



NATURE TERRITORY

March 2018

Newsletter of the Northern Territory Field Naturalists' Club Inc.

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



Tissa Ratnayake photographed this adult female and male (*Argiope picta*) from the St Andrews group of spiders while on a reconnaissance walk in preparation for the club's February field trip to Charles Darwin National Park. See page 4 for the field trip report.

FOR THE DIARY



March Field Trip: Sun 11 (night) - Frogs with Ian Morris

March Meeting: Wed 14 - Mangrove Mudpack with Adam Bourke

See pages 2 & 3 for more details

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

March Field Trip

Hunt for the Howard Springs Toadlet *with Ian Morris*

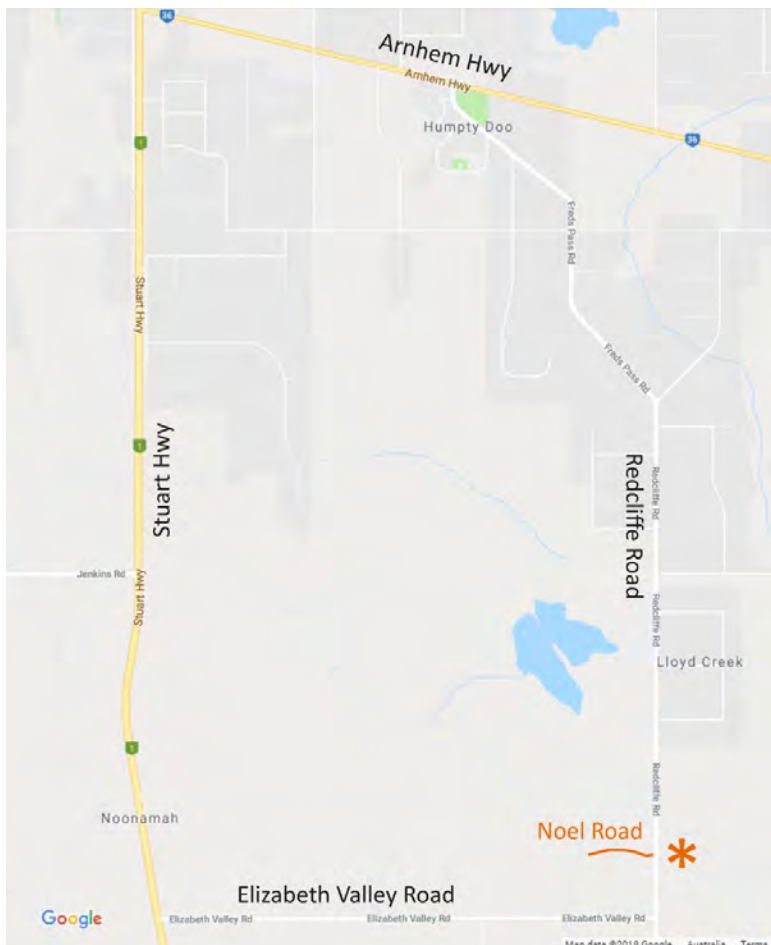
Sunday 11 March, 7 pm - *please note date is one week earlier than usual trip date

See map for meeting place

Ian Morris will lead the March field trip, aimed at looking for the endemic (to the NT) Howard Springs Toadlet (*Uperoleia daviesae*). It is known from only a relatively small number of specimens and chorus recording. Results from recent surveys appear to suggest that the Howard Springs Toadlet is confined to sandsheet heathland within the Howard and Elizabeth River Catchments close to Darwin. There is little information on the ecology of the species, other than it appears to be confined to sandsheet heath, areas of sandy soils with short vegetation that is inundated in the Wet season, or to adjacent Melaleuca woodland areas.



Howard Springs Toadlet. Photo: Ian Morris



Meeting location: Corner of Noel Road and Redcliffe Road, Lloyd Creek

What to bring: head torch, camera, water

Biting insects might be present and come prepared for wet conditions.

March Meeting

Mangrove Mudpack: An Exposé of Darwin's Mangrove Molluscs

presented by Adam Bourke

Wednesday 14 March, 7.45 pm, CDU Casuarina, Room **BLUE 2.1.51**

Biography- Since 2011 Adam Bourke has worked as an environmental consultant specialising in the mangrove flora and invertebrate fauna of Darwin Harbour's mangrove forests. Over the past few years he has been putting together a field guide on the molluscs of Darwin's mangroves and is in the final stages of writing up this soon to be published book.

