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PROVISIONAL REPORT
BRUCE ROCK SHIRE NATURE RESERVES

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Department of Fisheries & Wildlife
W.A. Wildlife Research Centre

PROVISIONAL REPORT ON 13 NATURE RESERVES IN BRUCE ROCK SHIRE

Introduction:

Between September 26th and October 9th 1979 an exploratory trip was made to the Bruce Rock Shire nature reserves. The reasons for this visit were as follows:-

1. To become familiar with the locations of every nature reserve in the Bruce Rock Shire;
2. To examine briefly the flora and fauna on those reserves not already surveyed.
3. To establish the present condition of each reserve with regard to potential fire danger, human uses, rubbishing, etc.
4. To demonstrate a departmental interest in the areas concerned.

This initial report follows on from the unpublished B.G. Muir Report (1978) entitled "Some Nature Reserves of the Bruce Rock Shire", and covers those areas not included in the above work. It represents only a brief period of time spent in each reserve and as such the observations are of a superficial nature. Weather conditions throughout the tour of inspection were fair to poor, with strong winds on most days hampering bird observations. Apart from some isolated patches of drizzle there was no rainfall.

The reserves can readily be placed in three separate categories; (a) those dominated by salt marsh samphire, (b) those reserves characterised by some form of woodland or shrub association, and (c) those dominated by granite rock hills and outcrops. They were all covered on foot, and by vehicle where tracks permitted. Field notes were made of the basic plant formations within the reserves and this information has been transposed to the diagramatic maps drawn up for each area. The text is augmented with habitat photographs taken on location, while sample specimens of the most abundant plant species were collected for verification in the W.A.W.R.C.

More detailed notes were made for the fauna encountered within the reserves. Where birds are concerned numbers may be misleading as they usually represent the sightings from only a single visit. As such they should be taken only as a general indication of what might be expected on more detailed examination. Time did not allow for a small mammal trapping program and this is an area where a concerted effort in the future may prove very rewarding. Several of the localities looked promising. Cool temperatures no doubt kept reptile movement to a minimum. However, four specimens were collected and are listed under their respective localities.

Of the thirteen reserves examined, four cover areas of only 2 - 5 hectares and as such are too small to be of much real value. Six of them are less than 100 ha. The largest reserve visited was Mokami Springs with a total area

of 480.9081 ha, though much of this is salt flats. Owing to their scattered distribution it is likely they are representative of the main vegetation types which were prevalent before the start of large scale clearing for wheat and sheep farming. The larger reserves provide cover for what native fauna still survives plus nesting and feeding areas for resident and migratory birds.

Several of the reserves are now under increasing human pressure especially Kokerbin Hill which is used as a recreational site by the local inhabitants. Rubbish dumping is also prevalent in many reserves particularly where major roads run adjacent to or through them.

The reserves visited are listed below:-

<u>Reserve No.</u>	<u>Area</u> (in hectares)	<u>Name</u> (if any)
11038	31.2620	} Kwolyin Hill
11046	29.2845	
11043	90.2449	Kokerbin Hill
14520	2.0234	
15199	2.0234	
16265	15.3781	Kumminin
17824	4.0823	
A 22261	369.8599	Belka
A 23187	176.4429	Nangeen Hill
23637	3.2375	
23686	480.9081	Mokami Springs
24097	12.1406	
35002	49.4728	Yilgerin Rock

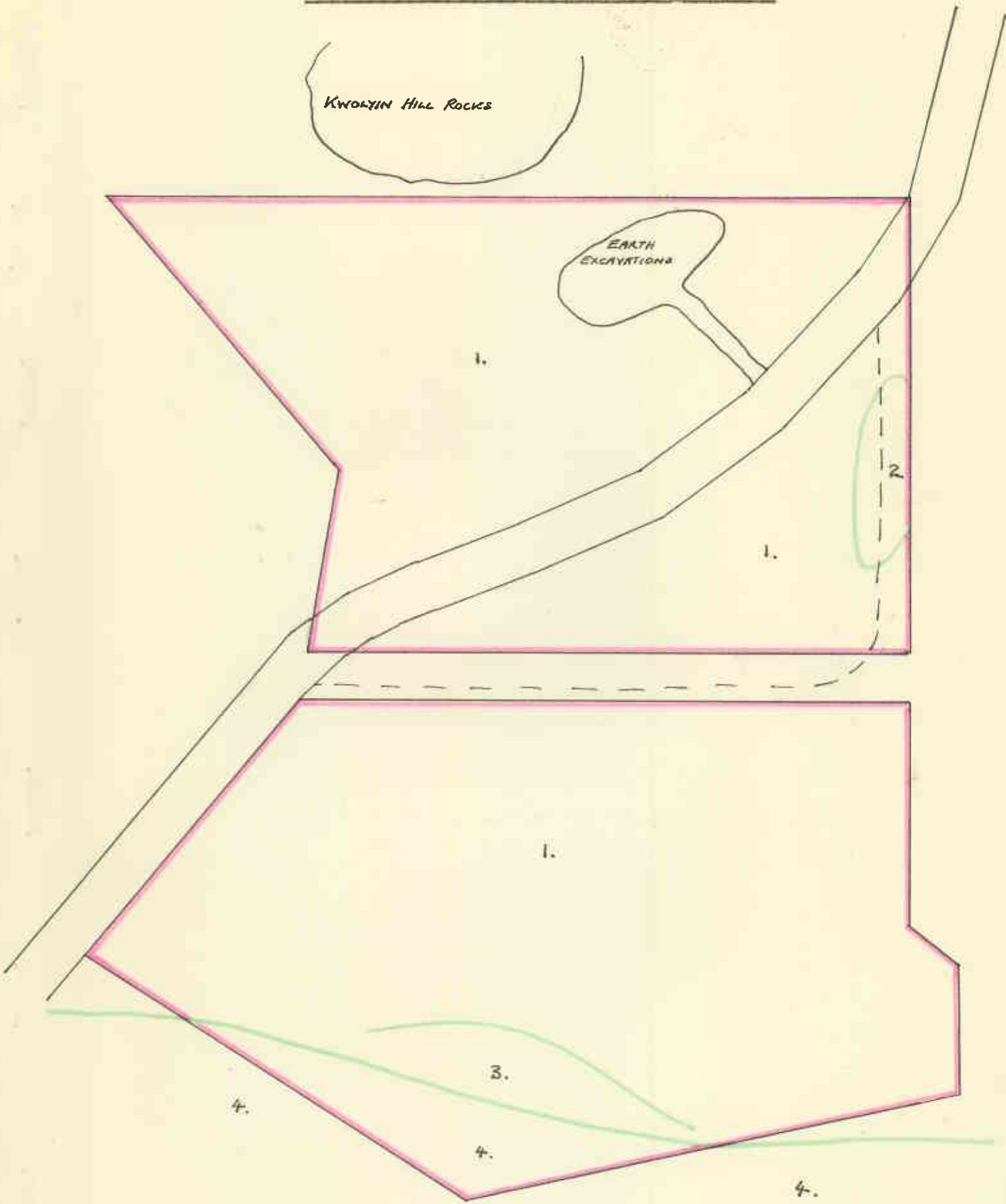
Note:

Thanks are due to Dr S.D. Hopper and Mr C.J. Robinson of the West Australian Wildlife Research Centre for their help in identifying plant specimens collected in the field. However, these identifications must be considered as provisional until the W.A. Herbarium has had time to compare them with material housed in their extensive collections.

Mr J.K. Rolfe and Mr W.K. Youngson identified the reptile and rodent specimens.

Fig. 1

KWOLYIN HILL - RESERVE 11038 & 11046



- Area 1. Scattered E. loxophleba over degenerate A. acuminata
- 2. Casuarina scrub.
- 3. Scattered E. loxophleba over open mixed scrub.
- 4. Samphire flats.

10 CHAINS

--- TRACKS

KWOLYIN HILL RESERVES No. 11038 AND No. 11046

Location: Ca 21 miles due west of Bruce Rock Townsite and shown on lithograph 4/80 - B2.

Background: Originally gazetted on February 28th 1908 for the purpose of "Water", these reserves were requested as rock wallaby habitat. On April 18th 1969 they were reclassified for Conservation of Flora and Fauna and vested in the West Australian Wildlife Authority as one of the proposed 'Granite Rock Reserves'. However, upon inspection it was found that the reserves did not cover any of the Kwolyin Hill granite rock habitat suitable for rock wallabies. Subsequent attempts to gain possession of the granite areas were not successful.

Physical Characteristics:

Taken together these two reserves are very roughly rectangular except for a large bite out of the western side and the loss of the south west corner. No. 11038 has an area of 31.2620 ha. and No. 11046 an area of 29.2845 ha. They have a common boundary which runs from east to west. A main road cuts diagonally through No. 11046 from the north east to the south west corner. Reserve No. 11038 borders to the south with the much larger Reserve No. 24505 which has predominantly salt flat vegetation. The remaining borders adjoin farmland with the Kwolyin granite hill to the north. The land slopes gently from the base of Kwolyin Hill in the north to the salt flats to the south. The soil is light coloured and sandy.

Vegetation:

The bulk of the area is covered by an association of widely scattered Eucalyptus loxophleba over degenerate Acacia acuminata and A. lasiocalyx, with little ground cover except grasses. Along the north east side of Reserve 11046 is a small area of Casuarina campestris scrub. There are salt water flats (samphire - Arthrocnemum spp.) along the southern boundary of Reserve 11038. Several shrubs were recorded along the samphire margins including Acacias, Hakeas, Melaleucas and Santalum acuminatum. The grasses Danthonia setaceae, Avena fatua and the Everlasting Helipterum manglesii were also recorded for the area.

Human Usage:

There is some beer-bottle litter, and also a pile of 30⁺ decaying sheep carcasses in the north east section. Two empty 12 bore shotgun shells were found which suggests that at some time hunters may have been using the reserve. There are signs of camp fires along the roadside.

Also, near the base of Kwolyin Hill and just inside the reserve there is an area of considerable disturbance where earth excavations, presumably for road building purposes have been in progress.

Fire History:

No recent sign of fire. There are a fair number of dead and fallen trees and branches, mainly Acacia acuminata, which with seasonal grasses could hold a fire.

FAUNA

Mammals: Rabbits - common. Several seen on reserve.

Euro - Macropus Robustus. One adult seen.

Birds:

1 x Brown Falcon	- <u>Falco berigora</u>
4 x Port Lincoln Parrot	- <u>Barnardius zonarius</u>
1 x Horsfield Bronze Cuckoo	- <u>Chrysococcyx Basalis</u>
12 Welcome Swallow	- <u>Hirundo neoxena</u>
1 x Black-faced Cuckoo-Shrike	- <u>Coracina novaehollandiae</u>
1 x White-winged Triller	- <u>Lalage sueurii</u>
4 x White-browed Babbler	- <u>Pomatostomus superciliosus</u>
2 x White-tailed Warbler	- <u>Gerygone fusca</u>
2 x Brown Flycatcher	- <u>Microeca leucophaea</u>
1 x Red-capped Robin	- <u>Petroica goodenovii</u>
2 x Willie Wagtail	- <u>Rhipidura Leucophrys</u>
1 x Western Shrike Thrush-	- <u>Colluricincla harmonica rufiventris</u>
3 x Black-faced Wood-Swallow	- <u>Artamus cinereus</u>
2 x Australian Raven	- <u>Corvus coronoides</u>

Remarks & Summary:

This becomes a more important area when taken together with Reserve 30969. It supports several species of resident birds as well as acting as a resting area for migratory species. It also provides suitable habitat for a small population of Euros which according to local farmers move back and forth from here to Kokerbin Hill. Enquiries should be made about the earth excavations on the edge of the reserve.

