

## Crocodile Islands Wildlife Surveys, 2012



**Kym Brennan**  
Flora and Fauna Division,  
Department of Land Resource Management

**Warrick Angus, Fabian Gaykamangu, Samuel Wumulul, Neil Djandjan, Leonard Bowaynu**  
Crocodile Islands Rangers

**Bobby Tamayo, University of Sydney, Dickman Lab**

**Bluey McGregor, Milingimbi Outstations & Progress Resource Association Inc**

**Quincy Carter, Steve Totterdell, Milingimbi Community**

## Participants

In August 2012 the Flora and Fauna Division of the Department of Land Resource Management and the Crocodile Islands Rangers conducted a capacity-building training survey of the animals on three of the Crocodile Islands - Milingimbi Island, Murrungga Island, and Rapuma Island. The survey team included:

- Kym Brennan (DLRM)
- Warrick Angus (co-ordinator), Fabian Gaykamangu, Samuel Wumulul and Neil Djandjan, Leonard Bowaynu (Crocodile Island Rangers), and
- Bobby Tamayo (University of Sydney, Dickman Lab).

Gurriba Island was surveyed in November 2012 by the following team:

- Kym Brennan (DLRM)
- Warrick Angus (co-ordinator), Samuel Wumulul (Crocodile Island Rangers)
- Bluey McGregor (MOPRA), and
- Quincy Carter, Steve Totterdell (community volunteers).

The team was supported by Bluey McGregor and other staff from the Milingimbi Outstations Progress Resource Association (MOPRA) and the survey would not have been possible without the support of the Yan-nhangu Traditional Owners from the Gamalangga, Malarra and Gorriyindi clans who allowed us to work on their islands. KB and BT also extend a huge vote of thanks to Warrick, his partner Simone and his mother for their generous hospitality while we were based at Milingimbi.



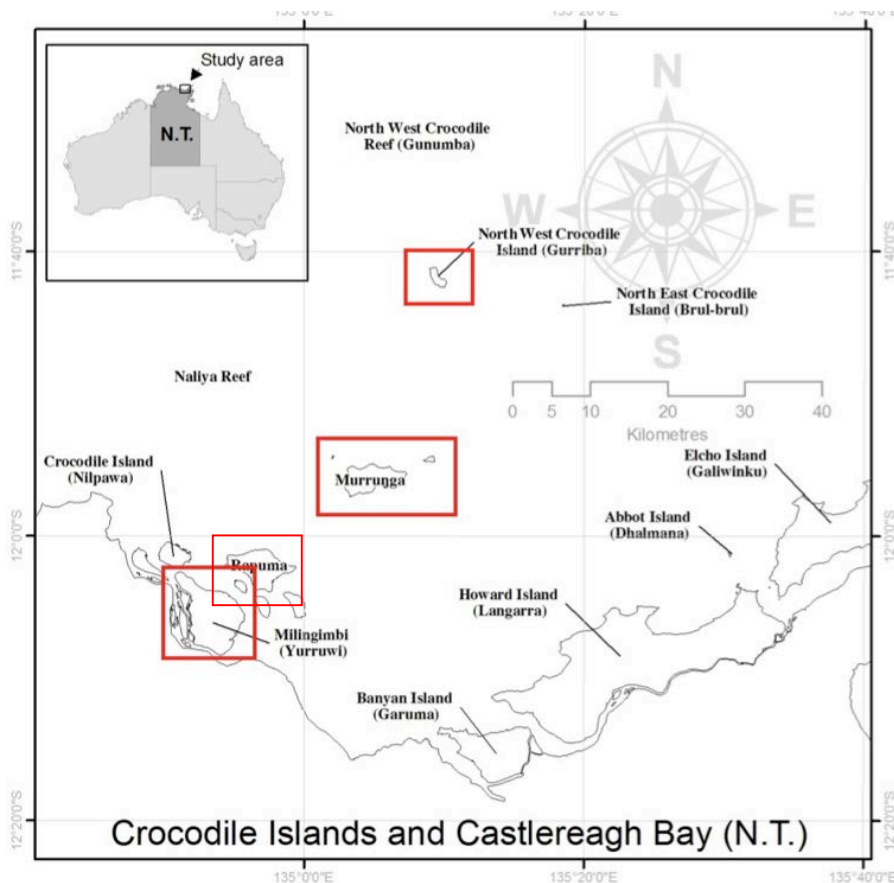
Photo: Kym Brennan and Warrick Angus surveying birds on Murrungga Island - photo by Bobby Tamayo

## Background

In 2009, the Biodiversity Conservation Unit of the (then) NT Department of Natural Resources, Environment, the Arts and Sport (NRETAS now DLRM) received funding from the Caring for Our Country Programme (CFOC) for a survey to assess the biodiversity conservation values of islands around the coast of the NT (Mahney et al 2009). Wherever possible local indigenous ranger groups and traditional owners were enlisted to help with these surveys, usually through provision of logistic support and/or by contributing local ecological knowledge. The Crocodile Islands was included in this survey (for all site locations see Appendix 1) but at the time the local ranger group based at Milingimbi had not fully formed and the surveys here were mostly done with assistance from the Gumur Marthakal rangers from Elcho Island and some local traditional owners.

Since 2009 the Crocodile Islands Rangers group has become fully functional with a full time co-ordinator and paid full time indigenous rangers. The group wanted to include on-going wildlife surveys and monitoring throughout their islands as part of their operations. In 2012 they received a grant from Territory Natural Resource Management, and with this funding purchased their own survey equipment and asked for assistance with training from the Flora and Fauna Division of the NT Dept of Land Resource Management. This report documents the results of a training survey which ran from August 16-26, 2012 and which included three of the Crocodile Islands, Milingimbi, Murrungga and Rapuma; and also November 26-30, 2012 on Gurriba Island.

## Location Map



## Methods



The methods for this survey were the same as those used throughout the NT by the Flora and Fauna Division of DLRM. They involve selecting sites across a range of habitats in an area, setting up live capture traps (Elliott traps, cage traps and pitfall traps) and doing active searches and observations to find out what birds, mammals, reptiles and amphibians occur there. (Appendix 2).

As this survey was primarily for training purposes the emphasis was more concerned with imparting the basic skills and routines needed to set up and manage survey sites and to get the rangers learning how to use resources to identify animals, than it was with achieving a rigorous set of end results.

Photo: Bobby Tamayo



Photos: Warrick Angus



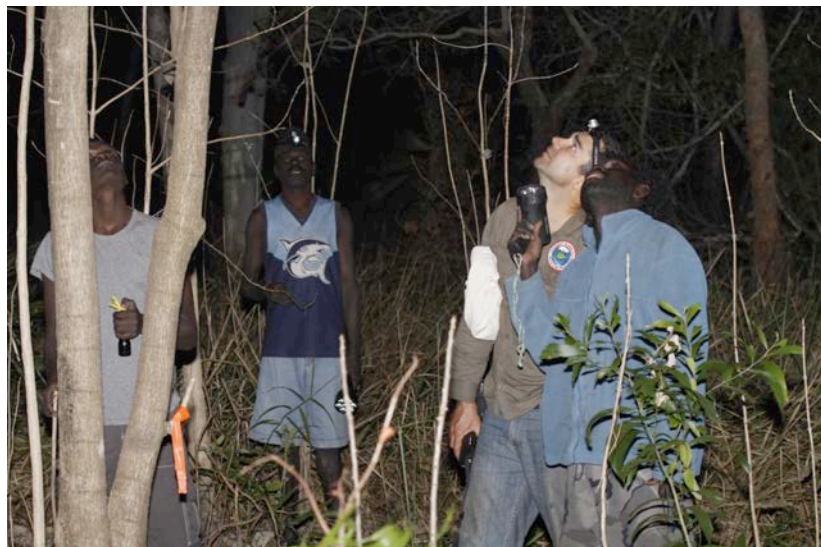
On each island (Milingimbi, Murrungga and Rapuma) three square 50m x 50m sites were set up and surveyed over a 72 hr (3 day) period. Each site was defined on the ground by the even placement of 16 Elliott traps and 8 cage traps around its perimeter. Four pitfall traps were set up randomly within the trap-defined square. In addition to the traps, each site was also 'active searched' to try to find any animals that could be hidden under bark, in leaf litter, amongst rocks or fallen timber, or any signs of them (i.e. bone, skin, poo, footprints, nests etc).



