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VEGETATION SURVEY OF SELECTED AREAS ON

LAKE MAGENTA NATURE RESERVE

Prepared for:

Executive Director,
Department of Conservation and
Land Management

By:

ANNE COATES,
Consultant Botanist,
15 Burgess Street,
LEEDERVILLE, 6007

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1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

Fire protection for the Lake Magenta Nature Reserve (Class A 25113) is based on a system of six metre wide ploughed firebreaks (Fig. 1) and a policy of suppression of fires on the Reserve. Provisions have also been made under the Lake Magenta Nature Reserve Management Plan (Crook and Burbidge 1982) for the establishment of one or more internal buffers of frequently burned vegetation based on the existing system of firebreaks. Management decisions regarding the placement and extent of these buffer strips will need to take into consideration the degree of environmental damage caused by the frequent burning of the areas. The management plan specifies that damage to either rare plant species or vegetation associations of limited distribution in the reserve will be considered in the planning stage.

Currently there is also pressure from landholders adjoining the southern side of the Reserve for a burnt buffer strip along the boundary. Provision for adequate protection to neighbouring landholders against risk of fire escaping from the Reserve is included in management priorities.

The objective of this consultancy is to assess the potential environmental damage, particularly with respect to plants, of three possible locations for burnt buffer strips (Fig. 1).

1.2 PROJECT REQUIREMENTS

The specific objectives of the consultancy as set out in the consultancy offer and agreement are as follows:

- 1) Produce a vegetation map for the selected areas of the Reserve outlined in Fig. 1.

- 2) Provide a series of association descriptions based on Muir (1977) with floristic clarification which cover the range of associations found within the strips surveyed. The site of each description to be recorded on the vegetation map.
- 3) Provide a description of vegetation types which were infrequently encountered during the survey, together with a list of vegetation associations and habitat types which should remain undisturbed.
- 4) Collect and identify a representative sample of the flora encountered. Voucher specimens to be lodged at the C.A.L.M. Katanning office or Western Australian Herbarium.
- 5) Compile a plant species list.
- 6) Record the location and approximate population size of gazetted rare flora encountered during the survey.
- 7) Produce a map showing soil types within the survey area which may be prone to wind erosion if vegetation cover is removed.

1.3 PHYSICAL ENVIRONMENT

a) Climate.

The region of the reserve is characterised by an annual rainfall of between 350 and 400 mm. Rainfall data recorded at the Pingrup Post Office between 1926 and 1983 gives a mean annual rainfall of 365 mm. Most of the rain is received in winter with long dry summers. Sporadic heavy falls from thunderstorms in summer do occur but this rain is unreliable.

Beard (1976) reports that heavy summer falls occurred in 12 out of 41 years at both Newdegate and Jerramungup, about once every 3-4 years. This rain is beneficial for native plant growth in summer

and for eucalypts and some other species which flower in autumn. The rain may also be vital to the regeneration of many species, especially heath (Beard, 1976).

The closest meteorological recording stations for data on temperatures and relative humidity in the region are Lake Grace and Ravensthorpe. Winters are mild with the mean temperature of the coldest month above 10°C. The mean temperatures of the hottest month exceed 21°C with the mean maximum temperatures reaching 29-32°C. Beard (1976) classes the regime as Dry Warm Mediterranean.

b) Geology and Soils.

The landscape of the region is gently undulating and of low relief. Valleys with a north-south trend contain numerous salt lakes and pans - remnants of a former river system of the early Tertiary of which Lake Magenta proper is a part (Beard, 1976).

The major underlying rocks are Archaean granite and Quaternary continental sedimentary rocks (Kitchener, unpubl.).

The landform and soils of the area have been mapped in Sheet 5 of the Atlas of Australian Soils (Northcote *et al.* 1967) as narrow ironstone gravel ridges with gently undulating pediments and some swamps and lakes. Soils on ridges consist of ironstone gravel (KS-Vc 4.11) with gravelly sand (Vc 4.11, 2.12) underlain by hardened mottled-zone material at 30-60cm and soils on main slopes consist of alkaline yellow duplex, hard-setting (Dy 2.43) or sandy (Dy 4.43, 5.43) with smaller areas of other duplex including those with gley subsoils (frequently waterlogged). Acid clay common at c 1m depth.

More detailed soil surveys have also been carried out in the area. In 1945 a soil reconnaissance in the East Pingrup-Lake Magenta

area covering most of the Reserve was made by Burvill (1945). Six main groups of soils were recognised in this survey.

- 1) Sandy surfaced soils with a domed, sandy clay subsoil. This was the most widely spread soil group with the sand only a few centimetres in places. A mallee vegetation association was typical of this group.
- 2) Grey heavy soils generally with *Eucalyptus platypus*. Clay-loam or clay passes quickly to tough clay in this group.
- 3) Brown and red-brown heavy soils carrying *E. annulata* and mallees. This group was very restricted in the survey and consisted of approximately 3cm of sandy loam or clay-loam passing to clay subsoil.
- 4) Brown, medium-textured soils carrying salmon gums with mallee in places. Sandy loam passes to sandy clay-loam with small fragments of granitic rock in places.
- 5) Sandy, gravelly soils on laterite subsoils carrying low scrub with *E. tetragona*. *E. incrassata* (*E. angulosa* in Burvill's report) also occurs in places where the gravelly sand is deeper and on related sandy gravelly types *E. falcata* occurs. The group is characterised by gravelly sand over more or less massive laterite.
- 6) Sandy, gravelly soils on alkaline clay subsoils carrying mallee. The gravelly sand surface is usually more than 30cm deep.

A second survey was carried out in 1957-58 as part of the Coompertup Project which also included the area of the Fitzgerald River National Park. Map CD906, Sheets 5 and 4 cover the area of the Lake Magenta Nature Reserve south and approximately 2km north of the East-West firebreak included in the survey. The soil

groups occurring in this area include sand, sandy loam, sand on gravel, sand and rock outcrops, sand on clay, sandy clay, clay, stony clay and stone.

1.4 LOCATION OF THE RESERVE AND AREAS SURVEYED

Lake Magenta Nature Reserve (Class A no. 25113) is situated 32 km east of Pingrup on East Road. Most of the Reserve lies within the boundaries of the Kent Shire with a small section in the North-east corner situated in the Shire of Lake Grace.

The present survey included the area within 400m (200m each side) of designated internal firebreaks (see Fig. 1) and within 400m to the north of the southern boundary. The total area surveyed was approximately 3,520 ha along approximately 88km of firebreaks.

1.5 PHYSICAL FEATURES OF THE RESERVE

Lake Magenta Nature Reserve (94,170 ha) is rectangular in shape, 32km along the east-west axis and 29km on the north-south axis. In the north-east corner the boundary is extended to take in the eastern side of Lake Magenta, a large salt-pan lake. Part of a chain of salt and ephemeral freshwater lakes to the south of Lake Magenta are also included in the Reserve.

The terrain is gently undulating and of low relief with an overall downward gradient running from the western section east to Lake Magenta proper. Several ridges stretch across the Reserve in a north-south direction. These ridges may in mid-slope contain small breakaways.

Numerous water courses transect the Reserve, particularly where part of the Fitzgerald River extends into the south-east corner. These water courses can hold water after only light rains.

Several soaks occur in the north of the reserve, one of which has been developed as a government dam. In general, however, fresh water is scarce in the area.

1.6 HISTORY

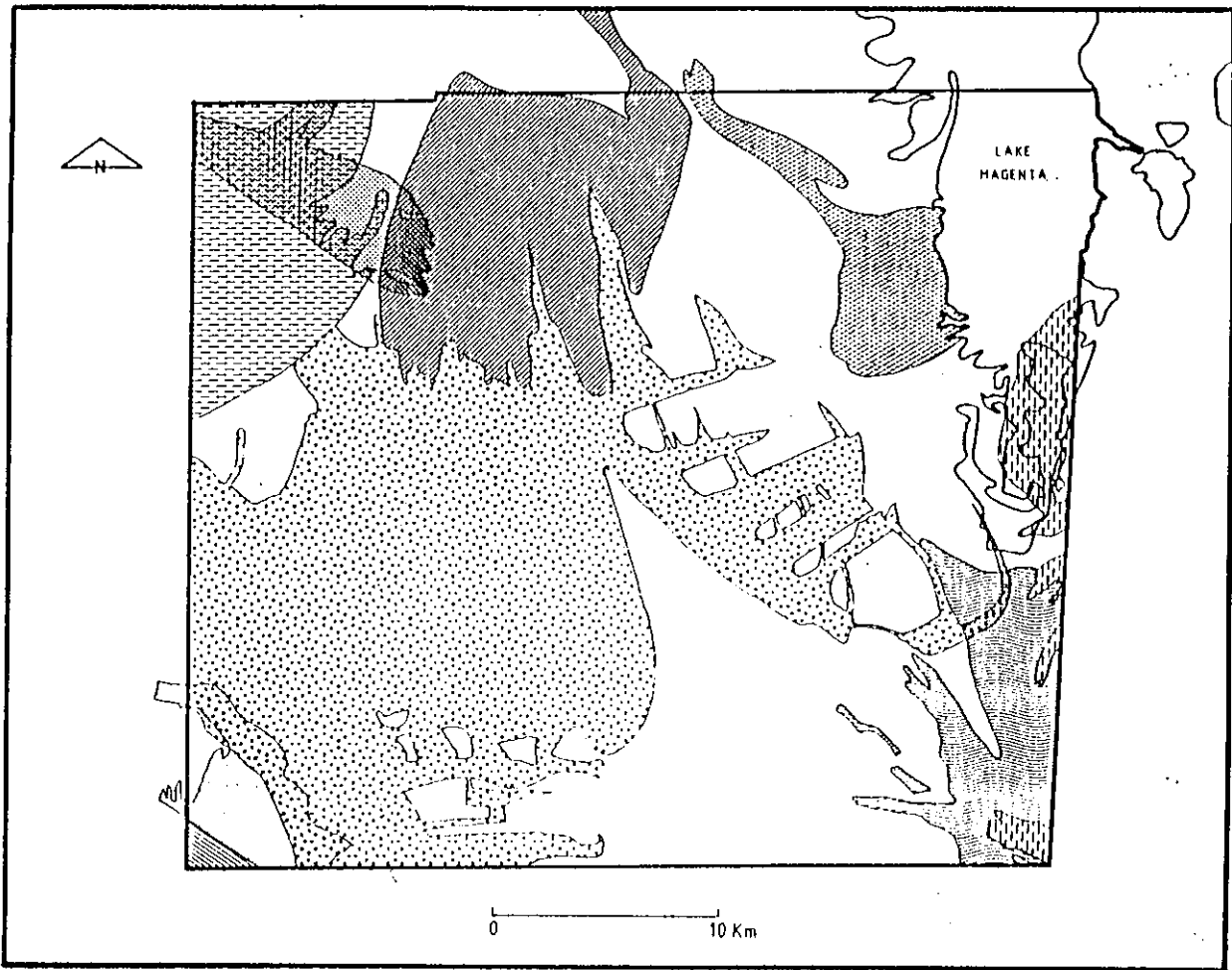
The history of the Reserve is described in the Lake Magenta Nature Reserve Management Plan (Crook and Burbidge 1982). Dr D.L. Serventy first proposed a "faunal reserve or primitive area" of some 135,768 ha including land east of the present Nature Reserve. The proposal was not favourably received by some local interests including the Kent Vermin Board and those wishing to open up the country for farm development. Finally a "Class A" reserve of 94,170 ha, 41,598 ha less than originally suggested, was established in 1958 and vested in the Fauna Protection Advisory Committee. Nearly all the land on its southern, western and northern boundaries has been cleared and developed as farm land. A final release of eight blocks on and near the eastern part of the northern boundary of the Reserve took place in 1980. For the most part these blocks have now been cleared.

1.7 FIRE HISTORY

Figure 2 has been reproduced from the Lake Magenta Reserve Management Plan and shows the fire history of the reserve up until 1979. In 1984 a fire started on a neighbouring property on the northern boundary of the Reserve and burnt south-east to the Lake.

About 60% of the Reserve has been burnt over the last 25 years. Most of these fires started outside of the Reserve as a result of lightning strike or the escape of clearing burns.

Fires appear to have been less common before the area was settled. Plant communities such as stands of *Eucalyptus platypus* are extremely slow growing and unlikely to have survived in areas subject to frequent fire (Crook and Burbidge 1982). This would indicate that the increased frequency of fires over the last 25 years is mostly associated with farm development in the area.



Fire history of the Lake Magenta Nature Reserve
1957 to present










pre- 1968				
1971-72				
Nov. 72				
1977-78				
Dec. 79				

Figure 2 Fire history of the Lake Magenta Nature Reserve reproduced from the Lake Magenta Reserve Management Plan (Figure 15).

2.0 METHODS

The ground survey of the vegetation and flora of the Reserve was carried out at the end of November and during periods in December 1986.

General vegetation divisions were noted using colour aerial photographs at 1:20,000 scale. Areas of interest thus delineated were examined in the field and the vegetation and soils at selected sites described. Because of time limitations some areas were not covered in detail in the ground survey and mapping was carried out by extrapolation of known vegetation associations using the aerial photographs.

Vegetation association descriptions were based on the classification system devised by Muir (1977) which was specifically designed for describing wheatbelt vegetation (Table 1).

Voucher specimens of most plant species encountered were collected and identified using keys and by comparison with specimens at the Western Australian Herbarium. Experts involved in revising particular genera were consulted wherever possible to ensure accuracy with identifications.

TABLE 1 MUIR SYSTEM OF VEGETATION CLASSIFICATION

LIFE FORM/HEIGHT CLASS	CANOPY COVER			
	DENSE 70 - 100% d	MID DENSE 30 - 70% c	SPARSE 10 - 30% i	VERY SPARSE 2 - 10% r
T Trees > 30 m M Trees 15 - 30 m LA Trees 5 - 15 m LB Trees < 5 m	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 > 2 m SA Shrubs 1.5 - 2.0 m SB Shrubs 1.0-1.5 m SC Shrubs 0.5 - 1.0 m SD Shrubs 0.0 - 0.5 m	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	Dense Mat Plants Dense Hummock Grass	Mat Plants Mid Dense Hummock Grass	Open Mat Plants Hummock Grass	Very Open Mat Plants Open Hummock Grass
GT Bunch Grass > 0.5 m GL Bunch Grass < 0.5 m J Herbaceous spp.	Dense Tall Grass Dense Low Grass Dense Herbs	Tall Grass Low Grass Herbs	Open Tall Grass Open Low Grass Open Herbs	Very Open Tall Grass Very Open Low Grass Very Open Herbs
VT Sedges > 0.5 m VL Sedges < 0.5 m	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

3.0 RESULTS

3.1 VEGETATION SURVEY

Previous Surveys.

Beard (1976) mapped the Newdegate area at a scale of 1:250,000 and differentiated five vegetation formations on the Lake Magenta Nature Reserve.

- a) Mallee on lateritic soil (*Eucalyptus eremophila* - *E. oleosa* association).
- b) Mallee-heath (*E. tetragona* over mixed Proteaceae-Myrtaceae).
- c) Scrub-heath (mixed Proteaceae-Myrtaceae).
- d) Boree scrub (*Melaleuca thyoides* community).
- e) Salmon gum woodland (*E. salmonophloia*).

For the most part the Reserve lies in the Hyden Vegetation System with the southern section being placed in the Chidnup System. Beard describes two recognisable mallee associations in the general area.

- a) *E. eremophila*-*E. oleosa* occurring on sand over ironstone gravel.
- b) *E. redunca*-*E. uncinata* occurring on sand over clay and following the valleys and lower ground.

The two associations merge together over widespread intermediate country. In the Hyden System *E. eremophila* and *E. oleosa* are the dominant species but *E. redunca* and *E. uncinata* are frequently found. The *E. eremophila*-*E. oleosa* association has been mapped by Breard in the area of the Lake Magenta Nature Reserve.

In the Hyden system the scrub/heath corresponds to the mallee/heath of the south coastal belt with Proteaceae prominent and *E. tetragona* occasional.

In the bottomland country of the Hyden System salt lakes with samphire heath, boree and woodlands occur including *E. salmonophloia*. Woodlands of *E. occidentalis* (flat-topped yate) and *E. salmonophloia* are both present in the Chidnup System.

In both systems stands of *E. falcata* (silver mallet) occur in small patches and in depressions *E. platypus* (Moort) with its associates *E. annulata* and *E. spathulata* form dense stands.

The considerable variability of the vegetation of the Lake Magenta Nature Reserve has been demonstrated in recent years by surveys conducted by the W.A. Museum and the Department of Conservation and Land Management. Expeditions to the north of the Reserve by members of the W.A. Museum in 1971 and 1972 described 16 vegetation formations including seven open and closed mallee formations, five open and closed woodland formations, one heath, two scrublands and one halophyte (samphire) formation (Kitchener, unpubl.).

Officers of C.A.L.M. inspected the Reserve in 1980 and described the structure of the vegetation at 11 sites around the Reserve. Formations described include : 1) Mixed open mallee of a number of *Eucalyptus* species, 2) mixed mallee/open woodland of *E. platypus*, *E. redunca* and *E. eremophila*, 3) closed mallee/forest of *E. platypus*, 4) open mallee of *E. tetragona* over heath, 5) mixed open shrub mallee over open scrub, 6) very open shrub mallee over heath, 7) Salmon Gum woodlands, 8) mixed eucalypt forest of *E. astringens*, *E. falcata*, *E. gardneri*, *E. platypus*, 9) *E. occidentalis* swamp, 10) *E. spathulata* woodland, 11) Samphire low heathland.

Current Survey

Twenty five vegetation types were encountered in the areas of the Lake Magenta Nature Reserve included in the present survey. The most common vegetation types were those of the Mallee associations

covering large areas of the surveyed strips. Beard (1976) indicated that the majority of the reserve is covered by the *Eucalyptus eremophila* - *E. oleosa* association. In the present survey most of the mallee associations are described as "mixed mallee" as *E. eremophila*, *E. phaenophylla* (m/s *E. redunca* group), *E. uncinata* and *E. flocktoniae* were recorded at most sample sites. The structure of the vegetation surveyed is complex with the understorey layers changing within a few meters in places forming an intricate mosaic. The vegetation structure has become even more complex due to the frequency of fires in the reserve over the past 25 years. Vegetation types, especially those of the mallee associations, tend to merge with each other and the general descriptions given indicate the "typical" form of the type described. Delineation of these associations was not always possible from the available aerial photographs and therefore site locations only describe the vegetation structure and species composition at that point and the surrounding boundaries marked on the vegetation map must be treated with caution. Dotted lines on the map can refer to changes in vegetation structure through fire but are also used where delineation of vegetation associations from the aerial photographs was particularly difficult. For the differences in vegetation structure between areas defined by these dotted lines information collected at site locations should be consulted (Appendix 2).

Site EW 2.1 = Site on the area surveyed along the east-west firebreak, section 2, site 1.

NS refers to a site on the area surveyed along the north-south firebreak.

SB refers to a site on the area surveyed along the southern boundary of the reserve. (See Figure 1).

The following is a list of the vegetation types described and mapped in the study.

Woodland Associations

1. *Eucalyptus salmonophloia* (Salmon Gum) Open Woodland (sW)
2. *Eucalyptus occidentalis* (Flat Topped Yate) Woodland (oW)
3. *Eucalyptus falcata* (Silver Mallet) Woodland (fW)
4. *Eucalyptus incrassata* Woodland (iW)
5. *Eucalyptus densa* (ms) Woodland (dW)
6. *Eucalyptus platypus* (Moort) Woodland (pW1)
7. *Eucalyptus platypus* (Moort) Dense Woodland (pW2)

Open Mallee Associations

1. Open Tallerak Mallee over Mixed Low Heath (tM)
2. Open Mallee over Scrub (bM)
3. Open Mallee over *Hakea varia* Heath (vM)

Mallee Associations

1. Mixed Mallee over Scrub (M4)
2. Mixed Mallee over *Melaleuca* Thicket (M5)
3. Mixed Mallee - Type 1 (M1)
4. Mixed Mallee - Type 2 (M2)
5. Mixed Mallee/*Hakea multilineata* (M3)
6. Mixed Mallee over *Melaleuca uncinata* Scrub (M6)
7. Dense Mixed Mallee - Type 1 (mM)
8. Dense Mixed Mallee - type 2 (pM)
9. *Eucalyptus annulata* Mallee (aM)

Heath and Thicket Associations

1. *Xanthorrhoea nana/Hakea baxteri* Heath (xH)
2. *Banksia baueri* Heath (bH)
3. Low Scrub with emergent *Santalum acuminatum* (sH)
4. Mixed Heath (mH)
5. *Eucalyptus platypus* (Moort) "Thicket" (pT)

Halophyte Associations

1. Samphire (S)

WOODLAND ASSOCIATIONS

- 1) *Eucalyptus salmonophloia* (Salmon Gum) Open Woodland (sW)

This vegetation type was only found in a small area surveyed along the North-South firebreak (Section 1) on low lying land on sandy loam over clay.

The area was burnt in February 1972 and the regenerating Salmon Gums now vary in height from 4-8m, canopy cover 2-10%. The understorey consists mainly of *Melaleuca* shrubs 0.5-1.5m including *M. depauperata*, *M. subtrigona* and *M. uncinata*. Patches of *Gahnia ancistrophylla* were also found. Mallee are scattered throughout this vegetation type and increase in density along the streamline. Species recorded include *Eucalyptus aspratilis* (m/s), *E. flocktoniae*, *E. conglobata* and *E. spathulata* var *grandiflora*.

Muir Description

Site NS 1.4 Open Low Woodland A over Low Scrub B over Dwarf Scrub C.

Comments - The Salmon Gum woodland at Sullivan Soak also extends slightly into the surveyed area in the south of this firebreak.

Photograph 1 Salmon Gums (*E. salmonophloia*) regenerating after the 1972 fire at site 4 on North-South firebreak (Section 1).



2) *Eucalyptus occidentalis* (Flat Topped Yate) Woodland (oW)

This vegetation type was only found in a small area on the Southern Boundary and at the eastern end of the East-West firebreak on sand over clay.

On the southern boundary the trees reach a height of 8-12m with a sparse canopy cover (10-30%). Scattered shrubs are also present.

At the eastern end of the East-West firebreak (Section 3) the trees form a mid-dense stratum (canopy 30-70%) and vary in height from 2-8m due to a pre-1968 fire.

Muir Descriptions

Site SB 2.5 Low Woodland A

Site EW 3.17 Low Forest A

Photograph 2 *E. occidentalis* (Flat-topped Yate) Woodland. (Site SB 2.5)



3) *Eucalyptus falcata* (Silver Mallet) Woodland (fW)

This vegetation type occurs in two small areas surveyed along the North-South firebreak (Section 2) on sand over laterite on high ground (ridge).

The trees form a mid-dense stratum (30-70% canopy cover) and reach a height of 8m. Scattered shrubs are also found including *Melaleuca uncinata*, *M. subtrigona*, *Gastrolobium crassifolium*, *Daviesia nematophylla*, *Westringia cephalantha* and *Hakea multilineata*.

Muir Description

Site NS 2.7 Low Forest A

Photograph 3 Silver Mallet (*E. falcata*) woodland on North-South firebreak (Section 2) (Site NS 2.7).



4) *Eucalyptus incrassata* Woodland (iW)

This vegetation type was found in small areas along the East-West firebreak (Section 1) and on the North-South firebreak (Section 2) on sandy gravel.

Trees and some mallee of *E. incrassata* (dominant), *E. falcata* (N-S firebreak only), *E. flocktoniae* and *E. scyphocalyx* form a dense stratum (canopy cover 70-100%) and reach a height of 5m. Shrubs 0.5-1m form a very sparse understorey (canopy cover 2-10%). Species present include *Dodonaea viscosa*, *Spyridium denticuliferum* and *Grevillea patentiloba*.

Muir Descriptions

Site NS 2.13 Dense Low Forest B over Open Dwarf Scrub C

Site EW 1.6 Dense Low Forest B over Open Dwarf Scrub C

Photograph 4 *Eucalyptus incrassata* woodland on North South firebreak 2 (Site NS 2.13).



5) *Eucalyptus densa* Woodland (dW).

Small areas of *Eucalyptus densa* (manuscript name) trees were found in the area surveyed along the East-West firebreak (section 2 and 3) on sand over clay. The trees reach a height of 6m and form a mid-dense stratum (canopy cover 30-70%) in section 2 and a sparse stratum (10-30% canopy cover) in section 3. The understorey is formed by a sparse shrub layer (canopy cover 10-30%) of *Melaleuca acuminata*, *M. undulata* and *M. uncinata* shrubs 1.5-2m.

On the southern boundary *E. densa*, *E. xanthonema* and *E. spathulata* trees with some mallee occur on sandy gravel over clay. The upper stratum is dense (70-100% canopy cover) and the trees/mallee vary in height from 4-6m. The lower stratum is mainly *Melaleuca acuminata* shrubs 1-1.5m with a sparse canopy cover (10-30%).

Muir Descriptions

Site EW 2.13 Low Forest A over Low Scrub A

Site EW 3.1 Low Woodland B over Low Scrub B.

Site SB 3.4 Dense Low Forest B over Low Scrub B

Photograph 5 *Eucalyptus densa*, *E. xanthonema* and *E. spathulata* woodland formation on the southern boundary (Site SB 3.4).



6) *Eucalyptus platypus* (Moort) Woodland (pW1).

This vegetation type is typical of stands of *E. platypus* which have remained unburnt for long periods of time. *E. platypus* regenerating after fire grow in dense stands and where the growth is less will eventually spread out to become small domed trees. Because of successive fires on the reserve this vegetation type was found only in small areas on the southern boundary and on the East-West firebreak (Section 1) on clay soils.

The height of the trees varies from 3-5m with the canopy sparse to mid-dense (20-50%). On the East-West firebreak an understorey of mid-dense *Melaleuca adnata* and *M. cucullata* shrubs 1-1.5m is present. On the southern boundary only scattered shrubs are present which is more typical for this vegetation type.

Muir Descriptions

Site EW 1.10 Low Woodland B over Heath B

Site SB 2.9 Tree Mallee/Low Forest B

Site SB 2.10 Tree Mallee/Low Woodland B

Photograph 6 Moort (*E. platypus*) woodland on the southern boundary (Site SB 2.10).



7) *Eucalyptus platypus* (Moort) Dense Woodland (pW2).

After fire, regeneration of *E. platypus* produces typically dense stands of trees. This vegetation type was found on the North-South firebreak (Section 2), the East-West firebreak and the southern boundary on clay soils. The dense upper stratum (canopy cover 70-100%) consists of trees varying in height from 2-5m with only scattered shrubs present in the lower stratum including *Melaleuca adnata* and *Exocarpus aphyllus*.

Muir Descriptions

Site NS 2.11 Dense Low Forest B

Site SB 3.8 Dense Low Forest B

OPEN MALLEE ASSOCIATIONS

1) Open Tallerak Mallee over Mixed Low Heath (tM).

This vegetation type occurs in areas surveyed along the North-South and East-West firebreaks on high ground on sandy and gravelly soils over laterite.

Eucalyptus tetragona shrub mallee 2-3m in height, usually form a very sparse upper stratum (2-10% canopy cover) but can be scattered in some areas. The lower stratum is made up of mid-dense shrubs (30-70% canopy cover) 0-0.5m in height. Scattered shrubs to 1.0m may form a very sparse stratum (canopy cover 2-10%) in some areas. This vegetation type is rich in species and the following are only a few of those recorded; *Agonis spathulata*, *Calothamnus gracilis*, *Baeckea preissiana*, *Eremaea pauciflora*, *Beaufortia micrantha*, *Dryandra pteridifolia*, *Melaleuca subtrigona*, *M. cuneata*, *I. buxifolius*, *H. crassifolia*, *Allocasuarina pinaster*, *Verticordia chrysantha*, *V. grandiflora*, *V. picta*. Myrtaceae and Proteaceae are both prominent.

Included in this vegetation association are 3 areas surveyed along the east-west firebreak. These areas have probably remained unburnt for some time and the *E. tetragona* mallee reaches a height of 4m at site EW 1.2 and 6m at sites EW 2.12 and EW 2.14. The lower stratum consists of mid-dense shrubs (30-70% canopy cover) 0.5-1.0m in height with *Beaufortia schaueri* prominent.