Kwolyin Hill - Reserve 11038 & 11046



Samphire flats along the S.W. boundary.



View into Reserve 11038 from S.W. boundary.
Note samphire in foreground with scattered
E. loxophleba over A. acuminata behind.

Kwolyin Hill - Reserve 11038 & 11046



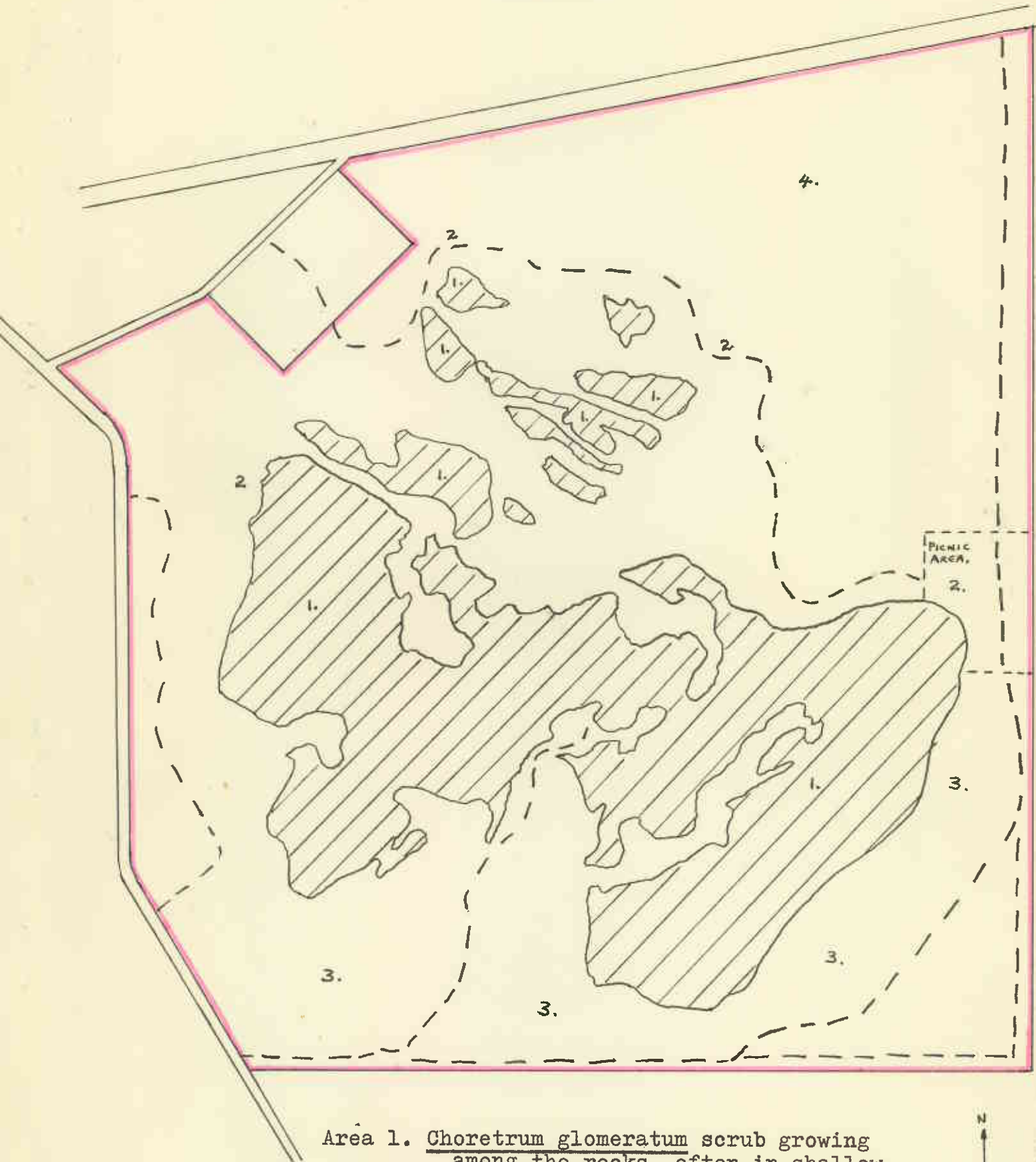
Earth excavations at base of Kwolyin Rock



Open grasses with A. acuminata behind.

Fig. 2

KOKERBIN HILL - RESERVE 11043



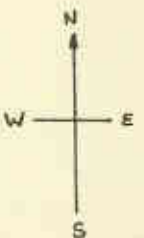
- Area 1. Choretrum glomeratum scrub growing among the rocks, often in shallow pockets of soil.
- 2. Stands of Casuarina huegeliana.
- 3. Low Casuarina campestris dominated scrub.
- 4. Scattered Eucalyptus sp. over mixed open scrub.



GRANITE ROCK

TRACKS

10 CHAINS



KOKERBIN HILL - Reserve No. 11043

Location: Ca 26 miles due west of Bruce Rock townsite and located on lithograph 4/80 AB2.

Background: This reserve was originally gazetted on February 28th 1908 for the purpose of water. On December 6th 1912 it's area was decreased to 90.2449 ha. On February 26th 1968 it's classification was changed to "Water and Conservation of Fauna" in an attempt to protect a small population of resident rock wallabies. This colony has subsequently disappeared, probably due to increased human disturbance in the area. The reserve is not vested.

Physical Characteristics:

The Kokerbin Hill Reserve is roughly square, though missing the north west and south west corners, and covers an area of 90.2449 ha. It is bordered to the north by the Kokerbin Road. To the south, east and west it is surrounded by farmland. The reserve itself lies in open, slightly undulating country under huge acreages of wheat and sheep pastures. It is dominated by the granite rock hill which takes up ca. 70% of the reserve. At the base of the hill the land slopes gently to the level areas around the perimeter. On the eastern side a 1 ha. block has been excised for the purpose of picnic site and is controlled by the local Shire Council. In the north west section is the small flora reserve No. 14520.

Vegetation:

The vegetation can be roughly separated into four categories.

- (1) The scrub growing on and around the rocks, this dominated by the common Sour Bush - Choretrum glomeratum - to ca 3 metres.
- (2) The tall stands of Casuarina huegeliana to 12 metres growing in scattered locations around the base of the rocks.
- (3) The low Casuarina campestris dominated scrub, often growing in association with Leptospermum erubescens. This generally on the level ground away from the base of the hill and very dense in places.
- (4) An area of scattered Eucalyptus over mixed scrub shown on Fig. 2, area 4. Examples of Acacia lasiocalyx were widely scattered throughout.

Human Usage:

There is no doubt that human pressure at Kokerbin Hill is far greater than at any other reserve in the Shire. The Bruce Rock Council has erected half a dozen picnic tables with barbeque facilities in the excised picnic area on the east side of the reserve (see Fig. 2). It has also built permanent public toilet facilities on the site. A network of bulldozed tracks gives access for 2-wheel drive vehicles to virtually every part of the reserve, and the net result is a vast increase in the number of local people who use the area for recreation. On the weekend 6th & 7th October 1979 ca 45 vehicles entered the reserve, carrying an estimated 225 tourists.

The area is generally clear of rubbish apart from smashed beer bottles on top of the rocks and garbage litter in the vicinity of the camp site. It is, however, disturbing to note the number of camp-fire signs about the reserve, and it is only a matter of time before the place goes up in smoke if this practice is allowed to continue. On the granite rocks there is some damage to the exfoliating surface sheets which provide important shelter for reptiles. Another disturbing aspect arising from so many people picnicing in so small an area is the destruction of vegetation for fire wood. There are signs of tree cutting for this purpose.

In the north west corner there is an old well not far from an old disused sandpit which now contains regenerating acacias.

Fire History:

There is no recent sign of fire but with the added human factor there is now some danger. However, the network of tracks should act as satisfactory fire breaks.

FAUNA

Mammals:

Rabbits - obviously plentiful in the past, but now uncommon since poison was put down.

Echidna - Tachyglossus aculeatus - one individual seen in the southern section. Also signs of fresh digging.

Australian free-tail bat - Tadarida australis - heard squeaking overhead at night.

Birds:

1 x Brown Goshawk	- <u>Accipiter fasciatus</u>
1 x Little Eagle (pale phase)	- <u>Haliaeetus morphnoides</u>
5 x Port Lincoln Parrot	- <u>Barnardius zonarius</u>
3 x Mulga Parrot	- <u>Psephotus varius</u>
1 x Horsfield Bronze Cuckoo	- <u>Chrysococcyx basalis</u>
2 x Tawny Frogmouth	- <u>Podargus strigoides</u>
1 x Owlet Nightjar	- <u>Aegotheles cristatus</u>
2 x Tree Martin	- <u>Petrochelidon nigricans</u>
6 x White browed Babbler	- <u>Pomatostomus superciliosus</u>
2 x White-tailed Warbler	- <u>Gerygone fusca</u>
14 x Yellow-tailed Thornbill	- <u>Acanthiza chrysorrhoa</u>
3 x Chestnut-tailed Thornbill	- <u>Acanthiza uropygialis</u>
1 x Redthroat	- <u>Pyrholaemus brunneus</u>
9 x Red-capped Robin	- <u>Petroica goodenovii</u>
1 x Grey Fantail	- <u>Rhipidura fuliginosa</u>
2 x Willie Wagtail	- <u>Rhipidura leucophrys</u>
4 x Rufous Whistler	- <u>Pachycephala rufiventris</u>
1 x Striated Pardalote	- <u>Pardalotus substriatus</u>
4 x Western silvereye	- <u>Zosterops lateralis gouldi</u>
4 x Brown Honeyeater	- <u>Lichmera indistincta</u>
10 x Singing Honeyeater	- <u>Meliphaga virescens</u>
2 x Grey Butcher-bird	- <u>Cracticus torquatus</u>
4 x Australian Raven	- <u>Corvus coronoides</u>

Breeding Records:

Yellow tailed Thornbill (a) pair building fresh nest

(b) pair lining old nest in
preparation for second brood.

Red-capped Robin - female feeding 3 young in nest near picnic site.

Reptiles:

Burton's Snake-Lizard	- <u>Lialis burtonis</u>
Bobtail Lizard	- <u>Teliqua rugosa</u>

Remarks & Summary:

Kokerbin Hill was originally gazetted for the purpose of Water. In an attempt to save a dwindling population of resident Rock Wallabies it was reclassified as a Flora and Fauna Reserve. Unfortunately the Bruce Rock Shire Council wished to utilise the area for recreational purposes and constructed numerous roads on the reserve. This interference probably led to the disappearance of the Rock Wallabies.

The area does, however, still provide excellent habitat for birds and mammals and should be actively protected against further damage. This may prove difficult if not impossible without frequent ranger inspections.

Note:

In view of the number of people who used the reserve during my visit, I can to some extent understand the Shire's desire to utilise the site as a recreational area.

