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SOME NATURE RESERVES OF THE
WESTERN AUSTRALIAN WHEATBELT

PART 17 : DOWERIN SHIRE

B.G. MUIR
WESTERN AUSTRALIAN MUSEUM
1979

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SOME NATURE RESERVES OF THE

DOWERIN SHIRE

1979

B.G. MUIR

Introduction

Dowerin Shire is in the central wheatbelt and has an area of about 2178 square km. There are 9 Nature Reserves within the Shire totalling 13.91 square km or ca 0.6% of the area of the Shire. The largest Nature Reserve in the Shire is Cullimbin Well (11688) being ca 405 ha in area and the smallest Reserve 23856 being ca 12 ha in area. Five of the 9 reserves are less than 100 ha in area. Two reserves have 'A' classification: 687 (Namalcatching Well) and 9228 (Moonijin Soak). Another Reserve, 4244 (Dowerin) has 'B' classification. Only 1 reserve (687) is vested in the Western Australian Wildlife Authority and 3 (9228, 11688 and 15794) are vested in the Minister for Water Supply, Sewerage and Drainage. The remaining 5 have no vesting.

This survey was carried out in March 1979 and consisted of brief examinations of 4 Reserves; 4244, 4313, 14510, and 23856. A report on each of the Reserves is attached.

Methodology

Physical characteristics of the reserves were obtained directly from the most recently available lithographs as published by the Department of Lands and Survey, and interpreted from observations made on the reserve.

Reserves were examined by vehicle where tracks were available, and on foot. Local knowledge and air-photographs were consulted to find areas of particular interest. Only a very short time could be spent on each reserve, the smaller ones being examined in 1 or 2 hours, the larger ones in a full day.

Vegetation was classified using Muir's (1977) system (Table 1), which was designed specifically for describing wheatbelt vegetation. In the presentation of the abbreviated descriptions (in the section titled "Vegetation") capital letters in descriptive terms refer to specific classes of life form, height and canopy cover as used in the classification.

As the survey period on any reserve was very brief only the commonest plant species could be noted. Any species in which less than 3 individual plants were encountered within a space of 10-15 minutes examination of the vegetation were considered uncommon and are not listed. As much of the survey work was carried out rapidly and in unfavourable seasons, many plants were not flowering and so identifications were made from foliage alone. Only if an important dominant plant was not recognised were specimens brought back to the laboratory for examination.

Soil was examined very briefly and classified according to Northcote's (1971) texture groups and Munsell (1954) colour terms.

Fire history was determined from observation of the area, appearance of air-photographs and information from nearby farmers.

Fauna were not specifically sought, but some species (usually the most obvious) were encountered while examining vegetation. The lists provided are only a small fraction of the species present on nearly every reserve examined. Scats, footprints, burrows, nests and other indirect evidence is used only where identification is certain. Observations by farmers are used if considered reliable.

Opinion and recommendations expressed in these reports are entirely those of the author and are based on extensive experience in vegetation mapping and description in the wheatbelt, and association with faunal and habitat studies conducted by suitably qualified researchers.

Results and discussion

The features of each Reserve can be summarised as follows:

Reserve 4244 - 160 ha : salt marsh; important for soil conservation.

Reserve 4313 - ca 44 ha : several formations and associations; good condition; isolated, important for transient fauna.

Reserve 14510 - ca 162 ha : heaths and sedgeland; contains unusual plant species and associations; valuable as wind break and to prevent salt encroachment onto farmland.

Reserve 23856 - ca 12 ha : originally a surveyed road; few plants present; passage for transient fauna; useful wind break.

Of the 4 reserves examined, 1 is salt marsh and another a degraded belt of trees along a fence line. The other 2 (4313 and 14510) contain a varied flora at species and association level and are valuable conservation reserves.

Reserve 4244, nonetheless, is important for soil conservation and 23856 is a useful passage area for transient fauna. All 4 reserves should be retained and vested in the Western Australian Wildlife Authority.

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Reserve 4244

Located ca 6.5 km SSE of Dowerin Townsite and shown on lithograph 33/80, 3-4/A-B and 1:100000 Topographic sheet 2335:0642.

