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~ JULY 2005 NEWSLETTER ~

MEETINGS AND FIELD TRIPS

We meet on the third Thursday of the month at 7:30 pm. General meetings conclude by 8:15 pm and are followed by a guest speaker beginning at 8:30 pm. There is time for a cuppa between the meeting and the guest speaker. The venue for the meeting is Marrara Christian School, on the corner of Amy Johnson and McMillan Drives. All welcome. Bring plants to swap, sell or have identified.

~ SUBSCRIPTION REMINDER ~
MEMBERSHIP FEES ARE DUE 1 JULY 2005

See the back page of this newsletter for details

~ NEXT MEETING THURSDAY 21 JULY 2005~
~ GUEST SPEAKER ~
"RECOGNISING PLANT FAMILIES"
Dale Dixon, NT Herbarium.

Dr. Dale Dixon, Taxonomic Botanist at the Darwin Herbarium, will provide an introduction to plant identification techniques, focusing on recognising family characters. Dale will also outline techniques and protocols for collecting plant specimens. This talk will be a valuable introduction for those attending the Plant Identification Workshop at Litchfield National Park at the end of July. For those not attending the workshop, the talk will still provide skills to help in identifying Top End native plants.

~ JULY FIELD TRIP ~
Saturday 30 July to Monday 1 August
Plant Identification Workshop

We have arranged a plant identification workshop for over the Picnic Day long weekend in Litchfield National Park. Dale Dixon will follow his talk to assist with instruction at this workshop. The workshop is aimed at the needs of participants with no expectation of pre-existing plant identification skills. A keenness to learn is the only prerequisite. The venue is the Environmental Education Campground in Litchfield National Park, near Buley Rockhole. The campground comprises a large shelter shed, a kitchen and store room at one end; a gas cooker, stainless steel bench and sinks; sturdy trestle tables and plastic chairs; an ablution block; grassed area for tents; fireplace; solar lighting and generator if required. The camp is set in the bush with a small creek nearby and small plunge pool. See itinerary inside for further details.

~ OTHER UPCOMING EVENTS ~
August General Meeting
August Field Trip
TBA

~ Inspirational Role Earns Life Membership ~

Sunday 19th of June, TENPS honoured long-term member Joyce Stobo with an award of life membership. This is the first time life membership has been awarded by the Society, given in recognition of Joyce's contribution to the Society and her role in generating interest in the wildflowers of the Top End.

During the presentation ceremony under a shady tree on Darwin's Esplanade, Society President, Dr David Liddle, expressed the respect and gratitude of members:

> *"Joyce is an inspiration through her enthusiasm and knowledge of plants, particularly the little flowers. The seasonally inundated wetlands of the Howard River area are of international significance with their diversity of carnivorous bladderwort plants and Joyce has been a driving force in bringing these small showy wetland plants to the attention of members. Within the Howard River catchment, in an area around 30 paces by 30 paces the global authority on bladderworts found 14 species, a level of bladderwort diversity equally high to anywhere around the globe. Joyce has displayed determination in pursing her interest in plants with numerous field excursions and many hours peering down a microscope. About a decade ago, at an age where most people would run as fast as they could from new technology, Joyce went out and bought a computer. She mastered the technology and set up a database to store her numerous photographs of wildflowers. Her enthusiasm and capacity to take on new challenges is an inspiration to us all. Although a self-taught amateur, Joyce's knowledge of Top End herbs is only equalled by the most experienced botanists. At 85 years, she is still discovering species in the Darwin rural area that are considered rare. Her inspiration to others has engendered an appreciation of the many delightful and little studied herbs that grow in the region."*

Thanks to members who contributed to organising the ceremony to award life membership to Joyce Stobo and to those who turned up on the day to make it a great event. The ceremony went off well, accompanied by a delicious afternoon tea and pleasant stroll along Lameroo Beach. TENPS presented a certificate produced by Deb Bisa and a photo album compiled by Robyn Liddle. Joyce will bring the certificate and photo album to the next general meeting, so members who could not attend the ceremony will have a chance to view the items.

