

EXPEDITION TO A FORGOTTEN WORLD

On 5 March 2003, Dr Ric How, a WA Museum zoologist who specialises in mammals and reptiles in his survey work, spoke to the Society on the topic "Expedition to a forgotten world: faunal examination of remote Kimberley islands".

First, Ric acknowledged the audience's experience and familiar faces from Landscape Expeditions, and he mentioned important colleagues such as Linc Schmitt. He stated that the Kimberley Islands are one of the State's icons: they excite interest. There are 2500 of them. However, there is still the charisma of the Kimberley mainland such as Mitchell Plateau and Purnululu. The islands have been in glorious isolation for 6000 to 10,000 years, with changing sea levels causing isolation and speciation.

Ric then showed slides to illustrate the various islands visited by his recent expedition and their special faunas.

Slide 1. Cassini Island, about 300–400 hectares, named by Baudin in 1803. This was the most distant from the mainland of the 10 visited, being 30 km off Cape Voltaire in the Timor Sea.

Slide 2. Middle Osborn Island was visited in the 'Golden Age' of Kimberley Island faunal exploration in 1971–1973 by Fisheries and Wildlife scientists. Twenty islands in Bonaparte Gulf were visited from 1 to 11 days and 14 islands in the Buccaneers also. They found 5 frogs of 26 species on the mainland (= 19%); 34 out of 72 mainland mammals (= 47%); and 58 of 109 mainland reptiles (=53%).

Slide 3. Carlia Island had not been examined in detail before. It is in Port Warrender and off Admiralty Gulf north of Mitchell Plateau.

Slide 4. Cattle in *Livistona* and *Eucalyptus miniata* woodland on the mainland at Mitchell Plateau. A lot is known about the fauna there due to the extensive surveys in 1976 and 1977 and also in 1981–1982 when the Museum investigated mammals and reptiles and had the use of helicopters to get around. In the pristine Kimberley there are few ferals, but cattle are one of the major threats, both feral and grazing.

Slide 5: Fire on the Kalumburu Road. The Kimberley is changing due to extensive and repeated fires. Recolonisation after vast burns is not immediate.

Slide 6: Dingo at Mitchell Plateau brings us to mining being significant in the exploration of the Mitchell Plateau. The WA Museum led a survey here in 1976–1977 and further research in 1981–1982. There are no feral mice, rabbits or foxes, just CATS!

Slide 7. *Wyulda* at Mitchell Plateau. The Kimberley is very seasonal and the animals have great habitat specificity. Looking at Northern Territory data shows a decline of the larger small mammals due to changed wet season regimes. Fire and grazing had been blamed.

Slide 8. South-west Osborn Island to Steep Head. This project will:

- Determine the morphology and genetic variation in island and mainland populations of selected Kimberley species;
- Evaluate the systematic and conservation status of fauna, particularly vertebrate species on selected Kimberley islands;
- Interpret this variation in relation to island biogeography;
- Determine islands of high biodiversity and conservation value;
- Identify biodiversity nodes for nature-based tourism activities;
- Communicate research outcomes through community education, museum exhibitions and publications.

Why?

- To contrast these data with those available on vertebrates from adjacent archipelagos in the Pilbara and west coast of WA that have evolved in isolation during fluctuating Pleistocene sea levels; e.g. Barrow Island has 5–12 unique mammal species and 1 unique bird.
- To examine problems of nomenclature on different island groupings for conservation status evaluation.
- To provide some appreciation of fauna in the absence of ferals, fire and European disturbance.

Slide 9. Photograph of Juneau, Alaska with hordes of visitors; 3000 from numerous cruise ships. The Kimberley coast in future could attract large numbers of tourists as our population rises.

Slide 10. Access to the islands was by means of the *Barra B*, a 17 m fishing vessel with an expert skipper, together with 3 runabouts, 1 for each of 3 teams, for landing.

Slide 11. Clay Bryce on SW Osborn Island. It was decided to make a documentary film of fieldwork for local TV. He took 15 hours of film involving 7 people, but he's experiencing frustration postproduction.

Ric then went on to show photographs to illustrate the Project outcomes in regard to amphibians, birds, invertebrates and mammals.

Slide 12. Cormorants on White Rock. Seabirds, especially roseate and little terns are new colonists. There are island isolates such as wrens, tawny grassbirds, cisticola and sandstone shrike thrush. Rainforest birds encountered were the green winged pigeon, scrub fowl, varied triller and little shrike thrush. Mangrove birds recorded were the golden whistler (with geographical variation in the Kimberley), bar shouldered dove, mangrove heron and yellow white-eye.

Slide 13. A scrub fowl mound. This, at 10 x 12 x 5 m, was the biggest yet recorded. The mound is made of beach spoil and shell grit on Middle Osborn Island and is larger than the one at Lone Dingo Vine Thicket photographed by Kevin Coate.

Slide 14. Red-tailed Black Cockatoos on the Plateau. They overfly Fenelon Island to reach bloodwoods on Cassini Island, 30 km from Cape Voltaire on the mainland.

Slide 15. *Salenocosmia* — a big tarantula-like spider discovered on South-west Osborn.

Slide 16. *Odontomaches* — a sedentary ant genus collected on many islands.

Slide 17. Mark Harvey looking for pseudoscorpions on Pandanus. A new species of *Metagiochernes* was found. *Faella*, of Gondwana origin, were recorded and also intertidal ones on Steep Head.

Slide 18. *Camaenids* (land snails) in a tree hollow. One species is endemic to Cassini Island and is threatened. The expedition recorded two species on Cassini. *Camaenids* are known to exist on 60+ of the islands.

Slide 19. Crocodiles on the mainland. The salt water species do not occur frequently in Indonesia. They are the icons of the North.

Slide 20. Crocodiles on Cassini Island. They often travel large distances in the open sea. Genetic studies were not attempted.

Slide 21. Turtle tracks on Cassini Island. Two species occur; green and flatbacks.

Slide 22. Trapping on Cassini Island and the bloodwoods on the island.

Slides 23 and 24. *Ctenotus inornatus* (a skink). These show variation in patterning, morphology and DNA.

Slide 25. Roy and Soak. Significance of seepages/soaks during the dry summer in Institut Group to the viability of faunal populations.

Slide 26. *Liasis*: Kimberley Olive Python. These were the highlight of the expedition, occurring near a soak where they apparently fed on the species drawn to water to drink.

Slide 27. King brown snakes occur on many islands. A new species was recorded. They were both trapped and identified from skin sloughs.

Slide 28. *Pteropus* bats on Cassini. They fly out 30 km from the mainland. No other bat species was heard.

Slide 29. Tracks of small mammals. *Dasyurus hallucatus* (Northern Quoll), *Zyomys woodwardi* (Rock Rat) and *Pseudechis australis* were noted on SW Osborn Island.

Slide 30. *Zyomys woodwardi*. There has been a decline in mammal species on the mainland and there are fewer species on the islands than on the mainland. There is no hard data collected but such data as there is gives useful information of relative abundance.

Slide 31. *Cyclodomorphus maximus* (a large skink). This is a new discovery for the islands.

Slide 32. The team. Discussions are proceeding with UWA in regard to invertebrate projects; a PhD student is studying the morphology and genetics of *Ctenotus*. DNA from brains is being replicated and the WA Museum collection is useful in this regard. However continuation is dependent on winning grants.

Ric was thanked for his interesting talk and presented with a small token of appreciation.

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