With over 150 species of molluscs recorded so far, Darwin Harbour's mangroves have it all. From tiny snails the size of poppy seeds, to deep-burrowing clams that derive nutrition from sulphur-oxidizing bacteria, to tree-climbing marine slugs – the molluscs inhabiting Darwin's mangrove forests are wonderfully varied in their size, diversity and behaviour. Although molluscs are one of the most abundant groups of animals living within mangrove forests, there are few handbooks or field guides illustrating their actual diversity. As such, Adam and two local experts have taken it upon themselves to produce Australia's first field guide to mangrove-dwelling molluscs. His presentation provides an introduction to the molluscs living within our mangrove forests and showcases beautiful photographs of both the shells and the remarkable animals that make them.



This vivid red bubble snail (*Haminoea* sp.) is conspicuous on the mud of mangrove forests. Photo: Adam Bourke



A tree-climbing mangrove slug (*Platevindex* sp.) on the trunk of a *Ceriops* tree. Photo: Adam



The mangrove clam (*Glaucanome plankta*) with fused siphons partially extended. Photo: Adam Bourke

Upcoming Field Nat Activities

April Meeting

Wed 11 - Research on Chlamidia and Staphylococcus - Phillip Griffard

April Field Trip

Sat 14 (night) - Light trapping for insects at George Brown Botanic Gardens
- Graham Brown

February Field Trip Report

Field Trip to Charles Darwin National Park - Sunday 18 February *Report, photographs and excursion led by Tissa Ratnayake*

The days leading up to the field trip had been quite ominous with overcast skies and regular downpours. So it was with some trepidation that I peered up at the skies at 7.30 am on Sunday only to confirm it was still overcast. The weather though can change quickly, for better or worse, so there was still a 50% chance of good conditions.

My two recent reconnaissance walks through this park's mixture of tropical savanna woodland and mangrove habitats had revealed a great diversity of birds, insects, spiders and plants, with the two most notable sightings being a pair each of Northern Rosella and the mangrove-dwelling White-breasted Whistler.

I arrived 15 minutes early at our meeting place, the picnic grounds in the park. Then a miracle occurred just as the first participants began arriving, the clouds cleared and we saw blue sky for the first time in many days. One of those whose presence I was grateful for was John Rawsthorne whose knowledge of birds would be a bonus while I concentrated on the invertebrates. As we prepared to commence our walk and almost as if to wish us well, high up in a nearby tree a Lemon-bellied Flyrobin began its exuberant calls.



Sharing observations after the walk



Flower of the mistletoe (*Decasynina signata*)

Our first stop was to examine a low hanging, flowering mistletoe (*Decasynina signata*) that was growing on a Sandpaper Fig. The mistletoe was also in fruit so John took the opportunity to explain how the aerial plant spreads from tree to tree. Picking a fruit and then squeezing it, John exposed the very sticky seed. He went on to describe how the Mistletoebird was the primary consumer of the fruit and as the bird had a very quick digestive process the seeds passed through intact and viable. The bird though often encounters an inconvenience when trying to expel the seed, it would often stick to its "bottom" - the bird's easy solution is to wipe its bottom on a branch, thereby depositing the seed in a new location where hopefully it would germinate.

While at this location we also took the opportunity to feel the rough, sandpapery leaves of the fig from which it derives its common name.

We didn't have to travel far to discover a weed that originated in South America but has now colonised tropical habitats throughout the world, the wild passionfruit (*Passiflora foetida*). This plant has a beautiful flower and small edible yellow fruit, however it does have a tendency in the wild to create dense mats and smother native plants.

A little further on we began to see the ever-popular creations of case moth caterpillars hanging from leaves. These speckled brown and white caterpillars are seldom seen as they first create a silken sock around themselves and then they conceal that by attaching



A case moth caterpillar hiding in its case.



The low flying Orange Ringlet was a common sight.

plant stems of equal length around it, adding overlapping layers as the caterpillar grows in size. Other species of case moths use bark, leaves or even sand pebbles to conceal themselves. The caterpillars pull the top shut and retreat into this protective environment when they are threatened though I have seen Grey-crowned Babbler hold the case with one foot and then use their probing beaks to extract the caterpillar.

