

Trees & Shrubs

for the Midlands and Northern
Wheatbelt

2nd edition



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AUTHORS

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Contributing Authors to 2nd edition

NACC thanks the following people for their significant contribution to *Trees and Shrubs for the Midlands and Northern Wheatbelt 2nd edition*.

David Wilcox and Trevor Stoneman surveyed the eastern part of the region. Trevor Stoneman described the landforms and soils and David Wilcox described the plants. This was carried out as a private consultancy funded by the One Billion Trees program.

Noel Schoknecht and Ted Griffin (Agriculture Western Australia now Department of Agriculture and Food, Western Australia) surveyed the western part of the region, together they described the landforms and soils, and Ted Griffin described the plants. This was carried out as part of a National Landcare Project. Ted Lefroy and David Wilcox (also Agriculture Western Australia) coordinated the production of this book on behalf of the East Three Springs Catchment Group.

Dr Jennifer Borger, a botanical consultant with many years experience surveying bushland and working on revegetation projects within the Northern Agricultural Region (NAR) of Western Australia. Jennifer updated and expanded the original species lists to include a wider range of species, as well as adding some species that had not been recorded at the time of the first edition. Please note that not all of these species are available in nurseries so referring to the 'How to use this book' section is essential when planning which species to use.

Dr Jackie Courtenay and Leigh Whisson, environmental consultants from Earth Creations who have extensive experience in environmental management planning, revegetation and land rehabilitation as well as in writing, editing and formatting major documents for publication. They undertook the editing, formatting and republication of *Trees and Shrubs for the Midlands and Northern Wheatbelt 2nd edition*.

Adele Killen and Sarah Jeffery from NACC, and Mike Clarke from DAFWA Geraldton, managed different elements of the 'Pilot to Test Carbon Driven Solutions on Saline Land' project of which this publication is one.

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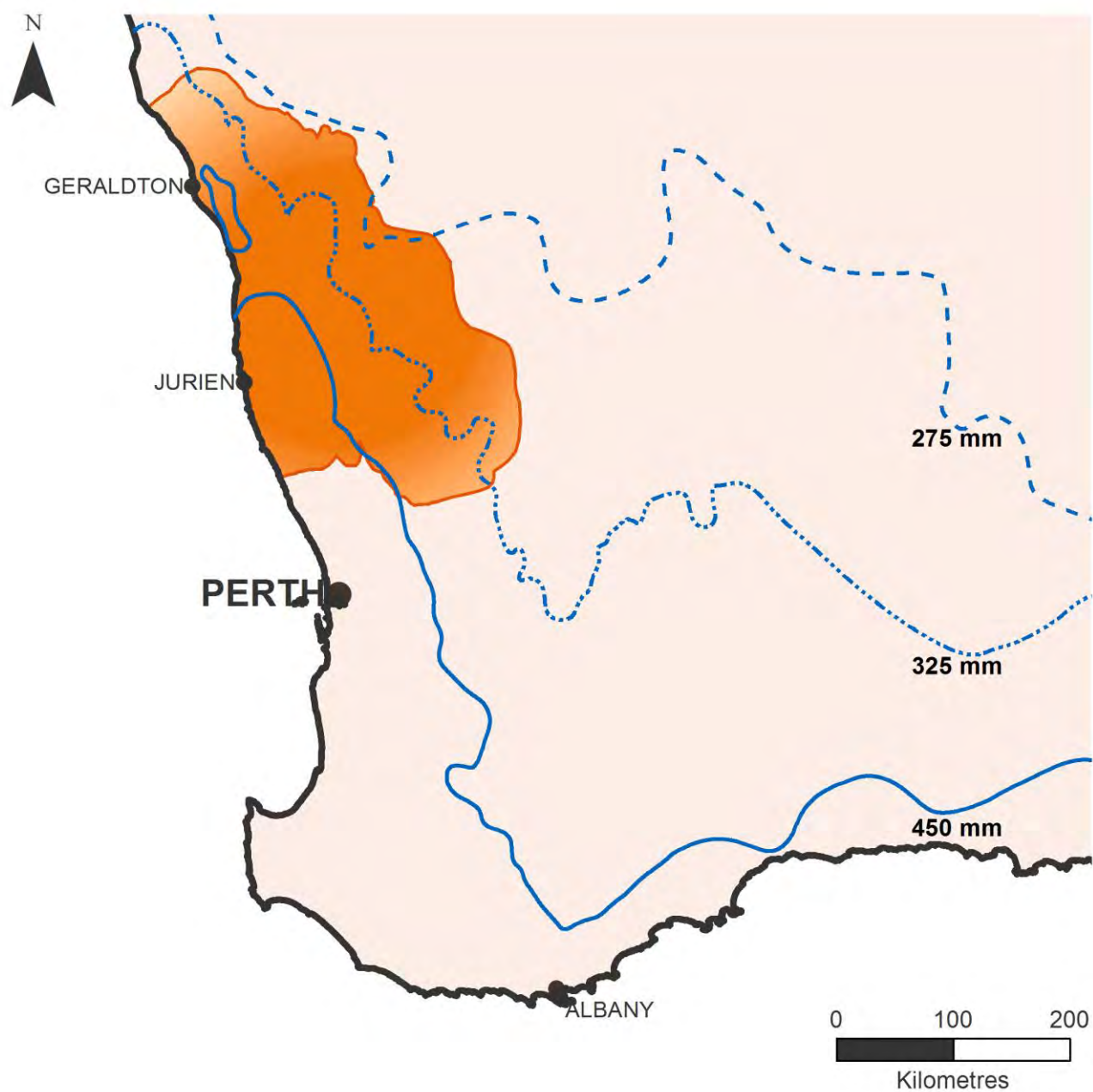
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The Midlands and Northern Wheatbelt area covered by this book

FOREWORD

The Northern Agricultural Catchments Council (NACC) is a not for profit Regional Natural Resource Management (NRM) Organisation located in the Mid West of Australia. NACC's purpose is to support people to support the natural environment across the Northern Agricultural Region (NAR) of Western Australia.

The first edition of the *Trees and Shrubs for the Midlands and Northern Wheatbelt* (1996) has been an essential resource guiding conservation and landscape restoration and revegetation for many people engaged in revitalising this region's natural environment.

NACC is pleased to extend its support for the production of this second edition of the *Trees and Shrubs for the Midlands and Northern Wheatbelt*. This edition updates and expands the species lists and publishes them in electronic format to improve accessibility for the wider community.

The second edition represents the collective effort of many past and present contributors from numerous organisations. This reproduction would not have been possible without DAFWA's dedication and commitment to the first edition.

Richard McLellan, CEO NACC

INTRODUCTION

What a world we live in. The environmental sector, like many of our native plants, is particularly ephemeral: People and projects come and go and the challenge is to preserve the specialist knowledge and the records of natural assets in special places. *Trees and Shrubs for the Midlands and Northern Wheatbelt 2nd edition* is one way of keeping the knowledge alive. It is an invaluable tool for both environmental practitioners and land managers.

Trees and Shrubs for the Midlands and Northern Wheatbelt was originally published in 1996 by the then Agriculture Western Australia (now Department of Agriculture and Food Western Australia). This edition, published by NACC, builds on the 1st edition and provides additional information to assist anyone planning revegetation works.

Revegetation has become an important part of many farms, whether for salinity control, shelter, wind breaks, wildlife corridors, degradation issues, water, carbon or simply for aesthetic reasons. This book is aimed at helping land managers with their decision-making and, therefore, improve return on investment and likelihood of success.

The information in *Trees and Shrubs for the Midlands and Northern Wheatbelt 2nd edition* is categorised by districts and then by soil type. Within each district's soil types, species are divided into trees and shrubs. Including a mix of trees and shrubs in revegetation activities ensures planting will mimic nature's layered, balanced structure.

Many species occur naturally across a large area. To get the most robust plants for revegetation it's recommended that seeds are sourced locally (i.e. they are of local provenance). If there is an area of remnant vegetation near where you plan to revegetate, try collecting your own seed, and perhaps working with your local nursery to propagate. Planting local provenance plants will increase survival rates of seedlings because they have already adapted to local conditions. Please note that you can collect seed on your own property without a permit, but collecting outside of your property boundary requires a permit. Contact the Department of Parks and Wildlife, Western Australia (DPAW) <http://www.dpaw.wa.gov.au/plants-and-animals/licences-and-permits> to obtain a licence.

Where collecting local seeds is not feasible, for example, where the local vegetation is under stress or too much seed is required - the seedlings grown in a local nursery are the next best option because the seed used by nurseries has either been grown at special seed orchards or collected in remnant vegetation under specific permit conditions.

The species lists in *Trees and Shrubs for the Midlands and Northern Wheatbelt 2nd edition* are quite extensive, however more complete lists are available for some specific sites within the region. Both the lists in the book and the extended species lists include species which are not currently available from suppliers but are expected to be in the future.

Please read the 'How to use this book' section to ensure you get the most out of this book and your revegetation works.

Before deciding on which species you are going to plant have a clear picture of why you are planting. If you want to increase native fauna on your property choose species that will create the appropriate habitat; for carbon sequestration you would choose species that will give you the 20 percent canopy cover and have the potential to reach 2m in height.

INTRODUCTION (contd)

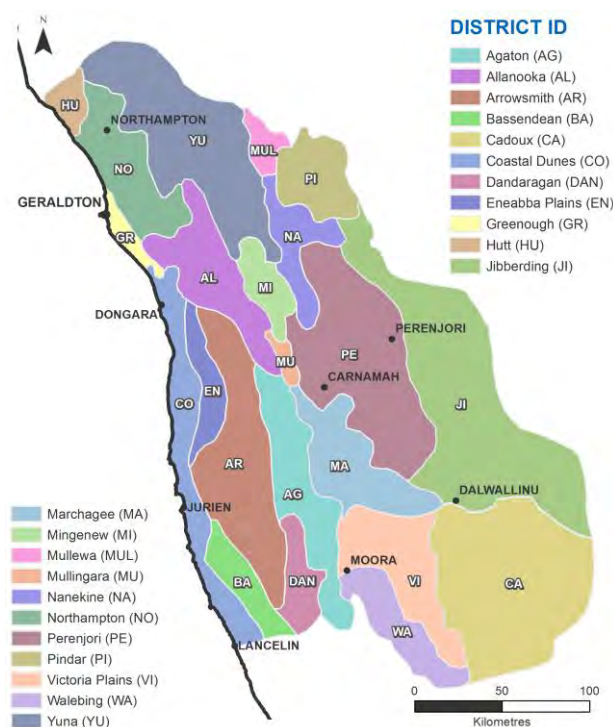
All species listed in *Trees and Shrubs for the Midlands and Northern Wheatbelt 2nd edition* are linked to Florabase, the official botanical database of DPaW and the Western Australia Herbarium. Where available, Florabase provides a comprehensive description of a plant and where it naturally occurs, and provides photos of trees, flowers and pods to aid identification.

HOW TO USE THIS BOOK

The region covered by this book has been subdivided into 22 **districts** on the basis of landform. Many of these districts are based on the earlier vegetation mapping carried out by Beard (1976 and 1981). Each district is further divided into between three and six landscape **units** using terms such as sandplain, valley floors, lower slopes and breakaways. Each unit is then further defined on the basis of **soil type** where more than one soil type is typical of a landscape unit. Commonly occurring trees and shrubs are then listed for each soil type.

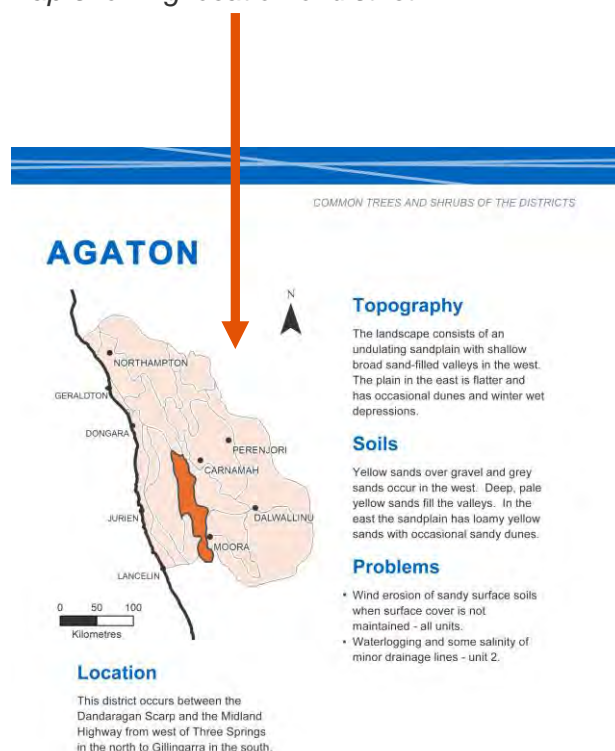
To find which plants are best suited to a particular area:

1. Refer to the map on page xii and decide in which of the 22 **districts** you are interested.



2. Then turn to Page 1 'Landforms, common trees and shrubs of the districts of the Midlands and Northern Wheatbelt' to find the pages on which your district is described.

Map showing location of district



3. Look at the landscape cross-section diagram to decide which **unit** best describes the land in which you are interested. Turn to the appropriate section for that landscape unit to find the list of recommended species. In some cases several clearly different **soil types** occur on the one landscape unit. Separate recommendations have been made for each soil in these units. Choose the appropriate soil type for your area.
4. When deciding on your species list determine why you are planting. Is it for carbon, simply revegetating a bare area or for biodiversity? This will help determine

which species are more appropriate within the lists. For example if you are planting for carbon you need to ensure that the species you choose give you the necessary 20% canopy cover and have the potential to get to 2m tall. If it is for biodiversity reasons you may choose plants that encourage more native fauna.

5. After determining your reason the next step would be to contact your local nursery to get a list of species that they grow. By using both their list and the list in the book you can decide on which species you are going to plant.

Agaton COMMON TREES AND SHRUBS OF THE DISTRICTS

Unit 1: Undulating sandplain

• Deep grey sand
• Sand over gravel

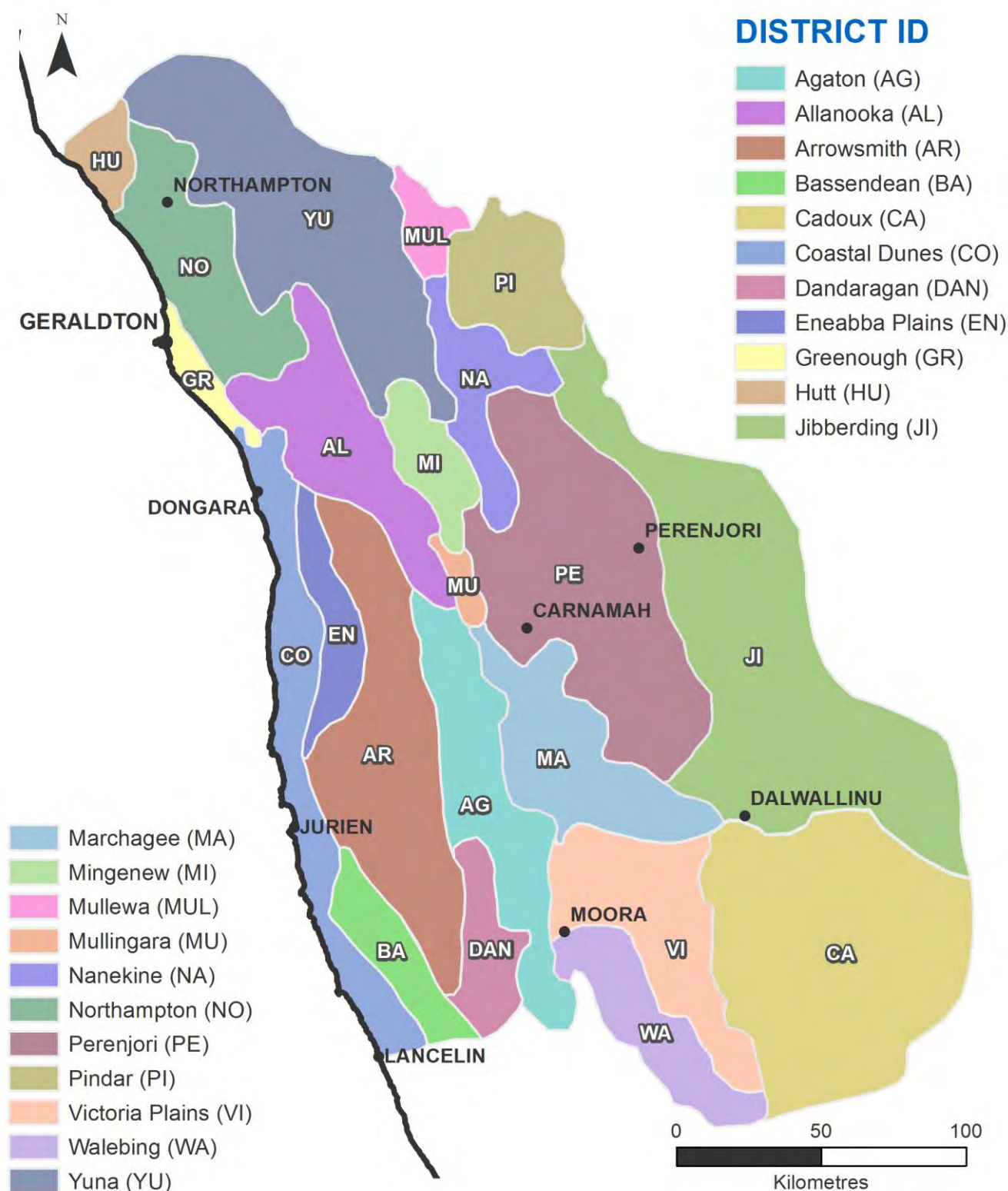
Soil (a) Deep grey sand

Trees	<i>Eucalyptus conveniens</i> <i>Eucalyptus drummondii</i> <i>Eucalyptus eudesmoides</i> <i>Eucalyptus pyriformis</i> <i>Eucalyptus todtiana</i> <i>Xylomelum angustifolium</i>	Drummond's Gum Malalie Pear-fruited Mallee, Dowerin Rose Coastal Blackbutt Sandplain Woody Pear
Shrubs	<i>Acacia cavealis</i> <i>Adenanthos cygnorum</i> ssp. <i>cygnorum</i> <i>Allocasuarina campestris</i> <i>Allocasuarina humilis</i> <i>Banksia candolleana</i> <i>Banksia leptophylla</i> var. <i>leptophylla</i> <i>Daviesia pedunculata</i> <i>Daviesia podophylla</i> <i>Grevillea polybotrya</i> <i>Hakea brownii</i> <i>Hakea obliqua</i> ssp. <i>parviflora</i> <i>Jacksonia floribunda</i> <i>Melaleuca trichophylla</i> <i>Petrophile recurva</i>	Common Woollybush Tamma, Tammara, Shrubby She-oak Dwarf Sheoak Propeller Banksia Holly Pea Pretty Honey Myrtle

Soil (b) Sand over gravel

Trees	<i>Eucalyptus diminuta</i> <i>Eucalyptus drummondii</i> <i>Eucalyptus pyriformis</i> <i>Eucalyptus wandoo</i> ssp. <i>pulverea</i>	Drummond's Gum Pear-fruited Mallee, Dowerin Rose
Shrubs	<i>Acacia scopulifolia</i> <i>Allocasuarina humilis</i> <i>Banksia leptophylla</i> var. <i>melletica</i> <i>Calothamnus sanguineus</i> <i>Daviesia quadrilobata</i> <i>Grevillea petrophiloides</i> ssp. <i>petrophiloides</i> <i>Hakea lissocarpa</i> <i>Hakea trifurcata</i> <i>Lambertia multiflora</i> var. <i>multiflora</i> <i>Melaleuca aspalathoides</i>	Dwarf Sheoak Silky-leaved Blood Flower, Pindak, Boolgalla Pink Pokers Honey Bush Two-leaf Hakea

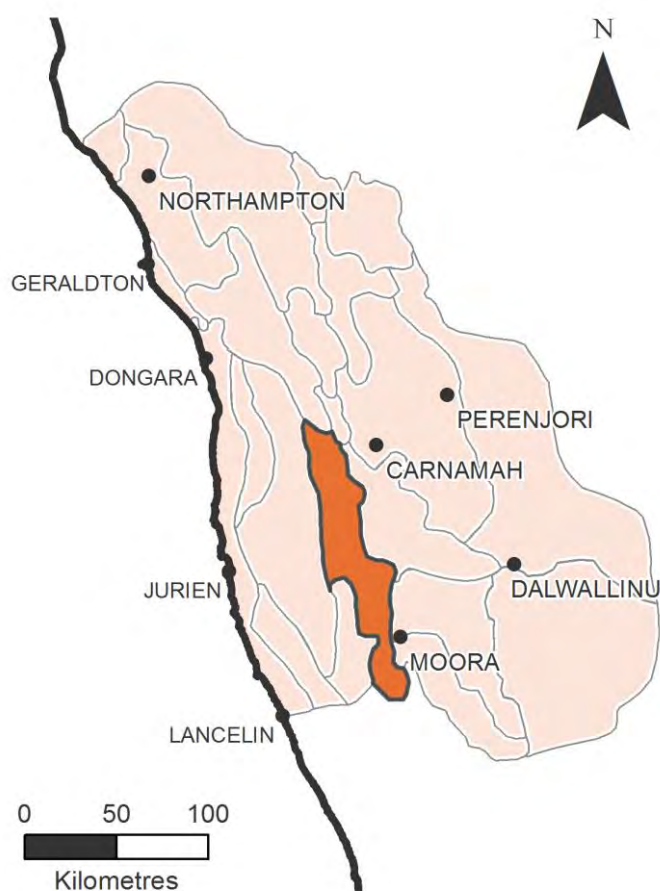
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Landforms, common trees and shrubs for the districts of the Midlands and Northern Wheatbelt

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AGATON



Location

This district occurs between the Dandaragan Scarp and the Midland Highway from west of Three Springs in the north to Gillingarra in the south.

Topography

The landscape consists of an undulating sandplain with shallow broad sand-filled valleys in the west. The plain in the east is flatter and has occasional dunes and winter wet depressions.

Soils

Yellow sands over gravel and grey sands occur in the west. Deep, pale yellow sands fill the valleys. In the east the sandplain has loamy yellow sands with occasional sandy dunes.

Problems

- Wind erosion of sandy surface soils when surface cover is not maintained - all units.
- Waterlogging and some salinity of minor drainage lines - unit 2.

Unit 1: Undulating sandplain



Soil (a) Deep grey sand

Trees

Eucalyptus conveniens
Eucalyptus drummondii
Eucalyptus eudesmioides
Eucalyptus pyriformis
Eucalyptus tottiana
Xylomelum angustifolium

Drummond's Gum
 Malallie
 Pear-fruited Mallee, Dowerin Rose
 Coastal Blackbutt
 Sandplain Woody Pear

Shrubs

Acacia cavealis
Adenanthos cygnorum ssp. *cygnorum*
Allocasuarina campestris
Allocasuarina humilis
Banksia candolleana
Banksia leptophylla var. *leptophylla*
Daviesia pedunculata
Daviesia podophylla
Grevillea polybotrya
Hakea brownii
Hakea obliqua ssp. *parviflora*
Jacksonia floribunda
Melaleuca trichophylla
Petrophile recurva
Verticordia eriocephala

Common Woollybush
 Tamma, Tammar, Shrubby She-oak
 Dwarf Sheoak
 Propeller Banksia

Holly Pea
 Pretty Honey Myrtle

Common Cauliflower, Cauliflower Verticordia

Soil (b) Sand over gravel

Trees

Eucalyptus diminuta
Eucalyptus drummondii
Eucalyptus pyriformis
Eucalyptus wandoo ssp. *pulverea*

Drummond's Gum
 Pear-fruited Mallee, Dowerin Rose

Shrubs

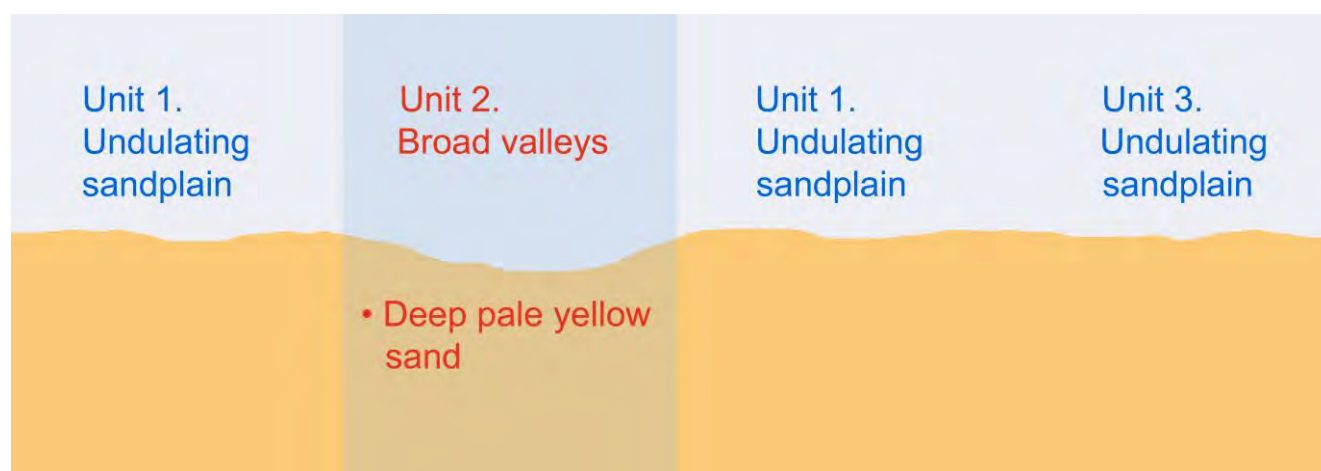
Acacia scirpifolia
Allocasuarina humilis
Banksia leptophylla var. *melletica*
Calothamnus sanguineus
Daviesia quadrilata
Grevillea petrophiloides ssp. *petrophiloides*
Hakea lissocarpha
Hakea trifurcata
Lambertia multiflora var. *multiflora*
Melaleuca aspalathoides

Dwarf Sheoak

Silky-leaved Blood Flower, Pindak, Boolgalla

Pink Pokers
 Honey Bush
 Two-leaf Hakea

Unit 2: Broad valleys



Soil (a) Deep pale yellow sand

Trees

Acacia saligna ssp. *lindleyi*
Banksia attenuata
Banksia burdettii
Banksia menziesii
Callitris pyramidalis
Casuarina obesa
Eucalyptus camaldulensis
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus pyriformis
Eucalyptus rudis ssp. *rudis*
Eucalyptus tottiana
Hakea preissii
Xylomelum angustifolium

Slender Banksia
 Burdett's Banksia
 Firewood Banksia, Menzies' Banksia
 Swamp Cypress
 Swamp Sheoak
 River Red Gum, River Gum
 York Gum
 Pear-fruited Mallee, Dowerin Rose
 Flooded Gum, Moitch, Kulurda
 Coastal Blackbutt
 Needle Tree, Needlebush, Dandjin, Tanjinn
 Sandplain Woody Pear

Shrubs

Acacia blakelyi
Acacia erinacea
Acacia lasiocarpa var. *lasiocarpa*
Acacia leptospermoides ssp. *leptospermoides*
Acacia multispicata
Banksia grossa
Banksia leptophylla var. *leptophylla*
Daviesia podophylla
Grevillea biformis ssp. *biformis*
Grevillea leucopteris
Hakea candolleana
Hakea platysperma
Lambertia multiflora var. *multiflora*
Melaleuca atroviridis
Melaleuca raphiophylla
Melaleuca seriata
Petrophile recurva
Petrophile seminuda
Rhagodia drummondii
Rhagodia preissii ssp. *preissii*
Scholtzia laxiflora
Scholtzia parviflora

Panjang, Pajang

Coarse Banksia

White Plume Grevillea

Cricket Ball Hakea, Peach Hakea

Broom Bush
 Swamp Paperbark

Lake Fringe Rhagodia

Unit 3: Undulating sandplain



Soil (a) Yellow loamy sand

Trees

Banksia attenuata
Banksia burdettii
Banksia prionotes
Eucalyptus eudesmioides
Eucalyptus pyriformis

Slender Banksia
 Burdett's Banksia
 Acorn Banksia
 Malallie
 Pear-fruited Mallee, Dowerin Rose

Shrubs

Acacia acuararia
Acacia fragilis
Acacia lasiocarpa var. *lasiocarpa*
Acacia leptospermoides ssp. *leptospermoides*
Acacia multispicata
Acacia scirpifolia
Allocasuarina campestris
Allocasuarina humilis
Astroloma xerophyllum
Banksia leptophylla var. *leptophylla*
Beaufortia elegans
Calothamnus sanguineus
Conospermum stoechadis ssp. *stoechadis*
Conostylis candicans ssp. *candicans*
Daviesia nudiflora ssp. *nudiflora*
Daviesia podophylla
Eremaea beaufortioides var. *microphylla*
Grevillea amplexans ssp. *amplexans*
Grevillea biformis ssp. *biformis*
Grevillea biternata
Grevillea eriostachya
Grevillea leucopteris
Hakea circumalata
Hakea obliqua ssp. *parviflora*
Jacksonia floribunda
Melaleuca calyptroides
Melaleuca concreta
Melaleuca dichroma
Melaleuca platycalyx
Petrophile biternata
Petrophile seminuda
Verticordia densiflora var. *densiflora*

Sand Prickly Wattle

Panjang, Pajang

Tamma, Tammar, Shrubby She-oak
 Dwarf Sheoak
 Erica Heath

Silky-leaved Blood Flower, Pindak, Boolgalla
 Common Smokebush
 Grey Cottonhead

Flame Grevillea
 White Plume Grevillea

Holly Pea

Compact Featherflower

Soil (b) Deep, pale yellow sand

Trees

Slender Banksia
Firewood Banksia, Menzies' Banksia
Acorn Banksia
Sandplain Cypress

Malallie
Coastal Blackbutt
Sandplain Woody Pear

Shrubs

Common Woollybush
Tamma, Tammar, Shrubby She-oak
Dwarf Sheoak
Yellow Kangaroo Paw
Erica Heath
Large-flowered Baeckea
Coarse Banksia

Marno

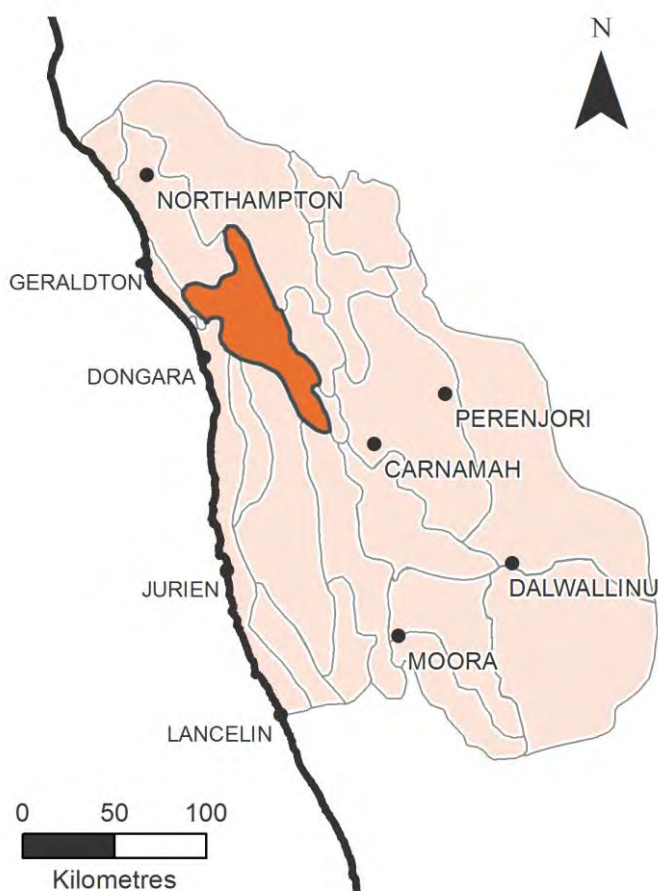
Flame Grevillea

Honey Bush
Cricket Ball Hakea, Peach Hakea

Pretty Honey Myrtle

Spiked Scholtzia
Common Cauliflower, Cauliflower Verticordia
Scarlet Featherflower

ALLANOOKA



Location

This district lies north and south of the Irwin River between Mingenew and Dongara, occupying the higher parts of the sandplain south of the Northampton district.

Topography

The district consists mainly of weakly dissected sandplains with long, gentle slopes, with some low ridges and broad open depressions. There are some areas of level to gently undulating sandplains.

Soils

The gently sloping sandplain is mainly deep, pale yellow sand with low gravel ridges and a few breakaways. Sand over clay soils occurs in the depressions. The level to undulating sandplain is sand over gravel with some gravel and the surface and deep yellow sand.

Problems

- Wind erosion is common during the crop establishment phase and following overgrazing - units 1 and 4.
- Waterlogging occurs in the sand over clay soils of the depressions in wet periods - unit 3.
- Development of subsoil compaction due to cultivation machinery - all units.