Kokerbin Hill - Reserve 11043



View of Kokerbin Hill from the north east.



Casuarina dominated scrub near S.E. corner of reserve.

Kokerbin Hill - Reserve 11043



Choretrum glomeratum growing on the rocks,
often in shallow pockets of soil.



Echidna - Tachyglossus aculeatus - photographed
in the southern section of the reserve.

Kokerbin Hill - Reserve 11043

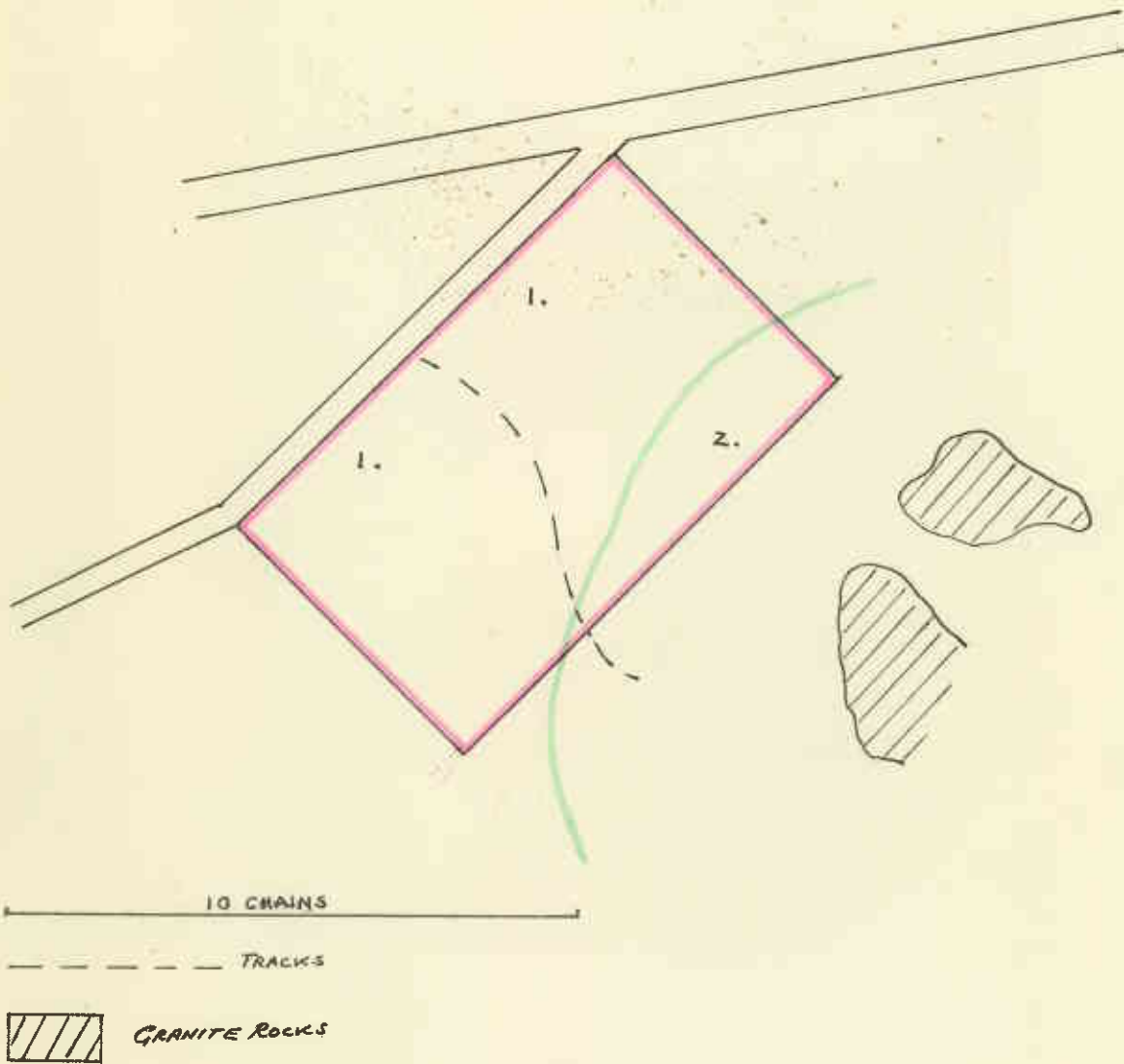


Pair of Frogmouths seen near picnic-site area.



Fig. 3

RESERVE 14520



Area 1. Mixed Casuarina huegeliana and Acacia lasiocalyx

2. Choretrum glomeratum and Casuarina campestris in association near the rocks

RESERVE 14520

Location:

Ca 26 miles due east of Bruce Rock townsite, and situated on the N.W. corner of Reserve 11043 - Kokerbin Hill - located on Lithograph 4/80 AB2.

Background:

This reserve was originally gazetted on 6th December 1912 as a school site. The Education Department intimated that they had no further interest in the reserve and on 6th March 1964 its purpose was changed to Conservation of Flora.

Physical Characteristics:

The area is a small rectangle covering an area of 2.0234 ha. It is situated on the inside of the N.W. boundary line of Kokerbin Hill Reserve, and so in terms of management they can virtually be lumped together. Reserve 14520 slopes gently from the base of the hill before levelling out along the N.W. side. One of the Kokerbin Hill tourist tracks passes through this reserve.

Vegetation:

Broadly speaking the most common plants recorded for Kokerbin Hill also occur in this reserve. Those species noted include Casuarina huegeliana, Casuarina campestris, Leptospermum erubescens and Acacia lasiocalyx.

Human Usage:

Nothing specific apart from vehicle use of the tourist track.

Fire History:

Nothing recent.

FAUNA

Mammals:

old signs of rabbits.

Birds:

1 x Grey Butcherbird - Cracticus torquatus

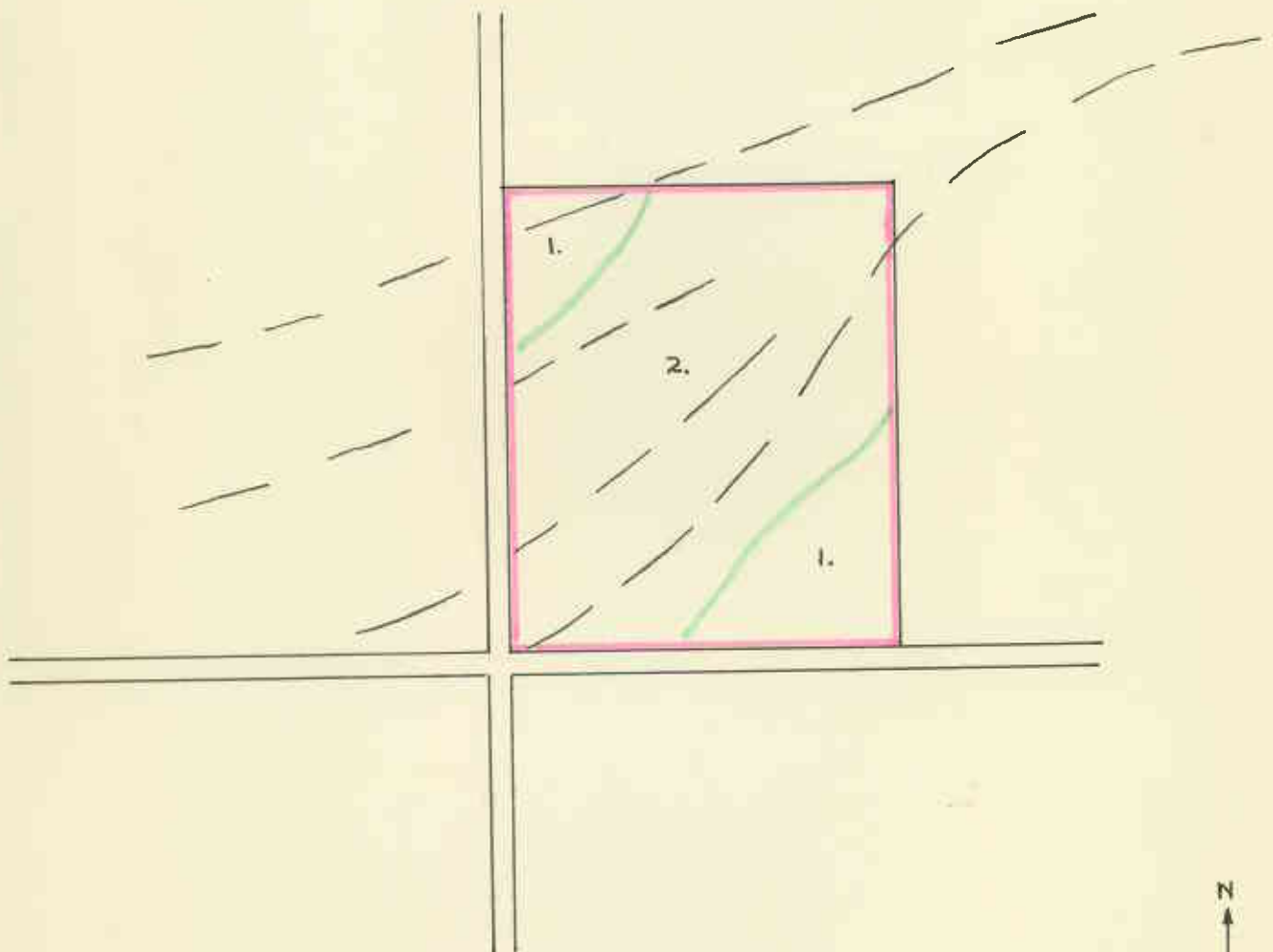
3 x Yellow-tailed Thornbill - Acanthiza chrysorrhoa

Remarks and Summary:

As this reserve is almost surrounded by Kokerbin Hill Reserve No. 11043 it follows that they should be treated as one unit. By itself this reserve would be too small to be of much value. Therefore the summary for Reserve 11043 also applies to Reserve 14520.

Fig. 4

RESERVE 15199



Area 1. Open stands of E. loxophleba, E. salubris and E. salmonophloia over very sparse undergrowth.

2. Disturbed area. Degenerate, sparse shrubs and grasses.

10 CHAINS

— — — — — = EARTH RIDGES

RESERVE NO. 15199

Location:

Ca 14.5 miles north east of Bruce Rock townsite. It lies at the crossroads between MUNTADGIN and PERKINS ROAD and can be located on Lithograph 5/80 Bl.

Background:

Originally set aside on 5th June 1914 as a school site. At the suggestion of the Shire of Bruce Rock the purpose was changed to Conservation of Flora on 14th December 1962. The reserve is unvested.

Physical Characteristics:

This is a small rectangular reserve with an area of 2.023 ha. The longer sides lie on a north south axis. It is bordered to the west and south by gravel roads and to the east and north by wheat fields. The area was originally almost level before it was badly marred by the construction of two colossal drainage ridges which lead into the reserve from the north east.

Vegetation:

The area contains two small stands of mature eucalyptus trees, one stand in the north west and one in the south east corners respectively. These include examples of E. loxophleba, E. salubris and E. salmonophloia. There is little undercover other than some sparse shrubs and grasses - those species identified were Acacia merallii, A. filifolia and santalum

acuminatum.

The remaining portion of the reserve has been badly disturbed and contains for the most part degenerate sparse shrubs, abundant grasses and a few scraggly E. loxophleba saplings.