Meanwhile John kept pointing out birds, the wing shuffling White-breasted Cuckoo Shrike, the distant notes of a Mangrove Robin, the melodiously calling Yellow Oriole and at one stage a complaining Pheasant Coucal clumsily flying from tree to tree, hissing and screeching at us.

Coucals are interesting as they are a species of cuckoo and in contrary to their parasitising relatives these birds are the only cuckoos that care for their own young.

With the coming out of the sun I had expected insects numbers to be higher but perhaps being morning it was still too cool for them. We did though see a few butterflies, - Dingy Bushbrown, Small Grass Yellow, Lesser Wanderer, Grass Dart and large numbers of Orange Ringlets fluttering close to the ground as is their usual habit.

As we meandered back up to the picnic area we came across several patches covered by large saucer-sized, bright yellow fungi that stood out strongly from the contrasting dark leaf strewn forest floor. The loud chatter of a Forest Kingfisher made us look up and then a pair flew past and settled in a nearby tree. We gathered to discuss the morning's observations and share a few nibbles when much to everyone's delight a resplendent male Red-wing Parrot did a fly past to finish the excursion on a high note.

Field trip bird list compiled by John Rawsthorn:

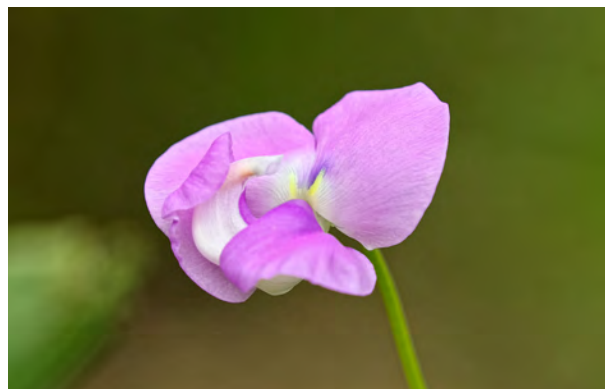
Magpie Goose	Weebill
Peaceful Dove	Large-billed Gerygone
Bar-shouldered Dove	White-breasted Woodswallow
Pheasant Coucal	Silver-backed Butcherbird
Forest Kingfisher	White-bellied Cuckooshrike
Sulphur-crested Cockatoo	Varied Triller
Red-winged Parrot	Yellow Oriole
Great Bowerbird	Northern Fantail
White-gaped Honeyeater	Magpie-lark
Dusky Honeyeater	Lemon-bellied Flyrobin
Brown Honeyeater	Mangrove Robin
White-throated Honeyeater	Mistletoebird
Little Friarbird	Crimson Finch
Silver-crowned Friarbird	Double-barred Finch
Striated Pardalote	



Spectacular, large, yellow fungi.



Male Red-winged Parrot.



The unusually shaped flower of *Vigna vexillata*.

Pacific Baza (*Aviceda subcristata*)

Chick Rehabilitation

by Mandy Hall

My name is Mandy and I rehabilitate seabirds and raptors at my property in Howard Springs. I have rehabilitated Aussie wildlife for 24 years. I work for Top End Veterinary Emergency as a vet nurse and volunteer for Darwin Wildlife Sanctuary.

This last year we have had in care - 1 Osprey, 17 kites (Black and Whistling), 2 Pacific Baza, 1 Brahminy, 1 Wedgetail Eagle, 4 Brown Goshawks, 3 Boobook Owls, 1 Barn Owl, 2 Barking Owls, 1 Lesser Frigatebird, 1 Bridled Tern, 1 Abbotts Booby and 1 Silver Gull.

The Pacific Bazas I think had a good breeding year and have been sighted around Howard Springs and Humpty Doo, favouring the high Frican Mahogany trees to nest and hunt in. Pacific Baza are a medium hawk, whose adult weight ranges from 250g to 448g. Their diet consists of large insects, frogs, nestling birds and lizards. Captive diet includes day old chicks, mice, mealworms, crickets, cockroaches with calcium and Vit D supplements.

My first Baza chick came in at 190g and was booted out of a full nest by two other siblings. I consulted my friend William Riddel, who observes raptors and their nesting behaviours and we decided I would hand raise this Baza and return it on fledgling. Once she reached 250g I attempted to return her using a hack



The first Baza chick feeding on a mouse.



