

NATURE TERRITORY

September 2012

Newsletter of the Northern Territory Field Naturalists Club Inc.

PO Box 39565, Winnellie, NT 0821

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Club web-site: <http://ntfieldnaturalists.org.au/>

Meetings are generally held on the second Wednesday of every month, commencing at 7:45 PM, in Blue 1.14 (Business Faculty Building) on the Casuarina Campus of Charles Darwin University.

Subscriptions are on a financial-year basis and are: Families/Institutional - \$30; Singles - \$25; Concessions - \$15. Discounts are available for new members – please contact us.



The photograph at left taken by club member Brian Thistleton was the winning entry at the Royal Darwin Show in the category Best Wildlife Subject - Colour Print, a category sponsored by our club. The image is of the dragonfly *Neurothemis stigmatizans*, taken in Honiara, Solomon Islands in December 2011.

Brian also went on to win the Grand Champion photo, with the image below of *Agrionoptera insignis*, also taken in Honiara.



CONTENTS

Club activities .. p2

Club notices .. p3-4

Rock-wallaby recovery project .. p5

Small mammal trapping @ CSIRO .. p8

Interesting bird sightings .. p9

recent literature .. p10

Disclaimer: The views expressed in *Nature Territory* are not necessarily those of the NT Field Naturalists Club Inc. or members of its Committee.

Club activities

September meeting. Wednesday 12, 7:45 PM. Blue 1.14 (Business Bldg.), CDU Casuarina.

Michael Hammer (Curator of Fishes, Museum and Art Gallery of the Northern Territory)

Weird and Amazing Fishes of the NT!

Explore and celebrate marine and freshwater biodiversity of the Northern Territory. Marvel at the weird and wonderful fishes which can be found in local freshwater stream, wetland, estuarine and marine habitats including some with bizarre saw like rostrums, savage teeth, flamboyant barbels and poisonous spines. Discover fish that lack eyes and scales; carry eggs on their head; or have bright and unusual colours. A focus will be on some of the interesting finds from this year's field trips.

Michael is an experienced aquatic ecologist, with a strong focus on the taxonomy and conservation of freshwater fishes. He started in his position at the NT Museum late last year, following on from Dr Helen Larson (big shoes to fill!). Prior to this, he spent 15 years studying fishes and aquatic habitats in southern Australia, completing his PhD on the systematics and ecology of various native fish including multiple cryptic species in many of the

groups examined. Overall, there seems to be a large issue in the taxonomy of Australia's freshwater fish, with genetic data hinting at perhaps 2-3 times the number of currently described species (300). There is a big job ahead to document fully the aquatic biodiversity of northern Australia!



Electrofishing Top End waters - image supplied by Michael Hammer

The Club's AGM will be held prior to the monthly meeting, see page 4 for details



September field trip. Knuckey Lagoons Sunset Birding – Sunday 16 September from 5 - 7pm

Knuckey Lagoons Conservation Reserve (situated approximately half way between Darwin and Palmerston) is popular with birders, however it seems to have remained largely undiscovered by the majority of Darwin's residents. Consisting of four naturally occurring waterholes, it's an area abundant with waterbirds towards the end of the Dry. Jabirus, Brolgas, Pelicans, Magpie Geese, Comb-crested Jacanas, egrets, ducks, cormorants, terns and numerous waders to name a few, can be present.

We'll meet at 5pm at the small waterhole at the end of Fiddlers Lane (turns off McMillans Road between Farrar Rd and Stevens Road, but on the opposite side). We'll then make the short drive to Snipe Lagoon, the largest of the waterholes. There is easy vehicle access to both locations and there is minimal walking. Bring binoculars and any members with access to spotting scopes are encouraged to bring those. If you would like more details please contact Tissa on 8921 8226.



Darters (male far left, female far right), Australian Pelican, Magpie Geese and Pacific Black Ducks at Knuckey Lagoons - photo: Tissa Ratnayeke

Club notices

Welcome to new members: Brendan Connor & Heather Treager, Carla Eisemberg, Jess Harris, Michele Greenfield, Liam Golding, Liane Collins, Rexine Lamshed, Stephen Richards & Lisa Capon, Tess Cooper, Tiffanie Pearse & Cameron Dean.