Human Usage

The construction of earth drainage ridges through the reserve has badly marred this area. Trees and shrubs have been bulldozed in the process. This action has proved disastrous for so small an area. Some wire netting has been dumped and there are signs that sheep have been on the reserve in the past.

Fire History:

Nothing recent, and farmers make adequate fire breaks.

FAUNA

Mammals - No records.

Birds

2 x Nankeen Kestrel	- <u>Falco Cenchroides</u>
2 x Galah	- <u>Eolophus roseicapillus</u>
3 x Port Lincoln Parrot	- <u>Barnardius zonarius</u>
1 x Tree Martin	- <u>Petrochelidon nigricans</u>
2 x Magpie-lark	- <u>Grallina cyanoleuca</u>
4 x Yellow-throated Miner	- <u>Manorina flavigula</u>

REMARKS & SUMMARY

This is a reserve of little value. It is too small and has been hadly damaged. However, being isolated it acts as a refuge for some birds, and Galahs were noted nesting in a hollow eucalyptus.

Reserve 15199



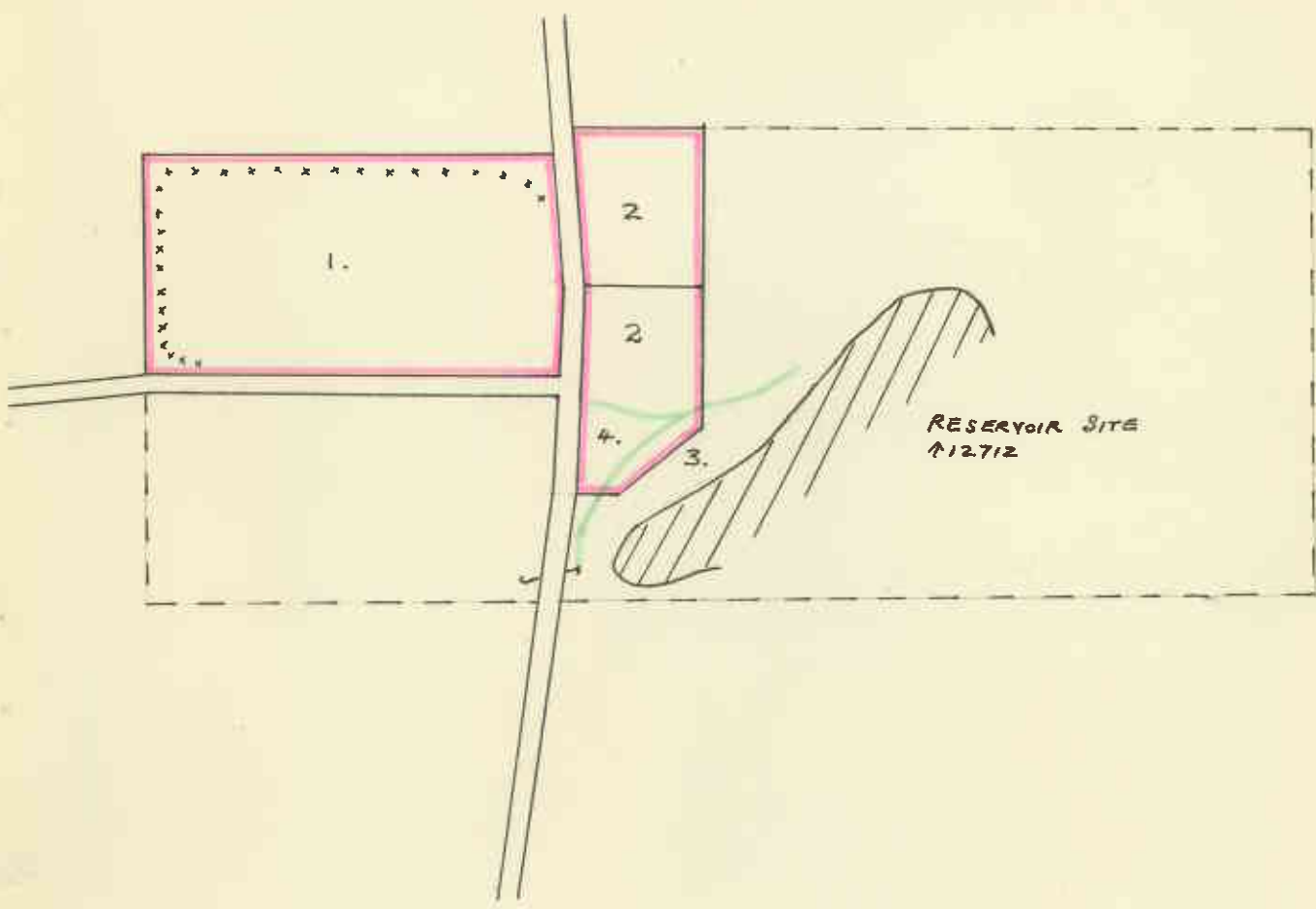
Freshly constructed drainage ridges on reserve. Note fallen timber.




Drainage ridge with Eucalyptus stand in S.E. corner.

Fig 5

KUMMININ - RESERVE 16265



x x x x x - FRESH FIRE BREAK

 - ROCKY AREA.

Area 1. Open E. loxophleba and E. salmonophloia woodland with very open understorey.

2. Predominantly E. loxophleba woodland.

3. Acacia lasiocalyx.

4. Cleared area. Open grasses.

10 CHAINS

KUMMININ RESERVE - NO. 16265

Location:

Ca 13 miles S.S.E. of Bruce Rock townsite, on the Kumminin Road, and located on lithograph 5/80 A4.

Background:

Originally gazetted on 14th January 1916 as a school site. The purpose of the reserve was changed from 'school site' to 'Flora and Fauna' on 22nd April 1955, and the reserve was further amended to include Avon Location 20498 on 31st August 1956. On 15th June 1962 the area was again increased to include Location 14242 and the reserve now stands at 15.3781 ha. It is controlled by the Bruce Rock Road Board.

Physical Characteristics:

The reserve is basically flat with only very minor variations in elevation. It is shaped roughly like a capital "T" with the Kumminin Road separating the two strokes of the letter. The north and west sides of the reserve border on farmland, and the south and east with a Water Reservoir Reserve which contains a sizeable area of granite rock and most of its original vegetation. A shallow, seasonal watercourse starts near the rocky outcrop and runs close to the western boundary of the reserve.

Vegetation:

The vegetation can be separated into four categories as shown on the diagrammatic map, Fig. 5. The section of

the reserve which lies west of the Kumminin Road supports open Eucalyptus loxophleba and E. salmonophloia woodland with almost no ground cover. To the east of the road the reserve supports denser E. loxophleba woodland with more shrub undercover. To the south east is a section of cleared grassland bordered by a stand of Acacia lasiocalyx at the base of a granite outcrop. This granite rock lies just outside the reserve.

Human Usage:

There is the framework of an old camping shelter but apart from this very little sign of rubbish. A dilapidated metal shed sits right on the eastern edge, though it may very well be just outside the reserve.

Local farmers have surrounded the area with excellent firebreaks. Strangely enough a fresh break has been pushed through on the reserve itself west of the Kumminin Road; see map, Fig 5.

Fire History:

No recent signs, and due to relatively open understorey little danger. Surrounding farmers have taken very adequate precautions.

FAUNA

Mammals:

5 x Grey Kangaroo - Macropus fuliginosus (seen close to
water reservoir site)
(2 adults + 3 sub-adults)

Birds:

2 x Wedge-tailed Eagle	- <u>Aquila audax</u> (flying over)
1 x Brown Falcon	- <u>Falco berigora</u>
3 x Crested Pigeon	- <u>Ocyphaps lophotes</u>
2 x Port Lincoln Parrot	- <u>Barnardius zonarius</u>
15 x Purple-crowned Lorikeet	- <u>Glossopsitta porphyrocephala</u>
2 x Tree Martin	- <u>Petrochelidon nigricans</u>
1 x Willie Wagtail	- <u>Rhipidura leucophrys</u>
4 x Singing Honeyeater	- <u>Meliphaga virescens</u>
7 x Yellow-plumed honeyeater	- <u>Meliphaga ornata</u>
5 x Yellow-throated Miner	- <u>Manorina flavigula</u>
1 x Red wattle-bird	- <u>Anthochaera carunculata</u>
1 x Pied Butcher-bird	- <u>Cracticul nigrogularis</u> (imm.)
2 x Little Crow	- <u>Corvus bennetti</u>

Remarks & Summary:

This is a relatively small reserve of only 15.3781 ha. Its value would be enormously increased by the inclusion of the neighbouring Water Reservoir Site No. 12712. This site is much more lush than Reserve 16265 due presumably to runoff from the adjoining granite outcrop. The birdlife is also far more abundant.

Note:

The purple-crowned lorikeets and the yellow-plumed honeyeaters were observed feeding on the blossoms of flowering Eucalyptus loxophleba.

Kumminin Reserve 16265



Eucalyptus woodland with very open
understorey on west side of road.



View from Kumminin Road into east side
of Reserve. Note E. loxophleba woodland

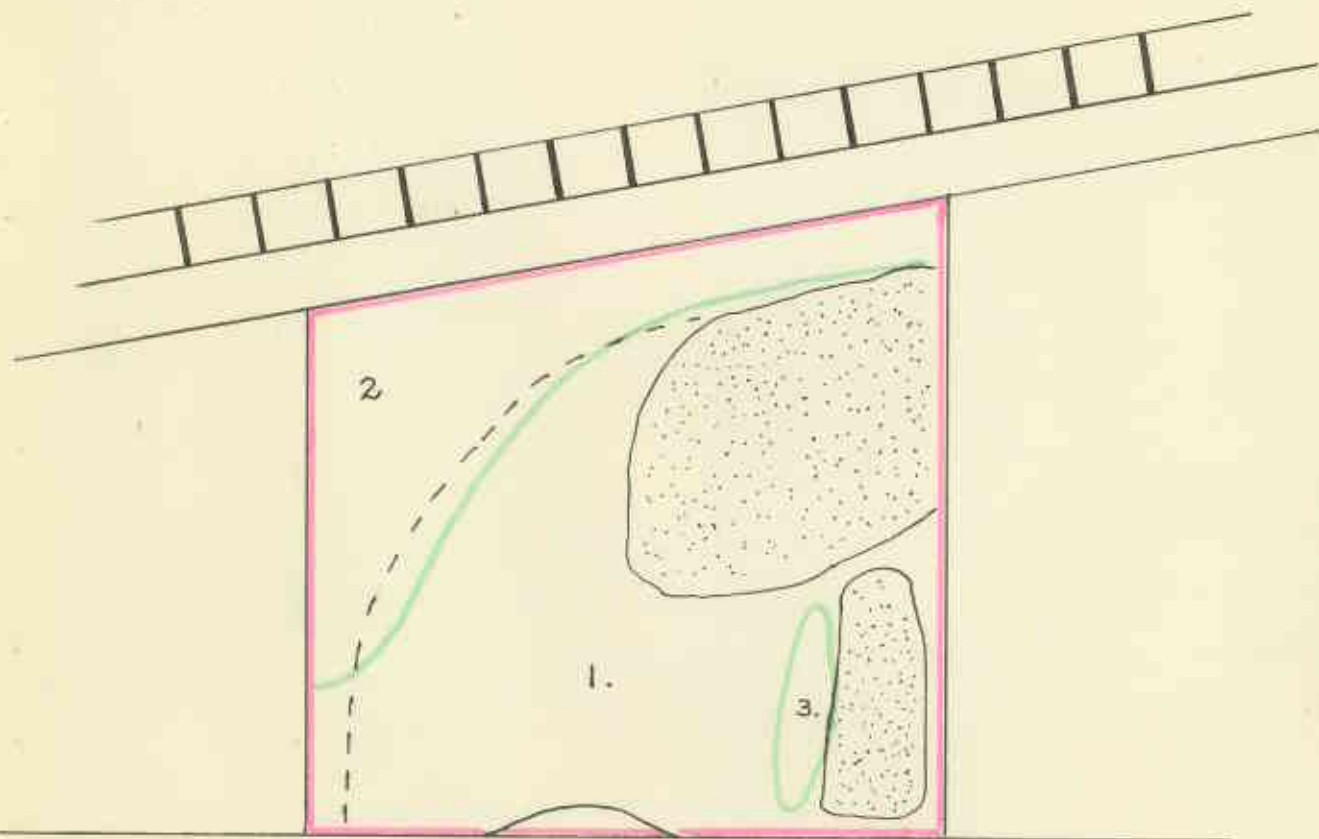
Kumminin Reserve 16265




Fresh fire-break constructed on reserve.

