

NATURE TERRITORY

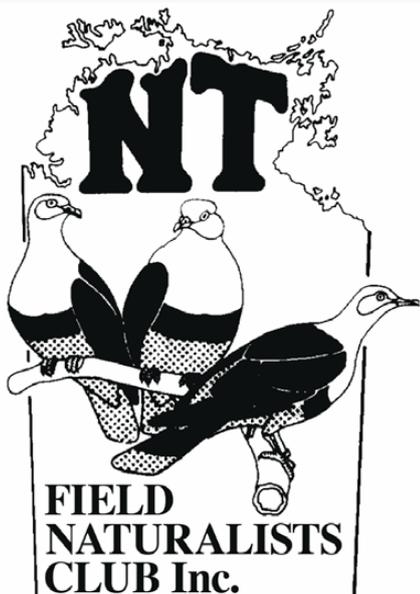
November 2014

Newsletter of the Northern Territory Field Naturalists Club Inc.

PO Box 39565, Winnellie, NT 0821

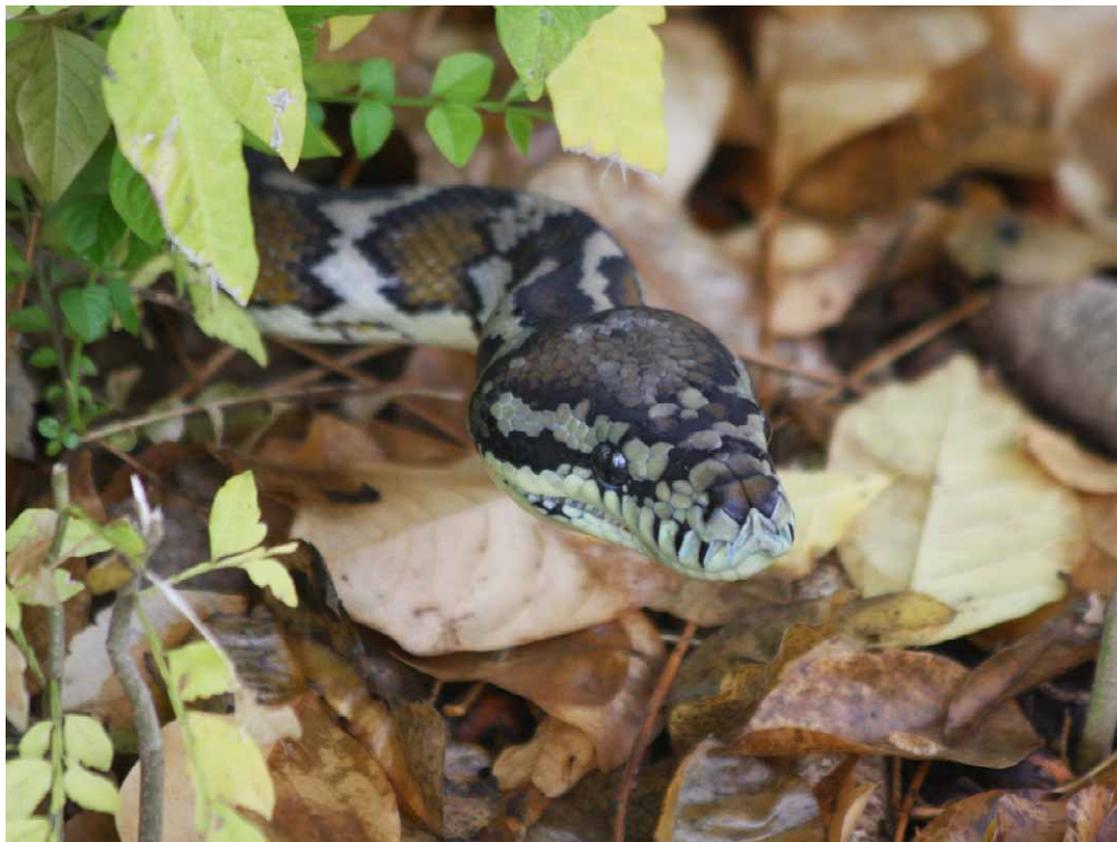
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Club web-site: <http://ntfieldnaturalists.org.au/>



Meetings are generally held on the second Wednesday of every month, commencing at 7:45 PM, in Blue 1.54 (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.



Northern Carpet Pythons (*Morelia spilota variegata*) are moderately common around Darwin, although are apparently at risk from cane toads.

This 150cm specimen, seen in suburban Fannie Bay, was in fine health in early November.

