Top End Native Plant Society NEWSLETTER

MAY 2025

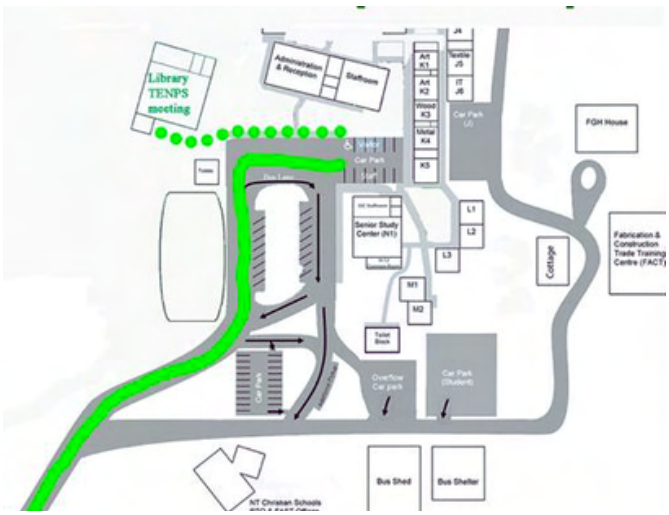
WHAT'S FLOWERING THIS MONTH

Trichosanthes cucumerina by Russell Dempster

Monthly Meetings

Top End Native Plant Society (TENPS) general meetings are held at 7:00pm on the third Thursday of the month at Marrara Christian College library on the corner of Amy Johnson Ave and McMillans Rd.
Bring your plants to swap, sell or have identified over a cuppa. The guest speaker presents at 8pm.
This month's talk will be by Jenni Risler from CSIRO on sand sheet vegetation.

NEXT MEETING: MAY 15TH 2025



TENPS (Top End Native Plant Society) Committee Members

President: Russell Dempster (0459440665)
Vice President: Sean Stieber
Secretary: Johanna Stieber
Treasurer: Graham Zemunik
Publications and Librarian: Richard Boyne
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General Committee Member: Clair Hewitt
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Public Officer: Dave Liddle

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VISIT OUR FACEBOOK FOR INFO ON OUR NEXT EVENTS AND SALES!

www.topendnativeplants.org.au
topendnativeplants

APRIL MEETING ~ SAWFISH PRESENTATION BY SAM AMINI

Sam Amini presented the April meeting talk on sawfish in the Top End. Sam is an honours student and research assistant in the Northern Shark and Ray Research Group and winner of the 2024 TENPS CDU scholarship.

Sawfishes fall into a category of vertebrates called elasmobranchs, which include sharks and rays. At the present time, approximately one third of all elasmobranch species are threatened with extinction due to factors such as high levels of both targeted and incidental exploitation, persecution, habitat loss, and climate change.

Sawfish are a family of shark-like-rays consisting of two genera: *Anoxypristis* and *Pristis*. They are characterised by a long, toothy saw-like rostrum covered with electroreceptors, and there are five species globally. All five species are now critically endangered. The rostrums have the teeth on them – the saw.

Rostrums of 3 sawfish species by Russel Dempster

Northern Australia is a sawfish hotspot. Four out of the five species are 'reliably' caught in northern Australia, including Narrow Sawfish, Dwarf Sawfish, Green Sawfish, and Largetooth Sawfish. Each species is in decline due to overfishing, habitat loss and low biological productivity.

Narrow Sawfish are found from the Pilbara coast to Rockhampton, living in marine to estuarine waters. They occupy depths ranging from 0 -128 m, mostly to 40 m. These sawfish have no rostral teeth on the basal quarter of the rostrum and reach a total length of about 3.5 m.

Dwarf Sawfish live in marine-lined bays, river mouths, and turbid inshore waters, being found from the Pilbara coast to the Gulf of Carpentaria. They have a strong association with mudflats living in water in depths up to 20 m. These sawfish have evenly spaced rostral teeth and reach a total length of about 3.5 m.

Green Sawfish live in marine and estuarine waters with a preference for low turbidity, being found from the Pilbara coast to central Queensland. They reach a total length of more than 7 m and live in depths ranging from 0 - 100 m, more commonly in shallower water. The space between the rostral teeth increases closer to the body in this species.