Muir Descriptions

- Site NS 1.5 Very Open Shrub Mallee over Low Heath D
Site NS 2.10
Site NS 2.16
Site EW 2.4
Site EW 2.11 with *Beaufortia schaueri* prominent
- Site NS 3.2 Very Open Shrub Mallee over Low Scrub B over Dwarf Scrub D (not typical).
Site NS 3.6 Very Open Shrub Mallee over Open Low Scrub B over Low Heath C (not typical)
Site EW 2.5 *Very Open Shrub Mallee over Low Heath C*
Site EW 2.7 Very Open Shrub Mallee over Open Dwarf Scrub C over Low Heath D with *Beaufortia schaueri* prominent
Site EW 1.2 Very Open Shrub Mallee over Low Heath C with
Site EW 2.12 *Beaufortia schaueri* prominent
Site EW 2.14

Photograph 7a Open Tallerak Mallee (*E. tetragona*) over mixed heath on the North-South firebreak (Section 1). *Verticordia picta* and *Melaleuca subtrigona* (pink flowers), *V. roei* (white), *V. chrysantha* (yellow) and *Verticordia* sp. nov. (orange).



Photograph 7b Open Tallerak Mallee (*E. tetragona*) over mixed heath with *Beaufortia schaueri* prominent (Site EW 2.14).



2) Open Mallee over Scrub (bM).

This vegetation type occurs in areas surveyed along the western part of the Southern Boundary on sand.

For the most part *E. tetragona*, *E. incrassata*, *E. falcata*, *E. phaenophylla* (manuscript name - *E. redunca* group) and *E. uncinata* Shrub Mallee, 1.5-4m in height, form a very sparse upper stratum (2-10% canopy cover) but may be scattered in some areas. The understorey is variable with *Hakea corymbosa* and *H. crassifolia* 1-1.5m in height forming a sparse stratum (2-30% canopy cover) in some areas and mixed shrubs 0.5-1m in height forming a sparse stratum (10-30% canopy cover) in other areas. The lowest stratum of shrubs 0-0.5m in height with a canopy cover of 10-30% is always present. *Banksia* species recorded include *B. calyculata*, *B. blechnifolia* and *B. violacea*.

Muir Descriptions

- Site NS 4.14 Very Open Shrub Mallee over *Hakea crassifolia* Low Scrub B over Dwarf Scrub D (unburnt)
- Site SB 1.3 Very Open Shrub Mallee over Low Heath D with scattered *Hakea crassifolia*
- Site SB 1.6 Very Open Shrub Mallee over Dwarf Scrub C over Dwarf Scrub D with scattered *Hakea corymbosa* and *Hakea crassifolia*
- Site NS 4.13 Very Open Shrub Mallee over Dwarf Scrub C over Dwarf Scrub D (burnt)
- Site SB 1.7 Very Open Shrub Mallee over Dwarf Scrub D with scattered *Hakea corymbosa* and other shrubs to 1.5m
- Site SB 1.12 Low Heath C over Dwarf Scrub D (shrub mallee scattered)
- Site SB 1.13 Very Open Shrub Mallee over Low Scrub B over Dwarf Scrub D with scattered *Hakea crassifolia*, *H. corymbosa* to 1.5m
- Site SB 2.2 Very Open Shrub Mallee over Dwarf Scrub C over Dwarf Scrub D with *Dryandra cuneata*, *Beaufortia schaueri*

- and *Agonis spathulata* scattered to 1.5m
- Site SB 2.3 Very Open Shrub Mallee over Low Scrub B over Dwarf Scrub D
- Site NS 4.12 Very Open Shrub Mallee over *Hakea crassifolia*, *H. corymbosa* Open Low Scrub B over Low Heath D (unburnt)

Photograph 8 Open Mallee over Banksia scrub on the southern boundary (Site SB 1.13).



3) Open Mallee over *Hakea varia* Heath (vM).

This vegetation type can be found in areas surveyed along the North-South firebreak (section 4), the East-West firebreak (section 3) and the Southern Boundary (section 3) on sandy gravel. Usually a mosaic is found with patches of heath and mallee. The very sparse upper stratum (canopy cover 2-10%) of Shrub Mallee 1.5-4m, occurs over a mid-dense lower stratum (canopy cover 30-70%) of mixed shrubs 0-0.5m. Shrubs of *Hakea varia* to 2m are scattered throughout. On the southern boundary the *H. varia* shrubs reach a density of 2-10% canopy cover. Species of shrub mallee recorded include *E. scyphocalyx*, *E. phaenophylla* (ms), *E. uncinata* and *E. eremophila*.

Muir Descriptions

- Site NS 3.13 Very Open Shrub Mallee over Dwarf Scrub C over Dwarf Scrub D with scattered shrubs of *Melaleuca uncinata*, *Hakea varia* and *Hakea corymbosa*
- Site NS 4.6 Very Open Shrub Mallee over Dwarf Scrub D with scattered *Hakea varia* to 1.5m (unburnt)
- Site NS 4.8 Open Shrub Mallee over Low Heath C with scattered *Hakea varia* to 2m (unburnt)
- Site EW 3.8 Very Open Shrub Mallee over Low Heath D with scattered *Hakea varia* to 2m
- Site EW 3.10 Low Heath D with scattered *Hakea varia* to 2m (mallee present at edge of area)
- Site SB 3.1 Very Open Shrub Mallee over *Hakea varia* Open Low scrub B over Low Heath D

Photograph 9 Open shrub mallee over *Hakea varia* heath (site EW3.8)



MALLEE ASSOCIATIONS

1) Mixed Mallee over *Banksia* scrub (M4).

This vegetation type occurs on the Southern Boundary and on areas adjacent to the North-South firebreak (section 4) on sand and gravelly sand.

The association is similar to the Open Mallee over scrub but in areas where this vegetation type occurs the upper stratum is formed by sparse Shrub Mallee (canopy cover 10-30%), 2-4m in height and the understorey consists of a mid-dense lower stratum (20-70% canopy cover) formed by shrubs 0-0.5m in height. *Hakea* and other shrubs including *H. corymbosa*, *H. obliqua* and *Banksia media* are sometimes present forming a sparse stratum (2-30% canopy cover) to 1.5m in height. Species of *Eucalyptus* recorded include *E. falcata*, *E. incrassata*, *E. phaenophylla* (ms), *E. scyhocalyx*, *E. tetragona* and *E. uncinata*. *Banksia* species recorded include *B. media*, *B. blechnifolia* and *B. violacea*. *Dryandra* sp. nov. (1114) was collected at Site SB 1.10.

Muir Descriptions

- Site SB 1.8 Open Shrub Mallee over *Hakea crassifolia*, *H. corymbosa* and *Banksia media* Open Low Scrub B over Low Heath D
- Site SB 1.10 Open Shrub^{Mallee} over *Hakea corymbosa*, *H. crassifolia* Open Low Scrub B over Low Heath D
- Site SB 1.11 Open Shrub^{Mallee} over *Melaleuca uncinata*, *Hakea crassifolia*, *H. varia* Open Low Scrub B over Low Heath D
- Site SB 1.9 Open Shrub Mallee over Low Heath D with scattered *Hakea obliqua* and *Petrophile squamata* to 1.5m
- Site SB 1.14 Open Shrub Mallee over Open Dwarf Scrub C over Dwarf Scrub D
- Site SB 2.1 Open Shrub Mallee over Low Scrub B over Dwarf Scrub D

2) Mixed Mallee over *Melaleuca* "Thicket" (M5).

This vegetation type was found in areas surveyed along the Southern Boundary (Sections 2 and 3), the North-South firebreak (Section 2) and the East-West firebreak (Sections 1 and 2) on sand over clay or sandy clay soils.

The sparse upper stratum (canopy cover 10-30%) of Shrub Mallee varies in height from 2-5m and occurs over a mid-dense to dense lower stratum (canopy cover 60-100%) of *Melaleuca* shrubs varying in height from 1.5-2m over the range of areas surveyed. Species of *Eucalyptus* and *Melaleuca* recorded include *E. annulata*, *E. aspratilis* (ms), *E. calycogona*, *E. conglobata*, *E. flocktoniae*, *E. incrassata*, *E. spathulata*, *E. scyphocalyx*, *E. phaenophylla* (m/s), *E. uncinata*, *E. xanthonema*, *Melaleuca subtrigona*, *M. uncinata*, *M. lateriflora*, *M. holosericea* and *M. acuminata*.

Muir Descriptions

- Site NS 2.9 Open Shrub Mallee over *Melaleuca subtrigona* Heath B
(not typical)
- Site SB 2.8 Open Shrub Mallee over Heath A
- Site SB 2.11 Shrub Mallee/Open Shrub Mallee over Low Scrub B (not
typical)
- Site SB 2.12 Open Shrub Mallee/Shrub Mallee over Dense Heath A
- Site SB 3.2 Open Shrub Mallee over Heath A
- Site EW 1.20 Open Shrub Mallee over Heath A
- Site SB 3.12 Open Shrub Mallee/Shrub Mallee over Heath A
- Site EW 2.15 Open Shrub Mallee over Dense Heath B (not typical)

Photograph 10 Shrub Mallee over dense *Melaleuca uncinata* shrubs at Site SB 2.8.



3) Mixed Mallee - Type 1 (M1)

This vegetation type occurs mainly in areas surveyed along the North-South firebreak (Sections 1, 2 and 4) and in small areas along the East-West firebreak (Section 1) on low lying land on sandy clay or sand over clay where the sand layer is shallow.

The sparse to mid-dense upper stratum (canopy cover 10-40%) consists of shrub mallees ranging in height from 1-4m. The northern section of the areas surveyed was burnt in 1972 and the mallee appear to be more dense in these areas. The very sparse lower stratum consists usually of shrubs 0-0.5m in height, 2-10% canopy cover but variations from scattered shrubs to areas with shrubs of canopy cover 10-30% occur merging into Mixed Mallee Type 2 (M2). *Melaleuca uncinata* sometimes forms a very sparse stratum 1-1.5m in height.

As in most of the mallee associations surveyed the understorey forms a mosaic changing from scattered shrub to a sparse

understorey over short distances. Species of *Eucalyptus* recorded include *E. eremophila*, *E. flocktoniae*, *E. spathulata*, *E. conglobata*, *E. pileata* and *E. phaenophylla*(m/s). Species commonly recorded in the understorey include *Exocarpus aphyllus*, *Templetonia sulcata*, *Grevillea pectinata*, *G. patentiloba*, *G. pauciflora*, *A. glaucoptera* and *Melaleuca uncinata*

Muir Descriptions

- Site NS 2.1) Open Shrub Mallee over Open Dwarf Scrub D
Site NS 2.4)
Site NS 4.3) Open Shrub Mallee over Open Low Scrub B over Open Dwarf Scrub D
Site NS 1.8) Open Shrub Mallee over Open Low Scrub B over Open Dwarf Scrub D
Site NS 1.9)
Site NS 4.5)
Site NS 1.2 Open Shrub Mallee over Dwarf Scrub D
Site NS 1.6 Open Shrub Mallee over Open Dwarf Scrub C over Dwarf Scrub D
Site NS 1.10 Open Shrub Mallee
Site EW 1.12 Open Shrub Mallee over Open Dwarf Scrub C
Site NS 4.2

Photograph 11 Mixed Mallee Type 1 at Site NS 1.10. *E. conglobata*, *E. eremophila*, *E. flocktoniae* and *E. spathulata* occur in the area.



4) Mixed Mallee - Type 2 (M2)

This vegetation type occurs throughout the area surveyed and was the most common vegetation type encountered. It occurs on sand and gravelly sand over clay with the sand layer usually deeper than in the soil type carrying the previous vegetation type (Mixed Mallee - Type 1).

This vegetation type consists of a mid-dense to sparse upper stratum (canopy cover 10-40%) of mixed shrub mallee varying in height from 1-5m. The shrub mallee tend to be more dense in the northern sections surveyed. The understorey forms a mid-dense layer (30-70% canopy cover) of shrubs 0-0.5m in height but changes in canopy cover were recorded over relatively short distances. *Melaleuca subtrigona*, *M. holosericea*, *M. aff. pentagona* or other *Melaleuca* species are often prominent. *Melaleuca uncinata* is also often present as scattered shrubs or forming a very sparse layer (2-10% canopy cover) at a height of 1-1.5m. Scattered shrubs of *Banksia media* and *B. caleyi* are found in deeper sandy areas. Species of *Eucalyptus* recorded include *E. aspratilis* (m/s), *E. eremophila*, *E. flocktoniae*, *E. phaenophylla* (m/s), *E. incrassata*, *E. scyphocalyx*, *E. uncinata*, *E. spathulata* and *E. xanthonema*. Included under this vegetation association are areas surveyed at Sites NS 4.4 and NS 4.10. These areas have remained unburnt for some time with mallee reaching a height of 5m. The lower stratum consists predominantly of shrubs 0.5-1m (20-70% canopy cover).

Muir Descriptions

Sites NS 3.1, 3.11, 3.14, 4.1, 4.11 Open Shrub Mallee over Low
EW 1.1, 1.8, 2.6, 2.9 Heath D
SB 2.13, 3.3, 3.7, 3.10, 3.15

Sites NS 1.3, Open Shrub Mallee over Open Low Scrub B over Low
Heath D

- Sites NS 2.12, 3.12 Open Shrub Mallee over Open Low Scrub B over
EW 2.1, 3.3, 3.7, 3.12 Low Heath D
- Site EW 2.2 Open Shrub Mallee over Open Dwarf Scrub C over Low
Heath D
- Site EW 2.17 Open Shrub Mallee over Open Dwarf Scrub C over Low
Heath D
- Site SB 1.4 Open Shrub Mallee over Dwarf Scrub D
- Site EW 3.4
- Site EW 3.9 Very Open Shrub Mallee over Open Low Scrub B over Low
Heath D
- Site EW 2.10 Very Open Shrub Mallee over Low Heath D
- Site EW 3.13 Open Shrub Mallee over Open Dwarf Scrub C over Dwarf
Scrub D
- Site NS 4.10 Open Shrub Mallee over Dwarf Scrub C over Dwarf
Scrub D (unburnt)
- Site NS 4.4 Open Shrub Mallee over Open Low Scrub B over Low
Heath C (unburnt)
- Site EW 1.15 Open Shrub Mallee over Open Low Scrub B over Low
Heath C
- Site SB 2.7 Open Shrub Mallee over Low Heath C

Photograph 12 Shrub Mallee with an understorey of *Melaleuca subtrigona* shrubs and scattered *Melaleuca uncinata*.



Photograph 13 Shrub Mallee with an understorey of mixed shrubs with *Melaleuca subtrigona* prominent. Scattered shrubs of *Banksia media* and *B. caleyi* (right) can be seen.



5) Mixed Mallee *Hakea multilineata* (M3).

This vegetation type was found in areas surveyed along the North-South firebreak (sections 1, 2 and 3) and the East-West firebreak (section 1) on higher ground on sand over laterite.

Mixed shrub mallee form a sparse to very sparse upper stratum (canopy cover 2 - 30%) varying in height from 1.5-5m. The lower stratum is variable. Shrubs 0.5-1m usually form a mid-dense to sparse stratum (2-30% canopy cover) and in some places *Melaleuca uncinata* shrubs 1-2m form a mid-dense to sparse stratum (2-30% canopy cover). This vegetation type is characterised by the presence of *H. multilineata* and *Gastrolobium crassifolium*. *Eucalyptus* species recorded include *E. eremophila*, *E. flocktoniae*, *E. phaenophylla* (ms), *E. scyphocalyx*, *E. tetragona* and *E. uncinata*.

Muir Descriptions

- Site NS 1.1 Very Open Shrub Mallee over Open Low Scrub B over Low Heath D
- Site NS 2.5 Open Shrub Mallee over Low Scrub A over Open Dwarf Scrub C
- Site NS 2.8 Open Shrub Mallee over Open Low Scrub B over Dwarf Scrub C
- Site NS 2.14
- Site EW 1.13
- Site EW 1.7 Open Shrub Mallee over Dwarf Scrub C
- Site NS 3.5 Very Open Shrub Mallee over Open Low Scrub B over Low Heath C
- Site EW 1.4 Open Shrub Mallee over *Acacia assimilis* Open Low Scrub A over Dwarf Scrub C
- Site EW 1.18 Open Shrub Mallee over Low Scrub B over Low Heath C

Photograph 14 *Hakea multilineata* with mallee at Site NS 2.5.



6) Mixed Mallee over *Melaleuca uncinata* Scrub (M6).

This vegetation type occurs in areas surveyed along the East-West firebreak, the North-South firebreak and the southern boundary on sand over clay.

For the most part sparse shrub mallee (canopy cover 10-30%) form the upper stratum, 1-4m in height. The lower stratum consists of *Melaleuca uncinata* shrubs canopy cover 25-70%, 1-1.5m in height. A very sparse layer of mixed shrubs 0-0.5m in height is sometimes present. *Eucalyptus* species recorded include *E. flocktoniae*, *E. phaenophylla* (ms), *E. scyphocalyx*, *E. spathulata* var. *grandiflora* and *E. xanthonema*.

This vegetation association merges with M2 in places but is characterised by denser *Melaleuca uncinata* shrubs (canopy cover 25-70%).

Muir Descriptions

- Site EW 1.11 Low Scrub B over Dwarf Scrub D scattered shrub
mallee
- Site EW 2.3 Open Shrub Mallee over Low Scrub B
- Site EW 2.19 Open Shrub Mallee over Low Scrub B over Open Dwarf
Scrub D
- Site EW 3.11
- Site NS 3.4
- Site EW 3.2 Open Shrub Mallee over Low Scrub B
- Site EW 3.5 Open Shrub Mallee over Low Scrub B
- Site EW 3.6 Open Shrub Mallee over Low Scrub A over Dwarf Scrub C
- Site SB 3.5 Open Shrub Mallee over Low Scrub B over Dwarf Scrub D
- Site SB 3.11 Open Shrub Mallee over Dwarf Scrub C over Open
Dwarf Scrub D
- Site NS 3.9 Shrub Mallee over Low Scrub B over Open Dwarf
Scrub C
- Site NS 2.15 Open Shrub Mallee over Low Scrub B over Dwarf
Scrub D
- Site SB 3.6 Open Shrub Mallee over Heath B
- Site SB 3.17

Site EW 2.8

Site SB 2.6 Open Shrub Mallee over Heath B over Dwarf Scrub D

Site EW 1.17 Open Shrub Mallee over Heath B over Dwarf Scrub C

Site EW 1.19 Open Shrub Mallee over Heath B over Dwarf Scrub D

Photograph 15 Shrub Mallee over *Melaleuca uncinata* scrub at site EW 2.19.



7
§) Dense Mixed Mallee - Type 1 (mM).

This vegetation type occurs in areas surveyed along the North-South firebreak (section 3) and along the East-West firebreak (section 1) on sand over clay and is found in streamlines and depressions.

Shrub mallee form a mid-dense upper stratum (canopy cover 50-70%) varying in height from 2-5m. Scattered shrubs are also present. Species of *Eucalyptus* recorded include *E. eremophila*, *E. flocktoniae*, *E. conglobata*, *E. uncinata* and *E. incrassata*.

Muir Descriptions

Site EW 1.3 Shrub Mallee

Site EW 1.14

Site EW 3.16

§) Dense Mixed Mallee - Type 2 (pM).

This vegetation type is found in the area adjacent to the North-South firebreak (section 4) on sandy gravel on gently sloping terrain.

Eucalyptus phaenophylla is prominent in this area and was not recorded for the previous vegetation type (mM).

E. phaenophylla, *E. uncinata*, *E. flocktoniae* and *E. scyphocalyx* tree and shrub mallee form a mid-dense stratum, 2-5m, canopy cover 30-70%. The very sparse lower stratum of *Melaleuca uncinata*, 1-1.5m is usually present and shrubs 0-0.5m, 2-10% canopy cover are also found.

Muir Descriptions

Site NS 4.7 (unburnt) Shrub Mallee over Open Low Scrub B over Open Dwarf Scrub D

Site NS 4.9 (burnt)

Photograph 16 Dense *E. phaenophylla* mallee at Site NS 4.7.



q 16) *Eucalyptus annulata* Mallee (aM).

This vegetation type was found in areas surveyed along the North-South firebreak (sections 1 and 3) and the East-West firebreak (section 1 and 2) on sandy loams or sandy clay soils.

Mixed shrub mallee with *E. annulata* prominent form a mid-dense upper stratum (canopy cover 30-70%) 2-5m in height. A sparse lower stratum is sometimes present but is very variable with shrubs usually 0.5-1m in height forming a canopy cover of 2-30%.

Other species of *Eucalyptus* recorded include *E. platypus*, *E. calycogona*, *E. conglobata*, *E. pileata*, *E. depauperata*, *E. flocktoniae*.

Muir Descriptions

Site NS 1.7 Shrub Mallee over Dwarf Scrub C

Site NS 3.7

Site EW 1.16

Site NS 2.3 Shrub Mallee

Site EW 1.5 Shrub Mallee over Open Dwarf Scrub C

Site EW 2.16 Shrub Mallee over Low Scrub B

Photograph 17 *E. annulata* shrub mallee at Site NS 3.7



HEATH AND THICKET ASSOCIATIONS

1) *Xanthorrhoea nana/Hakea baxteri* Heath (xH).

This vegetation type was burnt in 1972 and again in 1976-77. Mixed shrubs 0-0.5m in height form a mid-dense stratum (canopy cover 30-70%). Scattered *E. tetragona* are also present reaching a height of 2m.

Species composition differs from that of the Open Tallerak mallee with *Xanthorrhoea nana*, *Hakea baxteri*, *Banksia caleyi*, *Astroloma sprengeloides*, *Verticordia densiflora*, *Andersonia parvifolia*, *Isopogon trilobus* among some of the species recorded. (See Appendix 2 for details.)

Muir Description

Site SB 1.2 Low Heath D

Photograph 18 Heath area on the Southern Boundary with *Xanthorrhoea nana* and *Hakea baxteri*.



2) *Banksia baueri* Heath (bH).

This vegetation type occurs in the south east corner of the Reserve on sand.

Mid-dense shrubs (30-70% canopy cover) 0-0.5m in height occur with scattered shrubs of *Banksia baueri* and *Hakea corymbosa* to 1.5m. *Darwinia diosmoides*, *Pityrodia uncinata*, *Petrophile* sp. nov. (aff. *longifolia*), *Isopogon* sp. nov. (aff. *attenuatus*) and *Adenanthos cuneatus* are among some of the species recorded.

Muir Description

Site SB 3.18 Low Heath D with *Banksia baueri* and *Hakea corymbosa* scattered to 1.5m

Photograph 19 *Banksia baueri* Heath



3) Low Scrub with emergent *Santalum acuminatum* (SH).

This vegetation type occurs at the eastern end of the East-West firebreak on sandy soils. The very sparse upper stratum (canopy cover 2-10%) of shrubs 0.5-1.0m in height occurs over a sparse lower stratum (canopy cover 10-30%) of mixed shrubs 0-0.5m in height. *Santalum acuminatum* to 2m is scattered throughout most of the area. Some of the species recorded include *Melaleuca urceolaris*, *Verticordia densiflora*, *V. plumosa*, *Kunzea preissiana* and *Acacia fragilis*. In the north-eastern section of this vegetation type *Stipa juncifolia* and *Melaleuca brevifolia* become prominent forming a sparse stratum (10-30% canopy cover). *Melaleuca cuticularis* occurs at the edge of the area surveyed.

Muir Description

Site EW 3.14 Open Dwarf Scrub C over Dwarf Scrub D

Photograph 20 Low Scrub with emergent *Santalum acuminatum* at the eastern end of the East-West firebreak.



4) Mixed Heath (mH)

This vegetation association is found in small areas on the North-South firebreak (sections 2 and 3) and on the Southern Boundary Section 3 on sand over clay.

Mixed shrubs to 0.5m in height form a mid-dense stratum (canopy cover 30-70%). *Beaufortia schaueri* is prominent in some areas on the North-South firebreak and scattered mallee are sometimes present.

Muir Description

Site NS 2.6 Low Heath D
Site NS 3.3
Site NS 3.8
Site NS 3.10
Site SB 3.14 Open Dwarf Scrub C over Low Heath D
Site SB 3.18a Open Low Scrub B over Low heath D

5) *Eucalyptus platypus* (Moort) "Thicket" (pT).

"Recently" burnt (pre 1968 and 1972) *E. platypus* is found on clay soils throughout much of the area surveyed.

The shrubs vary in height from 0.5 to 2m in the areas surveyed and form a mid-dense to dense (50-100%) stratum with no understorey. Scattered shrubs are present including *Melaleuca undulata* and *Exocarpus aphyllus*. Scattered Salmon Gums (*E. salmonophloia*) are present at site EW 2.18.

Muir Descriptions

Site NS 2.2 Low Heath C
Site EW 1.9 Dense Heath B/Dense Heath A
Site EW 2.18 Dense Heath B with scattered *Eucalyptus salmonophloia*

Comments - The term "thicket" has also been used in other survey work to describe dense *E. platypus* woodland with trees 2-5m.

Photograph 21 A stand of *Eucalyptus platypus* trees next to *E. platypus* shrubs near Site NS 2.11.



HALOPHYTE ASSOCIATIONS

1) Samphire (S)

This vegetation type was found only in a small area in the eastern section of the southern boundary on clay soils.

Shrubs of *Halosarcia halocnemoides* and *H. lepidosperma* dominate the area forming a sparse stratum (canopy cover 10-30%) 20-30cm in height.

Muir Description

Site SB 3.16 Dwarf Scrub D

Photograph 22 Samphire Heath at Site SB 3.16.



3.2 FLORA SURVEY

A total of 304 species were recorded during the survey. A complete list of species identified is found in Appendix 1. Manuscript names (m/s) have been used to avoid confusion between undescribed species. Identifications with the Generic name followed by "sp." or ? are uncertain because of lack of flowering material or confusion in the current taxonomy of those groups which are at present being revised. The nomenclature follows that of Green (1985) unless otherwise stated.

Due to time and seasonal constraints Appendix 1 represents by no means a complete list of the flora present in the area surveyed. The field work was carried out at the end of November and in periods during December resulting in lack of flowering material and the absence of a number of ephemeral and herbaceous species. For example no members of the Orchidaceae or Stylidiaceae were recorded and very few of the Liliaceae and Asteraceae. Further collecting work to be carried out in the wildflower season is recommended for a more comprehensive record of the flora of the area.

The families Myrtaceae, Proteaceae, Papilionaceae and Mimosaceae were the most strongly represented. Members of the Liliaceae were the most abundant of the Monocotyledons. The family Liliaceae is retained here for convenience and covers the families Dasypogonaceae, Xanthorrhoeaceae, Phormiaceae and Anthericaceae listed in Green (1985). The number of species recorded for the most prominent families is as follows:

Myrtaceae	86
Proteaceae	67
Papilionaceae (pea flowers)	23
Mimosaceae (wattles)	21
Epacridaceae (heath plants)	10
Liliaceae (lilies, blackboys)	9
Cyperaceae (sedges)	8

Thirty nine families were represented in the area surveyed.

Twenty species of Mallee (*Eucalyptus*) were recorded reflecting the diversity of the Mallee associations. Species rich areas included heath, Open Mallee over heath and Mallee over *Banksia* scrub.

Using the present data, the overall floristic diversity of the area surveyed can be estimated at 8.6 species/km² which is comparable to nature reserves in the general area, for example, Tarin Rock (8.7 species/km²) and Bendinging (5.9 species/km²) (Muir 1977). If it is assumed that the species list (Appendix 1) only represents about 60% of the total flora of the area surveyed a more realistic estimate of the floristic diversity may be nearer to 14 species/km². Tutanning Reserve which is in a higher rainfall area has a floristic diversity of 22 species/km² but has also been intensively studied.

The diversity figures are helpful when comparing areas for floristic richness but must be regarded with caution. As Muir (1977) points out such estimates depend on the distribution of vegetation types within the reserve boundaries and reserve size, both of which are largely a matter of chance.

Gazetted Rare Plants

No gazetted rare plants were found in the area surveyed but *Grevillea involucrata* and *Grevillea prostrata* are present on Ryan and Lake Lockhart roads just to the north of the reserve boundary. The two species have not actually been sighted on the Lake Magenta Nature Reserve, only in the general area. The habitat types in which the *Grevillea* species are found are present on the Reserve and the areas surveyed. These include Open Heath on shallow sand over laterite and Low Shrubland on white-yellow sand (Rye and Hopper 1981).

These habitat types should be kept in mind when management decisions are made as more intensive fieldwork may indicate that these *Grevillea* species are present.

Geographically Restricted Plants

Bosslaea divaricata is recorded by Rye (1982) as geographically restricted with a range of less than 100km. The location given is S-E of Nyabing. In December 1986 only 2 specimens of *Bosslaea divaricata* were found in the reference collection at the W.A. Herbarium. One specimen was collected at the Gairdner River and the other at Nyabing. In the present survey this species was recorded at Site EW 1.10 and a voucher specimen collected.

Melaleuca apodocephala is also recorded by Rye (1982) as geographically restricted with a range of less than 100km. Rye gives the geographical distribution as east of Pingrup to south-east of Jerramungup and occurring on a conservation reserve. Dr B.A. Barlow is at present revising the genus *Melaleuca* and in 1985 included under *M. apodocephala* collections previously identified as undescribed species. Fourteen specimens were found in the reference collection at the W.A. Herbarium in December 1986 ranging from The Stirling Range to Pt. Dover. An 'eastern limestone biotype' is now included.