Thank you: the previous issue was printed by **Stuart Young**, and collated and mailed by **Anne Highfield**. It was printed using equipment kindly made available by **Collections, Biodiversity and Biological Parks** from the Department of Natural Resources, Environment, the Arts & Sport.



Need a Club membership form? Go to: <http://sites.google.com/site/ntfieldnaturalists/downloads>.



Newsletter contributions welcome: Sightings, reports, travelogues, reviews, photographs, sketches, news, comments, opinions, theories , anything relevant to natural history. Please forward material to Tissa at tissa@imprintdesign.com.au or the Club's postal address, or contact him on 8921 8226.

Deadline for the September newsletter: Wednesday 19 September.



Club library: The Club's journal and book collection is available to members. Lists of holdings can be found on our web-site: <http://sites.google.com/site/ntfieldnaturalists/library>. The library is housed in two sections:

Books, reports and CDs: at the medical clinic of Dr. Lyn Reid in the Rapid Creek Business Village. This can be accessed directly between 9 AM and 2:30 PM Tuesday to Thursday, and 4–6 PM on Tuesday, or indirectly by phoning Lyn at work on 8985 3250.

Journals: in the office of Stuart Young at the Biodiversity Unit at Berrimah. These can be accessed by ringing Stuart on 8995 5026 (w).



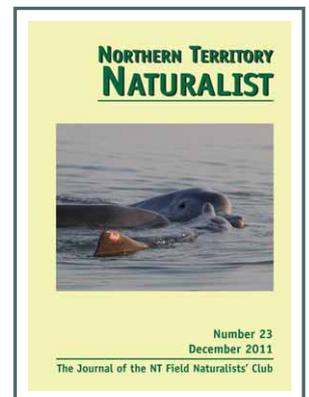
Northern Territory Naturalist: The Editorial Committee of the Club's journal, the *Northern Territory Naturalist*, is now calling for manuscripts for issue no. 24. The journal publishes works concerning any aspect of the natural history and ecology of the Northern Territory or adjacent northern Australia, and may include Reviews, Research Articles, Short Notes, Species Profiles and Book Reviews.

The *Northern Territory Naturalist* is a registered, peer-reviewed journal (ISSN 0155-4093). Author instructions may be downloaded from our web-site:

<http://sites.google.com/site/ntfieldnaturalists/journal>.

If possible, manuscripts should be submitted in digital form by email to michael.braby@nt.gov.au. Manuscript editors are Drs Michael Braby, Lynda Prior and Anke Frank. Louis Elliott is the production editor.

Originals are available of most back issues, some are available as photocopies only, and several recent issues are out-of-print but individual papers are available as pdfs. The journal page of the Club's web-site has an order form for back issues. Free pdfs of papers from issue 18 (2005) onwards are available from the authors or by contacting Lou Elliott, email louis.elliott@nt.gov.au.



Top End Native Plant Society General meetings are held on the 3rd Thursday of the month at the Marrara Christian College, corner Amy Johnson Ave. and McMillans Road, and commence at 7:30 PM (speaker at 8 PM). Visit <http://www.topendnativeplants.org.au/index.php> or contact Russell Dempster on 8983 2131.

Meeting - September 20th: Zoe Carmichael - Land For Wildlife.

Field trip - September 22nd - propagation workshop hosted by TWP and held in the Botanical Activity Centre/plant nursery. TENPS may also bring some plants for sale during the workshop.

