



NATURE TERRITORY

December 2008

Newsletter of the Northern Territory Field Naturalists Club Inc.
PO Box 39565, Winnellie, NT 0821

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Club web-site: <http://www.geocities.com/ntfieldnaturalists>

Meetings are generally held on the second Wednesday of every month, commencing at 7:45 PM, in Blue 1.03 (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. Part-year discounts are available for new members from January 1 each year.

Your editor has no particular reason to put this photo of a Rose-crowned Fruit-Dove on page one except that I like it! Don't you? The dove was photographed by Con Foley recently whilst he was visiting Darwin from Singapore.



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bird observations .. p8; recent literature .. p9.

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

December meeting. Wednesday December 10, 7:45 PM. Blue 1.03 (Business Building), CDU.

Tess Atie

"The Pointer"

This will also be a Christmas get-together; details below.

Tess will share her knowledge of Bush Tucker with us at our December meeting

Tess says "For many years of my life growing up in a rich culture full of amazing wonders, it's good and easy to understand the complexness. As small and simple this bush tucker is, it is a wow factor for our visitors.

"Have you ever heard of a small sweet potato point in the direction to another potato... well there is. In our language we call this in mudatheal, mubahyai. Other indigenous languages - they will have other names for this small sweet potato. To find this, it's got a purple stem on the bottom and a purple bell, long leaf and a pointer at the very top pointing in the direction to the next sweet small potato to find."

Come along to hear Tess, Indigenous Presenter at the Windows on the Wetlands & NT Museum and Art Gallery, talk about the Pointer and other great Bush Tucker stories.

Christmas get-together: There will be a quiz with prizes, and some bottles of bubbly for convivial consumption. Bring a plate.

January field trip. (no field trip for December) Duke Street rainforest; Saturday Jan. 17, 9AM.

Meet at the Duke Street rainforest, Stuart Park - corner of Duke Street and Dinah Beach Road, just off the Stuart Highway. The Duke Street rainforest patch is a reserved remnant surrounded by industry, but fascinating and diverse all the same; there is a short walking path through the forest. Excursion leaders: Tida Nou & Don Franklin.

February 2009 meeting. Wednesday February 11. Tida Nou: *Christmas Island*.

March 2009 meeting. Wednesday March 11. *speaker to be announced*.

April 2009 meeting. Wednesday April 8. Brian Thistleton: *Dragonflies*.

May 2009 meeting. Wednesday May 13. Paul Horner: *Top End reptiles*.

Top End Native Plant Society activities

Christmas party, Sunday December 14, 11 AM - 3 PM, at the Berry Springs Nature Park. Bring a preferred food item and something to share around; a chair, swimmers and towel might also be handy. BBQ facilities are available.

General meetings are held on the 3rd Thursday of the month at the Marrara Christian College, corner Amy Johnson and McMillans Drives, and commence at 7:30 PM (speaker at 8 PM). For more information, contact Russell Dempster on 8983 2131.

Club notices

Thank you

The previous issue was proof-read by Christine Maas and collated and mailed by Susan Jacups. It was printed by Gay Crowley and Don Franklin using equipment kindly made available by the Biodiversity Unit, Department of Natural Resources, Environment and the Arts, Berrimah and the School for Environmental Research at Charles Darwin University.

Newsletter contributions welcome

Sightings, reports, travelogues, reviews, photographs, sketches, news, comments, opinions, theories , anything relevant to natural history. Please forward material to eucalypt@octa4.net.au or the Club's postal address, or contact the editor on 8948 1293.

Deadline for the February newsletter: Friday January 23. There will be no newsletter in January.

Need an NTFNC membership form? Go to: <http://www.geocities.com/ntfieldnaturalists/subscription.htm>.