In the present survey the species was found at Site SB 1.14.

Thysanotus acerifolius is also recorded by Rye (1982) as geographically restricted with a range of less than 100km. The geographical range is given as Newdegate to Pallanup Rocks (~50km ENE of Lake Magenta) and occurring in a nature reserve. This species has been recently collected ~20km N-E of Katanning (K. Wallace, pers. comm.).

In the present survey the species was recorded at Site EW 2.12 and a voucher specimen collected.

Allocasuarina pinaster has been recorded by Rye (1982) as geographically restricted with a range between 100 and 160kms. The geographic range is given as north of Hyden to Commander Rocks (40km NE of Lake Magenta). Specimens examined in the reference collection at the W.A. Herbarium in December 1986 confirmed this information. Twenty two specimens were present, some collected from as far west as Dumbleyung.

In the present survey the species was found in areas of open Tallerak mallee and was prominent in some areas.

Oxylobium microphyllum is also recorded by Rye (1982) as geographically restricted with a range between 100 to 160km from Chillinup Pool to north to Ravensthorpe. The genus *Oxylobium* is at present being revised and specimens previously lodged at the W.A. Herbarium are now on loan.

Other Causes for Concern

Leigh et al. (1981) report *Acacia crassuloides*, *Eucalyptus xanthonema* and *Cryptandra polyclada* as species with a very restricted distribution and with a maximum geographic range of less than 100km. *Acacia crassuloides* and *E. xanthonema* are also classified as vulnerable species, i.e. not presently endangered but at risk over a longer period through continued depletion or which largely occur on sites likely to experience changes in land use. *Cryptandra polyclada* is classified as rare but not currently considered endangered or vulnerable and is known to be represented within a conservation reserve.

Acacia crassuloides is now represented by 19 collections in the W.A. Herbarium ranging from Salmon Gums to Bremer Bay, ~260km. *Eucalyptus xanthonema* ssp. *xanthonema* is represented by 39 specimens collected from Wagin to Ravensthorpe, range ~250km and *Cryptandra polyclada* is represented by 12 specimens, ranging from Tammin to Clyde Hill, NE of Esperance.

In the present survey *Acacia crassuloides* was recorded only at Site NS 2.3 but *Eucalyptus xanthonema* and *Cryptandra polyclada* were recorded at numerous sites within the mixed mallee associations.

Xanthorrhoea nana, *Banksia blechnifolia*, *Dryandra pteridifolia*, *Hakea baxteri*, *Acacia glaucoptera*, *Frankenia tetrapetala*, *Dicrastylis glauca* and *Cassytha racemosa* are all reported by Leigh et al. (1981) as having a geographical range over 100km but occurring only in small populations which are mainly restricted to highly specific habitats. *Xanthorrhoea nana* and *B. blechnifolia* are also classified as vulnerable but not presently endangered and *D. pteridifolia*, *H. baxteri*, *A. glaucoptera* and *Frankenia tetrapetala* are classified as rare but not currently considered endangered or vulnerable. *Dicrastylis glauca* and *Cassytha racemosa* are classified as poorly known species.

Cassytha racemosa is now recognised as a fairly common species with over 100 collections lodged at the W.A. Herbarium ranging in distribution from Cape Range to Pt. Dover.

Dicrastylis glauca is only represented by 3 specimens at the W.A. Herbarium collected from Newdegate, near Hyden and between Newdegate and Lake Grace.

Frankenia tetrapetala was recorded at site SB 3.16 and near site SB 3.4, *Hakea baxteri* at site SB 1.2 and *Dicrastylis glauca* at site EW 3.12.

Xanthorrhoea nana and *Banksia blechnifolia* were recorded at several sites in the western section of the area surveyed along the southern boundary and *Acacia glaucoptera* and *Cassytha racemosa* in a number of sites in mallee associations in the northern sections of the Reserve. *Dryandra pteridifolia* was recorded at numerous sites in mallee/heath formations.

Leigh et al. (1981) also report *Dryandra calophylla* as having a geographical range over 100km but occurring only in small populations and as rare but not currently considered endangered or vulnerable. This species was reported by G. Keighery (unpublished) as being present on the Lake Magenta Nature Reserve near site 14 on the southern boundary (section 1) but was not found during the present survey.

Undescribed Species

Twenty two undescribed species were found in the area surveyed. This does not include any plant specimens where the identification was uncertain due to lack of flowering or fruiting material or confusion in the current taxonomy of those groups which are presently being revised.

Twenty of these undescribed species have been previously collected and ten of these have manuscript names. No previous collections of the remaining two species *Dryandra* sp. nov. (1114) and *Adenanthos* sp. nov. (aff. *glabrescens*) were found. *Adenanthos* aff. *glabrescens* has characteristics similar to *Adenanthos illeticos*, a gazetted rare and endangered plant but the new species appears to be closer to *A. glabrescens* (G. Keighery and K. Newby pers. comm.).

Undescribed species only recorded at one site include :

<i>Adenanthos</i> sp. nov. (aff. <i>glabrescens</i>) 862	Site NS 1.1
<i>Dryandra</i> sp. nov. (1114)	Site SB 1.14
<i>Isopogon</i> sp. nov. (aff. <i>attenuatus</i>) 1175	Site SB 3.18
<i>Petrophile</i> sp. nov. (aff. <i>longifolia</i>) 1174	Site SB 3.18
<i>Pimelea</i> sp. nov. (aff. <i>aeruginosa</i>) 785	Site NS 1.10
<i>Eucalyptus</i> sp. nov. 1065	Site EW 3.4

4.0 MANAGEMENT CONSIDERATIONS

Rare Vegetation Associations

The following is a list of vegetation associations infrequently encountered during the survey and covering only small areas of land. Some of these vegetation types may not be restricted to small areas in the Lake Magenta Nature Reserve as a whole. However, it is known that most of the Reserve is covered by Mallee associations and therefore it can be expected that Woodland and Heath associations would be rare in comparison. Rare vegetation associations encountered include :

- 1) *Eucalyptus salmonophloia* (Salmon Gum) Open Woodland
- 2) *Eucalyptus occidentalis* (Flat Topped Yate) Woodland
- 3) *Eucalyptus falcata* (Silver Mallet) Woodland
- 4) *Eucalyptus incrassata* Woodland
- 5) *Eucalyptus densa* Woodland
- 6) *Eucalyptus platypus* (Moort) Woodland
- 7) *Eucalyptus platypus* (Moort) Dense Woodland
- 8) *Xanthorrhoea nana/Hakea baxteri* Heath
- 9) *Banksia baueri* Heath
- 10) Low Scrub with emergent *Santalum acuminatum*
- 11) Samphire

There is at present growing concern over the long term survival of significant areas of Salmon Gum woodlands in the wheatbelt. Lack of regeneration of these woodlands on private land due to environmental pressures and grazing of animals increases the importance of the conservation of these woodland areas in nature reserves. Only one small area of Salmon Gum woodland was encountered during the survey and although larger areas do occur elsewhere in the Reserve the vegetation type is still fairly restricted. Salmon gums are also fire sensitive. The 1972 fire killed an estimated 70% of the Salmon Gum trees at Sullivan Soak and would also have destroyed the trees occurring in the surveyed

area at that time. The other woodland associations mentioned in the report were also infrequently encountered and all provide important habitats for local fauna, e.g. nesting hollows for bird species.

E. playtpus was not uncommon in the areas surveyed but due to the frequency of fires in the area the Moort woodland associations were rare. The Lake Magenta Management Plan describes the closed canopy of unburnt Moort (4m) with a sparse understorey and a thin layer of leaf or bark litter on the ground to be the type of habitat required by birds such as the Mallee Fowl.

Both the *Santalum* and samphire associations were encountered only once during the survey but maybe more widely distributed in the Reserve as a whole. Samphire was reported around the shoreline of Lake Magenta in the Management Plan.

The *Xanthorrhoea nana/Hakea baxteri* heath and the *Banksia baueri* heath were only found in the area surveyed along the southern boundary. *Banksia baueri* has been recorded elsewhere on East Road.

The vegetation on the area adjacent to the southern boundary is completely different from that encountered in other sections of the Reserve. Mallee over Scrub associations are not included in the above list as they cover a relatively large area. It would appear, however, that these vegetation associations, together with a number of plant species, do not occur in other sections of the Reserve and that most of the vegetation types described for the southern boundary do not extend northwards for any great distance. Although Sites 12, 13 and 14 on the North-South firebreak are included in the general description of Mallee over Scrub the structural and floristic composition can be seen (Appendix 2) to differ slightly from that recorded for the sites on areas adjacent to the southern boundary e.g. *Banksia blechnifolia* is not recorded at any of the sites on the North-

South firebreak and *Xanthorrhoea nana* only at Sites NS 4.13 and NS 4.14.

Rare Plants

The plant species mentioned in the flora section should be considered when management decisions regarding the position and extent of buffer strips are being made. A number of the plant species were only recorded at one or two sites on the Reserve. The following is a list of these species. For exact site locations see Section 3.2.

- North-South firebreak - *Oxylobium microphyllum*, *Acacia crassuloides*, *Adenanthos* sp. nov. 862, *Pimelea* sp. nov. 785.
- East-West firebreak - *Thysanotus acerosifolius*, *Dicrastylis glauca*, *Acacia* sp. nov. 989, *Eucalyptus* sp. nov. 1065
- Southern Boundary - *Melaleuca apodocephala*, *Frankenia tetrapetala*, *Hakea baxteri*, *Dryandra* sp. nov. 1114, *Isopogon* sp. nov. 1175, *Petrophile* sp. nov. 1174.

Wind Erosion

Due to concerns regarding the problem of wind erosion in the southern sandplain areas the Department of Agriculture has recently carried out research work in this region, including farmland to the south of the Lake Magenta Nature Reserve. Weather data, including wind velocities is now being recorded at a station only a few kilometres from the southern boundary. The Department's Technical Report 3 - Division of Resource Management states that wind erosion may be an ever-present risk on sandplain soils without an (undefined) minimum of vegetation cover in this area. The application of LANSAT imagery together with data on geology, soils etc. has also been used to study wind erosion

Lake Magenta Nature Reserve

Date: 11.10.2010
Scale: 1:2500

- LEGEND:
- Reserve Boundary
 - Road Reserve
 - Footpath
 - Track
 - Fence/line
 - Gate into Reserve
 - Gate: Private Access
 - Dam
 - Farm house/buildings
 - Hotel/resort
 - Direct Access (lots with Seasonal Conditions)
 - Bushland adjoining Reserve
 - Nature Reserve Sign

Areas susceptible to wind erosion

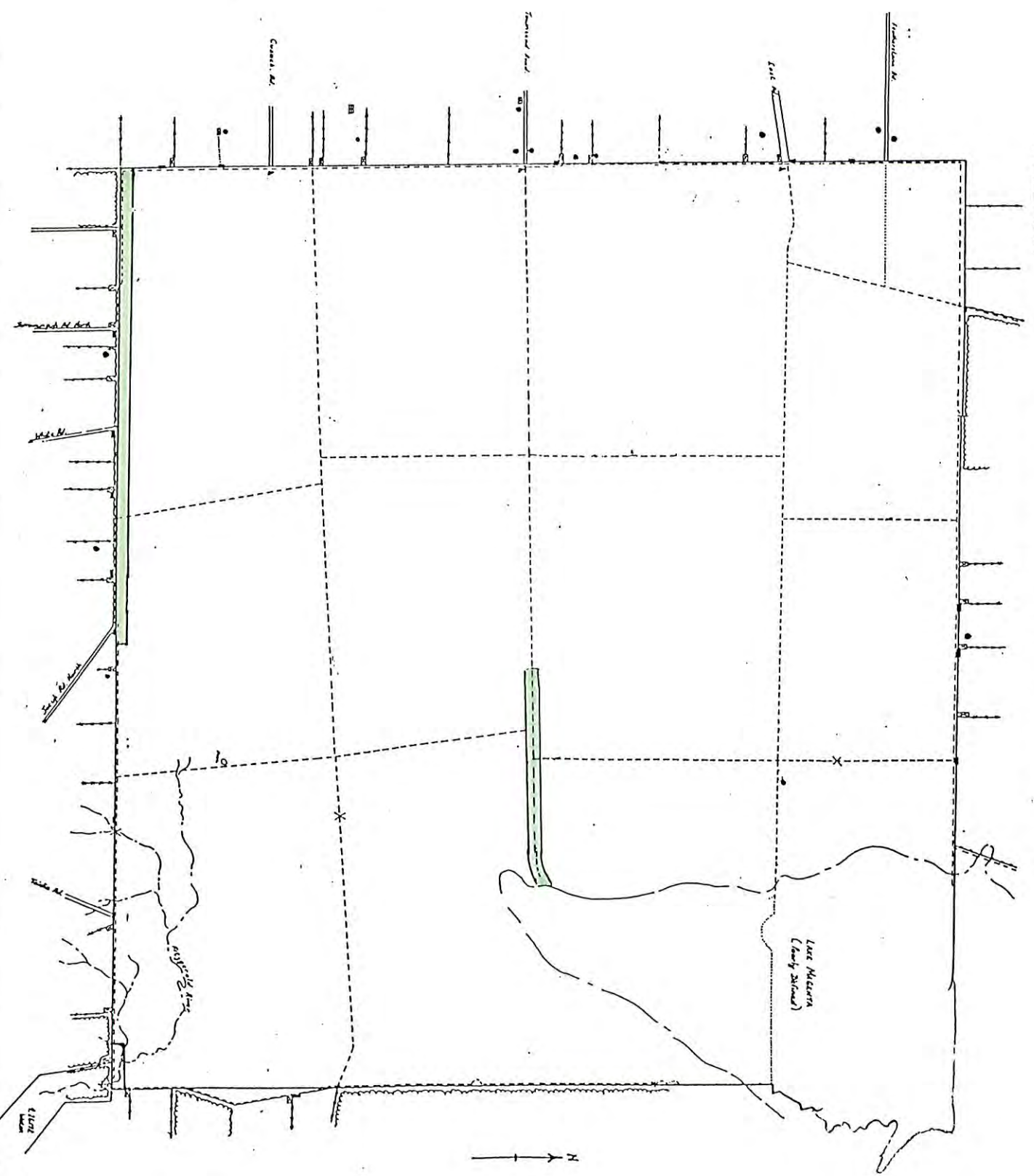


FIGURE 3 - Areas surveyed on the Lake Magenta Nature Reserve which may be prone to wind erosion if vegetation cover is removed.

problems in the Lake Magenta area (Carter and Houghton, 1984). Carter and Grasby (1986) report that wind erosion can also be a problem on sandy surfaced soils in areas of the Lake Grace Shire especially those of Unit S130 (Atlas of Australian Soils) in which the Lake Magenta Reserve is placed.

From the available information it would appear that the areas included in the present survey with sandy soils and flat topography (indicated in Figure 3) will be susceptible to wind erosion when vegetation cover is removed until sufficient regrowth or rain can alleviate the problem.

The most intense and damaging winds are reported from the north and north-west and therefore the vegetation to the north of land adjacent to the southern boundary will afford some protection in this area. The amount of protection will depend on the width of the proposed buffer strips as the wind will start to pick up sand after approximately 15m.

Internal areas should be protected from wind erosion to a certain extent by the surrounding vegetation.

Weed Invasion

Weeds, particularly grasses, were recorded on areas adjacent to the southern boundary on heavier soils. Species recorded include *Hordeum leporinum*, *Pentstemon airoides* and *Centaurea erythraea*. These weeds have only spread a couple of metres into the native vegetation and were mostly on the firebreak. If the area was burnt to provide a buffer strip it is possible that these weeds would spread into the buffer area causing a potential fire hazard in themselves.

Dittrichia graveolens (stinkwort), *Carduus pycnocephalus* (slender thistle) and *Cirsium vulgare* (spear thistle) have also been reported on the southern boundary of the reserve (G. Keighery,

pers. comm.). The two thistles grow happily in sandy soils and were recorded next to the Mallee/Scrub associations. These weeds may cause a problem on a buffer strip on sandy soils.

Dieback

Although no evidence of dieback was found in the Reserve during a recent survey, increased activity in areas where *Banksia* species are present may increase the susceptibility of these areas to dieback in the future.

5.0 ACKNOWLEDGEMENTS

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Mr B. Maslin for the identification of *Acacia* species, Dr. I. Brooker for *Eucalyptus* species, Mr M. Trudgen for *Baeckea* species and Mr P. Wilson for species of *Halosarcia*.

The Curator of the Western Australian Herbarium for permission to consult the collection.

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APPENDIX 1

SPECIES LIST - LAKE MAGENTA

(* indicates introduced species)

Species	Voucher number
CUPRESSACEAE	
<i>Actinostrobus pyramidalis</i>	1168
<i>Callitris roei</i>	810
POACEAE	
<i>Danthonia caespitosa</i>	1179b
* <i>Hordeum leporinum</i>	1179
* <i>Pentaschistis airoides</i>	
<i>Stipa juncifolia</i>	
CYPERACEAE	
<i>Gahnia ancistrophylla</i>	791, 968a
<i>G. australis</i>	1159
<i>G. lanigera</i>	1134
<i>Lepidosperma gracile</i>	880
<i>L. tuberculatum</i>	1126
<i>L. viscidum</i>	959, 1086
<i>Mesomelaena preissii</i>	1036
<i>M. stygia</i>	1123
RESTIACEAE	
<i>Harperia lateriflora</i>	1162
<i>Leptocarpus humilis</i>	1180a
<i>Leptocarpus ramosissimus</i> (m/s)	1160b
<i>Loxocarya fasciculata</i>	
<i>L. myrioclada</i>	863, 968, 1108
<i>Lyginia barbata</i>	1176

Dasyogonaceae

<i>Calectasia grandiflora</i>	1044
<i>Chamaexeros serra</i>	1110

Xanthorrhoeaceae

<i>Xanthorrhoea nana</i>	
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Phormiaceae

<i>Dianella revoluta</i>	893
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Anthericaceae

<i>Borya ?nitida</i>	
<i>Laxmannia paleacea</i>	846
<i>Thysanotus acerosifolius</i>	1051
<i>T. dichotomus</i>	1186

HAEMODORACEAE

<i>Conostylis argentea</i> (m/s)	1187
(previously <i>Conostylis androstemma</i> <i>ssp. argentea</i>)	

IRIDACEAE

<i>Patersonia lanata</i>	1097
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CASUARINACEAE

<i>Allocasuarina acutivalvis</i>	986
<i>A. campestris</i>	1152
<i>A. corniculata</i>	1185
<i>A. humilis</i>	935,
<i>A. microstachya</i>	
<i>A. pinaster</i>	843
<i>A. thuyoides</i>	902

PROTEACEAE

<i>Adenanthos cuneatus</i>	1178
<i>A. flavidiflorus</i>	839

<i>Adenanthos</i> sp. nov. (aff. <i>glabrescens</i>)	862
<i>Banksia baueri</i>	
<i>B. blechnifolia</i>	1106
<i>B. caleyi</i>	1008
<i>B. media</i>	
<i>B. violacea</i>	995, 1095
<i>Conospermum distichum</i>	849
<i>Dryandra arctotidis</i>	1109
<i>D. cirsioides</i>	942
<i>D. cuneata</i>	856
<i>D. erythrocephala</i>	857, 1006
<i>D. ferruginea</i>	854
<i>D. nivea</i>	943
<i>D. pteridifolia</i>	855
<i>D. tenuifolia</i>	909
<i>Dryandra</i> sp. nov.	1114
<i>Grevillea armigera</i>	1113
<i>G. cagliana</i> (previously <i>G. aff. baxteri</i>)	899a
<i>G. haplantha</i>	918, 1069
<i>G. huegelii</i>	773
<i>G. patentiloba</i>	868
<i>G. pauciflora</i>	809b
<i>G. pectinata</i>	772
<i>G. shuttleworthiana</i>	1082
<i>G. tripartita</i>	1170
<i>Hakea ?adnata</i>	779, 969
<i>H. baxteri</i>	
<i>H. comutata</i>	787, 790, 920
<i>H. corymbosa</i>	
<i>H. crassifolia</i>	848
<i>H. ferruginea</i>	897
<i>H. laurina</i>	892
<i>H. lehmanniana</i>	998
<i>H. lissocarpha</i>	804
<i>H. marginata</i>	1033
<i>H. multilineata</i>	866

<i>H. nitida</i>	938
<i>H. obliqua</i>	1002, 1121
<i>H. prostrata</i>	1025
<i>H. subsulcata</i>	931, 957
<i>H. trifurcata</i>	
<i>H. varia</i>	865
<i>H. verrucosa</i>	1102
<i>Hakea</i> sp.	1067
<i>Hakea</i> sp. (aff. <i>roei</i>)	1070
<i>Hakea</i> sp. nov. (aff. <i>falcata</i>)	
(large fruited cream form)	946
<i>Isopogon buxifolius</i>	840
<i>I. teretifolius</i>	831
<i>I. trilobus</i>	1100
<i>I. villosus</i>	830
<i>Isopogon</i> sp. nov. (aff. <i>attenuatus</i>)	1175
<i>Persoonia quinquinervis</i>	1010
<i>P. striata</i>	1004, 1117
<i>P. teretifolia</i>	927
<i>Petrophile brevifolia</i>	832
<i>P. cricinata</i>	903
<i>P. divaricata</i>	834
<i>P. ericifolia</i>	835
<i>P. media</i>	898, 1019
<i>P. squamata</i>	950, 860
<i>P. trifida</i>	833
<i>Petrophile</i> sp. (aff. <i>ericifolia</i>)	836
<i>Petrophile</i> sp. nov. (aff. <i>longifolia</i>)	1174
<i>Synaphaea petiolaris</i>	900, ?1172
<i>S. polymorpha</i>	1173
SANTALACEAE	
<i>Exocarpos aphyllus</i>	803
<i>E. sparteus</i>	806, 981
<i>Leptomeria obovata</i>	851a
<i>Santalum acuminatum</i>	875

<i>S. murrayanum</i>	794, 850, 878
OLACACEAE	
<i>Olax benthamiana</i>	851a
CHENOPODIACEAE	
<i>Rhagodia preissii</i>	1133
<i>Halosarcia halocnemoides</i>	1165
<i>H. lepidosperma</i>	1166
LAURACEAE	
<i>Cassytha melantha</i>	801
<i>C. racemosa</i>	1021
PITTOSPORACEAE	
<i>Billardiera variifolia</i>	1104
<i>Cheiranthera filifolia</i>	887
MIMOSACEAE	
<i>Acacia accelerata</i>	1129
<i>A. acutata</i>	1061
<i>A. assimilis</i>	937, 987
<i>A. bidentata</i>	778
<i>A. brachyclada</i>	982
<i>A. chrysocephala</i>	1091a, 1124
<i>A. crassuloides</i>	973
<i>A. densiflora</i>	770
<i>A. erinacea</i>	
<i>A. fragilis</i>	1115
<i>A. glaucoptera</i>	
<i>A. ixiophylla</i>	786
<i>A. lasiocalyx</i>	1016
<i>A. lasiocarpa</i> var. <i>bracteolata</i>	867
<i>A. ?merrallii</i>	964
<i>A. pulchella</i> var. <i>subsessilis</i>	1112
<i>A. pycnocephala</i>	1111 (range extension)

A. sphacelata	915
A. uncinella	985, 1030a
A. viscifolia	961
Acacia sp. nov. (aff. multilineata, P5)	989
PAPILIONACEAE	
Bossiaea divaricata	1032b
B. spinosa	853
Brachysema latifolium	1088
Burtonia conferta	958, 1026, 1091b
Daviesia abnormis	945
D. ?audax (m/s)	844
D. ?angulata	904, 944
D. benthamii	781, 1120
D. emarginata	845
D. incrassata ssp. reversifolia	1169
D. lancifolia	908
D. nematophylla	768
Dillwynia uncinata	802
Gastrolobium crassifolium	895, 930, 991
G. reticulatum	859
Gastrolobium sp. (aff. hookeri)	1022, 1083
Jacksonia racemosa	905, 1066
Oxylobium microphyllum	799
O. parviflorum var. stenocarpum	1052
Pultenaea capitata	1007
P. conferta	771
P. verruculosa	847
Pultenaea sp.	1164
Templetonia sulcata	793
RUTACEAE	
Boronia inornata	809a
Microcybe albiflora	1032, 1135
Nematolepis phebaloides	1031
Phebalium lepidotum var. obovatum	956

<i>P. microphyllum</i>	894
<i>P. tuberosum</i>	797
TREMANDRACEAE	
<i>Tetratheca confertifolia</i>	997
POLYGALACEAE	
<i>Comesperma spinosum</i>	879
EUPHORBIACEAE	
<i>Beyeria brevifolia</i>	864
SAPINDACEAE	
<i>Dodonaea bursarifolia</i>	800
<i>D. caespitosa</i>	1017
<i>D. stenozyga</i>	812
<i>D. viscosa</i>	782
RHAMNACEAE	
<i>Cryptandra polyclada</i>	798
<i>Spyridium cordatum</i>	811
<i>S. denticuliferum</i>	941, 1089
<i>S. subochreatum</i>	861
STERCULIACEAE	
<i>Lasiopetalum rosmarinifolium</i>	792
DILLENIACEAE	
<i>Hibbertia exasperata</i>	942b, 807
<i>H. gracilipes</i>	1172
<i>H. verrucosa</i>	1098
<i>Hibbertia</i> sp. nov. (aff. <i>gracilipes</i>)	913
FRANKENIACEAE	
<i>Frankenia tetrapetala</i>	1146

THYMELAEACEAE

<i>Pimelea argentea</i>	1131
<i>Pimelea</i> sp. nov. (aff. <i>villifera</i>) (m/s <i>erecta</i>)	774, 808
<i>Pimelea</i> sp. nov. (aff. <i>aeruginosa</i>) (m/s <i>cracens</i>)	785

MYRTACEAE

<i>Agonis spathulata</i>	827
<i>Astartea ambigua</i>	1024, 1040, 951
<i>Baeckea crispiflora</i>	1011, 1153
<i>B. latens</i>	1028a, 978
<i>B. pachyphylla</i>	1028b, 1039
<i>B. polyandra</i>	1046
<i>B. preissiana</i>	838
<i>Baeckea</i> sp.	1060, 916
<i>Beaufortia micrantha</i>	821
<i>B. schaueri</i>	816
<i>Callistemon phoeniceus</i>	1142
<i>Calothamnus gracilis</i>	829, 1101
<i>C. quadrifidus</i>	1014, 1116
<i>Calothamnus</i> sp.	1005
<i>Calytrix ciliata</i> (Lhotskya <i>ciliata</i>)	1096
<i>C. leschenaultii</i>	1035, 1087
<i>Darwinia diosmoides</i>	1183
<i>Eremaea pauciflora</i>	837, 1147
<i>Eucalyptus annulata</i>	923, 954
<i>E. aspratilis</i> (m/s)	872, 1043, 1140, ?1141
<i>E. calycogona</i>	777, 924a
<i>E. celastroides</i> ssp. <i>virella</i>	1063
<i>E. conglobata</i>	874, 1041, 1079, 766
<i>E. depauperata</i> (m/s)	925
<i>E. densa</i> (m/s)	960, 1055, 1058, 1144
<i>E. dissimulata</i> (m/s)	1042
<i>E. eremophila</i>	769, 924, 1072

<i>E. falcata</i>	911b, 939, 1093
<i>E. flocktoniae</i>	788, 805, 911a
<i>E. incrassata</i>	7824b, 7906, 936, 940, 947, 979, 984, 1118
<i>E. ?longicornis</i>	780
<i>E. occidentalis</i>	
<i>E. phaenophylla</i> (m/s) (<i>E. redunca</i> group)	891, 910c, 929, 955 967, 980a, 1053, 1057, 1071, 951b
<i>E. pileata</i>	882, 962
<i>E. platypus</i>	921
<i>E. perangusta</i> (m/s)	1062, 1148, 1156, 1163
<i>E. salmonophloia</i>	
<i>E. scyphocalyx</i> (name retained, Brooker, pers. comm.)	871, 796, 823, 907, 934, 953, 990, 1012, 1047 1139
<i>E. spathulata</i> var. <i>grandiflora</i>	789, 973, 1158
<i>E. spathulata</i> var. <i>spathulata</i>	7889, 1145
<i>E. uncinata</i>	884, 928, 975, 1085, 1092
<i>E. xanthonema</i>	1063b, 1084, 1136, 1143
<i>Eucalyptus</i> sp. nov.	1065
<i>Hypocalymma puniceum</i>	1125
<i>Kunzea preissiana</i>	1045, 1130, 917, 949
<i>Leptospermum inelegans</i> (m/s aff. <i>roei</i>)	815
<i>L. oligandrum</i>	869, 1064, 1150
<i>L. spinescens</i>	817
<i>Melaleuca acuminata</i>	775
<i>M. adnata</i>	776
<i>M. apodocephala</i>	1103
<i>M. bracteosa</i>	1050
<i>M. brevifolia</i>	1020, 1080, 1149, 1160
<i>M. cucullata</i>	965
<i>M. cuneata</i>	826
<i>M. cuticularis</i>	1081
<i>M. depauperata</i>	877

<i>M. eleutherostachya</i>	795
<i>M. glaberrima</i>	1132
<i>M. hamulosa</i>	1157
<i>M. holosericea</i>	883, 1138
<i>M. lateriflora</i>	784
<i>M. pentagona</i>	992, 1048
<i>M. platycalyx</i>	1018
<i>M. spicigera</i>	972
<i>M. subfalcata</i>	996
<i>M. subtrigona</i>	825, 1107, 1077
<i>M. thyoides</i>	1184
<i>M. uncinata</i>	
<i>M. undulata</i>	813, 1059, 1137,
<i>M. urceolaris</i>	1078
<i>Melaleuca</i> sp. (aff. <i>pauperiflora</i>)	910a, 1056
<i>Melaleuca</i> sp. (aff. <i>pentagona</i>)	814, 1049
<i>Melaleuca</i> sp. nov. (aff. <i>depauperata</i>)	876, 971, 1056, 948
<i>Melaleuca</i> sp. nov.	1068
<i>Verticordia acerosa</i>	1027
<i>V. brownii</i>	1073
<i>V. chrysantha</i>	888, 1009
<i>V. densiflora</i>	1075
<i>V. drummondii</i>	1015, 1099
<i>V. grandiflora</i>	822
<i>V. habrantha</i>	
<i>V. picta</i>	818
<i>V. plumosa</i>	914, 970, 1038, 1076
	952
<i>V. roei</i>	819
<i>Verticordia</i> sp. nov.	820

HALGORACRAE

<i>Glischrocaryon aureum</i>	852
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APIACEAE

<i>Platysace maxwellii</i>	1029, 1090
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EPACRIDACEAE

Andersonia parvifolia	999
A. sprengeloides	1003
Astroloma compactum	1034
A. serratifolium	1094
Coleanthera myrtoides	870, 977, 1037
Conostephium drummondii	1167
Leucopogon cuneifolius	1054
L. obtusatus	890
Lysinema ciliatum	841
Lysinema sp. nov.	1105

GENTIANACEAE

Centaurium erythraea	1151
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CONVOLVULACEAE

Wilsonia humilis	922
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CHLOANTHACEAE

Dicrastylis glauca	1074
Pityrodia uncinata	1182

LAMIACEAE

Microcorys barbata	1177
M. exserta	842, 1119
M. loganiacea	1000, 1013
Prostanthera 'microphylla' (m/s)	919
(previously <i>P. serpyllifolia</i> ssp. <i>microphylla</i>)	
Westringia cephalantha	933, 974

LOBELIACEAE

Isotoma hypocrateriformis	1161
Lobelia gibbosa	1127

GOODENIACEAE

<i>Anthotium humile</i>	1154
<i>Cooperhooikia strophiolata</i>	966
<i>Goodenia</i> sp.	1001

ASTERACEAE

<i>Helichrysum lepidophyllum</i>	767
<i>Olearia muelleri</i>	783
<i>O. muricata</i>	1181
<i>O. ramosissima</i>	912
<i>Waitzia aurea</i>	1128

APPENDIX 2

NORTH-SOUTH FIREBREAK

Section 1

Site NS 1.1 M3 Mixed Mallee/*Hakea multilineata*

Vegetation Description : Mixed kSr. *Melaleuca uncinata* SBr. mixed SDC. Scattered *Exocarpus sparteus* and *Hakea multilineata* to 2m.