- Dave Liddle

~ To the Top End Native Plant Society ~

This is a letter of thanks to the Society who so kindly presented me with a life membership, it is much appreciated. I was thrilled to have both the attractive certificate, showing some of my favourite *Utricularias*, and the magnificent photo album. For those of you who may not have seen the album, it shows excellent photos of many of the club's field days, interspersed with Bronwyn's amusing sketches.

I cannot quite remember when I first joined the club. The meetings were held at Howard Springs .Since the meetings have been held at the Marrara Christian

School I have attended the meetings fairly regularly. I enjoy the input from the speakers and also the company of other members.

In about 1986 I joined a small group flower hunters in W A . It was led by Dr David Philcox, a botanist from Kew. I was fascinated by many of the plants we came across and on my return started looking to see if some of these families and species grew in the Top End. With the aid of the checklist of vascular plants of the Northern Territory, I found that many of the same families did exist here. Since then I have been looking for these plants that where previously unknown to me, and I am still looking. !!

- Joyce Stobo

Future Directions for Landscape Ecology in Northern Australia: Building on the Lessons from Palms and Termites. Professor David Bowman

Professor Bowman is an occasional speaker at our meetings and never fails to dazzle us with his enthusiasm and challenging subject matter; this talk was no exception.

He began by likening the engagement between landscape and plants to a conversation or dialogue that creates a story, and outlined the history of landscape ecology. It used to be plot-based but since the advent of new and powerful technology such as global information systems there is now the capacity and the means to deal effectively with the landscape by retaining spatial and temporal aspects.

Increasingly the value of the savannah is being realised, especially as a carbon sink to ameliorate the effects of global warming. Approximately 1 tonne/ha of Carbon is captured, two thirds of which is biomass located underground. Some stark alternatives are becoming clear; what is more important, cattle or carbon sinks?

With a convergence of disciplines there is new thinking about landscapes in evolutionary ways. Organisms are the work of millions of years of evolution and can disappear in a short time frame. Landscape change is closely coupled to population viability, and the study of ecological genetics (eg minimum population analysis used to study inbred populations) leads to realistic models and maps that can assist in determining which part of the landscape is to be kept or destroyed.

Prof. Bowman used 3 case studies to illustrate his talk; *Livistona* sp. Palms, 'magnetic' termites (bio-markers of the monsoon) and rock rats.

Livistona palms are spread over a range of habitats, but DNA analysis, used to build a family tree of the genus, have resulted in the finding that the initial invasion was from SE Asia, followed by an explosive radiation that filled the available niches. The reason for the close genetic relationship between the current species is that big rivers (paleo-channels) carried the seeds across the landscape. Prof. Bowman suggests that convergent evolution of fire-tolerant taxa has occurred, and that the relatively recent radiation of *Livistonia* has resulted in the genus filling a broad cross-section of pre-existing habitats, including fire-prone ones.

Prof. Bowman says that the monsoon is the driver of flammability in the Australian environment. The summer monsoon with its seasonal contrast of prevailing winds and rainfall has influenced the northern half of the continent for a very long time, but it is likely that the power of the monsoon has dropped away in more recent times, as indicated by the distribution of the paleo-channels. Fires, characteristic of the dry season, are terminated by thunderstorms, and our region (the Kimberley to Darwin) is the 'circuit breaker' for the planet. This was shown by quite vivid imagery showing the level of lightning strikes in our region compared to the rest of Australia and the world. The so-called Maritime Continent (covering the area of Northern Australia and Indonesia) is a global heat engine, derived from the extent of the warm, shallow seas in the area, and has generated the northern monsoon for a very long but uncertain time. Evidence for the greater southerly extent and influence of the monsoon is found in Pleistocene lake sediments for the arid zones that show the waxing and waning of monsoonal incursions, and the evidence that the Barkly Tableland was once an enormous wetland.

The bio-physics of 'magnetic' termites.
These termites are endemic to northern Australia; their mound acts a solar panel that is aligned to local conditions so that cool air is counteracted by heating due to higher temperatures on the eastern side of the mound. These mounds represent a perfect adaptation to the monsoon climate and local conditions. Each group of mounds has an individual orientation, produced as a result of the genetic makeup of the termites, that is consistent with the antiquity of the habitat of these 'magnetic' termites and thus the monsoon, which Prof Bowman speculates could be 20 million years old.

