



The Vertebrate Fauna of Bangalley Headland

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Top: Scenery of Bangalley Headland from the Southern end, featuring the gully with some unusually situated 'rainforest' plants

Bottom left: The White-faced Heron is one of many birds to utilise the extensive rock platforms situated below the steep cliffs of Bangalley Headland Reserve.

Bottom middle: Endemic to the Sandstones of the Sydney Basin, the Broad-tailed Gecko is widespread throughout the reserve utilising caves, fissures and overhangs.

Bottom right: The Peron's Tree Frog is sometimes found within the reserve however it relies upon permanent bodies of water often found in neighbouring suburbia.

Summary

The author was engaged by Pittwater Natural Heritage Association to undertake a comprehensive fauna survey of Bangalley Headland Reserve. Minimal surveying has been undertaken within the reserve in the 21st Century, with all surveying occurring over 20 years ago (Lembit & Burcher 1997, Smith & Smith 1998). This study aims to gain an understanding of what species are persisting in this urban bushland reserve and which species may have been lost as a result of the isolated nature of the site.

Study Area

Bangalley Headland Reserve is located in North Avalon on the Barrenjoey Peninsula, 30km from the Sydney CBD. The Reserve is approximately 8.5 hectares in size with an additional area of rockshelf whose sizes constantly fluctuates depending on tide levels.

Like many urban bushland reserves throughout the Northern Beaches LGA, particularly on the Barrenjoey Peninsula, Bangalley Headland Reserve lacks connectivity with any significant tracts of Bushland. However, it is moderately well connected at a canopy level through private property to McKay Reserve in the North. Additionally, Ku-ring-gai Chase National Park is 3km away at its closest point allowing for the movement of migratory and nomadic bird species across the waterways of Pittwater.

The location of the reserve is significant due to its potential as a migrant trap. Within Australia many bird species are dispersive and will travel towards the coast in times of inland drought, regularly heading east until they can see no more land. As such, in a similar manner to other well-documented headland reserves on the Northern Beaches such as Long Reef, Bangalley Headland Reserve acts as an important place to temporarily feed and rest for many species not typically found in Coastal Sydney such as Brown Songlark, Rufous Songlark, Red-capped Robin and more. The Reserve offers a wide diversity of vegetation communities given its small size. Six vegetation communities are present as outlined in Bangalley Headland Reserve and North Avalon Headland Plan of Management 2002 allowing for a diversity of habitats for fauna.

Survey Effort

Existing Fauna Data

Extensive flora monitoring has been undertaken within the reserve in addition to several short-term Fauna monitoring projects. Lembit and Burcher (1997) undertook a Pittwater-wide Coastal Zone Flora and Fauna study and had limited temporal variation of surveying within Bangalley Headland Reserve. In addition, Ecotone March (2009) conducted four nights of hair tubes and Elliot traps, one spotlighting survey and a 60-minute reptile search.

Methods

Given the steep and narrow nature of the site, access to some areas was not possible. These areas contained high quality reptile habitat and were scanned from above with binoculars where possible. Additionally, transects were deemed to be of little value given the topography and the impossibility of following a straight line. It was determined that most resident species home ranges would take up a significant portion latitudinally and longitudinally through the reserve therefore visual encounter surveys and entire site searches were conducted in a standardised pattern of searching per survey. Surveys were conducted once or twice monthly and were timed to coincide with weather events that suited target species. Surveys were conducted between September 2019 and November 2020.

Surveys included:

Bird Surveys (3 hours each)	1x per month
Reptile Surveys (1.5 hours each)	2x per month
Spotlighting Surveys (2 hours per survey)	1x per month

All birds observed or heard calling were recorded during the surveys and any species recorded incidentally during reptile or spotlighting surveys were also recorded. Reptile surveys involved active searching in caves, overhangs, under rocks and logs and passive searching for active reptiles throughout the Reserve.

Results and Discussion

Overview

A total of 61 bird species, 11 reptile species, 3 amphibian species and 11 mammal species were recorded in the survey period. The entire site was sampled within approximately 10m of the reserve boundaries. These surveys covered a variety of habitats and recorded several species that were previously undocumented from this area. An additional 7 species of seabirds were recorded over the ocean within 100m of the cliffs including the Vulnerable Black-browed and Shy Albatrosses.