NTFNC Annual General Meeting

The Annual General Meeting of The NT Field Naturalists Club Inc. will be held at 7.45pm on Wednesday 12 September in Room Blue 1.14 (Business Bldg.), Casuarina Campus of Charles Darwin University. Issues to be considered include:

- a Special Resolution to amend the Club's constitution, as shown below*
- President's report
- the audited accounts for 2011-12 and Treasurer's report. Audited accounts are available from John Rawsthorne (treasurer.ntfnc@gmail.com)
- election of Office Bearers and Management Committee for 2012-2013 (a nomination form below)

*The NT Field Naturalists Club Inc.'s constitution has no provision for the Club to recognise a member's outstanding contribution to Club activities and furthering its objectives. The Club's Executive Committee recommends this be rectified by amending the constitution to add a fourth category of membership – that of honorary life membership. A copy of the current Constitution can be obtained by contacting Tissa on phone 08 8921 8226 or email tissa@imprintdesign.com.au

The following Special Resolution will be proposed at the AGM:

That the constitution of the NT Field Naturalists Club Inc. be amended as follows:

Replacement of current Section:

4.2 The categories of membership shall be: (a) single; (b) family and (c) institutional.

with the following Sections:

4.2 The categories of membership shall be: (a) single; (b) family; (c) institutional and (d) honorary life.

4.2A The Executive Committee may decide to confer honorary life membership on a Club member considered to have made an outstanding contribution to furthering the objectives of the Club.

Summary of Profit & Loss Statement and Balance Sheet for NTFNC for the financial year 2011-12

<u>Income</u>		<u>Expenditure</u>			
Subscriptions	2,537.50	NT Naturalist	1,675.00	General expenses surplus	1,371.73
NT Naturalist sales	245.55	Field activities	100.99	NHT turtle expense	8,947.00
NT Nat. © payment	504.44	Postage/stationery	479.40	Deficit for year	\$ 7,575.27
Miscellaneous	50.00	Insurance	350.00	<u>Assets and liabilities, 30 June 2012</u>	
Interest	1025.34	NHT turtle project	8,947.00	Assets: money*	\$ 23,839.05
		other	385.71	Other assets**	\$ 200.00
Total	\$ 4,362.83	Total	\$ 11,938.10	Liabilities	\$112.28
				* term deposit, bank account & cash	
				** books, journals	

NOMINATION FOR NTFNC COMMITTEE, 2012/13

Name of person being nominated: _____

Position being nominated for (circle):

President Secretary Treasurer Committee Member (up to 7 needed)

Signature of Nominee: _____

Proposer's name: _____ and signature: _____

Secunder's name: _____ and signature: _____

Under our Constitution, written nominations received by our Secretary (Peter Holbery) prior to the commencement of the Annual General Meeting (AGM) have precedence. Either: (1) mail nominations to NTFNC, PO Box 39565, Winnellie, NT 0821, (2) hand deliver to Secretary or current committee member, or (3) bring them to the AGM.

Victorian Brush-tailed Rock-wallaby Recovery Project

Report on Craig Reid's August meeting presentation

By Judit Szabo

We heard a very inspiring talk from Craig - a former Parks Victoria Ranger and member of the Recovery Team - about his 10 years of experience with the captive-breeding and recovery of the Brush-tailed Rock-wallaby (*Petrogale penicillata*).

Our knowledge of this fascinating and elusive wallaby has greatly increased thanks to the efforts of the Recovery Team and its supporting members from Tidbinbilla NR, Healesville Sanctuary, Melbourne Uni, Adelaide Zoo, NRE, Parks Victoria and various consultants.

This medium sized wallaby (60-65 cm and 6-8 kg) inhabits rock piles and cliff lines, and its agile body is well adapted to living on the rocks, with rough pads on the bottom of its feet, short toenails and an arched bushy tail that helps in balancing. They like basking at sunny rock ledges, but are mostly nocturnal.

They used to range along the Great Dividing Range from about 100 km north-west of Brisbane to western Victoria, in vegetation ranging from rainforest to dry sclerophyll forests. However, their distribution has contracted a lot in the south, and now are Critically Endangered in Victoria, having only 3-4 natural colonies in East Gippsland and the Grampians NP, comprising of less than 30 animals in the wild.