Club library

The Club's journal, magazine and reference collection is available to members. Lists of books, reports, CDs and journals held can be found on our web-site: <http://www.geocities.com/ntfieldnaturalists>. 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 Don Franklin at CDU Casuarina (Red 1.2.34 = room 31.2.34). These can be accessed directly during working hours, or by ringing Don on 8946 6976 (w) or 8948 1293 (h).

Northern Territory Naturalist

The Editorial Committee of the *Northern Territory Naturalist* is now calling for manuscripts for issue no. 21. Manuscripts may relate to any aspect of natural history or ecology relevant to the Northern Territory, and may include reviews, papers, research reports, species profiles and thesis abstracts.

Northern Territory Naturalist is a registered, peer-reviewed journal (ISSN 0155-4093). Author instructions may be downloaded from

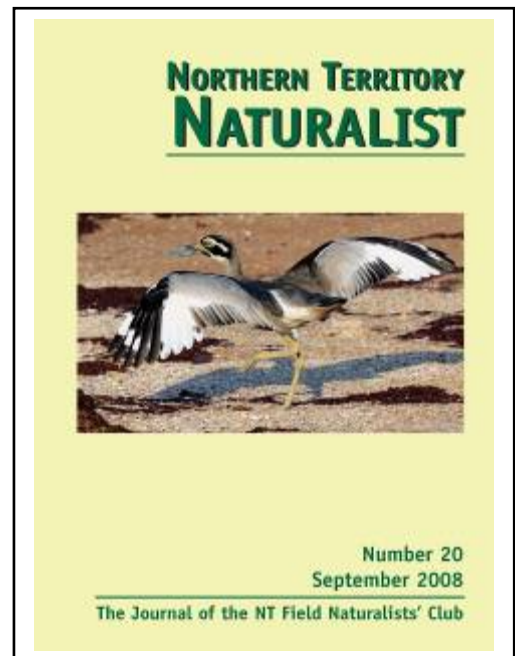
<http://www.geocities.com/ntfieldnaturalists/journal.htm>. If possible, manuscripts should be submitted in digital form by emailing to lynda.prior@cdu.edu.au. Editors of the journal are Dr Lynda Prior and Dr Michael Braby.

Back issues of the *Northern Territory Naturalist* are available individually (some in photocopy only) or as a set. The cost of a set is \$50- for nos. 1-18 or \$60- for nos. 1-19. Contact Don Franklin, eucalypt@octa4.net.au.

Sewage Pond Keys - Leanyer and Alice Springs

NT Field Naturalists have access to this world-famous bird-watching spot. The key can be collected from Graham Brown (h) 8945 4745. A refundable \$50.00 deposit is required at time of collecting the key, which is available only to members. Conditions imposed by PowerWater Corporation apply to all visitors to the ponds. These are not onerous and are made clear at time of picking up the keys.

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.



Red dwarf

Could this be the world's smallest carnivorous plant? It seems so.

Allen Lowrie, Ian Cowie and John Conran (2008; see *Recent Literature*, page 9) have described a new species of *Utricularia*, *U. simmonsii*, that grows just 3–8 mm above ground, having a solitary leaf and 1–3 red flowers about 1 mm across. The species is so distinct that the authors have named and described a new section (*Minutae*) within the genus for it. It was discovered on the Howard River floodplain in Darwin's rural area, where it is known from two sites. Since its discovery, the species has been found in the Iron Range and Lockhart River areas of Cape York Peninsula, and earlier this year and since the paper was written, it has also been found in Limmen National Park, NT, by Ben Stuckey - Ian Cowie (pers. comm.).



One millimetre across: the flower of *U. simmonsii*. Photo: Ian Cowie.

Utricularia simmonsii forms colonies, connected by delicate underground stolons, that may be up to one metre across. The solitary leaves are up to 15 mm long and less than half a millimetre wide.

Is *U. simmonsii* rare, or just hard to find? The authors note that it flowers in May to July, later than most small herbs and thus not at the time of year when surveys are generally conducted. Its habitat – poorly-drained sands – is far more widespread than its known distribution.