Unit 1: Gently sloping sandplain



Soil Deep pale yellow sand

Trees

Allocasuarina acutivalvis ssp. *acutivalvis*
Banksia attenuata
Banksia prionotes
Banksia sceptrum
Callitris arenaria
Eucalyptus eudesmioides
Eucalyptus horistes
Eucalyptus jucunda
Eucalyptus pyramidalis
Xylomelum angustifolium

Black Tammar
 Slender Banksia
 Acorn Banksia
 Sceptre Banksia
 Sandplain Cypress
 Malallie
 Oil Mallee (Northern Rough Bark)
 Yuna Mallee
 Pear-fruited Mallee, Dowerin Rose
 Sandplain Woody Pear

Shrubs

Acacia acutaria
Acacia blakelyi
Acacia comans
Acacia multispicata
Acacia rostellifera
Acacia spathulifolia
Allocasuarina campestris
Allocasuarina humilis
Banksia leptophylla var. *leptophylla*
Banksia sessilis var. *flabellifolia*
Calothamnus quadrifidus ssp. *angustifolius*
Calothamnus sanguineus
Conostylis candicans ssp. *candicans*
Daviesia quadrilata
Grevillea candelabroides
Grevillea polybotrya
Hakea circumalata
Hakea costata
Hakea lissocarpha
Hakea trifurcata
Jacksonia floribunda
Melaleuca trichophylla
Melaleuca urceolaris
Petrophile macrostachya
Petrophile scabriuscula

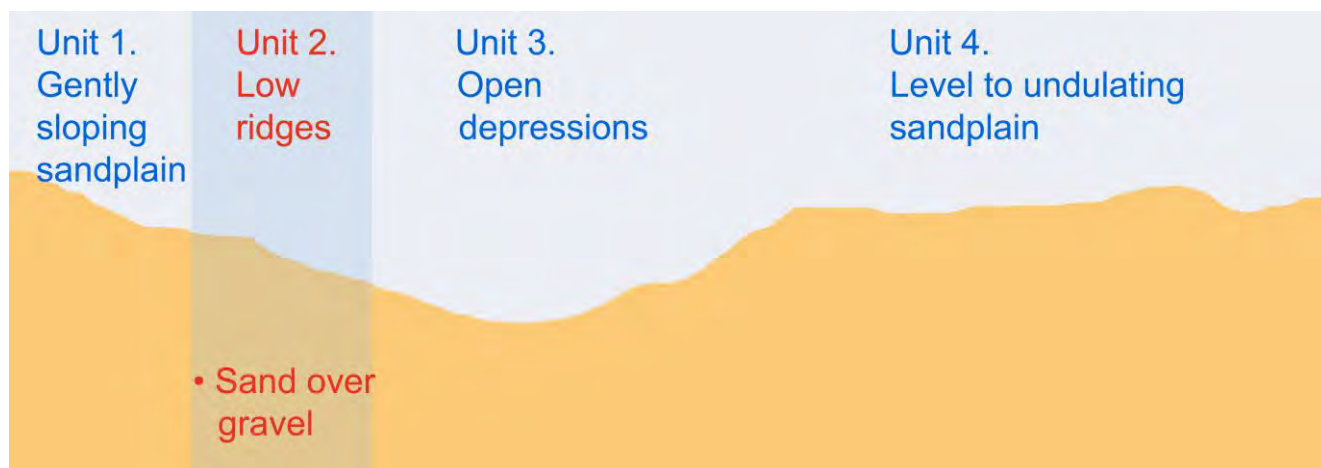
Sand Prickly Wattle

 Summer-scented Wattle, Black Wattle
 Spoon Leaf Wattle
 Tamma, Tammar, Shrubby She-oak
 Dwarf Sheoak

Silky-leaved Blood Flower, Pindak, Boolgalla
 Grey Cottonhead

Ribbed Hakea
 Honey Bush
 Two-leaf Hakea
 Holly Pea
 Pretty Honey Myrtle

Unit 2: Low ridges



Soil (b) Sand over gravel

Trees

<i>Acacia acuminata</i>	Jam, Mangard, Inland Jam (narrow leaf)
<i>Acacia anthochaera</i>	
<i>Acacia longiphyllodinea</i>	Long-leaved Wattle
<i>Acacia scirpifolia</i>	
<i>Allocasuarina huegeliana</i>	Rock Sheoak, Rock Oak, Kwool
<i>Banksia prionotes</i>	Acorn Banksia
<i>Eucalyptus ebbanoensis</i> ssp. <i>ebbanoensis</i>	Sandplain Mallee
<i>Eucalyptus eudesmioides</i>	Malallie
<i>Eucalyptus macrocarpa</i> ssp. <i>elachantha</i>	Small-leaved Mottlech
<i>Eucalyptus oldfieldii</i>	Oldfield's Mallee
<i>Eucalyptus pyriformis</i>	Pear-fruited Mallee, Dowerin Rose
<i>Eucalyptus wandoo</i> ssp. <i>pulverea</i>	

Shrubs

<i>Acacia andrewsii</i>	
<i>Acacia daphnifolia</i>	
<i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i>	Panjang, Pajang
<i>Acacia leptospermoides</i> ssp. <i>leptospermoides</i>	
<i>Allocasuarina campestris</i>	Tamma, Tammar, Shrubby She-oak
<i>Banksia carlinoides</i>	Pink Dryandra
<i>Banksia fraseri</i> var. <i>fraseri</i>	
<i>Banksia leptophylla</i> var. <i>melletica</i>	
<i>Banksia nivea</i> ssp. <i>nivea</i>	Honeypot Dryandra, Pudjarn
<i>Banksia sphaerocarpa</i> var. <i>sphaerocarpa</i>	Fox Banksia
<i>Calothamnus blepharospermus</i>	
<i>Calothamnus quadrifidus</i> ssp. <i>angustifolius</i>	
<i>Calothamnus sanguineus</i>	Silky-leaved Blood Flower, Pindak, Boolgalla
<i>Daviesia nudiflora</i> ssp. <i>nudiflora</i>	
<i>Grevillea candelabroides</i>	
<i>Hakea auriculata</i>	
<i>Hakea circumalata</i>	
<i>Hakea lissocarpa</i>	Honey Bush
<i>Hakea orthorrhyncha</i> var. <i>filiformis</i>	
<i>Melaleuca depressa</i>	
<i>Melaleuca nematophylla</i>	Wiry Honey-myrtle
<i>Melaleuca radula</i>	Graceful Honey-myrtle
<i>Verticordia densiflora</i> var. <i>densiflora</i>	Compact Featherflower

Unit 3: Open depressions



Soil Sand over yellow clay

Trees

Acacia acuminata
Acacia blakelyi
Acacia microbotrya
Acacia rostelifera
Acacia saligna ssp. *lindleyi*
Acacia tetragonophylla
Casuarina obesa
Eucalyptus camaldulensis
Eucalyptus diminuta
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus loxophleba ssp. *supralaevis*
Eucalyptus rudis ssp. *rudis*
Hakea preissii
Hakea recurva ssp. *recurva*
Melaleuca viminea ssp. *viminea*
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)

Manna Wattle
 Summer-scented Wattle, Black Wattle

Kurara
 Swamp Sheoak
 River Red Gum, River Gum

York Gum

Flooded Gum, Moitch, Kulurda
 Needle Tree, Needlebush, Dandjin, Tanjinn
 Djarnokmurd, Bag-needle Bush
 Mohan
 Quandong

Shrubs

Acacia daphnifolia
Acacia spathulifolia
Allocasuarina humilis
Atriplex bunburyana
Banksia fraseri var. *ashbyi*
Calothamnus hirsutus
Enchylaena tomentosa
Hakea scoparia ssp. *scoparia*
Jacksonia hakeoides
Kunzea praestans
Leptospermum erubescens
Melaleuca adnata
Melaleuca concreta
Melaleuca lateriflora
Melaleuca marginata
Pimelea microcephala ssp. *microcephala*
Rhagodia drummondii
Scaevola spinescens
Scholtzia parviflora

Spoon Leaf Wattle
 Dwarf Sheoak
 Silver Saltbush

Barrier Saltbush, Ruby Saltbush

Roadside Teatree, Pink Teatree

Gorada

Shrubby Riceflower
 Lake Fringe Rhagodia
 Currant Bush, Maroon Bush

Unit 4: Level to undulating sandplain



Soil (a) Sand over gravel

Trees

Acacia acuminata
Acacia anthochaera
Acacia rostellifera
Banksia prionotes
Eucalyptus eudesmioides

Jam, Mangard, Inland Jam (narrow leaf)
 Summer-scented Wattle, Black Wattle
 Acorn Banksia
 Malallie

Shrubs

Acacia andrewsii
Acacia comans
Acacia lasiocarpa var. *lasiocarpa*
Allocasuarina campestris
Banksia sphaerocarpa var. *sphaerocarpa*
Calothamnus blepharospermus
Calothamnus quadrifidus ssp. *angustifolius*
Calothamnus sanguineus
Grevillea candelabroides
Hakea lissocarpa
Hakea orthorrhyncha var. *filiformis*
Jacksonia floribunda
Melaleuca trichophylla

Panjang, Pajang
 Tamma, Tammar, Shrubby She-oak
 Fox Banksia
 Silky-leaved Blood Flower, Pindak, Boolgalla
 Honey Bush
 Holly Pea
 Pretty Honey Myrtle

Soil (b) Deep, yellow sand

Trees

Acacia blakelyi
Banksia attenuata
Callitris arenaria
Eucalyptus eudesmioides
Eucalyptus jucunda
Eucalyptus oldfieldii
Eucalyptus pyriformis
Xylomelum angustifolium

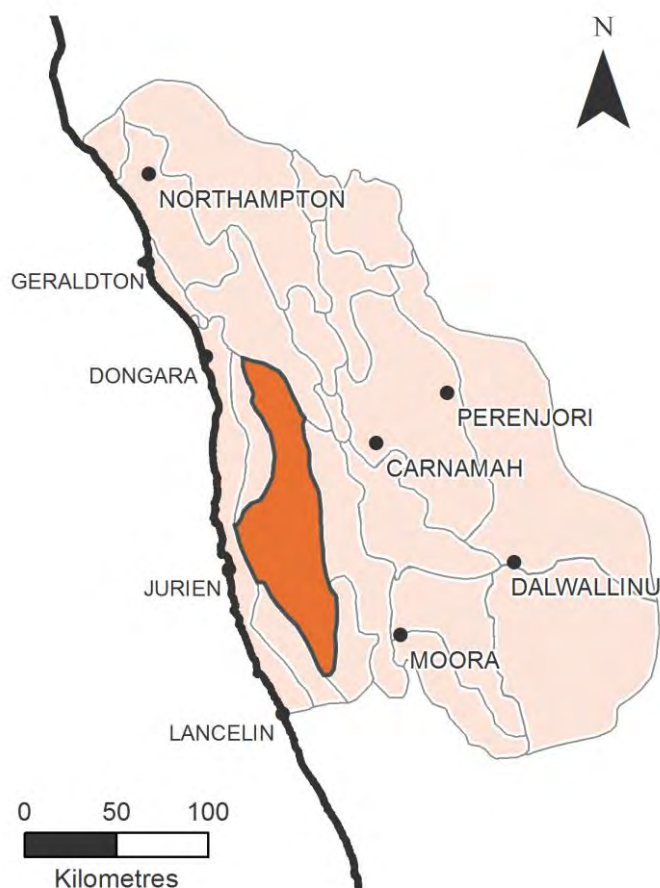
Slender Banksia
 Sandplain Cypress
 Malallie
 Yuna Mallee
 Oldfield's Mallee
 Pear-fruited Mallee, Dowerin Rose
 Sandplain Woody Pear

Shrubs

Acacia acuarina
Acacia multispicata
Acacia spathulifolia
Calothamnus blepharospermus
Grevillea candelabroides
Grevillea eriostachya
Grevillea leucopteris
Hakea francisiana
Petrophile macrostachya

Sand Prickly Wattle
 Spoon Leaf Wattle
 Flame Grevillea
 White Plume Grevillea
 Emu Tree, Pink Spike Hakea

ARROWSMITH



Location

This district lies between the Gingin and Dandaragan Scarps from the Irwin River to Dandaragan.

Topography

The landscape is predominantly a dissected lateritic upland with undulating lateritic remnants higher in the landscape and broad sandy valleys between them. These valleys occasionally have well defined creek flats. Hills of exposed sedimentary rocks occur north and south of Mount Lesueur.

Soils

The uplands have gravel at the surface and massive laterite is sometimes exposed. The upper slopes have sands over gravel or, in areas of sedimentary rocks, extremely variable soils ranging from red-brown clays to shallow stony soils. In the broad valleys there are deep, grey or yellow sands sometimes over gravel. The soils of the creek flat are variable and range from sands and loams to occasional clays.

Problems

- Water erosion on slopes in unit 2 especially in the sedimentary rock areas.
- Wind erosion of sandy surface soils when surface cover is not maintained - units 2 and 3.
- Salinity on the slopes and creek flats in the areas of sedimentary rocks - units 2 and 4.

Unit 1: Undulating uplands



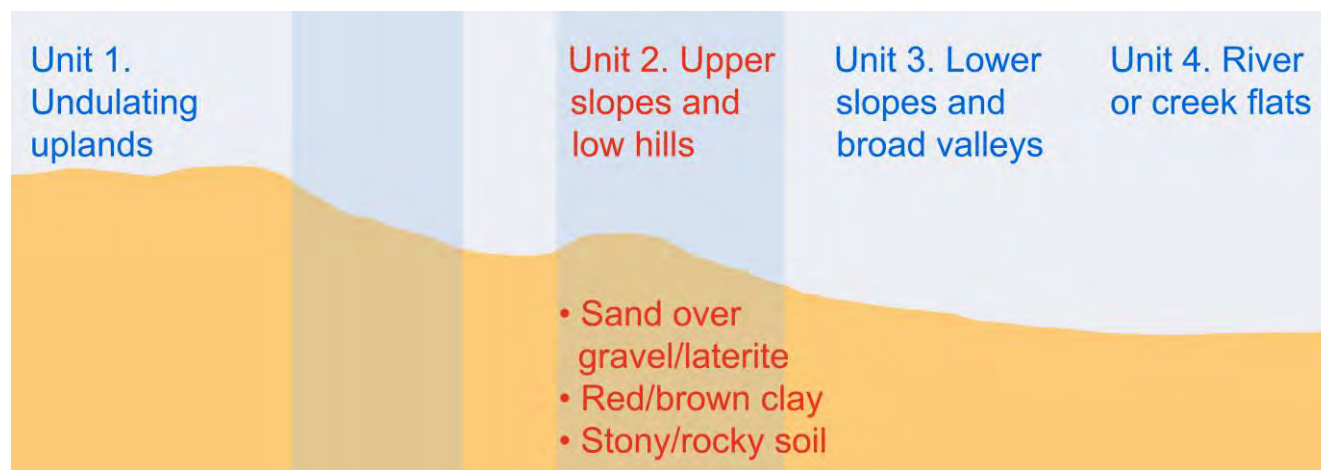
Soil (a) Gravel at the surface, laterite exposed

Trees	<i>Eucalyptus gittinsii</i> <i>Eucalyptus macrocarpa</i> ssp. <i>elachantha</i> <i>Eucalyptus wandoo</i> ssp. <i>wandoo</i>	Northern Sandplain Mallee (in north) Small-leaved Mottlecah Wandoo, White Gum
Shrubs	<i>Acacia scirpifolia</i> <i>Allocasuarina campestris</i> <i>Allocasuarina humilis</i> <i>Banksia armata</i> var. <i>armata</i> <i>Banksia carlinoides</i> <i>Banksia glaucifolia</i> <i>Calothamnus sanguineus</i> <i>Calothamnus torulosus</i> <i>Gastrolobium spinosum</i> <i>Hakea auriculata</i> <i>Hakea conchifolia</i> <i>Hakea erinacea</i> <i>Melaleuca aspalathoides</i> <i>Melaleuca radula</i> <i>Melaleuca trichophylla</i> <i>Xanthorrhoea drummondii</i>	Tamma, Tammar, Shrubby She-oak Dwarf Sheoak Prickly Dryandra Pink Dryandra Silky-leaved Blood Flower, Pindak, Boolgalla Prickly Poison Shell-leaved Hakea Hedge-hog Hakea, Echidna Hakea Graceful Honeymyrtle Pretty Honey Myrtle

Soil (b) Sand over gravel or laterite

Trees	<i>Banksia attenuata</i> <i>Eucalyptus tottiana</i> <i>Xylomelum angustifolium</i>	Slender Banksia Coastal Blackbutt Sandplain Woody Pear
Shrubs	<i>Acacia fragilis</i> <i>Allocasuarina campestris</i> <i>Banksia candolleana</i> <i>Banksia fraseri</i> var. <i>fraseri</i> <i>Banksia grossa</i> <i>Banksia lanata</i> <i>Grevillea petrophiloides</i> ssp. <i>petrophiloides</i> <i>Hakea brownii</i> <i>Hakea costata</i> <i>Hakea incrassata</i> <i>Hakea trifurcata</i> <i>Melaleuca dichroma</i>	Tamma, Tammar, Shrubby She-oak Propeller Banksia Coarse Banksia Pink Pokers Ribbed Hakea Marble Hakea Two-leaf Hakea

Unit 2: Upper slopes and low hills



Soil (a) Sand over gravel or laterite (often shallow)

Trees	<i>Eucalyptus accedens</i> <i>Eucalyptus drummondii</i> <i>Eucalyptus gittinsii</i>	Powderbark Wandoo Drummond's Gum Northern Sandplain Mallee
Shrubs	<i>Allocasuarina campestris</i> <i>Allocasuarina humilis</i> <i>Baeckea crispiflora</i> var. <i>tenuoir</i> <i>Banksia armata</i> var. <i>armata</i> <i>Banksia candolleana</i> <i>Banksia lanata</i> <i>Banksia shuttleworthiana</i> <i>Calothamnus sanguineus</i> <i>Daviesia epiphyllum</i> <i>Daviesia pedunculata</i> <i>Eremaea violacea</i> <i>Hakea incrassata</i> <i>Hibbertia hypericoides</i> <i>Hypocalymma xanthopetalum</i> <i>Melaleuca trichophylla</i>	Tamma, Tammar, Shrubby She-oak Dwarf Sheoak Prickly Dryandra Propeller Banksia Bearded Dryandra Silky-leaved Blood Flower, Pindak, Boolgalla Violet Eremaea Marble Hakea Yellow Buttercups Pretty Honey Myrtle

Soil (b) Red or brown structured clay

Trees	<i>Acacia acuminata</i> <i>Acacia microbotrya</i> <i>Allocasuarina huegeliana</i> <i>Eucalyptus loxophleba</i> ssp. <i>loxophleba</i> <i>Eucalyptus wandoo</i>	Jam, Mangard, Inland Jam (narrow leaf) Manna Wattle Rock Sheoak, Rock Oak, Kwool York Gum Wandoo
Shrubs	<i>Acacia multispicata</i> <i>Acacia saligna</i> ssp. <i>lindleyi</i> <i>Allocasuarina campestris</i> <i>Melaleuca adnata</i> <i>Melaleuca marginata</i> <i>Melaleuca platycalyx</i> <i>Melaleuca radula</i> <i>Melaleuca stereophloia</i> <i>Rhagodia preissii</i> ssp. <i>preissii</i>	Tamma, Tammar, Shrubby She-oak Graceful Honey myrtle

Unit 2: Upper slopes and low hills (contd)

Soil (c) Stony or rocky soils, highly variable

Trees

Acacia microbotrya
Eucalyptus accedens
Eucalyptus gittinsii
Eucalyptus wandoo ssp. *wandoo*

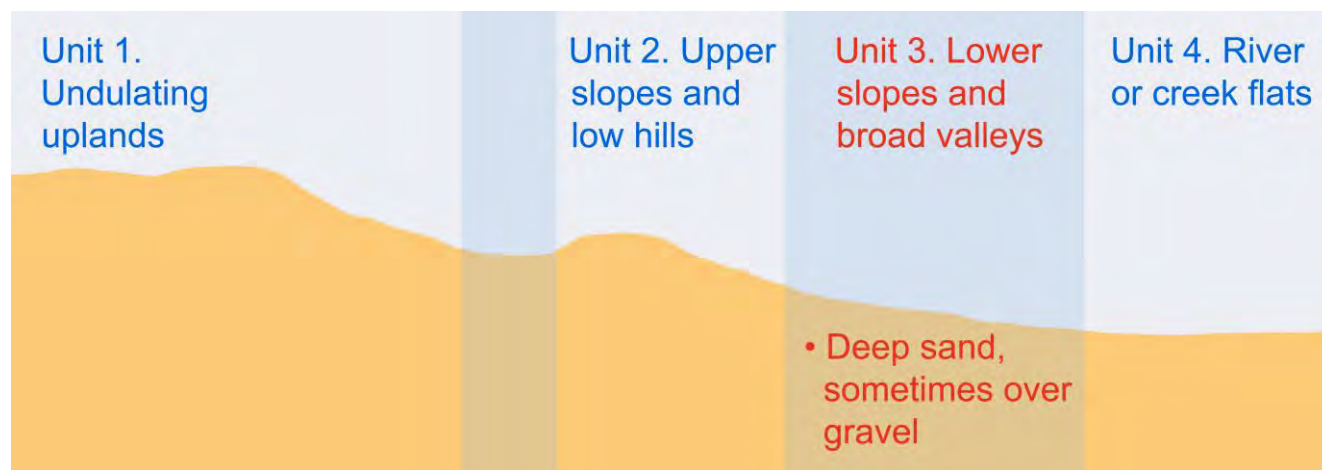
Manna Wattle
 Powderbark Wandoo
 Northern Sandplain Mallee
 Wandoo, White Gum

Shrubs

Acacia erinacea
Acacia multispicata
Allocasuarina campestris
Allocasuarina microstachya
Baeckea crispiflora var. *tenuoir*
Baeckea grandiflora
Banksia fraseri var. *fraseri*
Daviesia hakeoides
Hakea gilbertii
Hakea invaginata
Melaleuca platycalyx
Melaleuca radula

Spiny Wattle
 Tamma, Tammar, Shrubby She-oak
 Large-flowered Baeckea
 Graceful Honeymyrtle

Unit 3: Lower slopes and broad valleys



Soil Deep, grey or yellow sand, sometimes over gravel

Trees

Banksia attenuata
Banksia burdettii
Banksia menziesii
Banksia prionotes
Callitris arenaria
Eucalyptus conveniens
Eucalyptus decipiens
Eucalyptus drummondii
Eucalyptus eudesmioides
Eucalyptus horistes
Eucalyptus pyriformis
Eucalyptus tottiana
Xylomelum angustifolium

Slender Banksia
 Burdett's Banksia
 Firewood Banksia, Menzies' Banksia
 Acorn Banksia
 Sandplain Cypress

Redheart
 Drummond's Gum
 Malallie
 Oil Mallee (Northern Rough Bark)
 Pear-fruited Mallee, Dowerin Rose
 Coastal Blackbutt
 Sandplain Woody Pear

Shrubs

Acacia blakelyi
Acacia lasiocarpa var. *lasiocarpa*
Acacia rostellifera
Allocasuarina campestris
Banksia candolleana
Banksia glaucifolia
Banksia leptophylla var. *leptophylla*
Beaufortia elegans
Calothamnus blepharospermus
Daviesia podophylla
Daviesia triflora
Eremaea beaufortioides var. *beaufortioides*
Grevillea biformis ssp. *biformis*
Grevillea polybotrya
Hakea costata
Hakea orthorrhyncha var. *filiformis*
Jacksonia floribunda
Leptospermum erubescens
Melaleuca concreta
Melaleuca depressa
Petrophile macrostachya
Petrophile recurva

Panjang, Pajang
 Summer-scented Wattle, Black Wattle
 Tamma, Tammar, Shrubby She-oak
 Propeller Banksia

Ribbed Hakea

Holly Pea
 Roadside Teatree, Pink Teatree

Unit 4: River or creek flats



Soil Alluvial soils, sand or loam with occasional clay

Trees

Acacia daphnifolia
Acacia saligna ssp. *lindleyi*
Banksia littoralis
Callitris pyramidalis
Casuarina obesa
Corymbia calophylla
Eucalyptus camaldulensis
Eucalyptus diminuta
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus loxophleba ssp. *supralaevis*
Eucalyptus rudis ssp. *rudis*
Melaleuca raphiophylla

Swamp Banksia, Pungura
 Swamp Cypress
 Swamp Sheoak
 Marri, Red Gum (in south)
 River Red Gum, River Gum

York Gum

Flooded Gum, Moitch, Kulurda (in south)
 Swamp Paperbark

Shrubs

Acacia cavealis
Banksia telmatiaea
Calothamnus hirsutus
Calytrix flavescens
Chamelaucium uncinatum
Ficinia nodosa
Hakea prostrata
Hakea varia
Hypocalymma angustifolium
Jacksonia hakeoides
Melaleuca hamulosa
Melaleuca seriata
Melaleuca stereophloia
Melaleuca viminea ssp. *viminea*
Petrophile seminuda
Regelia ciliata
Rhagodia preissii ssp. *preissii*
Scholtzia laxiflora
Scholtzia parviflora
Tecticornia halocnemoides
Thryptomene mucronulata
Verticordia chrysanthella

Swamp Fox Banksia

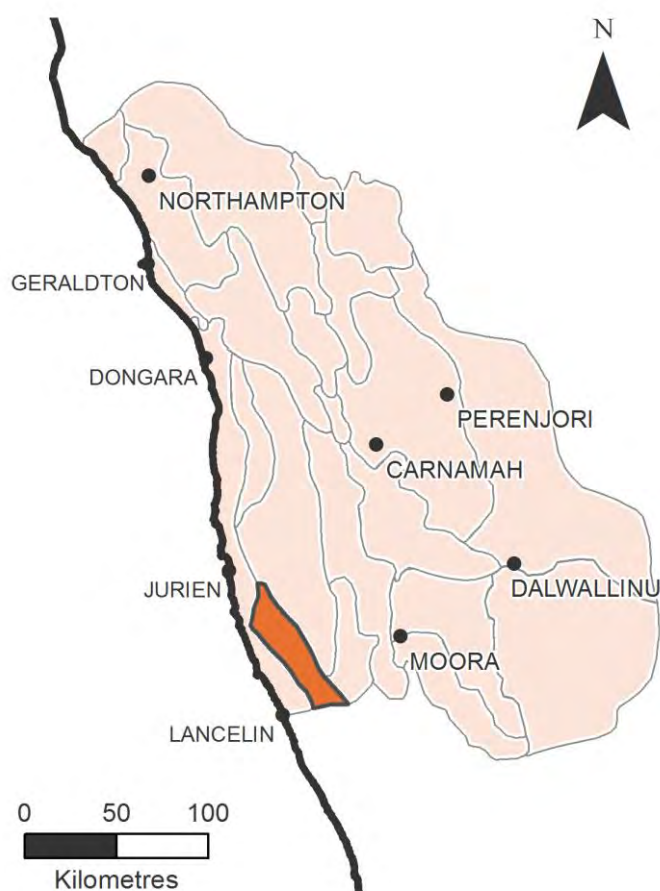
Summer Starflower
 Geraldton Wax
 Knotted Club Rush, Knobby Club Rush
 Harsh Hakea
 Variable-leaved Hakea
 White Myrtle, Kudjid

Creekline Honey Myrtle

Mohan

Shrubby Samphire

BASSENDEAN DUNES



Location

This district occurs between the coastal dunes to the west and the Gingin Scarp to the east, from east of Jurien in the north to Lancelin in the south.

Topography

The landscape is mainly a low sandy plain. Sand dunes are common in the south near the Moore River, and the northern areas are characterised by a flat to gently undulating plain. Seasonal creeks which cross the plain often end in swampy areas or disappear into the ground next to the limestone rises of the Coastal Dunes district.

Soils

Deep, grey sands, often with a yellow sand subsoil, occur on the dunes and sandy plains. Sands over clays, gravels or hardpans occur in the seasonally wet plains. Variable organic, sandy or clayey soils, usually gooey, occur in the swamps.

Problems

- Wind erosion of sandy surface soils when surface cover is not maintained - units 1 and 2.
- Waterlogging, and occasional salinity in the seasonally wet areas of units 3 and 4.

Unit 1: Dunes



Soil	Deep, grey sand, sometimes grading into pale yellow sand at depth	
Trees	<i>Banksia attenuata</i> <i>Banksia menziesii</i> <i>Eucalyptus tottiana</i>	Slender Banksia Firewood Banksia, Menzies' Banksia Coastal Blackbutt
Shrubs	<i>Acacia daphnifolia</i> <i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i> <i>Acacia pulchella</i> var. <i>glaberrima</i> <i>Acacia rostellifera</i> <i>Acacia scirpifolia</i> <i>Acacia spathulifolia</i> <i>Adenanthos cygnorum</i> ssp. <i>cygnorum</i> <i>Allocasuarina humilis</i> <i>Allocasuarina lehmanniana</i> ssp. <i>lehmanniana</i> <i>Allocasuarina microstachya</i> <i>Banksia candolleana</i> <i>Banksia elegans</i> <i>Bossiaea eriocarpa</i> <i>Calytrix angulata</i> <i>Calytrix flavescens</i> <i>Daviesia incrassata</i> ssp. <i>incrassata</i> <i>Daviesia podophylla</i> <i>Eremaea beaufortioides</i> <i>Eremaea pauciflora</i> var. <i>pauciflora</i> <i>Grevillea biformis</i> ssp. <i>biformis</i> <i>Hakea candolleana</i> <i>Jacksonia floribunda</i> <i>Lambertia multiflora</i> var. <i>multiflora</i> <i>Petrophile macrostachya</i> <i>Petrophile seminuda</i> <i>Scholtzia umbellifera</i> <i>Stirlingia latifolia</i> <i>Verticordia chrysanthella</i> <i>Xanthorrhoea drummondii</i>	Panjang, Pajang Summer-scented Wattle, Black Wattle Spoon Leaf Wattle Common Woollybush Dwarf Sheoak Dune Sheoak Propeller Banksia Elegant Banksia Common Brown Pea Yellow Starflower Summer Starflower Holly Pea Blueboy

Unit 2: Plains



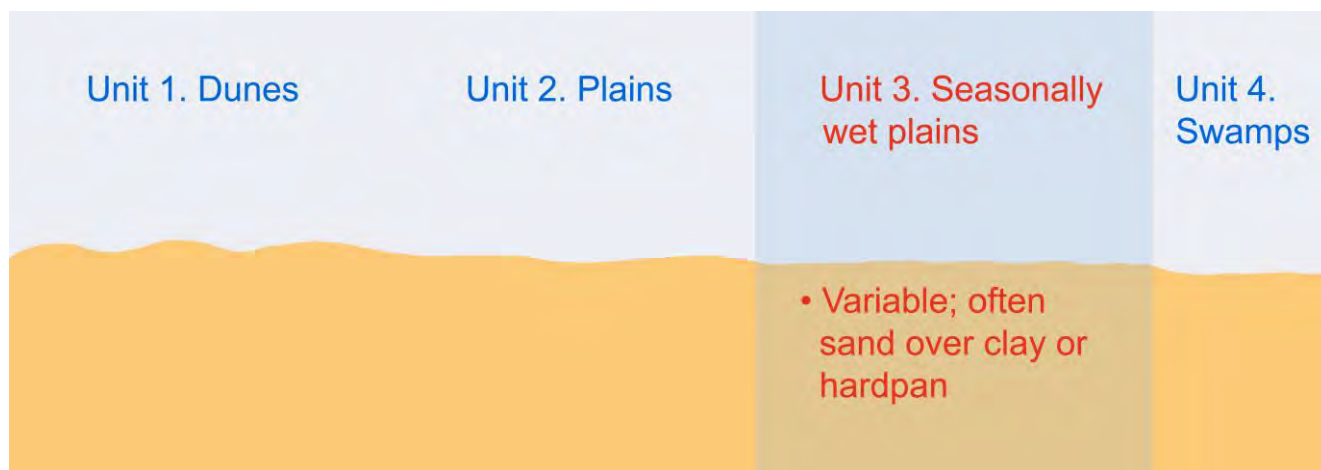
Soil (a) Deep, grey sand, often grading into yellow sand at depth

Trees	<i>Acacia saligna</i> ssp. <i>lindleyi</i> <i>Banksia attenuata</i> <i>Banksia ilicifolia</i> <i>Banksia menziesii</i> <i>Eucalyptus macrocarpa</i> ssp. <i>elachantha</i> <i>Eucalyptus tottiana</i>	Slender Banksia Holly-leaved Banksia Firewood Banksia, Menzies' Banksia Small-leaved Mottlecah Coastal Blackbutt
Shrubs	<i>Acacia blakelyi</i> <i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i> <i>Acacia pulchella</i> var. <i>glaberrima</i> <i>Acacia spathulifolia</i> <i>Allocasuarina humilis</i> <i>Banksia elegans</i> <i>Calothamnus sanguineus</i> <i>Chamelaucium uncinatum</i> <i>Daviesia incrassata</i> ssp. <i>incrassata</i> <i>Daviesia nudiflora</i> ssp. <i>nudiflora</i> <i>Daviesia podophylla</i> <i>Eremaea pauciflora</i> var. <i>pauciflora</i> <i>Grevillea biformis</i> ssp. <i>biformis</i> <i>Hypocalymma xanthopetalum</i> <i>Petrophile macrostachya</i>	Panjang, Pajang Spoon Leaf Wattle Dwarf Sheoak Elegant Banksia Silky-leaved Blood Flower, Pindak, Boolgalla Geraldton Wax

Soil (b) Grey sand over gravel, clay or hardpan

Trees	<i>Eucalyptus macrocarpa</i> ssp. <i>elachantha</i>	Small-leaved Mottlecah
Shrubs	<i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i> <i>Acacia latipes</i> ssp. <i>latipes</i> <i>Acacia spathulifolia</i> <i>Banksia nivea</i> <i>Calothamnus sanguineus</i> <i>Calytrix flavescens</i> <i>Eremaea pauciflora</i> var. <i>pauciflora</i> <i>Hakea candolleana</i> <i>Hakea conchifolia</i> <i>Hakea costata</i> <i>Hakea incrassata</i> <i>Melaleuca seriata</i> <i>Petrophile macrostachya</i>	Panjang, Pajang Spoon Leaf Wattle Honeypot Dryandra, Pudjarn Silky-leaved Blood Flower, Pindak, Boolgalla Summer Starflower Shell-leaved Hakea Ribbed Hakea Marble Hakea

Unit 3: Seasonally wet plains



Soil Variable; often sand over clay or hardpan

Trees

Acacia microbotrya
Acacia saligna ssp. *lindleyi*
Acacia saligna ssp. *saligna*
Eucalyptus myriadena
Melaleuca preissiana

Manna Wattle
 Orange Wattle, Golden Wreath Wattle
 Moonah, Modong, Stout Paperbark

Shrubs

Acacia dilatata
Allocasuarina lehmanniana ssp. *lehmanniana*
Banksia telmatiaea
Beaufortia squarrosa
Calothamnus hirsutus
Calothamnus quadrifidus ssp. *quadrifidus*
Chamelaucium uncinatum
Conospermum triplinervium
Daviesia incrassata ssp. *incrassata*
Hakea candolleana
Hypocalymma angustifolium
Hypocalymma xanthopetalum
Jacksonia hakeoides
Melaleuca seriata
Pericalymma ellipticum
Petrophile seminuda
Regelia ciliata
Scholtzia laxiflora
Scholtzia parviflora
Verticordia chrysanthella
Verticordia densiflora var. *densiflora*

Dune Sheoak
 Swamp Fox Banksia
 Sand Bottlebrush, Sand Flameflower, Puno
 One-sided Bottlebrush
 Geraldton Wax
 Tree Smokebush
 White Myrtle, Kudjid
 Swamp Teatree
 Compact Featherflower

Unit 4: Swamps



Soil Variable; organic sand or sand over clay

Trees

Acacia microbotrya
Acacia saligna ssp. *saligna*
Banksia littoralis
Callitris pyramidalis
Eucalyptus myriadena
Eucalyptus rudis ssp. *rudis*
Melaleuca cuticularis
Melaleuca incana ssp. *incana*
Melaleuca preissiana
Melaleuca raphiophylla
Melaleuca viminea ssp. *viminea*

Manna Wattle
 Orange Wattle, Golden Wreath Wattle
 Swamp Banksia, Pungura
 Swamp Cypress

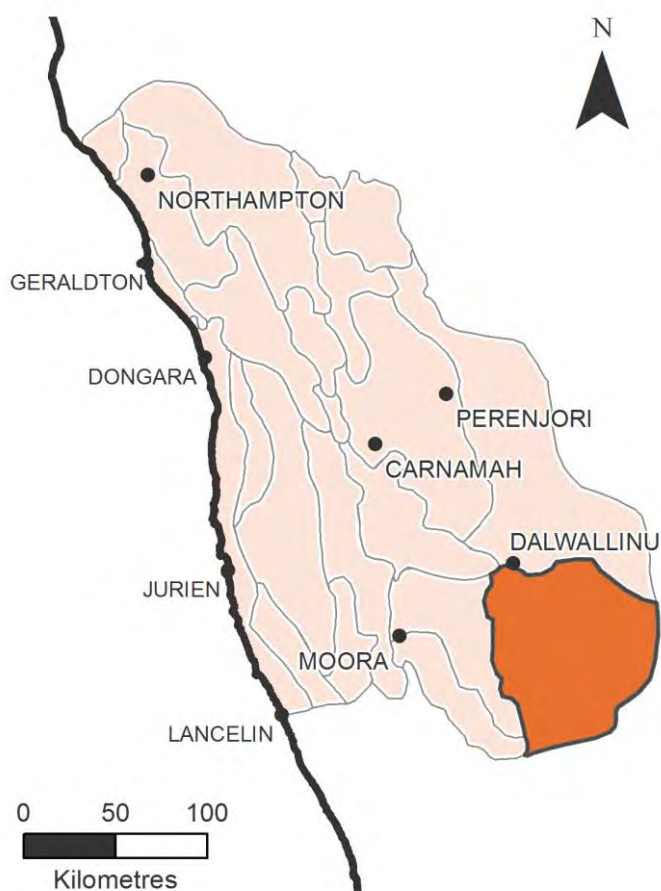
Flooded Gum, Moitch, Kulurda
 Saltwater Paperbark
 Grey Honey myrtle
 Moonah, Modong, Stout Paperbark
 Swamp Paperbark
 Mohan

Shrubs

Acacia dilatata
Banksia telmatiaea
Calytrix flavescens
Hypocalymma angustifolium
Maireana brevifolia

Swamp Fox Banksia
 Summer Starflower
 White Myrtle, Kudjid
 Small Leaf Bluebush

CADOUX



Location

This district lies between Goomalling and Dalwallinu and principally east of the Goomalling to Mullewa railway line.

