

**BIOLOGICAL SURVEY OF**

**BARLEE RANGE NATURE RESERVE**

**Project (N92/5)**

**Progress Report 10**

*Prepared by: Stephen van Leeuwen*

*Date: May 1996*

TITLE OF PROJECT:

Biological survey of the Barlee Range Nature Reserve (A ↑26808)

AGENCY:

Western Australian Department of Conservation and Land Management (CALM) (undertaken jointly by the Science and Information Division and the Pilbara Regional office).

PROJECT SUPERVISOR:

Stephen van Leeuwen  
Research Scientist  
CALM Karratha  
P.O. Box 835  
KARRATHA WA 6714 (091) 431 628

PROJECT OFFICERS:

1. Stephen van Leeuwen  
Research Scientist
2. Peter Kendrick  
Assistant Conservation Officer

SCOPE OF PROPOSAL:

- a. Select sites that represent the array of communities typical of the Barlee Range.
- b. At all sites, establish and sample permanent quadrats recording landform unit, species composition, habitat type and the vegetation associations present. Permanent quadrats will enable, through long-term monitoring, the documentation of change over time and after environmental perturbations.
- c. Analyse data sets for each biotic group sampled (flora, mammals, birds, reptiles, amphibians and invertebrates (ants)), discussing patterns of community structure, species richness and distribution. Prepare descriptions of vegetation associations and landform units present and map their distribution within the reserve.
- d. Publish results of the survey and subsequent analyses. Discuss implications of these results with reference to the representativeness of the nature reserve and its nature conservation values. Make recommendations for management where appropriate.

WORK COMPLETED

Since the submission of the last report in September 1995 very little progress has been made towards completion of this project. Departmental requirements to clear leave entitlements for both my technical officer and myself are primarily responsible for this lack of progress.

All field work associated with this project has been completed. Identification and processing of flora and fauna specimens has also progressed, although some difficult and not well known taxonomic groups are causing problems. Some preliminary data analysis has been undertaken to ensure that taxonomic and GIS databases established for the project comply with analytical software requirements. The GIS databases are almost complete and cover themes such as geology, landsystems, vegetation, topography, drainage and cadastral information.

The last field trip conducted to the nature reserve was in October 1995 and was primarily a fauna sampling trip. Preliminary results of this trip are presented below.

Progress on this project, with reference to those biotic groups in which work has been undertaken since the last progress report, is outlined in the following sections.

### **Mammals**

Work is continuing on the identification of the many specimens collected within the reserve. In collaboration with colleagues from Macquarie University, attempts are currently being made identify the rock wallaby at Barlee Range using DNA marker technology. Cryo-preserved biopsy material was obtained from a fresh specimen of the Barlee Range Rock wallaby during the October sampling trip. The wallaby present in the reserve could either be the Black-footed rock wallaby (*Petrogale laterallis*) or Rothschild's rock wallaby (*P. rothchildi*).

Sorting and identification of subfossil cave deposit material collected from Kookhabinna Gorge has continued in collaboration with the WA Museum's Department of Earth and Planetary Sciences. In addition to the eight mammals identified from this subfossil deposit, a further four species have been identified in material collected from a similar deposit on the Henry River, immediately adjacent to the reserve. These four new species are either representatives of new taxa or belong to species which are now extinct in the Pilbara and Ashburton regions, at least on the mainland.

During the October fauna sampling trip another species of bat was added to the reserves list. This was the Orange Leafnosed-bat, *Rhinonictoris aurantius*. The identification of this bat in the nature reserve is of considerable significance as it represents the most southern location for this essentially tropical bat. Previous locations were all confined to the Kimberleys and Northern Territory, although a few small populations have been recorded in the eastern Pilbara. An unconfirmed record has also been made from the Pannawonica-Red Hill areas, approximately 200 km north of Barlee Range. This bat is currently listed as a Schedule 1 taxon which implies that it is rare or likely to become extinct. Previous research has indicated that this bat has very specific habitat requirements, mainly associated with a very humid roost site, and is very sensitive to human interference.

### **Reptiles and Amphibians**

A new species of frog, probably belonging to the genus *Neobatrachus*, was collected from around the claypan on the western side of the reserve during the October field trip. The specimens collected appear to be the first obtained by

the Western Australian Museum and do not superficially match any other species of *Neobatrachus*. Further taxonomic research, including electrophoretic and DNA analysis of biopsy material, should clarify the status of the specimens collected.

### **Invertebrates**

Sorting of invertebrate samples has progressed over the last two months. All non-Formicidae (non-ants) have been forwarded to the Western Australian Museum's Department of Terrestrial Invertebrates for identification. Sorting and counting of ant specimens is nearing completion, after which specimens will be forwarded to the appropriate institutions for identification.

No more field trips are planned to the nature reserve. In the coming months, with the return to work of myself and associated support staff, work will progress with the identification and sorting of flora and fauna specimens. Progress will also continue on the databasing and development of the GIS database for this project.

The duration of this project and submission of the final draft report will take longer than mentioned in previous progress reports as a consequence of the requirement to clear leave entitlements and the volume of specimens, particularly novel and poorly collected species apparently present within the reserve.

### EXPENDITURE TO DATE

No expenditure statement is included with this progress report as no funds have been debited against this project since the last progress report

As detailed in the last progress report, at the 29<sup>th</sup> September 1995 a total of \$16 924 or 84% of the \$20 000 NEGP budget had been consumed. Therefore to date, 71% of NEGP fund expenditure has been directed towards the purchase of materials and equipment required to undertake the survey. The remainder has been spent on vehicle hire fees and running changes.

A cost overrun in the budget for this project is not anticipated.

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