Fig. 6

RESERVE 17824



 - GRAVEL PITS

----- TRACKS

- Area 1. Casuarina dominated scrub.
- 2. Cleared, predominantly grassland.
- 3. Mallee form Eucalyptus loxophleba.



10 CHAINS

RESERVE NO. 17824

Location:

Ca 18 miles W.S.W. of Bruce Rock townsite and ca 0.5 miles due east of Shackleton Station; located on Lithograph 4/80 C2,3.

Background:

Originally gazetted on 21st October 1921 for recreation. This reserve was then changed on 17th March 1957 to the purpose of Conservation of Flora, and vested in the Bruce Rock Road Board.

Physical Characteristics:

This is a very small reserve and covers an area of only 4.0823 ha. It is roughly square, bordered to the south by the Quairading road and to the north by the railway line. It slopes very gently towards the north west. The soil is a mixture of laterite gravel and sandy soils. Much of the area has been badly damaged by gravel pit workings which take up some 35% of the total reserve.

Vegetation:

The vegetation can be split into three separate associations as shown on the diagrammatic map for the area (Fig. 6):-

Area (1) Casuarina campestris dominated scrub to 2.5 metres.

This forms the main component of the reserve's vegetation.

Area (2) The cleared part characterised by grassland with a few scattered shrubs mainly in the north west section.

Area (3) A small group of mallee form Eucalyptus loxophleba.

Examples of Verticordia chrysantha, Grevillea paradoxa and Acacia lasiocalyx were noted growing along the edge of the Casuarina scrub. On the gravel pits little or no vegetation grew except for weeds and grasses.

Human Usage:

The entire reserve has been littered with drums, bottles, paper, rusty tins and pieces of metal, and some 35% of the area has been turned into gravel pit workings. The roadworks have also dumped several truck loads of blue metal on the reserve, and piles of old building rubble have added to the general mess.

Fire History:

No recent sign of fire. The area is too small and the bush too fragmented to present any great fire hazard.

FAUNA:

Mammals - signs of rabbits, but nothing fresh.

Birds + 2 x Singing honeyeater - Meliphaga virescens

1 x Laughing dove - Streptopelia senegalensis

1 x Willie Wagtail - Phipidura leucophrys

Remarks and Summary:

This reserve has been badly damaged by human misuse and rubbishing, and is beyond repair. It is too small to be of any real value but for lack of any alternative use might just as well retain its present status.

Reserve No. 17824



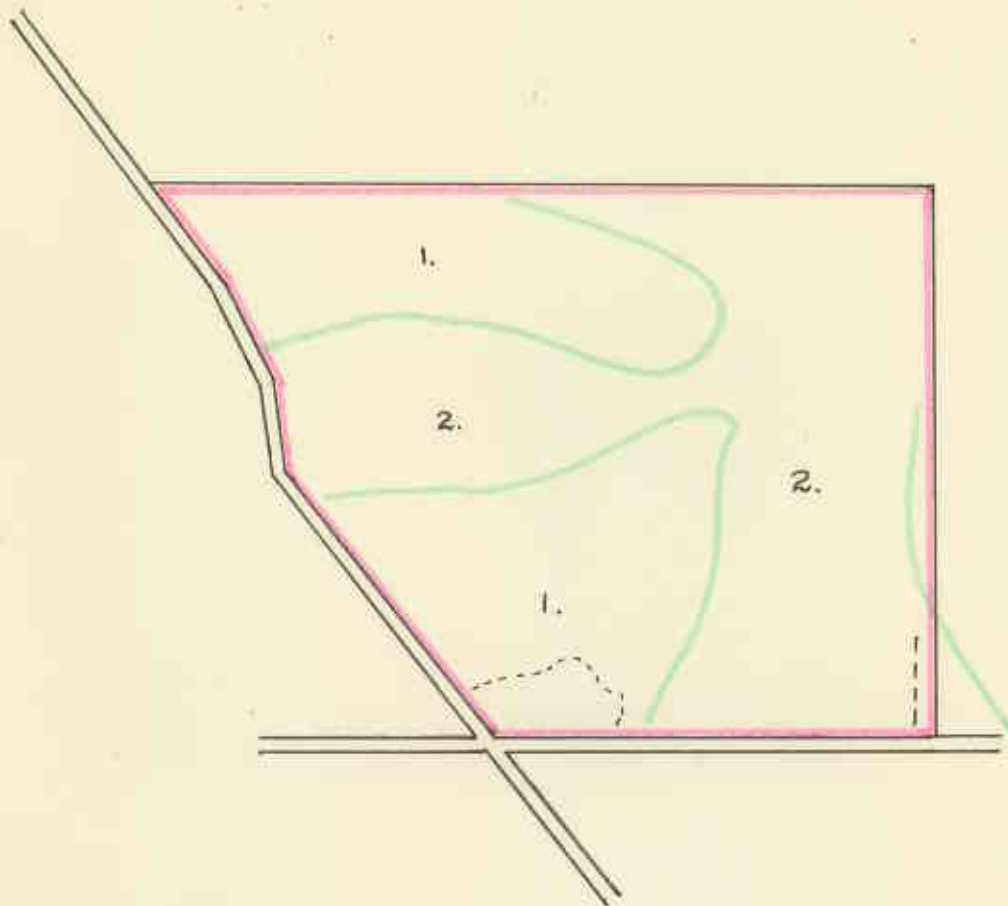
Casuarina scrub along roadside



Part of the gravel pit workings on the reserve. Note the pile of blue metal which has been dumped. Shackleton siding in the background.

Fig. 7

BELKA - RESERVE 'A' 22261



Area 1. Eucalyptus wandoo woodland over open Casuarina dominated scrub.

2. Mixed mallee form Eucalyptus spp. and Casuarina dominated scrub.



----- TRACKS

————— 1 MILE

BELKA : RESERVE NO. 'A' 22261

Location:

Ca 11 miles N.N.W. of Bruce Rock townsite and located on Lithographs 4/80 E1 and 25/80 E4.

Background:

This reserve was originally gazetted on 4th July 1941. The purpose was then changed on 5th October 1951 to Protection of Flora and Fauna and classified as a class 'A' Reserve. On 28th March 1958 the area was increased to its present size of 369.8599 ha.

Physical Characteristics:

Belka is a relatively unspoilt Reserve. It is basically flat and very roughly rectangular in shape. It covers an area of 369.8599 ha. To the south and west it is bordered by gravel roads, and to the north and east by farmland.

Vegetation:

The vegetation can be placed in three distinct associations.

- (a) Eucalyptus wandoo woodland over open understorey or sparse Casuarina scrub.
- (b) Casuarina campestris dominated scrub to ca 1.5 metres.
- (c) Association of mixed mallee form Eucalyptus with flowering Grevilleas and Hakeas.

The Eucalyptus woodland is located in two major zones in the south west and north west sections. Between these

two areas is the Casuarina dominated scrub which stretches across to the western side. In the south eastern corner is a most interesting area of mixed mallee Eucalyptus, associated with several species of Grevillea, Hakea, Verticordia and Dryandra. This scrub area is very dense in places and provides shelter from strong winds. It supports a large and varied population of bird species including several honeyeaters which were attracted to flowering Eucalyptus burracoppinensis. Other plant species recorded include Grevillea excelsior, Grevillea paradoxa, Verticordia chrysantha and a Grevillea sp. under revision.

Human Usage:

Very little sign of human usage and practically no rubbish on the reserve. There are two short vehicle tracks, one in the S.W. corner and one in the S.E. corner.

Fire History

No recent signs. Mr Brian McGillen, a neighbouring farmer who owns land along part of the eastern boundary, stated that there had been no fire on the reserve for over 15 years. However, the scrub/mallee is dense enough to hold a fire. Mr McGillen mentioned that as bush has begun to overgrow his fence line he would like to clear this and at the same time construct a break just inside the reserve. At present there are no breaks actually on the reserve.

FAUNA

Mammals - Rabbits - Some signs but apparently not particularly common.

Foxes - None recorded but Mr McGillen reports they are plentiful on the reserve.

Grey Kangaroo - Macropus fuliginosus - Apparently cross into Mr McGillen's wheat fields from the reserve.

Birds: (Locally abundant in the south east corner)

- | | |
|--|--|
| 10? x Purple-crowned Lorikeet | - <u>Glossopsitta porphyrocephala</u>
(flock flying over) |
| 3 x Galah | - <u>Eolophus roseicapillus</u> |
| 2 x Port Lincoln Parrot | - <u>Barnardius zonarius</u> |
| 4 x Tree Martin | - <u>Petrochelidon nigricans</u> |
| 2 x Weebill | - <u>Smicrornis brevirostris</u>
(feeding on flowering <u>Hakea</u>) |
| 3 x Yellow-tailed Thornbill | - <u>Acanthiza chrysorrhoa</u> |
| 1 x Western Shrike-Thrush | - <u>Colluricincla harmonica</u>
<u>rufiventris</u> |
| 4 x Western Silvereye | - <u>Zosterops lateralis gouldi</u> |
| 20 ⁺ x Brown Honeyeater | - <u>Lichmera indistincta</u> |
| 6 x Singing Honeyeater | - <u>Meliphaga virescens</u> |
| 2 x Australian Raven | - <u>Corvus coronoides</u> |
| 3 x Mallee Fowl
(Reported by Mr McGillen -
reserve in July 1979) | - <u>Leipoa ocellata</u>
- apparently seen on the |

Reptiles:

2 Bobtail lizards - Teliqua rugosa

Remarks and Summary:

This is an excellent reserve, both from the botanical and ornithological standpoint. It is relatively undisturbed and free from human rubbishing.

Belka - Reserve 'A' 22261



Photograph taken at S.E. corner showing Mallee/Casuarina dominated scrub. Note indistinct track which peters out after ca. $\frac{1}{2}$ km.