Topography

There are large areas of gently undulating sandplain; areas of gently undulating to rolling country with some ridges and uneven slopes and some hilly areas with rock outcrops. The major valleys are broad and flat with clay pans and salt lakes.

Soils

The sandplain has mainly deep, yellow sand, sometimes acid at depth, and sand over gravel with exposed gravels on crests and ridges. The rolling country has sands over red or yellow clays and soils with gravel at the surface on the breakaways. The broad flat valleys have mainly sand over yellow clay with some areas of crabholes (gilgai country).

Problems

- Salinity development on the valley floors - unit 2.
- Water erosion particularly below breakaways.
- Hillside seepages which are usually saline - unit 2.
- Wind erosion of sandy soils if bared by cultivation or overgrazing - unit 3.

Unit 1: Hills and rolling country



Soil (a) Sand over red or yellow clay

Trees

Acacia acuminata
Acacia saligna ssp. *lindleyi*
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus arachnaea ssp. *arachnaea*
Eucalyptus drummondii
Eucalyptus flocktoniae ssp. *flocktoniae*
Eucalyptus kochii ssp. *plenissima*
Eucalyptus leptopoda ssp. *arctata*
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus loxophleba ssp. *supralaevis*
Eucalyptus salmonophloia
Eucalyptus subangusta ssp. *subangusta*
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)

Pixie Bush
 Black-stemmed Mallee
 Drummond's Gum
 Merrit
 Oil Mallee

York Gum

Salmon Gum, Wurak

Quandong

Sand Prickly Wattle
 Wait-a-while

Shrubs

Acacia acutaria
Acacia colletioides
Acacia fragilis
Acacia leptospermoides ssp. *leptospermoides*
Acacia multispicata
Acacia tetragonophylla
Allocasuarina humilis
Alyogyne hakeifolia
Calytrix strigosa
Eremaea pauciflora var. *pauciflora*
Eremophila clarkei
Grevillea paniculata
Grevillea paradoxa
Hakea incrassata
Hakea scoparia ssp. *scoparia*
Leptospermum erubescens
Melaleuca cordata
Melaleuca marginata
Melaleuca platycalyx

Kurara
 Dwarf Sheoak
 Red-centred Hibiscus

Turpentine Bush

Bottlebrush Grevillea
 Marble Hakea

Roadside Teatree, Pink Teatree
 Heart Leaf Honey Myrtle

Soil (b) Sand over gravel

Trees

Acacia acuminata
Acacia anthochaera
Allocasuarina huegeliana

Jam, Mangard, Inland Jam (narrow leaf)

Rock Sheoak, Rock Oak, Kwool

Soil (b) Sand over gravel

Callitris arenaria

Eucalyptus drummondii
Eucalyptus eudesmioides
Eucalyptus jucunda
Eucalyptus kochii ssp. *plenissima*
Eucalyptus pluricaulis ssp. *pluricaulis*
Eucalyptus pyriformis
Hakea recurva ssp. *recurva*
Santalum spicatum

Sandplain Cypress

Drummond's Gum

Malallie

Yuna Mallee

Oil Mallee

Pear-fruited Mallee, Dowerin Rose

Djarnokmurd, Bag-needle Bush

Sandalwood

Acacia assimilis ssp. *assimilis*
Acacia ericksoniae
Acacia erinacea
Acacia latipes ssp. *latipes*
Acacia leptospermoides ssp. *leptospermoides*
Acacia longiphyllodinea
Acacia neurophylla ssp. *erugata*
Acacia tetragonophylla
Allocasuarina campestris
Allocasuarina humilis
Baeckea crispiflora var. *tenuoir*
Calothamnus quadrifidus ssp. *angustifolius*
Daviesia benthamii ssp. *benthamii*
Dodonaea inaequifolia
Eremaea pauciflora var. *pauciflora*
Grevillea bitermata
Grevillea candelabroides
Grevillea paniculata
Grevillea petrophiloides ssp. *petrophiloides*
Grevillea teretifolia
Hakea circumalata
Hakea cygna ssp. *cygna*
Hakea invaginata
Hakea lissocarpha
Isopogon divergens
Kunzea praestans
Malleostemon roseus
Melaleuca conothamnoides
Melaleuca cordata
Melaleuca eleuterostachya
Melaleuca marginata
Melaleuca radula
Petrophile incurvata
Petrophile shuttleworthiana

Wodjil

Spiny Wattle

Long-leaved Wattle

Kurara

Tamma, Tammar, Shrubby She-oak

Dwarf Sheoak

Pink Pokers

Round Leaf Grevillea

Swan Fruit Hakea

Honey Bush

Spreading Coneflower

Purple Pom Pom Myrtle

Heart Leaf Honey Myrtle

Graceful Honeymyrtle

Unit 2: Broad valleys



Soil (a) Sand over red and yellow clay, sometimes saline

Trees

Acacia acuminata
*Acacia daphnifolia**
Callitris pyramidalis
*Casuarina obesa**
*Eucalyptus brachycorys**
Eucalyptus leptopoda ssp. *arctata*
Eucalyptus loxophleba ssp. *loxophleba**
Eucalyptus loxophleba ssp. *supralaevis**
*Eucalyptus salicola**
Hakea francisiana
Hakea preissii
Melaleuca hamata
*Melaleuca hamulosa**
*Melaleuca lanceolata**
Melaleuca viminea ssp. *viminea*
Santalum spicatum

Jam, Mangard, Inland Jam (narrow leaf)

Swamp Cypress
 Swamp Sheoak
 Cowcowing Mallee

York Gum

Salt Gum
 Emu Tree, Pink Spike Hakea
 Needle Tree, Needlebush, Dandjin, Tanjinn
 Broom Bush
 Creekline Honey Myrtle
 Rottnest Teatree
 Mohan
 Sandalwood

Shrubs

Acacia acuaria
Acacia erinacea
Acacia leptospermoides ssp. *leptospermoides*
Acacia ligustrina
*Acacia merrallii**
Acacia tetragonophylla
Allocasuarina campestris
Alyogyne hakeifolia
*Atriplex bunburyana**
Eremophila clarkei
Eremophila decipiens ssp. *decipiens*
Eremophila glabra ssp. *albicans*
Exocarpos aphyllus
Grevillea paniculata
Hakea scoparia ssp. *scoparia*
Leptospermum erubescens
*Maireana brevifolia**
Melaleuca adnata
Melaleuca atroviridis
Melaleuca cordata
*Melaleuca lateriflora**

Sand Prickly Wattle
 Spiny Wattle

Merrall's Wattle
 Kurara
 Tamma, Tammar, Shrubby She-oak
 Red-centred Hibiscus
 Silver Saltbush
 Turpentine Bush
 Slender Fuchsia

Leafless Ballart

Roadside Teatree, Pink Teatree
 Small Leaf Bluebush

Broom Bush
 Heart Leaf Honey Myrtle
 Gorada

Unit 2: Broad valleys (contd)

Soil (b) Sand over red and yellow clay, sometimes saline (contd)

Shrubs	<i>Rhagodia drummondii</i> *	Lake Fringe Rhagodia
	<i>Rhagodia preissii</i> ssp. <i>preissii</i>	
	<i>Scaevola spinescens</i>	Currant Bush, Maroon Bush

*Suitable for saline sites

Soil (c) Crabholes (gilgai)

Trees	<i>Acacia acuminata</i>	Jam, Mangard, Inland Jam (narrow leaf)
	<i>Acacia daphnifolia</i>	
	<i>Eremophila oldfieldii</i> ssp. <i>oldfieldii</i>	Pixie Bush
	<i>Eucalyptus loxophleba</i> ssp. <i>supralaevis</i>	
	<i>Eucalyptus myriadena</i>	
	<i>Eucalyptus salmonophloia</i>	Salmon Gum, Wurak
	<i>Eucalyptus salubris</i>	Gimlet
	<i>Hakea preissii</i>	Needle Tree, Needlebush, Dandjin, Tanjinn
	<i>Santalum acuminatum</i>	Quandong
Shrubs	<i>Acacia acuarria</i>	Sand Prickly Wattle
	<i>Acacia aestivalis</i>	
	<i>Acacia andrewsii</i>	
	<i>Acacia anthochaera</i>	
	<i>Acacia colletioides</i>	Wait-a-while
	<i>Acacia erinacea</i>	Spiny Wattle
	<i>Acacia hemiteles</i>	Tan Wattle
	<i>Acacia ligustrina</i>	
	<i>Acacia merrallii</i>	Merrall's Wattle
	<i>Atriplex bunburyana</i>	Silver Saltbush
	<i>Exocarpos aphyllus</i>	Leafless Ballart
	<i>Maireana brevifolia</i>	Small Leaf Bluebush
	<i>Melaleuca adnata</i>	
	<i>Olearia muelleri</i>	Goldfields Daisy
	<i>Rhagodia drummondii</i>	Lake Fringe Rhagodia
	<i>Rhagodia preissii</i> ssp. <i>preissii</i>	
	<i>Scaevola spinescens</i>	Currant Bush, Maroon Bush

Unit 3: Sandplain



Soil (a) Deep, yellow sand, neutral

Trees

Acacia acuminata
Acacia stereophylla var. *stereophylla*
Allocasuarina acutivalvis ssp. *acutivalvis*
Callitris arenaria
Eucalyptus eudesmioides
Eucalyptus jucunda
Eucalyptus leptopoda ssp. *arctata*
Eucalyptus oldfieldii
Eucalyptus pyriformis

Jam, Mangard, Inland Jam (narrow leaf)

Black Tammar
 Sandplain Cypress
 Malallie
 Yuna Mallee

Oldfield's Mallee
 Pear-fruited Mallee, Dowerin Rose

Shrubs

Acacia coolgardiensis
Acacia fragilis
Acacia neurophylla ssp. *erugata*
Acacia pulchella var. *glaberrima*
Allocasuarina campestris
Allocasuarina microstachya
Beaufortia elegans
Beaufortia squarrosa
Calothamnus quadrifidus ssp. *angustifolius*
Calytrix strigosa
Ecdeiocolea monostachya
Grevillea biformis ssp. *biformis*
Grevillea eriotrya
Grevillea eriostachya
Grevillea paradoxa
Hakea cygna ssp. *cygna*
Hakea erecta
Hakea incrassata
Hakea invaginata
Hakea multilineata
Melaleuca cordata
Melaleuca dichroma
Melaleuca stereophloia

Spinifex Wattle

Tamma, Tammar, Shrubby She-oak

Sand Bottlebrush, Sand Flameflower, Puno

Sedge Rush

Woolly Cluster Grevillea
 Flame Grevillea
 Bottlebrush Grevillea
 Swan Fruit Hakea

Marble Hakea

Grass Leaf Hakea
 Heart Leaf Honey Myrtle

Soil (b) Yellow sandplain, acidic

Trees

Acacia stereophylla var. *stereophylla*
Banksia benthamiana
Eucalyptus horistes
Eucalyptus leptopoda

Oil Mallee (Northern Rough Bark)
 Tammin Mallee

Unit 3: Sandplain (contd)

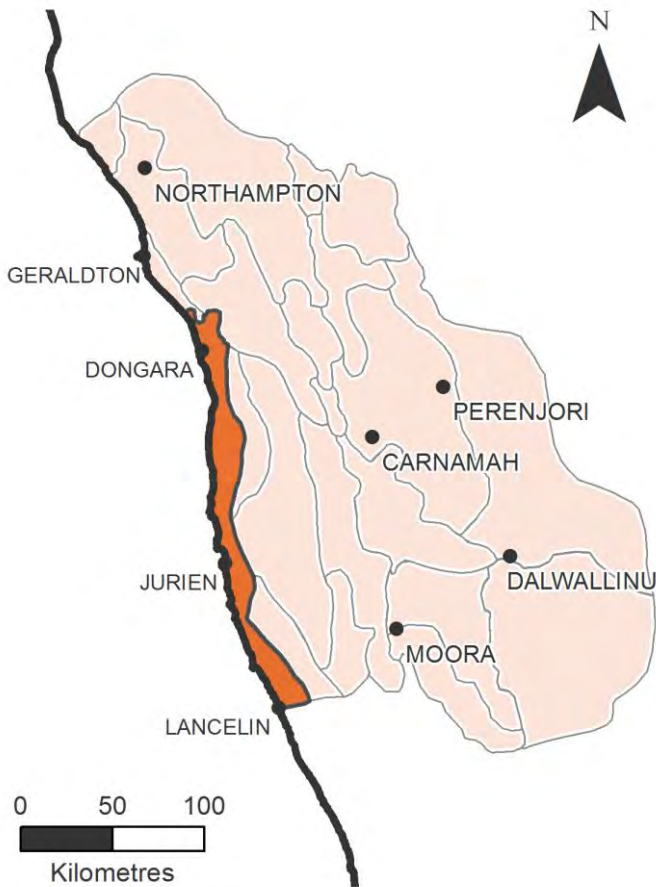
Soil (b) Yellow sandplain, acidic (contd)

Trees	<i>Eucalyptus oldfieldii</i> <i>Eucalyptus pyriformis</i> <i>Hakea francisiana</i>	Oldfield's Mallee Pear-fruited Mallee, Dowerin Rose Emu Tree, Pink Spike Hakea
Shrubs	<i>Acacia coolgardiensis</i> <i>Acacia fragilis</i> <i>Acacia neurophylla</i> ssp. <i>erugata</i> <i>Acacia resinimarginea</i> <i>Ecdeiocolea monostachya</i> <i>Grevillea eriostachya</i> <i>Hakea cygna</i> ssp. <i>cygna</i> <i>Hakea erecta</i> <i>Hakea multilineata</i> <i>Hakea platysperma</i> <i>Melaleuca cordata</i> <i>Melaleuca leptospermoides</i>	Spinifex Wattle Sedge Rush Flame Grevillea Swan Fruit Hakea Grass Leaf Hakea Cricket Ball Hakea, Peach Hakea Heart Leaf Honey Myrtle

Soil (c) Sand over gravel

Trees	<i>Acacia blakelyi</i> <i>Acacia microbotrya</i> <i>Acacia neurophylla</i> ssp. <i>erugata</i> <i>Acacia stereophylla</i> var. <i>stereophylla</i> <i>Banksia prionotes</i> <i>Callitris arenaria</i> <i>Eucalyptus eudesmioides</i> <i>Eucalyptus flocktoniae</i> <i>Eucalyptus pyriformis</i>	Manna Wattle Acorn Banksia Sandplain Cypress Malallie Merrit Pear-fruited Mallee, Dowerin Rose
Shrubs	<i>Acacia coolgardiensis</i> <i>Acacia ericksoniae</i> <i>Acacia fragilis</i> <i>Acacia latipes</i> ssp. <i>latipes</i> <i>Allocasuarina campestris</i> <i>Allocasuarina humilis</i> <i>Allocasuarina microstachya</i> <i>Banksia fraseri</i> var. <i>fraseri</i> <i>Beaufortia bracteosa</i> <i>Calothamnus quadrifidus</i> ssp. <i>angustifolius</i> <i>Calytrix strigosa</i> <i>Eremaea pauciflora</i> var. <i>pauciflora</i> <i>Gastrolobium spinosum</i> <i>Hakea incrassata</i> <i>Hakea multilineata</i> <i>Hakea platysperma</i> <i>Isopogon divergens</i> <i>Leptospermum erubescens</i> <i>Melaleuca calyptroides</i> <i>Melaleuca concreta</i>	Spinifex Wattle Tamma, Tammar, Shrubby She-oak Dwarf Sheoak Prickly Poison Marble Hakea Grass Leaf Hakea Cricket Ball Hakea, Peach Hakea Spreading Coneflower Roadside Teatree, Pink Teatree

COASTAL DUNES



Location

This district occurs in a band up to 20 km wide along the coast from Lancelin to Dongara.

Topography

Steep and irregular dunes lie parallel to the coast. Parabolic dune systems with long trailing arms extend inland. Flat coastal plains often occur within the dune systems. Undulating rises of limestone occur inland from the dunes, although in places the dunes traverse the limestone. Chains of salt lakes are found parallel to the coast north of Jurien.

Soils

Deep, limey sands occur on the dunes. Shallow limey sands, usually over a calcrete hardpan or limestone rock, occur on the coastal plains. Neutral yellow/brown sands of variable depth occur on the limestone rises. Variable saline and calcareous soils occur in the salt lakes.

Problems

- The dunes of units 1 and 2 are highly susceptible to wind erosion after even minor disturbances. The sandy surface of unit 4 will also erode if left exposed.
- The salt lakes of unit 3 are saline and often inundated.

Unit 1: Foredunes



Soil Limey sand

Trees

Acacia cyclops
Eucalyptus decipiens
Melaleuca lanceolata

Coastal Wattle, Red-eyed Wattle
 Redheart
 Rottnest Teatree

Shrubs

Acacia cyclops
Atriplex cinerea
Atriplex isatidea
Carpobrotus virescens
Eremophila glabra ssp. *albicans*
Leucophyta brownii
Olearia axillaris
Rhagodia baccata
Scaevola crassifolia
Spinifex longifolius

Coastal Wattle, Red-eyed Wattle
 Grey Saltbush
 Coast Saltbush
 Coastal Pigface

Cushion Bush
 Coastal Daisybush
 Berry Saltbush
 Thick-leaved Fan-flower
 Beach Spinifex

Unit 2: Dunes and interdunal plains



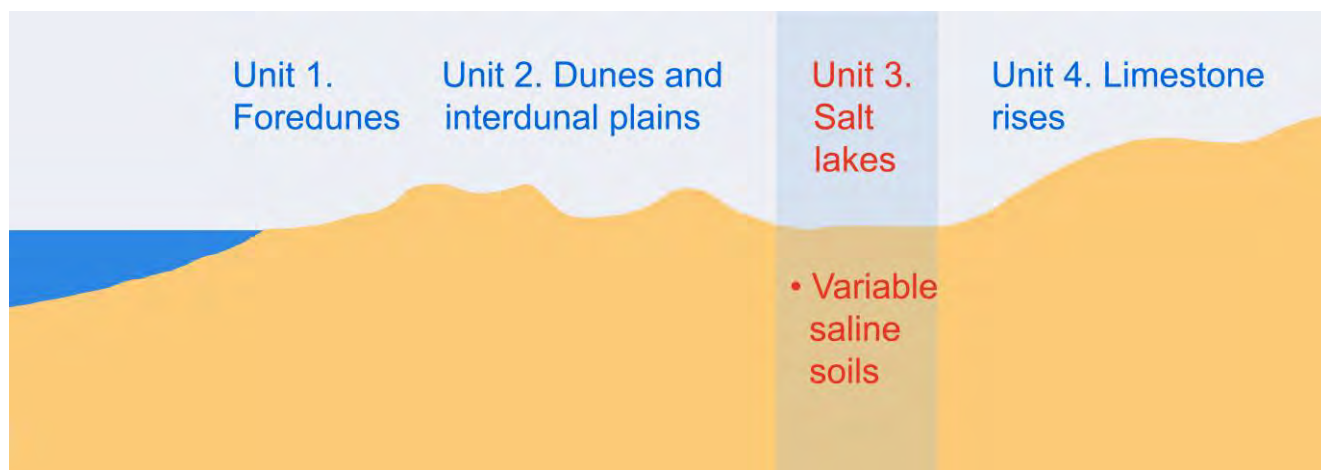
Soil (a) Limey sand

Trees	<i>Banksia ilicifolia</i> <i>Eucalyptus obtusiflora</i> ssp. <i>dongarraensis</i>	Holly-leaved Banksia Dongara Mallee
Shrubs	<i>Acacia cyclops</i> <i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i> <i>Acacia rostellifera</i> <i>Acacia truncata</i> <i>Allocasuarina lehmanniana</i> ssp. <i>lehmanniana</i> <i>Banksia hookeriana</i> <i>Calothamnus torulosus</i> <i>Hardenbergia comptoniana</i> <i>Melaleuca cardiophylla</i> <i>Melaleuca huegelii</i> ssp. <i>huegelii</i> <i>Melaleuca systema</i> <i>Myoporum insulare</i> <i>Rhagodia baccata</i> <i>Scaevola crassifolia</i> <i>Spyridium globulosum</i>	Coastal Wattle, Red-eyed Wattle Panjang, Pajang Summer-scented Wattle, Black Wattle West Coast Wattle, Wedge-leaved Wattle Dune Sheoak Hooker's Banksia Native Wisteria Tangling Melaleuca, Umbrella Bush Chenille Honeymyrtle Blueberry Tree, Boobialla Berry Saltbush Thick-leaved Fan-flower Basket Bush

Soil (b) Shallow, limey sand over calcrete hardpan or limestone

Trees	<i>Banksia ilicifolia</i> <i>Eucalyptus obtusiflora</i> ssp. <i>dongarraensis</i>	Holly-leaved Banksia Dongara Mallee
Shrubs	<i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i> <i>Acacia rostellifera</i> <i>Acacia spathulifolia</i> <i>Acacia truncata</i> <i>Allocasuarina lehmanniana</i> ssp. <i>lehmanniana</i> <i>Grevillea preissii</i> ssp. <i>preissii</i> <i>Hakea varia</i> <i>Hardenbergia comptoniana</i> <i>Melaleuca cardiophylla</i> <i>Melaleuca huegelii</i> ssp. <i>huegelii</i> <i>Melaleuca systema</i> <i>Myoporum insulare</i> <i>Rhagodia baccata</i> ssp. <i>baccata</i> <i>Scaevola crassifolia</i> <i>Spyridium globulosum</i> <i>Thryptomene baeckeacea</i>	Panjang, Pajang Summer-scented Wattle, Black Wattle Spoon Leaf Wattle West Coast Wattle, Wedge-leaved Wattle Dune Sheoak Spider Net Grevillea Variable-leaved Hakea Native Wisteria Tangling Melaleuca, Umbrella Bush Chenille Honeymyrtle Blueberry Tree, Boobialla Berry Saltbush Thick-leaved Fan-flower Basket Bush

Unit 3: Salt lakes



Soil	Variable sandy, silty or clayey saline soils, often with marl (white earthy mix of clay and calcium carbonate) or shelly layers	
Trees	<i>Callitris pyramidalis</i> <i>Casuarina obesa</i> <i>Eucalyptus baudiniana</i> <i>Eucalyptus decipiens</i> <i>Melaleuca lanceolata</i>	Swamp Cypress Swamp Sheoak Redheart Rottnest Teatree
Shrubs	<i>Allocasuarina lehmanniana</i> ssp. <i>lehmanniana</i> <i>Enchylaena tomentosa</i> <i>Gahnia trifida</i> <i>Melaleuca brevifolia</i> <i>Melaleuca cardiophylla</i> <i>Melaleuca viminea</i> ssp. <i>viminea</i> <i>Tecticornia halocnemoides</i> ssp. <i>halocnemoides</i> <i>Tecticornia indica</i> ssp. <i>bidens</i> <i>Threlkeldia diffusa</i>	Dune Sheoak Barrier Saltbush, Ruby Saltbush Coast Saw-sedge Mallee Myrtle, Mallee Honey-myrtle Tangling Melaleuca, Umbrella Bush Mohan Shrubby Samphire Coast Bonefruit

Unit 4: Limestone Rises



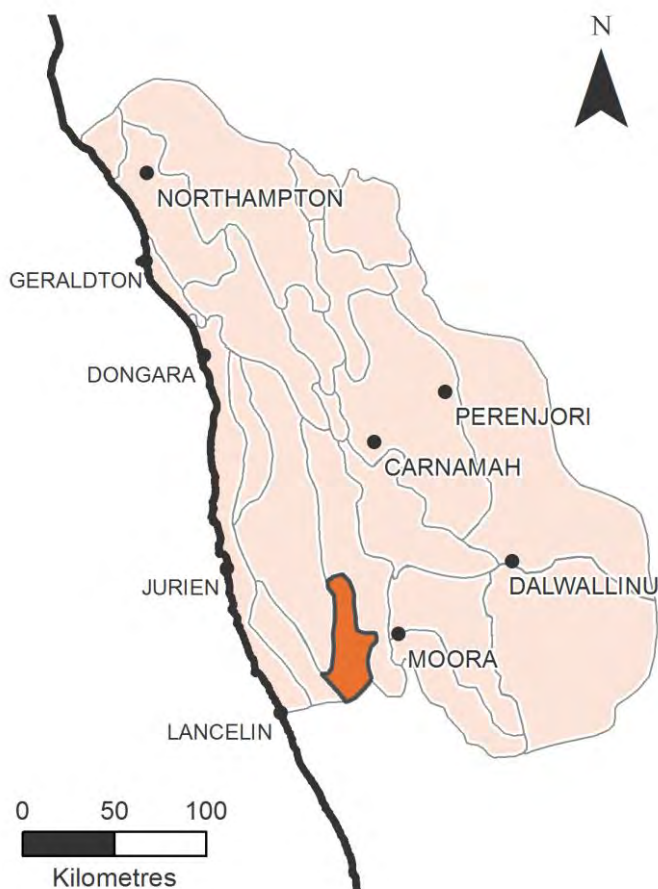
Soil (a) Yellow/brown sand (shallow) over limestone

Trees	<i>Acacia rostellifera</i> <i>Acacia xanthina</i> <i>Eucalyptus accedens</i> <i>Eucalyptus erythrocorys</i> <i>Eucalyptus obtusiflora</i> ssp. <i>dongarraensis</i>	Summer-scented Wattle, Black Wattle White-stemmed Wattle Powderbark Wandoo Illyarrie, Red Capped Gum Dongara Mallee
Shrubs	<i>Acacia spathulifolia</i> <i>Banksia leptophylla</i> var. <i>melletica</i> <i>Calothamnus quadrifidus</i> ssp. <i>angustifolius</i> <i>Chamelaucium uncinatum</i> <i>Daviesia epiphyllum</i> <i>Grevillea argyrophylla</i> <i>Grevillea olivacea</i> <i>Grevillea preissii</i> ssp. <i>glabrilimba</i> <i>Hakea trifurcata</i> <i>Melaleuca cardiophylla</i> <i>Melaleuca huegelii</i> ssp. <i>huegelii</i> <i>Melaleuca systema</i>	Spoon Leaf Wattle Geraldton Wax Silvery-leaved Grevillea Olive Grevillea Two-leaf Hakea Tangling Melaleuca, Umbrella Bush Chenille Honeymyrtle

Soil (b) Yellow/brown sand (deep) over limestone

Trees	<i>Acacia blakelyi</i> <i>Acacia rostellifera</i> <i>Banksia elegans</i> <i>Banksia menziesii</i> <i>Banksia prionotes</i> <i>Callitris arenaria</i> <i>Eucalyptus decipiens</i>	Summer-scented Wattle, Black Wattle Elegant Banksia Firewood Banksia, Menzies' Banksia Acorn Banksia Sandplain Cypress Redheart
Shrubs	<i>Acacia comans</i> <i>Banksia hookeriana</i> <i>Banksia leptophylla</i> var. <i>melletica</i> <i>Beaufortia squarrosa</i> <i>Calothamnus quadrifidus</i> ssp. <i>quadrifidus</i> <i>Calothamnus torulosus</i> <i>Daviesia divaricata</i> ssp. <i>divaricata</i> <i>Hakea trifurcata</i> <i>Melaleuca cardiophylla</i> <i>Melaleuca systema</i> <i>Olearia axillaris</i>	Hooker's Banksia Sand Bottlebrush, Sand Flameflower, Puno One-sided Bottlebrush Marno Two-leaf Hakea Tangling Melaleuca, Umbrella Bush Coastal Daisybush

DANDARAGAN



Location

This district occurs as a narrow strip east of the Dandaragan Scarp from Badgingarra to the Moore River, including the Minyolo and Caren Caren valleys.

Topography

The landscape consists of broad valleys separated by undulating ridges.

Soils

The deep, red-brown sands occurring on the lower slopes are the dominant soils of this system. The undulating ridges have yellow sands over gravel with occasional laterite outcrops while the upper slopes have relatively small areas of gravel and some heavier soils. The major valley floors have brown sands over red-brown clays, which in some areas are becoming waterlogged and saline.

Problems

- Wind erosion of the sands of units 1 and 3.
- Water erosion of the heavier soils of unit 2.
- Waterlogging and salinity may be a risk in the valleys of unit 4.