Background

Originally set aside 28 September 1900 for a "Water Reserve" of ca 130 ha. Reserves 9766 and 11065 were removed from Reserve 4244 by an amendment dated 10 July 1925. Reserve 4244 was controlled by the Dowerin Road Board, but this control was revoked on a date unspecified, but sometime between 1925 and 1973.

Following the Dowerin Road Board relinquishing control, the Reserve was vested in the Minister for Water Supply, Sewerage and Drainage. This vesting was revoked on 13 April 1973, at which time the area of the Reserve was increased (from what size is not recorded) to its present area of ca 160 ha, and its classification changed to "Conservation of Flora and Fauna".

Reserve 6830, on NE corner of Dowerin A.A. 56 was cancelled and that area included in 4244 in 1973.

Physical characteristics

Reserve 4244 is irregular in shape, ca 1.6 km long (N-S axis) and ca 0.8 km broad (E-W axis). It has a total perimeter of ca 4.2 km and an area of 160.0000 ha. Dowerin Topo sheet shows the Reserve to be flat and ca 250 m above sea level. There is only about 1 m in topographic relief within the Reserve.

Vegetation

Only salt marsh and a few marginal trees and shrubs are present.

Plant species

Only 8 plant species were recorded, of which 3 are exploited by the wildflower seed trade.

Nest hollows

Many in trees killed by salt encroachment. No young trees present.

Weeds

Avena sativa fatua and Salsola kali are scattered throughout the Reserve, particularly on road verges and disturbed areas.

Fire history

Probably never burnt since the area became salt.

Fauna

Port Lincoln Parrot (Platycercus zonarius) : several flying over Reserve.

Galah (Cacatua roseicapilla) : 6 in trees on E side of Reserve.

White-backed Swallow (Cheramoeca leucosterna) : 6 perched on dead tree in salt lake.

White-winged Wren (Malurus leucopterus) : common in samphires.

White-fronted Chat (Epthianura albifrons) : common in samphires.

Dusky Wood-Swallow (Artramus cyanopterus) : 2 perched on dead tree in salt lake.

Exotic fauna

None recorded.

Fire breaks and fences

No fire breaks, but unnecessary because of the non-combustible nature of the vegetation. Adjacent farmland is fenced but there are no fences

actually on the Reserve.

Human usage

Examination of the Reserve on the ground led to suspicions that an illegal fence has been placed so as to cut off the E. portion of the reserve. If so, the York Gum/Yorrell woodland on the Reserve margin has been grazed. This will undoubtedly lead to salt encroachment. Airphotographs of the area are needed to assess whether the trees are in the Reserve or outside its boundary. At the time of survey and report preparation the relevant airphoto was missing from Lands and Survey Department records. A definite statement on the juxta-position of the trees and the Reserve boundary will not be possible until the airphoto is available.

Adjacent uncleared land

Extensive salt flats to SE of Reserve.