The birds at each site were recorded from repeated observations throughout each day using binoculars. On this survey the indigenous rangers showed a

particular interest in birds so by normal standards the survey effort was somewhat biased in favour of this group of animals with the rangers learning to use binoculars, how to distinguish different groups of birds in the field and how to identify them using published field guides.

All the sites were also searched at night with a spotlight.





The CIR Junior Rangers participated in this project during the Milingimbi survey. The Rangers conducted a lesson with the Junior Rangers about the survey, and demonstrated how some of the equipment is used. The Junior Rangers then assisted the Rangers by preparing the honey, peanut butter and oat baits for the traps.

Some of the Junior Rangers also assisted with checking one of the Milingimbi trapping grids, and then reported their activities back to the rest of the group.



Photos: Bobby Tamayo



## Results

### Milingimbi Island



Locations of survey sites on Milingimbi Island, green dots

At each island we found animals that had not been recorded on previous surveys, mostly birds. This was not so surprising at Milingimbi Island because it hadn't been included on the intensive, NT-wide island survey in 2009, and before that only a few records of animals from this island had been documented. In all we observed total of 2 frog species, 5 reptile species, 26 species of birds and 2 mammal species and added 19 species of birds and 1 mammal (sugar glider) to the list of fauna known from Milingimbi Island (Appendix 3, Table 1). There also seemed to be an additional reptile found on this survey that wasn't previously known from Milingimbi Island, the small skink (*Ctenotus quirinus*). But this species has only recently been recognised as distinct from the Port Essington Skink (*Ctenotus essingtonii*) so the lizard from Milingimbi called the Port Essington Skink on pre-2012 surveys is probably the same as that which we now call *Ctenotus quirinus*. These sorts of changes to animal (and plant) scientific names can be quite confusing but are common and highlight the value of making collections of animals (and plants) for the NT museum (and the NT Herbarium) so that when name changes do occur we can go back to preserved specimens and work out how to apply them. The current inventory of fauna for Milingimbi Island now includes 6 frogs, 35 reptiles, 50 birds, and 10 mammals.

## Murrungga Island



Murrungga Island showing the locations of survey sites (green dots). Black dots show locations of survey sites in 2009.

On Murrungga Island a total of 2 reptiles and 26 bird species was seen or caught and these included 4 bird species (Brown Quail, Whiskered Tern, Rufous-throated Honeyeater and Silver-crowned Friarbird) that hadn't been detected on previous surveys (Appendix 3, Table 2). In the 2009 survey of Murrungga Island no mammals were detected and we had the same result this time. Murrungga Island is now known to support 18 reptile species, 90 birds and 1 mammal.



Photo: Bobby Tamayo



## Rapuma Island



Rapuma Island showing the locations of survey sites (green dots). Black dots show locations of sites in 2009.

At Rapuma Island our survey found 11 reptiles, 49 bird species and 3 mammals of which 2 reptiles (Zig-zag Gecko, and Swanson's Snake-eyed Skink), 10 birds (Emerald Dove, Rose-crowned Fruit-dove, Large-tailed Nightjar, Green-backed Gerygone, Rufous-banded Honeyeater, Dusky Honeyeater, Cicadabird, White-breasted Woodswallow, Arafura Fantail and Mistletoebird) and one mammal (Little Red Flying-fox) hadn't been picked up on previous surveys (Appendix 3, Table 3). Rapuma Island is now known to have 1 frog, 16 reptiles, 97 birds and 7 mammal species.



Photo: Bobby Tamayo

## Gurriba Island (North-West Crocodile Island)



Gurriba Island showing the locations of survey sites (green dots). Black dots show locations of sites in 2009.

At Gurriba Island our survey found 17 bird species and 5 different kinds of reptiles. Of these, 3 birds, the Brahminy Kite, the Brown Honeyeater and the Dusky Honeyeater proved to be new records for the island. Gurriba Island is now known to support 10 reptile species and 47 bird species. So far no frogs or mammals have ever been seen on this island.



Ranger Samuel observing a flatback turtle on Gurriba Island. Photo: Steve Totterdell.

## Conclusions and Recommendations

This survey, despite being primarily a training exercise, produced a number of new animal records for each island and therefore highlights the fact that results from previous surveys, such as those done in 2009, should never be regarded as complete inventories. Really comprehensive lists will only be achieved through time by returning to the various islands at different times and visiting different places and habitats. All the islands surveyed on this occasion could still benefit from additional survey work across all the animal groups. In particular though, Milingimbi Island stands out as being very 'under done' in terms of birds, having a quite small bird list despite being a relatively large island with a good variety of habitats. This could potentially be changed quite quickly; by continuing to cultivate the interest in birds shown by the Milingimbi-based indigenous ranger group through a small but systematic bird survey program around their 'home' island. The frog fauna on all the islands, but particularly at Murrungga and Rapuma, also appears to be very poorly surveyed. No frogs have been recorded from Murrungga Island despite it having relatively extensive and persistent wetlands. Similarly the reptiles on both Murrungga and Rapuma islands also seem somewhat under surveyed when compared with the number of reptile species known from Milingimbi.

At present the indigenous Crocodile Islands Rangers would need to greatly improve their identification skills through training and assistance by skilled staff from external agencies to be able to competently undertake any further surveys of reptiles and frogs.



The native mammal fauna on the islands we surveyed, as currently known, seems singularly unimpressive, with Murrungga Island having no mammals and the native mammal fauna of Rapuma and Milingimbi Islands mostly dominated by the widespread Grassland Melomys and the Agile Wallaby.

It's possible however that Milingimbi Island may support unusually high numbers of Sugar Gliders compared to many other areas in the NT, with animals having been sighted several times on two of the three sites that were sampled there. Follow-up spot light surveys for Sugar Gliders at other sites around the island could be done to obtain a better understanding of this.



Photos: Bobby Tamayo



The Brush-tailed Rabbit-rat, a native animal to for the rangers to look for on Crocodile Island. Photo: Kym Brennan

Despite the uninspiring state of current knowledge from mammal trapping efforts to date there is still a good case to persist with mammal trapping surveys throughout the Crocodile Islands and the greater mainland 'territory' of the crocodile island rangers. On this survey we were given tantalising anecdotal reports of a mammal occurring in woodland habitat on Crocodile Island that most closely fits the description of the Brush-tailed Rabbit-rat (*Conilurus penicillatus*), a species listed as Vulnerable in the NT.

Another Vulnerable-listed species, the Water Mouse (*Xeromys myoides*) has also been recorded quite close to Milingimbi on the mainland near the Dhabilla barge landing. The Crocodile Islands Rangers are well placed to be able to do additional surveys for both these species: in the case of the Brush-tailed Rabbit-rat, on Crocodile Island with guidance from the traditional owner who reported it, and in the case of the Water Mouse a more wide-ranging survey (using cage traps, Elliott traps and pitfall traps) in samphire and adjacent mangrove environments on the near-mainland islands (Milingimbi and Crocodile) and on the mainland itself within their management precinct. Elders of the community have also reported seeing Echidnas on Milingimbi Island in the past.



The Water Mouse: a rare native mammal that's been seen on the mainland close to Milingimbi; an animal the Rangers could do more surveys for around Milingimbi and on the mainland. Photo: Alex Dudley

The conservation values of the Crocodile Islands have been documented (Chatto 2000, 2001, 2003, Chatto and Baker 2008, Harrison et al 2009) and were well summarised in the 2009 survey report (Mahney et al 2009). Probably their most notable feature is their extensive tidal mud flats which act as important seasonal feeding grounds for internationally significant numbers of migratory wading birds.