Unit 1: Undulating uplands



Soil (a) Gravel at the surface, laterite exposed

Trees	<i>Allocasuarina huegeliana</i> <i>Corymbia calophylla</i> <i>Eucalyptus pluricaulis</i> ssp. <i>pluricaulis</i> <i>Eucalyptus wandoo</i> ssp. <i>wandoo</i>	Rock Sheoak, Rock Oak, Kwool Marri, Red Gum Wandoo, White Gum
Shrubs	<i>Acacia pulchella</i> var. <i>glaberrima</i> <i>Allocasuarina campestris</i> <i>Allocasuarina humilis</i> <i>Banksia carlinoides</i> <i>Banksia hewardiana</i> <i>Banksia kippistiana</i> var. <i>kippistiana</i> <i>Banksia sessilis</i> var. <i>sessilis</i> <i>Calothamnus quadrifidus</i> ssp. <i>quadrifidus</i> <i>Daviesia nudiflora</i> ssp. <i>nudiflora</i> <i>Hakea costata</i> <i>Hakea lissocarpa</i> <i>Hakea trifurcata</i> <i>Jacksonia floribunda</i> <i>Melaleuca seriata</i>	Tamma, Tammar, Shrubby She-oak Dwarf Sheoak Pink Dryandra Parrot Bush One-sided Bottlebrush Ribbed Hakea Honey Bush Two-leaf Hakea Holly Pea

Soil (b) Yellow sand over gravel

Trees	<i>Banksia attenuata</i> <i>Banksia prionotes</i> <i>Corymbia calophylla</i> <i>Eucalyptus tottiana</i> <i>Eucalyptus wandoo</i> ssp. <i>wandoo</i>	Slender Banksia Acorn Banksia Marri, Red Gum Coastal Blackbutt Wandoo, White Gum
Shrubs	<i>Acacia multispicata</i> <i>Allocasuarina campestris</i> <i>Allocasuarina humilis</i> <i>Banksia carlinoides</i> <i>Banksia nivea</i> ssp. <i>nivea</i> <i>Banksia sessilis</i> var. <i>sessilis</i> <i>Calothamnus quadrifidus</i> ssp. <i>quadrifidus</i> <i>Grevillea biformis</i> ssp. <i>biformis</i> <i>Grevillea eriostachya</i> <i>Hakea costata</i> <i>Melaleuca concreta</i> <i>Petrophile shuttleworthiana</i>	Tamma, Tammar, Shrubby She-oak Dwarf Sheoak Pink Dryandra Honey-pot Dryandra, Pudjarn Parrot Bush One-sided Bottlebrush Flame Grevillea Ribbed Hakea

Unit 2: Upper slopes



Soil (a) Gravel at the surface

Trees

Allocasuarina huegeliana
Corymbia calophylla
Eucalyptus accedens
Eucalyptus pluricaulis ssp. *pluricaulis*
Eucalyptus wandoo ssp. *wandoo*

Rock Sheoak, Rock Oak, Kwool
 Marri, Red Gum
 Powderbark Wandoo
 Wandoo, White Gum

Shrubs

Acacia latipes ssp. *latipes*
Acacia pulchella var. *glaberrima*
Allocasuarina campestris
Allocasuarina humilis
Banksia carlinoides
Banksia fraseri var. *fraseri*
Banksia sessilis var. *sessilis*
Calothamnus quadrifidus ssp. *quadrifidus*
Daviesia divaricata ssp. *divaricata*
Daviesia nudiflora ssp. *nudiflora*
Eremaea beaufortioides var. *beaufortioides*
Hakea conchifolia
Isopogon divergens
Melaleuca seriata
Melaleuca trichophylla
Petrophile recurva
Petrophile shuttleworthiana

Tamma, Tammar, Shrubby She-oak
 Dwarf Sheoak
 Pink Dryandra

Parrot Bush
 One-sided Bottlebrush
 Marno

Shell-leaved Hakea
 Spreading Coneflower

Pretty Honey Myrtle

Soil (b) Heavier soils, loam to clay

Trees

Acacia microbotrya
Corymbia calophylla
Eucalyptus drummondii
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus wandoo ssp. *pulverea*

Manna Wattle
 Marri, Red Gum
 Drummond's Gum
 York Gum

Shrubs

Acacia erinacea
Acacia lasiocarpa var. *sedifolia*
Calothamnus quadrifidus ssp. *quadrifidus*
Eremaea pauciflora var. *pauciflora*
Hibbertia hypericoides
Melaleuca platycalyx
Melaleuca radula
Petrophile seminuda

Spiny Wattle

One-sided Bottlebrush

Yellow Buttercups

Graceful Honey myrtle

Unit 3: Lower slopes and broad depressions



Soil Deep, red-brown sand

Trees

Banksia attenuata
Banksia prionotes
Callitris arenaria
Corymbia calophylla
Eucalyptus tottiana

Slender Banksia
 Acorn Banksia
 Sandplain Cypress
 Marri, Red Gum
 Coastal Blackbutt

Shrubs

Acacia blakelyi
Acacia lasiocarpa var. *lasiocarpa*
Acacia saligna ssp. *lindleyi*
Allocasuarina humilis
Banksia leptophylla var. *leptophylla*
Banksia nivea ssp. *nivea*
Calytrix flavescens
Daviesia benthamii ssp. *benthamii*
Daviesia pedunculata
Eremaea pauciflora var. *pauciflora*
Hakea erinacea
Hakea trifurcata
Hibbertia hypericoides
Jacksonia hakeoides
Leptospermum erubescens
Melaleuca viminea ssp. *viminea*
Scholtzia parviflora
Verticordia densiflora var. *densiflora*

Panjang, Pajang

Dwarf Sheoak

Honeypot Dryandra, Pudjarn
 Summer Starflower

Hedge-hog Hakea, Echidna Hakea
 Two-leaf Hakea
 Yellow Buttercups

Roadside Teatree, Pink Teatree
 Mohan

Compact Featherflower

Unit 4: Creek flats



Soil Brown sand over red-brown clay

Trees

Callitris pyramidalis
Casuarina obesa
Eucalyptus camaldulensis
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus rudis ssp. *rudis*
Eucalyptus wandoo ssp. *pulverea*
Melaleuca lateriflora
Melaleuca raphiophylla

Swamp Cypress
 Swamp Sheoak
 River Red Gum, River Gum
 York Gum
 Flooded Gum, Moitch, Kulurda
 Gorada
 Swamp Paperbark

Shrubs

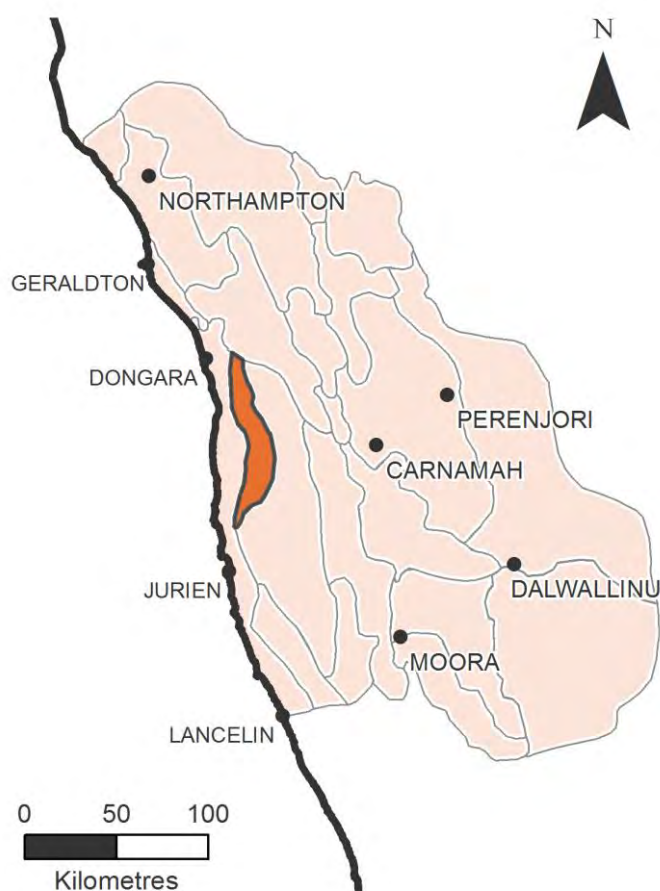
Calothamnus hirsutus
Daviesia benthamii ssp. *benthamii*
Eremaea pauciflora var. *pauciflora*
Hypocalymma angustifolium
Melaleuca hamata
Melaleuca platycalyx
Melaleuca seriata
Melaleuca viminea ssp. *viminea*
Rhagodia preissii ssp. *preissii*
Scholtzia parviflora
Thryptomene mucronulata
Verticordia densiflora var. *densiflora*

White Myrtle, Kudjid
 Broom Bush

Mohan

Compact Featherflower

ENEABBA PLAINS



Location

This district occurs inland of the limestone rises of the Coastal Dunes system, from south of the Irwin River to Cockleshell Gully and as far inland as the Gingin Scarp.

Topography

The landscape is predominantly a low plain with occasional coastal dunes. The lower lying western parts of the plain receive drainage from rises to the east and are seasonally inundated. Numerous lakes, both fresh and saline, occur along the western edge of the plain.

Soils

Deep, grey or yellow sands, sometimes over gravel, predominate on the better drained parts of the plain. The occasional low dunes have deep, yellow sands, usually with a pale grey surface. The seasonally wet western parts of the plain have shallow sands over clay which are gradually becoming saline as the result of rising watertables.

Problems

- Waterlogging and salinity on the lower lying western parts of the plain - unit 2.
- Wind erosion of sandy surface soils when surface cover is not maintained - units 2 and 3.

Unit 1: Lakes or swamps



Soil Various soils

Trees

Acacia saligna ssp. *lindleyi*
Callitris pyramidalis
Casuarina obesa
Eucalyptus camaldulensis
Eucalyptus diminuta
Eucalyptus loxophleba ssp. *loxophleba*
Melaleuca raphiophylla

Swamp Cypress
 Swamp Sheoak
 River Red Gum, River Gum

York Gum
 Swamp Paperbark

Shrubs

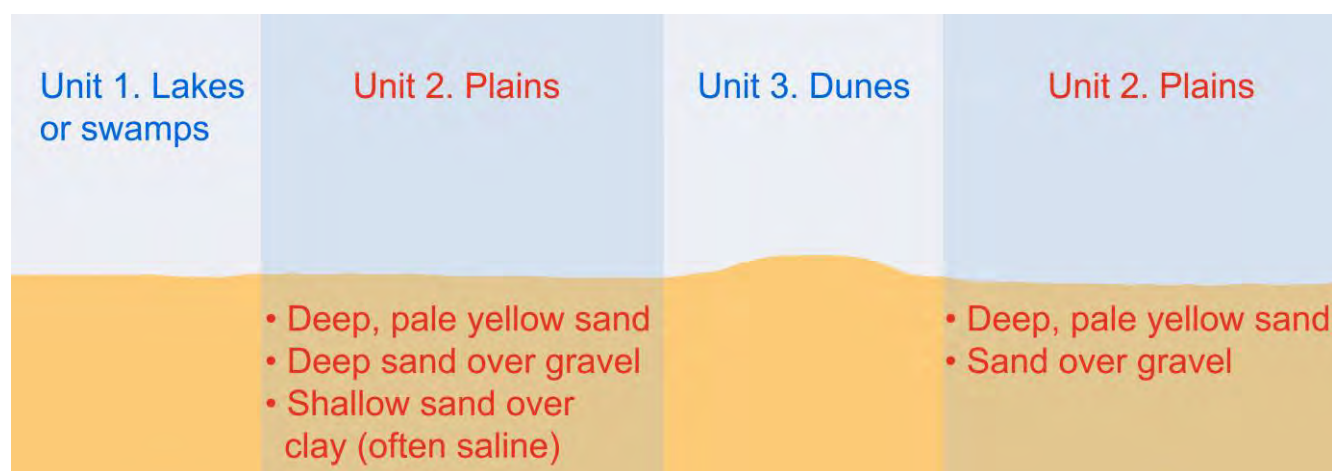
Acacia lasiocarpa var. *lasiocarpa*
Anigozanthos pulcherrimus
Calothamnus quadrifidus ssp. *angustifolius*
Calytrix flavescens
Carpobrotus modestus
Chamelaucium uncinatum
Grevillea preissii ssp. *preissii*
Hypocalymma angustifolium
Jacksonia hakeoides
Maireana brevifolia
Melaleuca hamulosa
Melaleuca radula
Melaleuca viminea ssp. *viminea*
Rhagodia preissii ssp. *preissii*
Scholtzia laxiflora
Thryptomene mucronulata

Panjang, Pajang
 Yellow Kangaroo Paw

Summer Starflower
 Inland Pigface
 Geraldton Wax
 Spider Net Grevillea
 White Myrtle, Kudjid

Small Leaf Bluebush
 Creekline Honey Myrtle
 Graceful Honey myrtle
 Mohan

Unit 2: Plains



Soil (a) Deep, pale yellow sand, usually with a grey surface

Trees

Acacia blakelyi
Banksia attenuata
Banksia burdettii
Banksia menziesii
Banksia prionotes
Callitris arenaria
Eucalyptus drummondii
Eucalyptus jucunda
Eucalyptus pyriformis
Eucalyptus tottiana
Xylomelum angustifolium

Slender Banksia
 Burdett's Banksia
 Firewood Banksia, Menzies' Banksia
 Acorn Banksia
 Sandplain Cypress
 Drummond's Gum
 Yuna Mallee
 Pear-fruited Mallee, Dowerin Rose
 Coastal Blackbutt
 Sandplain Woody Pear

Shrubs

Acacia blakelyi
Acacia cavealis
Acacia fragilis
Acacia spathulifolia
Adenanthos cygnorum ssp. *cygnorum*
Allocasuarina campestris
Allocasuarina humilis
Banksia elegans
Banksia hookeriana
Banksia leptophylla var. *melletica*
Banksia sessilis var. *cygnorum*
Beaufortia squarrosa
Calothamnus quadrifidus ssp. *angustifolius*
Calothamnus sanguineus
Chamelaucium uncinatum
Daviesia divaricata ssp. *divaricata*
Daviesia nudiflora ssp. *nudiflora*
Eremaea violacea ssp. *violacea*
Grevillea candelabroides
Grevillea eriostachya
Hakea candolleana
Melaleuca concreta
Melaleuca trichophylla
Petrophile macrostachya
Petrophile shuttleworthiana
Scholtzia involucrata

Spoon Leaf Wattle
 Common Woollybush
 Tamma, Tammar, Shrubby She-oak
 Dwarf Sheoak
 Elegant Banksia
 Hooker's Banksia

Sand Bottlebrush, Sand Flameflower, Puno

Silky-leaved Blood Flower, Pindak, Boolgalla
 Geraldton Wax
 Marno

Violet Eremaea

Flame Grevillea

Pretty Honey Myrtle

Spiked Scholtzia

Unit 2: Plains (contd)

Soil	(b) Deep sand over gravel	
Trees	<i>Callitris arenaria</i> <i>Eucalyptus accedens</i> <i>Eucalyptus conveniens</i> <i>Eucalyptus eudesmioides</i> <i>Eucalyptus gittinsii</i> <i>Eucalyptus macrocarpa</i> ssp. <i>elachantha</i>	Sandplain Cypress Powderbark Wandoo Malallie Northern Sandplain Mallee Small-leaved Mottlecah
Shrubs	<i>Acacia latipes</i> ssp. <i>latipes</i> <i>Allocasuarina campestris</i> <i>Banksia carlinoides</i> <i>Banksia hookeriana</i> <i>Banksia lanata</i> <i>Banksia nivea</i> ssp. <i>nivea</i> <i>Beaufortia bicolor</i> <i>Beaufortia elegans</i> <i>Calothamnus sanguineus</i> <i>Daviesia podophylla</i> <i>Eremaea beaufortoides</i> var. <i>beaufortoides</i> <i>Eremaea violacea</i> <i>Grevillea bitermata</i> <i>Hakea costata</i> <i>Hakea cygna</i> ssp. <i>cygna</i> <i>Hakea incrassata</i> <i>Hemiandra pungens</i> <i>Melaleuca urceolaris</i>	Tamma, Tammar, Shrubby She-oak Pink Dryandra Hooker's Banksia Honeypot Dryandra, Pudjarn Silky-leaved Blood Flower, Pindak, Boolgalla Violet Eremaea Ribbed Hakea Swan Fruit Hakea Marble Hakea Snakebush
Soil	(c) Shallow sand over clay, often saline (western part of plain)	
Trees	<i>Acacia saligna</i> ssp. <i>lindleyi</i> <i>Casuarina obesa</i> <i>Eucalyptus diminuta</i> <i>Melaleuca rhaphiophylla</i>	Swamp Sheoak Swamp Paperbark
Shrubs	<i>Adenanthos cygnorum</i> ssp. <i>cygnorum</i> <i>Beaufortia elegans</i> <i>Calothamnus hirsutus</i> <i>Calothamnus quadrifidus</i> ssp. <i>angustifolius</i> <i>Calytrix flavescens</i> <i>Chamelaucium uncinatum</i> <i>Daviesia triflora</i> <i>Grevillea candelabroides</i> <i>Grevillea preissii</i> ssp. <i>preissii</i> <i>Hakea candolleana</i> <i>Hypocalymma angustifolium</i> <i>Jacksonia hakeoides</i> <i>Melaleuca brevifolia</i> <i>Melaleuca hamulosa</i> <i>Melaleuca viminea</i> ssp. <i>viminea</i> <i>Scholtzia laxiflora</i>	Common Woollybush Summer Starflower Geraldton Wax Spider Net Grevillea White Myrtle, Kudjid Mallee Myrtle, Mallee Honey-myrtle Creekline Honey Myrtle Mohan

Unit 3: Dunes



Soil Deep, pale yellow sand, usually with a grey surface

Trees

Acacia blakelyi
Banksia attenuata
Banksia hookeriana
Banksia menziesii
Banksia prionotes
Eucalyptus erythrocorys
Eucalyptus tottiana
Xylomelum angustifolium

Slender Banksia
 Hooker's Banksia
 Firewood Banksia, Menzies' Banksia
 Acorn Banksia
 Illyarrie, Red Capped Gum
 Coastal Blackbutt
 Sandplain Woody Pear

Shrubs

Acacia lasiocarpa var. *lasiocarpa*
Adenanthos cygnorum ssp. *cygnorum*
Allocasuarina microstachya
Anigozanthos humilis ssp. *humilis*
Banksia candolleana
Banksia elegans
Banksia hookeriana
Bossiaea eriocarpa
Calytrix strigosa
Dasyopogon obliquifolius
Daviesia divaricata ssp. *divaricata*
Eremaea beaufortoides var. *beaufortoides*
Exocarpos sparteus
Hakea candolleana
Hakea prostrata
Jacksonia floribunda
Melaleuca systema
Petrophile shuttleworthiana
Scholtzia umbellifera
Stirlingia latifolia
Verticordia chrysanthella

Panjang, Pajang
 Common Woollybush

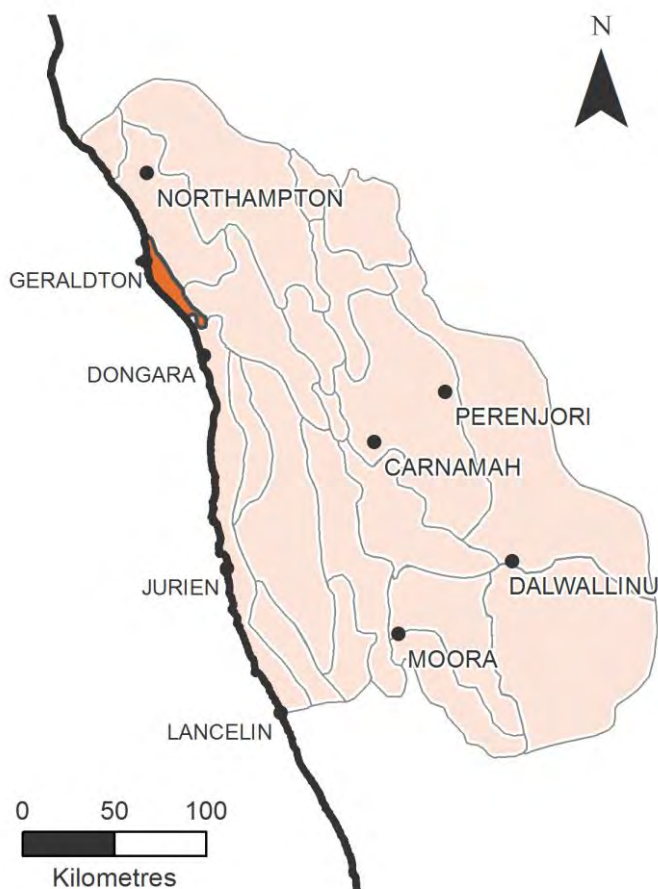
 Catspaw
 Propeller Banksia
 Elegant Banksia
 Hooker's Banksia
 Common Brown Pea

 Broom Ballart, Djuk, Native Cherry

 Harsh Hakea
 Holly Pea

 Blueboy

GREENOUGH



Location

Greenough district follows the coast from Port Gregory in the north to the Irwin River in the south. It is developed on the coastal limestones and includes the alluvial deposits of the Greenough River.

Topography

The main features are coastal dunes which are not farmed, a line of low hills parallel to the coast and alluvial tracts which are divided into the front and back flats.

Soils

The coastal dunes are limey sands. The low hills and rises between the alluvial flats are variously yellow sand over limestone and deep, yellow sand. The front flats are silty clays with minor areas of sandy loams on the river terraces together with some areas of crabhole (gilgai) country. The back flats are mainly deep, sandy loams with minor areas of crabholes.

Problems

- Wind erosion of the sandy areas - units 1 and 3.
- Waterlogging and local flooding on the flats - units 2 and 4.

Unit 1: Coastal dunes



Soil Limey sand

Trees *Pittosporum ligustrifolium*

Shrubs *Acacia cyclops*
Acacia rostellifera
Allocasuarina lehmanniana ssp. *lehmanniana*
Alyogyne huegelii
Carpobrotus modestus
Exocarpos sparteus
Melaleuca cardiophylla
Melaleuca depressa
Melaleuca systema
Melaleuca trichophylla
Myoporum insulare
Olearia axillaris
Rhagodia preissii ssp. *obovata*
Santalum acuminatum
Scaevola crassifolia
Spinifex longifolius
Tecticornia pergranulata
Threlkeldia diffusa
Thryptomene baeckeacea

Coastal Wattle, Red-eyed Wattle
 Summer-scented Wattle, Black Wattle
 Dune Sheoak
 Lilac Hibiscus, Purple Hibiscus
 Inland Pigface
 Broom Ballart, Djuk, Native Cherry
 Tangling Melaleuca, Umbrella Bush

Pretty Honey Myrtle
 Blueberry Tree, Boobialla
 Coastal Daisybush

Quandong
 Thick-leaved Fan-flower
 Beach Spinifex

Coast Bonefruit

Unit 2: Front flats



Soil Silty clay with sandy loam on river terraces and crabholes (gilgai)

Trees

Acacia saligna ssp. *lindleyi*
Casuarina obesa
Eucalyptus camaldulensis
Eucalyptus obtusiflora ssp. *dongarraensis*
Melaleuca lanceolata
Melaleuca raphiophylla
Santalum acuminatum

Swamp Sheoak
 River Red Gum, River Gum
 Dongara Mallee
 Rottnest Teatree
 Swamp Paperbark
 Quandong

Shrubs

Acacia rostellifera
Acacia scirpifolia
Acacia spathulifolia
Allocasuarina campestris
Alyogyne cuneiformis
Grevillea argyrophylla
Grevillea biternata
Melaleuca brevifolia
Melaleuca depressa
Melaleuca megacephala
Rhagodia preissii ssp. *obovata*
Stylobasium spathulatum

Summer-scented Wattle, Black Wattle

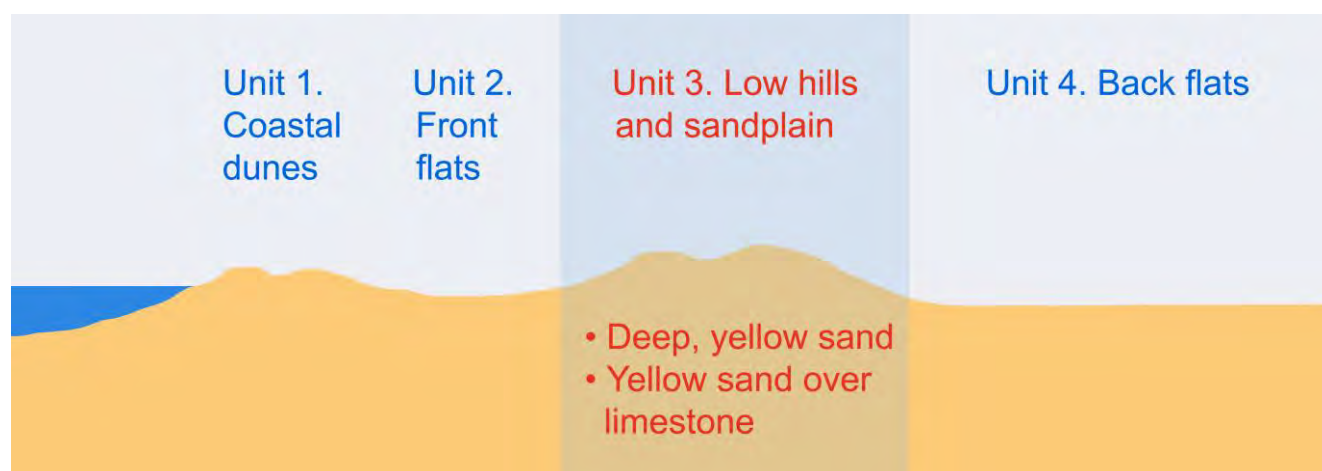
 Spoon Leaf Wattle
 Tamma, Tammar, Shrubby She-oak
 Coastal Hibiscus
 Silvery-leaved Grevillea

 Mallee Myrtle, Mallee Honey-myrtle

 Yellow Pom-Pom Myrtle

 Pebble Bush

Unit 3: Low hills and sandplain



Soil	(a) Deep, yellow sand, sometimes over gravel	
Trees	<i>Banksia attenuata</i> <i>Banksia elegans</i> <i>Banksia prionotes</i>	Slender Banksia Elegant Banksia Acorn Banksia
Shrubs	<i>Acacia leptospermoides</i> ssp. <i>leptospermoides</i> <i>Acacia oxyclada</i> <i>Acacia rostellifera</i> <i>Acacia scirpifolia</i> <i>Acacia spathulifolia</i> <i>Alyogyne hakeifolia</i> <i>Banksia sessilis</i> var. <i>flabellifolia</i> <i>Grevillea candelabroides</i> <i>Pimelea microcephala</i> ssp. <i>microcephala</i> <i>Scaevola crassifolia</i>	Summer-scented Wattle, Black Wattle Spoon Leaf Wattle Red-centred Hibiscus Shrubby Riceflower
Soil	(b) Yellow sand over limestone	
Trees	<i>Myoporum insulare</i> <i>Santalum acuminatum</i>	Blueberry Tree, Boobialla Quandong
Shrubs	<i>Acacia rostellifera</i> <i>Acacia scirpifolia</i> <i>Acacia spathulifolia</i> <i>Alyogyne hakeifolia</i> <i>Alyxia buxifolia</i> <i>Calothamnus quadrifidus</i> <i>Dodonaea aptera</i> <i>Grevillea biformis</i> <i>Melaleuca cardiophylla</i> <i>Rhagodia preissii</i> ssp. <i>obovata</i> <i>Scaevola crassifolia</i> <i>Scholtzia umbellifera</i>	Summer-scented Wattle, Black Wattle Spoon Leaf Wattle Red-centred Hibiscus Dysentery Bush One-sided Bottlebrush Coast Hop-bush Tangling Melaleuca, Umbrella Bush Thick-leaved Fan-flower

Unit 4: Back flats



Soil Sandy loam with minor inclusions of crabholes (gilgai)

Trees

Acacia saligna ssp. *lindleyi*
Acacia tetragonophylla
Banksia elegans
Eucalyptus camaldulensis
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus obtusiflora ssp. *dongarraensis*
Melaleuca lanceolata
Melaleuca raphiophylla
Santalum acuminatum

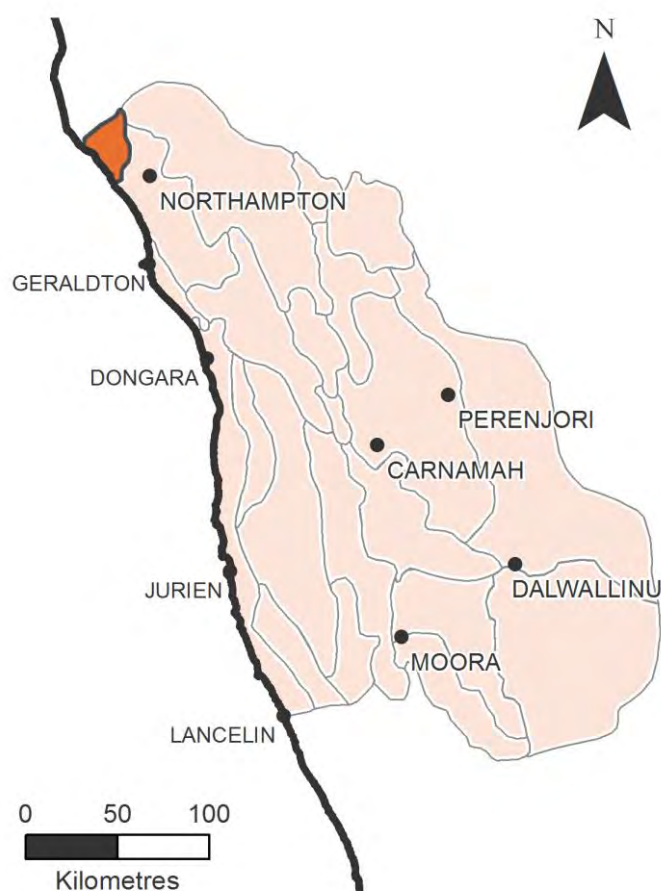
Kurara
 Elegant Banksia
 River Red Gum, River Gum
 York Gum
 Dongara Mallee
 Rottneet Teatree
 Swamp Paperbark
 Quandong

Shrubs

Acacia oxyclada
Acacia rostellifera
Adenanthos cygnorum ssp. *cygnorum*
Alyogyne cuneiformis
Calothamnus sanguineus
Gastrolobium spinosum
Hakea bucculenta
Hakea circumalata
Hakea costata
Melaleuca aspalathoides
Melaleuca depressa
Melaleuca trichophylla
Petrophile scabriuscula
Verticordia densiflora var. *densiflora*

Summer-scented Wattle, Black Wattle
 Common Woollybush
 Coastal Hibiscus
 Silky-leaved Blood Flower, Pindak, Boolgalla
 Prickly Poison
 Red Pokers, Grass Leaf Hakea
 Ribbed Hakea
 Pretty Honey Myrtle
 Compact Featherflower

HUTT



Location

The district lies to the north-west of Northampton, surrounding the valley of the Hutt River.

Topography

Undulating sandplain dissected by the Hutt River and its tributaries, which have produced numerous low breakaways and eroded short slopes below larger scarp faces. The valleys are usually moderately steep-sided and sandstone exposures are common.

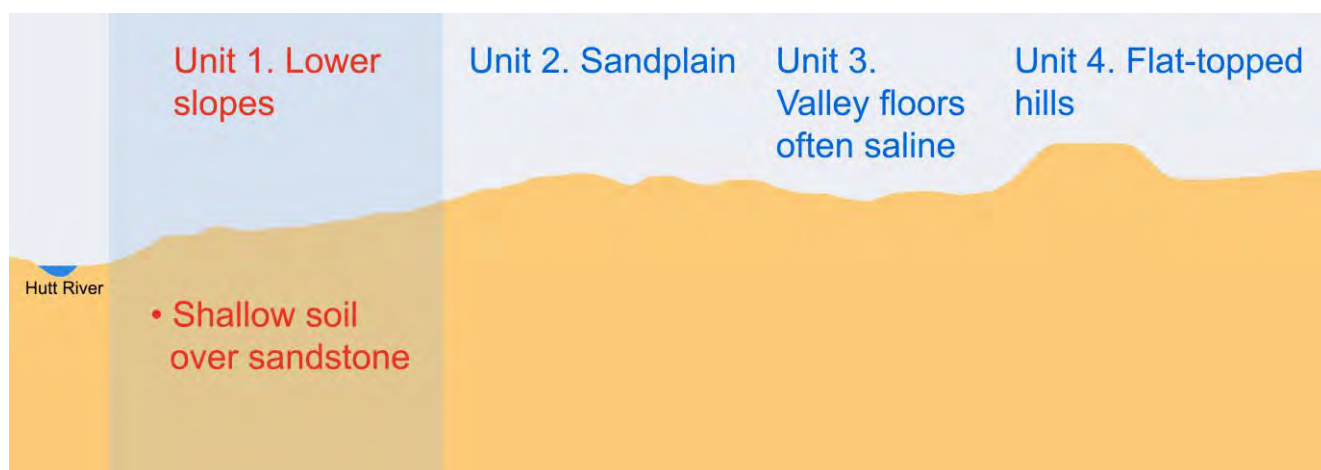
Soils

The principal soils of the sandplain are deep, yellow sands and sands over gravel. The soils of the valley sides are shallow over sandstone and sands over yellow clay. Silty soils and stony sand over yellow clay soils, often alkaline, occur in the vicinity of shale outcrops. These are frequently affected by secondary salinity.

Problems

- Water erosion of the sloping country, particularly below rock outcrops - units 1 and 4.
- Soil salinity with accompanying water erosion is common in the vicinity of shale rock outcrops - unit 3.
- Wind erosion when the surface cover is not maintained - unit 2.