Brush-tailed Rock-wallaby. Photo: Raz Martin

Besides shooting for sport and trade (1.1 million bounties paid on pelts in 1894-1914, 1200 shot at Suggan Buggan in the winter of 1903), various other threats, among them introduced predators (wild dogs, foxes, cats) have contributed to the decline. When the joeys get too big to be carried around, their mothers stow them while they go off to forage – this is a critical time for the inexperienced young and they get eaten by predators. Disease (toxoplasmosis and hydatosis) has been implicated as a threat. Also playing a role is

competition from both feral animals, such as rabbits and goats, as well as natives (possums). These animals compete with wallabies for food or denning sites. Wildfires cause direct mortality (e.g. 30 captive bred Tidbinbilla animals perished in the Canberra fires, which was a huge setback for reintroduction) or can remove food resources and drought (in combination with the other factors) have caused them to decline to near extinction.

Their numbers declined so steeply, that they were presumed extinct by 1915 in East Gippsland and by the 1920's in the Grampians, not seen again until 1937 and 1970 respectively. In 1985 Close captured two individuals, and estimated the Grampians population to be 12-15 individuals. In 1995 the Victorian Brush-tailed Rock-wallaby Recovery Team was formed and efforts at captive breeding started with a founding population, captured from small, isolated colonies that could not be protected against predators. In 2000, only 2 known colonies were left in East Gippsland. A photo taken with a remote camera in 1997, was the first sighting for over 10 years in the Grampians. Even with subsequent photos it was difficult to say if there was one or more individuals. Only one female was trapped and removed to the captive breeding program in 1999 – making them locally extinct.

There is a two-pronged approach to management:

- What to do with animals in the wild (predator control, in particular foxes and dogs in east Gippsland)
- Captive management in order to supplement wild populations. Capturing animals is the first hurdle, as most of them are trap shy (and were all females to start with). After considering the options, animals were captured from the smallest populations that had low viability, being hard to protect from predators. After obtaining a starting population, it was found that adults didn't breed in captivity, after which efforts concentrated on obtaining young animals. Unfortunately there are not enough individuals in captivity to keep the genetic purity of different populations and animals of different geographical origins are crossbred. The wallabies' productivity can increase sixfold (from one to six joeys per year) by cross fostering (about which we watched an interesting video done by BBC). Tiny pouch-young are removed from adult females and "adopted out" to foster mums of Tamar or Yellow-footed

Rock Wallabies. The Brush-tailed female will soon replace the bean-sized baby, which is again moved to another foster mum. After about a year the joeys are big enough to forage independently, and Craig says they are not very confused about their identity. After spending time in enclosures, these youngsters are soft-released to sites with ideal characteristics, such as aspect, complexity and access to water and will hopefully breed and disperse.



Release site in the Grampians NP. Photo: David Taggart

There needs to be monitoring to have a better handle on the state of affairs and the effectiveness of management: trap and mark wallabies with coloured ear tags that are picked up by remote camera or observers, and indirect methods using scat plots. Scats were counted and collected from a rock platform, and by analysing residual DNA the

population structure was studied, showing that the population was quite inbred and because the animals are so similar to each other genetically, it is difficult to tell the colonies apart. DNA analysis also proved that Jenolan caves animals are the closest relatives of Grampian animals.

Researching habitat requirements, such as refuge size and number, ledge size and number, proximity to fire, fire history, aspect and slope and habitat complexity is also important to pick the best sites for reintroduction.

As an interesting side story, quite opposite to what was happening in Australia, as part of the acclimatisation movement of the late 1800s, Governor Grey introduced this and four other species of wallabies to islands in Hauraki Gulf, near Auckland, New Zealand, where they became well-established. In modern times, these populations have come to be viewed as exotic pests, with severe impacts on the indigenous flora and fauna. As a result, eradication was undertaken. Between 1967 and 1975, 210 rock-wallabies were captured on Kawau Island and returned to Australia, along with thousands of other wallabies. Rock-wallabies were removed from Rangitoto and Motutapu Islands during the 1990s, and eradication is now underway on Kawau. Another thirty-three rock-wallabies were captured on Kawau during the 2000s, and returned to Australia, to a breeding program in the Blue Mountains (based on DNA similarities).



For the Calendar:

The Oceania Region of the Society of Conservation Biologists is holding its conference in Darwin. Day and full registration are still available. Check the website for further information <http://oscb2012.org/home>. For additional information contact Graham Brown 0417 80 40 36.