Migratory waders on mud flats on Crocodile Island: a good group of birds for the rangers to learn how to identify and count and help with national wader studies.  
Photo: Terry Mahney

It would be good if the bird observation skills of the Crocodile Islands Rangers could be expanded and equipped to include this important group of birds; a difficult group to learn at first, but one that ultimately can be highly rewarding and captivating through participation in nationally co-ordinated wader counts (Australian Wader Study Group within Birdslife Australia), the prospects of observing rare vagrants, and the prospects of observing and reporting birds that carry leg bands, flags and other types of identification marks arising from a variety of international wader migration study projects.



Photo: Bobby Tamayo

Overall there are several areas where the Milingimbi indigenous Rangers could continue to develop their field survey skills through initiation of ongoing field survey projects:

- From their experience and enthusiasm on this survey for learning to identify birds a small but regular bird census program could be started to more fully document the birds on their local island. This should first concentrate on gaining confidence in identifying woodland, mangrove and freshwater wetland birds and to develop a habit of recording observations in an organised fashion.
- With increased proficiency in these areas the rangers could then start to tackle the more difficult but locally important bird group, the migratory waders. For this, extra equipment and training should be sought to include: the use and care of telescopes, wader identification training and counting techniques. Ultimately the aim could be for the group to establish links to the Australasian Wader Study Group (within the organisation of Birdlife Australia) and to participate in nationally co-ordinated counts of migratory waders and to do other regular surveys of waders and look for and report any birds that have been tagged under migratory wader movement projects elsewhere.
- With their recently acquired experience of trapping methods and trap site management the rangers should continue to practice these skills and undertake small mammal surveys whenever or wherever they are able to. Some useful projects would be: to work with traditional owners from Crocodile Island to try to find an animal they've known from there that could be the Brush-tailed Rabbit-rat, and to do other trapping surveys in samphire and near-mangrove environments on Milingimbi and Crocodile islands, and on the mainland to try to find new populations of the Water Mouse.

## References

- Chatto R (2000) 'Waterbird breeding colonies in the Top End of the Northern Territory..' Parks & Wildlife Commission of the Northern Territory, Technical Report 69, Palmerston.
- Chatto R (2001) 'The distribution and status of colonial breeding seabirds in the Northern Territory.' Parks & Wildlife Commission of the Northern Territory, Technical Report 70., Palmerston.
- Chatto R (2003) 'The distribution and status of shorebirds around the coast and coastal wetlands of the Northern Territory.' Parks & Wildlife Commission of the Northern Territory, Technical Report 73., Palmerston.
- Chatto R, and Baker, B, (2008) 'The distribution and status of marine turtle nesting in the Northern Territory.' Parks and Wildlife Service, Northern Territory Department of Natural Resources, Environment and The Arts, Technical Report 77, Darwin.
- Harrison L, McGuire, L., Ward, S., Fisher, A., Pavey, C., Fegan, M. and Lynch, B. (2009) 'An inventory of sites of international and national significance for biodiversity values in the Northern Territory. .' Department of Natural Resources, Environment, The Arts and Sport,, Darwin, NT.
- Mahney T, Young S, Brennan K, Liddle D, Jack Roy, Paddy Mugabi, Curtis Maratjili, Harry Gunumba and Morrison S (2009) 'Crocodile Islands Wildlife Surveys, November 2009' NT Dept of Natural Resources Environment and the Arts (NRETAS), Div of Biodiversity Conservation North, Darwin. Unpublished Report.

# Appendix 1.

## Co-ordinates of survey sites from this survey and those of 2009

SITEDATA				
Island	SURVEY	SITE	LAT	LONG
Milingimbi	CroclIsles2012	Airplane	-12.10492	134.88206
Milingimbi	CroclIsles2012	Bbong	-12.09019	134.87598
Milingimbi	CroclIsles2012	Bodoia	-12.07814	134.89423
Murrungga	CroclIsles2012	Moro01	-11.91875	135.07889
Murrungga	CroclIsles2012	Moro02	-11.92447	135.07558
Murrungga	CroclIsles2012	Moro03	-11.92836	135.07581
Murrungga	ISLANDS 2009	MR1	-11.92792	135.07333
Murrungga	ISLANDS 2009	MR2	-11.93047	135.07328
Murrungga	ISLANDS 2009	MR3	-11.92792	135.07333
Murrungga	ISLANDS 2009	MR4	-11.94555	135.07453
Murrungga	ISLANDS 2009	MR5	-11.93634	135.11304
Murrungga	ISLANDS 2009	MR6	-11.93936	135.10611
Rapuma	CroclIsles2012	Rapu01	-12.02375	134.92525
Rapuma	CroclIsles2012	Rapu02	-12.02578	134.92287
Rapuma	CroclIsles2012	Rapu03	-12.02933	134.925
Rapuma	ISLANDS 2009	RA1	-12.02593	134.92326
Rapuma	ISLANDS 2009	RA2	-12.02374	134.92937
Rapuma	ISLANDS 2009	RA3	-12.02409	134.92014
Rapuma	ISLANDS 2009	RA4	-12.03475	134.92941
Rapuma	ISLANDS 2009	RA5	-12.03432	134.92554
Rapuma	ISLANDS 2009	RA6	-12.03749	134.9196
Gurriba	CroclIsles2012	Gur01	-11.70006	135.16533
Gurriba	CroclIsles2012	Gur02	-11.70085	135.16281
Gurriba	CroclIsles2012	Gur03	-11.69801	135.15958
Gurriba	ISLANDS 2009	GU1	-11.70028	135.16202
Gurriba	ISLANDS 2009	GU2	-11.69992	135.16035
Gurriba	ISLANDS 2009	GU3	-11.70013	135.1586
Gurriba	ISLANDS 2009	GU4	-11.69915	135.15606
Gurriba	ISLANDS 2009	GU5	-11.70372	135.15562
Gurriba	ISLANDS 2009	GU6	-11.70692	135.16489



## Appendix 2.

Standard methods used by the Flora and Fauna  
Division of DLRM for fauna surveys

## Survey methods

Biodiversity sampling and habitat description is based on defined and precisely located sites, also known as quadrats. Some incidental observations are made outside these quadrats, and some special methodologies may be adopted in particular projects.

Survey sites are selected to represent land units, vegetation types and land condition in the project area, along with a geographic spread. The number of habitats sampled and the number of quadrats sampled per habitat depend on the size and diversity of the study area and the time and resources available, as well as the aims of the study.

### Quadrats

In the Top End, the quadrats used for trapping are 50m x 50m. A 100m x 100m trapping quadrat may be used in the arid zone rectangular quadrats, with an equivalent area, may be used to sample narrow patches e.g. riparian strips.

Birds are sampled in a 100m x 100m quadrat centred on the core 50m x 50m quadrat. In the arid zone a larger quadrat (250m x 250m) or belt transect (100m x 500m) may be used, although this should not straddle several vegetation types.

Quadrats are located within substantial areas of relatively homogeneous vegetation and landform, and not near boundaries, e.g. fences or roads. The exception is when a deliberate decision is made to sample a small patch, edge or ecotone.

Quadrats should be well separated (i.e. 500m + apart) except where sampling adjacent contrasting land types in a paired-sample design.

The location of each quadrat should be determined as precisely as possible, preferably using an averaged GPS reading.

### Traps

Each quadrat is sampled using:

4 cage traps – one in each corner

20 Elliott traps around the perimeter – 5 on each side, c. 8m apart (for a 50m x 50m quadrat)

4 pit traps scattered within the quadrat. Each pit trap comprises a 20 litre plastic bucket dug into the ground with 10m of drift-fence set across it to channel small ground-dwelling fauna into the bucket.

Pits are located in different microhabitats in the quadrat e.g. in open ground; in dense grass; close to trees; in rocky areas.

4 funnel traps - placed in pairs midway along two 10m drift fences

All traps are marked clearly with flagging tape so they can be easily located

Elliott and cage traps are bait with a mixture of oats, peanut butter & honey. Vanilla essence, cat biscuits and tuna can be added. Cage traps may also be baited with fruit or meat scraps

Traps are usually opened for 3 nights. Sampling time may be extended depending on the requirements of the survey

Traps are checked early each morning and rechecked at midday. Elliott and cage traps are rebaited each afternoon.

Trapped animals are identified and released near the capture point, or retained for as short a time as possible for identification or for taking measurements.