Carpentaria Rock Rats, a native rat has been around for a long time and appeared to be critically endangered, according to knowledge acquired over the last 20 years. Population modelling showed that if changed fire patterns continued to threaten their rainforest habitat the survival of the species would be threatened. However, using new technologies, it appears that their habitat is expanding despite fire, and so the animal may not be critically endangered after all.

The lesson to be learnt from this data is that there is not such an important need to monitor populations (which is very resource-intensive) but instead do regular collection of molecular samples (hair, scats etc), and combine this with targeted remote sensing, then statistical analysis (eg to determine degrees of inbreeding). This strategy is consistent with good adaptive management of species as otherwise the cost of more resource-intensive land management is prohibitive.

Prof. Bowman says that we need to find new ways of thinking and doing in land and natural resource management so as to better negotiate land use in the current situation where everything has a value and everything is being 'put to work'. The love and awe of nature is still a valid value but we cannot rely solely on it when there are other possible users of natural resources and other interested parties that we need to engage with.

In conclusion, Prof. Bowman says that:

1. Global change will demand novel approaches
2. The opportunity exists for genuine integrative research
3. Technology advances provide fresh opportunities
4. Disciplinary convergence (consilience) will continue to provide new perspectives on natural resource management.

- Geoff Gaskell

Daly Region Community Reference Group: Brief Summary Of The Draft Report Of November 2004

This report identifies key issues for managing the values and natural resources of the Daly Region and recommends principles, guidelines, processes and actions for dealing with them.

The values of the Daly Region need to be managed in an integrated way as the management of each value will impact on the others. The management of the catchment's water resources and the processes for water allocation are critical to managing and maintaining the catchment's values and sustainable economic activity. Water allocation and land use planning are inextricably linked.

The knowledge base to inform decision-making for the Daly Region is incomplete, particularly in relation to the aquatic ecosystems of the Daly and its tributaries, the relationship between groundwater aquifers and river flow and the values Aboriginal people attach to land and water. A precautionary approach to resource use is therefore the only sensible action at this stage, coupled with an active regime of further research, monitoring, evaluation and adaptive management. Community ownership and empowerment (including capacity-building) of these processes is essential and local knowledge and expertise should be valued. Specific recommendations that may be of particular interest to TENPS members are:

- A Daly Catchment Management Authority should be created to deliver integrated natural resource planning and management in the catchment.
- The Daly Catchment Management Authority should develop an Integrated Catchment Management Plan through appropriate community engagement, for consideration by Government.
- Provision for, and where needed restoration through, an incentive program of vegetation corridors on all streams and rivers in the Daly Region.
  (A proposed addition to the above recommendation, stating that 'corridors should be a minimum of 1000 metres on both banks for Level 6 and 7 streams, graduating to 100 metres for Level 1 streams' was not included in the recommendations as there was no consensus among the group.

Interested members can obtain a CD with the full report and an audio/video 'flythrough' of the Daly Catchment at www.ipe.nt.gov.au/whatwedo/dalyregion/.

- Geoff Gaskell.

~ Itinerary for Plant Identification Workshop, Saturday 30th to Monday 1st August 2005 ~

Outcomes:

- Build participants confidence in using dichotomous keys to identify plants.
- Increase appreciation of features to look for and techniques applied in field identification.
- A familiarity with basic jargon.
- Increase familiarity with some plant families, particularly *Myrtaceae*.

Activities:

- A combination of field and camp based activities.
- A mix of instruction and practical using plant keys.
- Construct a simple plant key.
- Illustrated talks on naming of plants and vegetation communities.

Venue:

Environmental Education Campground, Litchfield National Park. The venue is located in the bush near Buley Rockhole, behind a locked gate. There is a small creek and plunge pool adjacent to the camp. The access road turns off the road to Florence Falls, on the opposite side of the road and about 100m back from the turn-off to Buley Rockhole. From the gate it is around 500m to the campground. On Saturday morning somebody will be at the gate to let new arrivals in at half past the hour, at 0830 and 0930. If you arrive at another time, please walk down to the camp to collect the key.