Image by John Rawsthorne

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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

November meeting. Wednesday November 12, 7:45 PM. Blue 1.54 (Business Bldg.), CDU Casuarina.

Range expansion of an ‘invasive’ butterfly in South-East Asia and Australia: a consequence of tropical deforestation or climate change?

Presented by Michael F. Braby

Documenting the range size and range boundaries of species, and understanding the factors determining changes in these spatial components, is crucial given current rates of anthropogenic climate change and habitat loss. Michael will report on the establishment and rapid spread of the Tawny Coster butterfly, *Acraea terpsicore*, in South-East Asia and Australia, which he recently presented to the International Symposium on Research and Conservation of Asian Butterfly Diversity in Taiwan.

The butterfly (which is native to Sri Lanka and India) became established in Indo-China (Thailand) during the 1980s and since that time it has spread to other parts of South-East Asia. It was first recorded on the Australian mainland in the Northern Territory in early 2012.

Michael and his team modelled the species’ rate of colonisation and potential for further range expansion in the Indo-Australian region. The bioclimatic niche models identified additional regions with favourable climatic conditions, indicating potential for further range expansion. It was hypothesized that habitat modification, particularly rapid deforestation of tropical



forest in South-East Asia during the past three decades, has been a major driver accounting for the range expansion. Climate change may be a contributing factor but was unlikely the sole determinant given the spatial area involved and rate of spread.

Michael currently works as a senior scientist with the NT Government (DLRM) and is a Visiting Fellow with the Research School of Biology at The Australian National University.

*Top: The Tawny Coster (Acraea terpsicore);
Left: Michael Braby*



Quiz: Who was the first person to see a Tawny Coster in Australia, and where did they see it? Answer on p7

November Field Trip: End-of-year soiree at Charles Darwin National Park, with a side serving of natural wonder

Join your fellow club members at this near-city park for an exploration mixed with an early Christmas social gathering on 16 November from 8.30am.



Charles Darwin National Park is located close to the heart of Darwin, off Tiger Brennan Drive in Winnellie. It includes areas of savannah woodland and mangroves, and has a rich biodiversity for an areas as close to a major city as this. The photo at left (by **Graham Brown**) shows a view of the city from a lookout at the reserve, with mangroves in the foreground, while the image below right (also by Graham Brown) shows a sample of the diverse habitat within the reserve.

The exploration phase of this excursion kicks off at 8.30am, meeting at the car park in the middle of the park. **Richard Willan** will lead an exploration of the mangrove areas, focussing on crustaceans, birds and the mangroves themselves. Graham Brown will lead a second expedition through the terrestrial areas of the park, focusing on birds, reptiles and insects. If you turn up after 8.30 am, simply ring Graham Brown on 0417 804 036 to find out where in the reserve the group is at. The reserve is not particularly big, so latecomers can easily join in the fun.

The social phase of the outing will be a lunch in the grassy park area of the reserve, from about 11.30am. The club will be providing the bones of a meat/salad lunch, but we would encourage members to bring additional food including festive desserts to share. Also, members will need to bring their own drinks and chairs. The picnic area (below) is shady and pleasant.



Biting insects may be an issue so be prepared, consider covering up and using insect repellent.

Please let Graham Brown know if you intend to attend this outing, particularly for catering purposes, on 0417 804 036.



Club notices

Thank you: The previous issue was prepared by **John Rawsthorne** and collated and mailed by **Laurie & Illona Barrand**. It was printed using equipment kindly made available by **Palmerston Telstra Shop**.

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 December newsletter: Monday 24 November.



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



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: can be accessed by contacting **Peter Ebsworth** on 0437 278 799.

Journals: in the Biodiversity Unit at Berrimah. For access phone **Michael Braby** on 08 8995 5015 (w).



Leanyer Ponds: Access to Leanyer Ponds is available only after induction through PAWC. To commence the induction process go to www.rapidinduct.com.au/powerwater/waterservices

Note that the Leanyer Ponds are currently temporarily closed to birdwatchers.

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.



Northern Territory Naturalist: The Editorial Committee of the Club's journal, the *Northern Territory Naturalist*, has now released edition no. 25. 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 richard.willan@nt.gov.au. Manuscript editors are Drs **Richard Willan**, **Anke Frank** and **Sean Bellairs**. **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.