Small Mammal Trapping and Survey at CSIRO and a Brachychiton Study

by Keith Oldfield

A turnout of over 20 members and family gathered for an early morning Sunday start at the gates of the CSIRO property in Berrimah. The group was treated to a wonderful late August Top End sunrise before driving around to the bushland area to the rear of the main office buildings. This area of bushland, some 10 hectares in total, is one of the few remaining relatively intact areas of coastal savanna woodland close to Darwin. It consists of two sections separated by a track which conveniently provide study areas with differing historical fire regimes. One section has been burnt relatively frequently, the last being April 2009, the other has remained unburnt for more than 20 years.

The Small Mammal Trapping & Surveying has been carried out twice yearly at the site by the Biodiversity Unit of NRETAS, with data available back to Jan 2004.



Above: The first catch of bagged mammals about to be measured, keenly watched by all. Below Left: Anke Frank gets her fingers sticky mixing the bait of honey, peanut butter and oats. Photos: Tissa Ratnayake



This year traps were setup on the evening of Friday 17 August and then baited on that and the following two evenings. The traps are checked at sunrise on the mornings after. But before we were 'set free' on the unsuspecting captive mammals, we were provided with a short introduction to captive mammal handling by Stuart Young. Two types of traps were being used, the larger cage traps and smaller Elliott traps.

Bait used is a mix of oats, peanut butter and honey rolled up into small balls and place at the back of the trap. On being tempted by the bait and entering the trap the unsuspecting mammal trips the door mechanism which closes behind it. Stuart described the range of captive

mammal behavior at this stage as ranging from 'quite quiet' to 'freaking out' and stressed the importance of getting the animal out of the trap quickly, safely and calmly. We were joined by Anke Frank, Brydie Hill and Alaric Fisher from the Biodiversity Unit before splitting into two groups to check each set of traps.

The traps are set in four quadrants, each quadrant having a grid pattern of five rows with traps set at five points along each row, with each point numbered for ease of location and data recording. The first impression when our group entered the unburnt section of woodland is how different it is to most other bushland areas around Darwin and the rural area. There was a deep layer of leaf litter covering the soil. Tree layer was, as expected, dominated by *Eucalyptus miniata* and *Eucalyptus tetradonta* but with a mid-storey of smaller trees and shrubs providing a variety of vegetation not typical in more frequently burnt areas. The understory was very open with only a little grass coverage. We even found ourselves tripping over vines hanging from some of the trees. It was not long before we found our first trapped mammal, a Northern Brushtail Possum (*Trichosurus vulpecula arnhemensis*) followed by a Northern Brown Bandicoot (*Isodon macrourus*) and a Black-footed Tree-rat (*Mesembriomys gouldii*). All three were 'bagged and tagged' and carried back to the track to be weighed, measured, sexed and microchipped if it didn't already have one. Mammals were then released back at their capture location, the Black-footed Tree-rat drawing the largest crowd for its return to freedom.



Alaric Fisher bravely displays a sharp toothed Black-footed Tree-rat (note white tip to the rat's tail). Photo: Magen Pettit

Over to the burnt woodland site we again split into two groups to check traps and return with various 'bagged' mammals. The burnt woodland area had a thicker grass cover with noticeably less variety in mid and lower storey vegetation. Our group again scored examples of possum, bandicoot and tree rat with the bandicoot weighing in at 1.9 kilograms. We quickly became familiar with such small mammal field study jargon as SSRT – same session re-trap and female bandicoots described as 'perforated' or 'unperforated' which I will leave to the imagination.

It would be interesting to consider the data returned since 2004 to see how the effect of fire might be having an effect on mammal numbers and diversity, perhaps a topic for a future presentation to the NTFNC?

To round off a memorable Sunday in the bush, we met with Trish Bate, who with fellow club member Don Franklin has been conducting an experiment on Red-flowered Kurrajong (*Brachychiton megaphyllus*) on a plot on this site to evaluate the cues and drivers and ecological significance of seasonal patterns of leaf shed, leaf shoot, flowering and fruiting (phenology).