Opinion and recommendations

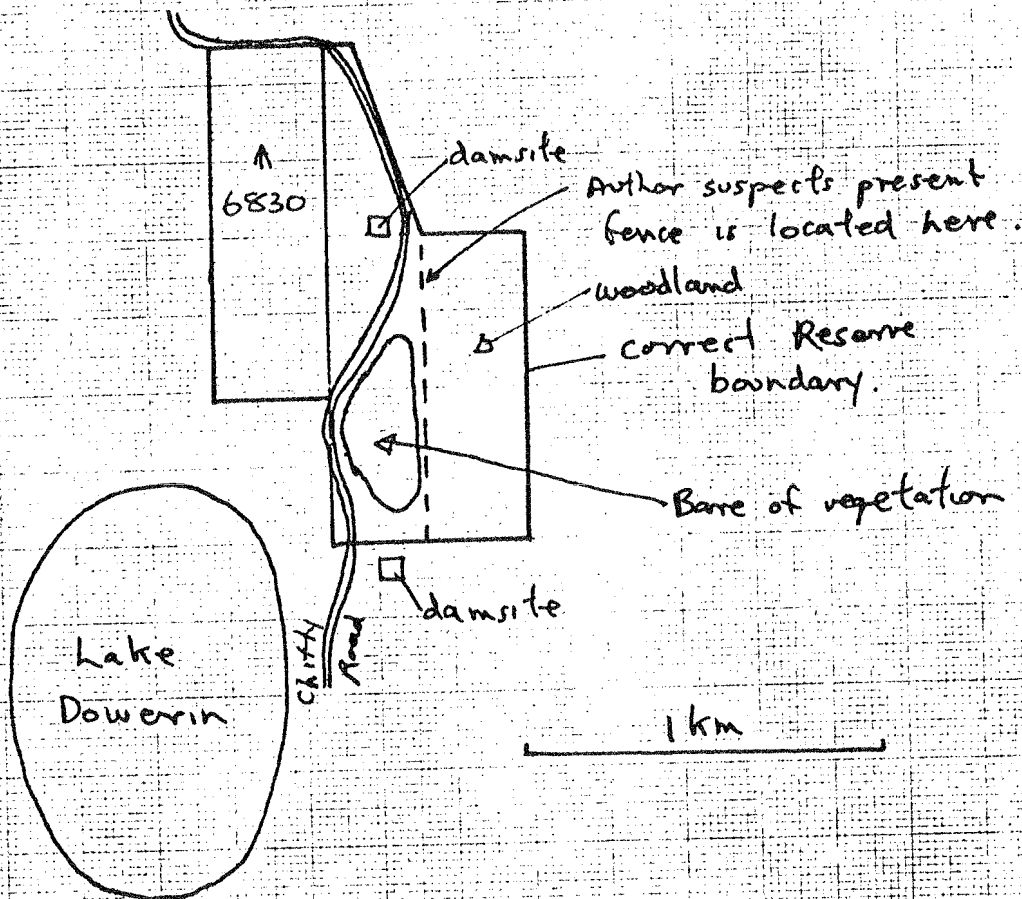
Reserve 4244 has little value for flora and fauna, but is probably vital to reduce excessive salt encroachment onto adjacent farmland. If examination of airphotographs supports the suggestion that the eastern boundary has been illegally moved, action should be taken to have the fence line restored and perhaps some rehabilitation program be undertaken. Both should be at the farmers expense. I recommend that the Reserve be left in its present condition apart from the above provision and be vested in the Western Australian Wildlife Authority.

APPENDIX 1

Reserve 4244

Vegetation is now Arthrocnemum bidens, A. halocnemoides, Atriplex semibaccata, Bassia diacantha, Melaleuca cymbifolia, Rhagodia nutans with an overall cover of ca 10-30%. Marginal stands of Eucalyptus gracilis and E. salmonophloia 16-22 m tall. Soil poorly drained salt marsh with season flooding.

Reserve 4244.



Reserve 4313

Located ca 21 km due S of Dowerin Townsite and shown on lithograph 26/80, A1 and 1:100000 Topographic series 2335 (Dowerin) 0129.

Background

Originally set aside for "Public Utility" on 15 June 1923. Purpose changed to "Conservation of Natural Vegetation" on 18 February 1972.

Physical characteristics

Reserve 4313 is triangular, with a total perimeter of ca 3.5 km and an area of 43.7060 ha. Dowerin Topo sheet shows the Reserve to be ca 260 m above sea level, with a topographic range of ca 2-4 m.

Vegetation

She-oak and York Gum woodlands are present as well as Eucalyptus oleosa mallee and stands of Melaleuca and Tamma shrubland. An area of heath is also present.

Plant species

Fifty-eight plant species were collected, of which 16 are exploited by the wildflower seed trade.

Nest hollows

Abundant in York Gum and Wandoo areas. Very few young trees present.

Weeds

Grass present throughout, mostly as scattered plants except in disturbed areas.

Fire history

Vegetation has not been burnt for at least 30 years.

Fauna

Black-faced Cuckoo-shrike (Coracina novaehollandiae) : 2 in
York Gum woodland.

Red Wattlebird (Anthochaera carunculata) : 1 in York Gum woodland.

Dusky Wood Swallow (Artramus cyanopterus) : several perched on dead
trees on roadsides.

Exotic fauna

Rabbit diggings and scats in friable soil areas.

Fire breaks and fences

No fire breaks except roadway, marginal tracks and inadequate breaks
in adjacent farmland. Good fences adjacent to farmland.

Human usage

Some rubbish dumping on S side Reserve. Eatons Sand Hole is a
shallow depression (refer Appendix 2 : She-oak woodland).

Adjacent uncleared land

None.