## Bird counts

Eight daylight bird counts are carried out in each quadrat. In addition, birds are recorded during two nocturnal visits – see below.

The majority of bird counts should be done in the early morning, with the remainder spread through the day if necessary.

Each bird count is theoretically an instantaneous count of all the birds within the quadrat. In practice this involves briefly walking through the quadrat but it is not a count over an extended period of time.

The number of individuals of each species is recorded for each count.

Only birds that are using the quadrat are recorded – birds merely flying across overhead are not included. Raptors, wood-swallows, etc are included if they are observed hunting overhead.

## Searches

Each quadrat is actively searched five times for reptiles, amphibians, mammals, scats and signs.

Three searches are carried out during the day (morning, midday, late afternoon) and two searches at night using spotlights.

Each search takes about 15 minutes and involves turning rocks and logs, raking through leaf litter, looking under bark or in rock crevices.

The number of individuals of each species seen is recorded. Scats, bones and other signs are recorded where these can confidently be attributed to species.

Carnivore scats can be collected for hair analysis.

## Incidental records

Species that are seen in the vicinity of the quadrat and in the same environment are recorded as incidental records for that site, with an abundance of zero to indicate they were not within the quadrat. Other species seen in the general area are recorded on a separate list for incidental records. Where possible, the exact location and brief habitat details for the species are noted. This is most important for species that have some significance (e.g. rare or vulnerable species or species for which the record may be a range extension)

## Bat Sampling

Systematic methods for censusing bats include timed recordings using Anabat equipment (with a digital Anabat recorder it is usually practical to record calls for one or more complete nights per site)

Bat calls are identified by comparison with a reference library (Milne 2002) .

Bats may also be sampled opportunistically using harp traps and mist nets, by sightings or captures in caves, and identification of audible calls for a few species. For each record the location and brief habitat description are noted. When traps are used the trapping time is also recorded. It is usual procedure to take basic measurements of all bats trapped.

## Invertebrate Sampling

Invertebrate taxa are not routinely sampled during NRETAS biodiversity surveys (although systematic sampling of ants and some other groups effectively sampled using pit traps have sometimes been included – eg. Andersen *et al.* 2002, 2004)

Appropriate methods for sampling various invertebrate groups should be discussed with staff from the NT Museum and/or CSIRO Sustainable Ecosystems in Darwin.

## Data recording

Each species from the quadrat is recorded on a proforma (example attached) with an abundance score, as the survey progresses  
Each bird count, each day or night of survey and each trapping methods are recorded separately, in order to allow additional analyses (eg. species accumulation curves).  
Incidental records adjacent to the quadrat are given an abundance of zero.  
Data are later transferred from proformas to electronic databases.

## Specimens

Specimens should only be collected when absolutely necessary – when a species cannot be positively identified in the field (and such identification is important) or when the specimen represents a significant range extension  
Equally, positive identification may be crucial and museum specimens form a very valuable resource, so collecting specimens when appropriate should not be avoided  
Specimens can only be collected where this is specified on the animal ethics approval, and must be lodged with the NT Museum  
Guidelines for collecting voucher specimens and recommended euthanasia techniques are at: <http://www.cdu.edu.au/research/office/appaec.html>  
Specimens are usually fixed in 10% formalin and stored in 70% alcohol, although formalin fixing is not essential

## Genetic Samples

Genetic samples may be a viable non-destructive alternative to voucher specimens in some cases  
Genetic samples are now routinely collected from all mammal species captured during NRETAS surveys, for taxonomic, conservation genetics and other potential future research projects  
Small amounts of tissue (eg. tail tip, ear clip) are collected using sterile techniques and stored in 70% alcohol

## Habitat Description

A standard proforma (attached) is used in NRETAS biodiversity surveys to record ecologically meaningful information about the sample sites. Fields are described in the box following the attachment  
Digital photographs should be taken of each site

## Floristic data

Where possible all quadrats will also have a full floristic inventory done. This will usually be done by a botanist, concurrently with the fauna survey or on a separate trip.  
Methods for floristic inventory are described by Brocklehurst et al. (2007)<sup>1</sup>. A sample data proforma is attached.  
If the floristic inventory is to be done separately, the quadrat must be marked in such a way that the botanist can find both the location and at least approximately the site boundaries.

<sup>1</sup> [http://www.nt.gov.au/nreta/natres/natveg/seminar/pdf/guidelines\\_fieldmethods.pdf](http://www.nt.gov.au/nreta/natres/natveg/seminar/pdf/guidelines_fieldmethods.pdf)

## Post-survey

All data should be promptly entered onto electronic databases, and data-sheets archived in an ordered fashion in an accessible location

Purpose-built Access and Excel databases are available from the NRETAS Biodiversity Conservation group.

Photographs should be stored digitally with a filename or number linked to the site description

Specimens should be lodged with the NT Museum, with location, collector, date and brief habitat details.

## References and Field Guides

- Andersen A, Hoffmann BD, Muller WJ & Griffiths AD (2002) Using ants as bioindicators in land management: simplifying assessment of ant community responses. *Journal of Applied Ecology* 39.
- Andersen AN (2000) *The ants of northern Australia: a guide to the monsoonal fauna*. CSIRO Publishing.
- Andersen AN, Woinarski JCZ, Hoffmann BD (2004) Biogeography of the ant fauna of the Tiwi Islands, in northern Australia's monsoonal tropics. *Australian Journal of Zoology* 52, 1-14.
- Braby MF (2004) *The complete field guide to the butterflies of Australia*. CSIRO Publishing, Melbourne.
- Brock J (2001) *Native plants of northern Australia*. Reed New Holland, Sydney.
- Brocklehurst P, Lewis D., Napier D, Lynch D. (2007) *Northern Territory guidelines and field methodology for vegetation survey and mapping*. Technical Report No. 02/2007D, Department of Natural Resources, Environment and the Arts, Palmerston, Northern Territory.
- Churchill S (2008) *Australian bats. Second edition*. Jacana Books, Crows Nest, Australia.
- Cogger HG (2000) *Reptiles & amphibians of Australia*. 6th edition. Reed New Holland, Sydney.
- Cole J & Woinarski J (2002) *Field guide to the rodents and dasyurids of the Northern Territory*. Surrey Beatty & Sons, Chipping Norton.
- Cowie ID, Short PS & Madsen MO (2000) *Floodplain flora: a flora of the coastal floodplains of the Northern Territory, Australia*. Flora of Australia Supplementary Series Number 10. ABRS, Canberra & PWCNT Darwin.
- Dunlop CR, Leach GJ & Cowie ID (1995) *Flora of the Darwin region volume 2*. Northern Territory Botanical Bulletin No. 20, Conservation Commission of the Northern Territory, Darwin.
- Homer P (1991) *Skinks of the Northern Territory*. Handbook Series Number 2, Northern Territory Museum of Arts and Sciences, Darwin
- Jessop J (1981) *Flora of central Australia*. Reed Books, Sydney.
- McDonald RC, Isbell RF, Speight JG, Walker J & Hopkins MS (1998) *Australian soil and land survey handbook*. Second edition.
- Menkhorst P & Knight F (2001) *A field guide to the mammals of Australia*. Oxford University Press, Australia.
- Pizzey G & Knight F (2007) *The field guide to the birds of Australia*. Harper Collins Australia.
- Simpson K & Day N (2004) *Field guide to the birds of Australia*. 7th edition. Penguin Books.

- Triggs B (1996) *Tracks, scats and other traces – a field guide to Australian mammals*. Oxford University Press, Melbourne
- Tyler MJ & Davies M (1986) *Frogs of the Northern Territory*. Conservation Commission of the Northern Territory, Darwin.
- Van Dyke S & Strahan R (2008) *The mammals of Australia. Third edition*. Reed New Holland, Sydney.
- Wheeler JR, Rye BL, Koch BL & Wilson AJG (1992) *Flora of the Kimberley region*. Department of Conservation and Land Management, Western Australia.
- Wilson S & Swan G (2008) *A complete guide to reptiles of Australia. Second edition*. New Holland, Sydney
- Woinarski J, Pavey C, Kerrigan R, Cowie I & Ward S (eds) (2007) *Lost from our landscape: threatened species of the Northern Territory*. Northern Territory Department of Natural Resources, Environment and the Arts, Darwin.

