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PROVISIONAL REPORT

NANGEEN HILL NATURE RESERVE

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PROVISIONAL REPORT ON NANGEEEN HILL NATURE  
RESERVE NO. A 23187

Introduction

Nangeen Hill Nature Reserve lies on the western side of Bruce Rock Shire in the eastern-central wheatbelt. On the 29th and 30th July 1980 an inspection of the area was carried out by Mr Andrew Williams of the W.A. Wildlife Research Centre. The resultant report, which follows, is to act as the basis for a Management Plan of the area.

The reserve was examined on foot, and by vehicle where tracks permitted. Physical characteristics were obtained from the relevant lithograph (1:50 000 Pantapin) and interpreted from observations made in the field. Aerial photographs were consulted to locate areas of special interest. The vegetation was classified following the B.G. Muir System as used in the W.A. Wheatbelt Survey. Where necessary sample plant specimens were collected for identification at the W.A. Wildlife Research Centre and the W.A. Herbarium. A diagrammatic map shows the vegetation associations, and this is augmented with habitat photographs taken by Dr I.G. Crook.

Notes were also made on the birds encountered, although this information is of a superficial nature. Those species listed represent the sightings from only two excursions onto the reserve. (Nomenclature follows Slater's Field Guide to

Australian Birds). The mammal and reptile data was kindly supplied by Dr J.E. Kinnear and Mr M. Onus of the W.A. Wildlife Research Centre who are presently researching a small population of Rock Wallabies on the reserve.

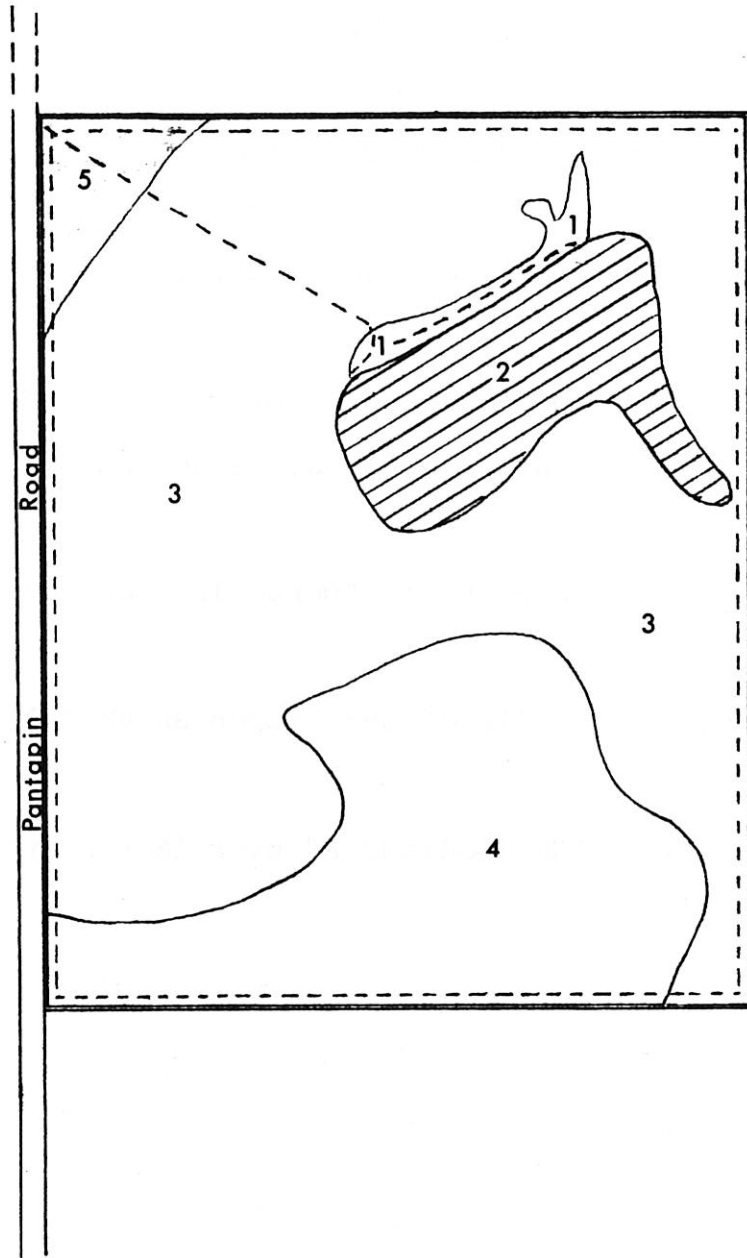
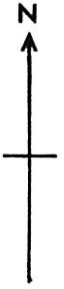
The weather during the inspection was generally sunny and dry though increased wind on the second day hampered bird observations to some extent.