Facilities:

The environmental education campground has a large shelter shed, open on 3 sides with a kitchen and store room at one end. The kitchen is equipped with a gas cooker along with stainless steel benches and sinks. Other equipment provided includes sturdy trestle tables and plastic chairs. The shelter has solar lighting and a generator if required. There is an ablution block, large grassed area for tents and fireplace.

Cost:
There are no tuition fees for the workshop. Camping charges are very reasonable at $3.30 per adult per night (16 years and over), $1.65 per child per night (5-15 years) or $7.70 per family per night (2 Adults / 4 Children).

What to bring for camping:
Participants should be self sufficient with regard to camping gear. We will have access to the kitchen with gas cooker, otherwise bring your own, including food and drinking water. Water will be available for other purposes.

Day & Time	Activity	Location	Co-ordinator
Saturday			
10 – 10.30am	Introduction: outline of program; taxonomic hierarchy,	Camp	Liddle
10.30 – 10.45am	Break		
10.45am – 2.00pm	Field; Recognise family groups - rainforest and some woodland; BYO lunch and bathers.	Creekline near camp	Dixon
2.00pm-2.30pm	Break		
2.30 – 3.00pm	Camp: use of keys; dichotomous keys; glossary; features.	Camp	Dixon
3.00- 3.30pm	Break		
3.30 – 4.30pm	Practice use of plant keys, focus on vegetative features.	Camp	Dixon, Jacka, Liddle
4.30 – 8.00pm	Break		
8.00 – 8.30pm	Naming of plants.	Camp	Jacka
Sunday			
9.00am – 12.00am.	Field: *Myrtaceae*; focus on features of Eucalypts. BYO morning tea and bathers.	Field near camp.	Jacka, Liddle
12.00 – 1.30pm	Lunch Break		
1.30 – 3.00pm	Practice use of plant keys, focus on flower and fruit features	Camp	Jacka, Liddle
3.00 – 3.30pm	Break.		
3.30 – 4.30pm	Practice use of plant keys.	Camp	Jacka, Liddle
4.30 – 8.00pm	Break		
8.00 – 8.30pm	Vegetation communities.	Camp	Liddle
Monday			
9.00 – 10.30am	Construct plant key.	Camp	Jacka, Liddle
10.30 – 11.00am	Break.		
11.00 – 12.00	Demonstration of participants keys	Camp	Jacka, Liddle
12.00 – 1.00pm	Break.		
1.00 – 2.00pm	Summary and wind up.	Camp	Jacka, Liddle
2.00pm	End of workshop.		

What to bring for plant identification:
Enthusiasm!!! Remember, the workshop will be aimed at the needs of participants with no expectation of pre-existing plant identification skills; however, a keenness to learn is a prerequisite.
Essential:
Note book and pencil
Desirable:
Plastic bags, 5-10 recycled shopping bags will be fine.
Hand lens, 10 x magnification.
Plant books including
- Booker & Kleinig (2004): Field Guide to Eucalypts Vol 3
- Booth et al. (2001). Field key for the monsoon rainforest flora of the Darwin Region.
- Dunlop et al. (1995). Flora of the Darwin Region Vol 2.
- Any other reference books that you think may be relevant.

Registration:
Numbers are limited and for planning purposes we need to know who is attending. To register or for further information please respond to **Sally Jacka on 8988 5654 or Email** s983452@students.cdu.edu.au

Pre-workshop Introduction:
Dr Dale Dixon from the NT Herbarium will deliver a talk about plant families and field collection techniques at the TENPS general meeting on Thursday 21st July. The workshop will build upon the theme of plant families, so please attend the general meeting if you can.

~ Our Garden ~

Seven years ago we purchased an 11ha bush block in Humpty Doo. Being focused on getting a house built and managing weeds, the garden took third place until we moved into the house nearly 3 years ago. Although Snake weed control still takes up much of our spare time, we are now able to enjoy more gardening.