Appendix 3  
Fauna lists for Milingimbi, Murrungga  
and Rapuma Islands

Table 1. Fauna records for Milingimbi Island

ID#	Common_Name	Species Name	2012 sites			pre2012
			Bod	Air	Bong	
<b>1-Frogs</b>						
9	Ornate Burrowing Frog	<i>Platyplectrum ornatus</i>				1
24	Giant Frog	<i>Litoria australis</i>				1
26	Green Tree-frog	<i>Litoria caerulea</i>				1
38	Rocket Frog	<i>Litoria nasuta</i>			1	1
42	Roth's Tree-frog	<i>Litoria rothii</i>				1
48	Cane Toad	<i>Rhinella marina</i>			1	1
<b>2-Reptiles</b>						
124	Northern Dtella	<i>Gehyra australis</i>				1
134	Asian House Gecko	<i>Hemidactylus frenatus</i>				1
135	Bynoe's Gecko	<i>Heteronotia binoei</i>				1
148	Marbled Velvet Gecko	<i>Oedura marmorata</i>			1	1
166	Burton's Legless Lizard	<i>Lialis burtonis</i>				1
171	Two-Spined Rainbow Skink	<i>Carlia amax</i>	1	1	1	1
173	Robust Rainbow Skink	<i>Carlia longipes</i>				1
179	Swanson's Snake-eyed Skink	<i>Cryptoblepharus cygnatus</i>	1	1	1	1
201	Port Essington Ctenotus	<i>Ctenotus essingtonii</i>				1
223		<i>Ctenotus quirinus</i>			1	
252	Douglas' Skink	<i>Glaphyromorphus douglasi</i>	1			1
253	Smooth-Tailed Skink	<i>Glaphyromorphus isolepis</i>				1
264	Karl Schmidt's Lerista	<i>Lerista karlschmidti</i>				1
285	Common Blue-Tongued Lizard	<i>Tiliqua scincoides</i>				1
287	Frilled Lizard	<i>Chlamydosaurus kingii</i>				1
323	Sand Goanna	<i>Varanus gouldii</i>				1
324	Mangrove Monitor	<i>Varanus indicus</i>				1
330	Spotted Tree Monitor	<i>Varanus scalaris</i>				1
333	Black-tailed Monitor	<i>Varanus tristis</i>				1
347	Yirrkala Blind Snake	<i>Ramphotyphlops yirrikalae</i>				1
348	Children's Python	<i>Antaresia childreni</i>				1
352	Water Python	<i>Liasis mackloti</i>				1
353	Olive Python	<i>Liasis olivaceus</i>				1
355	Carpet Python	<i>Morelia spilota</i>				1
357	Little File Snake	<i>Acrochordus granulatus</i>				1
358	Brown Tree Snake	<i>Boiga irregularis</i>				1
359	Australian Bockadam	<i>Cerberus australis</i>				1



ID#	Common_Name	Species Name	Bod	Air	Bong	pre2012
360	Green Tree Snake	<i>Dendrelaphis punctulata</i>				1
362	White-bellied Mangrove Snake	<i>Fordonia leucobalia</i>				1
364	Slaty-grey Snake	<i>Stegonotus cucullatus</i>				1
365	Keelback	<i>Tropidonophis mairii</i>				1
385	Black Whip Snake	<i>Demansia vestigiata</i>				1
386	Orange-naped Snake	<i>Furina ornata</i>				1
389	King Brown Snake	<i>Pseudechis australis</i>				1
394	Western Brown Snake	<i>Pseudonaja nuchalis</i>				1

### 3-Birds

532	Emerald Dove	<i>Chalcophaps indica</i>					1
541	Peaceful Dove	<i>Geopelia striata</i>					1
542	Bar-shouldered Dove	<i>Geopelia humeralis</i>	1	1	1		
546	Pied Imperial-Pigeon	<i>Ducula bicolor</i>				1	
549	Large-tailed Nightjar	<i>Caprimulgus macrurus</i>					1
572	Pied Cormorant	<i>Phalacrocorax varius</i>				1	
590	Australian White Ibis	<i>Threskiornis molucca</i>				1	
591	Straw-necked Ibis	<i>Threskiornis spinicollis</i>	1				
602	Whistling Kite	<i>Haliastur sphenurus</i>	1				
603	Brahminy Kite	<i>Haliastur indus</i>	1			1	
604	Black Kite	<i>Milvus migrans</i>					1
677	Asian Dowitcher	<i>Limnodromus semipalmatus</i>					1
720.2	Red-tailed Black-cockatoo (Top End)	<i>Calyptorhynchus banksii</i> <i>macrorhynchus</i>				1	
725	Sulphur-crested Cockatoo	<i>Cacatua galerita</i>				1	
727	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	1	1	1		1
728	Varied Lorikeet	<i>Psitteuteles versicolor</i>				1	
729	Red-winged Parrot	<i>Aprosmictus erythropterus</i>	1	1			
731	Northern Rosella	<i>Platycercus venustus</i>					1
740	Pheasant Coucal	<i>Centropus phasianinus</i>	1				
745	Little Bronze-Cuckoo	<i>Chalcites minutillus</i>					1
758	Blue-winged Kookaburra	<i>Dacelo leachii</i>	1	1	1		1
763	Rainbow Bee-eater	<i>Merops ornatus</i>					1
799	Striated Pardalote	<i>Pardalotus striatus</i>					1
812	Rufous-banded Honeyeater	<i>Conopophila albogularis</i>					1
813	Rufous-throated Honeyeater	<i>Conopophila rufogularis</i>				1	
820	Dusky Honeyeater	<i>Myzomela obscura</i>				1	
821	Red-headed Honeyeater	<i>Myzomela erythrocephala</i>				1	1

ID#	Common_Name	Species Name	Bod	Air	Bong	pre2012
823	Brown Honeyeater	<i>Lichmera indistincta</i>			1	1
825	White-throated Honeyeater	<i>Melithreptus albogularis</i>	1	1	1	1
829	Little Friarbird	<i>Philemon citreogularis</i>				1
841	White-bellied Cuckoo-shrike	<i>Coracina papuensis</i>	1	1		1
848	Rufous Whistler	<i>Pachycephala rufiventris</i>				1
852	Grey Shrike-thrush	<i>Colluricincla harmonica</i>			1	
854	Australasian Figbird	<i>Sphecotheres vieilloti</i>				1
855	Yellow Oriole	<i>Oriolus flavocinctus</i>				1
856	Olive-backed Oriole	<i>Oriolus sagittatus</i>				1
864	Pied Butcherbird	<i>Cracticus nigrogularis</i>			1	
867	Spangled Drongo	<i>Dicrurus bracteatus</i>				1
871	Northern Fantail	<i>Rhipidura rufiventris</i>				1
872	Willie Wagtail	<i>Rhipidura leucophrys</i>				1
875	Torresian Crow	<i>Corvus orru</i>	1	1		
877	Leaden Flycatcher	<i>Myiagra rubecula</i>		1	1	
879	Restless Flycatcher	<i>Myiagra inquieta</i>		1		
881	Magpie-lark	<i>Grallina cyanoleuca</i>				1
885	Lemon-bellied Flycatcher	<i>Microeca flavigaster</i>	1			1
895	Tawny Grassbird	<i>Megalurus timoriensis</i>				1
909	Mistletoebird	<i>Dicaeum hirundinaceum</i>				1
911	Double-barred Finch	<i>Taeniopygia bichenovii</i>				1
912	Long-tailed Finch	<i>Poephila acuticauda</i>				1
1026	Red-cheeked Dunnart	<i>Sminthopsis virginiae</i>				1
<b>4-Mammals</b>						
1035	Sugar Glider	<i>Petaurus breviceps</i>	1	1		
1037.2	Common Brushtail Possum (Top End)	<i>Trichosurus vulpecula arnhemensis</i>				1
1043	Agile Wallaby	<i>Macropus agilis</i>				1
1044	Antilopine Wallaroo	<i>Macropus antilopinus</i>				1
1057	Ghost Bat	<i>Macroderma gigas</i>				1
1062	Yellow-bellied Sheath-tailed Bat	<i>Saccolaimus flaviventris</i>				1
1073	Large Bent-winged Bat	<i>Miniopterus schreibersii</i>				1
1117	Grassland Melomys	<i>Melomys burtoni</i>	1		1	1
1128	Cat	<i>Felis catus</i>				1
1136	Cattle	<i>Bos taurus</i>				1

