PIECING TOGETHER THE REMNANTS

Kevin Kenneally

by K.F.Kenneally and N.L.McKenzie

Isolation, the rugged Kimberley landscape and daily monsoonal storms were just a few of the problems faced by scientists surveying rainforest patches in the North Kimberley, during the wet season. The project, part of the National Rainforest Conservation Program, is the first comprehensive ecological survey of Western Australia's unique rainforest remnants.

Kevin Kenneally

Lygodium microphyllum, *a climbing maidenhair fern, caught in a shaft of sunlight.*

Small patches of rainforest are scattered throughout the Kimberley, from Broome in the south to the Bungle Bungles in the east. They are at their best near the Prince Regent River and Mitchell Plateau.

Designed to document the State's rainforests, the survey started during the 'dry' in mid-1987 when birds, plants and snails were studied in 83 rainforest remnants.

Many of the rainforest plants and animals surveyed are specially adapted to the dense, moist environment and are not found elsewhere in W.A. The plants are closely related to the tropical vegetation of Queensland and South-East Asia.

In last year's 'dry', the focus switched to the mammals, reptiles, spiders and ants living in 16 patches chosen to represent the diversity of rainforests in the North-West Kimberley. Detailed study of plants, birds and soil profiles continued.

The project entered its final phase in the 'wet' early this year. In January, a field team spent eight days revisiting these 16 rainforests.

Team members included the W.A. Herbarium's Kevin Kenneally and the CSIRO's Dr Bernie Hyland, both tropical plant specialists, and Norm McKenzie, a zoologist from CALM's Research Division. Aboriginal guide Geoffrey Munglemurra, from the Kalumburu Community, assisted throughout the field program.

Most of the rainforest patches are in rugged escarpment country, remote from roads and settlements.

Norm McKenzie

Kevin Kenneally

Team members lunch in a riverine rainforest south of Kalumburu (top).

Storm at Kalumburu base camp (above).

Helicopter at Mt Trafalgar rainforest patch (below).

Even with a helicopter, the researchers often had to walk long distances to reach their study sites.

Base camps were established at Kalumburu and Mount Hart Station. The teams started work at first light to get through the day's program by 3pm when the intense heat triggered daily monsoonal storms. Helicopter pilot Carl Matthews dodged isolated but violent electrical storms on the flight back to base camp.

However, the rain was a bonus for biologists Peter Kendrick and Richard Johnston, who recorded frog sounds. Many frogs are best identified by their call.

Norm McKenzie

Norm McKenzie

Rainforest patch south-east of Kalumburu.

In March, a final field survey was carried out from base camps at Derby, Mt Hart, Kalumburu and Wyndham. The team included W.A. Museum ornithologist Ron Johnstone and CALM botanist Greg Keighery.

The survey provided further insights into rainforest wildlife late in the wet season. Patches on Yampi Peninsula, Dampier Peninsula and in the North-west and East Kimberley were again surveyed.

A number of rainforest plants were collected in flower for the first time, including a new species of *Aristolochia*, commonly known as Dutchman's Pipe. Annual herbs were prominent at this time, especially in patches with sandy soils, those near the coast or those disturbed by cattle.

Information was also gathered about migratory rainforest birds such as the Common Koel, Oriental Cuckoo and Barn Swallow. Some birds, such as the Rufous Fantail and the Shining Flycatcher, which were present in thickets during the dry season, had left to breed in the nearby mangroves.

Reptiles were more visible during the 'wet' and some rare species, such as the soil swimmer *(Lerista kalumburu)* and the burrowing snake, *(Vermicella minima)*, were seen.

Kimberley rainforest earthworms were also collected for the first time. There was an average density of 40 worms per square metre, consistent with the world's other sub-humid rainforests.

Earthworms recycle nutrients from the deep layers of leaf litter that accumulate on the soil surface. On the steep slopes where most rainforest patches grow, earthworm tunnels help water soak into the soil.

Few areas of rainforest are represented in conservation reserves or national parks, although a major planning study in the Kimberley is currently looking at proposals to rectify this.

Kevin Kenneally

Ron Johnstone

Ron Johnstone

Fungi abound in the rainforest during the wet (above).

Litoria wotjulumensis *is known for its wide repertoire of calls - chuckles, clicks and rattles (above right).*

Vermicella minima *(Worrell's snake) - another rainforest inhabitant (right).*

Kevin Kenneally

The bright fruits of Aglaia eleagnoidea *make a tasty meal for several rainforest birds.*

LANDSCOPE

VOLUME 4 NO 3 AUTUMN EDITION 1989

EDITORIAL

A prerequisite for the successful management of land and wildlife is an understanding of the processes that drive ecosystems, and managers who can manipulate these processes.

In Western Australia, we are fortunate that we have a wealth of talent in different government agencies, tertiary institutions and private companies who can provide these research and management skills.

Of course, obtaining a perfect understanding of ecosystems and ways to manage them brings to mind the frog who wants to reach a creek, but can only jump half the distance every time.

But it is not the complexities of understanding or managing ecosystems which provide the greatest difficulty.

Social and political factors are far more difficult to accommodate.

All the scientific and managerial skills in the world are worth nothing if the community and, often more importantly, selected constituencies within the community do not support the management strategies.

Unfortunately, there is often an inverse relationship between a scientist's or manager's skills in his profession and his capacity to handle social and political factors in the community. This is not surprising, since most scientists and managers have received little training in basic communication skills, let alone community politics.

CALM is attempting to address this problem in a variety of ways. But the people who should know the most about how to obtain community support for public land management strategies are the public. *Landscope* readers are an important and influential constituency. If you have thoughts on this issue we would like to hear from you.

What a sterling idea! A new management plan for CALM's South Coast Region - page 28.

Are insects gradually eating away our jarrah forests? Turn to page 18.

What lies beneath the waters of Marmion Marine Park? See page 25.

COVER

A rose by any other name... Does its name detract from the beauty of the common eggfly (Hypolimnas bolina)? Photograph - Jiri Lochman

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Editors: Kylie Byfield/Carolyn Thomson
Designers: Louise Burch/Robyn Mundy
Production: Karen Addison/Margaret Wilke
Advertising: Tim Langford-Smith ☎ (09) 389 8644
Colour Separations by The Colour Set
Printed in Western Australia by Kaleidoscope
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Published by Dr S Shea, Executive Director,
Department of Conservation and Land Management,
50 Hayman Road, Como, Western Australia 6152.