Opinion and recommendations

Reserve 4313 is in excellent condition and supports a varied flora
at both association and species level. Although little fauna was recorded
during this visit the Reserve is probably quite rich in species. Its
isolation makes it an important resting and feeding area for transient
bird species. I recommend that the Reserve be retained in its present
state and that signs be placed near the roadways at the corners of the
Reserve to indicate that rubbish dumping is prohibited. I also recommend
that Reserve 4313 be vested in the Western Australian Wildlife Authority.

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APPENDIX 2

Reserve 4313

She-oak woodland

Casuarina huegeliana trees 8-12 m tall, 30-70% cover over Avena sativa fatua and A. barbata bunch grasses, 0.4 m tall, seasonally up to 70% cover. Also recorded were Acacia acuminata, Dianella revoluta and Eucalyptus loxophleba. There was some Afghan Thistle (Solanum hystrix) along the fence line.

Eatons Sand Hole occurs in this association and is a depression 10 m in diameter and the lowest point of which is about 2 m below the surrounding ground level. There is a growth of Juncus kraussii sedge and some Inula graveolens and Muhlenbeckia adpressa on the sides of the depression.

Soil of the whole area is grey, loamy sand. Well to excessively drained.

York Gum woodland

Eucalyptus loxophleba trees, 10-18 m tall, 2-10% cover, with scattered E. wandoo. Understorey is Loxocarya fasciculata and Harperia lateriflora sedges, 30 cm tall, 30-70% cover. Other species recorded were: Acacia acuminata, A. mackayana, Acanthocarpus sp. 1, Borya nitida, Cryptandra myriantha, Dianella revoluta, Ecdeiocolea monostachya, Grevillea paniculata, Lomandra effusa, Podotheca gnaphalioides, Raphanus raphanistrum, Santalum acuminatum, Stipa elegantissima and Waitzia acuminata. Soil is reddish brown, sandy loam. Well drained.

Mallee area

Eucalyptus oleosa mallee, 6-9 m tall, 10-30% cover over Ecdeiocolea monostachya, 0.5 m, 30-70% cover or Melaleuca uncinata shrubs 2-3.5 m tall, 30-70% cover but mostly dead. Other species recorded were: Acanthocarpus sp. 1, Dianella revoluta, Harperia lateriflora, Hemiandra sp., Leptospermum erubescens, Lomandra effusa, Loxocarya pubescens, Melaleuca seriata, M. subtrigona, Mesomelaena uncinata, Mirbelia spinosa, Olearia revoluta, Plectrachne drummondii, Santalum acuminatum, Scholtzia sp., Stipa elegantissima, Verticordia chrysantha. Soil is yellow brown, sandy clay loam. Moderately drained.

Melaleuca area

Melaleuca adnata and M. acuminata shrubs, 3-4 m tall, 30-70% cover. Also recorded were: Acacia acuaria, A. graffiana, Acanthocarpus sp. 1., Beyeria leschenaultii, Dianella revoluta, Dicrastylis parvifolia, Dodonaea ptarmicifolia, Exocarpus sparteus, Lepidosperma pruinsum, Wehlia affin. thryptomenoides. Soil was brown, loam. Moderately drained.

Tamma shrubland

Casuarina campestris shrubs, 2-3.5 m tall, 30-70% cover over Ecdeiocolea monostachya sedge, 0.5 m tall, 30-70% cover. Also present were Borya nitida, Verticordia chrysantha and Waitzia acuminata. Soil brown, loam with ca 20% laterite pebbles. Moderately drained.

Heath

Mixed shrubs and Ecdeiocolea monostachya sedge, 0.5 m tall, 30-70% cover. Scattered Casuarina huegeliana trees or C. campestris shrubs which locally reach 3-4% cover. Also present were: Actinostrobos arenarius, Astroloma serratifolium, Cryptandra myriantha, Eremaea

pauciflora, Gahnia affin. polyphylla, Gastrolobium spinosum, Grevillea
affin hookerana, Hakea circumalata, H. incrassata, Harperia lateriflora,
Melaleuca laxiflora, Mesomelaena uncinata, Verticordia brownii. Soil
grey, loamy sand. Excessively drained.