Thanks are due to Dr S.D. Hopper of the W.A. Wildlife Research Centre for his help in identifying plant specimens collected in the field, and to Dr J.E. Kinnear and Mr M. Onus for the use of data related to their Rock Wallaby research.




TABLE 1: VEGETATION CLASSIFICATION AS USED IN WHEATBELT SURVEY

LIFE FORM/HEIGHT CLASS	CANOPY COVER				
	DENSE d 70-100%	MID-DENSE c 30-70%	SPARSE i 10-30%	VERY SPARSE f 2-10%	
T Trees >30m M Trees 15-30m LA Trees 5-15m LB Trees <5m	Dense Tall Forest Dense Forest Dense Low Forest A Dense Low Forest B	Tall Forest Forest Low Forest A Low Forest B	Tall Woodland Woodland Low Woodland A Low Woodland B	Open Tall Woodland Open Woodland Open Low Woodland A Open Low Woodland B	
KT Mallee tree form KS Mallee shrub form	Dense Tree Mallee Dense Shrub Mallee	Tree Mallee Shrub Mallee	Open Tree Mallee Open Shrub Mallee	Very Open Tree Mallee Very Open Shrub Mallee	
S Shrubs >2m SA Shrubs 1.5-2.0m SB Shrubs 1.0-1.5m SC Shrubs 0.5-1.0m SD Shrubs 0.0-0.5m	Dense Thicket Dense Heath A Dense Heath B Dense Low Heath C Dense Low Heath D	Thicket Heath A Heath B Low Heath C Low Heath D	Scrub Low Scrub A Low Scrub B Dwarf Scrub C Dwarf Scrub D	Open Scrub Open Low Scrub A Open Low Scrub B Open Dwarf Scrub C Open Dwarf Scrub D	
P Mat plants H Hummock Grass GT Bunch grass >0.5m GL Bunch grass <0.5m J Herbaceous spp	Dense Mat Plants Dense Hummock Grass Dense Tall Grass Dense Low Grass Dense Herbs	Mat Plants Mid-Dense Hummock Grass Tall Grass Low Grass Herbs	Open Mat Plants Hummock Grass Open Tall Grass Open Low Grass Open Herbs	Very Open Mat Plants Open Hummock Grass Very Open Tall Grass Very Open Low Grass Very Open Herbs	
VT Sedges >0.5m VL Sedges <0.5m	Dense Tall Sedges Dense Low Sedges	Tall Sedges Low Sedges	Open Tall Sedges Open Low Sedges	Very Open Tall Sedges Very Open Low Sedges	
X Ferns Mosses, liverwort	Dense Ferns Dense Mosses	Ferns Mosses	Open Ferns Open Mosses	Very Open Ferns Very Open Mosses	

NANGEEEN HILL NATURE RESERVE NO. A 23187



1 km

-  Reserve Boundary
-  Firebreaks-Tracks
-  Nangeen Hill

Nangeen Hill Nature Reserve - Reserve No. A 23187

Vegetation areas shown on map.

Area 1 : "Open Low Grass" to ca. 5 cm.

Area 2 : "Low Woodland A" over "Scrub" over "Very  
Open Low Grasses, Ferns and Mosses".

Area 3 : "Thicket" to "Dense Thicket" over Borya nitida.

Area 4 : "Woodland" over "Open Shrub Mallee".

Area 5 : "Low Woodland A" over "Scrub" to "Low Scrub A".

Location:

Ca. 12 km north west of Kwolyin Townsite and located on lithograph 2434-111 Pantapin.