With the aim of encouraging native animals to share our garden, but at the same time providing our house with some fire protection, we cleared some bush around the house site, but retained some well-established trees and built garden beds around them. These existing trees provided shelter for new plantings and perches and homes for birds and other wildlife.

One way of creating gardens that attract a diversity of fauna is to provide a variety of habitats. This is what we have attempted to do. When we sit on our front verandah, if we look to the right we see a small rainforest; look straight ahead, we see a pond with a wetland backdrop, and look to the left, a sandstone escarpment vegetation community. Well, at least this is the aim – we haven't quite got there yet. It makes our garden sound huge, but in fact, the area I am talking about is only about the same size as an urban block. With careful planning and appropriate treatment, it can be done.

For the rainforest, we imported a large amount of cow manure. I would only recommend this if you are willing to be vigilant with weed control, as it did bring in all sorts of weird weed species we had never seen before. However, we were careful to retain it in specified areas, and once spread out, we covered it in at least half a metre of mulch, which is added to every year. We now have what could be considered reasonable soil in this area. Here we have planted a variety of locally indigenous rainforest trees and understorey shrubs.

The pond is lined with a black acrylic, which works well. Behind the pond we dug out an area which the pond overflows into, and filled it with sand. This simulates seasonal inundation and here we have planted *Grevillea pteridifolia, Banksia dentata, Hakea arborescens, Petalostigma pubescens* and a variety of sedges. Although we do not have any fish in the pond, as they can put frogs off breeding, we don't get mosquitoes breeding in it. It seems that some tadpoles and other larger insects feed on the wrigglers. We have created a paradise for frogs, but with the effect that our aquatic plants get decimated by the tadpoles. We have finally found a beautiful lily, *Nymphaea violacea*, that has resisted them, so we will attempt to get more of them.

For the escarpment simulation garden, we moved some local rocks to build it up. We would have liked to use larger rocks, but prefer not to take them from other areas. We then imported river sand (yes I am guilty - this is not really environmentally sound) to mix with the existing soil. We planted *Livistonia inermis, Melaleuca grandiflora* and a variety of acacias and grevilleas that grow naturally in escarpment country. This garden is bordered with a swathe of annual woodland herbs, mostly *Gomphrenas,* which flower in the late wet season.

Our back garden is essentially the native bush, but to provide extra colour, we have added *Grevillea dryandrii, Grevillea decurrens*, Kapoks and Kurrajongs and some annual herbs, all of which grow naturally in the area.

Most of the plants I have propagated from seed, but these have been supplemented with plants grown by other TENPS members and Greening Australia.

The immediate surrounds of our house is lawn. Well at least I wish it was. We are attempting to grow a native lawn, but with the wallabies that frequent our place, this may take some years. It is wonderful having the wildlife in close proximity, but it does take it's toll on the garden, and you have to learn to compromise at times if you are going to share with them.

- Sally Jacka

~ 2005 NT Threatened Species Art and Photography Exhibition ~

It's coming around to that time of the year again when artists and photographers start preparing for the annual exhibition. The theme of the event is 'NT threatened species, their threats and their habitats'. The event is open to all mediums (painting, sketch, sculpture, photography etc), will be on display at the Darwin Entertainment Centre Gallery from September 7th to 10th, the adult overall winner first prize is $1000 cash, and entries close 26th August. It is not a 'hard core' art event, the primary purpose is to raise awareness of the NT environment and its threats, so even if people have photographs, painting etc that aren't totally brilliant, it still would be good to have them exhibited. For contact details see below.

~ Book Launch ~

All TENPs members, their friends and their families, are invited to attend the official launching of the book titled **'A Guide to Threatened, Near Threatened and Data Deficient Plants in the Litchfield Shire of the Northern Territory',** written by Jarrad Holmes, Deborah Bisa, Audrey Hill and Beth Crase. The book is a result of a joint effort between the Threatened Species Network, TENPS, local community members and had significant input from staff from the Northern Territory Herbarium. TENPS also made a financial contribution to the printing costs of this publication.