Unit 1: Lower slopes



Soil Shallow soil over sandstone

Trees

Acacia acuminata
Acacia tetragonophylla
Allocasuarina huegeliana
Eucalyptus arachnaea ssp. *arachnaea*
Melaleuca raphiophylla

Jam, Mangard, Inland Jam (narrow leaf)
 Kurara
 Rock Sheoak, Rock Oak, Kwowl
 Black-stemmed Mallee
 Swamp Paperbark

Shrubs

Acacia alata var. *biglandulosa*
Acacia blakelyi
Acacia restiacea
Acacia rostellifera
Acacia spathulifolia
Acacia ulicina
Allocasuarina campestris
Banksia fraseri var. *ashbyi*
Calothamnus quadrifidus ssp. *homalophyllus*
Calothamnus sanguineus
Calytrix strigosa
Daviesia hakeoides ssp. *hakeoides*
Daviesia pedunculata
Dodonaea inaequifolia
Grevillea bitermata
Grevillea intricata
Grevillea leucopteris
Hakea orthorrhyncha var. *filiformis*
Melaleuca concreta
Melaleuca depressa
Melaleuca hamulosa
Melaleuca marginata
Melaleuca megacephala
Thryptomene baeckeacea

Summer-scented Wattle, Black Wattle
 Spoon Leaf Wattle

Tamma, Tammar, Shrubby She-oak

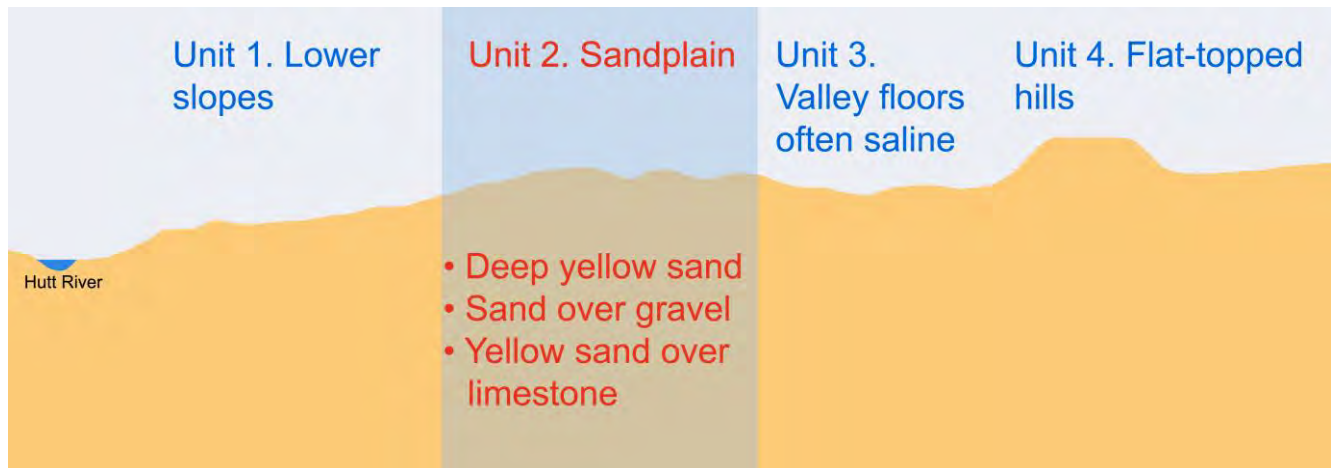
Murchison Clawflower
 Silky-leaved Blood Flower, Pindak, Boolgalla

White Plume Grevillea

Creekline Honey Myrtle

Yellow Pom-Pom Myrtle

Unit 2: Sandplain



Soil (a) Deep yellow sand

Trees

Banksia attenuata
Banksia prionotes
Banksia sceptrum
Banksia victoriae
Callitris arenaria
Eucalyptus eudesmioides
Eucalyptus jucunda
Eucalyptus kochii ssp. *borealis*
Eucalyptus oldfieldii

Slender Banksia
 Acorn Banksia
 Sceptre Banksia
 Woolly Orange Banksia
 Sandplain Cypress
 Malallie
 Yuna Mallee
 Oil Mallee
 Oldfield's Mallee

Shrubs

Acacia blakelyi
Acacia lasiocarpa var. *lasiocarpa*
Acacia rostellifera
Anigozanthos humilis ssp. *humilis*
Banksia fraseri var. *ashbyi*
Banksia sessilis var. *flabellifolia*
Calothamnus quadrifidus ssp. *homalophyllus*
Calothamnus sanguineus
Grevillea leucopeteris
Hakea lissocarpa
Hibbertia hypericoides
Lachnostachys eriobotrya
Melaleuca depressa
Melaleuca marginata
Melaleuca megacephala
Scholtzia laxiflora
Thryptomene baeckeacea
Verticordia chrysanthella
Xanthorrhoea drummondii

Panjang, Pajang
 Summer-scented Wattle, Black Wattle
 Catspaw

Murchison Clawflower
 Silky-leaved Blood Flower, Pindak, Boolgalla
 White Plume Grevillea
 Honey Bush
 Yellow Buttercups
 Lambswool

Yellow Pom-Pom Myrtle

Soil (b) Sand over gravel

Trees

Acacia acuminata
Acacia anthochaera
Banksia attenuata
Banksia prionotes
Eucalyptus eudesmioides
Eucalyptus oldfieldii

Jam, Mangard, Inland Jam (narrow leaf)

Slender Banksia
 Acorn Banksia
 Malallie
 Oldfield's Mallee

Unit 2: Sandplain (contd)

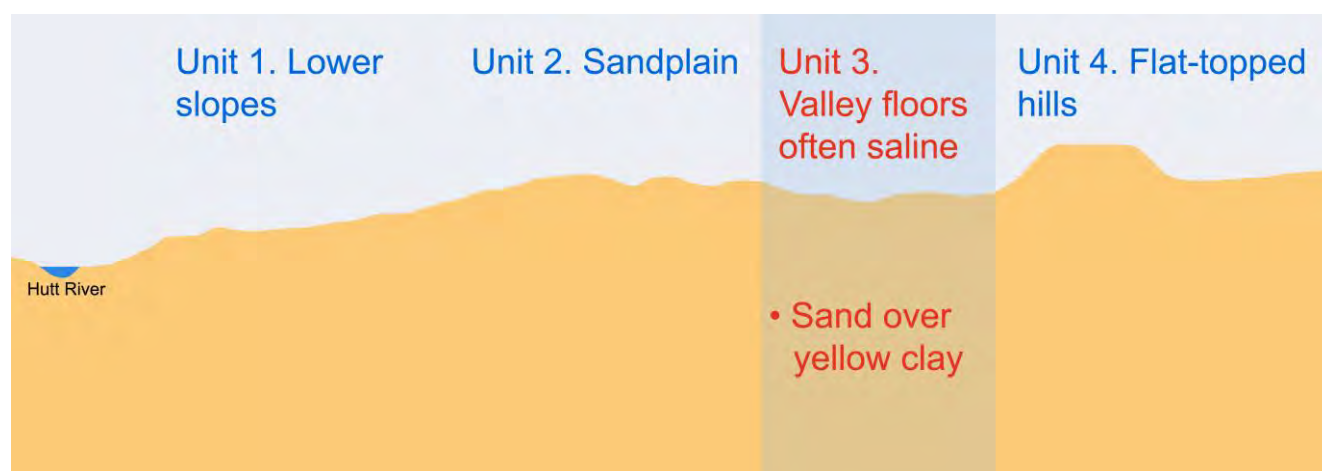
Soil (b) Sand over gravel (contd)

Shrubs	<i>Acacia blakelyi</i> <i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i> <i>Acacia restiacea</i> <i>Acacia scirpifolia</i> <i>Allocasuarina campestris</i> <i>Allocasuarina humilis</i> <i>Anigozanthos humilis</i> ssp. <i>humilis</i> <i>Banksia fraseri</i> var. <i>ashbyi</i> <i>Banksia sessilis</i> var. <i>flabellifolia</i> <i>Calothamnus sanguineus</i> <i>Calytrix strigosa</i> <i>Daviesia hakeoides</i> ssp. <i>hakeoides</i> <i>Daviesia pedunculata</i> <i>Grevillea biternata</i> <i>Grevillea leucopteris</i> <i>Grevillea petrophiloides</i> <i>Grevillea teretifolia</i> <i>Hakea lissocarpa</i> <i>Hakea orthorrhyncha</i> var. <i>filiformis</i> <i>Hibbertia hypericoides</i> <i>Isopogon divergens</i> <i>Lachnostachys eriobotrya</i> <i>Melaleuca marginata</i> <i>Melaleuca megacephala</i> <i>Melaleuca radula</i> <i>Scholtzia laxiflora</i> <i>Thryptomene baeckeacea</i>	Panjang, Pajang Tamma, Tammar, Shrubby She-oak Dwarf Sheoak Catspaw Silky-leaved Blood Flower, Pindak, Boolgalla White Plume Grevillea Pink Pokers Round Leaf Grevillea Honey Bush Yellow Buttercups Spreading Coneflower Lambswool Yellow Pom-Pom Myrtle Graceful Honeymyrtle
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Soil (c) Yellow sand over limestone (rare)

Trees	<i>Banksia prionotes</i> <i>Banksia victoriae</i> <i>Eucalyptus erythrocorys</i> <i>Eucalyptus eudesmioides</i> <i>Eucalyptus kochii</i> ssp. <i>borealis</i> <i>Exocarpos aphyllus</i> <i>Pittosporum phillyreoides</i>	Acorn Banksia Woolly Orange Banksia Illyarrie, Red Capped Gum Malallie Oil Mallee Leafless Ballart Weeping Pittosporum
Shrubs	<i>Acacia rostellifera</i> <i>Banksia sessilis</i> var. <i>flabellifolia</i> <i>Calothamnus sanguineus</i> <i>Dodonaea inaequifolia</i> <i>Grevillea argyrophylla</i> <i>Lachnostachys eriobotrya</i> <i>Melaleuca depressa</i> <i>Melaleuca megacephala</i> <i>Olearia axillaris</i> <i>Pimelea microcephala</i> ssp. <i>microcephala</i> <i>Scholtzia laxiflora</i> <i>Thryptomene baeckeacea</i>	Summer-scented Wattle, Black Wattle Silky-leaved Blood Flower, Pindak, Boolgalla Silvery-leaved Grevillea Lambswool Yellow Pom-Pom Myrtle Coastal Daisybush Shrubby Riceflower

Unit 3: Valley floors often saline



Soil Sand over yellow clay

Trees

Acacia daphnifolia
Acacia microbotrya
Acacia saligna ssp. *lindleyi*
Acacia tetragonophylla
Allocasuarina huegeliana
Callitris columellaris
Callitris pyramidalis
*Casuarina obesa**
*Eucalyptus baudiniana**
*Eucalyptus camaldulensis**
Eucalyptus loxophleba ssp. *supralaevis*
Eucalyptus subangusta ssp. *subangusta*
*Hakea preissii**
Melaleuca eleuterostachya
Melaleuca viminea ssp. *viminea*
Santalum acuminatum

Manna Wattle

Kurara
 Rock Sheoak, Rock Oak, Kwool
 White Cypress Pine
 Swamp Cypress
 Swamp Sheoak

River Red Gum, River Gum

Needle Tree, Needlebush, Dandjin, Tanjinn

Mohan
 Quandong

Shrubs

Acacia blakelyi
Acacia rostellifera
Acacia spathulifolia
Acacia ulicina
Allocasuarina humilis
Eremophila decipiens ssp. *decipiens*
Grevillea bitermata
Melaleuca concreta
Melaleuca viminea ssp. *viminea*
Rhagodia preissii ssp. *obovata**
Scholtzia laxiflora

Summer-scented Wattle, Black Wattle
 Spoon Leaf Wattle

Dwarf Sheoak
 Slender Fuchsia

Mohan

*Suitable for saline sites

Unit 4: Flat-topped hills



Soil Shallow soil over sandstone

Trees

Acacia acuminata
Acacia tetragonophylla
Allocasuarina huegeliana
Eucalyptus arachnaea ssp. *arachnaea*
Eucalyptus loxophleba ssp. *supralaevis*
Eucalyptus subangusta ssp. *subangusta*
Hakea recurva ssp. *recurva*
Melaleuca eleuterostachya
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)
 Kurara
 Rock Sheoak, Rock Oak, Kwowl
 Black-stemmed Mallee

Djarnokmurd, Bag-needle Bush

Quandong

Shrubs

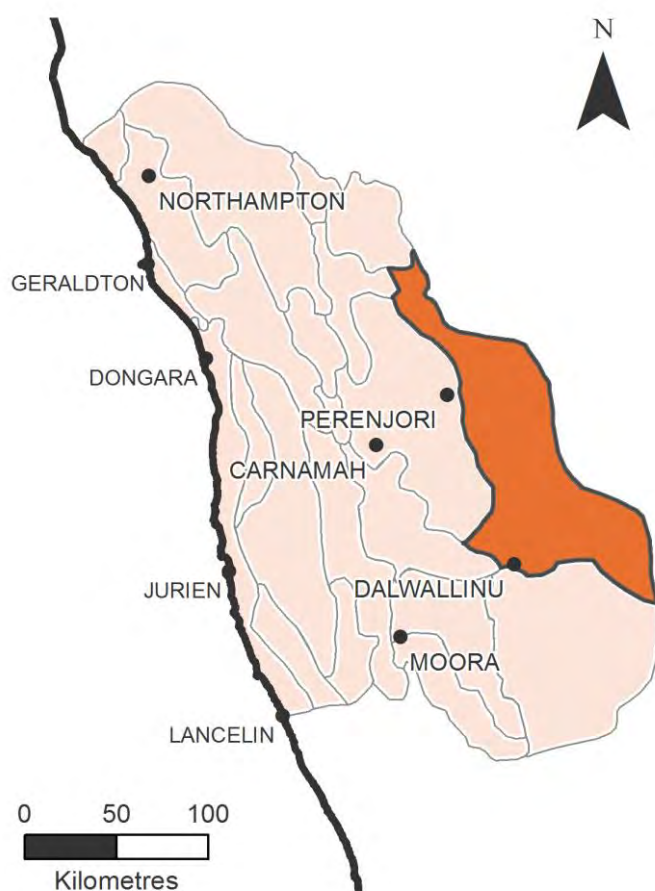
Acacia alata var. *biglandulosa*
Acacia andrewsii
Acacia latipes
Acacia restiacea
Acacia ulicina
Allocasuarina campestris
Calothamnus sanguineus
Daviesia pedunculata
Dodonaea inaequifolia
Grevillea intricata
Hakea orthorrhyncha var. *filiformis*
Lachnostachys eriobotrya
Melaleuca concreta
Melaleuca depressa
Melaleuca megacephala
Scholtzia laxiflora
Thryptomene baeckeacea

Tamma, Tammar, Shrubby She-oak
 Silky-leaved Blood Flower, Pindak, Boolgalla

Lambswool

Yellow Pom-Pom Myrtle

JIBBERDING



Location

This district lies inland from the Perenjori district extending from Morawa in the north to Dalwallinu in the south and across to the eastern fringes of the northern wheatbelt. It is very similar to the Perenjori system, but has lower and less reliable rainfall.

Topography

There are large areas of undulating country with long, narrow valleys and rock outcrops on hill crests as well as extensive areas of sandplain. The major drainage systems have level to very gently sloping valley floors with extensive adjacent lower slopes.

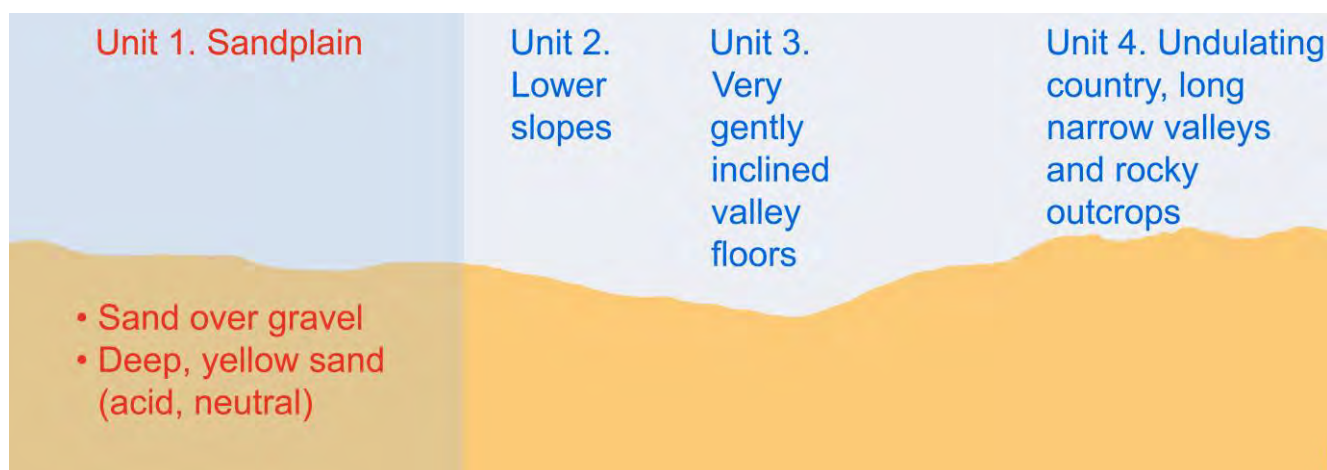
Soils

Deep, yellow sands, sometimes acidic, and sands over gravel occur on the sandplain. Red, sandy loams over clays and some areas of crabholes (gilgai) are found on the lower slopes. Red loams over hardpan, often saline, occur on the valley floors. Sand over gravel, shallow soil over granite or gneiss and red loams over hardpan occur on the undulating country.

Problems

- Wind erosion of sandy surfaced soils when surface cover is not maintained - unit 1.
- Subsurface compaction in sandy soils caused by wheeled machinery - unit 1.
- Some deep, yellow sands are naturally acidic at depth - unit 1.
- Salinity and waterlogging of valley floors - unit 2.
- Flooding in some areas due to excessive run-off - unit 2.
- Water erosion on slopes where run-off is not controlled by banks, other structures or management practices - unit 3.

Unit 1: Sandplain



Soil (a) Sand over gravel

Trees

Acacia acuminata
Acacia anthochaera
Allocasuarina huegeliana
Callitris arenaria
Eucalyptus eudesmioides
Eucalyptus jucunda
Eucalyptus oldfieldii
Hakea francisiana

Jam, Mangard, Inland Jam (narrow leaf)

Rock Sheoak, Rock Oak, Kwool
 Sandplain Cypress
 Malallie
 Yuna Mallee
 Oldfield's Mallee
 Emu Tree, Pink Spike Hakea

Shrubs

Acacia andrewsii
Acacia assimilis ssp. *assimilis*
Acacia burkittii
Acacia colletioides
Acacia coolgardiensis
Acacia longiphyllodinea
Acacia stereophylla var. *stereophylla*
Allocasuarina campestris
Daviesia nudiflora ssp. *nudiflora*
Eremophila clarkei
Grevillea candelabroides
Grevillea obliquistigma ssp. *obliquistigma*
Grevillea paradoxa
Hakea invaginata
Hakea scoparia ssp. *scoparia*
Melaleuca calyptroides
Melaleuca conothamnoides
Melaleuca cordata
Melaleuca eleuterostachya
Melaleuca nematophylla
Petrophile incurvata

Wodjil
 Sandhill Wattle
 Wait-a-while
 Spinifex Wattle
 Long-leaved Wattle

Tamma, Tammar, Shrubby She-oak

Turpentine Bush

Bottlebrush Grevillea

Purple Pom Pom Myrtle
 Heart Leaf Honey Myrtle

Wiry Honey-myrtle

Soil (b) Deep, yellow sand, acidic

Trees

Acacia resinimarginea
Allocasuarina acutivalvis ssp. *acutivalvis*
Banksia benthamiana
Eucalyptus horistes
Eucalyptus leptopoda ssp. *arctata*
Hakea francisiana

Black Tammar

Oil Mallee (Northern Rough Bark)

Emu Tree, Pink Spike Hakea

Unit 1: Sandplain (contd)

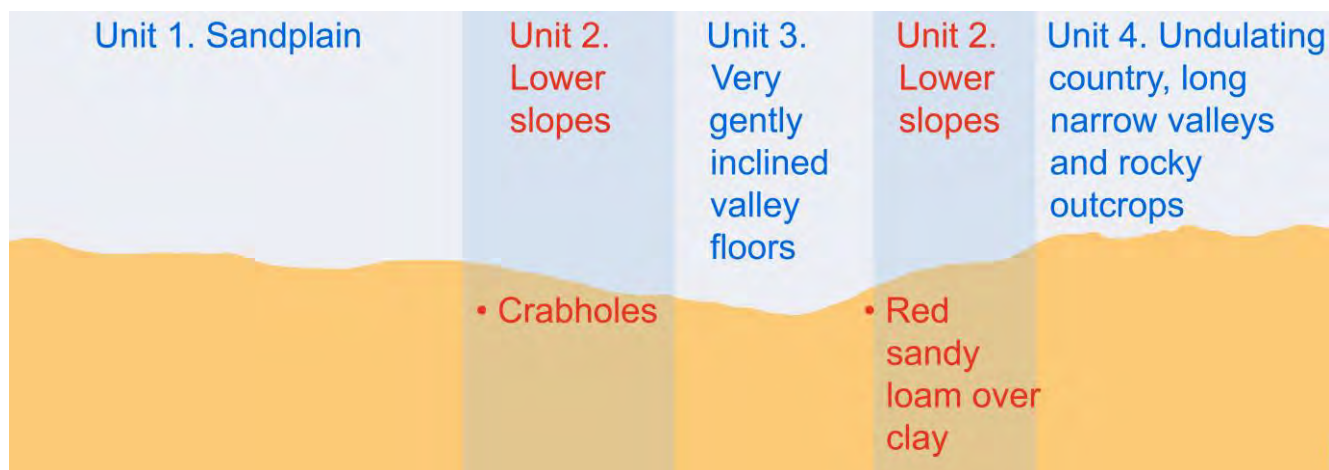
Soil (b) Deep, yellow sand, acidic (contd)

Shrubs	<i>Acacia coolgardiensis</i>	Spinifex Wattle
	<i>Acacia longiphyllodinea</i>	Long-leaved Wattle
	<i>Acacia multispicata</i>	
	<i>Acacia neurophylla</i> ssp. <i>erugata</i>	
	<i>Acacia stereophylla</i> var. <i>stereophylla</i>	
	<i>Allocasuarina campestris</i>	Tamma, Tammar, Shrubby She-oak
	<i>Grevillea biformis</i> ssp. <i>biformis</i>	
	<i>Grevillea eriostachya</i>	Flame Grevillea
	<i>Grevillea obliquistigma</i> ssp. <i>obliquistigma</i>	
	<i>Grevillea paradoxa</i>	Bottlebrush Grevillea
	<i>Hakea erecta</i>	
	<i>Hakea francisiana</i>	Emu Tree, Pink Spike Hakea
	<i>Malleostemon roseus</i>	
	<i>Melaleuca cordata</i>	Heart Leaf Honey Myrtle
	<i>Petrophile shuttleworthiana</i>	

Soil (c) Deep, yellow sand, neutral

Trees	<i>Acacia acuminata</i>	Jam, Mangard, Inland Jam (narrow leaf)
	<i>Banksia benthamiana</i>	
	<i>Callitris arenaria</i>	Sandplain Cypress
	<i>Eucalyptus ebbanoensis</i> ssp. <i>ebbanoensis</i>	Sandplain Mallee
	<i>Eucalyptus horistes</i>	Oil Mallee (Northern Rough Bark)
	<i>Eucalyptus kochii</i> ssp. <i>plenissima</i>	Oil Mallee
	<i>Eucalyptus leptopoda</i> ssp. <i>arctata</i>	
	<i>Eucalyptus oldfieldii</i>	Oldfield's Mallee
	<i>Eucalyptus subangusta</i> ssp. <i>pusilla</i>	
	<i>Grevillea juncifolia</i> ssp. <i>temulenta</i>	
	<i>Hakea francisiana</i>	Emu Tree, Pink Spike Hakea
Shrubs	<i>Acacia assimilis</i> ssp. <i>assimilis</i>	Wodjil
	<i>Acacia coolgardiensis</i>	Spinifex Wattle
	<i>Acacia fragilis</i>	
	<i>Acacia isoneura</i> ssp. <i>nimia</i>	(in north)
	<i>Acacia multispicata</i>	
	<i>Acacia resinimarginea</i>	
	<i>Allocasuarina campestris</i>	Tamma, Tammar, Shrubby She-oak
	<i>Grevillea candelabroides</i>	
	<i>Grevillea eriostachya</i>	Flame Grevillea
	<i>Grevillea paradoxa</i>	Bottlebrush Grevillea
	<i>Grevillea polybotrya</i>	
	<i>Hakea erecta</i>	
	<i>Hakea scoparia</i> ssp. <i>scoparia</i>	
	<i>Malleostemon roseus</i>	
	<i>Melaleuca conothamnoides</i>	Purple Pom Pom Myrtle
	<i>Melaleuca cordata</i>	Heart Leaf Honey Myrtle

Unit 2: Lower slopes



Soil (a) Red, sandy loam over clay

Trees

Acacia acuminata
Allocasuarina acutivalvis ssp. *acutivalvis*
Eucalyptus horistes
Eucalyptus kochii ssp. *plenissima*
Eucalyptus loxophleba ssp. *supralaevis*
Eucalyptus salmonophloia
Eucalyptus salubris
Eucalyptus subangusta ssp. *pusilla*
Melaleuca eleuterostachya
Santalum acuminatum
Santalum spicatum

Jam, Mangard, Inland Jam (narrow leaf)
 Black Tammar
 Oil Mallee (Northern Rough Bark)
 Oil Mallee

Salmon Gum, Wurak
 Gimlet

Quandong
 Sandalwood

Shrubs

Acacia colletioides
Acacia hemiteles
Acacia ligustrina
Acacia ramulosa var. *ramulosa*
Melaleuca leiocarpa
Olearia muelleri
Rhagodia drummondii

Wait-a-while
 Tan Wattle

Horse Mulga
 Pungent Honey Myrtle
 Goldfields Daisy
 Lake Fringe Rhagodia

Soil (b) Crabholes (gilgai)

Trees

Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus salmonophloia
Eucalyptus salubris
Melaleuca atroviridis
Melaleuca eleuterostachya
Santalum acuminatum

Pixie Bush
 York Gum
 Salmon Gum, Wurak
 Gimlet
 Broom Bush

Quandong

Shrubs

Acacia acuarina
Acacia aestivalis
Acacia ligustrina
Acacia merrallii
Melaleuca adnata
Pimelea microcephala subsp. *microcephala*
Rhagodia drummondii
Rhagodia preissii ssp. *preissii*
Scaevola spinescens
Senna artemisioides ssp. *filifolia*

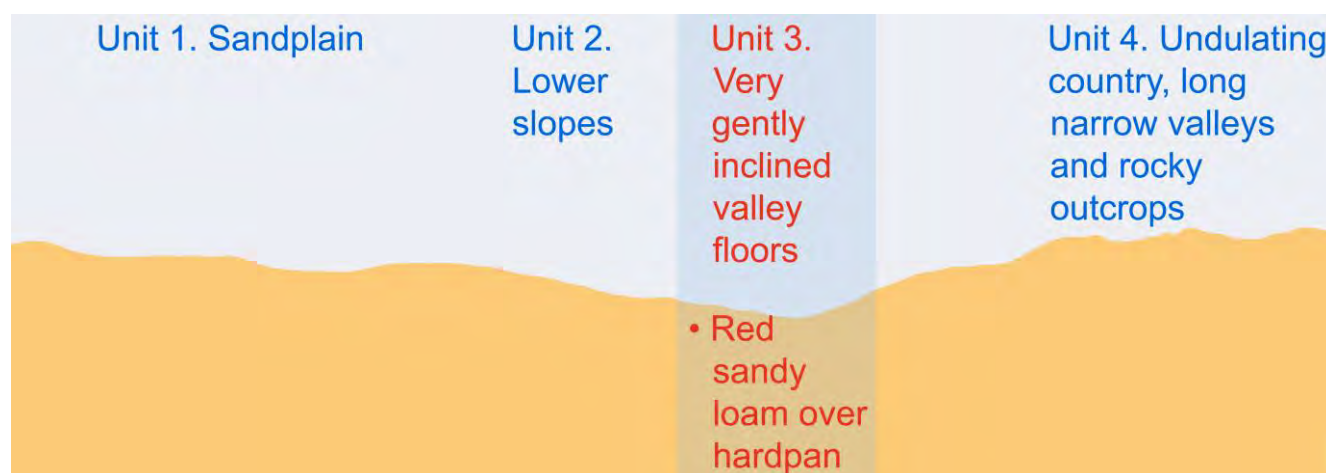
Sand Prickly Wattle

Merrall's Wattle

Shrubby Riceflower
 Lake Fringe Rhagodia

Currant Bush, Maroon Bush

Unit 3: Very gently inclined valley floors



Soil Red, sandy loam over hardpan, often saline

Trees

Acacia acuminata
Acacia tetragonophylla
*Casuarina obesa**
Eremophila decipiens ssp. *decipiens*
Eucalyptus brachycorys
Eucalyptus loxophleba ssp. *supralaevis**
*Eucalyptus salicola**
*Eucalyptus salubris**
*Hakea preissii**
Melaleuca atroviridis
Santalum spicatum

Jam, Mangard, Inland Jam (narrow leaf)
 Kurara
 Swamp Sheoak
 Slender Fuchsia
 Cowcowing Mallee

Salt Gum
 Gimlet
 Needle Tree, Needlebush, Dandjin, Tanjinn
 Broom Bush
 Sandalwood

Shrubs

Acacia acuaria
Acacia anthochaera
Acacia colletioides
Acacia erinacea
*Acacia hemiteles**
*Acacia ligustrina**
*Acacia merrallii**
Acacia sclerosperma ssp. *sclerosperma*
*Atriplex bunburyana**
*Dodonaea inaequifolia**
*Enchylaena tomentosa**
Eremophila forrestii ssp. *forrestii*
*Maireana brevifolia**
Melaleuca adnata
Olearia muelleri
Pimelea microcephala ssp. *microcephala*
*Rhagodia drummondii**
Rhagodia preissii ssp. *preissii*
Scaevola spinescens
Senna artemisioides ssp. *filifolia*
Senna charlesiana
*Tecticornia halocnemoides**
Tecticornia pergranulata ssp. *pergranulata**

Sand Prickly Wattle

Wait-a-while
 Spiny Wattle
 Tan Wattle

Merrall's Wattle
 Limestone Wattle
 Silver Saltbush

Barrier Saltbush, Ruby Saltbush
 Wilcox Bush
 Small Leaf Bluebush

Goldfields Daisy
 Shrubby Riceflower
 Lake Fringe Rhagodia

Currant Bush, Maroon Bush

Shrubby Samphire
 Blackseed Samphire

*Suitable for saline sites

Unit 4: Undulating country, long narrow valleys and rocky outcrops



Soil (a) Shallow soils over granite or gneiss

Trees

Acacia acuminata
Acacia tetragonophylla
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus kochii ssp. *plenissima*
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus salubris
Hakea recurva ssp. *recurva*
Hakea scoparia ssp. *scoparia*
Melaleuca atroviridis
Melaleuca eleuterostachya
Santalum acuminatum
Santalum spicatum

Jam, Mangard, Inland Jam (narrow leaf)
 Kurara
 Pixie Bush
 Oil Mallee
 York Gum
 Gimlet
 Djarnokmurd, Bag-needle Bush
 Broom Bush
 Quandong
 Sandalwood

Shrubs

Acacia andrewsii
Acacia coolgardiensis
Acacia erinacea
Acacia hemiteles
Acacia longiphyllodinea
Acacia ramulosa var. *ramulosa*
Allocasuarina campestris
Baeckea crispiflora var. *tenuoir*
Daviesia hakeoides ssp. *subnuda*
Dodonaea inaequifolia
Eremophila clarkei
Grevillea paniculata
Grevillea paradoxa
Melaleuca filifolia
Melaleuca fulgens ssp. *steadmanii*
Melaleuca hamata
Melaleuca marginata
Melaleuca radula
Verticordia chrysanthella

Spinifex Wattle
 Spiny Wattle
 Tan Wattle
 Long-leaved Wattle
 Horse Mulga
 Tamma, Tammar, Shrubby She-oak
 Turpentine Bush
 Bottlebrush Grevillea
 Wiry Honeymyrtle
 Broom Bush
 Graceful Honeymyrtle

Soil (b) Red, sandy loam over hardpan

Trees

Acacia acuminata
Allocasuarina acutivalvis ssp. *acutivalvis*
Eucalyptus kochii ssp. *plenissima*
Eucalyptus leptopoda ssp. *arctata*