Largetooth Sawfish are the only euryhaline sawfish species, living in freshwater to marine waters. Juveniles use freshwater nurseries up until 6 to 8 years of age. They reach a total length of more than 7 m and are long lived, the oldest recorded being about 44 years. Sam is working on this species. It is well recorded in the NT and can be found 400 - 500 km upstream.

Sam's study area is the Daly River, working in collaboration with Malak Malak rangers. The Daly has a large catchment of about 53,000 square km. When floodwaters retract at the end of the wet season, billabongs are left on the floodplains, fringed with *Barringtonia acutangula* (Freshwater Mangrove).

Freshwater mangrove on the edge of a billabong, Daly River Floodplain by Sam Amini

Sawfish rescues combine the traditional ecological knowledge of the Malak Malak rangers with western science to locate, capture, process and relocate stranded Largetooth Sawfish from near-dry waterholes to the perennial waters of the nearby river. The 14+ year collaboration has seen 113 sawfish relocated, with a direct conservation benefit as well as two-way knowledge being exchanged in culturally important ecosystems.

Floodplain waterholes provide refugia for the Largetooth Sawfish. Shade from Freshwater Mangroves (*Barringtonia*) provides a thermal buffer from heat, and the shallow habitat allows the opportunity to avoid predation from Saltwater Crocodiles. There is an abundance of prey species even in the late dry for the sawfish to eat.

Billabong on the Daly River Floodplain by Thor F. Jensen

There is a strong correlation between the wet season size (AMI) and floodplain inundation with the number of sawfish, based on the number rescued in a given year.
In his study on relatedness of individuals (genetic similarity shared via a common ancestor), Sam has found there is a low incidence of kin in the sawfish rescued, and that capture location affects the odds of being related.

The Daly River is under threat from agriculture and water allocation as reduced inundation of floodplains results in decreased productivity of sawfish. Additionally, the Daly is under threat from climate change as recruitment opportunities decrease.

Thanks Sam, for a stimulating presentation, sharing your insights from your work. It was very enjoyable and educational.

Report by Russell Dempster.

MARCH FIELD TRIP ~ MARRAKAI ROAD OFF STUART HIGHWAY TO THE PROPOSED ARROWS SITE

For the March Field Trip TENPS members met at Coolalinga and car-pooled down to Marrakai Road. There was a good turn out with Bryn Pickering leading the excursion.

Some members met us at the start of the road at the Stuart Highway intersection and we consolidated cars further. There was some water to drive through before we ventured through the first range of hills. We stopped on the track between the two sets of hills. Bryn gave an introduction to the area where the Adelaide River Off-stream Water Storage (AROWS) project will inundate. Details of the project can be seen at https://infrastructure.nt.gov.au/project/adelaide-river-off-stream-water-storage

Marrakai Rd by Russel Dempster

Bryn at Marrakai by Gurusha Leeman

Marrakai Rd adventurers by Russel Dempster

Utricularia involvens by Russel Dempster

We walked along the track and had a look at the open woodland species growing near and along the road including *Cartonema spicatum*, before going into a sand sheet area. There were several species of *Utricularia* found, including *Utricularia involvens, U. Gaagudju, U. leptoplectra* and *U. chrysantha*. *Utricularia involvens* looks a lot like *U. odorata*, the former has a twining stem (shown in the photo), the latter has a straight stem. *Centranthera cochinchinensis, Thysanotus chinensis, Drosera dilatatopetiolaris, Drosera brevicornis* and *Byblis aquatica* were also observed in the sand sheet.

Utricularia leptoplectra by Russel Dempster

Utricularia chrysantha by Zig Madycki

Centranthera cochinchinensis by Russel Dempster

Utricularia gaagudju by Zig Madycki

A creek with flowing across the road over a metre deep stopped our vehicles as we drove on toward the second range, so we turned around and went back to the first range closer to the Stuart Highway. We stopped and walked along the track where the creek cuts through the range, enjoying the monsoon forest there.

I was particularly pleased to find a tall *Endospermum mymrecophilum* growing in the forest, as well as some *Artocarpus glaucus* (Breadfruit). Previously known as *Endospermum medullosum*, *E. mymrecophilum* is classified as Near Threatened. Growing also at Black Jungle, the Tiwi Islands and Channel Point, they are typically found in rainforest patches with less than five adults and no juveniles. *Artocarpus glaucus* is a large, evergreen tree that can grow up to 40 metres tall. It can buttress, and it has edible fruits.

