for the Darwin Council and is as yet unpublished. East Point forest comprises small areas of remnant forest and larger areas of regrowth where clearing has occurred at some stage. Surveys identified different areas based on canopy cover. Areas considered Dense are defined as greater than 70% cover, Mid Dense forest has 30-70% cover. Preliminary results indicate the Atlas Moth host plant *Litsea glutinosa* is found only in Dense forest. The primary host plant *Croton habrophyllus* only occurs in Mid Dense areas in remnant old forest and of the regrowth areas it is found only in the oldest of these sites. *C. habrophyllus* trees averaged 5m in height and are mostly restricted to the edge of the forest patches.

### **Conservation Volunteers and Landcare at Casuarina Coastal Reserve – Louise Finch**

Conservation Volunteers (formerly Conservation Volunteers Australia – CVA) have been actively involved in Landcare for 15 years. CV aims to 'protect, extend, manage and reinforce vegetation communities'. CV has a goal to revegetate 2500 hectares and to manage 2600 hectares around the Top End. Whilst this is small scale along the way CV has the chance to educate and increase publicity on the importance of habitat restoration. CV has over 400 volunteers.

Through the Corridors of Green project CV is aiming to create more stepping stones of habitat, raise community awareness, increase their volunteers and improve transfer of knowledge. Of the Corridors of Green projects 3 are focused on creation of Atlas Moth habitat and other projects that extend as far as Adelaide River.



*Atlas Moth Forum participants at Casuarina Coastal Reserve Landcare site. Photo by Russell Dempster.*

### **Friends of East Point – Helen Haritos**

This Landcare site is on the suburban fringe of the East Point Reserve behind Lake Alexander and is located on Council owned land. Historically the area includes a commercial salt pan and has significant military history. The Breezeway was originally a golf course. There was also a possible sighting of the Atlas Moth recorded from the site before cyclone Tracy. The Landcare group was established in 2007 first as the Breezeway Landcare, and later became the Friends of East Point in 2009.

Weeds such as Gamba and Mission grass are a problem in the area and fires burn significant portion of the site annually due to fires escaping from group who sleep rough in the area. There are pockets of native vegetation mostly open woodland and one huge kurrajong (*Brachychiton diversifolius*) is listed on the significant tree register. Richard Noske described the site as unique due to the close proximity of separate woodland, wetland and mangrove habitats. A number of school and educational surveys have been conducted in the area. A number of *Croton habrophyllus* plants have been planted by the Friends volunteers.



*Atlas Moth Forum participants at Friends of East Point Landcare site. Photo by Russell Dempster.*

Unfortunately the construction corridor for the pipeline for the new sewerage outfall now bisects the site. There is however potential for this site to be eventually connected with the Ludmilla Corridors or Green Landcare site.

*Article by Sarah Hirst.*

### **Deckchair Cinema Movie Night**

TENPS and Calma Gardens will be hosting an evening at Deckchair Cinema on September 11<sup>th</sup> as a joint fundraiser. More details will follow but put this date in your diary. Plan to come along, have fun and support your organisation...



## February Field Trip Report – Atlas Moth Forum trip to Dundee Beach.

Our field trip in February was to Dundee Beach to look at Atlas Moth sites with Geoff Martin leading the trip. Don Sands and Michael Braby were also in attendance, and there were about 20 of us in all. We met at the Lodge of Dundee at 9 am on the Sunday morning of the 23rd of February. Most of us had some breakfast or at least a coffee as we waited for everyone to assemble.

Negotiating the treacherous dirt road on a short stretch near Dundee was a challenge, as one section was covered with water and there was a huge hole in the centre of the road hidden from view. Some vehicles didn't manage to avoid it, and it featured in the NT News a few days later. Thankfully none of the vehicles involved were Top End Native Plant trippers!



We visited a monsoon forest patch where Yuli and Geoff found eggs of the Atlas Moth the year before on *Litsea glutinosa*. The other known food plant for Atlas Moth larvae, *Croton habrophyllus*, was well populated on the margins of the forest along with *Litsea glutinosa*. We didn't find any eggs this trip though as the timing wasn't right after an intense monsoon period.