The primary purpose of the book is to help locals in identifying and recording information on the plants of

'conservation concern' found within the Shire, and through collation of this information enable better informed decisions and the conservation of our local plant species. The book is in full colour, 93 pages in length, and includes descriptions for 55 plant species. The descriptions include information such as habitat preferences, known distributions, key-distinguishing features and for the majority of species a photograph as well. The book will be for sale to the public at a price of $12, and is free to TENPS members.

To encourage people to use the book, anyone who is the first to locate a plant featured in the book and has its identity confirmed by an expert, will be able to give the species a common name, which will be documented by the Threatened Species Network. At present, only 9 of the 55 species featured have a recognised common name.

The launch will take place at the Tropical Garden Spectacular, George Brown Botanic Gardens, in the 'Demonstration Marque' at 12pm on August the 6th.

There will be two guest speakers, one being a TENPS committee member, and the other being Mr Gerry Wood, member for Nelson, who will officially launch the publication.

After the launch, books will be available at the Tropical Garden Spectacular from the TENPS stall.

Hope to see you all there.

Jarrad Holmes Threatened Species Network Coordinator - Northern Savannas
Level 1, 82 Smith St, Darwin
GPO Box 1268 Darwin Northern Territory 0801

Tel: (08) 8941 7554 Fax: (08) 8941 6494
Email: jholmes@wwf.org.au

TSN is a community-based program of the Australian Government's Natural Heritage Trust and WWF Australia.

~ What's in Flower this month? ~

Whilst helping to set a Rogaine course around Adelaide River I came across this amazing tree orchid, *Dendrolobuim affine*, within a dry narrow gully. It was remarkable in that the host plant, a melaleuca was the only specimen in the vicinity that had the orchid growing on it and in such numbers. Unfortunately in the dusk the lighting was not conducive to a good photo nor was there time for a better examination. The epiphyte orchid flowers from May to October with showy pink and white flowers.

~ Create a Top End Cottage Garden ~

How often have you heard "I put in a few exotics to give the garden some colour". I think it is a real pity that the majority of gardeners and, sad to say, plant nurseries are unaware of the beautiful array of colourful native plants we have. Apart from a variety of Acacias, Hibiscus, Calytrix and Grevilleas, just to mention a few shrub genera, the Top End has an abundance of colourful annuals. And there are many that will provide the 'cottage garden' look, if that is your wish.

Crotalaria novae-hollandiae provides a thick yellow 1 metre backdrop to many slightly shorter species such as the white petalled, red throated *Abelmoschus moschatus* and *Hibiscus meraukensis*, various *Gomphrenas* ranging from pale to dark pink, and the white to pale blue *Borreria exserta.* At around 0.5 metre height, there is the crimson *Polycarpaea corymbosa* and *Trachymene didiscoides*, and the smaller, more delicate pink *Ptilotus corymbosus*. In front of these, the more shrubby deep crimson *Gomphrena* and dark blue *Spermacoce*

leptoloba., along with delicate, white *Oldenlandia*s and yellow *Goodenias* make a pretty border. If you wish for a more natural look, all these flowers look great interspersed with the appropriate height native grasses, which also gives the garden more body.

These are just a few examples of Top End woodland annuals that provide great colour in the late wet/early dry. For most of them, now is the time to collect seeds.

So, if you have a bush block, or know someone who does, look out for them. As most of them like disturbed ground, they flourish on roadside reserves in the rural area. But sadly, no consideration is given to their survival with the timing of slashing. Each year they are becoming less common, as they are so often slashed before they have a chance to set seed.

- *Sally Jacka*

Left and below left: Gomphrenas and Ptylotus come in a variety of pink and red shades. They have the added advantage of attracting butterflies and are ideal for dry flower arrangements.

Below: Crotalaria novae-hollandiae provides a thick yellow backdrop or hedge. The flowers and seed pods attract many species of butterflies.