Ironically, the known occurrence at Howard River is in abandoned sand pits, possibly because the elevated water table in these suits the species.

However, given a combination of few records and the vulnerability

of the Howard River site to development – it is on freehold land – they have recommended a conservation classification of Data Deficient.

The species is named for Paul Simmons, a school teacher and keen field naturalist who discovered the species in Queensland. Paul also visited the Howard River site.

Bladderworts

Plants in the genus *Utricularia* (family Lentibulariaceae) are commonly referred to as *bladderworts*. Many are familiar for their showy purple or yellow-orange flowers in the late wet or early dry seasons, growing as small herbs in wet sites, often in sand beside small spring-fed streams. The common name refers to their bladder-like traps, which are underground and serve to trap minute creatures “swimming” in the saturated soil. The traps are sophisticated structures with sensitive hairs and a trap door. It is probably no coincidence that bladderworts and the other well-known genus of carnivorous plants that occur locally – the sundews, genus *Drosera* – both occur mainly on infertile and/or poorly drained soils where the uptake of nutrients from the soil is particularly challenging and tiny creatures may provide an alternative source.

Based on a suggestion by Ian Cowie, your editor suggests that *U. simmonsii* be dubbed the Red Dwarf Bladderwort.

The bladders of U. simmonsii are 0.3-0.4 mm across. They are shown here attached to a leaf, though they may also be attached to the stolons.

Photo: Ian Cowie.



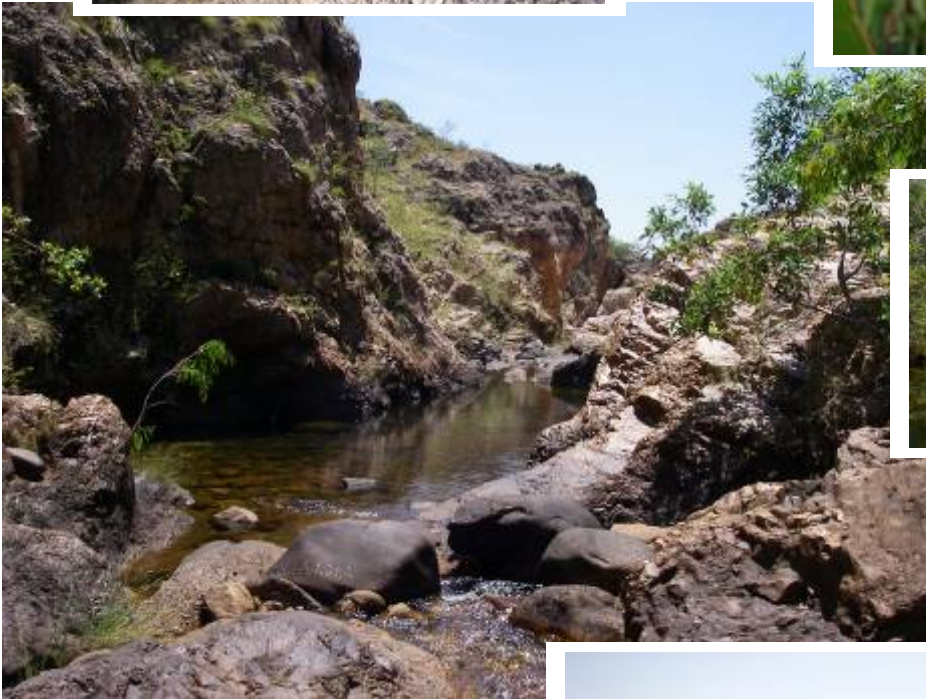
Walking Barramundie Gorge

Text and photos by Bryan Baker

The upper parts of Barramundie Gorge in Kakadu National Park are a beautiful area for bushwalking, with several camping spots for those interested in overnight hikes. Some of the smaller side creeks are spring-fed, allowing all-year hiking, although even in mid-September (when these photos were taken) the afternoons were almost too hot to carry a pack! Above the Gorge at Maguk, Barramundie Creek itself is mostly lined with enormous paperbarks and is nestled in a narrow valley. Overnight hikes between Gunlom and Maguk can take in these beautiful views.