Soil Type : Light brown sand, 20-30% laterite.

Acacia lasiocarpa var. *bracteolata*

Adenanthos aff. *glabrescens* (862)

Baeckea preissiana

Beaufortia schaueri

Beyeria brevifolia

Coleanthera myrtoidea

Dodonaea viscosa

Eucalyptus scyphocalyx

E. uncinata

Exocarpus aphyllus

E. sparteus

Gahnia ancistrophylla

Gastrolobium reticulatum

Grevillea cagiana

G. patentiloba

Hakea corymbosa

H. ? adnata

H. aff. falcata

H. multilineata

H. varia

Isopogon buxifolius

Lasiopetalum rosmarinifolius

Lepidosperma gracile

Leptospermum oligandrum

Loxocarya myrioclada

L. fasciculata

Melaleuca subtrigona

Olax benthamiana

Petrophile squamata

Spyridium subochreatum

S. denticuliferum

Site NS 1.2 M1 Mixed Mallee - Type 1

Vegetation Description : kS1. SD1 Patchy M2 in places

Soil Type : brown/grey sand over clay

Eucalyptus eremophila
E. pileata
E. spathulata
E. flocktoniae
Santalum murrayanum
Comesperma spinesum
Lepidosperma gracile
Melaleuca holosericea
M. subtrigona
M. ?undulata
Daviesia nematophylla
Exocarpus aphyllus
Grevillea pauciflora
Melaleuca adnata
Hakea commutata
Dodonaea bursarifolia
Grevillea patentiloba
Helichrysum lepidophyllum
Cryptandra polyclada
Olearia muelleri
Exocarpus sparteus
Templetonia sulcata

Site NS 1.3 M2 Mixed Mallee Type 2

Vegetation Description : kS1. *Melaleuca uncinata* SBr. mixed SDc
(patchy with areas of M1)

Soil Type : Yellow brown sand, 10% laterite

Eucalyptus scyphocalyx	Verticordia plumosa
E. phaenophylla (ms)	Melaleuca ?subtrigona
E. uncinata	Acacia acutata
Gastrolobium reticulatum	Melaleuca spicigera
Isopogon buxifolius	Hakea aff. falcata
Hakea corymbosa	Exocarpus aphyllum
Lasiopetalum rosmarinifolium	Grevillea patentiloba
Spyridium subochreatum	Gahnia ancistrophylla
Banksia media	Loxocarya myrioclada
Hakea lissocarpha	Spyridium cordatum
H. ?adnata	S. subochreatum
H. nitida	Adenanthos ?glabrescens
Acacia bidentata	Melaleuca uncinata
Exocarpus sparteus	Calytrix ?lechenaultii
Leptospermum oligandrum	Melaleuca aff. depauperata
Hakea crassifolia	
Cheiranthera filifolia var. filifolia	

Site NS 1.4 SW Salmon gums woodland

Vegetation Description : LAr. SB1. SC1

Soil Type : Sandy loam over clay

Melaleuca aff. depauperata (876)	Santalum acuminatum
M. depauperata	Hakea ?adnata
M. subtrigona	H. lissocarpa
M. uncinata	H. corymbosa
Gahnia ancistrophylla	Lasiopetalum rosmarinifolium
Eucalyptus aspratilis (ms)	Melaleuca acuminata
E. flocktoniae	Olearia muelleri
E. conglobata	Grevillea huegelii
E. spathulata var. grandiflora	Lepidospermum sp.
E. salmonophloia	

Site NS 1.5 tM Open Tallerak Mallee over Mixed Low Heath

Vegetation Description : kSr. SDC

Soil Type : Sandy gravel over laterite

Verticordia chrysantha	Daviesia ?audax
Eucalyptus spathulata	D. emarginata
Leucopogon obtusatus	Laxmannia paleacea
Leptospermum inelegans (ms)	Pultenaea verruculosa
Beaufortia schaueri	Hakea crassifolia
Leptospermum spinescens	Conospermum distichum
Verticordia picta	Santalum murrayanum
V. grandiflora	Olax benthamiana
V. roei	Glischrocaryon aureum
V. chrysantha	Bossiaea spinosa
V. sp. nov. (820)	Dryandra ferruginea
Beaufortia micrantha	D. pterififolia
Eucalyptus scyphocalyx	D. cuneata
E. ?incrassata	D. erythrocephala
E. phaenophylla (ms)	Banksia caleyi
E. tetragona	Andersonia sprengeloides
Melaleuca subtrigona	Grevillea shuttleworthiana
M. cuneata	Allocasuarina humilis
Agonis spathulata	A. microstachya
Calytrix lechenaultii	Banksia violacea
Calothamnus gracilis	Callitris roei
Isopogon villosus	Grevillea cagiana
I. buxifolius	Calytrix ciliatum
I. teretifolius	Allocasuarina pinaster
Petrophile brevifolia	Microcorys exerta
P. trifida	Lysinema ciliatum
P. divaricata	Adenanthos flavidiflorus
P. ericifolia	Baeckea preissiana
P. aff. ericifolia	Eremaea pauciflora

Site NS 1.6 M1 Mixed mallee - Type 1

Vegetation Description : kSi. *Melaleuca uncinata* SCr. mixed SDr
(patchy 10-30% cover in places)

Soil Type : Sand over clay

Melaleuca subtrigona	Dodonaea bursariifolia
Grevillea pauciflora	Exocarpus sparteus
Templetonia sulcata	Melaleuca lateriflora
?Grevillea haplantha	Melaleuca adnata
G. pectinata	Eucalyptus calycogona
Cryptandra polyclada	E. spathulata
Daviesia benthamii	E. flocktoniae
Exocarpus aphylla	Leucopogon obtusatus
Hibbertia verrucosa	Olearia muelleri
Olearia ramosissima	Dillwynia uncinata

(Patchy with M2 in places)

Site NS 1.7 aM *Eucalyptus annulata* Mallee

Vegetation Description : kSc. SC1

Soil Type : Sandy clay

Eucalyptus spathulata
E. calycogona
Daviesia benthamii
Melaleuca adnata
M. acuminata
M. subtrigona
M. uncinata
Helichrysum lepidophyllum
Hakea commutata
Grevillea pectinata
Cassytha melantha
Olearia muelleri
Spyridium cordatum

Site NS 1.8 M1 Mixed Mallee Type 1 (burnt)

Vegetation Description : kSi. *Melaleuca uncinata* SBr. SDr (patchy
shrubs 0-0.5m and 10-30% canopy cover in places)

Soil Type : Light brown sand

Eucalyptus scyphocalyx	Daviesia nematophylla
Lasioptalum rosmarinifolium	Gahnia ancistrophylla
Templetonia sulcata	Melaleuca uncinata
Santalum murrayanum	M. undulata
Melaleuca eleutherostachya	Dodonaea bursarifolia
Phebalium tuberosum	Oxylobium microphyllum
Cryptandra polyclada	Melaleuca aff. pentagona

Site NS 1.9 M1 Mixed Mallee Type 1 (unburnt)

Vegetation Description : kSi. *Melaleuca uncinata* SBr. SDr (patchy shrubs 0-0.5m with 10-30% canopy cover in places)

Soil Type : Light brown sandy gravel

<i>Laslopetalum rosmarinifolium</i>	<i>Grevillea huegelii</i>
<i>Eucalyptus scyphocalyx</i>	<i>G. patentiloba</i>
<i>E. flocktoniae</i>	<i>Exocarpus aphyllus</i>
<i>Boronia inornata</i>	<i>Dillwynia uncinata</i>
<i>Callitris roei</i>	<i>Cassytha melantha</i>
<i>Spyridium cordatum</i>	<i>Hakea lissocarpa</i>
<i>Pimelea aff. villifera</i>	<i>Grevillea pauciflora</i>
<i>Hibbertia exasperata</i>	<i>Isopogon buxifolius</i>
<i>Santalum murrayanum</i>	<i>Pultenaea conferta</i>
<i>Hakea ?adnata</i>	<i>Melaleuca uncinata</i>
<i>Templetonia sulcata</i>	<i>Olearia muelleri</i>
<i>Daviesia nematophylla</i>	<i>Daviesia benthamii</i>

Site NS 1.10 M1 Mixed Mallee Type 1

Vegetation Description : kSi with scattered shrubs

Soil Type : Sand over clay

<i>Eucalyptus ?longicornis</i>	<i>Helichrysum lepidophyllum</i>
<i>E. depauperata</i>	<i>Acacia densiflora</i>
<i>E. conglobata</i>	<i>Melaleuca adnata</i>
<i>E. eremophila</i>	<i>M. uncinata</i>
<i>E. spathulata var. grandiflora</i>	<i>Grevillea pectinata</i>
<i>Daviesia benthamii</i>	<i>G. huegelii</i>
<i>D. nematophylla</i>	<i>Pultenaea conferta</i>
<i>Dodonaea viscosa</i>	<i>Acacia bidentata</i>
<i>Melaleuca lateriflora</i>	<i>Gahnia ancistrophylla</i>
<i>Pimelea aff. aeruginosa</i>	<i>Santalum acuminatum</i>
<i>Acacia ixiophylla</i>	<i>Olearia muelleri</i>
<i>Hakea commutata</i>	

NORTH SOUTH FIREBREAK

Section 2

Site NS 2.1 M1 Mixed Mallee Type 1

Vegetation Description : kSl. SDr (patchy with M2 in places)

Soil Type : Sand over clay

Melaleuca aff. pauperiflora	Helichrysum lepidophyllum
M. subfalcata	Daviesia nematophylla
M. uncinata	D. benthamii
Eucalyptus phaenophylla (ms)	Grevillea pectinata
E. flocktoniae	Melaleuca ?subtrigona
E. falcata	M. cuneata
E. scyphocalyx	Boronia inornata
Olearia ramosissima	Gahnia ancistrophylla
Hibbertia aff. gracilipes	Hakea commutata
Verticordia plumosa	Prostanthera microphylla
Acacia sphacelata	Grevillea haplantha
Kunzea preissiana	

Site NS 2.2 pT *Eucalyptus platypus* "thicket"

Vegetation Description : SCc

Soil Type : Sandy clay

Eucalyptus platypus
E. calycogona
E. flocktoniae
Melaleuca lateriflora
Wilsonia humilis
Melaleuca adnata
Exocarpus aphyllus

Site NS 2.3 aM *Eucalyptus annulata* Mallee

Vegetation Description : kSc

Soil Type : Sandy loam over clay

Eucalyptus annulata
E. eremophila
E. pileata
E. calycogona
Dodonaea stenozyga
Acacia crassuloides
Cassytha sp.
Exocarpus aphyllus
Melaleuca adnata
Olearia muelleri

Site NS 2.4 M1 Mallee Type 1 shrubs up to 50% cover in places

Vegetation Description : kSi. SDr (patchy with M2 in places)

Soil Type : Sand over clay

Eucalyptus flocktoniae	Acacia crassuloides
E. calycogona	Grevillea pectinata
E. eremophila	Melaleuca uncinata
E. depauperata	M. subfalcata
E. platypus	M. laxiflora
Olearia muelleri	M. undulata
Exocarpus aphyllus	M. adnata
Cassyltha sp.	M. acuminata
Dodonaea viscosa	Baeckea preissiana
Hakea varia	Acacia glaucoptera
Pultenaea conferta	

Site NS 2.5 M3 Mixed Mallee/*Hakea multilinea*

Vegetation Description : kSi. SAi. SCr

Soil Type : Sandy gravel over laterite

Melaleuca uncinata	Eucalyptus eremophila
M. ?subtrigona	E. flocktoniae
Allocasuarina pinaster	E. phaenophylla (ms)
Hakea multilinea	E. scyphocalyx
Grevillea patentiloba	E. tetragona
Isopogon buxifolius	E. uncinata
Beaufortia schaueri	Hakea commutata
Persoonia teretifolia	Gastrolobium crassifolium

Site NS 2.6 mH Mixed Heath

Vegetation Description : SDc

Soil Type : Sand over clay

Beaufortia schaueri (prominent)	Gastrolobium crassifolium
Hakea varia	Isopogon buxifolius
H. subsulcata	Dryandra cirsioides
H. ?adnata	Melaleuca uncinata
Phebalium lepidotum	Acacia glaucoptera
var. obovatum	Eucalyptus eremophila
Grevillea pauciflora	Isopogon teretifolius
Gahnia ancistrophyll	Hakea lissocarpha
Hibbertia exasperata	Daviesia lancifolia
Lepidosperma gracile	

Site NS 2.7 fW *Eucalyptus falcata* Woodland

Vegetation Description : LAc

Soil Type : Sandy gravel over laterite

Spyridium denticuliferum
Persoonia teretifolia
Westringia cephalantha
Eucalyptus scyphocalyx
Daviesia nematophylla
Gastrolobium crassifolium
Hakea multilineata
Grevillea patentiloba
Dodonaea viscosa
Melaleuca ?subtrigona

Site NS 2.8 M3 Mixed Mallee/*Hakea multilineata*

Vegetation Description : kSi. *Melaleuca uncinata* SBr. SC1

Soil Type : Sandy gravel

Melaleuca uncinata
Gastrolobium crassifolium
Hakea multilineata
Isopogon buxifolius
Beaufortia schaueri
Spyridium denticuliferum
Exocarpus sparteus
Dodonaea viscosa
Daviesia nematophylla
Eucalyptus uncinata
E. falcata
E. scyphocalyx
Cassytha melantha
Grevillea patentiloba
Hakea nitida
Gahnia ancistrophylla
Lepidosperma sp.
Callitris roei

Site NS 2.9 M2 Mixed Mallee Type 2

M5 Mixed Mallee over *Melaleuca* thicket (unburnt)

This area has shrubs of *Melaleuca subtrigona* prominent 1-1.5m and 30-70% cover. The understorey is therefore taller than that normally characteristic of M2 but lower than that characteristic of M5 (1.5m and over).

Vegetation Description : kSi. SBc

Soil Type : Orange brown sand 10% laterite

Eucalyptus eremophila	Hakea varia
E. tetragona	H. corymbosa
E. uncinata	Gahnia ancistrophylla
E. incrassata	Calytrix ?leschenaultii
Melaleuca subtrigona (prominent)	Hakea aff. falcata
M. adnata	Daviesia lancifolia
M. uncinata	Isopogon buxifolius
Grevillea haplantha	Gastrolobium reticulatum
Coleanthera myrtoides	Leucopogon obtusatus
Baeckea latens	Acacia assimilis
Leptospermum oligandrum	Dianella revoluta

Site NS 2.10 tM Open Tallerack Mallee over Mixed Low Heath

Vegetation Description : kSr. SDC

Soil Type : Sand, 10% laterite over laterite

Allocasuarina pinaster	Eucalyptus phaenophylla (ms)
A. microstachya	E. tetragona
A. humilis	Grevillea cagiana
Leptospermum spinescens	Hakea nitida
Verticordia grandiflora	Loxocarya fasciculata
V. picta	Agonis spathulata
V. chrysantha	Synaphaea petiolaris
V. roei	Exocarpus sparteus
Petrophile brevifolia	Laxmannia palacea
Dryandra pteridifolia	Petrophile trifida
Banksia violacea	Allocasuarina thuyoides
Petrophile circinnata	Daviesia ?angulata
Gastrolobium crassifolium	Isopogon buxifolius
Eremaea pauciflora	Lysinema ciliatum
Beaufortia schaueri	Isopogon teretifolius
B. micrantha	Dryandra erythrocephala
Adenanthos flavidiflorus	Petrophile divaricata
Baeckea preissiana	Calothamnus sp.
Hakea crassifolia	Callitris roei
Melaleuca cuneata	Isopogon villosus
Hakea lissocarpa	Dryandra cuneata
Dryandra nivea	

Site NS 2.11 pW2 Eucalyptus platypus (Moort) Dense Woodland

Vegetation Description : LBd

Soil Type : Sandy clay

Eucalyptus platypus
 Exocarpus aphyllus
 Melaleuca adnata

Site NS 2.12 M2 Mixed Mallee type 2

Vegetation Description : kSi *Melaleuca uncinata* SBr. SDC (patchy with M1 in places)

Soil Type : Orange brown sand 20% laterite

Eucalyptus phaenophylla (ms)	Melaleuca pentagona
E. scyphocalyx	Beaufortia schaueri
E. uncinata	Hakea lissocarpa
Lasiopetalum rosmarinifolium	Hakea corymbosa
Banksia media	Exocarpus sparteus
Hakea laurina	Callitris roei
Isopogon buxifolius	Leucopogon obtusatus
Beyeria brevifolia	Spyridium cordatum
Hakea nitida	Melaleuca ? subtrigona
Grevillea patentiloba	M. uncinata
Dodonaea viscosa	M. spicigera
Cassythia melantha	

Site NS 2.13 1W *Eucalyptus incrassata* Woodland

Vegetation Description : LBd. SCR

Soil Type : Light orange brown sand, 20% laterite

Eucalyptus falcata
E. incrassata
E. flocktoniae
E. scyphocalyx
Hakea nitida
Spyridium denticuliferum
Callitris roei
Cassythia ?melantha
Grevillea patentiloba
Exocarpus aphyllus
Dodonaea viscosa

Site NS 2.14 M3 Mixed Mallee/*Hakea multilinea*

Vegetation Description : kSi. SBr. SCi (patchy with M1 in places)

Soil Type : Sand with 10% laterite over ?laterite

Westringia cephalantha	Grevillea patentiloba
Spyridium denticuliferum	Dodonaea viscosa
Hakea nitida	Callitris roei
Isopogon buxifolius	Hakea ?adnata
Hakea laurina	Hakea multilinea
Exocarpus aphyllus	Daviesia nematophylla

Site NS 2.15 M6 Mixed Mallee over *Melaleuca uncinata*

Vegetation Description : kS1. *Melaleuca uncinata* SB1. Sd1

Soil Type : Sand over clay

Eucalyptus scyphocalyx
E. uncinata
E. ?incrassata
Daviesia lancifolia
Dryandra tenuifolia
Leucopogon obtusatus
Gahnia ancistrophylla
Melaleuca ?subtrigona
Pultenaea conferta
Exocarpus aphyllus
Hakea lissocarpha
Petrophile squamata
Isopogon buxifolius

Site NS 2.16 tM Open Tallerak Mallee over Mixed Low Heath

Vegetation Description : kSr. SDC

Soil Type : Sandy gravel over laterite

Eucalyptus tetragona	Melaleuca ?bracteosa
Hakea ferruginea	M. uncinata:
Petrophile brevifolia	Hibbertia exasperata
Grevillea cagiana	Isopogon buxifolius
Synaphaea petiolaris	Hakea aff. falcata
Petrophile trifida	Daviesia abnormis
P. circinnata	Melaleuca cuneata
Banksia violacea	Dryandra erythrocephala
Allocasuarina thuyoides	Leptospermum spinescens
Daviesia ?angulata	Adenanthos flavidiflorus
Jacksonia racemosa	Verticordia grandiflora
Dryandra nivea	Lysinema ciliatum
Dryandra cirsioides	Allocasuarina pinaster
Baeckea preissiana	Agonis spathulata
Isopogon teretifolius	Allocasuarina humilis
Beaufortia micrantha	Verticordia chrysantha
Verticordia roei	Allocasuarina microstachys
Hakea prostrata	Eremaea pauciflora
Hakea crassifolius	Petrophile divaricata
Coleanthera myrtoides	Beaufortia schaueri

NORTH SOUTH FIREBREAK

Section 3

Site NS 3.1 M2 Mixed Mallee Type 2

Vegetation Description : kSi. SDc

Soil Type : Sand, 10% laterite over clay

Melaleuca subfalcata	Eucalyptus phaenophylla (ms)
M. ?subtrigona (prominent)	E. ?eremophila
Leucopogon obtusatus	E. scyphocalyx
Acacia acutata	E. uncinata
Hakea laurina	Hakea aff. falcata
Melaleuca uncinata	H. crassifolia
Petrophile squamata	H. trifurcata
Exocarpus aphyllus	Callitris roei
Hakea varia	Grevillea patentiloba
Gastrolobium reticulatum	Spyridium cordatum

Site NS 3.2 tM Open Tallerak Mallee over Mixed Low Heath.

This site is on the edge of the typical Open Tallerak Mallee over heath area and is similar to M2.

Vegetation Description : kSr. SBi. SDi

Soil Type : Sand over ?laterite

Hakea nitida	Eremaea pauciflora
Tetratheca confertifolia	Isopogon villosus
Baeckea preissiana	Dryandra cirsioides
Hakea aff. falcata	Melaleuca ?subtrigona
Petrophile divaricata	Eucalyptus tetragona
Gastrolobium reticulatum	E. incrassata
Allocasuarina microstachys	E. uncinata
Daviesia ?angulata	E. scyphocalyx
Exocarpus sparteus	Hakea crassifolia
Melaleuca uncinata	H. corymbosa
Dryandra pteridifolia	Banksia media
Leptospermum inelegans (ms)	Isopogon teretifolius
Lysinema ciliatum	Goodenia sp.
Petrophile squamata	Hakea obliqua
Andersonia sprengeloides	Persoonia striata

Site NS 3.3 mH Mixed Heath

Vegetation Description : SDe

Soil Type : Sandy clay

Beaufortia schaueri (prominent)	Gahnia ancistrophylla
Gastrolobium crassifolium	Hibbertia exasperata
Andersonia parvifolia	Melaleuca subfalcata
Hakea lehmanniana	Isopogon trifida
Microcorys loganiaceae	Melaleuca ?subtrigona
Dryandra cirsioides	Hakea varia
Isopogon buxifolius	Eucalyptus phaenophylla (ms)
Hakea aff. falcata	Hakea crassifolia
Melaleuca uncinata	Leucopogon obtusatus

Site NS 3.4 M6 Mixed Mallee over *Melaleuca uncinata*

Vegetation Description : kSl. SB1. SDr

Soil Type : Light brown sand over clay - gully

Eucalyptus uncinata	Petrophile divaricata
E. incrassata	Calothamnus sp. (905)
E. ?eremophila	Gastrolobium crassifolium
Melaleuca uncinata	Hakea corymbosa
M. subtrigona	Grevillea haplantha
Lasiopetalum rosmarinifolium	Leucopogon obtusatus
Gahnia ancistrophylla	Hibbertia exasperata
Isopogon buxifolius	Melaleuca pentagona

Site NS 3.5 M3 Mixed Mallee/*Hakea multilineata*

Vegetation Description : kSr. SBr. Low Heath C

Soil Type : Sandy gravel over ironstone - high ground

Beaufortia micrantha	Gahnia ?ancistrophylla
Leucopogon obtusatus	Gastrolobium crassifolium
Melaleuca uncinata	Grevillea cagiana
Hakea crassifolia	Exocarpus sparteus
H. varia	Eucalyptus tetragona
H. corymbosa	E. scyphocalyx
H. subsulcata	E. phaenophylla (ms)
H. multilineata	Lepidosperma sp.
Dryandra cirsioides	Hibbertia exasperata
D. pteridifolia	Allocasuarina pinaster
Melaleuca cuneata	Hakea aff. falcata
Isopogon buxifolius	H. laurina

Site NS 3.6 tM Open Tallerak Mallee over Mixed Low Heath

Vegetation Description : kSr. SBr. SCc (not typical of this vegetation type)

Soil Type : sandy gravel with 10% laterite

Verticordia chrysantha	Beaufortia schaueri
Persoonia quinquinervis	Petrophile squamata
Baeckea crispiflora	Grevillea cagiana
(var. small leaves)	Petrophile trifida
Hakea aff. falcata	Beaufortia micrantha
Verticordia picta	Dryandra cirsioides
Baeckea preissiana	Gastrolobium crassifolium
Dryandra pteridifolia	Hibbertia exasperata
Callitris roei	Leucopogon obtusatus
Melaleuca subtrigona	Isopogon buxifolius
H. subsulcata	Exocarpus sparteus
Daviesia nematophylla	Eucalyptus eremophila
Melaleuca cuneata	E. tetragona
Hakea laurina	E. phaenophylla (ms)
Spyridium denticuliferum	Exocarpus aphyllus

Site NS 3.7 aM *Eucalyptus annulata* Mallee

Vegetation Description : kSc. SC1

Soil Type : Sandy clay

Melaleuca ?undulata	Eucalyptus calycogona
Daviesia nematophylla	E. ?eremophila
Hakea commutata	E. platypus
Helichrysum lepidophyllum	E. annulata
Gahnia ancistrophylla	Melaleuca uncinata

Site NS 3.8 mH Mixed Heath (Mallee over *Melaleuca uncinata* M6 covers part of the area but this is not mapped)

Vegetation Description : SDC

Soil Type : Sand over ?clay

Calothamnus quadrifidus	Hakea aff. falcata
Verticordia drummondii	Petrophile divaricata
V. chrysantha	Dodonaea caespitosa
Acacia lasiocalyx	Hakea incrassata
Melaleuca platycalyx	Allocasuarina microstachya
M. uncinata (1-1.5m in places)	Baeckea crispiflora

Site NS 3.9 M6 Mixed Mallee over *Melaleuca uncinata* Scrub

Vegetation Description : kSc. *Melaleuca uncinata* SB1. SCR

Soil Type : Sand over ?clay

Mallee are denser here (canopy cover 30-70%) than in the typical form of this vegetation type.