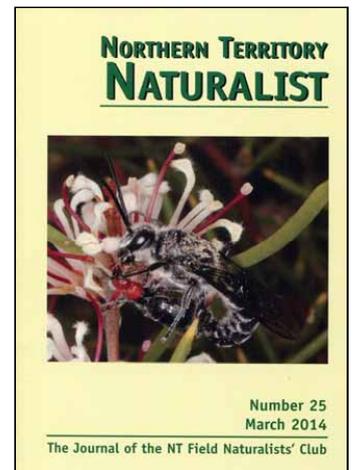


Top End Native Plant Society General meetings are held on the 3rd Thursday of the month at the Marrara Christian College, corner Amy Johnson Ave. and McMillans Road, and commence at 7:30 PM (speaker at 8 PM). Visit <http://www.topendnativeplants.org.au/index.php> or contact Russell Dempster on 8983 2131.

Upcoming TENPS events:

20-Nov-2014 : AGM and talk by Ian Morris on "Plants of Economic Significance to Indigenous People of East Arnhem Land"

22-Nov-2014 : Tour of George Brown Darwin Botanic Gardens led by Sharon Wilson



October meeting: Gliding into the unknown: Marsupial gliders of the NT and beyond, with Sue Carthew

Report by Michael Braby

Professor Sue Carthew is Pro Vice Chancellor of the Faculty of Engineering, Health, Science and the Environment at Charles Darwin University. Prior to moving to Darwin 2.5 years ago Sue was based at the University of Adelaide where she conducted extensive research into the ecology and conservation biology of gliding marsupials, particularly in western Victoria and south-eastern South Australia.

There are nine species of gliding marsupials, which are found only in New Guinea and Australia. In Australia, there are at least six species, including the Greater Glider, Yellow-bellied Glider, Mahogany Glider, Squirrel Glider, Sugar Glider and Feathertail Glider. They are sometimes known as wrist-winged gliders because of the gliding membrane comprising folds of skin between the limbs and the side of the body that allows them to glide between trees.

Gliders have very specific habitat requirements. They are strictly nocturnal and arboreal, living in trees, and depend upon tree hollows which are used as dens. Most species occur in the taller mature eucalypt forests where they feed primarily on the pollen and nectar of flowers; some species also utilise sap and feed on small invertebrates. The Yellow-bellied Glider is well known for harvesting sap from eucalypts by making distinct v-shaped incisions on the trunk of particular trees to exude the rich sugary phloem. Gliders tend to have patchy distributions in the landscape, which may be related to their mating systems and social structure. Several gliders are of conservation concern because of their ecological specialisation and susceptibility to habitat fragmentation.

Sue provided a brief overview of her research in southern Australia, which has included long-term investigations spanning 20 years into the reproductive biology, spatial distribution and effects of forest fragmentation and isolation on population density, population viability, movement between remnant patches of gliders etc., with particular focus on the Yellow-bellied Glider and Sugar Glider. The Yellow-bellied Glider is severely threatened by habitat fragmentation. The animals live in small family groups, but because they require relatively large home ranges (>30 ha) they do not survive well in small isolated patches of forest. In contrast, the Sugar Glider lives in larger social groups but has smaller home ranges (0.5 – 4.0 ha) and therefore is less susceptible to fragmentation. However, Sue and her research team found that in smaller forest fragments (<100 ha in area), Sugar Gliders had a much lower level of occupancy, and that group sizes and population densities were also significantly smaller compared to larger forest patches, indicating an overall negative effect of fragmentation that is presumably related to diminished availability of ecological resources.



Above: A glider from Territory Wildlife Park: Is it a Sugar Glider or a Lambalk Glider? Image by Tissa Ratnayake

The Sugar Glider is more widespread and common than the Yellow-bellied Glider, although it is rare in South Australia. It currently includes five subspecies, of which two occur in mainland New Guinea. One of these subspecies, commonly referred to as the Lambalk Glider (*Petaurus breviceps ariel*), occurs in the Kimberley and Top End of north-western Australia. Very little is known about the taxonomy and ecology of this glider, and since moving to the Northern Territory Sue and her students have had the opportunity to investigate the species boundary and systematic relationships of the Lambalk Glider in more detail. Sue presented fascinating preliminary evidence based on comparative morphology of the Lambalk, Sugar and Squirrel Gliders together with phylogenetic reconstruction of the genus *Petaurus* using genetic sequence data (from the ND2 mitochondrial gene), which indicate that *P. breviceps ariel* is not closely related to the Sugar Glider and appears to have its nearest evolutionary affinity with the Mahogany and Squirrel Gliders. Although more data is needed to confirm this pattern, this discovery is most interesting because it emphasises the unique and peculiar biogeographical nature of north-western Australia within the Australian Monsoon Tropics. We eagerly await the results of Sue's ongoing research to fully unravel the taxonomic mystery and biology of our glider in northern Australia.