Left: Wotjulum
Frog *Litoria
wotjulumensis*.



Slow boat on the Mekong

A report of the talk given at the November meeting by Don Franklin

Bruce Maley. Photos by Don Franklin

At the November club meeting, Don Franklin gave a typically entertaining and informative talk, in four vignettes, on an 8 week trip he and Christine Maas undertook in northern Thailand and Laos, richly illustrated by many of their great photos.

The first vignette was a description of the biologically diverse (over 1100 species of trees) forests of northern Thailand, which cover 60 – 70% of the area. Much is protected, for example in the Nam Tok Mae Surin National Park. Don suggested this high species richness and diversity could be attributed to a very wide altitude range (from lowlands 300m above sea level to mountains over 2 km high) and to the area being on the border of two climatic zones, giving a great variety of landscapes and resulting in the presence of both South-East Asian and Himalayan floras.

He described six forest types along the altitude gradient: lowland rainforest, in which grew, much to Don's joy, the world's tallest bamboo, *Dendrocalamus giganteus*. Then there were evergreen forests with deciduous emergents, and drier deciduous and bamboo forests, including the heavily logged Teak, *Tectona grandis*. Further up the slopes were dry dipterocarp forests, shedding leaves in the dry season and superficially resembling some of the woodlands around the Top End. Higher again were tall dipterocarp forests and many flowers, open "rainforest" at around 1200m and finally cloud forest. The mountains were not high enough to have a true alpine region.

This biogeographic mixing led to a few unexpected finds – Himalayan elements – forests of Three-Needle Pine *Pinus kesiya*, rhododendrons, and the beautiful Himalayan Wild Cherry *Prunus cerasoides*, which was in full bloom!

Seemingly out of place in tropical (montane) forests: the Himalayan Wild Cherry.



Vignette 2 saw Don and Christine, after an assiduous 9 stamps in their passports to enter Laos, board a crowded and not-so-slow boat which churned down the Mekong rapids. The subsequent stress was relieved by liberal imbibitions of excellent Laotian beer. After two days they arrived at the very pretty and world heritage-listed town of Luang Prabang. In progressively smaller and slower boats they travelled up the Nam Ou tributary through spectacular hilly country to the town of Nong Khiaw, where the people, like many Laotians, were forced to live in caves during the appalling 8-year bombing campaign of "Kissinger's Secret War".



*Village view over the Nam (River) Ou, Muang Ngoi, Laos.
The village is accessible only by boat, or by hiking overland for several days.*

Finally, on the Nam Fa tributary Don and Christine offered themselves up as experimental tourists for a fledgling ecotourism outfit, surviving dodgy-looking dry-season bamboo bridges and a handmade leaking canoe in which they were nevertheless kept relatively dry due to masterful negotiation of the numerous rapids and the operators' refusal to let them hop out and help. They arrived at a Khmu village of 800 people which was so isolated that the locals had not only never come across bearded foreigners, but most had never even seen the Mekong itself!

An “experimental tourist” – and hard-working boatmen – on the Nam (River) Fa, Laos.

Vignette 3 described the joys and frustrations of bird-watching in the Doi Khuntan National Park and around Chiang Mai in northern Thailand. Traditional hunting of forest birds seems to have been a selective pressure in the birds to remain inconspicuous despite often brilliant plumage. Faith, patience and persistence paid off in glimpses of the Black-hooded Oriole, and the White-Crested Laughing-thrush (apparently named for its derisory vocalizations towards hapless would-be birdwatchers).