The monsoon forest was quite dense, probably too dense for the large wing span of the Atlas Moths to negotiate, so like the Atlas Moths we ventured down a fire break on the edge of two properties, led by Geoff. A feature of the forest that I enjoyed seeing was the spikey trunked *Zanthoxylon parviflorum* trees, some of which were fruiting.

Then we went on to another Don's place, a bit further inland. Don has a fantastic open woodland block on which he has managed to virtually eradicate all weeds from, an amazing

achievement. Don has established a labyrinth of paths on the block, and we meandered down the paths marvelling at the diversity and health of the woodland.



*Cycas maconochiei* was common (above); some were adorned with moss and *Dendrobium* affine orchids. A Bower Bird nest was well protected by a stand of Turkey Bush, *Calytrix exstipulata*. A soft hairy fronded *Cheilanthes* fern was growing amongst laterite next to Don's vehicle track in an exposed area.

Midway through the walk over Don's block Geoff received a call from ABC radio's Lisa Pellegrino. Geoff, Michael and Russell went live on air via telephone promoting conservation, the Atlas Moth and activities of the Top End Native Plant Society!

The hardy monsoon forest trees *Canarium australianum* were fruiting in the open woodland. Another hardy monsoon forest species, *Carallia brachiata*, had a carpet of seedlings under the parent tree, so Don said we



could rescue a few of the seedlings from the pathway to save them from being mown down later. A few of us conservationally minded people obliged.

Other species of interest that were flowering included *Thysanotus*, *Ipomoea*, *Grevillea pluricaulis* and a *Habernaria* orchid.



*Habernaria* photographed during the February field trip to Dundee by Russell Dempster.

We sojourned back to the Lodge for lunch after thoroughly enjoying the activities and meanderings of the morning, being thoroughly appreciative of the leadership of Geoff and Don.

*Article and photos by Russell Dempster.*

### TENPS Committee Meeting

Committee meetings are held every second month and members are most welcome to attend. The next committee meeting will be on Wednesday **2<sup>nd</sup> April 2014** at 7.30 pm, venue TBA.

### March Meeting Report – Groote Eylandt Research by Jenni Low Choy.

Jenni Low Choy was awarded the 2013 TENPS scholarship for her CDU Masters degree. Jenni is attempting to improve vegetation maps of Groote Eylandt.

Groote Eylandt is the third largest island off the Australian coast. It covers 2200km<sup>2</sup> and is the largest of the 40 islands in the archipelago.



*Groote Eylandt (Image courtesy of Google Earth).*

Groote is home to the GEMCO mine and due to the mining lease the eastern side of the island was intensively surveyed in 1992 and as a result fine scale vegetation mapping has been done for this area. The remainder of the island has only very coarse mapping. On an NT scale existing maps show only 4 communities on Groote whilst Land System mapping indicates 17 units. Therefore fine scale mapping is required and using data from about 400 floristic plots undertaken in surveys between 2005 and 2009, Jenni has been able to develop preliminary fine scale land cover maps showing about 40 units.

Habitats on Groote Eylandt include:

- woodlands on sandstone, sand and laterite soils
- coastal heath and dune complexes and spinifex (*Triodia microstachys*) extends through coastal and inland areas
- mangrove swamps and sea grass with mangroves dominated by the sedge *Cladium mariscus*, *Batis arcillicola* and *Halosarcia*

- coastal riparian and monsoon vine thicket
- sandstone pavement and escarpment

Flora on Groote has variously been documented as follows:

- 600 species - 1981 Lewitt
- 850 species - 1988 Waddy
- 427 species - 1992 GEMCO survey (east coast mining lease only)
- 206 species - Jeremy Russell Smith
- 948 species - Non-vouchered records NT Atlas of plants
- 1096 species - NT Herbarium vouchers specimens
- and more to be discovered...