Eucalyptus flocktoniae	Callitris roei
E. scyphocalyx	Lasiopetalum rosmarinifolium
E. uncinata	Melaleuca depauperata
E. ?eremophila	M. glaberrima
Dodonaea caespitosa	M. uncinata
Exocarpus aphyllus	M. lateriflora
Hakea varia	M. spicigera
Cassyltha melantha	M. cuneata
Gahnia ancistrophylla	M. subfalcata
Acacia ?bidentata	Cooperhooikia strophiolata
A. acutata	Cassyltha racemosa
Isopogon buxifolius	Exocarpus sparteus

Site NS 3.10a mH Mixed Heath

Vegetation Description : SDC (patches of mallee in places)

Soil Type : Light brown sand over ?clay

Beaufortia micrantha	Verticordia chrysantha
Callitris roei	Isopogon teretifolius
Calothamnus	Lysinema ciliatum
Melaleuca brevifolia	Hibbertia exasperata
Cassyltha racemosa	Verticordia roei
Gastrolobium aff. hookeri	Hakea crassifolia
Calothamnus quadrifidus	Synaphaea petiolaris
Isopogon buxifolius	Petrophile trifida
Allocasuarina microstachya	Banksia caleyi
Hakea aff. falcata	Beaufortia schaueri
Dryandra cirsioides	Hakea varia
Calytrix sp.	H. nitida
Baeckea preissiana	Dryandra pteridifolia
Petrophile divaricata	Melaleuca cuneata
Allocasuarina humilis	Exocarpus sparteus
Grevillea haplantha	Coleanthera myrtoides
Petrophile media	Melaleuca ?pentagona
P. squamata	Hakea trifurcata
Cassyltha melantha	
C. racemosa	

Site NS 3.10b mH Mixed heath (edge of tM Open *Eucalyptus tetragona* Mallee over Heath)

Vegetation Description : SDC

Soil Type : Sand over ?

Calothamnus quadrifidus (1m)	Hakea corymbosa
Verticordia drummondii	Acacia lasiocalyx
Baeckea crispiflora	Eucalyptus tetragona
Verticordia roei	Petrophile divaricata
V. chrysantha	Allocasuarina microstachya
Melaleuca platycalyx	Melaleuca subtrigona
Hakea lissocarpa	

Site NS 3.11 M2 Mallee type 2

Vegetation Description : kSi. SDC (patchy)

Soil Type : Sandy over ?clay

Eucalyptus uncinata	Hakea corymbosa
E. ?eremophila	Santalum murrayanum
E. phaenophylla (ms)	Acacia acutata
E. tetragona	Lasiopetalum rosmarinifolium
Melaleuca uncinata	Calytrix sp.
Beaufortia micrantha	Leptospermum oligandrum
Lysinema ciliatum	Melaleuca ?pentagona
Baeckea preissiana	Hakea aff. falcata
Petrophile squamata	Gahnia ancistrophylla
Isopogon buxifolius	Exocarpus sparteus
Melaleuca subtrigona	Astartea ambigua
Callitris roei	Verticordia acerosa
Gastrolobium reticulatum	Lasiopetalum rosmarinifolium
Hakea varia	Hakea crassifolia
Dryandra tenuifolia	Lepidosperma viscosa
Daviesia ?angulata	

Site NS 3.12 M2 Mixed Mallee type 2

Vegetation Description : kSi. *Melaleuca uncinata* SBr. SDC

Soil Type : Sandy gravel (10% laterite)

Melaleuca subtrigona	Eucalyptus incrassata
Verticordia acerosa	E. tetragona
Astartea ambigua	E. uncinata
Hakea prostrata	E. ?eremophila
Dryandra tenuifolia	Banksia media
Grevillea haplantha	Daviesia ?angulata
Exocarpus sparteus	Baeckea preissiana
Petrophile ?media	Beyeria brevifolia

Cassytha racemosa
Leucopogon obtusatus
Leptospermum spinescens
Banksia caleyi
Hakea crassifolia
Dryandra cirsioides
Melaleuca spicigera
Petrophile squamata
Melaleuca cuneata
Hakea varia
Dryandra pteridifolia
Synaphaea petiolaris

Santalum Sp.
Isopogon buxifolius
Callitris roei
Hakea laurina
Leptospermum oligandrum
Spyridium subochreatum
Hakea nitida
Petrophile divaricata
Allocasuarina microstachya
Grevillea patentiloba
Hibbertia exasperata

Site NS 3.13 vM Open Mallee over *Hakea varia* Heath (not typical of this vegetation type)

Vegetation Description : kSr. SCi. SDi with scattered shrubs of *Hakea varia*, *Hakea corymbosa* and *Melaleuca uncinata* to 1.5m.

Soil Type : Light yellow-brown sand with 30% laterite

Eucalyptus tetragona
E. ?eremophila
E. incrassata
Melaleuca spicigera
Isopogon teretifolius
Verticordia chrysantha
Allocasuarina microstachya
Oxylobium parviflorum
Coleanthera myrtoides
Allocasuarina acutivalvis
Callitris roei
Hakea corymbosa
Hibbertia exasperata
Lysinema ciliatum
Banksia media
Beaufortia micrantha
Petrophile squamata
Grevillea haplantha
Isopogon buxifolius
Hakea laurina
Melaleuca subtrigona

Hakea crassifolia
Spyridium subochreatum
Gastrolobium aff. hookeri
Baeckea preissiana
Hakea varia
Hakea aff. falcata
Grevillea shuttleworthiana
Melaleuca cuneata
Dryandra cirsioides
Petrophile divaricata
Dryandra pteridifolia
Beyeria brevifolia
Cassytha racemosa
Leptospermum spinescens
Exocarpus aphyllus
Hakea multilineata
Grevillea patentiloba
Synaphaea petiolaris
Adenanthos flavidiflorus
Petrophile trifida

Site NS 3.14 M2 Mixed Mallee type 2

Vegetation Description : kS1. SDC (patchy M1 in places)

Soil Type : Light brown sand over clay

Eucalyptus flocktoniae	Melaleuca adnata
E. uncinata	Exocarpus aphyllus
E. densa	Daviesia nematophylla
E. spathulata	Melaleuca undulata
Melaleuca subtrigona (prominent)	Grevillea pauciflora
Cryptandra polyclada	Grevillea huegelii
Hakea commutata	Melaleuca ?thyoides
Isopogon buxifolius	Daviesia ?angulata
Acacia sp. nov. (aff. multilineaata)	

Areas of *E. platypus* "thicket" 1-1.5m adjacent.

NORTH SOUTH FIREBREAK

Section 4

Site NS 4.1 M2 Mixed mallee type 2

Vegetation Description : kS1. SDC (patchy with areas of M1)

Soil Type : Sand over clay

Exocarpus aphyllus	Eucalyptus uncinata
Melaleuca adnata	E. spathulata
Grevillea pectinata	E. flocktoniae
G. patentiloba	Acacia sp. nov. (aff. multilineaata)
Grevillea huegelii	Dillwynia uncinata
G. pauciflora	Daviesia sp.
Melaleuca subtrigona (prominent)	Microcorys barbata
M. adnata	Hakea commutata
M. lateriflora	Cryptandra polyclada
Boronia inornata	Acacia acutata
Cassythia melantha	Melaleuca uncinata
Exocarpus sparteus	Daviesia benthamii
Banksia media	D. lancifolia
Spyridium cordatum	

Site NS 4.2 M1 Mixed Mallee type 1 (patchy M2 in places)

Vegetation Description : kS1. SCR scattered *Melaleuca uncinata* 1-1.5m

Soil Type : Sand over clay

Melaleuca acuminata	Eucalyptus xanthonema
Grevillea patentiloba	E. uncinata
Melaleuca ?subtrigona	E. phaenophylla (ms)

M. ?glaberrima
Baeckea crispiflora
Acacia ?assimilis
A. acutata
Melaleuca adnata
M. lateriflora
Cooperhooikia strophiolata
Spyridium cordatum
Boronia inornata

E. aspratilis (ms)
Grevillea huegelii
Daviesia ?abnormis
Hakea corymbosa
Grevillea pectinata
G. pauciflora
Cryptandra polyclada
Exocarpus aphyllum

Site NS 4.3 M1 Mallee type 1

Vegetation Description : kSi. *Melaleuca uncinata* SBr. SDr

Soil Type : Sand over clay

Eucalyptus spathulata
E. scyphocalyx
E. flocktoniae
E. uncinata
Melaleuca uncinata
Daviesia benthamii
Exocarpus aphyllus
Baeckea preissiana
Spyridium cordatum
Gahnia ancistrophylla
Persoonia teretifolia
Comesperma spinosum
Hibbertia exasperata

Grevillea huegelii
?Microcorys barbata
Cooperhooikia strophiolata
Melaleuca lateriflora
Acacia acutata
Melaleuca adnata
M. ?subtrigona
Grevillea pectinata
Cryptandra polyclada
Dillwynia uncinata
Cassythia melantha
Melaleuca pentagona
Acacia sp. nov. (aff multilineata)

Site NS 4.4 M2 Mixed Mallee type 2 (unburnt)

Vegetation Description : kSi. *Melaleuca uncinata* SBr. SCc

Soil Type : Gravelly sand with 10% laterite

Eucalyptus uncinata
(tree or mallee form)
E. phaenophylla (ms)
E. scyphocalyx
E. xanthophylla
Daviesia lancifolia
Hakea ?adnata
Cassythia melantha
Acacia ?assimilis
Isopogon buxifolius
Calytrix ?leschenaultii
Dillwynia uncinata
Exocarpus aphyllus
Phebalium tuberculosum
Grevillea haplantha
Lysinema ciliatum

Melaleuca ?subtrigona
M. pentagona
M. holosericea
Grevillea patentiloba
Persoonia teretifolius
Leucopogon obtusatus
Spyridium cordatum
Beyeria brevifolia
Daviesia sp.
Cryptandra polyclada
Grevillea pauciflora
G. pectinata
Daviesia nematophylla
Verticordia acerosa
Petrophile squamata
Dodonaea bursarifolia

Site NS 4.5 M1 Mallee type 1

Vegetation Description : kSi. *Melaleuca uncinata* SBr. SDr (lowest stratum patchy M2 in places)

Soil Type : Gravelly sand (with 10% laterite) over clay

Eucalyptus phaenophylla (ms)	Leucopogon obtusatus
E. flocktoniae	Microcorys barbata
E. spathulata	Dillwynia uncinata
E. uncinata	Exocarpus aphyllus
Verticordia drummondii	Spyridium cordatum
Burtonia conferta	Gahnia ancistrophylla
Cryptandra polyclada	Grevillea haplantha
Cooperookia strophiolata	Hakea varia
Dodonaea bursarifolia	Daviesia sp.
Melaleuca sugtrigona	

Site NS 4.6 vM Open Mallee over *Hakea varia* Heath (burnt)

Vegetation Description : kSr (mallee patchy 10-30% in places). SDi scattered *Hakea varia* to 1.5m

Soil Type : Gravelly sand with 10% laterite

Eucalyptus phaenophylla (ms)	Lepidosperma viscidum
E. uncinata	Kunzea preissiana
Petrophile squamata	Gahnia ancistrophylla
Melaleuca subtrigona	Acacia ?assimilis
Grevillea haplantha	A. brachyclada
G. patentiloba	Cryptandra polyclada
Baeckea preissiana	Calytrix sp.
Petrophile brevifolia	Hakea nitida

Site NS 4.7 pM Dense Mixed Mallee - type 2 (unburnt)

Vegetation Description : kSc. SBr. SDr

Soil Type : Yellow brown gravelly sand (50% laterite)

Calytrix leschenalutii	E. phaenophylla
Brachysema latifolium	E. uncinata
Spyridium denticuliferum	Lysinema ciliatum
Platysace maxwellii	Petrophile squamata
Hakea varia (1.5m)	Grevillea patentiloba
Daviesia nematophylla (1.5m)	Hibbertia exasperata
Melaleuca uncinata (1.5m)	Leucopogon obtusatus
Daviesia lancifolia	Acacia bidentata
Lasiopetalum rosmarinifolium	A. acutata
Beyeria brevifolia	Grevillea haplantha
Exocarpus aphyllum	Cassytha racemosa
Dodonaea bursarifolia	Coleanthera myrtoides
Astroloma compactum	Melaleuca pentagona

Site NS 4.8 vM Open Mallee over *Hakea varia* (unburnt)

Vegetation Description : kS1. SCc (patchy 30-70% cover in places)
Hakea varia scattered to 1.5-2m)

Soil Type : Gravelly sand (5% laterite)

Gahnia ancistrophylla	Beaufortia micrantha
Melaleuca uncinata	Lepidosperma sp.
M. subtrigona (prominent)	Persoonia striata
Daviesia lancifolia	Grevillea haplantha
Baeckea preissiana	Hakea aff. falcata
Cassytha racemosa	Coleanthera myrtoides
Lasiopetalum rosmarinifolium	Spyridium denticuliferum
Petrophile squamata	Leptospermum inelegans (ms)
Hakea nitida	L. oligandrum
Isopogon buxifolius	Lysinema ciliatum
Eucalyptus peremophila	Verticordia acerosa
E. uncinata	Leucopogon obtusatus
E. phaenophylla (ms)	Kunzea preissiana
Grevillea patentiloba	

Site NS 4.9 pM Dense Mixed Mallee - type 2 (burnt)

Vegetation Description : kSc (patchy 30% in places). *Melaleuca uncinata* SBr. SDr

Soil Type : Gravelly sand (50% laterite)

Banksia caleyi	Eucalyptus uncinata
Acacia chrysocephala	E. peremophila
Burtonia conferta	E. phaenophylla (ms)
Dodonaea bursarifolia	E. scyphocalyx
Calectasia grandiflora	E. flocktoniae
Leucopogon obtusatus	Dryandra pteridifolia
Hakea nitida	D. tenuifolia
Melaleuca subtrigona	Isopogon buxifolius
Cassytha racemosa	Grevillea huegelii
Hakea varia	G. patentiloba
Spyridium subochreatum	Beyeria brevifolia
S. denticuliferum	Cooperhooia stropholiata
Acacia acutata	Dianella revoluta
Melaleuca pentagona	Kunzea preissiana
Gastrolobium aff. hookeri	Platysace maxwellii
Templetonia sulcata	Exocarpus sparteus
Hakea subsulcata	Lasiopetalum rosmarinifolium
Santalum sp.	

Site NS 4.10 M2 Mallee - type 2 (unburnt)

Vegetation Description : kS1. SC1. SD1 *Melaleuca* to 1.5m, scattered

Soil Type : Gravelly sand (5% laterite)

Eucalyptus ?eremophila	Banksia media
E. phaenophylla (ms)	B. caleyi
E. uncinata	Hakea varia
Cassytha melantha	H. corymbosa
Isopogon buxifolius	H. ?adnata
Leucopogon obtusatus	Gastrolobium reticulatum
Kunzea preissiana	Beaufortia micrantha
Dryandra pteridifolia	Melaleuca subtrigona
Grevillea haplantha	M. pentagona
Baeckea preissiana	Acacia acutata
Acacia chrysocephala	Spyridium denticuliferum
Grevillea patentiloba	Cassytha racemosa
Dryandra tenuifolia	Lasiopetalum rosmarinifolium
Platysace maxwellii	
Astroloma serratifolium	

Site NS 4.11 M2 Mixed Mallee - type 2 (burnt)

Vegetation Description : kS1. SDC scattered *Melaleuca uncinata* to 1.5m

Soil Type : Gravelly sand (10% laterite)

Eucalyptus uncinata	Banksia caleyi (1.0m)
E. scyphocalyx	Kunzea preissiana
E. falcata	Acacia chrysocephala
E. phaenophylla (ms)	Leucopogon obtusatus
E. tetragona	Melaleuca subtrigona (prominent)
E. ? eremophila	Baeckea preissiana
Verticordia chrysantha	Grevillea patentiloba
Beaufortia micrantha	G. haplantha
Calytrix ? leschenaultii	Andersonia ?serratifolium
Verticordia picta	Platysace maxwellii
Petrophile ?brevifolia	Lysinema ciliatum
Spyridium subochreatum	Hakea varia
Lasiopetalum rosmarinifolium	Coleanthera myrtoides
Persoonia striata	Gastrolobium reticulatum
Hakea corymbosa	Lepidosperma sp.
Santalum murrayanum	Petrophile squamata
Isopogon buxifolius	Hakea nitida
Dryandra pteridifolia	

Site NS 4.12 bM Open Mallee over Scrub (unburnt) (patchy, in some places M4 canopy cover of eucalypts 10-30%) *Banksia violacea* and *B. caleyi* recorded

Vegetation Description : kSr. SBr. SDC

Soil Type : Sand

Astroloma serratifolium	Eucalyptus tetragona
Banksia violacea	E. falcata
Beaufortia schaueri	E. phaenophylla (ms)
B. micrantha	Petrophile squamata
Isopogon buxifolius	Hakea varia
Petrophile divaricata	Daviesia lancifolia
Dryandra pteridifolia	Allocasuarina microstachya
D. cirsioides	Coleanthera myrtoides
Hakea ?adnata	H. corymbosa (1.5m)
Hakea crassifolia (1.5m)	Kunzea preissiana
Gastrolobium ?crassifolium	Lasiopetalum rosmarinifolium
Baeckea preissiana	Grevillea patentiloba
Gastrolobium reticulatum	Spyridium denticuliferum
Melaleuca subtrigona	Synaphaea petiolaris
Exocarpus sparteus	Cassytha racemosa
Hakea prostrata	Leptospermum spinescens
Dryandra cuneata	Chamaexeros serra
Melaleuca uncinata	Leucopogon obtusatus
Calytrix ciliata	

Site NS 4.13 bM Open Mallee over Scrub (burnt) (patchy - canopy cover of mallee 10-30% in places). Only *Banksia violacea* was recorded at this site.

Vegetation Description : kSr. SCr. SD1

Soil Type : Sand

Astroloma serratifolium,	Eucalyptus incrassata
Beaufortia micrantha	E. tetragona
B. schaueri	E. falcata
Gastrolobium ?crassifolium	Xanthorrhoea nana
Hakea aff. falcata	Daviesia lancifolia
Dryandra cirsioides	Grevillea patentiloba
D. pteridifolia	Petrophile divaricata
D. nivea	Lysinema ciliatum
D. cuneata	Hibbertia verrucosa
Melaleuca subtrigona	Calytrix ciliata
Baeckea preissiana	Patersonia lanata
Spyridium denticulatum	Verticordia drummondii
Hakea varia	V. grandiflora
H. crassifolia	V. densiflora
H. lehmanniana	Eremaea pauciflora
Petrophile squamata	Synaphaea petiolaris
Leptospermum spinescens	Chamaexeros serra

Thyeanotus ?multiflorus
Olax benthamiana
Allocasuarina thuyoides

Acacia pycnocephala
Exocarpus sparteus

Site NS 4.14 bM Open Mallee over Scrub (unburnt) *Banksia caleyi*, *B. violacea* were recorded

Vegetation Description : kSr. SB1. SD1

Soil Type : Gravelly sand (10% laterite)

Hakea crassifolia (to 1.5m)	Eucalyptus incrassata
Calothamnus gracilis	E. tetragona
Beaufortia micrantha	E. phaenophylla (ms)
Xanthorrhoea nana	E. falcata
Isopogon buxifolius	Melaleuca subtrigona
Allocasuarina thuyoides	Dryandra cirroides
Hakea corymbosa	Isopogon trilobus
H. obliqua	Beaufortia schaueri
H. aff. falcata	Baeckea preissiana
H. nitida	Astroloma serratifolium
H. trifurcata	Agonis spathulata
Dryandra pteridifolia	Petrophile divaricata
Petrophile squamata	Isopogon teretifolius
Allocasuarina humilis	Exocarpus sparteus
Daviesia lancifolia	Verticordia grandiflora
Calytrix ciliata	Coleanthera myrtoides
Thyeanotus sp.	Lysinema ciliatum
Eremaea pauciflora	Gastrolobium ?crassifolium
Leptospermum spinescens	
Hakea verrucosa)	
Melaleuca apodocephala) near firebreak on Southern Boundary	
Billardiera variifolia)	

EAST-WEST FIREBREAK

Section 1

Site EW 1.1 M2 Mixed Mallee - type 2

Vegetation Description : kS1/kSr. SDC scattered *Melaleuca uncinata* to 1.5m

Soil Type : Sand over ?clay

Eucalyptus phaenophylla (ms)	Grevillea pauciflora
E. pileata	Baeckea preissiana
Exocarpus sparteus	Leucopogon obtusatus
Acacia brachyclada	Daviesia lancifolia
Melaleuca ?subtrigona (prominent)	Gastrolobium crassifolium
M. pentagona	Hakea ?adnata
M. ?undulata	Banksia media
Daviesia benthamii	Exocarpus aphyllus
Gahnia ancistrophylla	Grevillea patentiloba
Acacia glaucoptera	Spyridium cordatum
Hakea laurina	
Verticordia acerosa)	
Burtonia conferta)	
Baeckea latens)	East of Site 1.1 in M2
B. pachyphylla)	
Platysace maxwellii)	

Site EW 1.2 tM Open Tallerak Mallee over Heath

Vegetation Description : kSr. SCc scattered *Melaleuca uncinata* and *Hakea varia*

Soil Type : Gravelly sand over ?ironstone

Eucalyptus tetragona	Hakea aff. falcata
E. incrassata	Baeckea preissiana
E. uncinata	Exocarpus aphyllum
E. phaenophylla (ms)	Leucopogon obtusatus
Beaufortia schaueri (prominent)	Petrophile squamata
Callitris roei	Melaleuca ?subtrigona
Hakea ?subsulcata	Banksia media
Melaleuca cuneata	Lysinema ciliatum
M. holosericea	Grevillea patentiloba
Daviesia lancifolia	Isopogon buxifolius
Adenanthos flavidiflorus	Gastrolobium crassifolium
Bossiaea ?spinescens	Phebalium tuberculatum
Gahnia ancistrophylla	Hibbertia exasperata

Site EW 1.3 mM Dense Mixed Mallee type 1

Vegetation Description : kSc. scattered shrubs

Soil Type : Sand over clay

Eucalyptus platypus	Daviesia benthamii
E. ?conglobata	Melaleuca uncinata
E. flocktoniae	Grevillea huegelii
E. densa (ms)	Microcybe albiflora

Site EW 1.4 M3 Mixed Mallee/*Hakea multilineata*. Lower lying areas near this site = M2.

Vegetation Description : kSl. *Acacia assimilis* SAR. SC1

Soil Type : Gravelly sand over ?ironstone

Allocasuarina acutivalvis	Hakea multilineata
Acacia uncinella	Gastrolobium crassifolium
Isopogon buxifolius	Exocarpus sparteus
Melaleuca subtrigona	Leptospermum spinescens
Daviesia lancifolia	Hakea varia
Verticordia chrysantha	Beyeria brevifolia
Hakea subsulcata	Lasiopetalum rosmarinifolium
Leucopogon obtusatus	Eucalyptus incrassata
Eucalyptus phaenophylla (ms)	

Site EW 1.5 aM Dense *Eucalyptus annulata* Mallee

Vegetation Description : kSc. SCR

Soil Type : Sand over clay

Acacia sp. nov. (aff. <i>multilineata</i>)	Exocarpus aphyllus
Grevillea patentiloba	Acacia viscifolia
Dodonaea bursarifolia	Melaleuca subtrigona
?Microcybe albiflora	M. undulata
Dillwynia uncinata	M. adnata
Grevillea huegelii	M. pentagona
G. pauciflora	M. uncinata
Baeckea preissiana	Daviesia benthamii
Cassytha sp.	Eucalyptus annulata
Cryptandra polyclada	E. densa (ms)
	E. flocktoniae
	E. ? conglobata

Site EW 1.6 1W *Eucalyptus incrassata* Woodland

Vegetation Description : LBd/kSd. SCr

Soil Type : Sandy gravel

Hakea multilineata	Spyridium denticuliferum
Microcybe albiflora	Daviesia benthamii
Grevillea patentiloba	Hakea laurina
Melaleuca uncinata	Hakea ?adnata
Dodonaea viscosa	Cassytha sp.
Baeckea preissiana	Gastrolobium crassifolium
Hakea subsulcata	Leucopogon obtusatus

Site EW 1.7 M3 Mixed Mallee/*Hakea multilineata*

Vegetation Description : kS1. SC1

Soil Type : Gravelly sand

Hakea multilineata	Eucalyptus flocktoniae
Gastrolobium crassifolium	E. scyphocalyx
Grevillea patentiloba	E. platypus
Isopogon buxifolius	Microcybe albiflora
Dodonaea viscosa	Hakea ?adnata
Melaleuca holosericea	Baeckea preissiana
M. uncinata	Spyridium denticuliferum
Daviesia benthamii	Boronia inornata
Grevillea huegelii	Cassytha melantha
G. pauciflora	Exocarpus sparteus

Site EW 1.8 M2 Mallee type 2

Vegetation Description : kS1. SDC

Eucalyptus platypus	Melaleuca pentagona
D. densa (ms)	M. undulata
E. flocktoniae	M. adnata
E. scyphocalyx	Grevillea pauciflora
Daviesia benthamii	G. patentiloba
Cassytha sp.	Persoonia teretifolius
Melaleuca holosericea (prominent)	Hibbertia exasperata
Nematolepis phebalioides	Baeckea preissiana
Exocarpus sparteus	

Site EW 1.9 pT *Eucalyptus platypus* "thicket"

Vegetation Description : SAd/SBd "stays" to 4m

Soil Type : Orange brown gravelly clay

Eucalyptus platypus, E. flocktoniae, Melaleuca adnata

Site EW 1.10 pW1 *Eucalyptus platypus* Woodland

Vegetation Description : LBi. SBc

Soil Type : Orange brown sandy clay

<i>Eucalyptus platypus</i>	<i>Melaleuca cucullata</i>
<i>E. annulata</i>	<i>M. ?undulata</i>
<i>Exocarpus aphyllus</i>	<i>Cooperhooikia strophiolata</i>
<i>Bossiaea divaricata</i>	<i>Hakea commutata</i>
<i>Dodonaea stenozyga</i>	<i>Daviesia benthamii</i>

Site EW 1.11 M5 Mixed Mallee over *Melaleuca uncinata*

Vegetation Description : *Melaleuca uncinata* SBi. SDi

Vegetation Description : Sand over clay

<i>Eucalyptus flocktoniae</i>	<i>Daviesia lancifolia</i>
<i>E. platypus</i>	<i>Grevillea pauciflora</i>
<i>E. densa</i> (ms)	<i>G. patentiloba</i>
? <i>Grevillea haplantha</i>	<i>Hakea commutata</i>
<i>Melaleuca undulata</i>	<i>Cryptandra ?polyclada</i>
<i>Gastrolobium crassifolium</i>	<i>Boronia inornata</i>
<i>Melaleuca ?subtrigona</i>	
<i>M. platycalyx</i>	

Site EW 1.12 M1 Mixed Mallee type 1

Vegetation Description : kSi. SCr

Soil Type : Sand over clay

<i>Eucalyptus phaenophylla</i> (ms)	<i>Melaleuca uncinata</i>
<i>E. platypus</i>	<i>M. ?undulata</i>
<i>E. spathulata</i>	<i>M. ?subtrigona</i>
<i>E. scyphocalyx</i>	<i>Exocarpus aphyllus</i>
<i>Melaleuca holosericea</i>	<i>Grevillea patentiloba</i>
<i>Boronia inornata</i>	<i>G. huegelii</i>
<i>Cryptandra polyclada</i>	<i>Dillwynia uncinata</i>
<i>Cassytha melantha</i>	<i>Leucopogon obtusatus</i>
<i>Grevillea pauciflora</i>	<i>Acacia ?merrallii</i>
<i>Platysace maxwellii</i>	<i>Daviesia nematophylla</i>

Site EW 1.14 mM Dense Mixed Mallee type 1

Vegetation Description : kSc. scattered shrubs

Soil Type : Sand over ?clay

Eucalyptus flocktoniae	Exocarpus aphyllus
E. spathulata	Daviesia benthamii
E. ?eremophila	Dillwynia uncinata
Melaleuca undulata	Grevillea patentiloba
M. pentagona	G. huegelii
Comesperma spinosum	

Site EW 1.15 M2 Mixed Mallee - type 2

Vegetation Description : kSi. *Melaleuca uncinata* SBr. SCc

Soil Type : Gravelly sand (5% laterite)

Melaleuca ?subtrigona (prominent)	Exocarpus aphyllus
M. spicigera	Grevillea huegelii
M. uncinata	Cryptandra polyclada
M. ?undulata	Leucopogon obtusatus
Grevillea pauciflora	Baeckea preissiana
Daviesia benthamii	Grevillea patentiloba

Site EW 1.16 aM *Eucalyptus annulata* Mallee

Vegetation Description : kSc. SCi

Soil Type : Sand over clay

Eucalyptus annulata	Melaleuca acuminata
E. flocktoniae	M. adnata
E. calycogona	Helichrysum leptophyllum
E. densa (ms)	Hakea commutata
E. pileata	Dodonaea bursarifolia
E. uncinata	Daviesia nematophylla
Cooperhooikia strophiolata	Olearia muelleri
Melaleuca uncinata	

Site EW 1.17 M6 Mixed Mallee over *Melaleuca uncinata*

Vegetation Description : kSi. *Melaleuca uncinata* Sbc. SCi (patchy)

Soil Type : Sand over clay

Eucalyptus densa (ms)	Acacia viscifolia
E. ?conglobata	Helichrysum leptophyllum
E. scyphocalyx	Grevillea huegelii
E. spathulata	Daviesia nematophylla

E. calycogona	Exocarpus aphyllus
E. flocktoniae	Boronia inornata
Melaleuca adnata	Cryptandra polyclada
M. undulata	Hakea ?adnata
M. uncinata	Cassytha sp.
M. aff. depauperata	Hakea commutata
M. subtrigona	Templetonia sulcata

Site EW 1.18 M3 Mixed Mallee/*Hakea multilineata* SB1. SDc

Soil Type : Orange brown sand over ironstone

Leucopogon obtusatus	Gahnia ancistrophylla
Hakea subsulcata	Eucalyptus phaenophylla (ms)
Gastrolobium crassifolium	E. ?eremophila
Hakea multilineata	E. tetragona
Phebalium lepidotum var. obovatum	Melaleuca uncinata
Burtonia conferta	Exocarpus sparteus
Beaufortia schaueri	Grevillea patentiloba
Cassytha sp.	Lasiopetalum rosmarinifolium
Isopogon buxifolius	Hakea ?adnata
Lepidospermum viscidum	H. laurina

Site EW 1.19 M6 Mixed mallee over *Melaleuca uncinata* scrub

Vegetation Description : kSi. *Melaleuca uncinata* SBc. SD1 (patchy)

Soil Type : Sand over clay

Eucalyptus flocktoniae	Pultenaea conferta
E. ?eremophila	Olax benthamiana
E. spathulata	Gahnia ancistrophylla
E. scyphocalyx	Dianella revoluta
Acacia glaucoptera	Cryptandra polyclada
Melaleuca subtrigona (prominent in places)	Grevillea huegelii
M. ?undulata (prominent in places)	G. patentiloba
M. spicigera	Templetonia sulcata
M. lateriflora	Exocarpus aphyllus
Hakea lissocarpha	Hakea aff. falcata
Astartea ambigua)	H. ?adnata
Verticordia plumosa) south of site location	

Site EW 1.20 M5 Mixed Mallee over *Melaleuca* "thicket"

Vegetation Description : kSi. SAc

Soil Type : Sand over clay

Eucalyptus incrassata	Melaleuca uncinata
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E. phaenophylla (ms)
E. ?eremophila
Kunzea preissiana
Petrophile squamata
Hibbertia exasperata

M. aff. depauperata
Gahnia ancistrophylla
Hibbertia ?gracilipes
Cryptandra polyclada
Acacia bidentata

EAST-WEST FIREBREAK

Section 2

Site BW 2.1 M2 Mixed Mallee - type 2

Eucalyptus ?eremophila
E. uncinata
E. phaenophylla (ms)
E. incrassata
Hakea marginata
H. corymbosa
H. prostrata
H. lissocarpa
Dianella revoluta
Grevillea patentiloba
Templetonia sulcata

Laslopetalum rosmarinifolium
Petrophile media/brevifolia
Melaleuca subtrigona (prominent)
Calytrix sp.
Isopogon buxifolius
Kunzea preissiana
Leucopogon obtusatus
Gahnia ancistrophylla
Cooperhooikia strophiolata
Melaleuca sp.