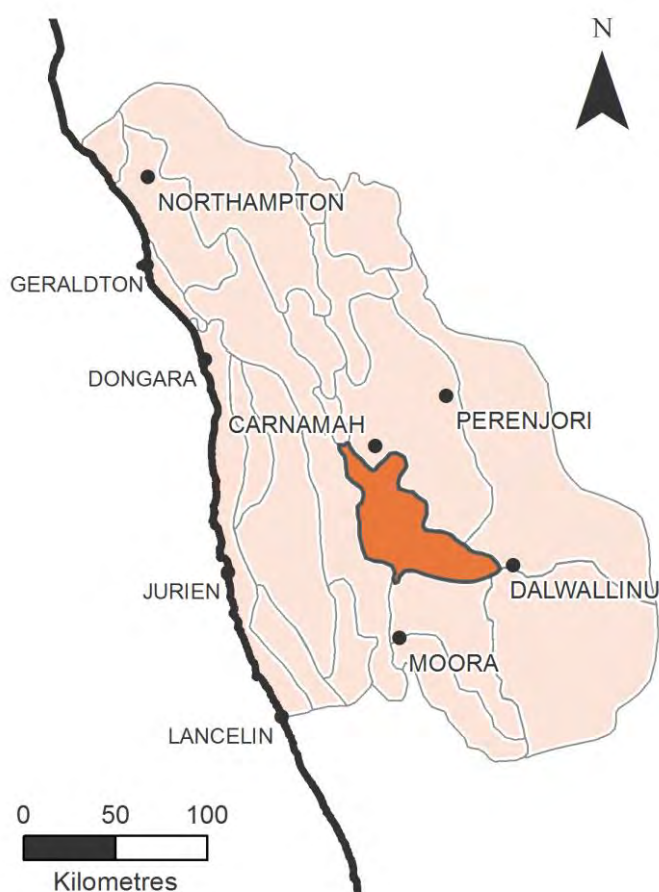
Jam, Mangard, Inland Jam (narrow leaf)
 Black Tammar
 Oil Mallee

Unit 4: Undulating country, long narrow valleys and rocky outcrops (contd)

Soil	(b) Red, sandy loam over hardpan (contd)	
Trees	<i>Eucalyptus loxophleba</i> ssp. <i>supralaevis</i>	
	<i>Eucalyptus salubris</i>	(only on soils derived from dolerites) Gimlet
	<i>Melaleuca atroviridis</i>	Broom Bush
	<i>Melaleuca eleuterostachya</i>	
	<i>Santalum acuminatum</i>	Quandong
Shrubs	<i>Acacia burkittii</i>	Sandhill Wattle
	<i>Acacia colletioides</i>	Wait-a-while
	<i>Acacia erinacea</i>	Spiny Wattle
	<i>Acacia hemiteles</i>	Tan Wattle
	<i>Acacia ligustrina</i>	
	<i>Acacia merrallii</i>	Merrall's Wattle
	<i>Acacia ramulosa</i> var. <i>ramulosa</i>	Horse Mulga
	<i>Eremophila clarkei</i>	Turpentine Bush
	<i>Eremophila forrestii</i> ssp. <i>forrestii</i>	(in north) Wilcox Bush
	<i>Exocarpos aphyllus</i>	Leafless Ballart
	<i>Melaleuca leiocarpa</i>	Pungent Honey Myrtle
	<i>Olearia muelleri</i>	Goldfields Daisy
	<i>Pimelea microcephala</i> ssp. <i>microcephala</i>	Shrubby Riceflower
	<i>Rhagodia drummondii</i>	Lake Fringe Rhagodia
	<i>Rhagodia preissii</i> ssp. <i>preissii</i>	
	<i>Scaevola spinescens</i>	Currant Bush, Maroon Bush

Soil	(c) Sand over gravel	
Trees	<i>Acacia acuminata</i>	Jam, Mangard, Inland Jam (narrow leaf)
	<i>Acacia anthochaera</i>	
	<i>Allocasuarina huegeliana</i>	Rock Sheoak, Rock Oak, Kwowl
	<i>Callitris arenaria</i>	Sandplain Cypress
	<i>Eucalyptus eudesmioides</i>	Malallie
	<i>Eucalyptus jucunda</i>	Yuna Mallee
	<i>Eucalyptus oldfieldii</i>	Oldfield's Mallee
	<i>Hakea francisiana</i>	Emu Tree, Pink Spike Hakea
Shrubs	<i>Acacia andrewsii</i>	
	<i>Acacia assimilis</i> ssp. <i>assimilis</i>	Wodjil
	<i>Acacia burkittii</i>	Sandhill Wattle
	<i>Acacia colletioides</i>	Wait-a-while
	<i>Acacia coolgardiensis</i>	Spinifex Wattle
	<i>Acacia longiphyllodinea</i>	Long-leaved Wattle
	<i>Acacia stereophylla</i> var. <i>stereophylla</i>	
	<i>Allocasuarina campestris</i>	Tamma, Tammar, Shrubby She-oak
	<i>Daviesia nudiflora</i> ssp. <i>nudiflora</i>	
	<i>Eremophila clarkei</i>	Turpentine Bush
	<i>Grevillea candelabroides</i>	
	<i>Grevillea obliquistigma</i> ssp. <i>obliquistigma</i>	
	<i>Grevillea paradoxa</i>	Bottlebrush Grevillea
	<i>Hakea invaginata</i>	
	<i>Hakea scoparia</i> ssp. <i>scoparia</i>	
	<i>Melaleuca calyptroides</i>	
	<i>Melaleuca conothamnoides</i>	Purple Pom Pom Myrtle
	<i>Melaleuca cordata</i>	Heart Leaf Honey Myrtle
	<i>Melaleuca eleuterostachya</i>	
	<i>Melaleuca nematophylla</i>	
	<i>Petrophile incurvata</i>	Wiry Honey-myrtle

MARCHAGEE



Location

The district lies mostly to the west of Coorow and Watheroo with a tongue extending south-eastwards towards Dalwallinu.

Topography

There are very extensive sandplains, often with linear sand ridges and some minor lateritic outcrops, elevated depressions and ephemeral lakes. Valley floors and lakes are common in the lower parts.

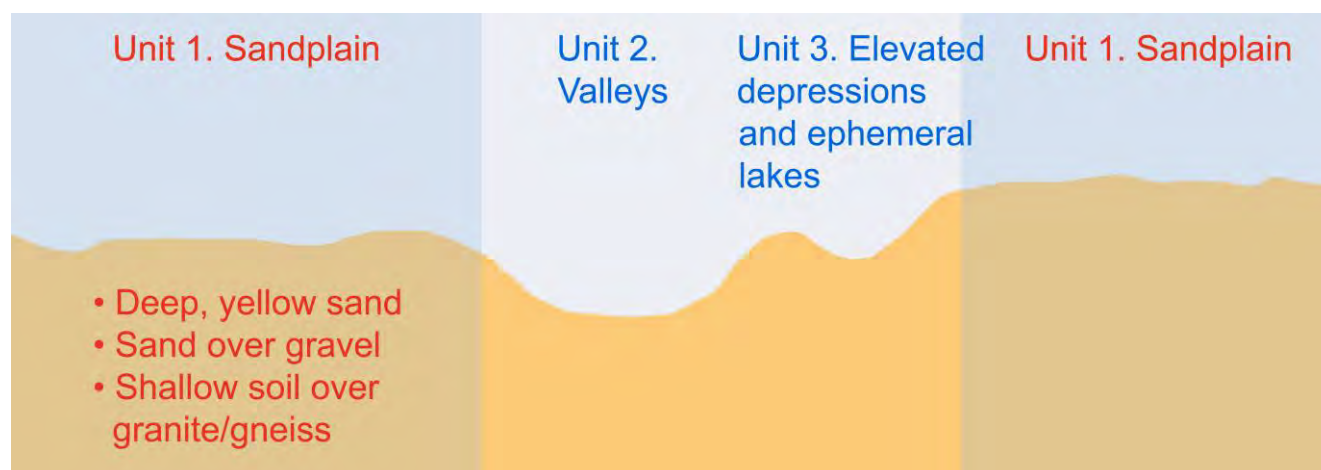
Soils

The dominant soils on the sandplain are deep, yellow sands (neutral in reaction) with limited areas of sand over gravel and/or rock. The valley soils are most commonly sand over red or yellow clay or occasionally red loams over hardpan. Salinity commonly occurs in the lower parts of the valleys.

Problems

- Wind erosion is common when the sandy surface soil is bared by cultivation or overgrazing - unit 1.
- Development of subsoil compaction due to cultivation machinery - unit 1.
- Waterlogging and salinity in lower parts of valleys - unit 2.

Unit 1: Sandplain



Soil (a) Deep, yellow sand

Trees

Allocasuarina acutivalvis ssp. *acutivalvis*
Banksia attenuata
Banksia burdettii
Banksia prionotes
Callitris arenaria
Eucalyptus horistes
Eucalyptus oldfieldii
Eucalyptus pyriformis
Eucalyptus tottiana
Santalum acuminatum
Xylomelum angustifolium

Black Tammar
 Slender Banksia
 Burdett's Banksia
 Acorn Banksia
 Sandplain Cypress
 Oil Mallee (Northern Rough Bark)
 Oldfield's Mallee
 Pear-fruited Mallee, Dowerin Rose
 Coastal Blackbutt
 Quandong
 Sandplain Woody Pear

Shrubs

Acacia acutaria
Acacia assimilis ssp. *assimilis*
Acacia blakelyi
Acacia coolgardiensis
Acacia multispicata
Acacia pulchella var. *glaberrima*
Allocasuarina campestris
Calothamnus quadrifidus ssp. *angustifolius*
Calothamnus sanguineus
Grevillea biformis ssp. *biformis*
Grevillea candelabroides
Grevillea leucopteris
Grevillea polybotrya
Hakea erecta
Hakea francisiana
Hakea platysperma
Hakea scoparia
Jacksonia floribunda
Melaleuca cordata
Petrophile shuttleworthiana

Sand Prickly Wattle
 Wodjil

 Spinifex Wattle

 Tamma, Tammar, Shrubby She-oak

 Silky-leaved Blood Flower, Pindak, Boolgalla

 White Plume Grevillea

 Emu Tree, Pink Spike Hakea
 Cricket Ball Hakea, Peach Hakea

 Holly Pea
 Heart Leaf Honey Myrtle

Soil (b) Sand over gravel

Trees

Acacia acuminata
Allocasuarina huegeliana
Banksia prionotes
Callitris arenaria
Eucalyptus accedens
Eucalyptus eudesmioides

Jam, Mangard, Inland Jam (narrow leaf)
 Rock Sheoak, Rock Oak, Kwool
 Acorn Banksia
 Sandplain Cypress
 Powderbark Wandoo
 Malallie

Unit 1: Sandplain (contd)

Soil (b) Sand over gravel (contd)

Trees

Eucalyptus leptopoda ssp. *arctata*
Eucalyptus oldfieldii

Oldfield's Mallee

Shrubs

Acacia anthochaera
Acacia assimilis ssp. *assimilis*
Acacia dilatata
Acacia leptospermoides ssp. *leptospermoides*
Allocasuarina campestris
Baeckea grandiflora
Daviesia divaricata ssp. *divaricata*
Grevillea candelabroides
Grevillea paradoxa
Hakea cygna ssp. *cygna*
Hakea scoparia ssp. *scoparia*
Melaleuca calyptroides
Melaleuca concreta
Melaleuca conothamnoides
Melaleuca cordata
Petrophile incurvata
Verticordia grandis

Wodjil

Tamma, Tammar, Shrubby She-oak
 Large-flowered Baeckea
 Marno

Bottlebrush Grevillea
 Swan Fruit Hakea

Purple Pom Pom Myrtle
 Heart Leaf Honey Myrtle

Scarlet Featherflower

Soil (c) Shallow soil over granite or gneiss

Trees

Acacia acuminata
Acacia tetragonophylla
Allocasuarina acutivalvis ssp. *acutivalvis*
Allocasuarina huegeliana
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus loxophleba ssp. *loxophleba*
Santalum acuminatum
Santalum spicatum

Jam, Mangard, Inland Jam (narrow leaf)
 Kurara
 Black Tammar
 Rock Sheoak, Rock Oak, Kwool
 Pixie Bush
 York Gum
 Quandong
 Sandalwood

Shrubs

Acacia acuarria
Acacia erinacea
Acacia longiphyllodinea
Acacia microbotrya
Acacia restiacea
Allocasuarina campestris
Baeckea crispiflora var. *tenuoir*
Calothamnus sanguineus
Grevillea paradoxa
Melaleuca concreta
Melaleuca eleuterostachya
Melaleuca fulgens ssp. *steadmanii*
Melaleuca lateriflora
Melaleuca nematophylla
Melaleuca radula
Melaleuca stereophloia

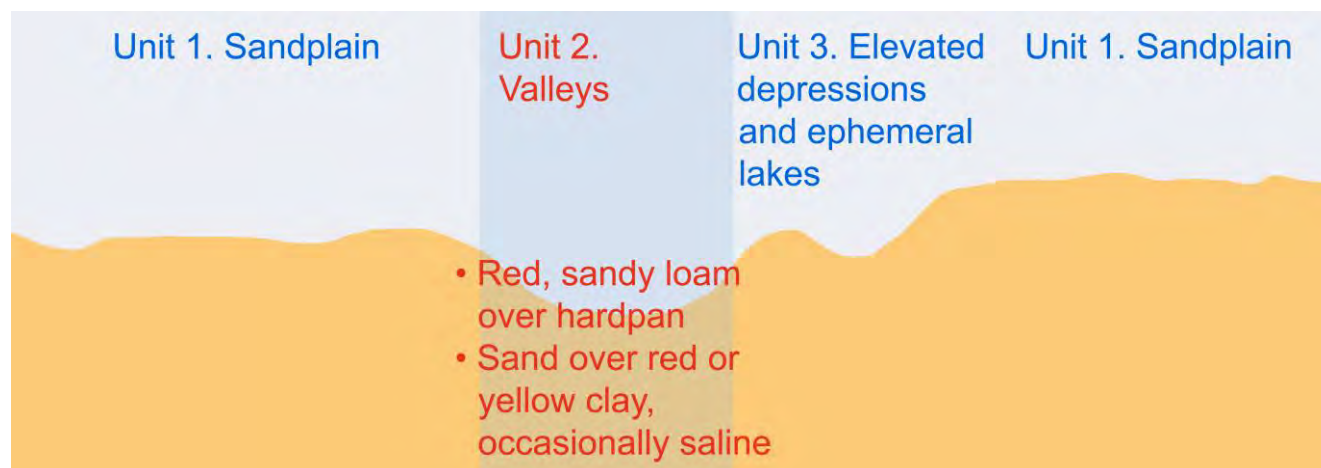
Sand Prickly Wattle
 Spiny Wattle
 Long-leaved Wattle
 Manna Wattle

Tamma, Tammar, Shrubby She-oak

Silky-leaved Blood Flower, Pindak, Boolgalla
 Bottlebrush Grevillea

Gorada
 Wiry Honey-myrtle
 Graceful Honeymyrtle

Unit 2: Valleys



Soil (a) Red, sandy loam over hardpan

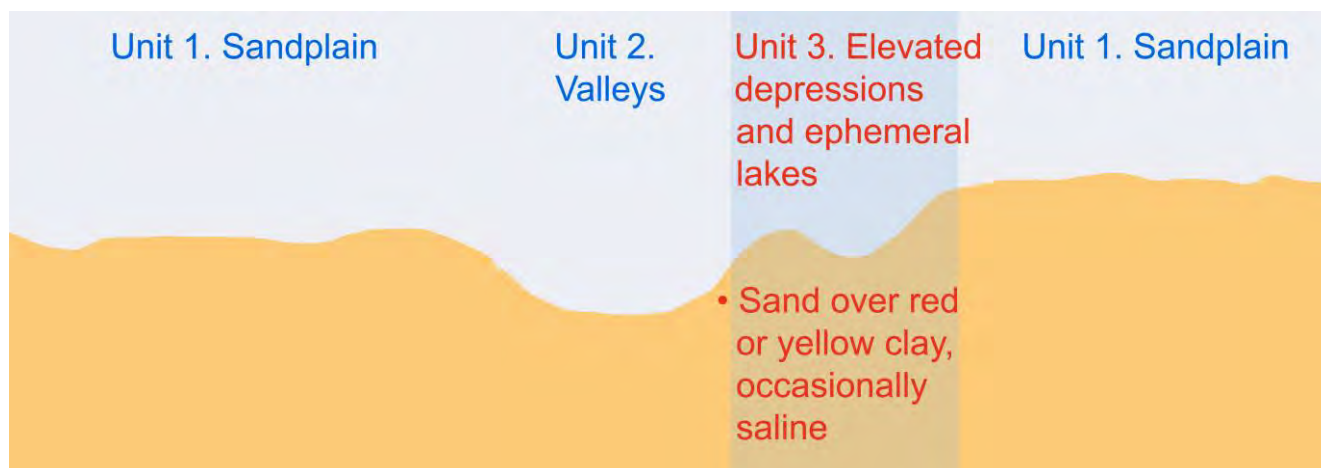
Trees	<i>Acacia acuminata</i> <i>Acacia anthochaera</i> <i>Acacia daphnifolia</i> <i>Acacia saligna</i> ssp. <i>lindleyi</i> <i>Acacia tetragonophylla</i> <i>Casuarina obesa</i> * <i>Eucalyptus camaldulensis</i> * <i>Eucalyptus loxophleba</i> ssp. <i>supralaevis</i> <i>Hakea recurva</i> ssp. <i>recurva</i> <i>Melaleuca viminea</i> ssp. <i>viminea</i> <i>Santalum acuminatum</i> <i>Santalum spicatum</i>	Jam, Mangard, Inland Jam (narrow leaf) Kurara Swamp Sheoak River Red Gum, River Gum Djarnokmurd, Bag-needle Bush Mohan Quandong Sandalwood
Shrubs	<i>Acacia aestivalis</i> <i>Acacia andrewsii</i> <i>Acacia colletioides</i> <i>Eremophila decipiens</i> ssp. <i>decipiens</i> * <i>Melaleuca adnata</i> <i>Melaleuca hamata</i> <i>Rhagodia drummondii</i> * <i>Rhagodia preissii</i> ssp. <i>preissii</i> * <i>Scaevola spinescens</i>	Wait-a-while Slender Fuchsia Broom Bush Lake Fringe Rhagodia Currant Bush, Maroon Bush

Soil (b) Sand over red or yellow clay, occasionally saline

Trees	<i>Acacia acuminata</i> <i>Eucalyptus camaldulensis</i> * <i>Eucalyptus loxophleba</i> ssp. <i>supralaevis</i> * <i>Eucalyptus myriadena</i> ssp. <i>myriadena</i> * <i>Hakea preissii</i> <i>Melaleuca eleuterostachya</i>	Jam, Mangard, Inland Jam (narrow leaf) River Red Gum, River Gum Needle Tree, Needlebush, Dandjin, Tanjinn
Shrubs	<i>Acacia acuaria</i> <i>Eremophila decipiens</i> ssp. <i>decipiens</i> * <i>Leptospermum erubescens</i> <i>Melaleuca adnata</i> <i>Melaleuca atroviridis</i> <i>Melaleuca lateriflora</i> * <i>Melaleuca stereophloia</i> <i>Rhagodia drummondii</i> *	Sand Prickly Wattle Slender Fuchsia Roadside Teatree, Pink Teatree Broom Bush Gorada Lake Fringe Rhagodia

*Suitable for saline sites

Unit 3: Elevated depressions and ephemeral lakes



Soil Sand over red or yellow clay, occasionally saline

Trees

Acacia acuminata
Acacia anthochaera
Acacia daphnifolia
Acacia microbotrya
Acacia tetragonophylla
Casuarina obesa
*Eucalyptus camaldulensis**
Eucalyptus pyriformis
Eucalyptus rudis ssp. *rudis*
Eucalyptus salmonophloia
Eucalyptus salubris
Hakea preissii
Melaleuca atroviridis
Melaleuca eleuterostachya

Jam, Mangard, Inland Jam (narrow leaf)

 Manna Wattle
 Kurara
 Swamp Sheoak
 River Red Gum, River Gum
 Pear-fruited Mallee, Dowerin Rose
 Flooded Gum, Moitch, Kulurda
 Salmon Gum, Wurak
 Gimlet
 Needle Tree, Needlebush, Dandjin, Tanjinn
 Broom Bush

Shrubs

Acacia acuarria
Acacia aestivalis
Acacia colletioides
Acacia leptospermoides ssp. *leptospermoides*
Calytrix flavescens
Chamelaucium uncinatum
Eremophila decipiens ssp. *decipiens**
*Maireana brevifolia**
*Melaleuca hamulosa**
*Melaleuca lateriflora**
*Melaleuca leptospermoides**
Melaleuca stereophloia
*Rhagodia drummondii**
Scholtzia laxiflora
Scholtzia parviflora
Triodia danthonioides
Verticordia chrysanthella

Sand Prickly Wattle

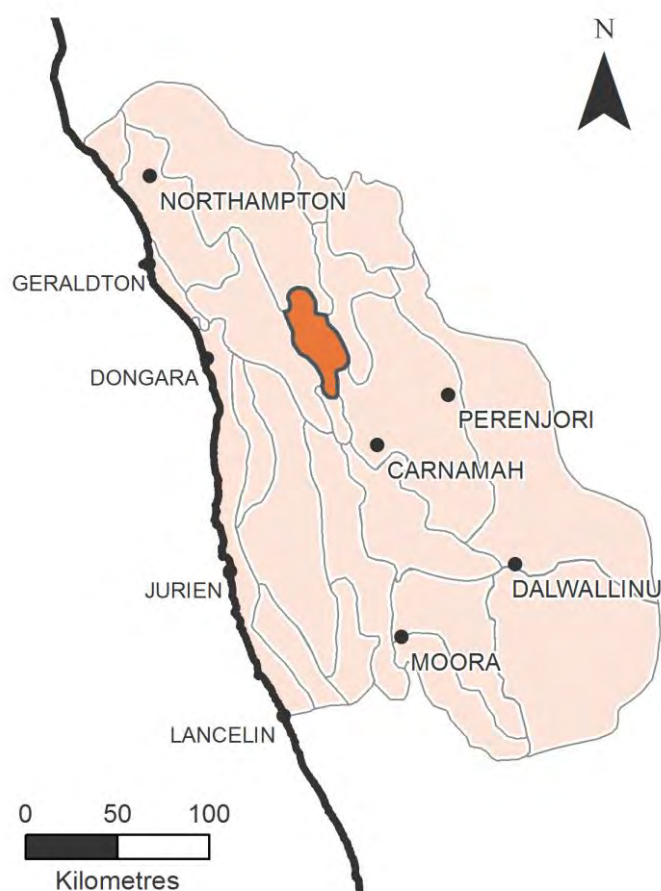
 Wait-a-while

 Summer Starflower
 Geraldton Wax
 Slender Fuchsia
 Mallee Myrtle, Mallee Honey-myrtle
 Creekline Honey Myrtle
 Gorada

Lake Fringe Rhagodia

*Suitable for saline sites

MINGENEW



Location

This district lies in the headwaters of the Irwin River with the town of Mingenew at the centre of its western boundary.

Topography

This complex district occupies dissected, gently undulating country in the headwaters of the Irwin River where the river has excavated deeply into the readily erodible Permian sediments (shales and limestones). The district is bounded by scarps above which the old lateritic plateau of adjacent districts is preserved.

Soils

The soils of the breakaways are mainly gravel at the surface with massive ironstone exposed and are not normally cleared. The gently inclined slopes have red and brown alkaline clays, which are often saline, and small areas of crabhole (gilgai) country. The small hills have shallow soils over sandstone and alluvial plains red sandy loam over clay and red and brown alkaline clays. The low ridges have sand over gravel and the elevated, broad, open depressions have sand over red clay. The sandplains are made up of deep, pale yellow sand.

Problems

- Water erosion, both sheet and gully, is serious on the sloping country - units 1 and 3.
- Soil salinity, particularly in the northern half of the system, is commonplace - units 1 and 3.
- Wind erosion can occur on the sandy soils if the surface is bared by cultivation or overgrazing - unit 6.

Unit 1: Gently inclined slopes



Soil (a) Red and brown alkaline clay, often saline

Trees

<i>Acacia acuminata</i>	Jam, Mangard, Inland Jam (narrow leaf)
<i>Acacia daphnifolia</i>	
<i>Acacia ligustrina</i>	
<i>Acacia saligna</i> ssp. <i>lindleyi</i>	
<i>Acacia tetragonophylla</i>	Kurara
<i>Allocasuarina acutivalvis</i> ssp. <i>acutivalvis</i>	Black Tammar
<i>Eremophila oldfieldii</i> ssp. <i>oldfieldii</i>	Pixie Bush
<i>Eucalyptus arachnaea</i> ssp. <i>arachnaea</i>	Black-stemmed Mallee
<i>Eucalyptus camaldulensis</i> *	River Red Gum, River Gum
<i>Eucalyptus flocktoniae</i>	Merrit
<i>Eucalyptus loxophleba</i> ssp. <i>loxophleba</i> *	York Gum
<i>Eucalyptus loxophleba</i> ssp. <i>supralaevis</i> *	
<i>Eucalyptus salomonophloia</i>	Salmon Gum, Wurak
<i>Hakea preissii</i> *	Needle Tree, Needlebush, Dandjin, Tanjinn
<i>Hakea recurva</i> ssp. <i>recurva</i>	Djarnokmurd, Bag-needle Bush
<i>Melaleuca eleuterostachya</i>	
<i>Santalum acuminatum</i>	Quandong

Shrubs

<i>Acacia acuaria</i> *	Sand Prickly Wattle
<i>Acacia aestivalis</i>	
<i>Acacia colletioides</i>	Wait-a-while
<i>Acacia erinacea</i>	Spiny Wattle
<i>Acacia rostellifera</i>	Summer-scented Wattle, Black Wattle
<i>Dodonaea inaequifolia</i>	
<i>Enchylaena tomentosa</i> *	Barrier Saltbush, Ruby Saltbush
<i>Maireana brevifolia</i> *	Small Leaf Bluebush
<i>Maireana pyramidata</i> *	Sago Bush
<i>Melaleuca adnata</i>	
<i>Melaleuca concreta</i> *	
<i>Melaleuca stereophloia</i>	
<i>Pimelea microcephala</i> ssp. <i>microcephala</i>	Shrubby Riceflower
<i>Rhagodia drummondii</i>	Lake Fringe Rhagodia
<i>Rhagodia preissii</i> ssp. <i>obovata</i>	
<i>Senna charlesiana</i>	

*Suitable for saline sites

Unit 1: Gently inclined slopes (contd)

Soil (b) Crabholes (gilgai)

Trees

Acacia acuminata
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus myriadena
Eucalyptus salmonophloia
Hakea recurva ssp. *recurva*
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)
 York Gum

Salmon Gum, Wurak
 Djarnokmurd, Bag-needle Bush
 Quandong

Shrubs

Acacia acuaria
Acacia aestivalis
Acacia andrewsii
Acacia anthochaera
Acacia merrallii
*Enchylaena tomentosa**
Maireana brevifolia
Maireana pyramidata
Melaleuca adnata
Melaleuca stereophloia
Pimelea microcephala ssp. *microcephala*
*Rhagodia drummondii**
Rhagodia preissii ssp. *obovata*
Scaevola spinescens
Senna artemisioides ssp. *filifolia*
Senna charlesiana

Sand Prickly Wattle

Merrall's Wattle
 Barrier Saltbush, Ruby Saltbush
 Small Leaf Bluebush
 Sago Bush

Shrubby Riceflower
 Lake Fringe Rhagodia

Currant Bush, Maroon Bush

*Suitable for saline sites

Unit 2: Small low hills (sandstone)



Soil Shallow soil over sandstone

Trees

Acacia acuminata
Acacia tetragonophylla
Allocasuarina acutivalvis ssp. *acutivalvis*
Allocasuarina huegeliana
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus oldfieldii

Jam, Mangard, Inland Jam (narrow leaf)
 Kurara
 Black Tammar
 Rock Sheoak, Rock Oak, Kwool
 York Gum
 Oldfield's Mallee

Shrubs

Acacia alata var. *biglandulosa*
Acacia andrewsii
Acacia ericksoniae
Acacia hemiteles
Acacia leptospermoides ssp. *leptospermoides*
Acacia restiacea
Acacia rostelifera
Allocasuarina campestris
Astroloma serratifolium
Baeckea crispiflora var. *tenuoir*
Banksia fraseri var. *fraseri*
Daviesia hakeoides ssp. *hakeoides*
Hakea scoparia ssp. *scoparia*
Melaleuca concreta
Melaleuca conothamnoides
Melaleuca fulgens ssp. *steedmanii*
Melaleuca nematophylla
Melaleuca radula
Melaleuca sclerophylla
Petrophile conifera ssp. *conifera*

Tan Wattle

Summer-scented Wattle, Black Wattle
 Tamma, Tammar, Shrubby She-oak
 Kondrung

Purple Pom Pom Myrtle

Wiry Honey-myrtle
 Graceful Honeymyrtle

Unit 3: Alluvial plains



Soil (a) Red, sandy loam over clay

Trees

Acacia acuminata
Acacia aestivalis
Acacia burkittii
Acacia daphnifolia
Acacia ligustrina
Acacia microbotrya
Acacia saligna ssp. *lindleyi*
Acacia tetragonophylla
Allocasuarina campestris
Casuarina obesa
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus brachycorys
Eucalyptus loxophleba ssp. *supralaevis*
Eucalyptus rudis
Eucalyptus salmonophloia
Eucalyptus subangusta ssp. *subangusta*
Hakea recurva ssp. *recurva*
Melaleuca eleuterostachya

Jam, Mangard, Inland Jam (narrow leaf)

Sandhill Wattle

Manna Wattle

Kurara
 Tamma, Tammar, Shrubby She-oak
 Swamp Sheoak
 Pixie Bush
 Cowcowing Mallee

Flooded Gum, Moitch, Kulurda
 Salmon Gum, Wurak

Djarnokmurd, Bag-needle Bush

Shrubs

Acacia acuaria
Acacia colletioides
Acacia erinacea
Acacia rostellifera
Enchylaena tomentosa
Grevillea paniculata
Hakea preissii
Hakea recurva ssp. *recurva*
Maireana brevifolia
Melaleuca acuminata
Melaleuca stereophloia
Pimelea microcephala ssp. *microcephala*
Rhagodia drummondii
Rhagodia preissii ssp. *obovata*
Senna charlesiana

Sand Prickly Wattle
 Wait-a-while
 Spiny Wattle
 Summer-scented Wattle, Black Wattle
 Barrier Saltbush, Ruby Saltbush

Needle Tree, Needlebush, Dandjin, Tanjinn
 Djarnokmurd, Bag-needle Bush
 Small Leaf Bluebush

Shrubby Riceflower
 Lake Fringe Rhagodia

Unit 3: Alluvial plains (contd)

Soil (b) Red and brown alkaline clays

Trees

Acacia acuminata
Acacia daphnifolia
Acacia saligna ssp. *lindleyi*
Acacia tetragonophylla
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus brachycorys
Eucalyptus camaldulensis
Eucalyptus ebbanoensis
Eucalyptus flocktoniae
Eucalyptus loxophleba ssp. *supraevis*
Eucalyptus salmophloia
Hakea preissii
Hakea recurva ssp. *recurva*

Jam, Mangard, Inland Jam (narrow leaf)

Kurara
 Pixie Bush
 Cowcowing Mallee
 River Red Gum, River Gum
 Sandplain Mallee
 Merrit

Salmon Gum, Wurak
 Needle Tree, Needlebush, Dandjin, Tanjinn
 Djarnokmurd, Bag-needle Bush

Shrubs

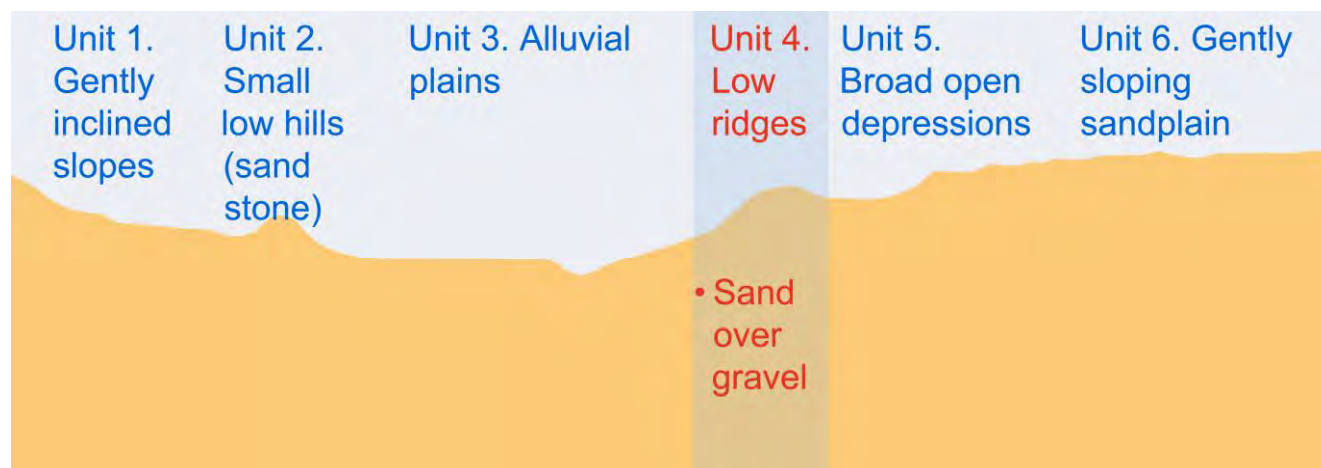
Acacia aestivalis
Acacia colletioides
Acacia erinacea
Acacia rostellifera
Enchylaena tomentosa
Maireana brevifolia
Maireana pyramidata
Melaleuca stereophloia
Pimelea microcephala ssp. *microcephala*
Rhagodia drummondii
Rhagodia preissii ssp. *obovata*
Scaevola spinescens
Scholtzia parviflora
Senna charlesiana