Diurnal Birds

Diurnal birds by far made up the greatest abundance and diversity within the Reserve. Of the 59 bird species recorded all but 3 were Diurnal. The White-cheeked honeyeater is a common year-round resident while interestingly the New Holland Honeyeater – a typical coastal heathland bird – was only recorded on one occasion. The Scarlet Honeyeater was recorded on several occasions mainly when the *Angophora floribunda* was in flower. The Leaden Flycatcher, Dollarbird and Sacred Kingfisher were all recorded on only one occasion and likely use this reserve for foraging whilst migrating to other larger, more suitable patches of habitat. In addition, the rock shelf below the walking track is an important feeding habitat for various rare and threatened birds including Sooty Oystercatcher, Pied Oystercatcher, Eastern Osprey and Eastern Reef Egret.

Nocturnal Birds

3 species of Nocturnal Bird were recorded; however it is also likely that the Barn Owl uses this reserve during periods of inland drought such as during the Sydney Barn Owl irruption of 2018.

The Tawny Frogmouth was occasionally recorded in the open heathland while the Southern Boobook was frequently encountered roosting in overhangs and foraging throughout the entire reserve. The Powerful Owl was recorded on only 1 occasion however it's more common elsewhere in taller Spotted Gum forest throughout the Barrenjoey Peninsula.

Arboreal Mammals

The most dominant species within the reserve is the Common Ringtail Possum, commonly found feeding in *Kunzea* and *Eucalypt* species throughout much of the reserve. Sugar Glider bite marks were found on a large *Corymbia gummifera*, however no Sugar Gliders were found and are likely to be locally extinct. The Common Brushtail Possum was much less common and only recorded in small numbers on a few occasions. This is in line with the ratio recorded in Ku-ring-gai Chase and Garigal National Parks.

Bats

Bats were incidentally recorded and included Grey-headed Flying Fox, White-striped Freetail Bat and Gould's Wattled Bat. Nearby St Michaels Cave is well known for its colony of Eastern Bentwing Bats and the occasional Large-eared Pied Bat.

Native Ground Mammals

Native ground mammals were largely absent from the reserve likely due to the small and isolated nature of the site. The Bush Rat was recorded on 2 occasions however the Black Rat was far more common and likely outcompetes with the local native small mammals. The Long-nosed Bandicoot was frequently heard and seen throughout the Reserve.

Reptiles

11 species of reptiles were recorded in this survey. The Golden-crowned Snake was regularly recorded on warm nights with multiple individuals found in suitable conditions. The Broad-tailed Gecko, endemic to the Sydney basin, was frequently encountered in and around Sandstone crevices and overhangs. The Elegant Snake-eyed Skink was recorded on one occasion under a rock in a sandstone overhang on the steep eastern side of the escarpment. This species is common in more established suburbs however it's hard to find in undisturbed areas.

Frogs

Only three amphibian species were recorded however this was predicted due to the steepness of the site and lack of standing water within the reserve itself. Two species – the Striped Marsh Frog and the Peron's Tree Frog were reliant upon waterbodies available adjacent to the reserve while the Common Eastern Froglet was found utilising the rainforest gully on the south facing slope of the reserve.

Introduced Species

Introduced species recorded during surveys regularly included the Spotted Dove, Rabbit, Black Rat and Brown Rat, while the Red Fox was recorded on one occasion near the end of the survey period.

References

Burcher, P. & Lembit, R. (1997) Coastal Flora & Fauna Study. Report prepared for Pittwater Council.

Smith, P & Smith, J (1998) Management Plan for Koalas and Other Threatened Fauna in Pittwater. Report prepared for Pittwater Council

