PRINCE REGENT RIVER RESERVE

PRELIMINARY REPORT

Because of the lack of knowledge of Kimberley wildlife the Fauna Research Branch of the Department of Fisheries and Wildlife decided four years ago to try and make one field trip per year to the Kimberley area.

During the past three years, emphasis has been placed on surveys of offshore islands and joint trips involving the Department, the Western Australian Museum and Western Australian Herbarium have been conducted.

It has been difficult however to interpret the results of the island trips because of lack of biological information on the adjacent mainland.

As it is the only large conservation reserve in the Kimberleys, the Prince Regent River Reserve (606 000 ha) was chosen as the logical place to carry out a biological survey. Not only was it a chance to give a substantial indication of what wildlife existed in the area; it was also an important step in trying to get other Kimberley reserves established.

The Australian Biological Resources Study Interim Council set up by the Commonwealth Government in 1972, included on its programme of study on remote areas of Australia, a survey of the Kimberley district of Western Australia.

The cost of the expedition was estimated at $36 000, the Commonwealth providing funds with the Department of Fisheries and Wildlife on a 2:1 basis.

Extra funds were provided by the Commonwealth so that two entomologists could be included to study the situation of possible future insect pest problems in the area.

Dr Andrew Burbidge, officer-in-charge of the Wanneroo Wildlife Research Centre, Department of Fisheries and Wildlife (the leader of the expedition) was assisted by Mr Norm McKenzie, reserves biological research officer at the Centre, and consultant biologist, Dr Jennie Miles.

Dr Miles was employed out of the grant to organise the expedition's complete requirements such as packaging, food, fuel, itinerary and general planning. Dr. Miles was also required to assist on the expedition to collate information and prepare a brief publication of the results at a later date.

The expedition team comprised representatives from the Western Australian Museum, Government Departments and the University of W.A. incorporating the fields of Botany, Entomology, Zoology and reserve management.

The personnel and their Departments were as follows:—

Department of Fisheries and Wildlife:—
- Dr A. Burbidge
- Dr J. Miles
- Mr S. Miles
- Mr N. McKenzie
- Mr K. Youngson

Museum:—
- Dr B. Wilson
- Mr P. Smith
- Mr L. Smith
- Mr R. Johnstone
- Mr J. Dell
- Mr A. Chapman
- Dr G. Allen

Herbarium:—
- Mr A. George
- Mr K. Kenneally

Department of Agriculture:—
- Mr K. Richards

University of W.A.:—
- Dr W. Bailey

Attached photographers:—
- Mr B. Wells
- Mrs Wells

The ground party consisting of Dr Burbidge, Dr Miles and Mr Sam Miles left Perth by landrover and truck on the 31st July. Their destination was Beverley Springs Station, approximately 85 kilometres south of the southern boundary of the Prince Regent River Reserve.

This was to be the base camp for the entire expedition.

The remaining personnel travelled from Perth by air charter on the 10 August, 1974.

After arrival at base camp all personnel immediately proceeded to move out in groups by helicopter to their respective bush camps.

The system comprised of 12 campsites made up of 2 camps of 3 people and 2 camps of 4 people. Each team manned 3 different sites with 6 days at each location.