Russell Dempster and a large *Endospermum mymrecophilum* by Gurusha Leeman

Thanks to Bryn for leading our morning. Your knowledge of plants and animals in the bush is amazing. Thanks to Zig and Grusha for sharing your knowledge and photos too.

Russell Dempster

Old growth ironwood set to be drowned on Marrakai Road

In March 2025, TENPS visited the site of the planned AROWS water harvesting project. It is expected to permanently flood 56 square kilometres of immaculate biodiverse savanna, floodplain and monsoon vine forest.

Amongst the erect *Sorghum intrans* (spear grass) stands a healthy tall and fat *Erythrophleum chlorostachys* (ironwood tree). It boasts a breast height circumference of 208 centimeters. To guess its age, a conversion equation reveals the diameter of this old tree is 66 centimetres. The hard part is deciding on a growth rate.

As ironwoods are known to be slow growing, if we take the slowest growth rate from a study [1] of observed growth of native trees in Queensland's 1000-1200 mm annual rain region then our ironwood may be 509 years old.

However, a local study [2] found that ironwoods with a diameter of 40 centimeters are likely to be about 367 years old. Perhaps as they didn't find any, they didn't compute for fatter trees and the growth rate clearly fell as the trees got older. Extrapolating on their graph of ironwood tree growth, suggests our ironwood could be as much as 900 years old.

All reports suggest old ironwoods are rare, and I am yet to see another ironwood with such an ancient girth.

[1]Growth rates of Eucalyptus and other Australian native tree species derived from seven decades of growth monitoring
[2] https://www.agriculture.gov.au/sites/default/files/sitecollectiondocuments/forestry/publications/Ironwood_in_NT.pdf

Article and photo by Grusha Leeman

From the Archives ~ collated by Lon Wallis

30 years ago – May 1995 – Monsoon Rainforests in the Darwin Area by Dave Liddle

Dave talked about the vegetation changes around Darwin since the 1940's. Bill Panton's paper *Changes in Post World War II Distribution and Status of Monsoon Rainforests in the Darwin Area* provided background, along with recent maps of remanent vegetation and land use of Darwin. The aerial photo's taken during the war have provided a good reference point for charting the decline and increase in the vegetation around Darwin. Since this time approximately 60% of monsoon vegetation has been lost with the largest decreases in the Millner/Rapid creek (100ha), Leanyer complex (63ha) and East Point (60ha). Only Holmes Jungle has increased in size by a mere 2ha.

The main factors which are considered to have led to this decline are increasing urbanisation which accounts for approximately 40% of the loss. Urbanisation has mainly affected the rainforests occurring on dry substrate, which are typified by locations such as East Point, Mindil Beach, etc. The other factors leading to the decline of the monsoon forests include cyclone damage, weed invasion and fire activity. In all of the fifteen patches identifiable in 1945, ten have retreated their boundaries, four have disappeared and one has increased in size.

Bill concluded in his paper that urbanisation is a decreasing threat for the larger patches, most of which are located in parks and reserves. However smaller patches are less protected, and all areas are increasingly threatened by wildfire and weed invasion. Both of which act to reduce rainforest regeneration, leading to boundary contraction.

Of particular interest lately has been the Duke Street rainforest which is of special interest as it is only one of two wet rainforests in the Darwin area (Holmes Jungle being the other). This particular patch has declined from 5ha in 1945 to 1ha today. This rainforest has permanent water which has contributed to the occurrence of species such as *Syzygium armstrongii* and *Melicope elleryana* which prefer wet conditions. The National Threatened Species Network, Darwin City Council, and other groups are currently looking at how the area can be managed, and are setting up a 'friends group' to provide the people power.

Our evening concluded with slides around Darwin from the early 1960's - with some places still recognisable and others ???

20 years ago – May 2005 – Carbon Flux (flow) in the Savanna – by Dr Lindsay Hutley (abridged)

Dr. Lindsay Hutley and a team of researchers from a range of institutions have been looking into carbon cycling in tropical savannas. While savannas hold a relatively small quantity of carbon per ha, their extensive nature means their total carbon store is significant. However, as for the global situation, little is known about the response of savannas, even basic questions such as: are savannas acting as a carbon sink?