The second Baza chick placed in its substitute nest in readiness for hoisting into the host tree.

pen. This is a process where the fledgling is kept in an enclosure, able to see out into its release surroundings. A hack is where the bird is slowly integrated into the wild by slow release over several weeks, even months where the bird can return to the hack enclosure and be fed, whilst enjoying the freedom of the wild. This process is very complex and requires a lot of time. Birds in care need to trust their care giver and not feel threatened when being fed.

She spent two days in the hack pen under her nest tree and unfortunately was returned to me as feral peacocks were trying to kill her and attacking her pen. I put her in my hack pen at home and this was working out perfectly. She could come and go as she pleased and returned to me for a feed. She roosted back in her hack pen in the evenings on the top of the pen. Unfortunately she was taken by a water python in her hack pen. I was devastated, but this is a natural death beyond my control.

The next Baza chick came in when his nest tree fell in a storm. He was quickly reunited with his parents by providing a hanging basket nest that we had placed high up in the next tree over. The nest was tethered in a way it could be taken down again if need be, or if the chick came to ground.

He was only a week or so from fledging. I call them "branchers", as they leave their nest and hang around in their nest trees on the branches. The property owner contacted me two weeks later to report a kookaburra had killed the chick. The kookaburra likely was protecting her own chicks and saw him as a threat. I submitted the body to the Museum and Art Gallery of the NT.

After all this bad Baza luck, I was very pleased to hear a familiar cry for food in my own garden. A screaming, naturally reared Baza fledgling passing though with its parents feeding it. In the wild, a very low percentage of raptor chicks make adulthood.

Caring for raptors takes a lot of skill and training as their requirements are very specialised. All raptors in my care are trained to allow for optimum fitness and hunting skills to give them the best chance at survival post release. I have been mentored by Martin Scuffins for longer than 10 years in raptor rehab.

Please report injured or orphaned wildlife to Darwin Wildlife Sanctuary 24 hr phone 0473 992 581. Save the number.



Hanging basket nest for second chick - note tethering rope.

Bird of the Month

By Denise Lawungkurr Goodfellow and Leilehua Yuen*

Bird: Lesser Frigatebird (*Fregata ariel*)

Order: Psittaciformes

Family: Fregatidae

Size: body length 75 cm.

Description: Frigatebirds are large slender, mostly black, seabirds. Most species have white bellies. They have a long hooked bill, long angular wings and a deeply forked tail.

The male has a red throat pouch, insignificant until inflated when courting.

In flight frigatebirds twist and turn with consummate grace, outmanoeuvring most other seabirds which these kleptoparasites harass until they regurgitate their food. Frigatebirds also eat turtles and fish they catch on the surface of the water, as well as carrion. In the waters off Hawai'i, they are documented as a predator of Exocoetidae (flying fish).

Three of the world's five species have been recorded in the Top End. The Lesser Frigatebird is the most common and the species most likely to be seen flying over your local Darwin shopping centre. The species and sexes are relatively difficult to tell apart.

Frigatebirds nest on remote oceanic islands, making a rough nest in shrubby trees or on the ground. They do not breed until about five years of age, and then only lay one egg, which they incubate for 40 days. The naked helpless young take several months to fledge and may remain dependent on their parents for a year.

The male's call is a double whistle, and the female's a shriek.

Where found: Lesser Frigatebird can be found throughout the tropics, with the Hawaiian archipelago being their northernmost range, and the bottom of coastal Queensland being the southernmost. In the Atlantic, they are predominantly found on small islands off the coast of Brazil - this species is found across the Top End and western Queensland and the Kimberley coast of Western Australia. All three species have been recorded in the Top End. Hilary Thompson and I saw a Christmas Island Frigatebird (*Fregata andrewsi*), the rarest of the three, at Parap and Myilly Point in 1986 along with both Lesser and Greater Frigatebird (*Fregata minor*).