Site BW 2.2 M2 Mixed Mallee - type 2

Vegetation Description : kSi. *Melaleuca uncinata* SCr. SDC

Soil Type : Sand over clay

Eucalyptus flocktoniae
E. eremophila
E. phaenophylla (ms)
E. scyphocalyx
E. incrassata
Laslopetalum rosmarinifolium
Hakea laurina
Baeckea crispiflora
Cassytha racemosa
Gahnia ancistrophylla
Hakea lissocarpa
Calytrix leschenaultii
Grevillea haplantha

Cooperhooikia strophiolata
Leucopogon obtusatus
Melaleuca subtrigona
Hakea marginata
Pultenaea ?verruculosa
Astroloma compactum
Exocarpus sparteus
Hakea corymbosa
Hakea varia
Spyridium subochreatum
Melaleuca pentagona
Gastrolobium reticulatum
Petrophile squamata

North of BW 2.2 across firebreak - Calytrix leschenaultii
Mesomelaena preissii
Coleanthera myrtooides

Site EW 2.3 M6 Mixed Mallee over *Melaleuca uncinata* scrub

Vegetation Description : kS1. SBI scattered shrubs 0.5m

Soil Type : Sand over clay

Eucalyptus conglobata	Hakea aff. falcata
E. dissimulata	Melaleuca ?glaberrima
E. aspratilis	M. uncinata
Verticordia plumosa	M. lateriflora
Baeckea pachyphylla	M. pentagona
Astartea ambigua	Isopogon buxifolius
Gahnia ancistrophylla	Lasiopetalum rosmarinifolium
Acacia ?acutata	Cassythia racemosa
A. ?pulchella	Petrophile squamata
Dodonaea caespitosa	Hakea subsulcata
Petrophile media/brevifolia	

Site EW 2.4 tM Tallerak Mallee over Mixed Low Heath

Vegetation Description : kSr. SDC. scattered shrubs to 1m

Soil Type : Gravelly sand over ?ironstone

Baeckea polyandra.	Eucalyptus tetragona
Hakea marginata	Petrophile trifida
Isopogon teretifolius	Agonis spathulata
Grevillea cagiana	Hakea crassifolia
Verticordia grandiflora	H. aff. falcata
Eremaea pauciflora	Dryandra cirsioides
Allocasuarina pinaster	D. nivea
Hakea trifurcata	D. pteridifolia
Daviesia benthamii	D. erythrocephala
Verticordia drummondii	D. ferruginea
V. chrysantha	D. cuneata
V. picta	Allocasuarina humilis
V. roei	Isopogon villosus
Pultenaea verruculosa	Leptospermum spinescens
Petrophile cricinata	Beaufortia schqueri
Allocasuarina microstachya	B. micrantha
Lysinema ciliatum	Banksia violacea
Melaleuca cuneata	Coleanthera myrtoides
Adenanthos flavidflorus	Callitris roei

Site EW 2.5 tM Open Tallerak Mallee over heath - Mallee patchy over 10% canopy cover in places

Vegetation Description : kSr. SCc

Soil Type : Sandy gravel over ?ironstone

Eucalyptus scyphocalyx	Melaleuca subtrigona
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E. uncinata	Isopogon buxifolius
E. tetragona	Hakea crassifolia
E. incrassata	Petrophile squamata
Hakea aff. falcata	Melaleuca uncinata
H. prostrata	M. cuneata
H. varia	Daviesia sp.
H. trifurcata	Beaufortia schaueri
H. corymbosa	B. micrantha
Gastrolobium crassifolium	Grevillea cagiana
Banksia caleyi	Lysinema ciliatum
Callitris roei	Hibbertia pungens
Calothamnus gracilis	Coleanthera myrtoides
Petrophile brevifolia	Dryandra pteridifolia
P. divaricata	Leucopogon obtusatus
Allocasuarina humilis	
A. microstachya	

Site EW 2.6 M2 Mixed Mallee - type 2

Vegetation Description : kSi. SDC scattered *Melaleuca uncinata* to 1.5m

Soil Type : Gravelly sand over ?clay

Melaleuca subtrigona (prominent)	Eucalyptus phaenophylla (ms)
Banksia caleyi (1m)	E. uncinata
B. media (1m)	E. incrassata
Hakea laurina	E. tetragona
Melaleuca pentagona	Gastrolobium reticulatum
Leucopogon obtusatus	Hakea corymbosa
Baeckea polyandra	Isopogon buxifolius
Petrophile media/brevifolia	Grevillea patentiloba
Daviesia ?angulata	Petrophile squamata
Hakea crassifolia	Hakea varia
Exocarpus sparteus	Calytrix sp.
Grevillea haplantha	Gahnia sp.

Site EW 2.7 tM Open Tallerak Mallee over Heath

Vegetation Description : kSr. SCr. SDC

Soil Type : Gravelly sand (10% laterite)

Hakea varia (2m)	Eucalyptus tetragona
Persoonia teretifolius	E. phaenophylla (ms)
Melaleuca uncinata (2m)	Beaufortia schaueri (prominent)
Grevillea cagiana	Callitris roei
Santalum murrayanum	Hakea aff. falcata
Dryandra cirroides	Banksia caleyi
Isopogon buxifolius	Gastrolobium crassifolium
Melaleuca cuneata	Leptospermum spinescens
M. subtrigona	Lepidosperma sp.

M. pentagona
?Microcybe albiflora
Grevillea ?huegelii
Hakea crassifolia
H. corymbosa
Petrophile squamata

Leucopogon obtusatus
Beaufortia micrantha
Hibbertia exasperata
Cassytha racemosa
Grevillea patentiloba

Site EW 2.8 M6 Mixed Mallee over *Melaleuca uncinata* scrub

Vegetation Description : kSi. SBC

Soil Type : Gravelly sand (10% laterite) over ?clay

Eucalyptus incrassata
E. flocktoniae
E. platypus
Hakea multilineaata
H. crassifolia
Phebalium tuberculatum
Exocarpus aphyllus
Daviesia sp.

Grevillea patentiloba
Melaleuca undulata
M. pentagona
M. adnata
Santalum ?acuminatum
Cooperhooikia strophiolata
Lasioptalum rosmarinifolium

Site EW 2.9 M2 Mixed Mallee type 2

Vegetation Description : kSi. SDC scattered *Melaleuca uncinata*
1.5m

Soil Type : Sand over clay

Andersonia sprengeloides
Melaleuca undulata
M. aff. pentagona)prominent
M. bracteosa)
Exocarpus aphyllus
Eucalyptus eremophila

Banksia caleyi
Daviesia ?angulata
Dryandra tenuifolia
Baeckea polyandra
Eucalyptus phaenophylla (ms)

Site EW 2.10 M2 Mixed Mallee type 2

Vegetation Description : kSr. SDC scattered shrubs to 1.5m

Soil Type : Sand over ?clay

Melaleuca uncinata
M. pentagona
M. aff. pentagona
Hakea crassifolia (1m)
H. varia (1m)
Grevillea cagiana (1.5m)
Exocarpus aphyllus
Beaufortia schaueri
Leucopogon obtusatus

Eucalyptus uncinata
E. incrassata
E. flocktoniae
Gastrolobium crassifolium
Daviesia ?angulata
Isopogon buxifolius
Grevillea haplantha
Microcorys ?loganiacea
Hakea aff. falcata

Dryandra cirsioides
Banksia media
Grevillea patentiloba

Gahnia sp.
Callitris roei

Site EW 2.11 tM Open Tallerak Mallee over heath - with
Beaufortia schaueri prominent (burnt)

Vegetation Description : kSr. SDC

Soil Type : Sand over ?clay

Eucalyptus tetragona
E. ?eremophila
E. phaenophylla (ms)
Gastrolobium crassifolium
Hakea aff. falcata
Dryandra cirsioides
Hakea lehmanniana
Adenanthos flavidiflorus
Leucopogon obtusatus
Baeckea preissiana
Cassytha racemosa
Andersonia sprengeloides
Melaleuca pentagona
Gahnia sp.
Hakea varia

Banksia schaueri (prominent)
Melaleuca uncinata
Lysinema ciliatum
Hakea crassifolia
Isopogon teretifolius
I. buxifolius
Melaleuca subtrigona
Grevillea patentiloba
Hakea laurina
Acacia glaucoptera
Banksia caleyi
Burtonia scabra
Daviesia ?angulata
Hibbertia exasperata
Petrophile divaricata

Site EW 2.12 fM Open Tallerak Mallee over Heath (unburnt)
Beaufortia schaueri prominent

Vegetation Description : kSr/kSi. SCc scattered to 2m

Soil Type : Sand over ?clay

Eucalyptus phaenophylla (ms)
E. ?eremophila
E. tetragona
E. uncinata
Thysanotus acerosifolius
Oxylobium parviflorum var.
 stenocarpum
Banksia caleyi (2m)
Isopogon buxifolius
Dryandra cirsioides
Allocasuarina pinaster
A. acutivalvis
Gahnia sp.
Astroloma compactum
Leptospermum aff. roei
Gastrolobium crassifolium

Beaufortia schaueri (prominent)
Leucopogon cuneifolius
Phebalium tuberculatum
Melaleuca uncinata (2m)
M. pentagona
M. bracteosa
M. cuneata
Hakea varia (2m)
H. aff. falcata
H. crasifolia (2m)
Grevillea haplantha
Beaufortia micrantha
Daviesia ?angulata
Verticordia chrysantha
Isopogon teretifolius
Coleanthera myrtoides

Site EW 2.13 dW *Eucalyptus densa* Woodland

Vegetation Description : Lbc. SAi

Soil Type : Sandy clay

Eucalyptus densa (ms)	Exocarpus aphyllum
Melaleuca undulata	
M. adnata	
M. uncinata	
M. acuminata	

Site EW 2.14 tM Open Tallerak Mallee over Heath (unburnt)
Beaufortia schaueri prominent

Vegetation Description : kSr. SCc with scattered *Melaleuca uncinata* to 2m

Soil Type : Sand over ?clay

Eucalyptus tetragona	Beaufortia schaueri (prominent)
E. ?eremophila	Hakea aff. falcata
E. uncinata	H. varia
Melaleuca cuneata	H. crassifolia
M. subtrigona	H. corymbosa
Dryandra cirsioides	Persoonia teretifolius
Isopogon buxifolius	Santalum acuminatum
Dryandra pteridifolia	Beaufortia micrantha
Leptospermum aff. roei	Verticordia grandiflora
Coleanthera myrtooides	Grevillea cagiana
Petrophile trifida	Leucopogon obtusatus
Phebalium tuberculatum	Lysinema ciliatum
Exocarpus aphyllum	Cassytha racemosa
Adenanthos flavidiflorus	Grevillea haplantha

Site EW 2.15 M5 Mixed mallee over *Melaleuca* Thicket. This area is included under M5 because of the density of shrubs - 70-100% canopy cover.

Vegetation Description : kSi. SBd

Soil Type : Sand over clay

Eucalyptus playtypus	Melaleuca subtrigona
E. densa (ms)	M. pentagona
E. flocktoniae	M. uncinata
E. calycogona	M. adnata
E. ?eremophila	M. ?undulata
Dodonaea bursarifolia	Exocarpus aphyllum

Site EW 2.16 aM *Eucalyptus annulata* Mallee

Vegetation Description : kSi. SB1

Soil Type : Orange brown sand

<i>Eucalyptus annulata</i>	<i>Melaleuca</i> aff. <i>pauperiflora</i>
<i>E. calycogona</i>	<i>M. adnata</i>
<i>Exocarpus aphyllum</i>	<i>M. uncinata</i>
<i>Dodonaea stenozyga</i>	<i>M. acuminata</i>
<i>Hakea commutata</i>	<i>Grevillea huegelii</i>

Site EW 2.17 M2 Mixed Mallee type 2

Vegetation Description : kSi. *Melaleuca uncinata* SCr. SDC

Soil Type : Sand over Pironstone

<i>Eucalyptus phaenophylla</i> (ms)	<i>Exocarpus aphyllum</i>
<i>E. flocktoniae</i>	<i>Daviesia</i> sp.
<i>E. tetragona</i>	<i>Beaufortia schaueri</i>
<i>E. uncinata</i>	<i>Dryandra cirsioides</i>
<i>E. spathulata</i>	<i>D. tenuifolia</i>
<i>Grevillea patentiloba</i>	<i>Melaleuca lateriflora</i>
<i>Petrophile squamata</i>	<i>M. pentagona</i>
<i>Gahnia</i> sp.	<i>M. subtrigona</i> (prominant)
<i>Cooperhooikia strophiolata</i>	<i>M. thyoides</i>
<i>Cassytha racemosa</i>	<i>Hakea varia</i>
<i>Hakea laurina</i>	<i>H. aff. falcata</i>

Site EW 2.18 pT *Eucalyptus platypus* Thicket

Vegetation Description : SBd scattered *E. salmonophloia* to 10m

Soil Type : Sandy clay

Eucalyptus platypus
E. salmonophloia
E. undulata
Hakea commutata
Exocarpus aphyllum
Melaleuca thyoides

Site EW 2.19 M6 Mixed Mallee over *Melaleuca uncinata* scrub

Vegetation Description : kSi. *Melaleuca uncinata* SB1. SDR

Soil Type : Sand over clay

<i>Eucalyptus scyphocalyx</i>	<i>Hakea lissocarpa</i>
<i>E. flocktoniae</i>	<i>H. corymbosa</i>

E. spathulata
Burtonia conferta
Pultenaea verrucosa
Acacia bidentata
Spyridium subochreatum
Grevillea pauciflora
Dillwynia uncinata
Acacia glaucoptera
Spyridium cordatum
Exocarpus aphyllum
Olearia ramosissima

Melaleuca uncinata
M. pentagona
Melaleuca sp.
Gahnia ancistrophylla
Grevillea patentiloba
Leucopogon obtusatus
Melaleuca subtrigona
Hibbertia pungens/exasperata
Grevillea haplantha
Baeckea sp.

EAST-WEST FIREBREAK

Section 3

Site EW 3.1 dW *Eucalyptus densa* Woodland

Vegetation Description : kS1/LB1 (patchy). SB1

Soil Type : Sand over ?clay (streamline)

Eucalyptus densa (ms)
E. perangusta
E. celastroides ssp. virella
E. xanthonema
Hakea corymbosa
H. ?adnata
H. lissocarpa
H. commutata
Acacia acutata

Melaleuca undulata ssp. undulata
M. acuminata
M. adnata
M. undulata
M. uncinata
M. subtrigona
M. ?subfalcata
Baeckea sp.

Site EW 3.2 M6 Mixed Mallee over *Melaleuca uncinata* scrub

Vegetation Description : kS1. *Melaleuca uncinata* SB1 (over 30% canopy cover in places)

Soil Type : Sand over clay

Eucalyptus pileata
E. phaenophylla (ms)
E. uncinata
E. flocktoniae
Cassytha racemosa
Hakea commutata
Acacia brachyclada

Melaleuca adnata
M. undulata
M. acuminata
Cryptandra polyclada
Santalum acuminatum
Grevillea patentiloba

Site EW 3.3 M2 Mixed Mallee type 2

Vegetation Description : kSi. *Melaleuca uncinata* SBr. SDC

Soil Type : Sand over clay

Eucalyptus scyphocalyx	Melaleuca pentagona
E. xanthonema	M. subtrigona (prominent)
E. spathulata	Baekkea sp.
Banksia media	Spyridium cordatum
Lasiopetalum rosmarinifolium	Hakea ?adnata
Grevillea huegelii	Santalum acuminatum
G. patentiloba	Gahnia ancistrophylla
G. pauciflora	Leucopogon obtusatus
Hakea corymbosa	Petrophile squamata
Acacia acutata	Pultenaea verrucosa
Baekkea preissiana	

Site EW 3.4

Vegetation Description : kSi/kSr. SDI scattered shrubs to 1m

Soil Type : Sand over clay

Dryandra tenuifolia	Eucalyptus phaenophylla (ms)
Banksia media	E. ?eremophila
Leptospermum oligandrum	E. xanthonema
Gastrolobium reticulatum	E. perangustata
Hakea corymbosa	E. sp. nov (1065)
Spyridium subochreatum	Petrophile squamata
Grevillea patentiloba	Beaufortia micrantha
Melaleuca ?subtrigona	Lysinema ciliatum
Hakea corymbosa (1-1.5m scattered)	
H. ?adnata	Isopogon buxifolius
H. nitida	Coleanthera myrtoides
Eremaea pauciflora	Verticordia drummondii
Baekkea preissiana	Acacia fragilis
Petrophile media/brevifolia	

Site EW 3.5 M6 Mixed Mallee over *Melaleuca uncinata* scrub

Vegetation Description : kSi. SB1

Soil Type : Sand over clay

Eucalyptus scyphocalyx	Melaleuca subtrigona
E. spathulata	M. cuneata
E. flocktoniae	M. lateriflora
Baekkea preissiana	Dillwynia uncinata
Daviesia benthamii	Dianella revoluta
Grevillea pauciflora	Melaleuca pentagona
G. patentiloba	Isopogon buxifolius

Acacia glaucoptera
Cooperhooikia strophiolata

Helichrysum lepidophyllum
Cryptandra polyclada

Site BW 3.6 M6 Mixed Mallee over *Melaleuca uncinata* scrub

Vegetation Description : kS1. *Melaleuca uncinata* SA1. SC1

Soil Type : Sand over clay

Eucalyptus scyphocalyx
E. spathulata
E. flocktoniae
Callitris roei
Isopogon buxifolius
Kunzea preissiana
Grevillea pauciflora
Coleanthera myrtoides
Leucopogon obtusatus
Verticordia densiflora
Hakea nitida

Melaleuca subtrigona
M. undulata
M. lateriflora
Petrophile squamata
Beaufortia micrantha
Grevillea patentiloba
G. haplantha
Dillwynia uncinata
Templetonia sulcata
Exocarpus aphyllum

Site BW 3.7 M2 Mixed Mallee type 2

Vegetation Description : kS1. *Melaleuca uncinata* SDC

Soil Type : Sand over clay

Melaleuca subtrigona
M. pentagona
M. holosericea (prominent)
M. uncinata
Daviesia benthamii (1m)
Grevillea haplantha
Eucalyptus spathulata
E. scyphocalyx
E. phaenophylla (ms)
E. xanthonema

Leucopogon obtusatus
Hakea varia
H. ?adnata
Grevillea pauciflora
Daviesia lancifolia
Santalum ?murrayanum
Leptospermum oligandrum
Hibbertia exasperata
Gahnia ?ancistrophylla

Site BW 3.8 vM Open Mallee over *Hakea varia* Heath

Vegetation Description : kS. SDC with *Hakea varia* scattered to 2m

Soil Type : Gravelly sand (10% laterite)

Eucalyptus phaenophylla (ms)
Verticordia picta
V. chrysantha
Leucopogon obtusatus
Petrophile divaricata
Melaleuca subtrigona
M. sp. nov. (1068)

Allocasuarina microstachya
Dodonaea caespitosa
?Mirbelia spinosa
Hakea varia
Gastrolobium crassifolium
Hakea multilinea
H. lissocarpa

M. uncinata (1.5m)
Baeckea preissiana
Grevillea haplantha
Acacia fragilis

Hakea sp. nov. (aff. roei)
Beaufortia schaueri
Allocasuarina acutivalvis
Baeckea sp.

Site EW 3.9 M2 Mixed Mallee type 2

To the west of this site shrubs 0-0.5m only reach a density of 10-30% canopy cover.

Vegetation Description : kSi. *Melaleuca uncinata* SBr. SDC

Soil Type : Sand over clay

Eucalyptus spathulata
E. scyphocalyx
Melaleuca subtrigona
M. pentagona
M. holosericea
Baeckea sp.
Dryandra tenuifolia

Templetonia sulcata
Grevillea pauciflora
Daviesia benthamii
Cryptandra polyclada
Acacia ?acutata
Hakea lissocarpa

Site EW 3.10 vM Open Mallee over Hakea varia Heath

Vegetation Description : Mallee around edge of area SDC (scattered *Hakea varia* 2m)

Soil Type : Gravelly sand (10% laterite)

Allocasuarina microstachya
Baeckea preissiana
Melaleuca subtrigona
Synaphaea petiolaris
Gastrolobium crassifolium
Leptospermum aff. roei
Cassutha racemosa
Dodonaea caespitosa

Verticordia acerosa
Calytrix ?leschenaultii
Petrophile divaricata
Coleanthera myrtoides
Melaleuca holosericea
Baeckea sp.
Verticordia brownii

Site EW 3.11 M6 Mixed Mallee over Melaleuca uncinata scrub

Vegetation Description : kSi. *Melaleuca uncinata* SBI. SDR

Soil Type : Sand over ?clay

Eucalyptus spathulata
E. scyphocalyx
Templetonia sulcata
Grevillea huegelii
G. patentiloba
G. haplantha
Cryptandra polyclada
Hakea aff. falcata
Acacia acutata

Gahnia ?ancistrophylla
Melaleuca subtrigona
M. pentagona
Baeckea sp.
Leucopogon obtusatus
Acacia brachyclada
Cooperhooikia strophiolata
Dianella revoluta
Hibbertia exasperata

Site EW 3.12 M2 Mixed Mallee type 2

Vegetation Description : kSi. *Melaleuca uncinata* SBr. SD1

Soil Type : Sand over clay

Dicrastylis glauca	Eucalyptus scyphocalyx
Verticordia densiflora	E. phaenophylla (ms)
V. plumosa	Cassytha racemosa
Grevillea haplantha	Melaleuca subtrigona
Hakea ?marginata	Grevillea huegelii
Acacia acutata	Santalum ? acuminatum
Leucopogon obtusatus	Gahnia ?ancistrophylla
Hakea corymbosa	Hibbertia exasperata
Dryandra tenuifolia	Baeckea sp.
Cryptandra polyclada	Coleanthera myrtoides
Kunzea preissiana	Gastrolobium reticulatum
Hakea lissocarpa	

Site EW 3.13 M2 Mixed Mallee type 2

Vegetation Description : kSi/kSr. *Melaleuca uncinata* SCr. SD1

Soil Type : Sand over clay

Melaleuca subtrigona	Eucalyptus perangusta (ms)
Loxocarya ?myrioclada	E. scyphocalyx
Gastrolobium reticulatum	E. ?conglobata
Grevillea haplantha	Hakea corymbosa
G. patentiloba	H. varia
Beaufortia micrantha	H. sp.
Astroloma ?compactum	Cooperhooikia strophiolata
Leucopogon obtusatus	Santalum ?acuminatum
Calytrix ?leschenaultii	Leptospermum sp.

Site EW 3.14 sH Low Scrub with emergent *Santalum acuminatum*

Vegetation Description : SCr. SD1 *Santalum acuminatum* 1.5-2m scattered

Soil Type : Sand over clay

Melaleuca urceolaris	Eucalyptus perangusta (ms)
Acacia fragilis	Melaleuca subtrigona
Beaufortia micrantha	M. bracteosa
Kunzea preissiana	Andersonia ?sprengeloides
Verticordia densiflora	Hakea corymbosa
V. plumosa	Hakea sp.
Stipa juncifolia	

Site EW 3.15

Vegetation Description : *Stipa juncifolia* and *Leptospermum* SC1

Soil Type : Sand over clay

Hakea sp.

Eucalyptus perangusta (ms)

Melaleuca subtrigona

M. brevifolia

M. lateriflora

M. cuticularis

Site EW 3.16 mM Dense Mixed Mallee

Vegetation Description : kSc scattered shrubs

Soil Type : Sand over clay

Eucalyptus conglobata

E. perangusta (ms)

Templetonia sulcata

Dodonaea bursarifolia

Gahnia ?ancistrophylla

Melaleuca lateriflora

Site EW 3.17 oW *Eucalyptus occidentalis* Woodland

Vegetation Description : LAc

Soil Type : Sandy loam over clay

Eucalyptus occidentalis

Stipa juncea

Melaleuca adnata

SOUTHERN BOUNDARY

Section 1

Site SB 1.1 M2? tM? Areas burnt recently. Mallee regrowth 2-3m, "stays" 6-8m. 10% canopy cover.