Numerous rocky streams had an avian fauna of their own – including the White-throated Kingfisher, forktails, water-redstarts and wagtails. Other sightings included the luminous Scarlet Minivet, the Verditer Flycatcher, the Greater Racket (*sic*) -tailed Drongo, and on the final day, Mrs Goulds Sunbird.

In his fourth vignette, Don offered some thoughts and observations on differences in the way of life for hill tribes in northern Thailand and northern Laos and the implications for conservation. Most of the hill tribes in Laos use slash-and-burn agriculture and dry rice cropping, leading to large fallow areas, poor productivity and a protein-deficient diet supplemented with birds and rats. In northern Thailand on the other hand, the hill tribes have access to good roads and lowland markets, allowing some cash crops, eg. strawberries and peaches. There are extensive national parks, and water catchments are protected, and despite the retention of traditional hunting practices, relative prosperity means that wildlife is less likely to be killed. Laos has an enlightened reserve system setting aside 14% of the land on an ecological basis, but because of it's comparative poverty, there are many land-use conflicts and management problems.

This was a very interesting insight into a nearby part of the world which is both biologically diverse and can also offer some cultural surprises – on meeting the Khmu village heads, the travellers were somewhat taken aback to be quizzed about the crazy idea that the world is, in fact, round!



Vegetation change (from *Recent Literature*, page 9)

There is plenty of evidence that woody vegetation in the Top End has changed - thickened or thinned (mostly thickened) over the last half century, but the causes are still subject to debate. Asian Water Buffalo, introduced to and once common in the north-western Top End but drastically reduced in numbers during the 1980s by the BTEC program, have been implicated as an agent of change. To evaluate this possibility, Bowman *et al.* (2008) compared air photos in a sequence from 1964 to 2004 for an area of floodplain and savanna in Kakadu National Park from which most buffalo were removed but which includes a 116 km² enclosure in which Buffalo were retained at high densities (the “Buffalo Farm” near Nourlangie Camp). Changes in tree cover and the density of buffalo tracks were evaluated. “Tree cover increased in both floodplain and savanna, but this was only weakly related to buffalo density. The best predictor of whether a floodplain cell converted from treeless to woody, or the converse, was the woodiness of neighbouring vegetation. There was slightly less thickening with high buffalo densities.” The authors argue, as they have previously, that the best explanation for the thickening of woody vegetation in the Top End is an increase in atmospheric CO₂ – the greenhouse effect – a situation which favours the growth of trees over that of grass.

Staben (2008) undertook a somewhat similar analysis, using air photos from 1950 to 2004 to examine changes in the extent of paperbark (*Melaleuca*) forest cover over a much smaller area – 4.9 km² – in the Magela Creek system (also in Kakadu National Park). Overall, there was little change in the total forest cover. However, there was considerable change in where the trees were growing, with a continual increase in one section of the floodplain and declines elsewhere. The author did not collect evidence concerning the agent of change.

*Cajuput (Melaleuca cajuputi) forest
near the Buffalo Farm in Kakadu National Park.*

Photo: Don Franklin.



Interesting bird sightings

17 October to 19 November 2008

Compiled by Ian Hance

Sightings are as reported (unvetted, unconfirmed) and have been mostly compiled from the e-mail digest of the NT birder website (<http://groups.yahoo.com/group/ntbirds>) moderated by Niven McCrie.