It is surprising how little is known about Top End deciduous and semi-deciduous plants and what triggers such events as leaf drop. Trish explained that the Kurrajong was chosen for the study partly because of its small size, its remarkably large yet few leaves (that could be readily counted and measured) and defined seasonal phenology. Initial study recorded phenological characteristics on a weekly basis across two groups of fifteen plants. One group was irrigated to replicate a 'wet season' right through the dry – some 63mm/week. Early results seem to show no effect of this water regime on timing



or extent of leaf drop. Trish explained some of the difficulties they have had with the local small mammal population chewing holes in their irrigation pipe. This was remedied by burying the pipe and even leaving out bowls of water so they didn't feel the need to chew through irrigation pipe to get at the water. We then wandered around the study plants noting their characteristic appearance at this time of year of complete leaf loss, though signalling they were very much alive by flowering, with some plants even having just set fruit.

Our thanks to all our hosts for a memorable day in the field.



Above: Elisha Pettit releases a juvenile Northern Brown Bandicoot.
Below left: Trish Bate standing next to a Red-flowered Kurrajong explains the experiment.
Photos: Tissa Ratnayeke

Mistaken ID

This photograph appeared in last month's newsletter in the report on Anke Frank's talk on Mammal decline in the Top End, however unfortunately it was incorrectly captioned. The specimen in the photograph was wrongly identified as a Pale Faced Rat (*Rattus tunney*) when in fact it is a fully grown Common Planigale (*Planigale maculate*). They are one of Australia's smallest marsupials. Anke advises us that contrary to its name, they are no longer common. The photographer was taken by Anke.



Interesting bird sightings

25 July to 20 August 2012

Compiled by Micha Jackson and Peter Kyne

Sightings are as reported (unvetted, unconfirmed) and have been compiled from emails sent to the NT Birds forum (<http://groups.yahoo.com/group/ntbirds>) moderated by Niven McCrie, postings on Birdline Northern Territory (<http://www.ereamaa.com/>) and from correspondences with birdwatchers. Bird names follow the IOC world checklist.

Species	Date	Location	Observer/s	Numbers/comments
Waterbirds, Seabirds & Shorebirds				
Pink-eared Duck	27/07/2012	Beswick Sewage Ponds	John Rawsthorne	1
Pink-eared Duck	12/08/2012	Leanyer Sewage Ponds	Bas Hensen & Amanda Lilleyman	17; 19 on 16-08-2012 (D Funnell)
Chestnut Teal	4/08/2012	Alice Springs Sewage Ponds	Chris Watson & Ilse Pickerd	Male & female
Black Bittern	4/08/2012	Red Lily Billabong	John Rawsthorne	1
Black Bittern	13/08/2012	Corroboree Billabong	Peter Kyne & Micha Jackson	1
Great-billed Heron	28/07/2012	Mary River Park	Magen Pettit	1
Great-billed Heron	12/08/2012	Nitmiluk (Katherine Gorge)	Andrew Browne	1
Spotless Crake	7/08/2012	Fogg Dam	Peter Kyne & Micha Jackson	2
Little Ringed Plover	12/08/2012	Leanyer Sewage Ponds	Bas Hensen & Amanda Lilleyman	2 (+ on 16-08-2012 (D Funnell))
Birds Of Prey				
Spotted Harrier	4/08/2012	South Alligator Floodplain	John Rawsthorne	1
Spotted Harrier	13/08/2012	East of Timber Creek	Marc Gardner	1
Grey Goshawk	7/08/2012	Mangroves, Rapid Creek	Will Riddell	Nesting
Red Goshawk	15/16-08-2012	Bitter Springs, Mataranka	Peter Kyne & Micha Jackson	Pair; observed mating on 15-08-2012
Little Eagle	6/08/2012	Wulagi Oval	John Rawsthorne	1
Little Eagle	9/08/2012	Dick Ward Dve, near Minmarama	John Rawsthorne	1
Black Falcon	16/08/2012	Leanyer Swamp	Dominic Funnell	1
Other Non-Passerines				
Channel-billed Cuckoo	19/08/2012	Parap	John Rawsthorne	1 calling
Pallid Cuckoo	3/08/2012	Marrakai Road	Dominic Funnell & Bas Hensen	1
Pallid Cuckoo	16/08/2012	Central Arnhem Hwy	Peter Kyne & Micha Jackson	1
Pallid Cuckoo	18/08/2012	Marrakai Road	Mike Jarvis	2
Passerines				
Dusky Grasswren	4/08/2012	Emily Gap	Pete Nunn	Several
Masked Woodswallow	3/08/2012	Marrakai Road	Dominic Funnell & Bas Hensen	100+
Masked Woodswallow	17/08/2012	Howard Springs	Dominic Funnell	2
Masked Woodswallow	19/08/2012	Central Arnhem Hwy	Marc Gardner	1 female
Ground Cuckooshrike	13/08/2012	Napperby Station	Richard Waring	3
Crested (Northern) Shrike-tit	16/08/2012	Central Arnhem Hwy	Peter Kyne & Micha Jackson	1 heard
Crested (Northern) Shrike-tit	19/08/2012	Central Arnhem Hwy	Marc Gardner	1
Sandstone Shrikethrush	13/08/2012	Ubirr, Kakadu NP	Peter Kyne & Micha Jackson	1
Sandstone Shrikethrush	14/08/2012	Nourlangie, Kakadu NP	Peter Kyne & Micha Jackson	1
Buff-sided Robin	3/08/2012	Marrakai Road	Dominic Funnell & Bas Hensen	
Gouldian Finch	13/08/2012	Timber Creek	Marc Gardner	30+
Gouldian Finch	3/08/2012	Marrakai Road	Dominic Funnell & Bas Hensen	35+
Gouldian Finch	13/08/2012	Dingo Springs	Marc Gardner	6