In mesic savannas such as near Darwin the ecosystem holds around 192 tonnes of carbon per ha. The above ground component is 35 tonnes, comprised of trees holding 32, the understorey 2 and litter 1 tonne per ha. The 32 tonnes of tree carbon is comprised of leaves 1, branches 8, stems 22 and dead stems 1 tonne per ha. The below ground plant component contributes around a further 17 tonnes, comprised of coarse roots 16.4 and fine roots 0.4 tonnes. The remaining 151 tonnes comes from humus and micro-organisms in the soil, measured to a depth of 1m. Thus, the soil holds a major component of carbon in our Top End landscape.

However, the interest is not limited to what is there, but how it changes. Gas exchange can be measured above canopy with instruments allowing the pattern of carbon flux to be followed over time. Preliminary data indicate that with fire around 50% of the annual production of carbon goes up in smoke. With fire the Top End site became a carbon source. However, in 3 months the canopy rebuilt and then the system reverted back to being a sink.

Overall the burned site in the NT was a net sink throughout the study. In contrast, the Queensland site was grazed and was a net source of carbon over a two-year study period. Of course the above is a simple summary of a complex story with seasonal changes that can vary between components of the system. Interestingly, the leaf area index for the canopy was relatively stable (I presume in the absence of hot fire scorching to the highest twigs! -DL) while not surprisingly the understorey was highly seasonal. There are also differing patterns with tree increment, season fine root turnover and release of CO2 from the soil.

Lindsay provided us with plenty of food for thought, numerous facts and figures and some intriguing insights as to how our Top End savannas contribute to the cycling of carbon. Without doubt we will hear much more about carbon flux as we humans face the legacy of our ongoing consumption of fossil fuels.

Article by Dave Liddle.

10 years ago – May 2015 – Grant application to produce a field guide to plants of the Sand Sheets

TENPS recently lodged a community grant application to Territory Natural Resource Management seeking funds to produce an electronic field guide to the plants of the sand-sheet country near Darwin. If funded, TENPS will collaborate with the NT Herbarium where botanists hold a wealth of knowledge and images of sand-sheet plants. There will be opportunities for members to add to the collection of photographs to fill gaps in the images available. We will also conduct a field day to engage with the broader community and launch the field guide.

TENPS have been involved with activities on the sand plains since the 1990's and this move to make more information available to the public is another step along the path of informing the community about the extraordinary landscape we have on our doorstep. Special plants of the sand-sheet include the endangered *Typhonium taylori* and vulnerable *Utricularia dunstaniae*.

Utricularia dunstaniae

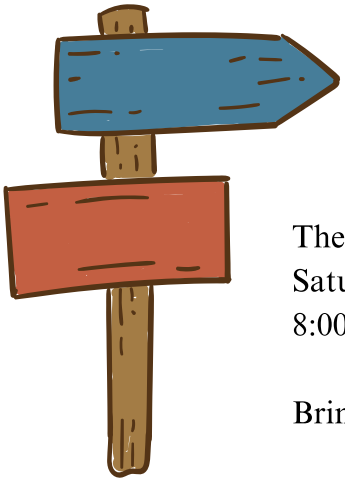
While these species are important and have particular status under legislation, the most outstanding feature is the extraordinarily high diversity of carnivorous Utricularia, with 26 species from the Howard Sand Plains Site of Conservation Significance and up to 12 species recorded in a single 20 x 20 metre survey quadrat.

An announcement of successful applications is expected before the end of the month.

Article and photos by Dave Liddle.

MAY MEETING - RESTORATION OF AN OLD SAND MINE BY THE HOLTZE LANDCARE GROUP

Jenni Risler is an environmental scientist with the Ecosystem Restoration and Landform (ERL) team in the Office of the Supervising Scientist. She specialises in fauna, botanic and ecological advice. Jenni's knowledge and experience is gained from over 30 years of field survey across north Australian savannas. She is leading fauna trapping and full floristic data inventories to accurately document the flora and fauna of natural ecosystems.



MAY FIELD TRIP

The next field trip will be to Walker Creek off Litchfield Park Rd on Saturday the 17th of May. We will meet at the Coolalinga Bendigo Bank at 8:00 am if you would like to carpool.