~ Newsletter Contributions ~

Send any contributions for the newsletter to Mark Raines at rain0021@optusnet.com.au

~ What's the TENPS Committee Meeting Up to? ~

- Following the Award of Life Membership to Joyce, a media release was sent to the press and radio. So far this has resulted in Dave Liddle being invited into the ABC radio studio as a guest on the Saturday morning Gardening Show. A good opportunity to promote TENPS.
- Review of the constitution is in progress, to be finalised at the AGM.
- An attempt is being made to streamline the administration of TENPS by having policies and guidelines in place on a variety of matters. Currently guidelines are being formulated on the use of Society equipment, the sale of plants and advertising.
- Also to assist in administration, a letter of welcome to new members has been drafted, along with a thankyou card to be sent to guest speakers or others who have assisted the Society.
- TENPS now has a reciprocal exchange of newsletters with the Top End Herb Group.

- TENPS will join the Australian Network for Plant Conservation, a national group with a mission "To promote and develop plant conservation in Australia". See http://www.anbg.gov.au/anpc/ for more information.
- Assistance is required to print plant labels on the Society printer, using materials purchased by TENPS. If you can assist please talk to Marj.

Poor recovery of woody vegetation on sand and gravel mines in the Darwin region of the Northern Territory. By Owen Price, Damian Milne and Charmaine Tynan. Published in Ecological Management & restoration Vol 6 No 2 August 2005

Abstract: Sand sheets near Darwin support a distinct heathland vegetation type which includes the habitat of several threatened species. Sand and gravel are extracted from shallow mines in this region. Woody vegetation recovery in 31 small, shallow former sand or gravel mine sites near Darwin that were up to 27 years old was assessed and compared to paired unmined control sites. Recovery in vegetation structure within each mine was calculated as the percentage of that in the control site. Mined sites recovered about 50% of their stem count and canopy cover, but only about 10% of basal area and mature tree count. Gravel mines showed poorer recovery than sand mines. Time since mining had no significant effect on the extent of recovery, but deeper mines had significantly poorer recovery. Only 35% of woody species in sand controls were present in mine sites, and 41% of gravel control species were present in former mine sites. It is unlikely that recovery will significantly improve in coming decades. Sand mining affects about 40 ha of land per year in this region, but is likely to increase in the future. If Darwin expands to a population of 1 million people, and mine sites are not fully rehabilitated, all of the sand-sheet vegetation in the region could be removed in the next 100 years. Improved rehabilitation and protection is crucial for the conservation of heathland vegetation in this region.

Australian Tropical Rain Forest Plants: Trees, Shrubs and Vines

TENPS has purchased a copy of this interactive CD for members to make use of.

Australian Tropical Rain Forest Plants: Trees, Shrubs and Vines is an interactive identification and information system for 2154 species of trees, shrubs and vines of northern Australian rain forests. Building on the second edition, it includes the species in northern Australia, from Broome in Western Australia to Townsville in Queensland, with additional species and many new photographs.

This powerful identification tool provides an easy to use and simple means of naming a rain forest plant using whatever information is available. By selecting characters from the plant (or specimen), and responding to a series of choices, the user is able to achieve identification via a process of elimination. A total of 154 characters, covering the morphology — habit, bark, leaves, flowers, fruits, buds and seedlings — and some geographic and ecological information ensure reliability of the key is high. Interpretation of the character information is assisted with help notes and images featuring colour or line drawings.

A comprehensive information system for each species includes common name, the formal scientific name together with nomenclatural synonyms, geographic and ecological information, distinguishing features and natural history notes. The descriptions are combined with high quality colour images for most species, leaf X-ray images and a map showing natural distribution.

Authors: BPM Hyland , T Whiffin, DC Christophel, B Gray, RW Elick.

NEXT MEETING THURSDAY 21ST JULY
GUEST SPEAKER:
"RECOGNISING PLANT FAMILIES"
Dale Dixon, NT Herbarium.

SENDER: TOP END NATIVE PLANT SOCIETY
PO BOX 135 PALMERSTON
NT 0831

TO:

~ SUBSCRIPTION FORM ~
~ MEMBERSHIP DUE 1 JULY 2005~
TOP END NATIVE PLANT SOCIETY PO BOX 135 PALMERSTON NT 0831

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