Background:

Reserve 23187 was originally gazetted on 26 January 1951. On the 6 September 1963 its area was increased to vs. 176.4429 ha, and on 16 September 1966 the purpose changed from 'Water' to 'Conservation of Flora and Fauna.' By Government Gazette notice of 28 August 1970 the area was vested in the Western Australian Wildlife Authority and declared a 'Prohibited Area' on 18 December of the same year. On the 28 January 1972 the reserve was officially named Nangeen Hill Wildlife Sanctuary although this was subsequently changed to Nangeen Hill Nature Reserve on 4 May 1979. The area was declared a Class 'A' reserve on 11 March 1977.

Physical Characteristics:

Nangeen Hill Nature Reserve is rectangular in shape with an area of ca. 176.4429 ha and a perimeter of ca 5.3 km. Its longer axis lies in a north-south direction. The reserve, surrounded by cleared fenced farmland, can be approached along the Pantapin Road.

The area is dominated by the large granite rock hill from which the reserve takes its name. This rocky outcrop, which rises to ca. 310 m above sea level, covers some 15% of the reserve area. The remainder of the reserve slopes gently away from the base of the hill, and supports four distinct vegetation associations shown on the diagrammatic map for the area. These include two eucalyptus woodland associations, a large area of Casuarina dominated thicket and a restricted area of grassy meadow along the north-western face of the hill. The soils for the most part consist of light coloured to reddish sandy loams.

Vegetation:

Area 1: - meadow at base of rocky hill. Mainly "Open Low Grass" to ca. 5 cm, but with some weed invasion. Common grasses include Aristida sp., Amphipogon strictus, Trifolium arvense, Bromus rubens, Bromus diandrus and Neurachne alopecuroides.

Area 2: - Nangeen Hill - with vegetation confined to shallow soil amongst the rocks.

"Low Woodland A" made up of Acacia lasiocalyx 3 to 8 metres, over mixed "Scrub", common species including Rhinocarpus \_\_\_\_\_ to 4 metres, \_\_\_\_\_ to 2 metres and Diplolaena \_\_\_\_\_ to 1 metre over assorted "Very Open Low Grasses,



Ferns and Mosses." The most common grass noted was Ehrharta longiflora.

Area 3: - "Thicket" to Dense Thicket" dominated by Casuarina campestris 1.5 to 3 metres, with Acacia lasiocalys, Acacia sp., Santalum acuminatum and Santalum spicatum forming minor components of the association in some places. This over 30% to 70% ground cover of Borya nitida to ca. 10 cm.

Area 4: - "Woodland" made up of Eucalyptus wandoo, E. salmonophloia, E. salubris and E. loxophleba from 12 to 20 metres, over "Open Shrub Mallee" made up of Eucalyptus erythronema, E. gracilis/foecunda and E. \_\_\_\_\_ from 4 to 6 metres. This over a generally open understorey.

Note:- A belt of Melaleuca uncinata aff. to ca. 2.5 metres was prevalent along the edges of this association.

Area 5: - "Low Woodland A" made up of Eucalyptus loxophleba 7 to 10 metres with scattered E. salmonophloia, emergent to 16 metres along the edges. This over mixed "Scrub" to "Low Scrub A" made up mainly of Acacia spp., Melaleuca sp., Santalum acuminatum and Melaleuca uncinata aff. There are odd examples of E. loxophleba scattered between the two main blocks of eucalyptus woodland.

Human Usage:

Nangeen Hill Nature Reserve has, in the past, been utilised for a number of human activities. To the north-west of the hill several earth mounds remain from the days when the area was used as a rifle range. There is also a goldmine-site near the north eastern corner. Along the southern boundary old stumps show where fence posts were once cut from the mixed eucalyptus woodland, although none have been taken recently. Over the years local residents often used the rocky hill for picnics, although this practice has largely ceased since the reserve was declared a Prohibited Area - this in an effort to protect the small population of Rock Wallabies from undue disturbance. However, there is still some illegal entry by unauthorised trail bike riders, and a fence with locked gates is soon to be erected along the Pantapin Road boundary to prevent this from re-occurring. Excellent firebreaks have been put in along all four boundaries, and a vehicle track also exists leading from the Pantapin Road to the western face of the hill. A minor litter problem exists in the form of beer cans and bottles.