Ron Johnstone preparing a bird skin at the E5 campsite

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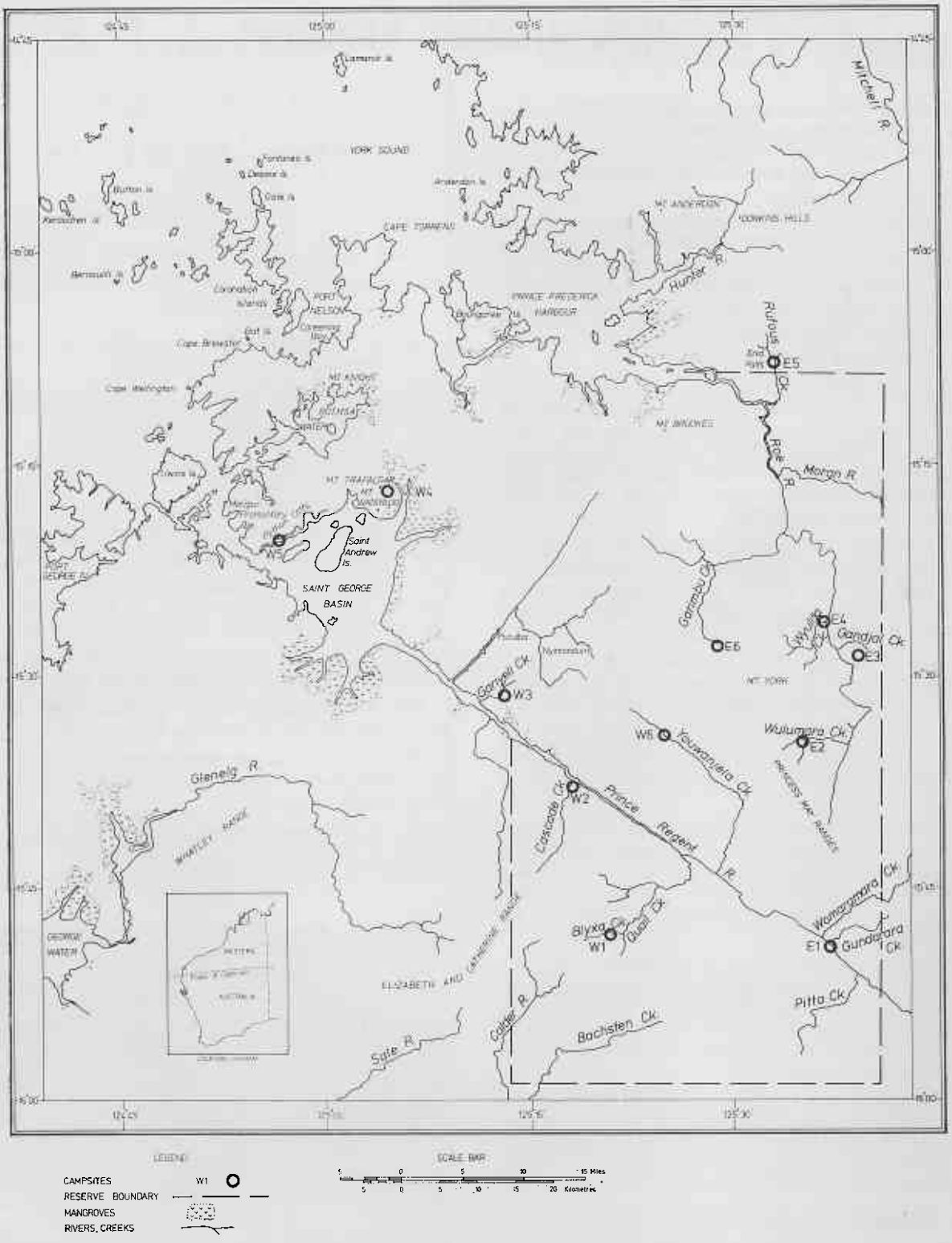

The Prince Regent River Reserve, showing topography and survey sites.

Part of the gorge on Pitta Creek named after the sighting of a Rainbow Pitta bird *Pitta iris*, in the fringing forests along the water course.

The helicopter was used to ferry the various groups to their pre-selected sites and landed on, or within a square mile of these, whatever the rugged terrain permitted. Every 3 days the helicopter brought in fresh supplies from base camp and took out any specimens which had been collected.

Attached to the team under a grant from the Australian Photographic Index were Mr and Mrs Bert Wells.

Their main objective was to find and photograph the rare Black Grass Wren, which was achieved after a shift in their camp location.

The team was in the reserve for a total of 18 days, at the conclusion of which the main body returned to Perth by air on the 2nd of September.