Table 2. Fauna records for Murrungga Island

ID#	Common_Name	Species Name	2012 sites			2009	pre2009
			M1	M2	M3		
<b>2-Reptiles</b>							
102	Saltwater Crocodile	<i>Crocodylus porosus</i>				1	
107	Flatback Turtle	<i>Natator depressus</i>					1
110	Northern Snake-necked Turtle	<i>Chelodina rugosa</i>				1	
124	Northern Dtella	<i>Gehyra australis</i>	1			1	
135	Bynoe's Gecko	<i>Heteronotia binoei</i>	1			1	
173	Robust Rainbow Skink	<i>Carlia longipes</i>				1	
175	Striped Rainbow Skink	<i>Carlia munda</i>				1	
179	Swanson's Snake-eyed Skink	<i>Cryptoblepharus cygnatus</i>				1	
209	Plain Ctenotus	<i>Ctenotus inornatus</i>				1	
252	Douglas' Skink	<i>Glaphyromorphus douglasi</i>				1	
285	Common Blue-Tongued Lizard	<i>Tiliqua scincoides</i>				1	
287	Frilled Lizard	<i>Chlamydosaurus kingii</i>				1	
330	Spotted Tree Monitor	<i>Varanus scalaris</i>				1	
342	Robust Blind Snake	<i>Ramphotyphlops ligatus</i>				1	
352	Water Python	<i>Liasis mackloti</i>				1	
360	Green Tree Snake	<i>Dendrelaphis punctulata</i>				1	
367	Deaf Adder	<i>Acanthophis sp. (rugosus complex)</i>				1	
385	Black Whip Snake	<i>Demansia vestigiata</i>				1	
<b>3-Birds</b>							
503	Orange-footed Scrubfowl	<i>Megapodius reinwardt</i>				1	
505	Brown Quail	<i>Coturnix ypsilophora</i>	1				
507	Magpie Goose	<i>Anseranas semipalmata</i>				1	
508	Wandering Whistling-Duck	<i>Dendrocygna arcuata</i>				1	1
512	Radjah Shelduck	<i>Tadorna radjah</i>				1	1
522	Pacific Black Duck	<i>Anas superciliosa</i>				1	1
527	Hoary-headed Grebe	<i>Poliiocephalus poliocephalus</i>				1	
541	Peaceful Dove	<i>Geopelia striata</i>			1	1	1
542	Bar-shouldered Dove	<i>Geopelia humeralis</i>			1	1	1
544	Rose-crowned Fruit-dove	<i>Ptilinopus regina</i>				1	
546	Pied Imperial-Pigeon	<i>Ducula bicolor</i>				1	
568	Australasian Darter	<i>Anhinga novaehollandiae</i>				1	1
569	Little Pied Cormorant	<i>Microcarbo melanoleucos</i>				1	1
571	Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>				1	
572	Pied Cormorant	<i>Phalacrocorax varius</i>					1
574	Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>					1

ID#	Common_Name	Species Name	M1	M2	M3	2009	pre2009
578	Eastern Great Egret	<i>Ardea modesta</i>				1	
579	Intermediate Egret	<i>Ardea intermedia</i>				1	
582	Striated Heron	<i>Butorides striata</i>				1	
584	Pied Heron	<i>Egretta picata</i>				1	
587	Eastern Reef Egret	<i>Egretta sacra</i>				1	1
588	Nankeen Night Heron	<i>Nycticorax caledonicus</i>				1	1
589	Glossy Ibis	<i>Plegadis falcinellus</i>			1	1	
590	Australian White Ibis	<i>Threskiornis molucca</i>	1			1	1
592	Royal Spoonbill	<i>Platalea regia</i>					1
594	Eastern Osprey	<i>Pandion cristatus</i>	1			1	
602	Whistling Kite	<i>Haliastur sphenurus</i>				1	
614	Brown Falcon	<i>Falco berigora</i>				1	
615	Australian Hobby	<i>Falco longipennis</i>				1	
621	Purple Swamphen	<i>Porphyrio porphyrio</i>				1	
630	Black-tailed Native-hen	<i>Tribonyx ventralis</i>				1	
634	Bush Stone-curlew	<i>Burhinus grallarius</i>				1	
635	Beach Stone-curlew	<i>Esacus magnirostris</i>				1	1
636	Australian Pied Oystercatcher	<i>Haematopus longirostris</i>				1	1
637	Sooty Oystercatcher	<i>Haematopus fuliginosus</i>					1
638	Black-winged Stilt	<i>Himantopus himantopus</i>				1	
642	Grey Plover	<i>Pluvialis squatarola</i>				1	
648	Greater Sand Plover	<i>Charadrius leschenaultii</i>				1	
655	Masked Lapwing	<i>Vanellus miles</i>				1	1
662	Black-tailed Godwit	<i>Limosa limosa</i>				1	
666	Eastern Curlew	<i>Numenius madagascariensis</i>				1	
667	Terek Sandpiper	<i>Xenus cinereus</i>				1	
670	Grey-tailed Tattler	<i>Tringa brevipes</i>				1	
672	Common Greenshank	<i>Tringa nebularia</i>				1	
673	Marsh Sandpiper	<i>Tringa stagnatilis</i>				1	
676	Ruddy Turnstone	<i>Arenaria interpres</i>				1	
678	Great Knot	<i>Calidris tenuirostris</i>				1	
682	Red-necked Stint	<i>Calidris ruficollis</i>				1	1
686	Sharp-tailed Sandpiper	<i>Calidris acuminata</i>				1	
705	Little Tern	<i>Sternula albifrons</i>					1
707	Caspian Tern	<i>Hydroprogne caspia</i>					1
708	Whiskered Tern	<i>Chlidonias hybrida</i>	1				
713	Lesser Crested Tern	<i>Thalasseus bengalensis</i>					1
714	Crested Tern	<i>Thalasseus bergii</i>					1
717	Silver Gull	<i>Chroicocephalus novaehollandiae</i>				1	
720	Red-tailed Black-cockatoo	<i>Calyptorhynchus banksii</i>				1	
725	Sulphur-crested Cockatoo	<i>Cacatua galerita</i>			1	1	

ID#	Common_Name	Species Name	M1	M2	M3	2009	pre2009
727	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>		1	1	1	
729	Red-winged Parrot	<i>Aprosmictus erythropterus</i>			1	1	
740	Pheasant Coucal	<i>Centropus phasianinus</i>	1				
741	Eastern Koel	<i>Eudynamys orientalis</i>				1	
745	Little Bronze-Cuckoo	<i>Chalcites minutillus</i>				1	
752	Southern Boobook	<i>Ninox novaeseelandiae</i>				1	
761	Sacred Kingfisher	<i>Todiramphus sanctus</i>				1	1
763	Rainbow Bee-eater	<i>Merops ornatus</i>		1		1	
764	Dollarbird	<i>Eurystomus orientalis</i>				1	
788	Green-backed Gerygone	<i>Gerygone chloronota</i>				1	
799	Striated Pardalote	<i>Pardalotus striatus</i>	1	1	1	1	
812	Rufous-banded Honeyeater	<i>Conopophila albogularis</i>		1	1	1	
813	Rufous-throated Honeyeater	<i>Conopophila rufogularis</i>		1			
823	Brown Honeyeater	<i>Lichmera indistincta</i>		1		1	
828	Silver-crowned Friarbird	<i>Philemon argenticeps</i>			1		
840	Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>		1			
842	Cicadabird	<i>Coracina tenuirostris</i>				1	
843	White-winged Triller	<i>Lalage sueurii</i>			1	1	
844	Varied Triller	<i>Lalage leucomela</i>				1	
848	Rufous Whistler	<i>Pachycephala rufiventris</i>			1	1	
856	Olive-backed Oriole	<i>Oriolus sagittatus</i>				1	
857	White-breasted Woodswallow	<i>Artamus leucorhynchus</i>		1		1	
867	Spangled Drongo	<i>Dicrurus bracteatus</i>			1	1	
868	Arafura Fantail	<i>Rhipidura dryas</i>				1	
871	Northern Fantail	<i>Rhipidura rufiventris</i>		1		1	
875	Torresian Crow	<i>Corvus orru</i>		1		1	
876	Broad-billed Flycatcher	<i>Myiagra ruficollis</i>				1	
877	Leaden Flycatcher	<i>Myiagra rubecula</i>		1		1	
878	Shining Flycatcher	<i>Myiagra alecto</i>				1	
885	Lemon-bellied Flycatcher	<i>Microeca flavigaster</i>		1	1	1	
897	Rufous Songlark	<i>Cincloramphus mathewsi</i>				1	
900	Yellow White-eye	<i>Zosterops luteus</i>				1	
909	Mistletoebird	<i>Dicaeum hirundinaceum</i>		1	1	1	