Notes: Leilehua Yuen, a Hawaiian educator, writes "Of course I had studied 'iwa (Lesser Frigatebird), they are culturally very important, and symbolic of both chiefs and hula dancers. But I had only seen museum displays, never the living birds. Well, it was 1993, and Jurassic Park, the movie about bringing dinosaurs back to life had just been released. That was June 11, the same day Tropical Cyclone Lidia formed. Now, 'iwa are pelagic birds, so they spend most of their time way out over the ocean, but in the event of storms, they will head for high islands (and, at 2,407 metres, we are fairly high) and seek shelter in the lee of the mountains. On this day, I was



To Hawaiian people the Constellation Cassiopeia is divided into two constellations, one representing the male frigatebird and the other, its favourite food, the Flying Fish. Painting: Leilehua Yuen



Juvenile frigatebirds from the Lacepede Islands off the Kimberley coast in WA. Photo: Denise Goodfellow

driving from Hilo to Kona, and the radio reception was quite poor. I already knew about the movie, but had not a clue about the cyclone. As I came down the road into Kailua town, I saw probably six or seven of these massive flying creatures silhouetted against the stormy looking sky. With their folded necks and unmoving wings, I thought, "Oh, what a clever idea! They are promoting the movie with radio-control pterodactyl models!" Well, when I got to my work, I called a friend to tell him about this wonderful sight. He replied, "Kikaha ka 'iwa maluna ka moku, noho ka 'ino maluna ka moana." When the 'iwa bird soars over the island, a storm sits over the sea.

Leilehua reports that 'iwa are compared to chiefs "due to their long wings (about the same as a chiefly person's arm span), their high flight, their ability to travel far distances, and their habit of robbing smaller birds, taking food and nesting material

(Yeah, chiefs are like that!)" She also says that 'Iwalani is a popular name to give children (Hawaiian names are non-gendered). Leilehua adds that frigatebirds are intelligent, "the young ones like to play, especially games involving stealing sticks and things from each other. Rather like the children of chiefs".

To Hawaiian people the Constellation of Cassiopeia is divided into two constellations, one representing the male frigatebird and the other, its favourite food, the Flying Fish. "The constellation, like the bird, flies out to sea in the summer hunting fish and flies closer to home in the winter". The Little Dipper is the female Frigate Bird, and circles her nest with its single egg.

The 'iwa is also important in Hawaiian cultural arts, and ceremonial objects incorporate the feathers of 'iwa, as well as feathers of other bird species. Today, the objects are made with commercially harvested feathers of domestic species, as most Hawaiian birds are now protected".

Leilehua, an authority on ancient hula writes that: "Hula dancers are expected to emulate their grace and strength" and "chiefs, their boldness and far-seeing. When they start flying in the lee of the mountains, a storm is coming, so people should prepare. From that, is the association with foretelling coming dangers".

Leon Puruntatameri says that Tiwi Island people call frigatebird Japarika, meaning storm bird.

Biography of Leilehua Yuen:

Leilehua is "hapa," meaning Native Hawaiian mixed race, and was reared by her father's parents in a culturally blended household in which Hawaiian was still spoken, along with English and smatterings of other languages.

Leilehua is a traditionally trained kumu (very roughly, "respected teacher of traditional Hawaiian culture and arts"), and has worked as an educator in the United States federal parks system, the Hawai'i parks system, the University of Hawai'i, and provided educational services to museums, schools, and other entities. A performing artist for 30 years, she uses traditional Hawaiian storytelling, music, song, and dance to teach the cultural and natural history of the Hawaiian Islands.

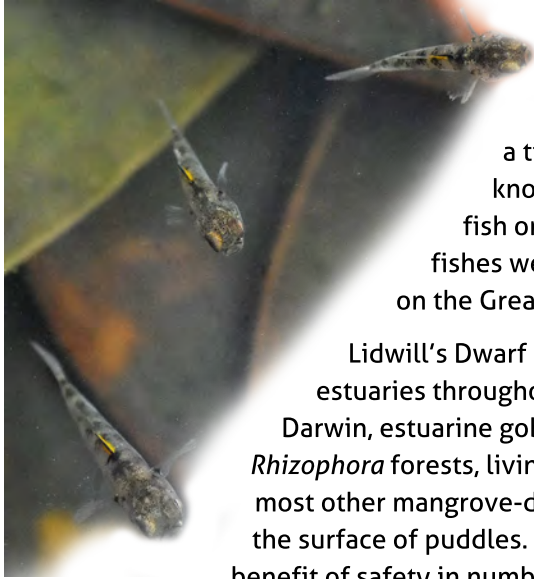
*Leilehua and Denise Goodfellow are "kaikua'ana ho'okama," that is they are elder sisters by adoption.

References:

Goodfellow, D.L. & M.P. Stott, M.P. (2000, 2005). Birds of Australia's Top End, Darwin: Scrubfowl Press.
Thompson, H. & D.L. Goodfellow (1989). Annotated List of Birds of the Top End (unpublished).