Dr Burbidge, Mr and Dr Miles then proceeded to break camp, pack specimens and prepare for the trip back to Perth. The convoy with its valuable cargo left Beverley Springs Station on the 4th of September, 1974.

The excellent results of specimens collected are described in their various order in the following sections.

PLANTS

Approximately 1 000 plant specimens were collected. Flowers or fruit of 200 specimens were preserved in alcohol. About 50 wood samples were collected and the seeds of many species were brought back.

About 1 500 photographs were taken to show the growth habits of plants and vegetation types in the reserve.

Among the plants were about 30 species of fungi; 30 species of lichen and 20 ferns. Two tree orchids were found, one of them a *Dendrobium*, rarely seen in W.A. There were many triggerplants, sundews and bladderworts, some of them new to science.

Wild figs were common on the rocky hills, one species having large sprays of fruit growing from the trunk. Among many other species previously unknown in W.A. are an umbrella-like fern (*Schizaea dichotoma*) and an aquatic plant (*Blyxa*) which is completely submerged in pools except for its rod-shaped white flowers.

A species of fungus is of interest as the first record in the State of mangrove-attacking fungus which is submerged in salt water at high tide.

MAMMALS

Thirty species were collected—probably the greatest number ever taken from one locality in Western Australia. They included one species only once before collected in W.A.—the Large-footed Bat *Myotis adversus*—and another which had been collected only twice before in W.A. and only five times in the whole of Australia—the Northern Blossom Bat *Macroglossus lagochilus.*

Several uncommon species were collected including the Scaly-tailed Possum *Wyulda squamicaudata*, Woodward's Rock Rat *Zyzomys woodwardii*, the Brush-tailed Tree Rat *Conilurus penicillata* and a Mosaic-tailed Rat *Melomys* sp.

Much work remains to be done in sorting and identifying many of the mammals and at the present moment the species list is tentative. It is not possible at present to be sure of the identification of two species of short-nosed bandicoots, some native rats and a marsupial mouse.

Dingoes were common in the reserve and one which was shot had a bandicoot in its mouth which it had just captured. A few feral cats and cattle were observed. One widespread feral species which was not collected was the House Mouse *Mus musculus.*

Scaly-tailed Possum *Wyulda squamicaudata*

(2)—45391

BIRDS

The biological survey of the Prince Regent River Reserve recorded 135 species of birds. This included the first record for W.A. of the King Quail which was previously known from the Eastern States and the Northern Territory.

The Torres Strait Pigeon was recorded breeding in W.A. for the first time. Other rare species recorded were Rufous Owl and Cicada Bird which had not been seen since G. Hill recorded them in 1911 at Parry Harbour. The Black Grass Wren which was thought to be nearing extinction was found to be common on the Reserve in rugged sandstone country. Other rare species observed were Scrub Fowl, Rainbow Pitta, Partridge Pigeon and Red-backed Quail. Many species were recorded breeding, giving valuable information on breeding seasons of Kimberley birds.

Black Grass-Wren *Amytornis housei*.

More specimens of Large-billed Mangrove Warbler, including a nest and eggs, were collected. This species was previously unknown from W.A. until Jan./Feb. 1973, when it was collected at Port Warrender, a little further north.

Because of the variety of habitats ranging from mangroves, monsoon forests, sandstone hills and canyons, to eucalypt woodlands and open grasslands, the Reserve contains nearly half the known species of Kimberley birds.

REPTILES AND FROGS

Nine species of frog, 2 species of tortoise, a fresh water crocodile and 38 species of terrestrial reptile were recorded in the reserve. These 50 species represent nearly half the species known from the Kimberley.

Two Carpet Snakes collected are the first of their species recorded for the Kimberley. They are from an isolated population which will probably prove to be more closely related to the Northern Territory and Eastern Australian carpet snakes than the South West Australian ones.