Eucalyptus wandoo woodland over casuarina in S.W. corner of reserve.

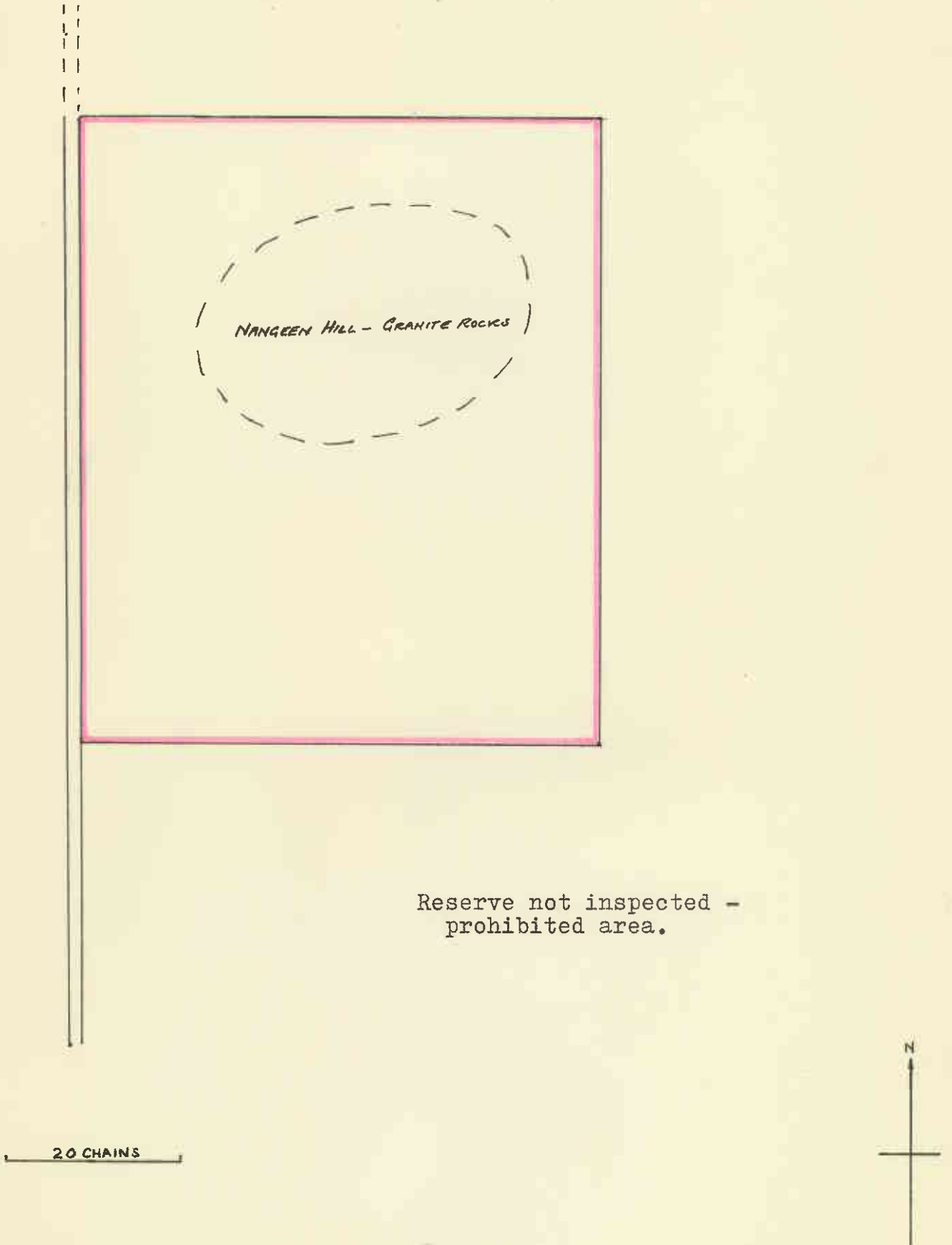
Belka - Reserve 'A' 22261



Grevillea excelsior in flower

Fig. 8

NANGEEN HILL - RESERVE 'A' 23187



Reserve not inspected -
prohibited area.

NANGEEN HILL NATURE RESERVE : NO. A 23187

Location:

Ca 27 miles west of Bruce Rock townsite and 3 miles N.N.W. of Kokerbin Hill. Located on Lithograph 4/80 AB1.2.

Background:

This reserve was gazetted on 16th September 1966 for the Conservation of Flora and Fauna. On the 18th December 1970 it was classified as a Prohibited Area in an attempt to shelter a local population of Rock Wallabies from human interference. On 28th December 1970 it was vested in the West Australian Wildlife Authority and on 11th March 1977 it was given 'A' class status. The name "Nangeen Hill Nature Reserve" was officially gazetted on 4th May 1979.

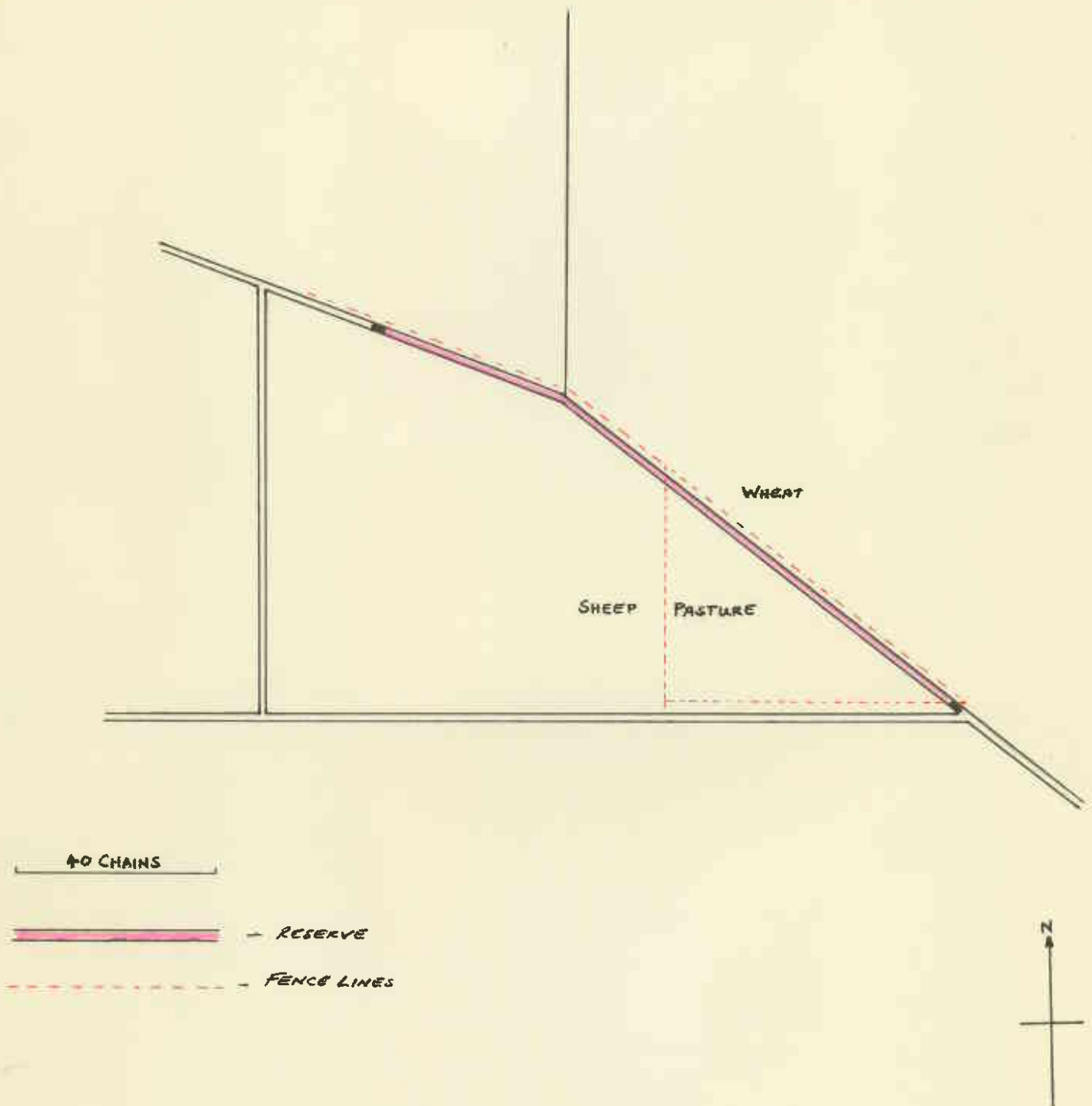
Physical Characteristics:

The reserve is rectangular with the longer axis running north and south. It is bordered to the west by the Pantapin Road, and is dominated by the rocky Nangeen Hill from which the reserve takes its name.

As Nangeen Hill Nature Reserve is classified as a Prohibited Area no attempt was made to carry out an inspection other than viewing from the Pantapin Road boundary.

Fig. 9

RESERVE 23637



Narrow belt of mature open
Eucalyptus woodland.
Understorey mainly cleared
for grazing.

RESERVE NO. 23637

Location:

Ca 2 miles east of Babakin Siding and located on Lithograph 344/80 El.

Background:

Originally a road reserve. On 21st November 1952 it was set aside as a Flora reserve and its area set at 3.2375 ha.

Physical Characteristics:

This narrow strip of land runs for ca 2 miles through undulating country adjacent to sheep pastures and wheat fields. Even though it is classified as a flora reserve the area has been fenced off and incorporated for pasture by the local farmers (see diagram showing fence lines). However, the reserve does contain some mature timber, though little or no understorey due to grazing. Note: No survey points were located for this reserve.

Vegetation:

The vegetation consists of mature mixed Eucalyptus woodland over grass. Near the middle of the reserve is an area of Casuarina scrub, but this is all that remains of the original understorey. The woodland is comprised mainly of E. loxophleba, E. salubris, E. salmonophloia and ? E. wandoo.

Human Usage:

Reserve utilised for grazing by local farmers.

Fire History:

None. Fire danger - nil.

FAUNA

Mammals - one rabbit seen.