Beast of the Month – Lidwill's Dwarf Goby

Text and photos by Adam Bourke



Amongst the 35 or so goby species inhabiting Darwin's mangrove forests (Larson et al. 2013), Lidwill's Dwarf Goby is without a doubt the most charming - at least in my opinion.

Typically growing to little over 12 mm in length, *Pandaka lidwilli* is a tiny fish indeed. The genus *Pandaka* contains the smallest of all known goby species, some of which were long thought to be the tiniest fish on the planet. In the mid-2000s however, two even smaller groups of fishes were discovered in peat swamps in Indonesia, and near coral outcrops on the Great Barrier Reef. And so, *Pandaka* gobies lost their title.

Lidwill's Dwarf Goby is a brackish-water fish associated with mangroves and estuaries throughout parts of the Indo-Pacific region from Japan to Australia. Around Darwin, estuarine gobies are typically found amongst seaward fringing mangroves and *Rhizophora* forests, living in shallow pools and puddles near the base of the trees. Unlike most other mangrove-dwelling gobies, this little species forms small, hovering schools near the surface of puddles. Congregating in the middle of water bodies provides the obvious benefit of safety in numbers, and helps these gobies avoid cryptic predators like the Finescale Gudgeon (*Incara multisquamata*) – a crafty mangrove fish with an insatiable appetite.

Although tiny, Lidwill's Dwarf Goby is no weakling. Being adapted to life in shallow tide pools means it is physiologically tough, as individuals are regularly subjected to low dissolved oxygen levels, seasonally high water temperatures, fluctuating salinity and acidic water conditions. Two observable adaptations to contend with poor water quality are inactivity and surface gasping (known technically as aquatic surface respiration – ASR) during low tide.

Similar to most other mangrove gobies, Lidwill's Dwarf Goby is rather drab, with the sparse colouration mostly limited to a flash of bright yellow on the posterior rays of the first dorsal fin. There is a second similar-looking species of *Pandaka* goby inhabiting Darwin Harbour, but it is predominantly a freshwater fish. As these two species may coexist in upstream mangroves, identification is often difficult without a microscope. That being said, the presence of four small black blotches on the fish's posterior end, one large mark on the anal fin, and three smaller ones on the ventral margin of the caudal peduncle (i.e. the narrow part of a body before the tail fin) usually determines the identity of this delightful little fish.



At only 12 mm long, Lidwill's Dwarf Goby is one of the smallest gobies on the planet.

References:

Akihito, P. & Meguro, K. (1975). *Pandaka trimaculata*, a new species of dwarf goby from Okinawa Prefecture, Japan and the Philippines. *Japanese Journal of Ichthyology* 22(2): pp. 63-67.

Larson, H.K., Williams, R.S. & Hammer, M.P. (2013). An annotated checklist of the fishes of the Northern Territory, Australia. *Zootaxa* 3696: pp. 1-293.

NT Field Naturalists' Club Directory

President:	Richard Willan	8999 8238 (w)
Secretary:	Diana Lambert	0409 767 570
Treasurer:	Jo Rapley	0487 193 241
Committee Members:	Graham Brown	0417 804 036
	Mark Grubert	8999 2167 (w)
	Lyn Lowe	0411 269 216
	Leona Sullivan	0423 951 874
Bird Life Australia Liason Officer:	Denise Goodfellow	
Newsletter Editor	Leona Sullivan	0423 951 874
Website and Facebook:	Tissa Ratnayeke	0417 659 755

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



Club notices

Thank you: The previous issue was despatched by **Tissa Ratnayeke**.



Newsletter contributions welcome: Sightings, reports, travelogues, reviews, photographs, sketches, news, comments, opinions, theories , anything relevant to natural history. Please forward material to news.ntfieldnatsnt@gmail.com

Deadline for the April newsletter: Wednesday 28 March 2018



Need a Club membership form? Go to: <http://ntfieldnaturalists.org.au/membership/>



Northern Territory Naturalist:

Chief Editor, Richard Willan, advises that the time for submission of articles for this year's issue has now closed. The clutch of papers for volume 28 is now going through the editorial system.



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 0459 440 665.



NT Field Naturalists' Club Meetings are *generally* held on the second Wednesday of every month, commencing at 7:45 PM, 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.