Leanyer Ponds:

Access to Leanyer Ponds is generally available after induction through PAWC. Go to <https://www.rapidinduct.com.au/powerwater/waterservices> to commence the induction process. A key to the ponds may be obtained on payment of a \$50 deposit. Only those who have undertaken the induction and signed an indemnity can enter Leanyer Ponds.

Leanyer Sewage Ponds will be **temporarily closed** to birdwatchers from 1 May 2012 until September 2012 due to major works being undertaken by Power and Water. This work will involve significant mobile plant and equipment on-site to remove accumulated sludge in order to enhance the treatment process. Closure of the entire lagoon site to non-Power and Water staff will be required during this time. Power and Water will advise when the ponds will be re-opened to birdwatchers possessing a permit to access the site.

Bryan Baker has keys for the Alice Springs Sewage Ponds, available for collection in Darwin by members before they head south. Bryan can be reached in Darwin on 8948 2196.

Recent literature about Top End natural history

PLANTS & VEGETATION

Compiled by Don Franklin

Non-technical

- Dempster R. 2012. *Trichosanthes morrisii*: a cucurbit named after one of our own!! *TENPS Newsletter* April 2012: 4-5.
- Napier D, Smith N, Alford L. 2012. *Common plants. Victoria River District & northern Barkly (the Territory's Savanna Way)*. Gecko Books: Marlestone, South Australia.
- Napier D, Smith N, Alford L, Brown J. 2012. *Common plants of Australia's Top End*. Gecko Books: Marlestone, South Australia.
- Schmid M, Smith N. 2012. *Common urban weeds of north Australia*. Gecko Books: Marlestone, South Australia.
- Smith NM. 2011. *Weeds of northern Australia. A field guide*. Environment Centre NT: Darwin. 120 pp.