Birds

2 x Magpie-lark	- <u>Grallina cyanoleuca</u>
1 x Willie Wagtail	- <u>Rhipidura leucophrys</u>
1 x Singing Honeyeater	- <u>Meliphaga virescens</u>
4 x Black-faced Wood-swallow	- <u>Artamus cinereus</u>
2 x Australian Magpie	- <u>Gymnorhina</u>
2 x Australian raven	- <u>Corvus coronoides</u>

Reptiles

Legless lizard - Delma fraseri (retrieved from Australian Magpie)

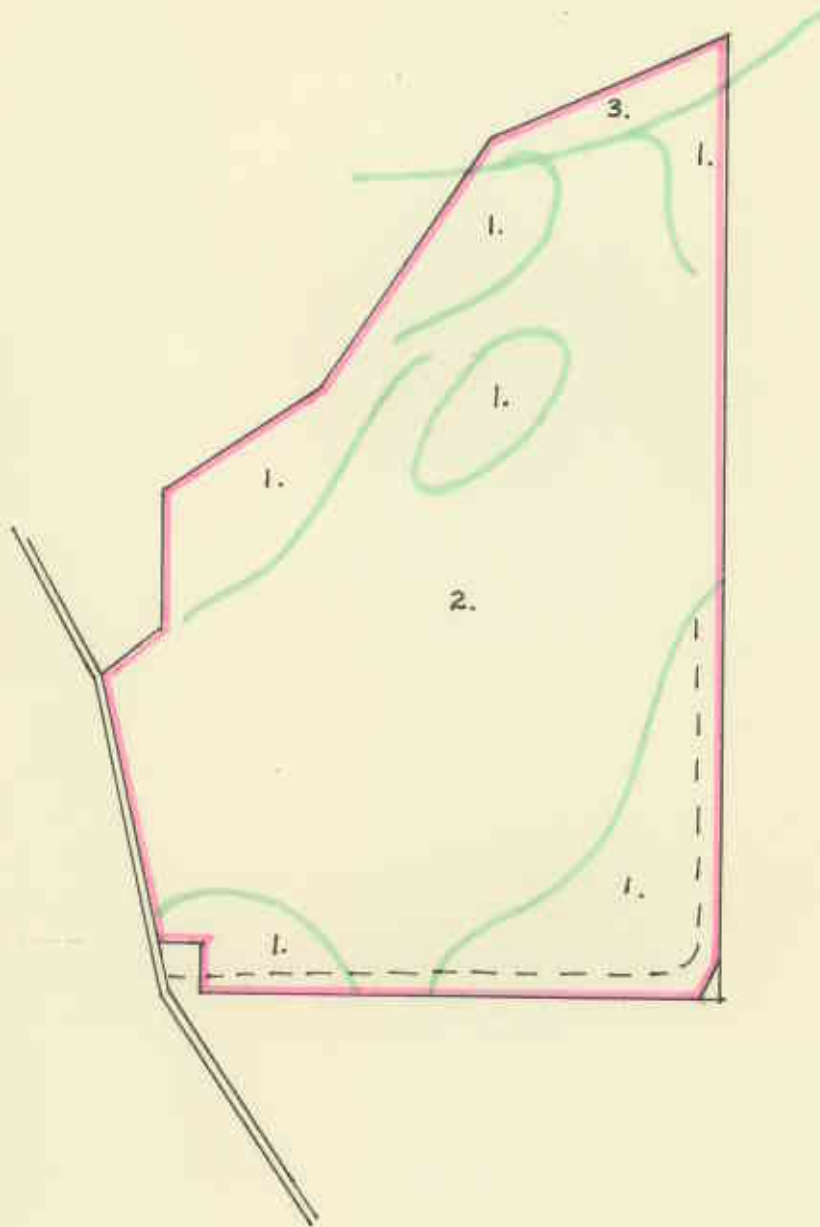
Remarks and Summary:

The only value in this reserve is the mature Eucalyptus woodland. Stock grazing has destroyed the natural understorey.



Mixed Eucalyptus woodland with no understorey due to stock grazing.

Fig. 10

MOKAMI SPRINGS - Reserve 23686

Area 1. Mixed Eucalyptus woodland over scattered shrub understorey.

2. Samphire flats and seasonal salt clay pans fringed by Melaleuca dominated scrub on elevated ground.

3. Cleared area. Grassland.

--- TRACKS.

1 MILE

MOKAMI SPRINGS : RESERVE NO. 23686

Location:

Ca 12.5 miles W.S.W. of Bruce Rock townsite and 2.5 miles S.E. of Erikin Siding; located on Lithograph 4/80 D3.

Background:

Originally gazetted on January 16th 1953 for the Conservation of Flora and Fauna. Its area was decreased on June 25th 1971 to its present size of 480.9081 ha., and on 30th May 1975 was vested in the Western Australian Wildlife Authority.

Physical Characteristics:

This reserve is, very roughly, shaped like a right angled triangle. It covers an area of 480.9081 ha., and for the most part consists of salt clay pans and samphire flats with associated fringe vegetation. Islands of slightly raised ground support thickets, mainly Melaleucas and Hakeas, which in turn give way to stands of Eucalyptus of various species. A narrow track runs along the entire length of the southern boundary and about one-third of the way up the eastern side. The south western section is bordered by the Erikin Road.

Vegetation:

The vegetation falls into three main categories:

- (1) The samphire salt flats characterised by Arthrocnemum spp.
- (2) The islands and fringes to the samphire characterised by thickets of Melaleucas and Hakeas. Melaleuca uncinata

and Santalum acuminatum were noted in this area.

(3) The mixed Eucalyptus woodland. This is comprised mainly of E. loxophleba, E. salubris and E. salmonophloia, with mallee form E. gracilis to 8 metres along the southern side. The shrub understorey where present is made up of Acacias, Hakeas and Melaleucas with Hemigenia incana to 0.75 metres common in some areas. Santalum acuminatum is scattered throughout.

At the northern end of the reserve is a cleared area of grassland.

Human Usage:

As previously reported there is a considerable quantity of rubbish in the south west corner, but none has been dumped recently. It consists mainly of fencing materials plus rusty metal sheets and tanks. There are signs that the track along the southern boundary has been recently used. The firebreaks along the outside of the reserve are excellent.

Fire History:

No recent signs, and the area presents no real fire danger.

FAUNA

Mammals

4 Grey Kangaroo - Macropus fuliginosus - edge of woodland.

Rabbits very common.

Birds

This area was visited on 2 separate occasions, therefore two bird lists.

VISIT
1st 2nd

6	37	Mountain Duck	<u>Tadorna tadornoides</u>
1		Black-shouldered Kite	<u>Elanus notatus</u>
1		Nankeen Kestrel	<u>Falco cenchroides</u>
2	3	Crested Pigeon	<u>Ocyphops lophotes</u>
6		Galah	<u>Eolophus roseicapillus</u>
10	10	Port Lincoln Parrot	<u>Barnardius zonarius</u>
3		Mulga Parrot	<u>Psephotus varius</u>
1		Pallid Cuckoo	<u>Cuculus pallidus</u>
2		Welcome Swallow	<u>Hirundo neoxena</u>
6	22	Tree Martin	<u>Petrochelidon nigricans</u>
	2	Richards Pipit (Australian)	<u>Anthus novaeseelandiae</u>
1	2	Black-faced Cuckoo-Shrike	<u>Coracina novaehollandiae</u>
	2	White winged Triller	<u>Lalage sueurii</u>
4	5	White-browed babbler	<u>Pomatostomus superciliosus</u>
	2	White-tailed Warbler	<u>Gerygone fusca</u>
4	3	Chestnut-tailed Thornbill	<u>Acanthiza uropygialis</u>
2	2	Yellow-tailed Thornbill	<u>Acanthiza chrysorrhoa</u>
6	2	Red-capped Robin	<u>Petroica goodenovii</u>
5	1	Willie Wagtail	<u>Rhipidura leucophrys</u>
1		Rusous Whistler	<u>Pachycephala rufiventris</u>
5	*16	White-fronted Chat	<u>Epthianura albifrons</u>
	1	Singing honeyeater	<u>Meliphaga virescens</u>
	1	Yellow-throated Miner	<u>Manorina flavigula</u>
	4	Black-faced Wood-Swallow	<u>Artamus cinereus</u>
3	2	Australian Raven	<u>Corvus coronoides</u>

* Post breeding flock of adults and juveniles along edge of samphire.

REPTILES

Lizard - Amphibolurus minor - collected on fallen tree
at edge of woodland.

Bobtail lizard - Teliqua rugosa

Remarks & Summary:

Primarily a samphire area but with considerable tracts of Melaleuca scrub and Eucalyptus woodland. It supports a sizeable population of resident birds and acts as a resting area for migratory species. The reserve is relatively unspoilt by human interference though there has been past rubbishing in the S.W. corner.

Mokami Springs - Reserve 23686



Typical samphire habitat with eucalyptus
in the background.



Fence line over bare salt flats along
east boundary.

Mokami Springs - Reserve 23686



Seasonal salt lake with samphire fringe.
E. loxophleba mallee on left side of photo.



Mixed eucalyptus woodland near S.E. corner.

Mokami Springs - Reserve 23686



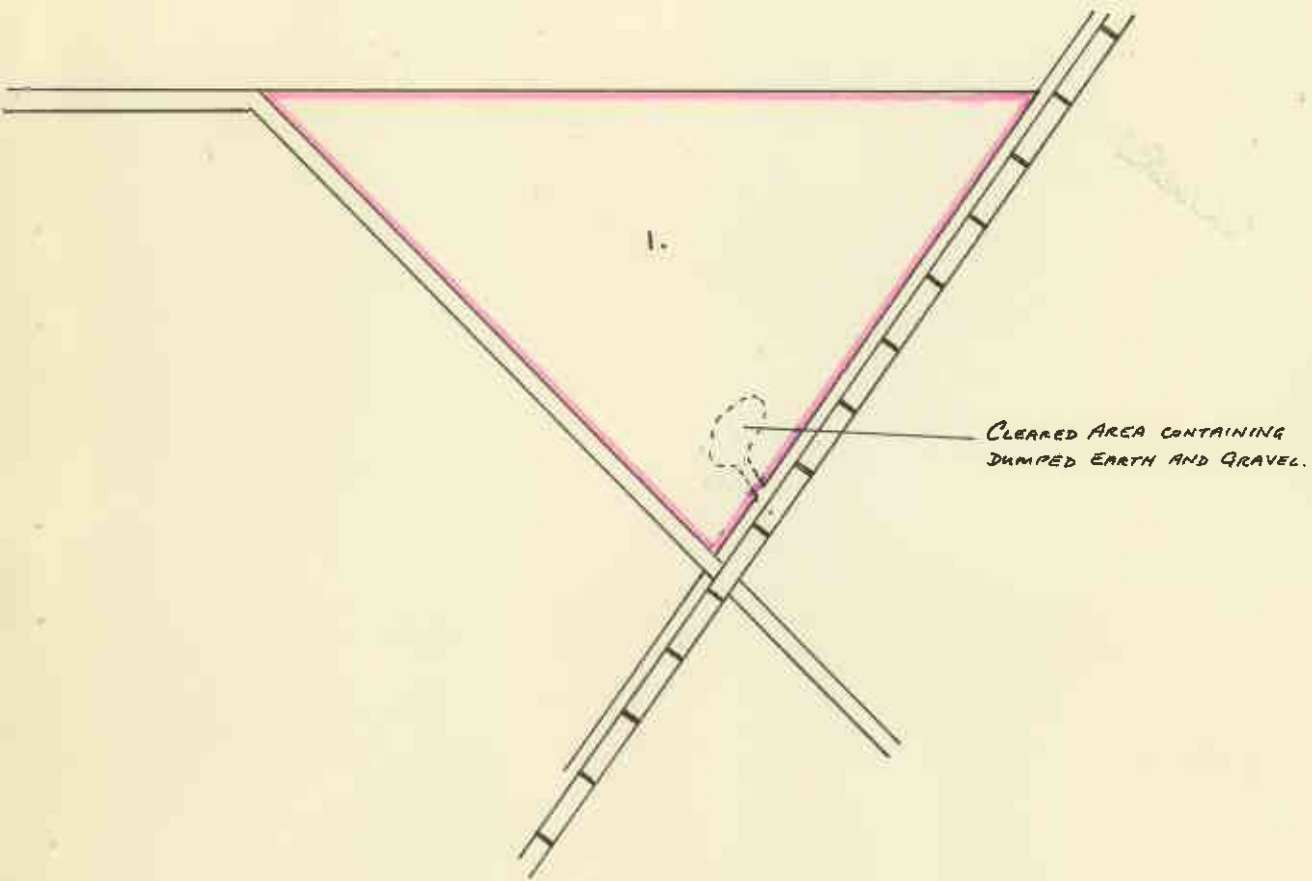
Rubbish dumped inside reserve at S.W. corner.