Vegetation Description : SDr. SDi

Soil Type : Light brown sand over ?clay

Eremaea pauciflora	Dryandra cirsioides
Leucopogon obtusatus	Verticordia grandiflora
Calothamnus quadrifidus	Eucalyptus tetragona
Isopogon teretifolius	E. phaenophylla (ms)
Astroloma serratifolium	Hakea corymbosa
Baeckea preissiana	H. crassifolia
Dryandra pteridifolia	H. varia
Exocarpus sparteus	H. aff. falcata
Petrophile divaricata	Daviesia lancifolia
Isopogon buxifolius	D. benthamii
?Bossiaea divaricata	Allocasuarina humilis
Lasiopetalum rosmarinifolium	A. microstachya
Olax benthamiana	

Site SB 1.2 xH *Xanthorrhoea/Hakea baxteri* Heath

Vegetation Description : SDC scattered *E. tetragona* to 2m

Soil Type : Light brown sand over laterite

Xanthorrhoea nana	Calothamnus quadrifidus
Hakea baxteri	Dryandra cuneata
H. varia	D. pteridifolia
Banksia media	D. nivea
B. caleyi	D. cirsioides
B. violacea	D. erythrocephala
Hakea crassifolia	Petrophile divaricata
H. aff. falcata	P. trifida
H. corymbosa	P. ericifolia
H. prostrata	Lysinema ciliatum
Adenanthos flavidiflorus	Verticordia plumosa
Beaufortia micrantha	Synaphaea petiolaris
B. schaueri	Persoonia striata
Daviesia sp.	Allocasuarina thuyoides
Eremaea pauciflora	Olax benthamiana
Lysinema sp. nov.	Leucopogon obtusatus
Astroloma serratifolium	Daviesia lancifolia
Acacia pycnocephala	Melaleuca subtrigona
Gastrolobium aff. hookeri	Andersonia ?parvifolia
Verticordia grandiflora	Loxocarya fasciculata
Leptospermum spinescens	Agonis spathulata
Allocasuarina microstachya	Allocasuarina humilis

Site SB 1.3 bM Open Mallee over Scrub. Only *Banksia caleyi* was recorded at this site. Mallee 1.5-3m "stays" to 4m.

Vegetation Description : kSr. SDc scattered *Hakea crassifolia*

Soil Type : Sand

<i>Banksia caleyi</i>	<i>Eucalyptus phaenophylla</i> (ms)
<i>Hakea crassifolia</i>	<i>Agonis spathulata</i>
<i>Beaufortia schauveri</i>	<i>Olax banthamiana</i>
<i>Melaleuca subtrigona</i>	<i>Petrophile trifida</i>
<i>Isopogon buxifolius</i>	<i>Acacia fragilis</i>
<i>Calothamnus quadrifidus</i>	<i>Dryandra pteridifolius</i>
<i>Castrolobium crassifolium</i>	<i>D. cirsoide</i>
<i>Hakea aff. falcata</i>	<i>D. cuneata</i>
<i>H. ?obliqua</i>	<i>Petrophile divaricata</i>
<i>Beaufortia micrantha</i>	<i>Baeckea preissiana</i>
<i>Astroloma serratifolium</i>	<i>Daviesia benthamii</i>
<i>Acacia pycnocephala</i>	<i>Verticordia grandiflora</i>
<i>Xanthorrhoea nana</i>	<i>V. densiflora</i>
<i>Eremaea pauciflora</i>	<i>Dryandra erythrocephala</i>
<i>Gastrolobium aff. hookeri</i>	<i>Leptospermum oligandrum</i>
<i>Hakea trifurcata</i>	<i>Lysinema ciliatum</i>
<i>H. lehmanniana</i>	<i>Cassytha racemosa</i>
<i>H. baxteri</i>	<i>Leucopogon obtusatus</i>
<i>H. varia</i>	<i>Daviesia lancifolia</i>
<i>Allocasuarina humilis</i>	<i>Adenanthos flavidiflorus</i>
<i>A. thuyoides</i>	<i>Petrophile ericifolia</i>
<i>Leptospermum inelegans</i> (ms aff. roel)	

Site SB 4.4 M2 Mixed Mallee type 2

Vegetation Description : kS1. SD1

Soil Type : Sand over ?clay

<i>Melaleuca subtrigona</i> (prominent)	<i>Eucalyptus incrassata</i>
<i>M. uncinata</i>	<i>E. tetragona</i>
<i>Lasiopetalum rosmarinifolium</i>	<i>E. phaenophylla</i> (ms)
<i>Hakea laurina</i>	<i>Spyridium subochreatum</i>
<i>H. nitida</i>	<i>Lepidosperma tuberculatum</i>
<i>H. verrucosa</i>	<i>Petrophile brevifolia</i>
<i>H. varia</i>	<i>Lysinema ciliatum</i>
<i>Baeckea preissiana</i>	<i>Exocarpus sparteus</i>
<i>Petrophile squamata</i>	<i>Gastrolobium reticulatum</i>
<i>Daviesia lancifolia</i>	<i>G. aff. hookeri</i>
<i>Verticordia ?densiflora</i>	<i>Beaufortia micrantha</i>
<i>Andersonia sp.</i>	<i>Hakea crassifolia</i>
<i>Calectasia cyanea</i>	<i>Grevillea patentiloba</i>
<i>Daviesia ?benthamii</i>	<i>Acacia ?assimilis</i>
<i>Synphaea petiolaris</i>	<i>Banksia caleyi</i>
<i>Grevillea haplantha</i>	

Site SB 1.5 M2 bM

Vegetation Description : kS1. SBr. SD1

Soil Type : Sand

<i>Hakea verrucosa</i> (1.5)	<i>Eucalyptus incrassata</i>
<i>H. corymbosa</i> (1.5)	<i>E. uncinata</i>
<i>H. crassifolia</i>	<i>E. phaenophylla</i> (ms)
<i>Banksia caleyi</i> (1m)	<i>Grevillea patentiloba</i>
<i>Exocarpus sparteus</i>	<i>Lasiopetalum rosmarinifolium</i>
<i>Isopogon buxifolius</i>	<i>Melaleuca subtrigona</i>
<i>Daviesia benthamii</i>	<i>Petrophile squamata</i>
<i>Kunzea preissiana</i>	<i>Callitris roei</i>
<i>Gastrolobium reticulatum</i>	<i>Beaufortia micrantha</i>
<i>Dryandra tenuifolia</i>	<i>Acacia fragilis</i>
<i>Calytrix Pleschenaultii</i>	<i>Verticordia acerosa</i>
<i>Andersonia serratifolium</i>	<i>Baeckea preissiana</i>
<i>Coleanthera myrtoides</i>	

SB 1.6 bM Open Mallee over *Banksia* scrub. Only *Banksia caleyi* was recorded at this site.

Vegetation Description : kSr. SC1. SD1 scattered *Hakea corymbosa*, *H. crassifolia*

Soil Type : Sand

<i>Eucalyptus phaenophylla</i> (ms)	<i>Coleanthera myrtoides</i>
<i>E. incrassata</i>	<i>Isopogon buxifolius</i>
<i>E. tetragona</i>	<i>Hakea trifurcata</i>
<i>Xanthorrhoea nana</i>	<i>Calothamnus</i> sp.
<i>Verticordia grandiflora</i>	<i>Dryandra pteridifolia</i>
<i>Gastrolobium crassifolium</i>	<i>Hakea crassifolia</i>
<i>Beaufortia schaueri</i>	<i>H. varia</i>
<i>Beaufortia micrantha</i>	<i>Leptospermum spinescens</i>
<i>Leucopogon obtusatus</i>	<i>Dryandra cirsioides</i>
<i>Petrophile divaricata</i>	<i>Acacia pycnocephala</i>
<i>Melaleuca subtrigona</i>	<i>Cassya racemosa</i>
<i>Andersonia serratifolium</i>	<i>Agonis spathulata</i>
<i>Allocasuarina humilis</i>	<i>Lysinema ciliatum</i>
<i>A. thuyoides</i>	
<i>A. microstachya</i>	

Site SB 1.7 bM Open Mallee over *Banksia* scrub. Only *Banksia blechnifolia* was recorded at this site.

Vegetation Description : Patchy mallee in clumps. kSr. SD1 scattered *Hakea corymbosa* and other shrubs to 1.5m.

Soil Type : Gravelly sand

Eucalyptus incrassata	Leptospermum spinescens
E. tetragona	Verticordia densiflora
E. uncinata	V. drummondii
E. falcata	Baeckea preissiana
Calothamnus sp.	Loxocarya myrioclada
Agonis spathulata	Chamaexeros serra
Hakea trifurcata	Allocasuarina microstachya
H. obliqua	A. thuyoides
H. prostrata	A. humilis
Melaleuca subtrigona	Petrophile ?media/brevifolia
Petrophile aff. longifolia	P. squamata
P. divaricata	Lysinema ciliatum
Acacia pulchella	Astroloma serratifolium
A. fragilis	Grevillea haplantha
Daviesia lancifolia	G. armigera
Isopogon buxifolius	Leucopogon obtusatus
Olax benthamiana	Callitris roei
Calytrix ?leschenaultii	Andersonia sp.
Isopogon trilobus	Daviesia ?benthamii
Bremaea pauciflora	Coleanthera myrtoides
Synaphaea polymorpha	Thysanotus sp.
Dryandra pteridifolia	Scirpus sp.
Hakea corymbosa	

Site SB 1.8 M4 Mixed Mallee over scrub. *Banksia media*, *B. violacea* and *B. blechnifolia* were recorded at this site.

Vegetation Description : kS1. SBr. SDC

Soil Type : Light grey brown sand; susceptible to wind erosion.

Hakea crassifolia (1.5m)	Beaufortia micrantha
Banksia media (1.5m)	Eucalyptus uncinata
Hakea corymbosa (1.5m)	E. scyphocalyx
H. obliqua	E. tetragona
H. crassifolia	Cassythia racemosa
Isopogon trilobus	Daviesia benthamii
Acacia pulchella	Lysinema ciliatum
Leucopogon obtusatus	Dryandra pteridifolia
Exocarpus sparteus	Calytrix sp.
Petrophile squamata	Allocasuarina microstachya
P. divaricata	A. thuyoides
Daviesia lancifolia	Acacia fragilis
Petrophile media/brevifolia	Bremaea pauciflora
Isopogon buxifolius	Verticordia acerosa

Verticordia sp.
Grevillea armigera
Coleanthera myrtoides
Leptospermum aff. roei
Lasiopetalum rosmarinifolium
Callitris roei

Melaleuca subtrigona
Andersonia sp.
Lysinema ciliatum
Leptospermum spinescens
Kunzea preissiana
Baeckea preissiana

SB 1.9 M4 Mallee over scrub. *Banksia media* and *B. violacea* were recorded.

Vegetation Description : kS1. SDC scattered *Hakea obliqua* and *Petrophile squamata* to 1.5m.

Soil Type : Gravelly sand

Hakea obliqua
Lysinema ciliatum
Verticordia drummondii
Petrophile divaricata
P. media/brevifolia
Baeckea preissiana
Isopogon trilobus
Andersonia serratifolium
Beaufortia micrantha
Coleanthera myrtoides
Calytrix ?leschenaultii

Daviesia lancifolia
Andersonia sp.
Eremaea pauciflora
Leptospermum spinescens
Lepidosperma tuberculatum
Dryandra pteridifolia
Hakea nitida
Grevillea haplantha
Persoonia striata
Allocasuarina microstachya

Site 1.10 M4 Mallee over scrub. *Banksia media*, *B. violacea* and *B. blechnifolia* were recorded at this site.

Vegetation Description : kS1. SBr. SDC

Vegetation Description : Sand

Dryandra sp. nov. 1114
Acacia fragilis
Callitris roei
Isopogon trilobus
Beaufortia micrantha
Hakea corymbosa (to 1.5m)
H. nitida
H. obliqua
H. crassifolia (to 1.5m)
H. varia
H. prostrata
Isopogon buxifolius
Exocarpus sparteus
Acacia chrysocephala
Daviesia lancifolia
Lasiopetalum rosmarinifolium
Melaleuca subtrigona
Thysanotus sp.

Eucalyptus phaenophylla (ms)
E. uncinata
E. incrassata
E. tetragona
E. falcata
Petrophile divaricata
P. brevifolia/media
P. squamata
Verticordia drummondii
Baeckea preissiana
Calytrix sp.
Daviesia benthamii
Kunzea preissiana
Eremaea pauciflora
Loxocarya myrioclada
Allocasuarina microstachya
Chamaexeros serra
Lepidosperma tuberculatum

Leptospermum spinescens
Melaleuca ?glaberrima
Lysinema ciliatum
Xanthorrhoea nana

Persoonia striata
Calothamnus ?gracilis
Leptospermum aff. roei
Hakea trifurcata

Site SB 1.11 M4 Mallee over scrub. Only *Banksia blacknifolia* was recorded.

Vegetation Description : kS1. SBr. SDC (patchy 10-30% canopy cover in places)

Soil Type : Sand

Grevillea armigera
Eucalyptus tetragona
E. incrassata
E. uncinata
E. phaenophylla (ms)
Gastrolobium reticulatum
Daviesia lancifolia
Beaufortia micrantha
Isopogon buxifolius
Hakea obliqua
Loxocarya myrioclada
Acacia pulchella
Lasiopetalum rosmarinifolium
Cassya racemosa
Verticordia sp.
Allocasuarina thuyoides
Verticordia grandiflora
Grevillea haplantha
Exocarpus sparteus

Hakea crassifolia (to 1.5m)
H. varia (to 1.5m)
Melaleuca uncinata (to 1.5m)
Lepidosperma tuberculatum
Dryandra pteridifolia
Eremaea pauciflora
Allocasuarina microstachya
Spyridium subochreatum
Kunzea preissiana
Grevillea patentiloba
Melaleuca subtrigona
Hibbertia verrucosa
Petrophile media/brevifolia
P. divaricata
Persoonia striata
Calectasia grandiflora
Baeckea preissiana
Petrophile squamata
Verticordia plumosa
V. drummondii

Site SB 1.12 bM Open Mallee over scrub (burnt). Only *Banksia violacea* recorded.

Vegetation Description : SCo. SD1 with scattered shrub mallee to 3m

Soil Type : Sand

Eucalyptus tetragona
E. phaenophylla (ms)
Hakea crassifolia
H. prostrata
Dryandra cuneata
D. nivea
D. pteridifolia
D. cirsioides
Xanthorrhoea nana
Synaphaea petiolaris

Isopogon teretifolius
Beaufortia schaueri
B. micrantha
Allocasuarina microstachya
A. thuyoides
A. humilis
Andersonia sp.
Lysinema ciliatum
Verticordia densiflora
V. grandiflora

Calothamnus gracilis
Eremaea pauciflora
Petrophile divaricata
Melaleuca subtrigona
Calytrix ciliata
Agonis spathulata
Acacia pycnocephala
Lysinema sp. nov. (1105)
Lepidosperma p.

Daviesia lancifolia
Astroloma serratifolium
Cassythia racemosa
Coleanthera myrtoides
Exocarpus aphyllum
Persoonia striata
Baeckea preissiana
Petrophile media/brevifolia

Site SB 1.13 bM Open Mallee over scrub (unburnt). *Banksia caleyi*, *B. violacea* and *B. blechnifolia* were recorded at this site.

Vegetation Description : kSr. SB1. SD1

Soil Type : Sand

Eucalyptus incrassata
E. tetragona
Melaleuca ?pentagona
Beaufortia micrantha
Calytrix sp.
Petrophile squamata
Dryandra pteridifolia
D. cirsoides
D. nivea
Baeckea preissiana
Petrophile media/brevifolia
Daviesia lancifolia
Astroloma serratifolium
Coleanthera myrtoides
Isopogon teretifolius
Hibbertia verrucosa
Hakea varia
Lepidosperma tuberculatum
Acacia acutata

Hakea crassifolia (1.5m)
H. corymbosa (1.5m)
H. obliqua (1.5m)
Eremaea pauciflora
Isopogon trilobus
I. buxifolius
Allocasuarina humilis
Lysinema ciliatum
Persoonia striata
Kunzea preissiana
Chamaexeros serra
Hakea tridentifera
Leptospermum spinescens
Verticordia drummondii
Calectasia grandiflora
Gastrolobium reticulatum
Exocarpus sparteus
Callitris roei
Agonis spathulata

Site SB 1.14 M4 Mallee over scrub (burnt). *Banksia caleyi* and *B. blechnifolia* were recorded at this site.

Vegetation Description : kS1. SC1. SD1

Soil Type : Sand

Eucalyptus phaenophylla (ms)
E. tetragona
E. incrassata
Calectasia grandiflora
Verticordia acerosa
Petrophile media/brevifolia
Gastrolobium reticulatum

Hakea crassifolia
Leucopogon obtusatus
Baeckea preissiana
Calytrix ?leschenaultii
Daviesia lancifolia
Calothamnus gracilis
Hakea varia

Melaleuca subtrigona
M. apodocephala
M. aff. pentagona
Loxocarya myrioclada
Dryandra actotidis
D. pteridifolia
D. nivea
Chamaexeros serra
Acacia pycnocephala
A. pulchella var. subsessilis
Lepidosperma tuberculatum
Eremaea pauciflora
Cassytha racemosa
Astroloma serratifolium
Scirpus sp.
Xanthorrhoea nana

Kunzea preissiana
Grevillea haplantha
G. patentiloba
Hakea prostrata
H. corymbosa
H. verrucosa
Allocasuarina humilis
Callitris roei
Beaufortia micrantha
Petrophile divaricata
P. squamata
Coleanthera myrtoides
Agonis spathulata
Calytrix ciliata
Isopogon buxifolius
I. trilobus

SOUTHERN BOUNDARY

Section 2

Site SB 2.1 M4 Mixed Mallee over scrub (unburnt) (Mallee patchy only 2-10% canopy cover in places). *Banksia media*, *B. violacea*, *B. blechnifolia* and *B. caleyi* recorded.

Vegetation Description : kS1. SB1. SC1

Soil Type : Sand

Microcorys exserta
Daviesia benthamii
Hakea obliqua (1.5m)
H. crassifolia (1.5m)
Beaufortia micrantha
Kunzea preissiana
Isopogon buxifolius
I. trilobus
Lysinema ciliatum
Eremaea pauciflora
Grevillea haplantha
Astroloma serratifolium
Petrophile media/brevifolia
P. divaricata
P. squamata
Callitris roei
Exocarpus aphyllum
Gastrolobium reticulatum
Calytrix sp.
C. ciliata
Coleanthera myrtoides

Eucalyptus incrassata
E. tetragona
E. falcata
Chamaexeros serra
Dryandra pteridifolia
D. nivea
Baeckea preissiana
Loxocarya myrioclada
Cassytha racemosa
Lepidosperma tuberculatum
L. gracilis
Verticordia chrysantha
V. acerosa
V. densiflora
Melaleuca subtrigona
Acacia assimilis
Daviesia lancifolia
Calectasia grandiflora
Allocasuarina humilis
Lasioptalum rosmarinifolium

Site SB 2.2 bM Mixed Mallee over Scrub (burnt)
(Mallee patchy mainly 10% canopy cover). *Banksia caleyi*, *B. violaceae* recorded.

Vegetation Description : kSr. SC1. SD1 scattered *Dryandra cuneata*, *Beaufortia schaueri*, *Agonis spathulata* to 1.5m.

Soil Type : Gravelly sand

Mesomelaena stygia	Eucalyptus tetragona
Synaphaea petiolaris	E. falcata
Allocasuarina humilis	E. incrassata
Beaufortia micrantha	Grevillea haplantha
B. schaueri	G. patentiloba
Dryandra cirsioides	Isopogon teretifolius
D. cuneata	Astroloma serratifolium
D. nivea	Daviesia benthamii
D. pteridifolia	D. lancifolia
Spyridium denticuliferum	Petrophile divaricata
Agonis spathulata	P. squamata
Scirpus sp.	Coleanthera myrtoides
Xanthorrhoea nana	Allocasuarina microstachya
Hakea trifurcata	Calothamnus quadrifidus
H. corymbosa	Verticordia acerosa
H. varia	V. ?plumosa
H. aff. falcata	V. drummondii
H. prostrata	Leptospermum spinescens
H. crassifolia	Callitris roei
Exocarpus sparteus	Lepidosperma tuberculatum
Lysinema ciliatum	Allocasuarina thuyoides
Baeckea preissiana	Calectasia grandiflora
Gastrolobium reticulatum	Acacia assimilis
G. ?crassifolium	Dampiera sp.
Microcorys exserta	Eremaea pauciflora

Site SB 2.3 bM Mallee over Mixed Heath (unburnt) (Mallee patch 10-30% canopy cover in places). *Banksia caleyi*, *B. violacea*, *B. blechnifolia* recorded at this site and *B. media* recorded nearby (west of site).

Vegetation Description : kSr. SB1. SD1

Soil Type : Sand

Brachysema latifolium	Eucalyptus incrassata
Agonis spathulata	E. tetragona
Hakea corymbosa	E. phaenophylla (ms)
H. crassifolia	E. falcata
Acacia chrysocephala (west of	Leptospermum oligandrum
Hypocalymma puniceum site)	Petrophile media/brevifolia
Verticordia habrantha	P. squamata
V. grandiflora	Melaleuca subtrigona
Lepidosperma tuberculatum	Daviesia lancifolia

Beaufortia micrantha
Isopogon buxifolius
Calytrix ciliata
Allocasuarina thuyoides
Dryandra pteridifolia
D. cirsioides
D. cuneata
Isopogon trilobus
Chamaexeros serra
Lysinema ciliatum
Microcorys ?barbata
Eremaea pauciflora

Cassyltha racemosa
Lasiopetalum rosmarinifolium
Calytrix sp.
Astroloma serratifolium
Exocarpus sparteus
Coleanthera myrtoides
Hakea trifurcata
Baeckea preissiana
Calothamnus quadrifidus
Acacia sp. nov. aff multilineata
(west of site)
Callitris roei

Site SB 2.4

Vegetation Description : SAR. *Acacia acellerata* SDC

Soil Type : Sand

Melaleuca uncinata)	
Hakea obliqua)	shrubs 1.5-2m
H. crassifolia)	
Melaleuca ?urceolaris		Hakea corymbosa (to 1.5m)
Santalum ?murrayanum		Lepidosperma gracile
Lobelia gibbosa		Waitzia aureum
Kunzea preissiana		

Site SB 2.5 oW *Eucalyptus occidentalis* Woodland

Vegetation Description : LA1. scattered shrubs

Soil Type : Loamy sand over clay

*Pentastichis airoides		Hakea laurina
Melaleuca glaberrima		H. nitida
M. acuminata		H. lissocarpa
M. uncinata		Gahnia ?ancistrophylla
Pimelea argentea		Acacia acellerata
Ragodia preissii		Lepidosperma gracile
Dodonaea viscosa		Acacia ?erinacea

Site SB 2.6 M6 Mixed Mallee over *Melaleuca uncinata* scrub (Mallee and *Melaleuca uncinata* density patchy over area)

Vegetation Description : kSi. *Melaleuca uncinata* SBC. SDi

Soil Type : Sand over clay

Gahnia lanigera		Eucalyptus ?aspratilis
Acacia accelerata		E. spathulata
Cassyltha racemosa		E. phaenophylla (ms)

Cryptandra polyclada
Grevillea huegelii
Hakea varia
H. laurina
H. corymbosa
Petrophile squamata
Grevillea haplantha
Dryandra tenuifolia
Phebalium microphyllum
Hibbertia exasperata
Grevillea patentiloba

E. tetragona
Melaleuca subtrigona
M. brevifolia
M. spicigera
M. ?pentagona
Gastrolobium ?crassifolium
Lepidosperma gracile
Leucopogon obtusatus
Isopogon buxifolius
Beaufortia schaueri

Site SB 2.7 M2 Mixed Mallee type 2 (unburnt?)

Vegetation Description : kSi. SCo

Soil Type : Sand over clay

Grevillea heugelii
Melaleuca subtrigona (prominent)
Baeckea ?crispiflora
Beyeria brevifolia
Gahnia ancistrophylla
Hakea ?adnata
Melaleuca pentagona
Isopogon buxifolius
Exocarpus aphyllum
Acacia accelerata
Burtonia conferta

Eucalyptus uncinata
E. incrassata
E. xanthoneura
E. scyphocalyx
Grevillea haplantha
Phebalium microphyllum
Acacia glaucoptera
Gastrolobium ?crassifolium
Cryptandra polyclada
Bossiaea spinosa

Site SB 2.8 M5 Mixed mallee over *Melaleuca* thicket

Vegetation Description : kSi. SAc. scattered shrubs

Soil Type : Sand over clay

Exocarpus aphyllum
Melaleuca subtrigona
M. laterifolia
M. pentagona
M. acuminata
M. adnata
Cooperhooikia strophiolata

Grevillea huegelii
Gastrolobium ?crassifolium
Cassutha racemosa
Gahnia lanigera
Cryptandra polyclada
Grevillea haplantha
Acacia accelerata

Site SB 2.9 pW1 *Eucalyptus platypus* Woodland

Vegetation Description : LBo (patchy) scattered shrubs

Soil Type : Sandy clay

Exocarpus aphyllum	Melaleuca acuminata
Acacia sp. nov. (aff multilineata)	M. ?thyoides
A. ?erinacea	M. adnata
Eucalyptus flocktoniae	M. holosericea
E. platypus	
E. annulata	

Site SB 2.10 pW1 *Eucalyptus platypus* Woodland

Vegetation Description : LBi with scattered shrubs

Soil Type : Loamy clay

Eucalyptus platypus	Exocarpus aphyllum
E. flocktoniae	Melaleuca adnata
Melaleuca acuminata	M. thyoides

Site 2.11 M5 Mixed mallee over *Melaleuca* thicket. This site is not typical of this vegetation type. The areas very patchy with mallee reaching a canopy cover of 50% in places and *Melaleuca* shrubs ranging in height from 1 to 2m. To the east of Site SB 2.12 mixed *Melaleuca* shrubs 1-1.5m, 30-70% canopy cover occur.

Vegetation Description : kSc/kSi. SA1 (patchy) scattered shrubs

Soil Type : Sand/clay

Melaleuca holosericea	Eucalyptus uncinata
M. thyoides	E. spathulata
M. undulata ssp. undulata	E. flocktoniae
M. uncinata	E. xanthonema
M. acuminata	E. platypus
Microcybe albiflora	E. calycogona
Dodonaea bursarifolia	Daviesia lancifolia
Cassya racemosa	Acacia erinacea
Olearia muelleri	Exocarpus aphyllum

Site SB 2.12 M5 Mixed Mallee over *Melaleuca* thicket

Vegetation Description : kSc/kSi. SAd

Soil Type : Sand over clay

Eucalyptus xanthonema	Melaleuca uncinata
E. phaenophylla (ms)	M. ?undulata

E. spathulata
E. annulata
E. ?eremophila

M. acuminata
Acacia sp. nov.
(aff. multilineata)

Site SB 2.13 M2 Mixed Mallee type 2

Vegetation Description : kS1. SDC

Soil Type : Sand

Melaleuca subtrigona
M. holosericea (prominent)
M. acuminata
M. uncinata
M. undulata
M. lateriflora
M. pentagona
M. adnata
Daviesia benthamii
Baeckea ?crispiflora
Grevillea pectinata

Eucalyptus flocktoniae
E. scyphocalyx
E. spathulata
Cryptandra polyclada
Grevillea huegelii
G. pauciflora
Exocarpus sparteus
Dodonaea bursarifolia
Hakea varia
Cooperhooikia strophiolata

SOUTHERN BOUNDARY

Section 3

Site SB 3.1 vM Open Mallee over *Hakea varia* Heath. Next to firebreak *Hakea varia* reaches a canopy cover of 10-30%.

Vegetation Description : kSr. *Hakea varia* SBr. SDC

Soil Type : Sand

Allocasuarina acutivalvis
Melaleuca subtrigona
M. scapigera
M. ?glaberrima
M. uncinata
Petrophile divaricata
Gastrolobium aff. hookeri
Verticordia chrysantha
V. picta
Hakea crassifolia
Cassytha racemosa
Lepidosperma ?gracile
Exocarpus sparteus

Eucalyptus scyphocalyx
E. uncinata
E. phaenophylla (ms)
Thysanotus sp.
Isopogon buxifolius
Grevillea haplantha
G. patentiloba
Baeckea preissiana
Beyeria brevifolia
Beaufortia micrantha
B. schaueri
Gastrolobium ?crassifolium
Petrophile squamata

Site SB 3.2 M5 Mixed Mallee over *Melaleuca* "thicket"

Vegetation Description : kSi. SAc

Soil Type : Sandy clay

Eucalyptus aspratilis	Callistemon phoeniceus
E. spathulata	Acacia aff. multilineata
E. xanthonema	Lepidosperma ?gracile
Leptospermum oligandrum	Melaleuca uncinata
Hakea corymbosa	M. holosericea
Isopogon buxifolius	*Hordeum leporina
Grevillea pectinata	*Pentaschistis airoides
Santalum acuminatum	Danthonia caespitosa

Site SB 3.3 M2 Mixed Mallee type 2

Vegetation Description : kSi. SDC

Soil Type : Sand

Grevillea haplantha	Eucalyptus spathulata
Melaleuca subtrigona	E. phaenophylla (ms)
M. pentagona	E. pileata
M. holosericea	E. scyphocalyx
M. aff. pentagona	E. flocktoniae
M. uncinata	Acacia ?accelerata
Isopogon buxifolius	Daviesia benthamii
Grevillea pectinata	Microcybe albiflora
Dryandra subpinnatifida	Burtonia conferta
Baeckea sp.	Grevillea pauciflora
Exocarpus sparteus	

Site SB 3.4 dW *Eucalyptus densa* (ms) Woodland

Vegetation Description : SDd (70% canopy cover). SB1

Eucalyptus xanthonema	Melaleuca acuminata
E. densa (ms)	Lepidosperma ?gracile
E. spathulata	Phebalium microphyllum
Frankenia tetrapetala	Exocarpus aphyllum

Site SB 3.5 M6 Mixed Mallee over *Melaleuca uncinata*

Vegetation Description : kSi. *Melaleuca uncinata* SB1. SD1 (patchy)

Soil Type : Sand over clay

Eremaea pauciflora	Eucalyptus perangusta
Melaleuca subtrigona	E. spathulata
M. urceolaris	E. phaenophylla (ms)

M. pentagona
M. aff. pentagona
M. uncinata
M. brevifolia
Kunzea preissiana
Leucopogon obtusatus
Acacia aff. multilineata
Loxocarya myrioclada
Calectasia grandiflora
*Pentaschistis airoides
Leptospermum oligandrum

Baeckea sp.
B. preissiana
Calytrix ?leschenaultii
Verticordia habrantha
V. densiflora
Gastrolobium ?crassifolium
Isopogon buxifolius
Gahnia ?ancistrophylla
Hakea corymbosa
*Hordeum leporinum

Site SB 3.6 M5-M6 Mixed Mallee over *Melaleuca*. On the streamline near Site SB 3.6 *Melaleuca uncinata*, *M. hamulosa* 2-3m, 30-70% canopy cover.