Reserve 4313

0.5 km

/// rubbish dumps

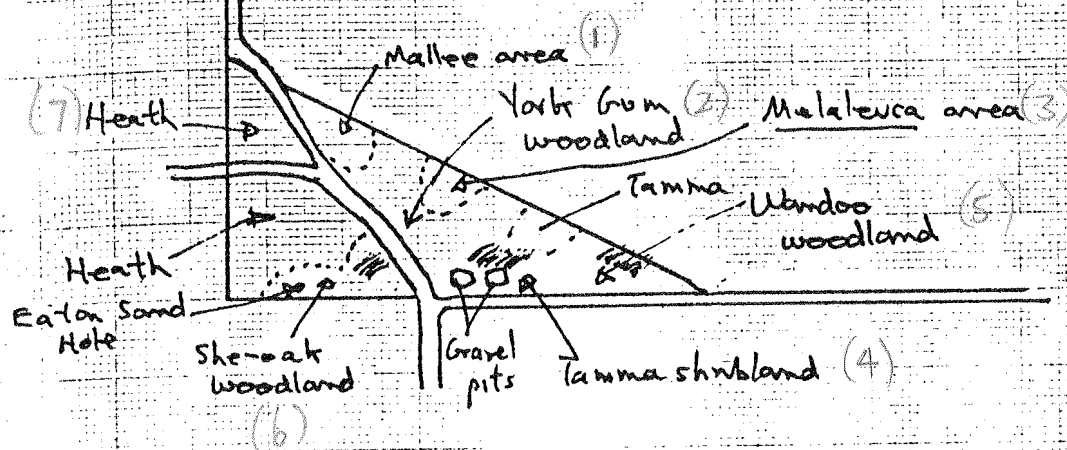




Plate 1. View across mixed shrubs and sedge/heath towards Tamma shrubland on Reserve 4313. On the heath edges, as shown, sedges dominate the association.

Reserve 14510

Located ca 16 km SSE of Dowerin Townsite and shown on lithograph 33/80, 4B and 1:100,000 Topographic sheet 2335 (Dowerin) 125,35.

Background

Originally set aside as a Rifle Range on 6 December 1912 and with an area of 91 ha. Reserve was increased to its present area of 161.8743 ha on 16 June 1950 and its classification changed to "Conservation of Flora". The classification was again changed on 17 December 1971 to "Conservation of Flora and Fauna".

Physical characteristics

Reserve 14510 is roughly triangular, ca 3 km long (N-S axis) and ca 1 km broad at its widest (southern) end. The Reserve has a total perimeter of ca 7 km and an area of ca 161.8743 ha. The topographic map shows the N end of the Reserve to be ca 250 m above sea level (ASL) and the S end to be 280 m ASL. There is thus a topographic range of ca 30 m.

Vegetation

The vegetation is dominated by heaths and sedgeland. Calothamnus Dwarf Scrub C, sedge and mixed shrubs Low Sedges/Low Heath D, and mixed Low Scrub A are represented. There is also an area of post-clearing regrowth and a belt of dense shrubs just S of the central roadway.

Plant species

Sixty-three plant species were recorded, of which 22 are exploited by the wildflower seed trade. A Lechenautia with affinities to expansa, but not this species, was collected, as well as an unidentified Leucopogon.

Nest hollows

None present.

Weeds

Abundant weeds, particularly Ptilotus polystachys on cleared and regrown areas. Scarce on other areas. Grasses were also abundant, particularly Stipa elegantissima, Avena sativa fatua, Briza maxima and Aira caryophylla.

Fire history

No evidence, but may have been burned in cleared area. Remainder is probably much older than 30 years.

Fauna

Grey Kangaroo (Macropus fuliginosus) : tracks common.

Emu (Dromaius novaehollandiae) : tracks common.

Pipit (Anthus novaeseelandiae) : common, particularly on fence lines.

White-browed Babbler (Pomatostomus superciliosus) : several in shrubland.

White-fronted Chat (Epthianura albifrons) : common on salt flat at N end and in regrowth area.

Exotic fauna

Rabbit scats seen.

Fire breaks and fences

Good marginal fire breaks and a broad central E-W track protect the Reserve from fire. Fences in good condition are on all sides.

Human usage

The area has been used as a rifle range. Section of the S end has been cleared and is regrowing. Fence wire has been dumped on the Reserve when the fences were renewed.

Adjacent uncleared land

About 10-15 ha of uncleared bushland is contiguous with the southern end of the Reserve.