Excellent firebreak along southern boundary.

Fig. 11

RESERVE 24097



Area 1. Mixed mallee form Eucalyptus to 7 metres. Dense, scrubby understorey to 1.75 metres in some areas.

10 CHAINS



RESERVE NO. 24097

Location:

Ca 3 miles N.E. of Bilbarin Siding and 4 miles S.W. of Babakin Siding, and on the north western side of the Corrigin/Bruce Rock railway line. Located on Lithograph 344/80 DE 1.2.

Background:

Originally gazetted on 7th January 1955 as a Flora and Fauna Reserve and vested in the Bruce Rock Shire. The area is controlled by the Bruce Rock Roads Board.

Physical Characteristics:

The reserve is triangular in shape and covers an area of 12.14058 ha. To the south east it is bordered by the Corrigin/Bruce Rock railway line and to the south west by a gravel road. The northern boundary faces onto farmland. The reserve is virtually flat and supports predominantly mallee form Eucalyptus on light coloured sandy clay soil.

Vegetation:

The entire reserve supports a mixed mallee Eucalyptus association, in some places with no understorey, and in others with dense, scrubby undercover of either Melaleuca platycalyx or Casuarina sp. For so small an area it is very rich indeed in Eucalyptus species. A random sample produced the following species - Eucalyptus oleosa ssp. oleosa to ca 3 metres, E. transcontinentalis to ca 2.5 metres, E. eremophila to ca 4 metres, and E. calycogona - a narrow

leafed species growing to ca 7 metres. Casuarina acutivalvis was also recorded.

Human Usage:

In the southern corner an area of ca 1 ha. has been cleared. Truck loads of gravel and earth have been dumped on this site, introducing large numbers of weeds and grasses which grow profusely on the mounds. "Waste" earth is still being added.

Considerable quantities of rubbish including chairs and sofas are littered along the railway line boundary inside the reserve. There are also piles of fencing wire stacked in the north west corner.

Fire History:

There is no recent sign of fire. The farmer has put in his own breaks along the northern boundary, while the road and the railway line act as breaks on the other two sides.

FAUNA

Mammals:

One dead rodent - Mus musculus - found near the southern corner.

Birds:

1	Crested Pigeon	<u>Ocyphaps lophotes</u>
6	Galah	<u>Eolophus roseicapillas</u>
2	Port Lincoln Parrot	<u>Barnardius zonarius</u>
2	White-tailed Warbler	<u>Gerygone fusca</u>
3	Broad-tailed Thornbill	<u>Acanthiza apicalis</u>

5	Yellow-throated Miner	<u>Manorina flavigula</u>
2	Black-faced Wood-Swallow	<u>Artamus cinereus</u> (flying over)
1	Grey Butcher-bird	<u>Cracticus torquatus</u>
3	Australian Raven	<u>Corvus coronoides</u>

Remarks and Summary:

For its size, this reserve supports a very large number of Eucalyptus species. It provides very good low cover for birds, and the Eucalyptus when in flower must attract nectar feeding species. Unfortunately rubbish dumping is prevalent, and enquiries should be made about the cleared area in the southern corner where mounds of earth are presently being deposited.

Reserve 24097

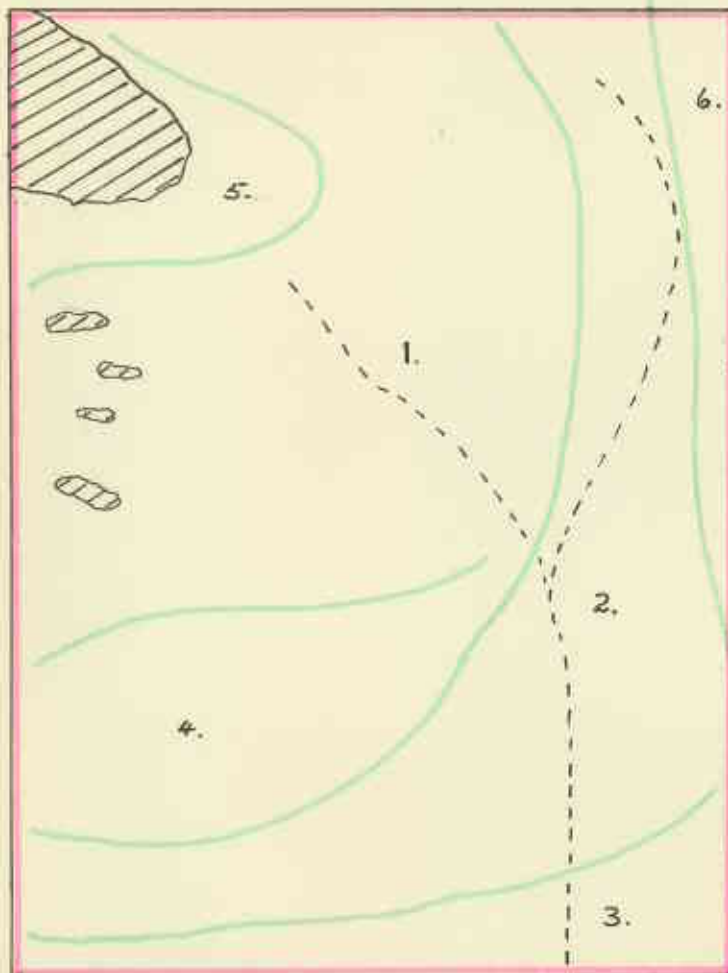


Gravel dumped in cleared area in southern corner of reserve. Note Cape Weed - Arctotheca calendula.



Mixed mallee form eucalyptus on S.W. border.

Fig. 12

YILGERIN ROCK - RESERVE 35002

- GRANITE ROCK



TRACKS

- Area 1. Scattered A. acuminata and A. lasiocalyx over grass.
2. Predominantly open E. loxophleba woodland over very sparse shrubs & grasses.
3. E. loxophleba & E. salmonophloia over sparse shrubs.
4. Dense A. lasiocalyx to 10 metres.
5. Casuarina huegeliana & A. lasiocalyx.
6. Samphire.

10 CHAINS



YILGERIN ROCK : RESERVE NO. 35002

Location:

Ca 9 miles south of Bruce Rock townsite on the Nambeen Road, and located on Lithograph 4/80 F3.4.

Background:

Yilgerin Rock was originally gazetted for the Conservation of Flora on 11th November 1977, and vested in the Western Australian Wildlife Authority. This action was taken following reports that the area was being illegally used for grazing purposes.

Physical Characteristics:

The reserve is rectangular with the longer axis running north and south, and covers an area of 49.4728 ha. It is bordered by farmland to the north and west and by encroaching salt marsh to the east. The Nambeen Road runs along the southern boundary. The total perimeter measures ca 1.75 miles. The ground slopes down from west to east, from the granite outcrop which dominates the N.E. portion to the low lying samphire salt water areas. There are two tracks on the reserve which join up before reaching the Nambeen road, though these have become partially obscured by recent growth of weeds and grasses. The area is well drained.

Vegetation:

Although this reserve only covers an area of 49.4728 ha., it has six distinct vegetation types as shown on the diagramatic

map for the area - Fig. 12. In the north-west corner is a granite outcrop around which grows tall Casuarina huegeliana and Acacia lasiocalyx. This then gives way to more open country with scattered Acacia acuminata and A. lasiocalyx over grasses. To the east of this lies a belt of predominantly open Eucalyptus loxophleba woodland over very sparse shrubs including Acacia hemiteles (formerly graffiana) and Daviesia nematophylla. This in turn gives way to the salt water samphire - Arthrocnemum spp which runs along most of the eastern border. South of the open area is a dense pocket of A. lasiocalyx over grasses, shown on the map as Area 4. Along the southern boundary with the road is a strip of mixed E. loxophleba, E. salmonophloia and E. salubris woodland over sparse shrubs including Santalum acuminatum, Cassia eremophila, Hakeas and Melaleucas. Other species recorded for the reserve include the grasses Danthonia setaceae and Avena fatua, and the Everlasting, Helipterum manglesii.

Fire History:

There is no evidence of recent burning, though some fire danger exists due to increased grass over much of the reserve plus fuel from fallen Acacia trees. The risk does not warrant action at this time as farmers make adequate fire breaks along their borders and much of the Eucalyptus woodland understorey is too sparse to hold a fire.

Human Usage:

This area was originally used illegally for grazing and there are many signs of past human activity. Rubbish,

especially rusty metal and fencing wire, is littered over much of the reserve. Also some old water tanks and building materials. West of centre there is an old gravel pit which, judging from plant growth, has not been used for several years. There is a well marked on Litho 4/80 but this was not located.

There is evidence that young parrots have been taken from their nests on the southern boundary where nest holes have been cut open with chain-saws.

A low earth bank has been pushed up in the north west section of the reserve to direct rain water run-off from the granite outcrop onto the adjoining property. There is no sign of recent illegal grazing on the reserve.

FAUNA

Mammals: Rabbits very common - one large warren in centre of reserve.

Grey Kangaroo - Macropus fuliginosus - one individual seen but very shy.

Birds:

1 x Mountain Duck	- <u>Tadornata tadornoides</u> (on salt marsh)
2 x Grey Teal	- <u>Anas gibberifrons</u> (on salt marsh)
1 x Crested Pigeon	- <u>Ocyphaps lophotes</u>
2 x Galah	- <u>Eolophus roseicapillus</u>
12 x Port Lincoln Parrot	- <u>Barnardius zonarius</u> (all in pairs)
3 x Mulga Parrot	- <u>Psephotus varius</u>
2 x Magpie-lark	- <u>Grallina cyanoleuca</u>

2 x Black-faced Cuckoo-Shrike	- <u>Coracina novaehollandiae</u>
4 x Yellow-tailed Thornbill	- <u>Acanthiza chrysorrhoa</u>
2 x Willie Wagtail	- <u>Rhipidura leucophrys</u>
2 x Singing Honeyeater	- <u>Meliphaga virescens</u>
14 x Yellow-throated Miner	- <u>Manorina flavigula</u> (throughout, in groups)
5 x Black-faced Wood-swallow	- <u>Artamus cinereus</u>
4 x Australian Magpie	- <u>Gymnorhina</u>
2 x Australian Raven	- <u>Corvus coronoides</u> (one pair)

Reptiles:

Skink - Menetia greyi - under piece of granite rock.

Remarks and Summary:

Potentially a good reserve, though past human occupation has to some extent spoilt the area.



Casuarina huegeliana and A. lasiocalyx
along edge of Yilgerin Rock.

Yilgerin Rock - Reserve 35002



Rubbish wire-fencing. Note low earth bank constructed to direct water runoff onto the adjacent property.



Salt water samphire in N.E. corner.

Yilgerin Rock - Reserve 35002



E. loxophleba on eastern side of reserve.



Abundant grasses with A. acuminata & single E. loxophleba in background.