Bring a hat, water bottle and some nibbles.

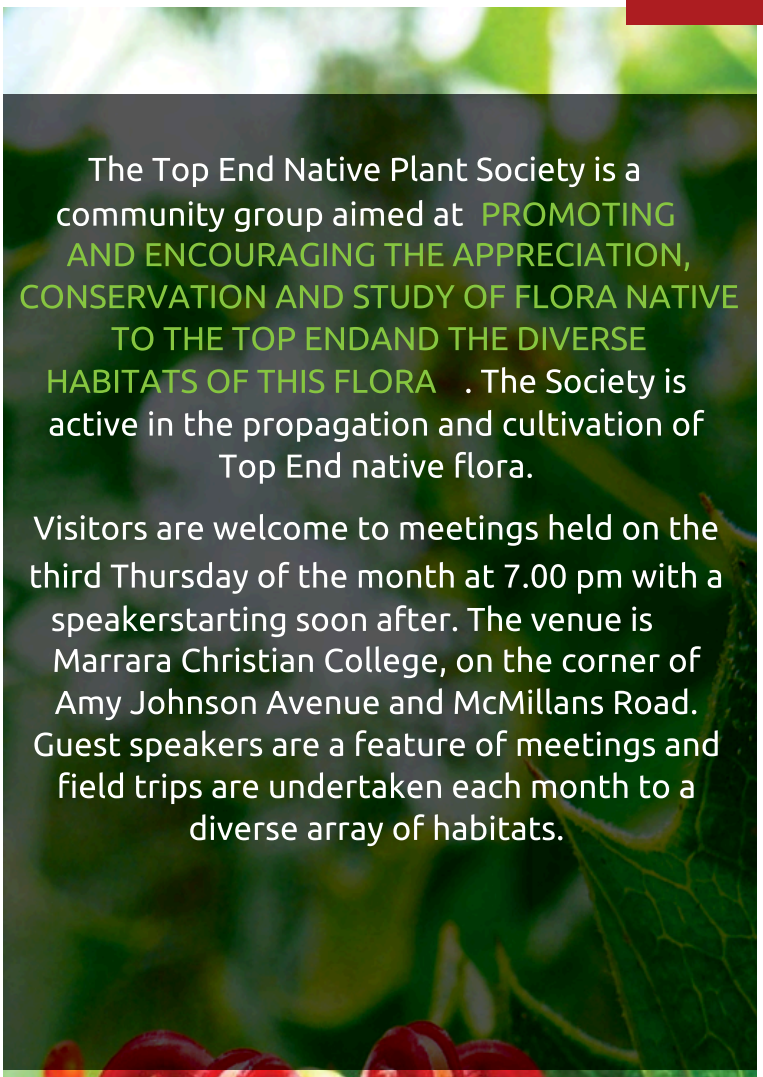
Top End Native Plant Society

BECOME A MEMBER!

Member discounts for plant sales.

MEMBERSHIP APPLICATION

(Due annually on 1st July each year)



The Top End Native Plant Society is a community group aimed at PROMOTING AND ENCOURAGING THE APPRECIATION, CONSERVATION AND STUDY OF FLORA NATIVE TO THE TOP ENDAND THE DIVERSE HABITATS OF THIS FLORA . The Society is active in the propagation and cultivation of Top End native flora.

Visitors are welcome to meetings held on the third Thursday of the month at 7.00 pm with a speakerstarting soon after. The venue is Marrara Christian College, on the corner of Amy Johnson Avenue and McMillans Road. Guest speakers are a feature of meetings and field trips are undertaken each month to a diverse array of habitats.

New Membership ☐ Renewal ☐

Membership fees are:

Individual Waged:	$35.00
Family Waged:	$45.00
Individual Unwaged:	$15.00
Family Unwaged:	$20.00

Payment: $_____

Family name:_____

Name/s: _____

Email address:_____

Postal address:_____

To pay online:

Bank : Bendigo Bank

Account Name: Top End Native Plant Society

BSB: 633 000

Account: 207 974 247

Note: Please include your name in the transfer reference and email the information in this form to topendnativeplantsociety@hotmail.com
Or pay in person at meetings or events where cash or card will be accepted.

Follow 'Top End Native Plant Society' on Facebook for information on current activities and events.

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