Thank you Sue for a well presented and most interesting talk!

October field trip: Evening visit to Fogg Dam for insect trapping

report by Julia Collingwood

On Friday evening 10 October about 20 of us assembled for an evening of insect light trapping organised by Graham Brown and Michael Barrett from NT Parks and Wildlife. Graham, who had run the light in the same spot on previous occasions although not in recent years, set up the UV light and a generator at the edge of the trees beside the start of the dam wall on the upstream side.

We then left the trap to attract insects while we took a walk through the rainforest led by Michael. During the walk we mostly saw wolf and huntsman spiders, both were very common. However, the assassin bugs on a dead stump and the sighting of stag beetles in a fallen tree nearby were particularly interesting due to their uncommonness.

When we returned to the light trap, it was alive with hundreds of specimens, the majority of which were:

1. small beetles - rove, darkling and diving beetles as well as scirtids which resemble flea beetles
2. bugs -stink and assassin
3. pink and black moths (*Creatonotos gangis*)
4. large crane flies



A more extensive list with photographs has been composed by Graham and will be placed on the website.



We were then lead by Michael for a night walk along the dam wall. It was impressed upon us that this was something we should never do on our own! After a few minutes and within a couple of metres of the dam wall, we clearly saw a freshwater crocodile. While walking along there was no mistaking the red shining glint of various other crocodiles in the dam. Michael pointed out the Northern dwarf tree frog (*Litoria bicolor*) which has a fondness for the pandanus trees growing along the dam wall. Once you began to look, these small frogs were everywhere. We also saw a number of Roth's tree frogs (*Litoria rothii*), Dahl's aquatic frog (*Litoria dahlii*) and Australian green tree frog (*Litoria caerulea*).

As we walked, the moon came up over the flat flood plain – a huge blood-red disc looking more like a setting sun than a rising a moon. It was breath-taking; a sight not to be forgotten.



Thanks to Michael Barrett and Graham Brown, it was an extremely successful excursion.



Images clockwise from top left: Pink and black moth *Creatonotos gangis* (Natalie Davis); an assassin bug (family Reduviidae) (Graham Brown); huntsman spider, *Heteropoda* sp. (Graham Brown); a moth of the family Noctuidae (Natalie Davis)

Members' ground-breaking conservation work recognised

Two NT Field Nats club members, **Stephen Garnett** and **Don Franklin** both of CDU, have been recognised for producing the world's first climate change adaptation plan for birds. They were awarded a Certificate of Commendation at this year's national Whitley Awards for Zoological Management and Conservation Resource for their co-edited and co-authored book, "Climate Change Adaptation Plan for Birds".

In an interview with CDU Newsroom, Professor Garnett said he was honoured to have received such an esteemed award in the scientific field of Australasian fauna. "It is a pleasure to win this," Professor Garnett said. "The hard work has been acknowledged.

"There has never before been an attempt to assess the impact of climate change on an entire faunal group as well as suggest potential adaptation measures."

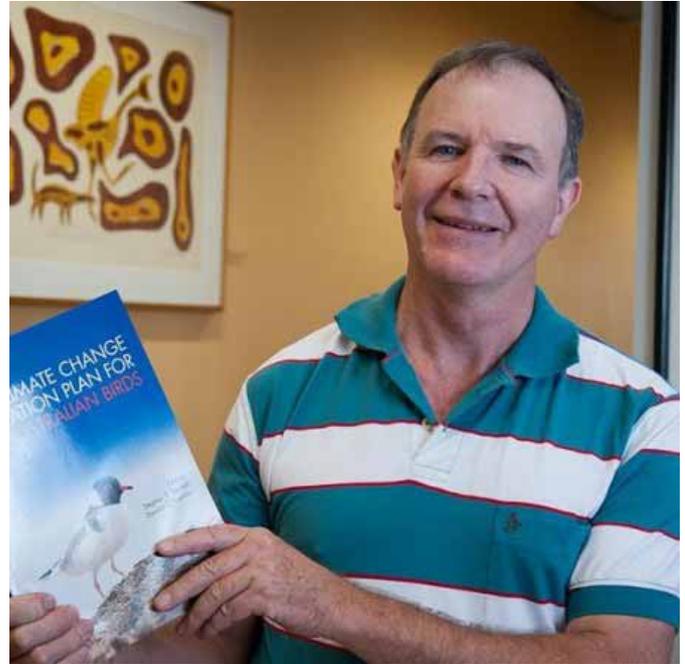
The book, published by CSIRO, describes the state of knowledge about climate change and Australian birds, detailing costed plans of action for those most vulnerable.