The tropical savanna

- Beringer J, Hacker J, Hutley LB, Leuning R, Arndt SK, Amiri R, Bannehr L, Cernusak LA, *et al.* 2011. Savanna patterns of energy and carbon integrated across the landscape. *Bulletin of the American Meteorological Society* 92: 1467-??
- Lawes MJ, Richards A, Dathe J, Midgley JJ. 2011. Bark thickness determines fire resistance of selected tree species from fire-prone tropical savanna in north Australia. *Plant Ecology* 212: 2057-2069.
- Lewis DL, Phinn S. 2011. Accuracy assessment of vegetation community maps generated by aerial photography interpretation: perspective from the tropical savanna, Australia. *Journal of Applied Remote Sensing* 5: Art. No. 053565.
- Petty AM, Setterfield SA, Ferdinands KB, Barrow P. 2012. Inferring habitat suitability and spread patterns from large-scale distributions of an exotic invasive pasture grass in north Australia. *Journal of Applied Ecology* 49: 742-752.
- Russell-Smith J, Edwards AC, Price OF. 2012. Simplifying the savanna: the trajectory of fire-sensitive vegetation mosaics in northern Australia. *Journal of Biogeography* 39: 1303-1317.

Taxonomy

- Cowie ID. 2011. New taxa and notes on *Helicteres* L. (Malvaceae: Helicteroideae) from the Northern Territory. *The Beagle, Records of the Museums and Art Galleries of the Northern Territory* 27: 27-54.
- Cooper WE, de Boer HJ. 2011. A taxonomic revision of *Trichosanthes* L. (Cucurbitaceae) in Australia, including one new species from the Northern Territory. *Austrobaileya* 8: 364-386. [see Dempster 2012 for NT species]
- Jackes BR. 2011. The vine *Embelia tiwiensis* (Angiospermae: Myrsinaceae), a new species from the Northern Territory. *The Beagle, Records of the Museums and Art Galleries of the Northern Territory* 27: 23-25.
- Kerrigan RA. 2012. A treatment for *Polygala* of northern Australia. *Australian Systematic Botany* 25: 83-137.
- Martine CT, Lavoie EM, Tippery NP, Vogt FD, Les DH. 2011. DNA analysis identifies *Solanum* from Litchfield National Park as a lineage of *S. dioicum*. *Northern Territory Naturalist* 23: 29-38.
- Shivas RG, Ryley MJ, Telle S, Liberato JR, Thines M. 2012. *Peronosclerospora australiensis* sp nov and *Peronosclerospora sargae* sp nov., two newly recognised downy mildews in northern Australia, and their biosecurity implications. *Australasian Plant Pathology* 41: 125-130.
- Stepkowski T, Watkin E, McInnes A, Gurda D, Gracz J, Steenkamp ET. 2012. Distinct *Bradyrhizibium* communities nodulate legumes native to temperate and tropical monsoon Australia. *Molecular Phylogenetics and Evolution* 63: 265-277.

Resisting fire: the secret is in the bark

Stems are killed by fire when the cambial tissue below the bark is over-heated. Bark thickness, and not its moisture content or density, is the major explanator of stem death among northern Australia trees (Lawes *et al.* 2011). "The duration of heating required to kill the cambium of a tree ... was directly proportional to bark thickness squared." Additionally, eucalypts had a greater level of resistance for a given bark thickness than did non-eucalypts, an effect the authors put down (in part) to the protected position of the eucalypt epicormic buds.

How far could Gamba Grass spread?

Using an extensive dataset of ground and air surveys of the occurrence of invasive fire-weed Gamba Grass (*Andropogon gayanus*), Petty *et al.* (2012) "tested for limiting factors using three landscape-scale indices related to soil quality, soil moisture and invasion history". They concluded that, whilst there are some constraints on Gamba's ability to colonise "upland" sites (i.e. away from watercourses), it nevertheless "has the potential to invade 70% of north Australia's upland savanna communities".

Fire on the Arnhem Plateau

An analysis of data from 15 years of monitoring vegetation in plots on the Arnhem Plateau confirmed the adverse impact of severe fire on large stems of the rainforest tree *Allosyncarpia* (*Allosyncarpia ternata*) and stem densities in savanna of the Northern Cypress-pine (*Callitris intratropica*), and fire frequency on numbers of a range "of obligate seeder taxa characteristic of shrubland heaths". There was no discernible impact of fire regime on adult eucalypts and other savanna tree species. The study "illustrates that more than half of the regional closed forest perimeters, savanna and shrubland habitats experienced deleterious fire regimes over the study period, except in very dissected terrain".