Opinion and recommendations

Reserve 14510 is in fairly good condition and supports quite a diverse vegetation, dominated mostly by sedgeland and heath. Not only is heath poorly represented on wheatbelt reserves in the eastern shires but Calothamnus sanguineus dominated heath and Ecdeiocolea monostachya/Grevillea hookerana sedgeland/heath have not been recorded by me prior to this survey. Retention of the Reserve is also important because it helps to stabilise salt encroachment and is an effective wind break. I recommend that Reserve 14510 be retained in its present form and that it be vested in the Western Australian Wildlife Authority.

APPENDIX 3

Reserve 14510

Shrubland belt

Banksia prionotes, Casuarina campestris and some Grevillea excelsior, 5, 3 and 2 m tall respectively, with an overall canopy cover of 70-100%. This association results from extra drainage from the central track and passes on the N ^{sides} into heath. Soils are deep sands, as found in other formations.

Calothamnus heath

Calothamnus sanguineus with patches of Scholtzia sp., 1.0 m tall, 10-30% cover over Lyginea tenax, 0.3 m tall, 30-70% cover. Also recorded were: Dampiera juncea, Hakea circumalata, Maireana brevifolia, Melaleuca scabra, Rhagodia nutans and Stipa elegantissima. Soil is pink clayey sand, poorly drained.

Sedgeland/Heath

Mesomelaena uncinata and mixed shrubs 0.5 m tall, 30-70% cover. Scattered Casuarina campestris * and Acacia filifolia to 2 m tall present. Other species recorded were: Actinostrobilus arenarius, Astroloma serratifolium *, Baeckea affin. crispiflora, Calytrix sp., Cassytha pubescens * (on Melaleuca laxiflora), Casuarina acutivalvis, Comesperma polygaloides, Conospermum stoechadis, Grevillea hookerana, Hakea circumalata, H. platysperma, Jacksonia furcellata, Leptospermum erubescens, Loxocarya fasciculata *, Lyginea tenax, Melaleuca laxiflora *, Persoonia affin. rufiflora, Petrophile seminuda, Platysace juncea, Plectrachne drummondii, Verticordia brownii *. Soil is yellow, sand. Excessively drained.

In some areas this association passes onto less well drained soils and becomes taller and less dense, with a corresponding species change.

The association in these areas is Ecdeiocolea monostachya and Mesomelaena uncinata sedges to 1 m tall, 2-10% cover. There are scattered Grevillea hookerana bushes present. Species marked * above were present in these moister areas together with: Calothamnus sanguineus, Conostylis aculeata, Daviesia acanthoclona, Eremaea pauciflora, Gahnia affin. trifida, Gastrolobium hookeri, Hemiandra incana, Hibbertia verrucosa, Isopogon scabriusculus, Lechenaultia affin. expansa, Leucopogon blepharolepis, L. hamulosus, L. sp. 1. Mirbelia spinosa, Petrophile ericifolia, Spyridium tridentatum, Stipa elegantissima, Synaphaea polymorpha. Soil in these areas is pinkish-grey sand. Moderately drained.

Mixed heath

Mixed shrubs, no particular dominant, 2 m tall, 10-30% cover over mixed shrubs, 0.5 m tall, 10-30% cover. Abundant seasonal growth of grasses. Also present were: Acacia eremaea, A. merrallii, Calytrix fraseri, Casuarina humilis, Comesperma scoparia, Darwinia diosmifolia, Daviesia rhombifolia, Eremaea pauciflora, Eucalyptus albida, Gastrolobium spinosum, Hakea circumalata, Jacksonia furcellata, Loxocarya fasciculata, Lyginea tenax, Verticordia serrata. Soil is pinkish grey, clayey sand. Moderately drained.

Regrowth area

Patchy regrowth of Acacia merrallii, Daviesia ? juncea, Gastrolobium spinosum, Grevillea hookerana, Loxocarya fasciculata and Ptilotus brachystachya. Soils disturbed, mostly pinkish grey sands. Well drained.

Note: Areas with dense Casuarina campestris commonly had Comesperma scoparia, Dryandra cirsioides and Grevillea didymobotrya in the understorey, regardless of soil type.