Note: Dr J.E. Kinnear and Mr M. Onus of the W.A. Wildlife Research Centre are conducting an active research programme on the resident Rock Wallabies. This aspect of the report will be covered separately by Dr I.G. Crook).

Fire History:

The reserve has not been burnt for a great many years. Excellent breaks have been put in along all borders.

FAUNABirds:

4 x Mountain Duck	<u>Tadorna tadornoides</u> (flying over)
2 x Crested Pigeon	<u>Ocyphaps lophotes</u>
2 x Port Lincoln Parrot	<u>Barnardius zonarius</u>
1 x Welcome Swallow	<u>Hirundo neoxena</u>
8 x Tree Martins	<u>Petrochelidon nigricans</u>
1 x Black-faced Cuckoo Shrike	<u>Coracina novaehollandiae</u>
6 x White-browed Babbler	<u>Pomatostomas superciliosus</u> (One pair nesting in <u>Casuarina</u> <u>campestris</u> )
2 x Western Warbler	<u>Gerygone fusca</u>
1 x Weebill	<u>Smicrornis brevirostris</u>
10+ Yellow-tailed Thornbill	<u>Acanthiza chrysorrhoa</u>
1 x Brown Flycatcher	<u>Microeca leucophaea</u>
3 x Red-capped Robin	<u>Petroica goodenovii</u>
1 x Grey Fantail	<u>Rhipidura fuliginosa</u> (on top of hill)
1 x Willie Wagtail	<u>Rhipidura leucophrys</u>

3 x Crested Bell-bird	<u>Oreoica guttaralis</u> (several other males calling)
3 x Black-capped Sittella	<u>Neositta pileata</u>
1 x Brown Honeyeater	<u>Lichmera indistincta</u>
1 x White-eared Honeyeater	<u>Meliphaga leucotis</u>
5 x Singing Honeyeater	<u>Meliphaga virescens</u>
2 x Yellow-throated Miner	<u>Manorina flavigula</u>
9 x Black-faced Woodswallow	<u>Artamis cinereus</u>

MAMMALS - Noted on Survey

1 x Australian Freetail Bat	<u>Tadarida australis</u> (heard at night)
2 x Euro	<u>Macropus robustus</u>
3 x Rock Wallaby	<u>Petrogale lateralis</u>
Rabbits	some signs but none observed.

MAMMALS - Previously recorded on Reserve:

Rabbits - plentiful

Foxes - limited numbers

Feral cats - limited numbers

Rock Wallaby - Petrogale lateralis - ca. 32.

Euros - Macropus robustus - ca. 15.

Grey Kangaroo - Macropus fuliginosus - ca. 6.

Echidna - Tachyglossus aculeatus - diggings common on reserve.

REPTILES - Previously recordedRemarks and Summary

Though small, Nangeen Hill is one of the most significant Nature Reserves in an area where much of the original habitat has long since been turned into farmland. With mixed eucalyptus woodland, Casuarina dominated thicket and the rocky hill, it provides a variety of habitats suitable for birds, mammals and reptiles.

The reserve was originally created to protect a remnant population of the endangered Rock Wallaby, Petrogale lateralis. This species was once common in suitable habitat throughout much of inland Western Australia. Its range is now restricted to only a handful of localities.

The area is also important for other mammals. Euros - Marcopus robustus utilize the rocky habitat on the hill. It is of interest to note that this represents the

southernmost limits of their range. Grey Kangaroos - Macropus fuliginosus are often seen in the woodland areas. Echidnas - Tachyglossus aculeatus have also been recorded. No small mammal trapping programme has been carried out on the reserve, but small rodents and possibly Dasyurids could be expected to occur.

Being isolated the reserve no doubt provides shelter for migratory birds while the dense Casuarina cover and mature woodland are excellent breeding areas for the resident species. The uncommon White-eared Honeyeater has been recorded on the reserve.

Management of the area has largely centred around the needs of the Rock Wallabies. An excellent firebreak system has been put in around the entire reserve, which has not been burnt for a considerable period of time. There is a project underway to fence off the area with a view to preventing unauthorized access by trailbike riders. Introduced fauna, namely rabbits, foxes and feral cats pose a potential threat to the Rock Wallabies, and the research team has therefore adopted an active control policy on these species.