#### 4-Mammals

1043	Agile Wallaby	<i>Macropus agilis</i>					1
------	---------------	------------------------	--	--	--	--	---

Table 3. Fauna records for Rapuma Island

ID#	Common_Name	Species Name	2012 Sites			2009 pre2009
			R1	R2	R3	
<b>1-Frogs</b>						
25	Northern Dwarf Tree-frog	<i>Litoria bicolor</i>				1
<b>2-Reptiles</b>						
124	Northern Dtella	<i>Gehyra australis</i>		1	1	1
135	Bynoe's Gecko	<i>Heteronotia binoei</i>		1	1	1
148	Marbled Velvet Gecko	<i>Oedura marmorata</i>	1		1	1
149	Zig-zag Gecko	<i>Oedura rhombifer</i>		1		
165	Black-necked Snake-lizard	<i>Delma tincta</i>				1
171	Two-Spined Rainbow Skink	<i>Carlia amax</i>			1	1
173	Robust Rainbow Skink	<i>Carlia longipes</i>	1	1		1
175	Striped Rainbow Skink	<i>Carlia munda</i>			1	
179	Swanson's Snake-eyed Skink	<i>Cryptoblepharus cygnatus</i>	1	1	1	1
223		<i>Ctenotus quirinus</i>	1		1	1
252	Douglas' Skink	<i>Glaphyromorphus douglasi</i>		1		1
299	Two-Lined Dragon	<i>Diporiphora bilineata</i>				1
324	Mangrove Monitor	<i>Varanus indicus</i>				1
328	Floodplain Monitor	<i>Varanus panoptes</i>				1
330	Spotted Tree Monitor	<i>Varanus scalaris</i>			1	1
346	Claw-snouted Blind Snake	<i>Ramphotyphlops unguirostris</i>				1
<b>3-Birds</b>						
503	Orange-footed Scrubfowl	<i>Megapodius reinwardt</i>	1		1	1
522	Pacific Black Duck	<i>Anas superciliosa</i>				1
532	Emerald Dove	<i>Chalcophaps indica</i>		1	1	
541	Peaceful Dove	<i>Geopelia striata</i>				1
542	Bar-shouldered Dove	<i>Geopelia humeralis</i>		1	1	1
544	Rose-crowned Fruit-dove	<i>Ptilinopus regina</i>	1			
546	Pied Imperial-Pigeon	<i>Ducula bicolor</i>	1	1	1	1
549	Large-tailed Nightjar	<i>Caprimulgus macrurus</i>	1			
572	Pied Cormorant	<i>Phalacrocorax varius</i>				1
574	Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>				1
580	Great-billed Heron	<i>Ardea sumatrana</i>				1
587	Eastern Reef Egret	<i>Egretta sacra</i>				1
601	White-bellied Sea-eagle	<i>Haliaeetus leucogaster</i>				1
602	Whistling Kite	<i>Haliastur sphenurus</i>	1			1
603	Brahminy Kite	<i>Haliastur indus</i>				1
605	Brown Goshawk	<i>Accipiter fasciatus</i>	1			1
611	Wedge-tailed Eagle	<i>Aquila audax</i>				1
622	Chestnut Rail	<i>Eulabeornis castaneoventris</i>				1
634	Bush Stone-curlew	<i>Burhinus grallarius</i>		1		1

ID#	Common_Name	Species Name	R1	R2	R3	2009	pre2009
635	Beach Stone-curlew	<i>Esacus magnirostris</i>					1
636	Australian Pied Oystercatcher	<i>Haematopus longirostris</i>					1
637	Sooty Oystercatcher	<i>Haematopus fuliginosus</i>					1
641	Pacific Golden Plover	<i>Pluvialis fulva</i>				1	
642	Grey Plover	<i>Pluvialis squatarola</i>				1	1
647	Lesser Sand Plover	<i>Charadrius mongolus</i>				1	1
648	Greater Sand Plover	<i>Charadrius leschenaultii</i>				1	1
662	Black-tailed Godwit	<i>Limosa limosa</i>				1	1
663	Bar-tailed Godwit	<i>Limosa lapponica</i>				1	1
665	Whimbrel	<i>Numenius phaeopus</i>				1	1
666	Eastern Curlew	<i>Numenius madagascariensis</i>				1	1
667	Terek Sandpiper	<i>Xenus cinereus</i>					1
668	Common Sandpiper	<i>Actitis hypoleucos</i>				1	
670	Grey-tailed Tattler	<i>Tringa brevipes</i>				1	1
672	Common Greenshank	<i>Tringa nebularia</i>				1	
676	Ruddy Turnstone	<i>Arenaria interpres</i>				1	1
678	Great Knot	<i>Calidris tenuirostris</i>				1	1
679	Red Knot	<i>Calidris canutus</i>				1	1
682	Red-necked Stint	<i>Calidris ruficollis</i>				1	1
686	Sharp-tailed Sandpiper	<i>Calidris acuminata</i>				1	
687	Curlew Sandpiper	<i>Calidris ferruginea</i>					1
705	Little Tern	<i>Sternula albifrons</i>				1	1
706	Gull-billed Tern	<i>Gelochelidon nilotica</i>					1
707	Caspian Tern	<i>Hydroprogne caspia</i>					1
711	Black-naped Tern	<i>Sterna sumatrana</i>				1	
712	Common Tern	<i>Sterna hirundo</i>				1	
713	Lesser Crested Tern	<i>Thalasseus bengalensis</i>				1	
714	Crested Tern	<i>Thalasseus bergii</i>				1	1
717	Silver Gull	<i>Chroicocephalus novaehollandiae</i>					1
720.2	Red-tailed Black-cockatoo (Top End)	<i>Calyptorhynchus banksii macrorhynchus</i>	1			1	1
725	Sulphur-crested Cockatoo	<i>Cacatua galerita</i>				1	1
727	Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	1	1		1	1
728	Varied Lorikeet	<i>Psitteuteles versicolor</i>				1	
729	Red-winged Parrot	<i>Aprosmictus erythropterus</i>	1			1	1
741	Eastern Koel	<i>Eudynamys orientalis</i>					1
742	Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>					1
745	Little Bronze-Cuckoo	<i>Chalcites minutillus</i>			1		1
748	Brush Cuckoo	<i>Cacomantis variolosus</i>					1
752	Southern Boobook	<i>Ninox novaeseelandiae</i>					1
757	Little Kingfisher	<i>Ceyx pusilla</i>					1
758	Blue-winged Kookaburra	<i>Dacelo leachii</i>				1	1
759	Forest Kingfisher	<i>Todiramphus macleayii</i>				1	1