Reserve 14510

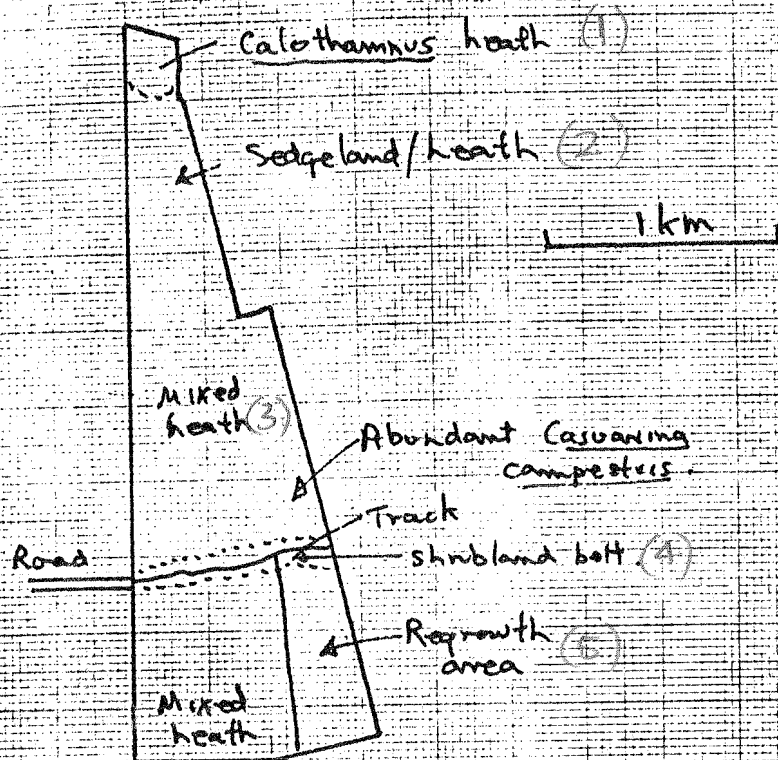




Plate 2. View S from edge of sedgeland/heath towards Calothamnus heath in the distance. Note grasses scattered throughout the heaths in this part of Reserve 14510.



Plate 3. View W across regrowth area on Reserve 14510. Note Acacia merrallii and Gastrolobium spinosum regrowth and abundant grasses.

Reserve 23856

Located ca 13 km due E of Manmanning Townsite and shown on lithograph 56/80, C-3.

Background

Originally set aside 11 December 1953 as a "Flora Reserve". Prior to this it was an undeveloped surveyed road.

Physical characteristics

Reserve 23856 is linear, ca 15 m wide by ca 6 km long. It is oriented E-W. It has an area of 11.9433 ha. There are no contour maps of the Reserve available and the only spot altitude is 307 m above sea level ca 1 km N of the W end of the Reserve. A visual estimate of topographic range was that it was mostly flat but had a high point near the centre of the Reserve; the resulting altitudinal range was ca 30 m.

Vegetation

The western 2 km of the Reserve was shrub and tree mallee of varying density and height. The eastern end was inaccessible and not examined. From air-photographs it appeared similar to the W end.

Plant species

Only the two dominant species Eucalyptus uncinata and E. transcontinentalis and some Casuarina campestris were recorded on the W end. All understorey had been destroyed by grazing.

Nest hollows

May be some in larger mallees. No young plants present.

Weeds

Afghan Thistle (Solanum hystrix) and Wild Mint (Chenopodium pumilio) are common. Some grass, mainly Arena sativa fatua is present.

Fire history

Mostly unburnt for many years except perhaps grass fires from stubble burning.

Fauna

Mulga parrot (Platycercus varius): 2 observed to use the mallee belt as a passage for at least 1 km.

Weebill (Smicrornis brevirostris): common in eucalypts.

Exotic fauna

Some rabbit scats seen.

Fire breaks and fences

Both unnecessary, however there is a track on one side of most of the mallee and a narrow fire break on the other. A fence line followed the S side of the Reserve.

Human usage

Heavily grazed.

Adjacent uncleared

Avon location 20651 is uncleared. It has an area of ca 205 ha.

Opinion and recommendations

The major value of the Reserve is as a passageway for fauna, as exemplified by the Mulga Parrot observation; and as a wind break.

The need for wind breaks in the area is demonstrated by several wind breaks on private property nearby.

I recommend that Reserve 23856 be retained in its present condition and that it be vested in the Western Australian Wildlife Authority.