Wait-a-while
 Spiny Wattle
 Summer-scented Wattle, Black Wattle
 Barrier Saltbush, Ruby Saltbush
 Small Leaf Bluebush
 Sago Bush

Shrubby Riceflower
 Lake Fringe Rhagodia

Currant Bush, Maroon Bush

Unit 4: Low ridges



Soil Sand over gravel

Trees

Acacia acuminata
Acacia longiphyllodinea
Acacia microbotrya
Allocasuarina huegeliana
Banksia prionotes
Eucalyptus arachnaea ssp. *arachnaea*
Eucalyptus eudesmioides
Eucalyptus flocktoniae ssp. *flocktoniae*
Eucalyptus leptopoda ssp. *arctata*
Eucalyptus pyriformis
Eucalyptus wandoo ssp. *pulverea*
Melaleuca eleuterostachya

Jam, Mangard, Inland Jam (narrow leaf)
 Long-leaved Wattle
 Manna Wattle
 Rock Sheoak, Rock Oak, Kwool
 Acorn Banksia
 Black-stemmed Mallee
 Malallie
 Merrit

Pear-fruited Mallee, Dowerin Rose

Shrubs

Acacia alata var. *biglandulosa*
Acacia andrewsii
Acacia blakelyi
Acacia ericksoniae
Acacia restiacea
Allocasuarina campestris
Banksia sessilis var. *flabellifolia*
Banksia sphaerocarpa var. *sphaerocarpa*
Calothamnus quadrifidus ssp. *angustifolius*
Daviesia divaricata ssp. *divaricata*
Daviesia hakeoides ssp. *hakeoides*
Grevillea candelabroides
Grevillea paradoxa
Grevillea petrophiloides ssp. *petrophiloides*
Hakea auriculata
Hakea orthorrhyncha var. *filiformis*
Hakea scoparia ssp. *scoparia*
Melaleuca aspalathoides
Melaleuca fulgens ssp. *steedmanii*
Melaleuca nematophylla
Melaleuca radula
Melaleuca stereophloia

Tamma, Tammar, Shrubby She-oak

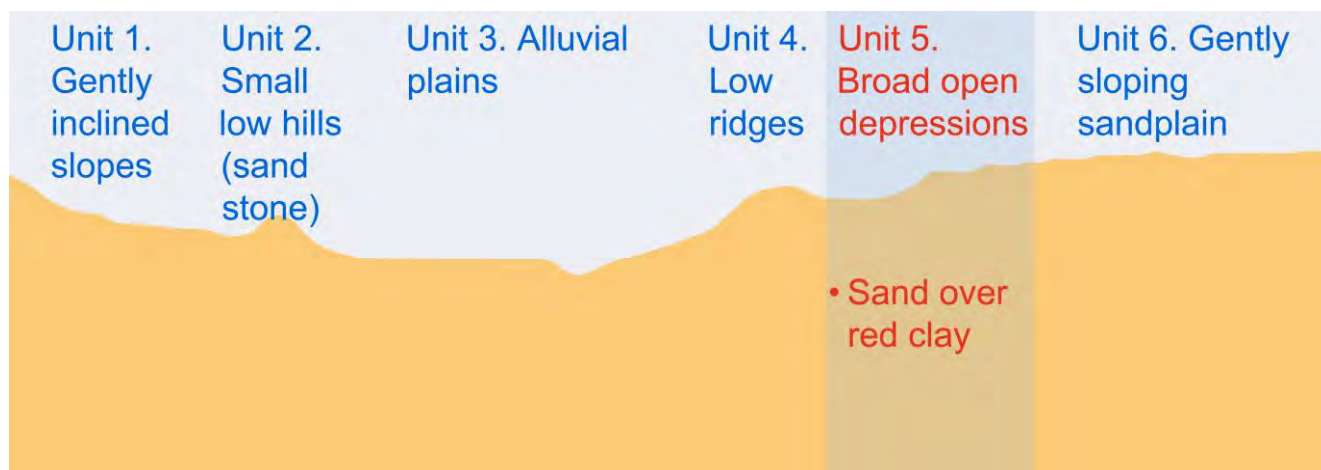
Fox Banksia

Marno

Bottlebrush Grevillea
 Pink Pokers

Wiry Honey-myrtle
 Graceful Honeymyrtle

Unit 5: Broad open depressions



Soil Sand over clay

Trees

Acacia acuminata
Acacia aestivalis
Acacia daphnifolia
Acacia ligustrina
Acacia microbotrya
Acacia saligna ssp. *lindleyi*
Acacia tetragonophylla
Casuarina obesa
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus brachycorys
Eucalyptus ebbanoensis ssp. *ebbanoensis*
Eucalyptus flocktoniae ssp. *flocktoniae*
Eucalyptus loxophleba ssp. *supralaevis*
Eucalyptus obtusiflora ssp. *obtusiflora*
Eucalyptus salmonophloia
Melaleuca eleuterostachya
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)

Manna Wattle

Kurara
 Swamp Sheoak
 Pixie Bush
 Cowcowing Mallee
 Sandplain Mallee
 Merrit

Dongara Mallee
 Salmon Gum, Wurak

Quandong

Sand Prickly Wattle

Wait-a-while
 Spiny Wattle

Tan Wattle
 Merrall's Wattle
 Summer-scented Wattle, Black Wattle
 Honey Bush
 Needle Tree, Needlebush, Dandjin, Tanjinn

Shrubby Riceflower
 Lake Fringe Rhagodia

Currant Bush, Maroon Bush

Shrubs

Acacia acuarina
Acacia blakelyi
Acacia colletioides
Acacia erinacea
Acacia fragilis
Acacia hemiteles
Acacia merrallii
Acacia rostellifera
Hakea lissocarpa
Hakea preissii
Melaleuca acuminata
Melaleuca adnata
Melaleuca stereophloia
Pimelea microcephala ssp. *microcephala*
Rhagodia drummondii
Rhagodia preissii ssp. *obovata*
Scaevola spinescens
Scholtzia parviflora

Unit 6: Gently sloping sandplain



Soil Deep, pale yellow sand

Trees

Banksia attenuata
Banksia prionotes
Callitris arenaria
Eucalyptus ebbanoensis ssp. *ebbanoensis*
Eucalyptus eudesmioides
Eucalyptus horistes
Eucalyptus jucunda
Eucalyptus leptopoda ssp. *arctata*
Eucalyptus obtusiflora ssp. *obtusiflora*
Eucalyptus oldfieldii
Eucalyptus pyriformis
Eucalyptus subangusta ssp. *subangusta*
Hakea francisiana

Slender Banksia
 Acorn Banksia
 Sandplain Cypress
 Sandplain Mallee
 Malallie
 Oil Mallee (Northern Rough Bark)
 Yuna Mallee

Dongara Mallee
 Oldfield's Mallee
 Pear-fruited Mallee, Dowerin Rose

Emu Tree, Pink Spike Hakea

Shrubs

Acacia assimilis ssp. *assimilis*
Acacia blakelyi
Acacia cavealis
Acacia comans
Acacia rostellifera
Acacia scirpifolia
Acacia stereophylla var. *stereophylla*
Allocasuarina campestris
Banksia sceptrum
Banksia sessilis var. *flabellifolia*
Calothamnus quadrifidus ssp. *angustifolius*
Daviesia podophylla
Grevillea candelabroides
Grevillea petrophiloides ssp. *petrophiloides*
Grevillea polybotrya
Hakea costata
Hakea lissocarpa
Hakea prostrata
Hakea scoparia ssp. *scoparia*
Melaleuca aspalathoides
Melaleuca cordata

Wodjil

Summer-scented Wattle, Black Wattle

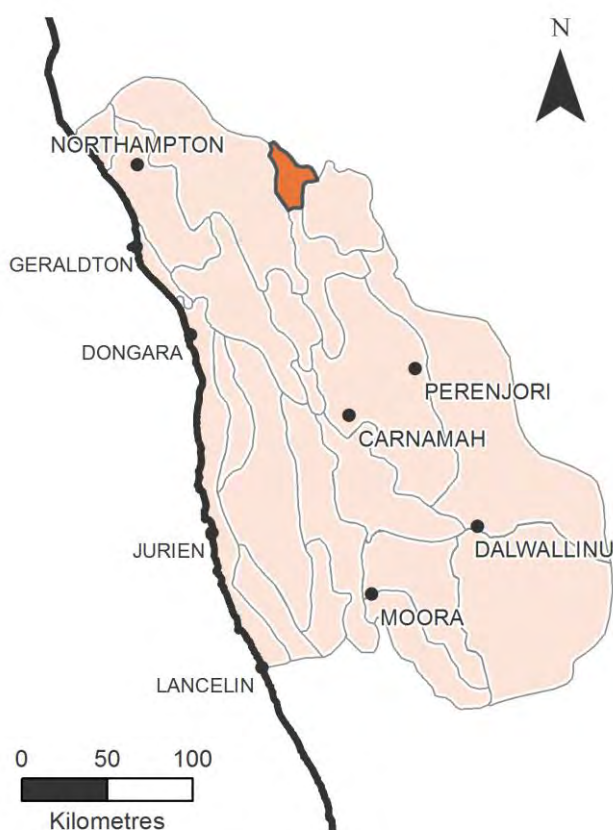
Tamma, Tammar, Shrubby She-oak
 Sceptre Banksia

Pink Pokers

Ribbed Hakea
 Honey Bush
 Harsh Hakea

Heart Leaf Honey Myrtle

MULLEWA



Location

Mullewa township lies in the south of this fairly small district. Its western boundary is with Yuna district and its eastern with Pindar.

Topography

In the west there are extensive areas of gently undulating sandplain with numerous dune ridges in places and smaller areas of gently inclined plains. In the east there are extensive areas of undulating rises and low hills with rock outcrops and smaller areas of gently inclined plains.

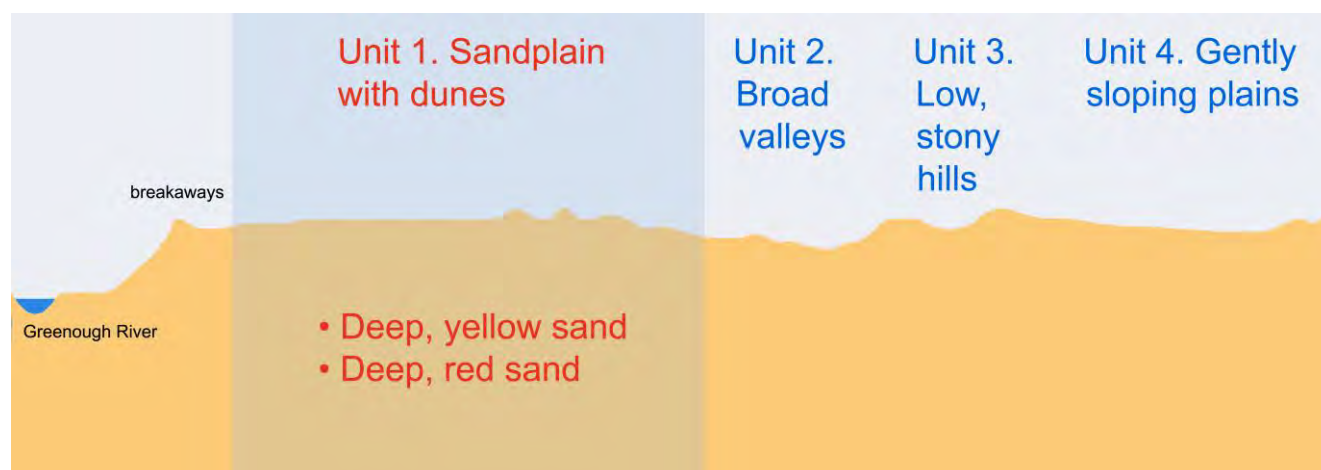
Soils

Laterite-capped breakaways over sandstone and shale occur close to the Greenough River. These areas are rarely cleared. The sandplain to the east of the Greenough River is mainly deep, yellow sand with some areas of red sand. The valley floors are red loams, with hardpan often present. The drainage lines are frequently salt-affected. Shallow soils on granite or gneiss occur on the low stony hills. Shallow, stony red sandy loams over clay, often with hardpan, predominate on the gently sloping plains further east.

Problems

- Wind erosion occurs on the deep, sandy soils - unit 1.
- Salinity development is common on the valley floors - unit 2.

Unit 1: Sandplain with dunes



Soil (a) Deep, yellow sand

Trees

Acacia scirpifolia
Acacia stereophylla var. *stereophylla*
Banksia attenuata
Banksia benthamiana
Banksia prionotes
Eucalyptus eudesmioides
Eucalyptus horistes
Eucalyptus jucunda
Eucalyptus leptopoda ssp. *arctata*
Eucalyptus oldfieldii

Slender Banksia

Acorn Banksia
 Malallie
 Oil Mallee (Northern Rough Bark)
 Yuna Mallee

Oldfield's Mallee

Shrubs

Acacia assimilis ssp. *assimilis*
Acacia blakelyi
Acacia burkittii
Acacia coolgardiensis
Allocasuarina campestris
Calothamnus sanguineus
Grevillea eriostachya
Grevillea obliquistigma ssp. *obliquistigma*
Hakea invaginata
Melaleuca cordata
Melaleuca depressa

Wodjil

Sandhill Wattle
 Spinifex Wattle
 Tamma, Tammar, Shrubby She-oak
 Silky-leaved Blood Flower, Pindak, Boolgalla
 Flame Grevillea

Heart Leaf Honey Myrtle

Soil (b) Deep, red sand

Trees

Acacia acuminata
Acacia daphnifolia
Acacia tetragonophylla
Eucalyptus camaldulensis
Eucalyptus horistes
Eucalyptus kochii ssp. *borealis*
Eucalyptus loxophleba ssp. *supralaevis*
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)

Kurara
 River Red Gum, River Gum
 Oil Mallee (Northern Rough Bark)
 Oil Mallee

Quandong

Shrubs

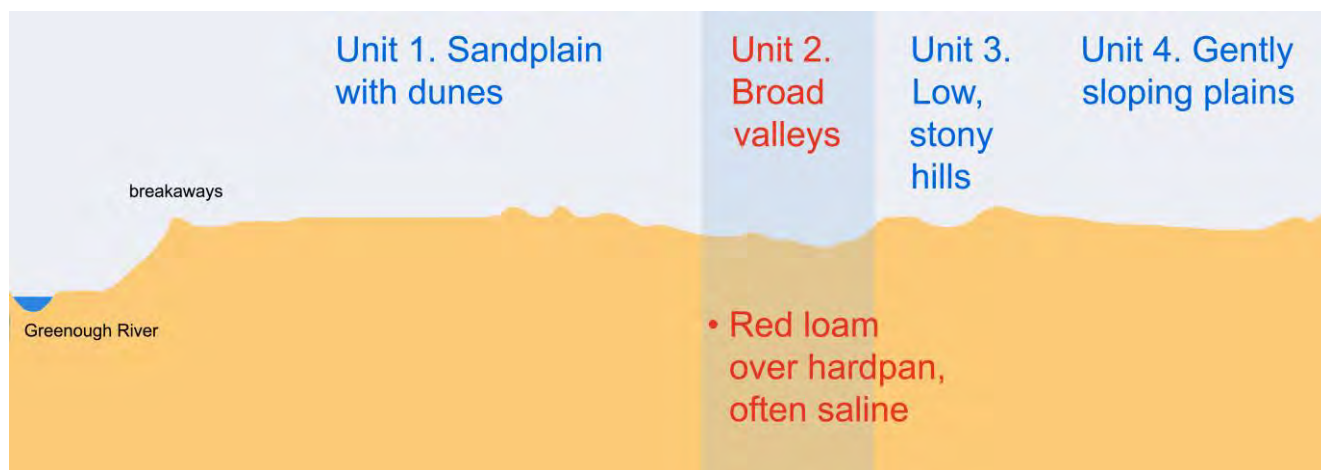
Acacia acuaria
Acacia coolgardiensis
Acacia effusifolia
Eremophila forrestii ssp. *forrestii*
Grevillea obliquistigma ssp. *obliquistigma*
Rhagodia drummondii

Sand Prickly Wattle
 Spinifex Wattle

Wilcox Bush

Lake Fringe Rhagodia

Unit 2: Broad valleys



Soil Red loam over hardpan, often saline

Trees

Acacia acuminata
Acacia anthochaera
Acacia burkittii
Acacia daphnifolia
Acacia ligustrina
*Acacia tetragonophylla**
Allocasuarina acutivalvis ssp. *acutivalvis*
Eremophila oldfieldii ssp. *oldfieldii*
*Eucalyptus brachycorys**
*Eucalyptus camaldulensis**
Eucalyptus loxophleba ssp. *supralaevis**
Eucalyptus oldfieldii
Hakea recurva ssp. *recurva*

Jam, Mangard, Inland Jam (narrow leaf)

Sandhill Wattle

Kurara
 Black Tammar
 Pixie Bush
 Cowcowing Mallee
 River Red Gum, River Gum

Oldfield's Mallee
 Djarnokmurd, Bag-needle Bush

Shrubs

Acacia acuarria
Acacia erinacea
Dodonaea inaequifolia
*Enchylaena tomentosa**
Eremophila clarkei
*Maireana brevifolia**
Melaleuca adnata
*Melaleuca hamata**
Olearia muelleri
*Rhagodia drummondii**
Scaevola spinescens
Senna artemisioides ssp. *filifolia*
Senna charlesiana
Senna pleurocarpa var. *pleurocarpa*

Sand Prickly Wattle
 Spiny Wattle

Barrier Saltbush
 Turpentine Bush
 Small Leaf Bluebush

Goldfields Daisy
 Lake Fringe Rhagodia
 Currant Bush, Maroon Bush

*Suitable for saline sites

Unit 3: Low stony hills



Soil Shallow soil over granite or gneiss

Trees

Acacia acuminata
Acacia tetragonophylla
Allocasuarina acutivalvis ssp. *prinsepiana*
Allocasuarina campestris
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus kochii ssp. *plenissima*
Eucalyptus loxophleba ssp. *loxophleba*
Hakea recurva ssp. *recurva*
Melaleuca eleuterostachya
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)
 Kurara

Tamma, Tammar, Shrubby She-oak
 Pixie Bush
 Oil Mallee
 York Gum
 Djarnokmurd, Bag-needle Bush

Quandong

Shrubs

Acacia acutaria
Acacia andrewsii
Acacia erinacea
Acacia longiphylloidea
Acacia restiacea
Acacia rostelifera
Allocasuarina campestris
Daviesia hakeoides ssp. *subnuda*
Dodonaea inaequifolia
Eremophila clarkei
Grevillea obliquistigma ssp. *obliquistigma*
Grevillea paradoxa
Grevillea petrophiloides ssp. *petrophiloides*
Melaleuca cordata
Melaleuca filifolia
Melaleuca fulgens ssp. *steedmanii*
Melaleuca nematophylla
Melaleuca radula
Melaleuca stereophloia
Rhagodia drummondii
Senna artemisioides ssp. *filifolia*
Senna charlesiana

Sand Prickly Wattle

Spiny Wattle
 Long-leaved Wattle

Summer-scented Wattle, Black Wattle
 Tamma, Tammar, Shrubby She-oak

Turpentine Bush

Bottlebrush Grevillea
 Pink Pokers
 Heart Leaf Honey Myrtle
 Wiry Honeymyrtle

Wiry Honey-myrtle
 Graceful Honeymyrtle

Lake Fringe Rhagodia

Unit 4: Gently sloping plains



Soil Red, sandy loam over clay; shallow and stony, often with hardpan

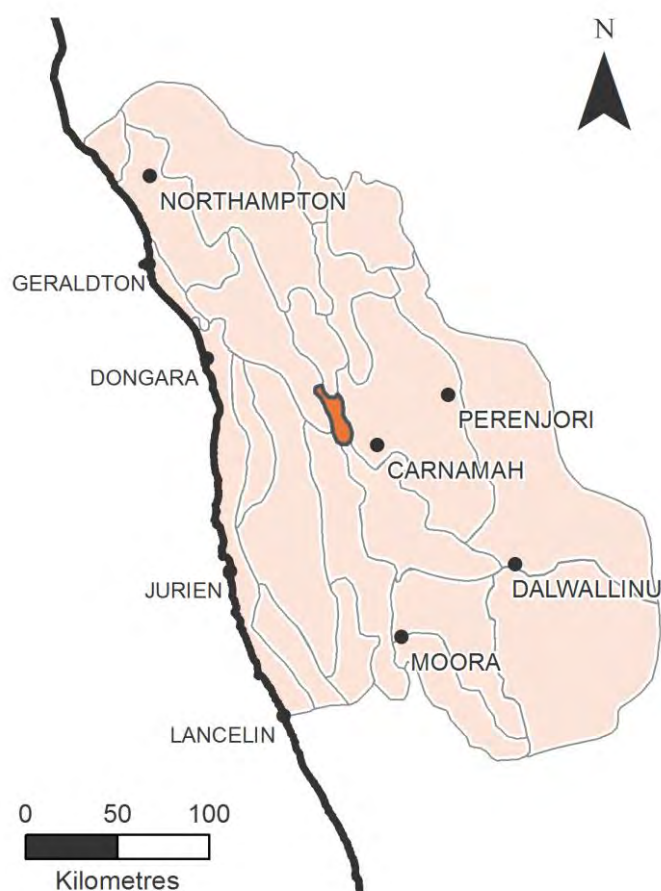
Trees

<i>Acacia acuminata</i>	Jam, Mangard, Inland Jam (narrow leaf)
<i>Acacia anthochaera</i>	
<i>Acacia burkittii</i>	Sandhill Wattle
<i>Acacia daphnifolia</i>	
<i>Acacia tetragonophylla</i>	Kurara
<i>Allocasuarina acutivalvis</i> ssp. <i>acutivalvis</i>	Black Tammar
<i>Eremophila oldfieldii</i> ssp. <i>oldfieldii</i>	Pixie Bush
<i>Eucalyptus kochii</i> ssp. <i>borealis</i>	Oil Mallee
<i>Eucalyptus loxophleba</i> ssp. <i>supralaevis</i>	
<i>Hakea invaginata</i>	
<i>Hakea recurva</i> ssp. <i>recurva</i>	Djamokmurd, Bag-needle Bush
<i>Melaleuca eleuterostachya</i>	

Shrubs

<i>Acacia acuarria</i>	Sand Prickly Wattle
<i>Acacia anthochaera</i>	
<i>Acacia erinacea</i>	Spiny Wattle
<i>Dodonaea inaequifolia</i>	
<i>Enchylaena tomentosa</i>	Barrier Saltbush, Ruby Saltbush
<i>Eremophila clarkei</i>	Turpentine Bush
<i>Eremophila forrestii</i> ssp. <i>forrestii</i>	Wilcox Bush
<i>Grevillea eriostachya</i>	Flame Grevillea
<i>Maireana brevifolia</i>	Small Leaf Bluebush
<i>Melaleuca hamata</i>	Broom Bush
<i>Rhagodia drummondii</i>	Lake Fringe Rhagodia
<i>Scaevola spinescens</i>	Currant Bush, Maroon Bush
<i>Senna artemisioides</i> ssp. <i>filifolia</i>	
<i>Senna charlesiana</i>	

MULLINGARRA



Topography

The system is dominated by the Kadathinni Hills, a range of low hills running north-south, which are characterised by short steep slopes to the east and more extensive and gentle slopes with sandplain to the west.

Soils

The sandplains have deep yellow and pale yellow sands. The soils of the slopes are mainly shallow over gravel, while the hills have extensive areas capped with massive ironstone.

Problems

- Water erosion, both sheet and gully, off the slopes below the laterite-capped hills - unit 2.

Location

This small district lies to the west of Three Springs.

Unit 1: Sandplain



Soil Deep, yellow and deep, pale yellow sand

Trees

Acacia acuminata

Banksia attenuata

Banksia prionotes

Callitris arenaria

Eucalyptus eudesmioides

Eucalyptus leptopoda ssp. *arctata*

Eucalyptus subangusta ssp. *pusilla*

Eucalyptus tottiana

Melaleuca eleuterostachya

Santalum acuminatum

Xylomelum angustifolium

Jam, Mangard, Inland Jam (narrow leaf)

Slender Banksia

Acorn Banksia

Sandplain Cypress

Malallie

Coastal Blackbutt

Quandong

Sandplain Woody Pear

Wodjil

Shrubs

Acacia assimilis ssp. *assimilis*

Acacia blakelyi

Acacia multispicata

Acacia pulchella var. *glaberrima*

Allocasuarina campestris

Astroloma serratifolium

Banksia fraseri var. *ashbyi*

Calothamnus quadrifidus ssp. *angustifolius*

Calothamnus sanguineus

Ecdeiocolea monostachya

Grevillea amplexans ssp. *amplexans*

Hakea circumalata

Hakea costata

Hakea lissocarpha

Jacksonia hakeoides

Melaleuca cordata

Petrophile shuttleworthiana

Ricinocarpos velutinus

Scholtzia parviflora

Stirlingia latifolia

Verticordia densiflora var. *densiflora*

Verticordia eriocephala

Verticordia grandis

Tamma, Tammar, Shrubby She-oak

Kondrung

Silky-leaved Blood Flower, Pindak, Boolgalla

Sedge Rush

Ribbed Hakea

Honey Bush

Heart Leaf Honey Myrtle

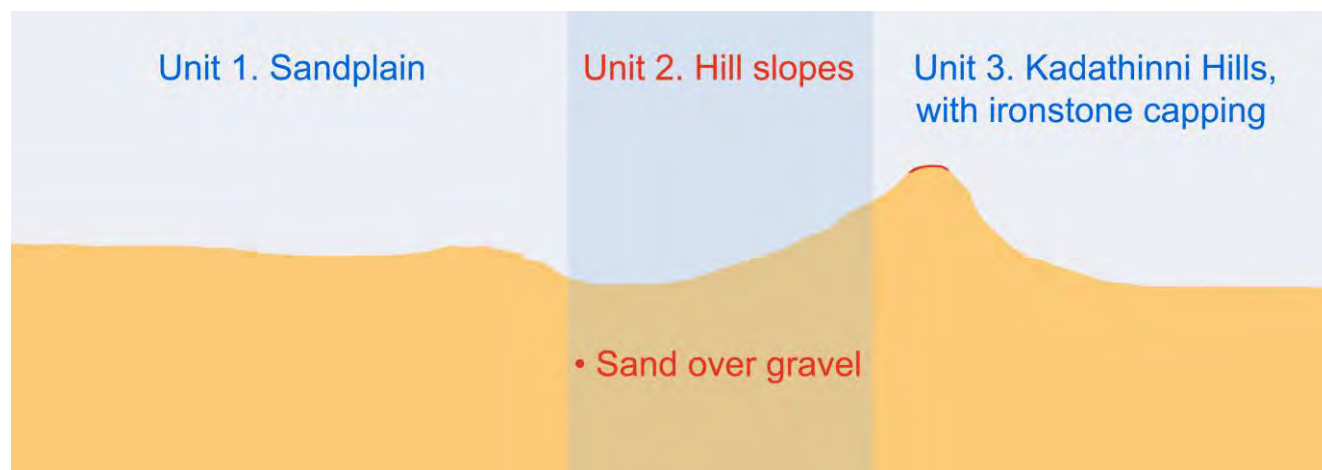
Blueboy

Compact Featherflower

Common Cauliflower, Cauliflower Verticordia

Scarlet Featherflower

Unit 2: Hill slopes



Soil Sand over gravel

Trees

Acacia acuminata
Acacia microbotrya
Acacia saligna ssp. *lindleyi*
Allocasuarina huegeliana
Eucalyptus accedens
Eucalyptus arachnaea ssp. *arachnaea*
Eucalyptus ebbanoensis ssp. *ebbanoensis*
Eucalyptus eudesmioides
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus subangusta ssp. *pusilla*
Eucalyptus wandoo ssp. *pulverea*
Hakea preissii
Hakea recurva ssp. *recurva*

Jam, Mangard, Inland Jam (narrow leaf)
 Manna Wattle

Rock Sheoak, Rock Oak, Kwool
 Powderbark Wandoo
 Black-stemmed Mallee
 Sandplain Mallee
 Malallie
 York Gum

Needle Tree, Needlebush, Dandjin, Tanjinn
 Djarnokmurd, Bag-needle Bush

Shrubs

Acacia assimilis ssp. *assimilis*
Acacia blakelyi
Acacia lasiocarpa
Acacia pulchella var. *glaberrima*
Allocasuarina campestris
Banksia fraseri var. *ashbyi*
Banksia hewardiana
Banksia sphaerocarpa
Calothamnus longissimus
Calothamnus sanguineus
Dodonaea inaequifolia
Grevillea petrophiloides
Grevillea teretifolia
Hakea circumalata
Jacksonia hakeoides
Melaleuca adnata
Melaleuca concreta
Melaleuca cordata
Melaleuca stereophloia
Petrophile conifera ssp. *conifera*
Petrophile shuttleworthiana

Wodjil

Panjang, Pajang

Tamma, Tammar, Shrubby She-oak

Round-fruit Banksia

Silky-leaved Blood Flower, Pindak, Boolgalla

Pink Pokers
 Round Leaf Grevillea

Heart Leaf Honey Myrtle

Unit 3: Kadathinni Hills, with ironstone capping



Soil Gravel at the surface

Trees

Acacia saligna ssp. *lindleyi*
Allocasuarina huegeliana
Eucalyptus accedens
Eucalyptus ebbanoensis ssp. *ebbanoensis*
Eucalyptus erythrocorys
Eucalyptus wandoo ssp. *pulverea*

Rock Sheoak, Rock Oak, Kwowl
 Powderbark Wandoo
 Sandplain Mallee
 Illyarrie, Red Capped Gum

Shrubs

Allocasuarina campestris
Baeckea crispiflora var. *tenuoir*
Banksia fraseri var. *fraseri*
Banksia hewardiana
Calothamnus sanguineus
Dodonaea inaequifolia
Grevillea petrophiloides ssp. *petrophiloides*
Hakea scoparia ssp. *scoparia*
Melaleuca cordata
Melaleuca nematophylla
Melaleuca radula
Melaleuca stereophloia
Petrophile conifera ssp. *conifera*

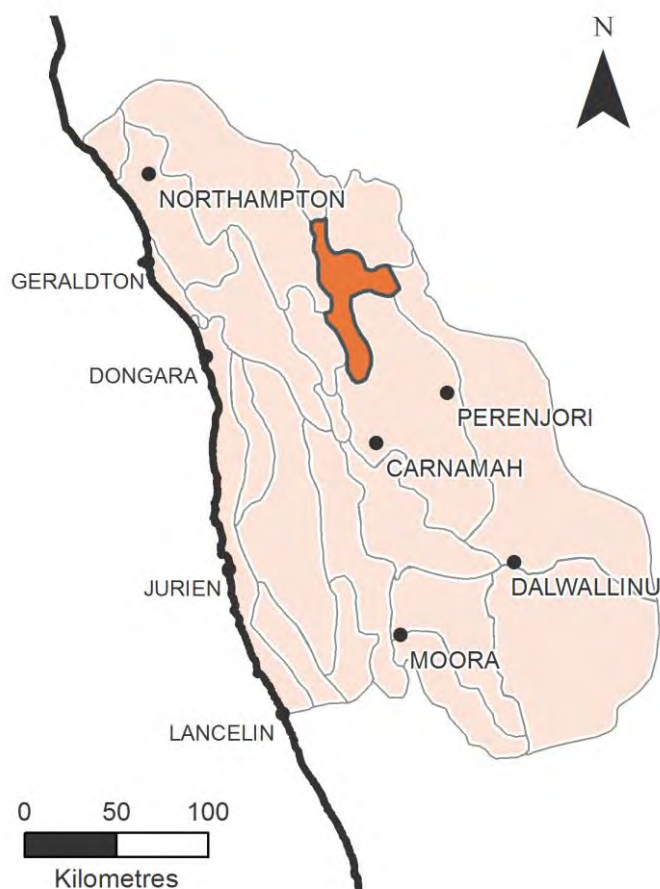
Tamma, Tammar, Shrubby She-oak

Silky-leaved Blood Flower, Pindak, Boolgalla

Pink Pokers

Heart Leaf Honey Myrtle
 Wiry Honey-myrtle
 Graceful Honeymyrtle

NANEKINE



Location

This district extends from just south of Mullewa to just north of Three Springs.

Topography

Many small valleys are separated by stony ridges capped with laterite or rock outcrops together with some areas of alluvial plains.

Soils

The alluvial plain soils are red, sandy loams over clay, sometimes with hardpan. Crabholes (gilgai) occur on the adjacent lower slopes. The low gravelly hills have gravel at the surface and sand over gravel soils. The small valleys have red, sandy loam over clay and the low hills with rock outcrop have shallow soil over granite or gneiss. There are areas of rocky terrain and limited areas of crabholes (gilgai) associated with shallow dolerite as well as areas of shallow soils over chert or basalt.

Problems

- Salinity and seasonal waterlogging and flooding of the valley floors - units 1 and 3.
- Water erosion, mainly sheet erosion - units 1 and 3.