Vegetation Description : kS1. SBc (patchy)

Soil Type : Sand over clay

Melaleuca urceolaris
M. uncinata
M. lateriflora
M. hamulosa
M. holosericea
M. undulata
Leucopogon obtusatus

Eucalyptus xanthonema
E. spathulata
E. perangusta
Acacia aff. multilineata
Kunzea preissiana
Gahnia ancistrophylla
Isopogon buxifolius

Site SB 3.7 M2 Mixed Mallee - type 2

Vegetation Description : kS1. SDc shrubs (patchy) 30-70% cover in places

Soil Type : Gravelly sand

Eucalyptus spathulata
E. flocktoniae
E. densa (ms)
E. phaenophylla (ms)
E. platypus
Exocarpus aphyllum
Grevillea pauciflora
Cryptandra polyclada
Dodonaea bursarifolia

Daviesia benthamii
Grevillea pectinata
Melaleuca subtrigona
M. undulata
M. adnata
M. uncinata
M. lateriflora
M. lateriflora
Cooperhooikia strophiolata

Site SB 3.8 pW2 *Eucalyptus platypus* Woodland

Vegetation Description : LBd scattered shrubs

Soil Type : Clay

Melaleuca adnata
M. thyoides
Eucalyptus platypus
E. annulata

Site SB 3.9 Scattered *Eucalyptus platypus* to 3m, patchy 1-1.5m,
30-70% canopy cover.

Vegetation Description : SCr (10% canopy cover)

Eucalyptus flocktoniae	Daviesia benthamii
E. calycogona	Melaleuca thyoides
E. platypus	M. pentagona
	M. adnata

Site SB 3.10 M2 Mixed Mallee type 2

Vegetation Description : kS1. SDc

Soil Type : Sand over ?clay

Banksia media	Eucalyptus tetragona
Beaufortia micrantha	E. phaenophylla (ms)
Melaleuca uncinata	E. xanthonema
Gastrolobium ?crassifolium	Astroloma serratifolium
Daviesia lancifolia	Cassytha racemosa
Hakea varia	Gahnia ancistrophylla
Grevillea patentiloba	Lepidosperma sp.
G. pauciflora	Hibbertia exasperata
G. haplantha	Beaufortia schaueri
Exocarpus aphyllum	Calectasia grandiflora
Melaleuca subtrigona	Cooperhookeya strophiolata
M. pentagona	Dianella revoluta
M. holosericea	Spyridium cordatum
M. lateriflora	Leucopogon obtusatus
M. aff. pentagona	Dryandra subpinnatifida
M. ?subfalcata	Acacia glaucoptera
Thysanotus sp.	

Site SB 3.11 M6 Mixed Mallee over *Melaleuca uncinata* scrub.
Area is a mosaic with patches of M6 and Heath and Site 3.11a.
Allocasuarina campestris shrubs 1-1.5m, 30-70% canopy cover at
Site SB 3.11b.

SB 3.11a M6

Vegetation Description : kSl. *Melaleuca uncinata* SD1. SDR

Soil Type : Sand over ?ironstone

Eucalyptus scyphocalyx
E. flocktoniae
E. spathulata
Burtonia conferta
Hakea aff. falcata
Cooperhookea strophiolata
Melaleuca lateriflora
Daviesia benthamii

Gahnia ?ancistrophylla
Grevillea patentiloba
Hakea lissocarpa
Santalum murrayanum
Hakea laurina
Grevillea pectinata
G. pauciflora
Exocarpus aphyllum

Heath

Vegetation Description : SDe

Soil Type : Orange brown gravelly sand

Petrophile divaricata
Allocasuarina campestris
A. microstachya
Hakea crassifolia
H. lissocarpa
H. ?adnata
Melaleuca spicigera
M. uncinata
Callitris roei
Leucopogon obtusatus

Thysanotus sp.
Gahnia ?ancistrophylla
Cassytha racemosa
Synaphaea petiolaris
Verticordia brownii
V. chrysantha
Isopogon buxifolius
Acacia ?uncinella
Grevillea haplantha

Site SB 3.11b

Vegetation Description : *Allocasuarina campestris* SBC over SDR
scattered Mallee

Soil Type : Orange brown sand over ?granite

Borya nitida
Melaleuca uncinata
M. aff. pentagona
Acacia ?uncinella
Leucopogon obtusatus
Thysanotus sp.
Calectasia grandiflora
?Hakea subsulcata
Loxoclada myrioclada
Phebalium lepidotum
var. *obovatum*
Gahnia ancistrophylla
Verticordia brownii

Petrophile divaricata
Verticordia acerosa
V. chrysantha
Hakea crassifolia
Calytrix sp.
Cassytha racemosa
Kunzea preissiana
Leptospermum oligandrum
Baeckea sp.
Hakea varia
H. corymbosa
Isopogon buxifolius
Acacia aff. multilineata

Site SB 3.12 M5 Mixed malle over *Melaleuca* thicket

Vegetation Description : kSc/kSl. SAc

Soil Type : Sand over clay

Eucalyptus spathulata	Melaleuca ?subtrigona
E. pileata	M. eleutherostachya
E. uncinata	M. holosericea
E. ?aspratilis	M. uncinata
E. flocktoniae	Hakea ?adnata
Cooperhooikia strophiolata	

Site SB 3.13 ?M5 Mixed Mallee over *Melaleuca*. Not typical - shrubs usually taller in this vegetation type, i.e. over 1.5m

Vegetation Description : kSc/kSl. Sbc (*Melaleuca* shrubs ~ 1m-1.5m)

Soil Type : Sand over clay

Melaleuca ?subtrigona	Eucalyptus flocktoniae
M. holosericea (prominent)	E. scyphocalyx
M. pentagona	E. spathulata
M. aff. pentagona	E. phaenophylla
M. uncinata	Exocarpus aphyllum
M. lateriflora	Hakea ?strumosa
M. undulata	Gahnia ancistrophylla
M. ?subfalcata	Daviesia benthamii
Grevillea huegelii	G. pectinata
G. pauciflora	

Site 3.14 mH Mixed Heath

Vegetation Description : SCr. Sdc scattered *E. tetragona* and *E. perangusta* (ms)

Soil Type : Sand

Isopogon buxifolius	Eremaea pauciflora
Hakea sp.	Beaufortia micrantha
Calothamnus quadrifidus	Verticordia densiflora
Dryandra sp.	Baeckea preissiana
Acacia accelerata	Chamaexeros serra
Leptospermum oligandrum	Melaleuca ?subtrigona
Hakea corymbosa	Leptospermum inelegans (ms)
Isopogon trilobus	Hakea prostrata
Callitris roei	H. trifurcata
Gastrolobium aff. hookeri	Petrophile divaricata
Daviesia lancifolia	Astroloma serratifolium

In gully -

Gahnia australis
Melaleuca brevifolia
Isotoma hypocrateriformis
Harperia lateriflora
Eucalyptus perangusta
Santalum sp.
Kunzea preissiana

*Pentastichis airoides
Acacia accelerata
Melaleuca thyooides
M. urceolaris
Isopogon buxifolius
Hakea corymbosa

Sb 3.13 M2 Mixed Mallee type 2

Area of shrubs 0.5-1m, 30-70% canopy cover; most of area shrubs 0-0.5m, 30-70% canopy cover.

Vegetation Description : kSl. SDC

Soil Type : Gravelly sand

Eucalyptus scyphocalyx
E. perangusta
E. spathulata
Melaleuca ?subtrigona
M. undulata
M. thyooides
M. holosericea
M. uncinata
M. lateriflora
Beaufortia schaueri

Exocarpus aphyllum
Daviesia benthamii
Cassythia melantha
Petrophile squamata
Grevillea pectinata
G. pauciflora
G. huegelii
Burtonia conferta
Leucopogon obtusatus

Site SB 3.16 S Sapphire

Vegetation Description : SDC

Soil Type : Clay

Halosarcia holocnemoides
H. lepidosperma
Frankenia tetrapetala

Melaleuca brevifolia
Carpobrotus sp.

Areas adjacent - Vegetation Description : SDC with scattered Mallee

Conostephium drummondii
Actinostrobilus pyramidalis
Pultenaea sp. 1164
Darwinia diosmoides
Kunzea preissiana
Callitris roei
Isopogon buxifolius
Hakea corymbosa
Beaufortia micrantha

Melaleuca ?subtrigona
M. urceolaris
M. thymoides
M. lateriflora
M. brevifolia
Frankenia tetrapetala
Eucalyptus scyphocalyx
Cassythia racemosa
Acacia aff. multiligneata

Site SB 3.17 M8 Mixed Mallee over *Melaleuca uncinata* scrub

Vegetation Description : kSi. *Melaleuca uncinata* SBo. SDr

Soil Type : Gravelly sand

Eucalyptus scyphocalyx	Astroloma compactum
E. phaenophylla (ms)	Kunzea preissiana
Isopogon buxifolius	Spyridium cordatum
Hakea lissocarpha	Santalum murrayanum
Actinostrobos pyramidalis	Gahnia ?ancistrophylla
Casytha melantha	Melaleuca lateriflora
Beaufortia micrantha	M. pentagona
Grevillea pauciflora	Leucopogon obtusatus
G. pectinata	Coleanthera myrtoides

Site SB 3.18a mH On eastern side of river.

Vegetation Description : *Hakea obliqua* and *H. corymbosa* SBr. SDo

Daviesia incrassata	Lyginia barbata
ssp. reversifolia	Microcorys barbata
Grevillea tripartita	Adenanthos cuneatus
Hibbertia gracilipes	Danthonia caespitosa
Synaphaea polymorpha	Stipa ?juncifolia
S. ?petiolaris	*Hordeum leporinum
Petrophile sp. nov.	Leptocarpus humilis
aff. longifolia	L. ?ramosissimus (ms)
Isopogon buxifolius	Hakea trifurcata
I. sp. nov. aff. attenuatus	Verticordia densiflora
Olearia muricata	Beaufortia micrantha
Verticordia sp. nov.	Banksia violacea
Melaleuca ?subtrigona	Hakea obliqua
Eremaea pauciflora	Hakea sp.
Daviesia lancifolia	H. crassifolia
Conostephium drummondii	Leptospermum spinescens
Chamaexeros serra	L. aff. roei
Petrophile squamata	Allocasuarina humilis
Olax benthamiana	Hakea trifurcata
Jacksonia racemosa	Actinostrobos pyramidalis
Isopogon trilobus	Lysinema ciliatum
Astroloma serratifolium	Darwinia diosmoides

Site 3.18b bH *Banksia baueri* Heath

Vegetation Description : SDo *Banksia baueri* and *Hakea corymbosa* scattered to 1.5m

Soil Type : Sand

Calothamnus quadrifidus	<i>Banksia baueri</i>
Darwinia diosmoides	Verticordia sp. nov.

Carpobrotus sp.
Acacia aff. multilineata
Beaufortia micrantha
Acacia ?assimilis
Petrophile squamata
Banksia violacea
Hakea obliqua
Leptospermum spinescens
Isopogon sp nov. aff. attenuatus
Petrophile sp. nov.
 aff. longifolia

V. densiflora
Actinostrobus pyramidalis
Jacksonia racemosa
Lysinema ciliatum
Synaphaea petiolaris
Isopogon buxifolius
I. trilobus
Hakea corymbosa
Melaleuca brevifolia
Pityrodia uncinata

LAKE MAGENTA NATURE RESERVE

VEGETATION OF AREAS ADJACENT TO THE EAST-WEST FIREBREAK

LEGEND

----- Delineate areas of variation within a vegetation type or areas where vegetation boundaries are indistinct on available aerial photography

--- Firebreak

--- Vegetation boundary

6 Site Location

--- Streamline

VEGETATION ASSOCIATIONS

Woodland Associations

1. *Eucalyptus salmonophloia* (Salmon Gum) Open Woodland (sw)
2. *Eucalyptus occidentalis* (Flat Topped Yate) Woodland (ow)
3. *Eucalyptus falcata* (Silver Mallet) Woodland (fw)
4. *Eucalyptus incrassata* Woodland (iw)
5. *Eucalyptus densa* (ms) Woodland (dw)
6. *Eucalyptus platypus* (Moort) Woodland (pw1)
7. *Eucalyptus platypus* (Moort) Dense Woodland (pw2)

Open Mallee Associations

1. Open Tallerak Mallee over Mixed Low Heath (tm)
2. Open Mallee over Scrub (bm)
3. Open Mallee over *Hakea varia* Heath (vm)

Mallee Associations

1. Mixed Mallee over Scrub (M4)
2. Mixed Mallee over *Melaleuca* Thicket (M5)
3. Mixed Mallee - Type 1 (M1)
4. Mixed Mallee - Type 2 (M2)
5. Mixed Mallee/*Hakea multiflora* (M3)
6. Mixed Mallee over *Melaleuca uncinata* Scrub (M6)
7. Dense Mixed Mallee - Type 1 (DM)
8. Dense Mixed Mallee - Type 2 (DM)
9. *Eucalyptus annulata* Mallee (ak)

Heath and Thicket Associations

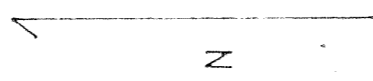
1. *Xanthorrhoea nana*/*Hakea baxteri* Heath (xh)
2. *Banksia bauseri* Heath (bh)
3. Low Scrub with emergent *Santalum acuminatum* (sh)
4. Mixed Heath (mh)
5. *Eucalyptus platypus* (Moort) "Thicket" (pt)

Halophyte Associations

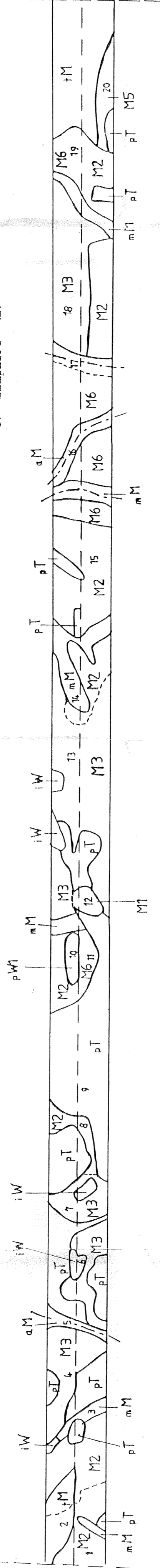
1. Samphire (s)

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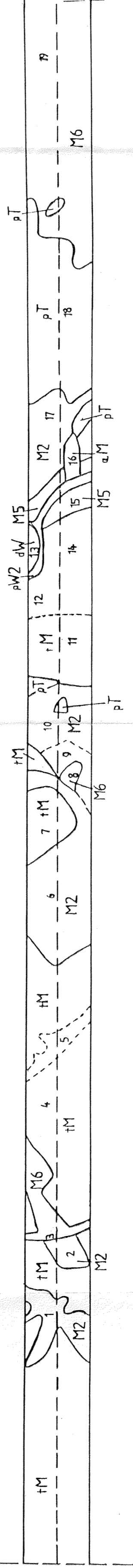
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kilometres



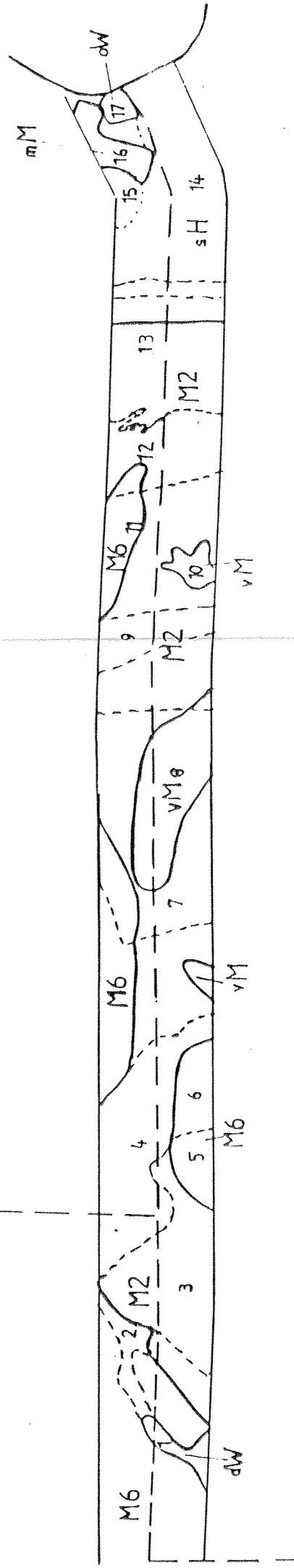
SECTION 1



SECTION 2



SECTION 3



LEGEND

----- Delineate areas of variation within a vegetation type or areas where vegetation boundaries are indistinct on available aerial photography

----- Firebreak

----- Vegetation boundary

6 Site Location

----- Streamline

LAKE MAGENTA NATURE RESERVE

VEGETATION OF AREAS ADJACENT TO THE SOUTHERN BOUNDARY

VEGETATION ASSOCIATIONS

Woodland Associations

1. *Eucalyptus salmoneophloia* (Salmon Gum) Open Woodland (sW)
2. *Eucalyptus occidentalis* (Flat topped) Woodland (oW)
3. *Eucalyptus taicata* (Silver Mallet) Woodland (fW)
4. *Eucalyptus incrassata* Woodland (iW)
5. *Eucalyptus densa* (MS) Woodland (dW)
6. *Eucalyptus platypus* (Moort) Woodland (pW1)
7. *Eucalyptus platypus* (Moort) Dense Woodland (pW2)

Open Mallee Associations

1. Open Tallerak Mallee over Mixed Low Heath (tM)
2. Open Mallee over Scrub (bM)
3. Open Mallee over *Hakea varia* Heath (vM)

Mallee Associations

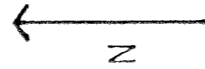
1. Mixed Mallee over Scrub (M4)
2. Mixed Mallee over *Mealeuca Thicket* (M5)
3. Mixed Mallee - Type 1 (M1)
4. Mixed Mallee - Type 2 (M2)
5. Mixed Mallee/*Hakea multilineata* (M3)
6. Mixed Mallee over *Mealeuca uncinata* Scrub (M6)
7. Dense Mixed Mallee - Type 1 (MM)
8. Dense Mixed Mallee - Type 2 (PM)
9. *Eucalyptus annulata* Mallee (aM)

Heath and Thicket Associations

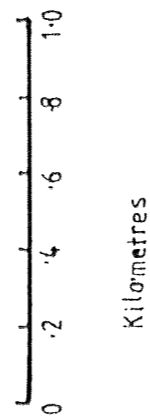
1. *Anthorrhiza mana/Hakea baxteri* Heath (xH)
2. *Banksia laevis* Heath (bH)
3. Low Scrub with emergent *Santalum acuminatum* (sH)
4. Mixed Heath (mH)
5. *Eucalyptus platypus* (Moort) "Thicket" (pT)

Halophyte Associations

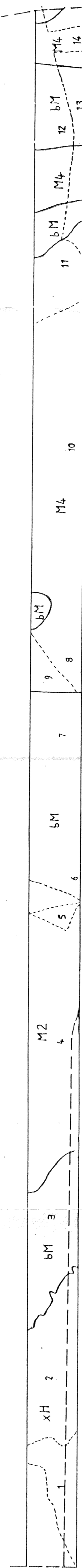
1. Samphire (S)



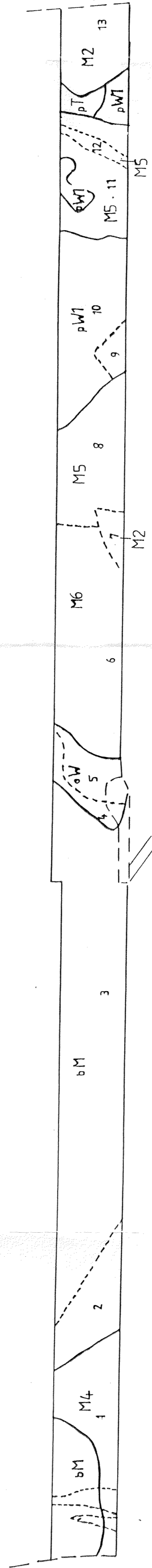
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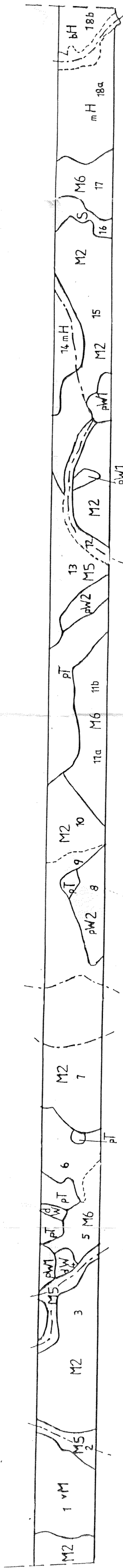
SECTION 1



SECTION 2



SECTION 3

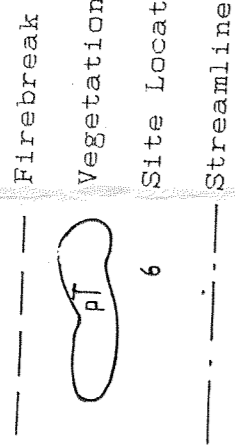


LAKE MAGENTA NATURE RESERVE

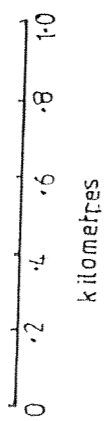
VEGETATION OF AREAS ADJACENT TO THE NORTH-SOUTH FIREBREAK

LEGEND

Delineate areas of variation within a vegetation type or areas where vegetation boundaries are indistinct on available aerial photography



SCALE 1:20,000



VEGETATION ASSOCIATIONS

Woodland Associations

1. *Eucalyptus salmonophloia* (Salmon Gum) Open Woodland (SW)
2. *Eucalyptus occidentalis* (Fist Lopped Yate) Woodland (OW)
3. *Eucalyptus falcata* (Silver Mallet) Woodland (fW)
4. *Eucalyptus incrassata* Woodland (iW)
5. *Eucalyptus densa* (ms) Woodland (dW)
6. *Eucalyptus platyptus* (Woort) Woodland (pW1)
7. *Eucalyptus platyptus* (Woort) Dense Woodland (pW2)

Open Mallee Associations

1. Open Tallerak Mallee over Mixed Low Heath (tM)
2. Open Mallee over Scrub (bM)
3. Open Mallee over *Hakea varia* Heath (vM)

Mallee Associations

1. Mixed Mallee over Scrub (M4)
2. Mixed Mallee over *Melaleuca* Thicket (M5)
3. Mixed Mallee - Type 1 (M1)
4. Mixed Mallee - Type 2 (M2)
5. Mixed Mallee/*Hakea* *multilineata* (M3)
6. Mixed Mallee over *Melaleuca uncinata* Scrub (M6)
7. Dense Mixed Mallee - Type 2 (DM)
8. Dense Mixed Mallee - Type 1 (DM)
9. *Eucalyptus annulata* Mallee (aM)

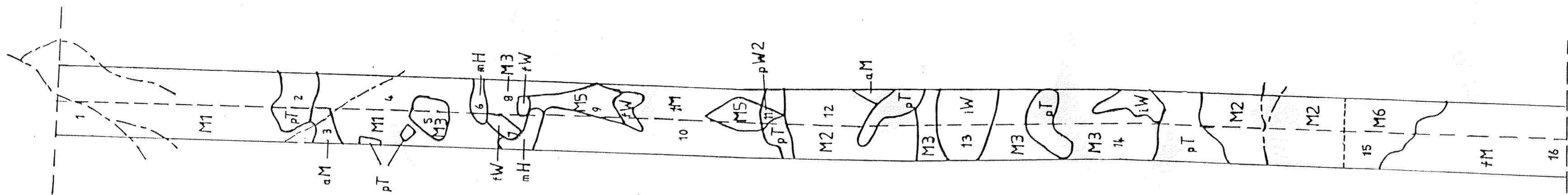
Heath and Thicket Associations

1. *Xanthorrhoea nana/Hakea baxteri* Heath (xH)
2. *Banksia baueri* Heath (bH)
3. Low Scrub with emergent *Santalum acuminatum* (sH)
4. Mixed Heath (mH)
5. *Eucalyptus platyptus* (Woort) "Thicket" (pT)

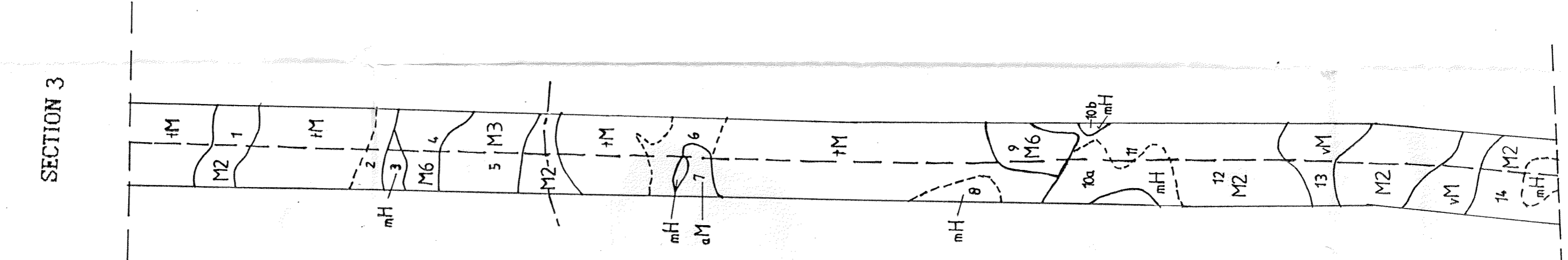
Halophyte Associations

1. Samphire (S)

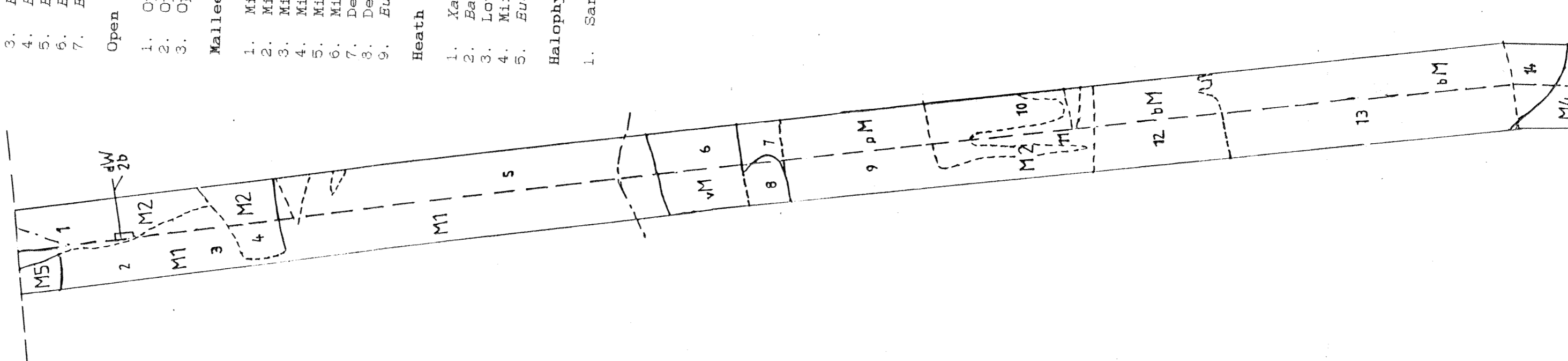
SECTION 2



SECTION 3



SECTION 4



SECTION 1