Species	Date	Location	Observer/s	Nos./comments
Waterbirds				
Little (Eurasian) Grebe	25/10/2008	Leanyer Sewage Ponds	Niven McCrie	still present from Sept/
Great-billed Heron	25/10/2008	Buffalo Creek	Niven McCrie	1
~ 25/10/2008		Mardugal Billabong, Cooina	Marc & Vikki Gardner	1
Little Egret	25/10/2008	Leanyer Sewage Ponds	Niven McCrie	1, Asian form
Chestnut Rail	8/10/2008	Buffalo Creek	Niven McCrie	2 adults & 3 chicks
Australian Spotted Crake	28/10/2008	Alice Springs Sewage Ponds	Stuart Cooney	2
Diurnal raptors				
Black-breasted Buzzard	21/10/2008	Yuendumu	Robert Gosford	breeding
Grey Goshawk (white form)	25/10/2008	Mardugal Billabong	Marc & Vikki Gardner	1
Grey Falcon	23/10/2008	150 K south of Mataranka	Ashley Carlson	1
Peregrine Falcon	21/10/2008	Yuendumu	Robert Gosford	1
Waders				
Red-necked Avocet	15/11/2008	Katherine Sewage Pond	Andrew Bell	1; few records this far north
Inland Dotterel	25/10/2008	Apatula, 44 km south of Finke	Don Haddon	50 (large no.)
Swinhoe's Snipe	9/11/2008	McMinns Lagoon	Niven McCrie	1; first for season?
Long-toed Stint	6/11/2008	Leanyer Sewage Ponds	Ian Hance	1
Broad-billed Sandpiper	2/11/2008	Leanyer Sewage Ponds	Luke Patterson	1
Ruff	1/11/2008	Leanyer Sewage Ponds	Niven McCrie et al.	1 adult (imm. 4/11/08)
Oriental Pratincole	9/11/2008	McMinns Lagoon	Niven McCrie	2
Other non-passerines				
Emu	16/11/2008	Sandy Ck. Litchfield	Stephen Garnett	adult & chick
~	17/10/2008	15 km west of Jabiru	Marc & Vikki Gardner	2
~	17/10/2008	Manyallaluk	Bryan Baker	20
Rose-crowned Fruit-Dove	25/10/2008	Mardugal Billabong	Marc & Vikki Gardner	1
Fork-tailed Swift	6/11/2008	near Pine Creek	Marc & Vikki Gardner	500
Red-backed Button-quail	9/11/2008	Holmes Jungle	Niven McCrie	1
Oriental Cuckoo	2/11/2008	Darwin Base Hospital	Niven McCrie	1, hepatic form
Rufous Owl	9/11/2008	George Brown Botanic Gardens	Niven McCrie	2
Little Kingfisher	2/11/2008	Howard Springs	Niven McCrie	1
Passerines				
Yellow Chat	~28/10/2008	Ashmore Reef	Darryel Binns	1
Crested Shrike-tit	23/10/2008	Central Arnhem Highway	Ashley Carlson	1 on nest
~	21/10/2008	near Maningrida	Richard Noske	4 sites & 1 female nesting
Grey Butcherbird	21/10/2008	near Maningrida	Richard Noske	1 st in Atlas cell for 20 years
Australian Magpie	14/10/2008	Mann River Area	Bryan Baker et al.	2 nesting
Island Monarch	~28/10/2008	Ashmore Reef	Darryel Binns	1
Hooded Robin	21/10/2008	near Maningrida	Richard Noske	2 sites
Brown Songlark	28/10/2008	Ashmore Reef	Darryel Binns	1
~	9/11/2008	McMinns Lagoon	Niven McCrie	1
Arctic Warbler	~28/10/2008	Ashmore Reef	Darryel Binns	1
Gouldian Finch	21/10/2008	near Maningrida	Richard Noske	5 sites
Yellow-rumped Mannikin	4/11/2008	near McMinns Lagoon	Darryel Binns	2
Yellow Wagtail sp.	25/10/2008	Leanyer Sewage Ponds	Niven McCrie	2
Grey Wagtail	2/11/2008	Palmerston Sew. Ponds	Adrian Boyle/Luke Patterson	1
~	7/11/2008	Twin Falls Kakadu	Luke Patterson	1



Apparently not common around Maningrida: the Grey (Silver-backed) Butcherbird.
Photo: Trevor Collins.

Recent literature about Top End natural history

PLANTS & VEGETATION

Compiled by Don Franklin

Not so technical

Bellairs S. 2008. Seeds banks and dormancy of 3 native riparian grasses with contrasting life histories. *TENPS Newsletter* Oct. 2008: 2-3.