A second specimen of an *Omolepida* (Skink) was collected. The original specimen was collected at Kalumburu in 1965 by Mr Harry Butler.

FISH

The fish collecting portion of the trip was an unqualified success. Thirty-four species were taken, approximately 20 from brackish waters at the base of King Cascades on the lower Prince Regent River. These collections are the first ever to be made in the Prince Regent and Roe Rivers and add greatly to our knowledge of the fresh water fish of the North-west. The fish of this region are very poorly known. Prior to 1947 only 3 species were recorded and even today only 2 areas besides the Prince Regent River have been sampled adequately; these being the Fortescue and Ord Rivers.

The present collections contain several new records for the State and Australia, and a species of rainbow fish collected from above the waterfall at King Cascades is possibly new to science.

Among the more interesting fish taken was a blind worm-like Goby, which was found buried in mud at King Cascades Inlet.

MOLLUSCS

Snails are an important source of food for many reptiles, small mammals and birds. Some may be secondary hosts for parasitic diseases which affect higher mammals, even man. Almost nothing is known of Kimberley snails. Only a few specimens from more accessible places have been studied by specialists on molluscs.

Participation in the Prince Regent Survey by Dr Barry Wilson and Mr Peter Smith was part of a major effort to collect and describe the molluscan fauna of the Kimberley.

About 28 species were collected, a surprisingly high number for such a seasonably dry area and at least 15 of these are species new to science.

W.A. Museum staff will seek assistance from other malacologists in Australia and overseas to name and describe the new species in the "Western Australian Museum Records" or other scientific journals.

INSECTS

Approximately, 4 000 insect specimens representing most insect orders were collected. Although it will be some time before this material is completely sorted it is likely that a number of new species will be included.

The specimens were collected during the day by netting, beating of vegetation and trapping, and at night by means of a special lamp suspended in front of a white sheet. The 160 watt, 240 volt lamp contained an ultra-violet filament the emission from which is particularly attractive to moths and other insects. Some 25 species of butterflies were obtained including a number of the large and showy "Big-greasy" swallowtails, the beautifully marked "Blue-tigers" and "Eggfly" butterflies and the colourful northern "Jezabel" and "Glasswings".

Crickets and grasshoppers were plentiful in the area, some 360 specimens, involving at least 70 species being collected. Sound recordings of the calls of a number of species were made. These recordings will be used in taxonomic research to assist in separating species.

Other insects of interest include ants which build their subterranean nests amongst the mangroves. These nests are completely covered with water each time the tide comes in.

A number of interesting native fruit flies were obtained from the monsoon forests. These were collected in traps, containing a special chemical lure, set amongst the native fig trees.

In conclusion, the Prince Regent River biological survey is considered by all the participating authorities to have been most successful. Although data on the distribution and abundance of the Kimberley fauna and flora are not plentiful it is evident that the Prince Regent River Reserve contains a representative flora and fauna of much of the north Kimberley. However, being sited in an extremely rugged country, it is not representative of regions containing broad valleys and extensive areas of open woodland. Thus, the only large macropod which was common was the Euro; the Antelopine Kangaroo and Nail-tail Wallaby which occur along rivers in open grassy country were not recorded.

Probably the most disappointing result was the poor quality and small size of areas of monsoon forest in the reserve. It is evident that further reserves will be needed to protect this interesting vegetation type.

The generally outstanding results achieved by the survey demonstrate the value of setting aside large conservation reserves. In order to protect more of the Kimberley flora and fauna, further large reserves are needed in other regions.

As well as a diverse flora and fauna the Prince Regent River Reserve contains areas of outstanding scenery—rugged rocky outcrops, gorges, rivers, creeks and waterfalls. Survey team members believe that the reserve is worthy of Class A status.

Philip Parker King visited the Prince Regent River in 1820. The crew of his cutter Mermaid, carved this Baobab *Adansonia gregorii* which was photographed in August 1974. Inscription reads " H.M.C. Mermaid 1820 ".