ID#	Common_Name	Species Name	R1	R2	R3	2009	pre2009
763	Rainbow Bee-eater	<i>Merops ornatus</i>	1		1	1	
764	Dollarbird	<i>Eurystomus orientalis</i>					1
765	Rainbow Pitta	<i>Pitta iris</i>			1	1	
769	Great Bowerbird	<i>Ptilonorhynchus nuchalis</i>	1			1	
785	Mangrove Gerygone	<i>Gerygone levigaster</i>					1
788	Green-backed Gerygone	<i>Gerygone chloronota</i>	1				
799	Striated Pardalote	<i>Pardalotus striatus</i>	1				1
812	Rufous-banded Honeyeater	<i>Conopophila albogularis</i>	1	1			
813	Rufous-throated Honeyeater	<i>Conopophila rufogularis</i>					1
820	Dusky Honeyeater	<i>Myzomela obscura</i>			1		
821	Red-headed Honeyeater	<i>Myzomela erythrocephala</i>	1	1			1
823	Brown Honeyeater	<i>Lichmera indistincta</i>	1	1	1	1	
825	White-throated Honeyeater	<i>Melithreptus albogularis</i>	1	1	1	1	
828	Silver-crowned Friarbird	<i>Philemon argenticeps</i>	1		1	1	
841	White-bellied Cuckoo-shrike	<i>Coracina papuensis</i>	1		1	1	
842	Cicadabird	<i>Coracina tenuirostris</i>	1				
843	White-winged Triller	<i>Lalage sueurii</i>					1
844	Varied Triller	<i>Lalage leucomela</i>	1		1	1	
847	Grey Whistler	<i>Pachycephala simplex</i>		1		1	
848	Rufous Whistler	<i>Pachycephala rufiventris</i>			1	1	
855	Yellow Oriole	<i>Oriolus flavocinctus</i>	1	1	1	1	
856	Olive-backed Oriole	<i>Oriolus sagittatus</i>	1		1	1	
857	White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	1				
862	Black Butcherbird	<i>Cracticus quoyi</i>					1
867	Spangled Drongo	<i>Dicrurus bracteatus</i>			1	1	
868	Arafura Fantail	<i>Rhipidura dryas</i>	1				
871	Northern Fantail	<i>Rhipidura rufiventris</i>	1	1	1	1	
875	Torresian Crow	<i>Corvus orru</i>	1	1		1	
876	Broad-billed Flycatcher	<i>Myiagra ruficollis</i>			1	1	
877	Leaden Flycatcher	<i>Myiagra rubecula</i>			1	1	
878	Shining Flycatcher	<i>Myiagra alecto</i>					1
885	Lemon-bellied Flycatcher	<i>Microeca flavigaster</i>	1	1			
900	Yellow White-eye	<i>Zosterops luteus</i>	1				
909	Mistletoebird	<i>Dicaeum hirundinaceum</i>	1	1	1	1	
923	Australasian Pipit	<i>Anthus novaeseelandiae</i>					1
1031	Northern Brown Bandicoot	<i>Isodon macrourus</i>					1



ID#	Common_Name	Species Name	R1	R2	R3	2009	pre2009
<b>4-Mammals</b>							
1035	Sugar Glider	<i>Petaurus breviceps</i>					1
1043	Agile Wallaby	<i>Macropus agilis</i>	1	1	1	1	1
1056	Little Red Flying-fox	<i>Pteropus scapulatus</i>		1			
1117	Grassland Melomys	<i>Melomys burtoni</i>	1	1			1
1126	Dingo	<i>Canis lupus</i>					1
1128	Cat	<i>Felis catus</i>					1
1137	Goat	<i>Capra hircus</i>					1

Table 4. Fauna records for Gurriiba Island

ID#	Common Name	Species Name	2012 Sites			
			GU1	GU2	GU3	2009pre2009
<b>2-Reptiles</b>						
102	Saltwater Crocodile	<i>Crocodylus porosus</i>				2
107	Flatback Turtle	<i>Natator depressus</i>				42
124	Northern Dtella	<i>Gehyra australis</i>				13
134	Asian House Gecko	<i>Hemidactylus frenatus</i>	5	1	1	47
135	Bynoe's Gecko	<i>Heteronotia binoei</i>				3
179	Swanson's Snake-eyed Skink	<i>Cryptoblepharus cygnatus</i>	1	1		4
183	Metallic Snake-eyed Skink	<i>Cryptoblepharus metallicus</i>				1
223		<i>Ctenotus quirinus</i>	4		7	20
252	Douglas' Skink	<i>Glaphyromorphus douglasi</i>	1		3	18
330	Spotted Tree Monitor	<i>Varanus scalaris</i>		2		5
<b>3-Birds</b>						
503	Orange-footed Scrubfowl	<i>Megapodius reinwardt</i>	1	2		25
542	Bar-shouldered Dove	<i>Geopelia humeralis</i>	2	1	2	34
544	Rose-crowned Fruit-dove	<i>Ptilinopus regina</i>	2	3		3
546	Pied Imperial-Pigeon	<i>Ducula bicolor</i>	2	3		9
562	Lesser Frigatebird	<i>Fregata ariel</i>				30
582	Striated Heron	<i>Butorides striata</i>				1
587	Eastern Reef Egret	<i>Egretta sacra</i>				1
594	Eastern Osprey	<i>Pandion cristatus</i>	1			0
601	White-bellied Sea-eagle	<i>Haliaeetus leucogaster</i>	0			0
603	Brahminy Kite	<i>Haliastur indus</i>	1			1
614	Brown Falcon	<i>Falco berigora</i>				2
635	Beach Stone-curlew	<i>Esacus magnirostris</i>				1
641	Pacific Golden Plover	<i>Pluvialis fulva</i>				39
647	Lesser Sand Plover	<i>Charadrius mongolus</i>				1
648	Greater Sand Plover	<i>Charadrius leschenaultii</i>				86
665	Whimbrel	<i>Numenius phaeopus</i>				0
670	Grey-tailed Tattler	<i>Tringa brevipes</i>				38
672	Common Greenshank	<i>Tringa nebularia</i>				3
674	Common Redshank	<i>Tringa totanus</i>				1
676	Ruddy Turnstone	<i>Arenaria interpres</i>				27
682	Red-necked Stint	<i>Calidris ruficollis</i>				27
686	Sharp-tailed Sandpiper	<i>Calidris acuminata</i>				1
703	Bridled Tern	<i>Onychoprion anaethetus</i>				5
705	Little Tern	<i>Sternula albifrons</i>				89
706	Gull-billed Tern	<i>Gelochelidon nilotica</i>				0
712	Common Tern	<i>Sterna hirundo</i>				0
714	Crested Tern	<i>Thalasseus bergii</i>				163
717	Silver Gull	<i>Chroicocephalus</i>				11

ID#	Common Name	__2012 Sites__		pre2009			
		Species Name	GU1	GU2	GU3	2009	pre2009
740	Pheasant Coucal	<i>Centropus phasianinus</i>			1	0	0
741	Eastern Koel	<i>Eudynamys orientalis</i>				2	5
746	Pallid Cuckoo	<i>Cacomantis pallidus</i>				0	
759	Forest Kingfisher	<i>Todiramphus macleayii</i>				2	
761	Sacred Kingfisher	<i>Todiramphus sanctus</i>				2	
763	Rainbow Bee-eater	<i>Merops ornatus</i>		15		21	
764	Dollarbird	<i>Eurystomus orientalis</i>				1	0
765	Rainbow Pitta	<i>Pitta iris</i>				1	
820	Dusky Honeyeater	<i>Myzomela obscura</i>		4			
821	Red-headed Honeyeater	<i>Myzomela erythrocephala</i>		3		23	
823	Brown Honeyeater	<i>Lichmera indistincta</i>		1			
843	White-winged Triller	<i>Lalage sueurii</i>					1
846	Mangrove Golden Whistler	<i>Pachycephala melanura</i>	2		1	30	
847	Grey Whistler	<i>Pachycephala simplex</i>					3
868	Arafura Fantail	<i>Rhipidura dryas</i>		2		7	
871	Northern Fantail	<i>Rhipidura rufiventris</i>				3	
876	Broad-billed Flycatcher	<i>Myiagra ruficollis</i>	1	1	2	16	
900	Yellow White-eye	<i>Zosterops luteus</i>	16		11	240	
909	Mistletoebird	<i>Dicaeum hirundinaceum</i>		1	1	1	0