Strider. 2008. The secret of the layered forest. *Environment* Sept. 2008: 6-7.

Vegetation change

Bowman DMJS, Riley JE, Boggs GS, Lehmann CER, Prior LD. 2008. Do feral buffalo (*Bubalus bubalis*) explain the increase of woody cover in savannas of Kakadu National Park, Australia? *Jour. of Biogeography* 35: 1976-1988.

Staben G. 2008. *Mapping the spatial and temporal distribution of Melaleuca spp on the Magela floodplain between 1950 and 2004 using object-based analysis and GIS*. Supervising Scientist Internal Report 545 (BSc [Hons] thesis, Charles Darwin University): Darwin. Available at: <http://www.environment.gov.au/ssd/publications/ir/index.html>.

Ecology, conservation & taxonomy of species

Andersen AN, Bradley M, Cook GD, Eager R, Lawes MJ, Richards A, Schatz J. 2008. Burning following tree fall causes local elimination of annual sorghum. *Northern Territory Naturalist* 20: 41-46.

Crowley G. 2008. Cockatoo Grass *Alloteropsis semialata* as a keystone species in northern Australia. *Northern Territory Naturalist* 20: 58-63.

Franklin DC, Hogarth NJ. 2008. Flowering and flooding: factors influencing shoot production in a semelparous bamboo. *Journal of Tropical Forest Science* 20: 188-192.

Liddle DT, Gibbons A. 2006. *National recovery plan for Boronia quadrilata and Boronia viridiflora in the Northern Territory of Australia*. Department of Natural Resources, Environment and the Arts: Palmerston.

Liu LX, Xu SM, Wang DL, Woo KC. 2008. Accumulation of pinitol and other soluble sugars in water-stressed phyllodes of tropical *Acacia auriculiformis* in northern Australia. *New Zealand Journal of Botany* 46: 119-126.

Lowrie A, Cowie ID, Conran JG. 2008. A new species and section of *Utricularia* (Lentibulariaceae) from northern Australia. *Telopea* 12: 31-46.

Bamboo flowering and productivity

It is quite widely reported that, in the year prior to mass-flowering and die-off, bamboos produce much fewer new culms (stems) than in a normal year. This may be used as an indicator of impending flowering, and suggests that the bamboos are storing reserves for flowering instead of committing to further growth. However, there are few hard data about the subject. When the bamboo stand (Top End Bamboo *Bambusa arnhemica* on the Adelaide River) that Franklin & Hogarth (2008) had been studying – documenting rates of survival and recruitment of culms – flowered and died, this seemed like the ideal opportunity to document the phenomenon. And on face value, it seemed straightforward – the productivity of culms was 78% lower in the year prior to flowering than it had been in the three previous years. However, the authors had a parallel study at another stand of this bamboo which didn't flower and die – on the Mary River – and productivity of that stand was also quite severely depressed in that year, an effect the authors were able to attribute to prolonged and/or early flooding. Re-examination of the Adelaide River data showed that productivity of culms was severely depressed on most of the river bank but only slightly depressed on clumps highest on the bank, suggesting a major impact of flooding that confounded interpretation. Given that the authors have observed marked depression of productivity in other stands of the Top End Bamboo in the year prior to flowering independent of flood effects, the likely interpretation is that whereas flooding compounded or confounded the negative effect of impending flowering on productivity on most clumps, the high rainfall associated with the flood year had a positive effect on clumps in the driest position. This suggests that bamboos are flexible in how they allocate resources when flowering is impending.

Bamboo shoots (green in photo) are the beginnings of new culms (stems), and are harvested for food, particularly in Asia. Loss of productivity with and in the year prior to flowering affects the livelihoods of many people. The photo, taken by Don Franklin, is of the Top End Bamboo.