The research draws on some 16 million records on 1200 bird species and subspecies, the largest collection of Australian bird records ever assembled.

"I hope this award draws people's attention to the work we have done and the requirements we all have as a society to prepare for what is coming with climate change," Professor Garnett said.

He said types of action included expanding coastal sanctuaries further inland and increasing monitoring of birds for early warnings of climate change impacts. "This is part of an ongoing conversation

with policy makers on what could be done to prepare ourselves for when the climate change impacts really start to bite," he said. "Some actions need to be taken very soon while others can be postponed for a while."



Stephen Garnett with the award-winning tome



White-throated Grasswrens (*Amytornis woodwardi*) were one of the focus species of the Kakadu Bird Week in September.

The image at left of a pair was captured by **Marc Gardner**. These birds were found in old growth spinifex with ample seed heads.



Trivia Answer from p2
The first person to see a Tawny Coster in Australia was Chris Sanderson of Brisbane, who spotted them at Wagait Beach.

Too good to lose: how to reverse the species declines at Kakadu

In a recent article published in The Conversation John Woinarski described a framework for the Kakadu Threatened Species Strategy. This is an important plan to stem a worrying tale of decline and disappearance. Below is an extract from John's article and a summary of financial commitments.

Kakadu National Park in Australia's tropical north is one of the world's premier conservation reserves. However, it is partly failing in one of its principal purposes. The past two to three decades have seen an extraordinary collapse in Kakadu's native mammal species. A comprehensive new Kakadu Threatened Species Strategy has been designed in response to these species declines, to provide a mechanism to reverse them.

National parks, particularly very large ones like Kakadu, should provide the robust foundation for the conservation of biodiversity. These are areas in which conservation is an explicit (and often paramount) priority and in which some of the most acute threats (such as vegetation clearance) are excluded. Furthermore, they are usually staffed by trained land managers with responsibility for undertaking actions to benefit biodiversity. If we can't maintain biodiversity in areas specifically set aside for this purpose, then the overall fate of our biodiversity is likely to be very bleak.

Kakadu is blessed with an embarrassment of riches: 75 threatened species and one threatened ecological community – probably more than any other conservation reserve in Australia. Indeed, the park's importance for the conservation of threatened species was one of the main justifications for its World Heritage listing.

Plan and financial commitment to save Kakadu's endangered species

- \$450,000 on intensive work to target threats from fire, weeds and feral animals in crucial habitat, extending from the Stone Country to the lowland woodlands.
- \$50,000 to create a wildlife refuge on Gardangarl (Field Island) for species struggling on the mainland including small mammals and goannas.
- \$200,000 on expanding of the 'toad smart' quolls project, building on the highly successful research conducted in Kakadu since 2010.
- \$50,000 for a seedbank and for propagating threatened plant species, many of which occur nowhere else in the world.

management ambition, accountability and competence in Kakadu that provides reassurance to our community that parks indeed provide a robust foundation for conserving Australia's plants, animals and ecosystems. Kakadu's biodiversity is too precious to lose.

Images: top Yellow Water sunset cruise; right a young quoll, courtesy Parks Australia

To read further on this important development in the protection of the Top End's biodiversity see: John Woinarski's full article in *The Conversation*

<http://theconversation.com/too-good-to-lose-how-to-reverse-the-species-declines-at-kakadu-33679>

The Kakadu Threatened Species Strategy

<http://www.nerpnorthern.edu.au/publications/citation/nerp634>

Press release from Senator the Hon. Simon Birmingham, Parliamentary Secretary to the Minister for the Environment

<http://www.environment.gov.au/minister/birmingham/2014/mr20141103.html>

Article on ABC webpage "Quolls, goannas to be relocated in bid to help Kakadu's endangered species", by Alexandra Fisher

<http://www.abc.net.au/news/2014-11-03/plan-to-help-kakadu-threatened-species/5862558>



Kakadu's threatened species include very many highly localised plants, endemic shrimps restricted to just a few headwater pools, river sharks, marine turtles, giant but very rarely seen snakes, toad-affected goannas, migratory shorebirds, and finches, in addition to its rapidly declining mammal species.