There are some notable floristic differences between Groote Eylandt and the NT mainland. Some species that are sparse on the mainland are common on Groote including:

- *Callitris intratropica*
- *Grevillea pungens*
- *Cycas arnhemica*
- *Ampelocissus acetosa*

There are also a number of species common on the mainland that are rare or absent on Groote:

- *Calytrix exstipulata*
- *Terminalia ferdinandiana*
- *Planchonia careya*
- *Cochlospermum fraseri*
- *Chrysopogon fallax*
- *Eucalyptus phoenicia*
- *Gardenia megasperma* (however *G. fucata* is common)

Groote has no threatened species at present as taxonomic changes have now found those listed previously are not separate species. There are however many near threatened plants and data deficient species along with a number of undescribed species. Some plants are known from only five locations in the NT including the lily, *Proiphys* (Amaryllidaceae), *Sedopsis* (Portulacaceae) and *Hernandia* (Hernandiaceae).

Some of the more interesting plants include the red flowering *Melaleuca viridiflora* (a contradiction as 'viridiflora' translates as 'green flower'!), and three separate colour phases in *Asteromyrtus magnifica* flowers found at Bartalumba Bay. *Aristolochis pubera* is also interesting for its highly variable leaf forms ranging from round to lobed to elongated.

Jenni shared some great photos of flowers found on Groote. After her presentation it was also mentioned that Groote is unique in that it has no introduced hoofstock, few weeds (notably no Gamba grass or Mimosa) and is relatively undisturbed (except for the GEMCO mine), and has few fires. It therefore has significant island Ark potential particularly the very remote southeast where there are no roads.

Thanks to Jenni for her presentation and amazing photos. We wish her all the best with her studies.

Article by Sarah Hirst.



*Grevillea pluricaulis* photographed during the February field trip to Dundee by Russell Dempster.



Bower bird bower photographed during the February field trip to Dundee by Russell Dempster.



# Howard Sand Plains

The Howard Sand Plains covers an area of 264 km<sup>2</sup> within the Howard River region, approximately 30 km east of Darwin in the Northern Territory. These sand plains are a NT Site of Conservation Significance that contains Sandsheet Heath vegetation, an 'at-risk' ecosystem in the Darwin coastal bioregion and is one of the 12 national priority High Environmental Value Aquatic Ecosystem sites. It has been classified 'at risk' due to the nature of plant and animal species found in the area and its proximity to encroaching urban development.



Sandsheet heath is generally made up of lightly scattered trees (*Melaleuca nervosa*, *Grevillea pteridifolia* and *Banksia dentata*) over a dense herbaceous layer made up of a large diversity of sedges and herbs. Due to the unique drainage and conditions created by these sand pockets, a wide range of plant and animal species specifically occur within this landscape type and include a range of slightly different plant communities on the sand pockets.

Photographs by Emma Lupin



# Howard Sand Plains

The area is a high priority for conservation as Rare and endangered species include the small carnivorous bladderwort plants of the genus *Utricularia*, for which the area is considered a diversity hotspot. At least 26 species have been found within the Howard Sand Plains. The site also supports the endangered herb *Typhonium taylori* and the Howard River Toadlet (*Uperoleia daviesae*). The toadlet species is known



only from the greater Darwin region and seems to be confined to the seasonally flooded sandplains of this area. In addition, 36 species recorded from the site are listed under international conventions protecting migratory birds. The high conservation sites are considered a priority as they are the best representative sites to support conservation of the endangered species which depend on this habitat.



Large portions of the site have been cleared, mined for sand and gravel, disturbed by roads, or planted with exotic trees and crops. The site is also increasingly impinged by intensifying urban growth with Humpty Doo and parts of Howard Springs and Coolalinga being within the site boundaries. Weeds, fire, fertiliser, hydrological changes and recreational vehicles are all additional threats.

This project aims to

- Reduce the impact of weeds and fire at high priority conservation sites.-
- Raise awareness of the area and its importance and engage community in its protection
- Undertake post-mining revegetation trials.

This project is supported by Greening Australia and Charles Darwin University through funding from the Australian Government Biodiversity fund



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