Bangalley Headland Reserve Fauna list

Birds	Scientific Name
Silver Gull	<i>Chroicocephalus novaehollandiae</i>
Crested Tern	<i>Thalasseus bergii</i>
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>
Pied Cormorant	<i>Phalacrocorax varius</i>
Sooty Oystercatcher	<i>Haematopus fuliginosus</i>
Australian Pied Oystercatcher	<i>Haematopus longirostris</i>
Eastern Reef Egret	<i>Egretta sacra</i>
White-faced Heron	<i>Egretta novaehollandiae</i>
Eastern Osprey	<i>Pandion haliaetus</i>
Black-shouldered Kite	<i>Elanus axillaris</i>
White-bellied Sea-eagle	<i>Haliaeetus leucogaster</i>
Whistling Kite	<i>Haliastur sphenurus</i>
Nankeen Kestrel	<i>Falco cenchroides</i>
Peregrine Falcon	<i>Falco peregrinus</i>
Spotted Dove	<i>Spilopelia chinensis</i>
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>
Galah	<i>Cacatua roseicapilla</i>
Little Corella	<i>Cacatua sanguinea</i>
Long-billed Corella	<i>Cacatua tenuirostris</i>
Australian King-parrot	<i>Alisterus scapularis</i>
Crimson Rosella	<i>Platycercus elegans</i>
Eastern Rosella	<i>Platycercus eximius</i>
Musk Lorikeet	<i>Glossopsitta concinna</i>
Little Lorikeet	<i>Glossopsitta pusilla</i>
Scaly-breasted Lorikeet	<i>Trichoglossus chlorolepidotus</i>
Rainbow Lorikeet	<i>Trichoglossus moluccanus</i>
Pacific Koel	<i>Eudynamys orientalis</i>
Channel-billed Cuckoo	<i>Scythrops novaehollandiae</i>
Australian Boobook	<i>Ninox boobook</i>
Powerful Owl	<i>Ninox strenua</i>
Tawny Frogmouth	<i>Podargus strigoides</i>
Laughing Kookaburra	<i>Dacelo novaeguineae</i>
Sacred Kingfisher	<i>Halcyon sancta</i>
Eastern Whipbird	<i>Psophodes olivaceus</i>
Eastern Yellow Robin	<i>Eopsaltria australis</i>
Dollarbird	<i>Eurystomus orientalis</i>
Welcome Swallow	<i>Hirundo neoxena</i>
Australasian Pipit	<i>Anthus novaeseelandiae</i>
Black-faced Cuckooshrike	<i>Coracina novaehollandiae</i>
Golden Whistler	<i>Pachycephala pectoralis</i>
Leaden Flycatcher	<i>Myiagra rubecula</i>
Magpie-lark	<i>Grallina cyanoleuca</i>
Grey Fantail	<i>Rhipidura albiscapa</i>
Willie Wagtail	<i>Rhipidura leucophrys</i>
Variiegated Fairywren	<i>Malurus lamberti</i>
White-browed Scrubwren	<i>Sericornis frontalis</i>
Brown Thornbill	<i>Acanthiza pusilla</i>
Noisy Miner	<i>Manorina melanocephala</i>
Red Wattlebird	<i>Anthochaera carunculata</i>
Little Wattlebird	<i>Anthochaera chrysoptera</i>
White-cheeked Honeyeater	<i>Phylidonyris niger</i>

New Holland Honeyeater Scarlet Honeyeater Yellow-faced Honeyeater Lewin's Honeyeater Spotted Pardalote Silvereye Grey Butcherbird Australian Magpie Pied Currawong Australian Raven	Phylidonyris novaehollandiae Myzomela sanguinolenta Lichenostomus chrysops Meliphaga lewinii Pardalotus punctatus Zosterops lateralis Cracticus torquatus Gymnorhina tibicen Strepera graculina Corvus coronoides
Mammals	Scientific Name
Grey-headed Flying Fox Gould's Wattled Bat White-striped Freetail Bat Long-nosed Bandicoot Common Ringtail Possum Common Brushtail Possum Bush Rat Black Rat Brown Rat Red Fox Rabbit	Pteropus poliocephalus Chalinolobus gouldii Australomus australis Perameles nasuta Pseudocheirus peregrinus Trichosurus vulpecula Rattus fuscipes Rattus rattus Rattus norvegicus Vulpes vulpes Oryctolagus cuniculus
Reptiles	
Blackish Blindsnake Golden-crowned Snake Red-bellied Blacksnake Yellow-faced Whipsnake Broad-tailed Gecko Elegant Snake-eyed Skink Dark-flecked Sunskink Pale-flecked Sinskin Common Bluetongued Skink Eastern Water Skink Three-toed Skink	Anilius nigrescens Cacophis squamulosus Pseudechis porphyriacus Demansia psammophis Phyllurus platurus Cryptoblepharus pulcher Lampropholis delicata Lampropholis guichenoti Tiliqua scincoides Eulamprus quoyii Saiphos equalis
Amphibians	Scientific Name
Common Eastern Froglet Striped Marsh Frog Peron's Tree Frog	Crinia signifera Limnodynastes peronii Litoria peronii