Kakadu is a beautiful, awe-inspiring and deeply spiritual place. It is also extraordinarily important for biodiversity. We need to set a standard of



Interesting bird sightings

1 to 31 October 2014

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.ereamaea.com/>) and from correspondences with birdwatchers. Bird names follow the IOC world checklist.

Species	Date	Location	Observer/s	Numbers/comments
Waterbirds, Seabirds & Shorebirds				
Chestnut Rail	14/10/14	Elizabeth River bridge	Darryel Binns	2
Great-billed Heron	25/10/14	Middle Arm, Darwin Harbour	John Rawsthorne	1
Little Curlew	20/10/14	Alice Springs Sewage Ponds	Chris Watson	1
Long-toed Stint	20/10/14	Alice Springs Sewage Ponds	Chris Watson	1
Oriental Plover	8/10/14	Timber Creek airfield	Darryel Binns	3
Pectoral Sandpiper	2/10/14	Alice Springs Sewage Ponds	Pete Nunn	1
Pink-eared Duck	20/10/14	Alice Springs Sewage Ponds	Chris Watson	1,000
Red-necked Avocet	20/10/14	Alice Springs Sewage Ponds	Chris Watson	100
Birds Of Prey & Owls				
Black-breasted Buzzard	25/10/14	Middle Arm, Darwin Harbour	John Rawsthorne	2
Black Falcon	4/10/14	Owen Springs Conservation Reserve	Richard & Moses Waring	1
Red Goshawk	22/10/14	Southern Kakadu NP	Luke Paterson	1
Square-tailed Kite	1/10/14	Nyirripi community	Richard Waring	1
Other Non-Passerines				
Banded Fruit-dove	13/10/14	Nourlangie, Kakadu NP	Darryel Binns	2
Bourke's Parrot	3/10/14	Kurnoth Bore	Richard & Moses Waring	1&10
Bourke's Parrot	10/10/14	Kurnoth Bore	Steve Roderick	24
Hooded Parrot	11/10/14	Pine Creek oval	Darryel Binns	28; also on 12/10
Oriental Cuckoo	7/10/14	Skycity, Darwin	Clive Garland	1; first report of season
Pacific Swift	31/10/14	Katherine	Marc Gardner	2
Passerines				
Black Honeyeater	6/10/14	Alice Springs Desert Park	Pete Nunn	
Cicadabird	15/10/14	Katherine	Marc Gardner	1 heard
Crimson Chat	20/10/14	Alice Springs Sewage Ponds	Chris Watson	3
Gouldian Finch	12/10/14	Copperfield Dam, Pine Creek	Darryel Binns	30+
Grey Honeyeater	8/10/14	W. of Ochre Pits, West MacDonnell Ranges	Steve Roderick	1
Painted Finch	20/10/14	Alice Springs Sewage Ponds	Chris Watson	5
Painted Honeyeater	5/10/14	Threeways Roadhouse, Stuart Hwy	John Pearson	1
Pied Honeyeater	6/10/14	Alice Springs Desert Park	Pete Nunn	
Purple-crowned Fairywren	8/10/14	Bradshaw Bridge	Darryel Binns	
Singing Honeyeater	10/10/14	East Point, Darwin	John Rawsthorne	1
Spinfexbird	4/10/14	Owen Springs Conservation Reserve	Richard & Moses Waring	2
White-browed Treecreeper	4/10/14	Owen Springs Conservation Reserve	Richard & Moses Waring	1
White-fronted Honeyeater	6/10/14	Alice Springs Desert Park	Pete Nunn	Also 23/10
White Wagtail	27/10/14	Lee Point, Darwin	Coen van Tuijl	1; unknown subspecies
Yellow-rumped Mannikin	9/10/14	Policeman's Point road, Timber Creek	Darryel Binns	12+



Macquarie Island pest eradication project

Macquarie Island is an Australian Antarctic island, with a long history of feral animals including cats, rats, mice and rabbits transforming the place.

The Macquarie Island Pest Eradication Project is the largest eradication program ever attempted for rabbits, ship rats or mice anywhere in the world and is one of the largest conservation management projects in Australia's history. This project has been ongoing for several years at significant expense.

In April 2014, after nearly three years of monitoring with no sign of surviving individual rabbits, rats or mice, the project was declared a success. The island's vegetation is rebounding and seabirds have returned to breed. A wonderful story. To read more about the project, go to www.parks.tas.gov.au or see the evaluation report at <http://www.parks.tas.gov.au/file.aspx?id=31160>