Unit 1: Alluvial plains



Soil (a) Red, sandy loam over clay; occasionally with hardpan

Trees

<i>Acacia acuminata</i>	Jam, Mangard, Inland Jam (narrow leaf)
<i>Acacia daphnifolia</i>	
<i>Acacia microbotrya</i>	Manna Wattle
<i>Acacia tetragonophylla</i>	Kurara
<i>Casuarina obesa</i> *	Swamp Sheoak
<i>Eremophila oldfieldii</i> ssp. <i>oldfieldii</i>	Pixie Bush
<i>Eucalyptus brachycorys</i> *	Cowcowing Mallee
<i>Eucalyptus ebbanoensis</i> ssp. <i>ebbanoensis</i>	Sandplain Mallee
<i>Eucalyptus loxophleba</i> ssp. <i>supralaevis</i> *	
<i>Eucalyptus obtusiflora</i> ssp. <i>obtusiflora</i>	Dongara Mallee
<i>Hakea recurva</i> ssp. <i>recurva</i>	Djarnokmurd, Bag-needle Bush
<i>Melaleuca atroviridis</i>	Broom Bush
<i>Santalum acuminatum</i>	Quandong
<i>Santalum spicatum</i>	Sandalwood

Shrubs

<i>Acacia acuarria</i>	Sand Prickly Wattle
<i>Acacia colletioides</i> *	Wait-a-while
<i>Acacia erinacea</i>	Spiny Wattle
<i>Acacia hemiteles</i> *	Tan Wattle
<i>Acacia rostellifera</i>	Summer-scented Wattle, Black Wattle
<i>Dodonaea inaequifolia</i>	
<i>Eremophila decipiens</i> ssp. <i>decipiens</i>	Slender Fuchsia
<i>Maireana brevifolia</i> *	Small Leaf Bluebush
<i>Melaleuca conothamnoides</i>	Purple Pom Pom Myrtle
<i>Melaleuca hamata</i> *	Broom Bush
<i>Melaleuca lateriflora</i>	Gorada
<i>Melaleuca viminea</i> ssp. <i>viminea</i>	Mohan
<i>Rhagodia drummondii</i> *	Lake Fringe Rhagodia
<i>Rhagodia preissii</i> ssp. <i>obovata</i> *	
<i>Scaevola spinescens</i>	Currant Bush, Maroon Bush
<i>Senna artemisioides</i> ssp. <i>filifolia</i>	

*Suitable for saline sites

Soil (b) Crabholes (gilgai)

Trees

<i>Acacia acuminata</i>	Jam, Mangard, Inland Jam (narrow leaf)
<i>Acacia daphnifolia</i>	
<i>Eremophila oldfieldii</i> ssp. <i>oldfieldii</i>	Pixie Bush

Unit 1: Alluvial plains (contd)

Soil (b) Crabholes (contd)

Trees

Eucalyptus baudiniana
Eucalyptus loxophleba ssp. *supralaevis**
Eucalyptus myriadena
Eucalyptus salmonophloia

Salmon Gum, Wurak

Shrubs

Acacia acuaria
Acacia aestivalis
Acacia andrewsii
Acacia anthochaera
*Acacia colletioides**
Acacia erinacea
*Acacia hemiteles**
Acacia merrallii
Eremophila decipiens ssp. *decipiens*
*Maireana brevifolia**
Melaleuca adnata
Pimelea microcephala ssp. *microcephala*
*Rhagodia drummondii**
Rhagodia preissii ssp. *obovata**
Scaevola spinescens
Senna artemisioides ssp. *filifolia*

Sand Prickly Wattle

Wait-a-while
 Spiny Wattle
 Tan Wattle
 Merrill's Wattle
 Slender Fuchsia
 Small Leaf Bluebush

Shrubby Riceflower
 Lake Fringe Rhagodia

Currant Bush, Maroon Bush

*Suitable for saline sites

Unit 2: Low, gravelly hills



Soil (a) Sand over gravel

Trees

Acacia acuminata
Acacia tetragonophylla
Allocasuarina acutivalvis ssp. *acutivalvis*
Callitris arenaria
Eucalyptus eudesmioides
Eucalyptus leptopoda ssp. *arctata*
Eucalyptus oldfieldii
Eucalyptus subangusta ssp. *subangusta*

Jam, Mangard, Inland Jam (narrow leaf)
 Kurara
 Black Tammar
 Sandplain Cypress
 Malallie

Oldfield's Mallee

Shrubs

Acacia anthochaera
Acacia blakelyi
Acacia neurophylla ssp. *erugata*
Allocasuarina campestris
Banksia benthamiana
Calothamnus quadrifidus ssp. *angustifolius*
Calothamnus sanguineus
Grevillea candelabroides
Grevillea obliquistigma ssp. *obliquistigma*
Melaleuca concreta
Melaleuca conothamnoides
Melaleuca cordata
Melaleuca fulgens ssp. *steadmanii*
Melaleuca radula

Tamma, Tammar, Shrubby She-oak

Silky-leaved Blood Flower, Pindak, Boolgalla

Purple Pom Pom Myrtle
 Heart Leaf Honey Myrtle

Graceful Honeymyrtle

Soil (b) Gravel at the surface

Trees

Acacia tetragonophylla
Allocasuarina huegeliana
Eucalyptus ebbanoensis ssp. *ebbanoensis*
Eucalyptus leptopoda ssp. *arctata*
Eucalyptus oldfieldii
Eucalyptus subangusta ssp. *subangusta*

Kurara
 Rock Sheoak, Rock Oak, Kwohl
 Sandplain Mallee

Oldfield's Mallee

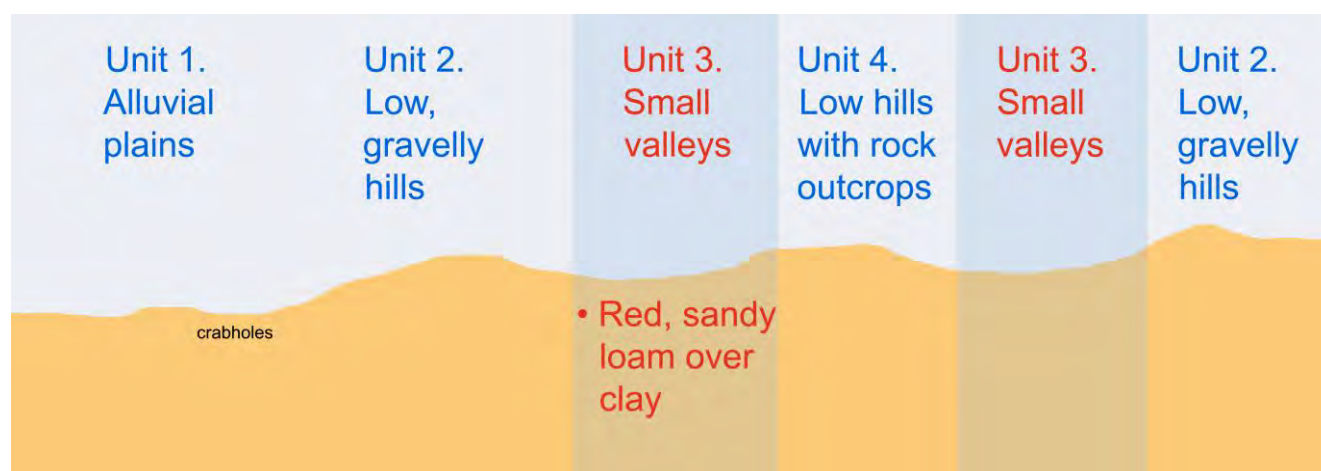
Shrubs

Acacia ericksoniae
Allocasuarina campestris
Grevillea petrophiloides ssp. *petrophiloides*
Hakea erecta
Hakea scoparia ssp. *scoparia*
Melaleuca cordata
Melaleuca nematophylla

Tamma, Tammar, Shrubby She-oak
 Pink Pokers

Heart Leaf Honey Myrtle
 Wiry Honey-myrtle

Unit 3: Small valleys



Soil Red, sandy loam over clay

Trees

Acacia acuminata
Acacia daphnifolia
Acacia microbotrya
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus baudiniana
Eucalyptus ebbanoensis ssp. *ebbanoensis*
Eucalyptus horistes
Eucalyptus loxophleba ssp. *supralaevis*
Eucalyptus salmonophloia
Melaleuca atroviridis
Melaleuca eleuterostachya
Santalum acuminatum
Santalum spicatum

Jam, Mangard, Inland Jam (narrow leaf)

Manna Wattle
 Pixie Bush

Sandplain Mallee
 Oil Mallee (Northern Rough Bark)

Salmon Gum, Wurak
 Broom Bush

Quandong
 Sandalwood

Shrubs

Acacia andrewsii
Acacia coolgardiensis
Acacia rostelifera
Acacia sclerosperma ssp. *sclerosperma*
Eremophila decipiens ssp. *decipiens*
Grevillea paniculata
Maireana brevifolia
Melaleuca acuminata
Melaleuca cordata
Melaleuca hamata
Pimelea microcephala ssp. *microcephala*
Rhagodia drummondii
Rhagodia preissii ssp. *obovata*
Scaevola spinescens
Senna artemisioides ssp. *filifolia*

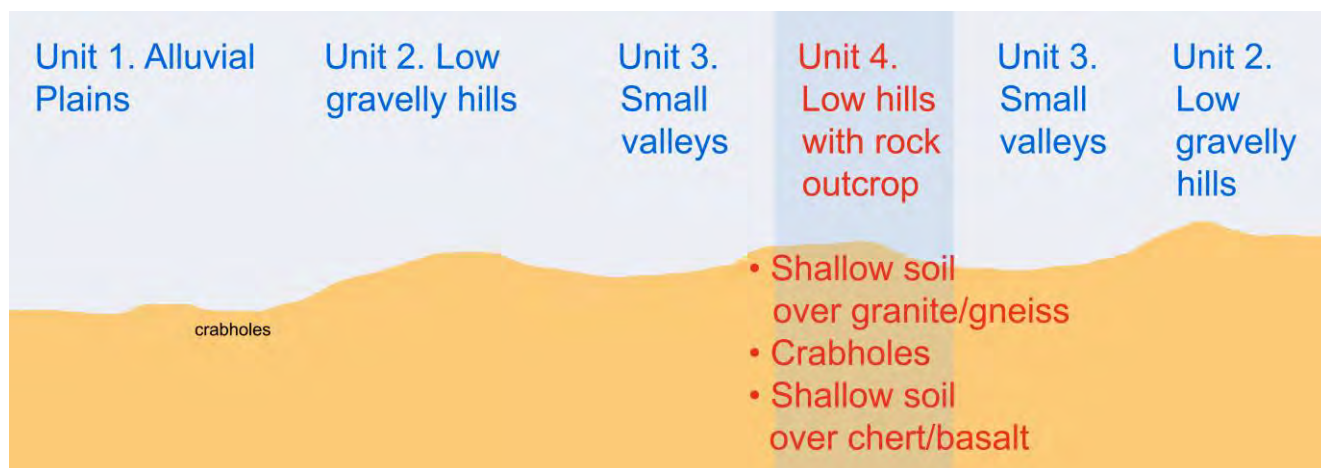
Spinifex Wattle
 Summer-scented Wattle, Black Wattle
 Limestone Wattle
 Slender Fuchsia

Small Leaf Bluebush

Heart Leaf Honey Myrtle
 Broom Bush
 Shrubby Riceflower
 Lake Fringe Rhagodia

Currant Bush, Maroon Bush

Unit 4: Low hills with rock outcrops



Soil (a) Shallow soil over granite or gneiss

Trees

<i>Acacia acuminata</i>	Jam, Mangard, Inland Jam (narrow leaf)
<i>Acacia microbotrya</i>	Manna Wattle
<i>Acacia rostellifera</i>	Summer-scented Wattle, Black Wattle
<i>Acacia tetragonophylla</i>	Kurara
<i>Allocasuarina acutivalvis</i> ssp. <i>prinsepiana</i>	
<i>Eremophila oldfieldii</i> ssp. <i>oldfieldii</i>	Pixie Bush
<i>Eucalyptus kochii</i> ssp. <i>borealis</i>	Oil Mallee
<i>Eucalyptus loxophleba</i> ssp. <i>loxophleba</i>	York Gum
<i>Hakea recurva</i> ssp. <i>recurva</i>	Djarnokmurd, Bag-needle Bush
<i>Melaleuca eleuterostachya</i>	
<i>Santalum acuminatum</i>	Quandong
<i>Santalum spicatum</i>	Sandalwood

Shrubs

<i>Acacia acuarria</i>	Sand Prickly Wattle
<i>Acacia ericksoniae</i>	
<i>Acacia erinacea</i>	Spiny Wattle
<i>Acacia hemiteles</i>	Tan Wattle
<i>Acacia restiacea</i>	
<i>Acacia rostellifera</i>	Summer-scented Wattle, Black Wattle
<i>Baeckea crispiflora</i> var. <i>tenuoir</i>	
<i>Grevillea obliquistigma</i> ssp. <i>obliquistigma</i>	
<i>Hakea preissii</i>	Needle Tree, Needlebush, Dandjin, Tanjinn
<i>Melaleuca stereophloia</i>	
<i>Rhagodia drummondii</i>	Lake Fringe Rhagodia

Soil (b) Crabholes (gilgai)

Trees

<i>Acacia acuminata</i>	Jam, Mangard, Inland Jam (narrow leaf)
<i>Acacia daphnifolia</i>	
<i>Eucalyptus loxophleba</i> ssp. <i>supralaevis</i>	
<i>Eucalyptus myriadena</i>	
<i>Eucalyptus salmonophloia</i>	Salmon Gum, Wurak
<i>Melaleuca atroviridis</i>	Broom Bush
<i>Santalum acuminatum</i>	Quandong

Shrubs

<i>Acacia acuarria</i>	Sand Prickly Wattle
<i>Acacia aestivalis</i>	
<i>Acacia andrewsii</i>	
<i>Acacia anthochaera</i>	
<i>Acacia colletioides</i>	Wait-a-while
<i>Acacia hemiteles</i>	Tan Wattle

Unit 4: Low hills with rock outcrops (contd)

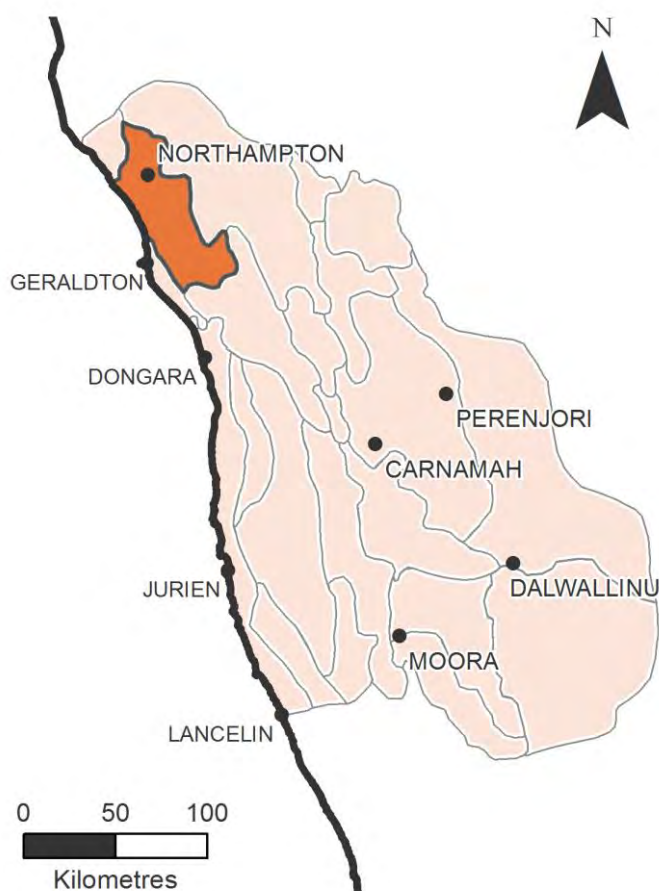
Soil (b) Crabholes (contd)

Shrubs	<i>Acacia merrallii</i>	Merrall's Wattle
	<i>Eremophila decipiens</i> ssp. <i>decipiens</i>	Slender Fuchsia
	<i>Maireana brevifolia</i>	Small Leaf Bluebush
	<i>Melaleuca adnata</i>	
	<i>Melaleuca stereophloia</i>	
	<i>Pimelea microcephala</i> ssp. <i>microcephala</i>	Shrubby Riceflower
	<i>Senna artemisioides</i> ssp. <i>filifolia</i>	

Soil (c) Shallow soils over chert or basalt

Trees	<i>Acacia acuminata</i>	Jam, Mangard, Inland Jam (narrow leaf)
	<i>Acacia tetragonophylla</i>	Kurara
	<i>Allocasuarina acutivalvis</i> ssp. <i>prinsepiana</i>	
	<i>Eucalyptus loxophleba</i> ssp. <i>loxophleba</i>	York Gum
	<i>Hakea recurva</i> ssp. <i>recurva</i>	Djarnokmurd, Bag-needle Bush
	<i>Santalum acuminatum</i>	Quandong
Shrubs	<i>Acacia neurophylla</i> ssp. <i>erugata</i>	
	<i>Acacia restiacea</i>	
	<i>Allocasuarina campestris</i>	Tamma, Tammar, Shrubby She-oak
	<i>Baeckea crispiflora</i> var. <i>tenuoir</i>	
	<i>Dodonaea inaequifolia</i>	
	<i>Eremophila clarkei</i>	Turpentine Bush
	<i>Grevillea obliquistigma</i> ssp. <i>obliquistigma</i>	
	<i>Grevillea paradoxa</i>	Bottlebrush Grevillea
	<i>Melaleuca filifolia</i>	Wiry Honey-myrtle
	<i>Melaleuca nematophylla</i>	Wiry Honey-myrtle
	<i>Melaleuca radula</i>	Graceful Honey-myrtle

NORTHAMPTON



Location

This district lies east of the Greenough district with Northampton town in the northern third. The Geraldton to Mullewa railway line crosses the southern third.

Topography

Mainly of undulating terrain including abrupt, flat-topped, sedimentary hills. There is a level to gently undulating upland in the centre of the district with some areas of remnant plateau that have moderate to steep-sided slopes. The Chapman River and its tributaries have alluvial flats and terraces.

Soils

The undulating terrain is mainly red, sandy loam over clay with appreciable areas of shallow soil over sandstone. Some patches of deep, yellow sand are intermingled. The Chapman River valley is largely red, sandy loam over clay. Deep, sandy loam over clay. Deep, yellow sand and sand over gravel soils predominate on the undulating upland with areas of shallow soil over granite gneiss. Some valleys in the east of the district are affected by secondary salinity and have sand over yellow clay. The laterite sandplain has deep, yellow sand and sand over gravel soils, with some patches of deep, red sand.

Problems

- Water erosion (sheet erosion and gullying) is common on sloping, particularly below rock outcrops - units 1 and 2.
- Salinity in the valley floors - unit 4.

Unit 1: Undulating country



Soil (a) Red, sandy loam over clay

Trees

Acacia acuminata
Acacia daphnifolia
Acacia tetragonophylla
Eucalyptus camaldulensis
Eucalyptus ebbanoensis ssp. *ebbanoensis*
Eucalyptus loxophleba ssp. *supralaevis*
Eucalyptus subangusta ssp. *subangusta*
Hakea preissii
Hakea recurva ssp. *recurva*
Melaleuca eleuterostachya
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)

Kurara
 River Red Gum, River Gum
 Sandplain Mallee

Needle Tree, Needlebush, Dandjin, Tanjinn
 Djarnokmurd, Bag-needle Bush

Quandong

Shrubs

Acacia acutaria
Acacia aestivalis
Acacia colletioides
Acacia erinacea
Acacia rostellifera
Acacia spathulifolia
Acacia stereophylla var. *stereophylla*
Hakea bucculenta
Hakea invaginata
Melaleuca concreta

Sand Prickly Wattle

Wait-a-while
 Spiny Wattle
 Summer-scented Wattle, Black Wattle
 Spoon Leaf Wattle

Red Pokers, Grass Leaf Hakea

Soil (b) Shallow soil over sandstone

Trees

Acacia acuminata
Acacia tetragonophylla
Allocasuarina huegeliana
Hakea recurva ssp. *recurva*
Santalum spicatum

Jam, Mangard, Inland Jam (narrow leaf)
 Kurara
 Rock Sheoak, Rock Oak, Kwool
 Djarnokmurd, Bag-needle Bush
 Sandalwood

Shrubs

Acacia blakelyi
Acacia latipes ssp. *latipes*
Acacia pulchella var. *glaberrima*
Acacia rostellifera
Acacia spathulifolia
Banksia fraseri var. *fraseri*
Calothamnus quadrifidus ssp. *homalophyllus*
Calothamnus sanguineus
Daviesia hakeoides ssp. *hakeoides*
Dodonaea inaequifolia

Summer-scented Wattle, Black Wattle
 Spoon Leaf Wattle

Murchison Clawflower
 Silky-leaved Blood Flower, Pindak, Boolgalla

Unit 1: Undulating country (contd)

Soil (b) Shallow soil over sandstone (contd)

Shrubs	<i>Grevillea argyrophylla</i>	Silvery-leaved Grevillea
	<i>Grevillea leucopteris</i>	White Plume Grevillea
	<i>Hakea lissocarpa</i>	Honey Bush
	<i>Hakea orthorrhyncha</i> var. <i>filiformis</i>	
	<i>Hakea prostrata</i>	Harsh Hakea
	<i>Isopogon divergens</i>	Spreading Coneflower
	<i>Melaleuca concreta</i>	
	<i>Melaleuca depressa</i>	
	<i>Melaleuca filifolia</i>	Wiry Honeymyrtle

Soil (c) Deep, yellow sand

Trees	<i>Acacia scirpifolia</i>	Slender Banksia
	<i>Banksia attenuata</i>	Firewood Banksia, Menzies' Banksia
	<i>Banksia menziesii</i>	Acorn Banksia
	<i>Banksia prionotes</i>	Sceptre Banksia
	<i>Banksia sceptrum</i>	Sandplain Cypress
	<i>Callitris arenaria</i>	Malallie
	<i>Eucalyptus eudesmioides</i>	Yuna Mallee
	<i>Eucalyptus jucunda</i>	Oldfield's Mallee
	<i>Eucalyptus oldfieldii</i>	
	<i>Eucalyptus subangusta</i> ssp. <i>subangusta</i>	
	<i>Xylomelum angustifolium</i>	Sandplain Woody Pear
Shrubs	<i>Acacia blakelyi</i>	
	<i>Acacia latipes</i> ssp. <i>latipes</i>	
	<i>Acacia neurophylla</i> ssp. <i>erugata</i>	
	<i>Acacia oxyclada</i>	
	<i>Acacia spathulifolia</i>	Spoon Leaf Wattle
	<i>Acacia stereophylla</i> var. <i>stereophylla</i>	
	<i>Banksia elegans</i>	Elegant Banksia
	<i>Banksia sessilis</i> var. <i>flabellifolia</i>	
	<i>Calothamnus blepharospermus</i>	
	<i>Calothamnus quadrifidus</i> ssp. <i>homalophyllus</i>	Murchison Clawflower
	<i>Chamelaucium uncinatum</i>	Geraldton Wax
	<i>Grevillea amplexans</i> ssp. <i>amplexans</i>	
	<i>Grevillea biformis</i> ssp. <i>biformis</i>	
	<i>Grevillea candelabroides</i>	
	<i>Grevillea eriostachya</i>	Flame Grevillea
	<i>Hakea circumalata</i>	
	<i>Hakea invaginata</i>	
	<i>Melaleuca depressa</i>	
	<i>Melaleuca trichophylla</i>	Pretty Honey Myrtle
	<i>Stylobasium spathulatum</i>	Pebble Bush

Unit 2: Chapman River valley



Soil Red, sandy loam over clay

Trees

Acacia anthochaera
Acacia burkittii
Acacia daphnifolia
Acacia sclerosperma ssp. *sclerosperma*
Acacia tetragonophylla
Casuarina obesa
Eucalyptus camaldulensis
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus loxophleba ssp. *supralaevis*
Hakea preissii
Hakea recurva ssp. *recurva*
Melaleuca raphiophylla
Santalum acuminatum

Sandhill Wattle

Limestone Wattle
 Kurara
 Swamp Sheoak
 River Red Gum, River Gum
 York Gum

Needle Tree, Needlebush, Dandjin, Tanjinn
 Djarnokmurd, Bag-needle Bush
 Swamp Paperbark
 Quandong

Shrubs

Acacia acuaria
Acacia alata var. *biglandulosa*
Acacia lasiocarpa var. *lasiocarpa*
Acacia spathulifolia
Alyogyne hakeifolia
Alyogyne huegelii
Banksia fraseri var. *ashbyi*
Dodonaea inaequifolia
Enchylaena tomentosa
Eremophila glabra
Maireana brevifolia
Melaleuca adnata
Melaleuca viminea ssp. *viminea*
Pimelea microcephala ssp. *microcephala*
Rhagodia drummondii
Rhagodia preissii ssp. *obovata*
Rhagodia preissii ssp. *preissii*
Scaevola spinescens
Scholtzia laxiflora
Senna pleurocarpa var. *pleurocarpa*

Sand Prickly Wattle

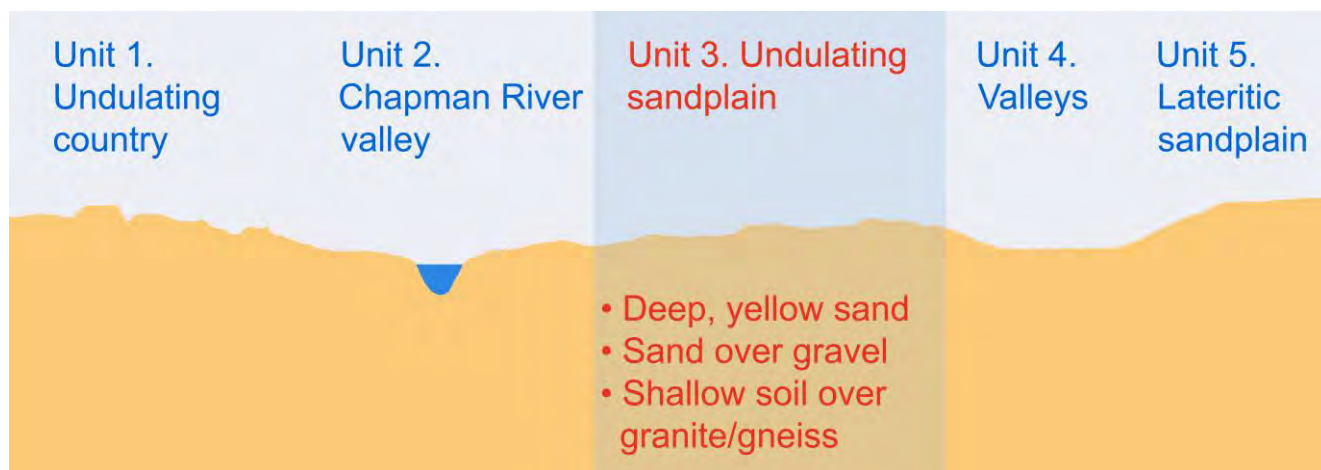
Panjang, Pajang
 Spoon Leaf Wattle
 Red-centred Hibiscus
 Lilac Hibiscus, Purple Hibiscus

Barrier Saltbush, Ruby Saltbush
 Tar Bush
 Small Leaf Bluebush

Mohan
 Shrubby Riceflower
 Lake Fringe Rhagodia

Currant Bush, Maroon Bush

Unit 3: Undulating sandplain



Soil (a) Deep, yellow sand

Trees

Acacia acuminata
Banksia attenuata
Banksia prionotes
Callitris arenaria
Eucalyptus horistes
Eucalyptus jucunda
Eucalyptus obtusiflora ssp. *obtusiflora*
Eucalyptus oldfieldii
Eucalyptus subangusta ssp. *subangusta*
Xylomelum angustifolium

Jam, Mangard, Inland Jam (narrow leaf)
 Slender Banksia
 Acorn Banksia
 Sandplain Cypress
 Oil Mallee (Northern Rough Bark)
 Yuna Mallee
 Dongara Mallee
 Oldfield's Mallee

Sandplain Woody Pear

Shrubs

Acacia blakelyi
Acacia latipes ssp. *latipes*
Acacia neurophylla ssp. *erugata*
Acacia oxyclada
Acacia stereophylla var. *stereophylla*
Allocasuarina campestris
Banksia elegans
Banksia leptophylla var. *melletica*
Banksia sceptrum
Calothamnus blepharospermus
Calothamnus quadrifidus ssp. *homalophyllus*
Chamelaucium uncinatum
Grevillea biformis ssp. *biformis*
Grevillea biternata
Grevillea candelabroides
Grevillea eriostachya
Grevillea leucopteris
Hakea bucculenta
Hakea circumalata
Melaleuca cordata
Melaleuca trichophylla
Melaleuca urceolaris
Petrophile macrostachya

Tamma, Tammar, Shrubby She-oak
 Elegant Banksia

Sceptre Banksia

Murchison Clawflower
 Geraldton Wax

Flame Grevillea
 White Plume Grevillea
 Red Pokers, Grass Leaf Hakea

Heart Leaf Honey Myrtle
 Pretty Honey Myrtle

Soil (b) Sand over gravel

Trees

Acacia acuminata
Acacia anthochaera
Acacia scirpifolia

Jam, Mangard, Inland Jam (narrow leaf)

Unit 3: Undulating sandplain (contd)

Soil (b) Sand over gravel (contd)

Trees	<i>Banksia prionotes</i> <i>Callitris arenaria</i> <i>Eucalyptus ebbanoensis</i> ssp. <i>ebbanoensis</i> <i>Eucalyptus eudesmioides</i>	Acorn Banksia Sandplain Cypress Sandplain Mallee Malallie
Shrubs	<i>Acacia alata</i> var. <i>biglandulosa</i> <i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i> <i>Acacia leptospermoides</i> ssp. <i>leptospermoides</i> <i>Acacia neurophylla</i> ssp. <i>erugata</i> <i>Adenanthos cygnorum</i> ssp. <i>cygnorum</i> <i>Allocasuarina campestris</i> <i>Allocasuarina humilis</i> <i>Banksia lanata</i> <i>Banksia sessilis</i> var. <i>flabellifolia</i> <i>Calothamnus sanguineus</i> <i>Grevillea bitermata</i> <i>Grevillea leucopteris</i> <i>Grevillea petrophiloides</i> ssp. <i>petrophiloides</i> <i>Hakea costata</i> <i>Hakea cygna</i> ssp. <i>cygna</i> <i>Hakea lissocarpha</i> <i>Hakea prostrata</i> <i>Hakea trifurcata</i> <i>Melaleuca systema</i> <i>Scholtzia laxiflora</i>	Panjang, Pajang Common Woollybush Tamma, Tammar, Shrubby She-oak Dwarf Sheoak Silky-leaved Blood Flower, Pindak, Boolgalla White Plume Grevillea Pink Pokers Ribbed Hakea Swan Fruit Hakea Honey Bush Harsh Hakea Two-leaf Hakea

Soil (c) Shallow soil over granite or gneiss

Trees	<i>Acacia acuminata</i> <i>Acacia tetragonophylla</i> <i>Allocasuarina huegeliana</i> <i>Eucalyptus loxophleba</i> ssp. <i>loxophleba</i> <i>Hakea preissii</i> <i>Hakea recurva</i> ssp. <i>recurva</i> <i>Santalum acuminatum</i> <i>Santalum spicatum</i>	Jam, Mangard, Inland Jam (narrow leaf) Kurara Rock Sheoak, Rock Oak, Kwool York Gum Needle Tree, Needlebush, Dandjin, Tanjinn Djarnokmurd, Bag-needle Bush Quandong Sandalwood
Shrubs	<i>Acacia alata</i> var. <i>biglandulosa</i> <i>Acacia oxyclada</i> <i>Acacia restiacea</i> <i>Banksia fraseri</i> var. <i>fraseri</i> <i>Calothamnus quadrifidus</i> ssp. <i>homalophyllus</i> <i>Dodonaea inaequifolia</i> <i>Grevillea intricata</i> <i>Hakea incrassata</i> <i>Hakea lissocarpha</i> <i>Hakea orthorrhyncha</i> var. <i>filiformis</i> <i>Isopogon divergens</i> <i>Melaleuca fulgens</i> ssp. <i>steadmanii</i>	Murchison Clawflower Marble Hakea Honey Bush Spreading Coneflower

Unit 4: Valleys



Soil Sand over yellow clay

Trees

Acacia acuminata
Acacia daphnifolia
Acacia microbotrya
Acacia rostellifera
Acacia saligna ssp. *lindleyi*
Acacia sclerosperma ssp. *sclerosperma*
Casuarina obesa
Eucalyptus camaldulensis
Eucalyptus diminuta
Hakea preissii
Melaleuca raphiophylla
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)

Manna Wattle
 Summer-scented Wattle, Black Wattle

Limestone Wattle
 Swamp Sheoak
 River Red Gum, River Gum

Needle Tree, Needlebush, Dandjin, Tanjinn
 Swamp Paperbark
 Quandong

Shrubs

Acacia alata var. *biglandulosa*
Acacia bidentata
Acacia blakelyi
Acacia erinacea
Acacia lasiocarpa var. *lasiocarpa*
Acacia leptospermoides ssp. *leptospermoides*
Allocasuarina campestris
Allocasuarina humilis
Banksia fraseri var. *ashbyi*
Chamelaucium uncinatum
Enchylaena tomentosa
Grevillea candelabroides
Hakea bucculenta
Melaleuca concreta
Melaleuca viminea ssp. *viminea*
Pimelea microcephala ssp. *microcephala*
Rhagodia drummondii
Rhagodia preissii ssp. *obovata*
Rhagodia preissii ssp. *preissii*
Scaevola spinescens
Scholtzia laxiflora
Scholtzia parviflora
Stylobasium spathulatum

Spiny Wattle
 Panjang, Pajang

Tamma, Tammar, Shrubby She-oak
 Dwarf Sheoak

Geraldton Wax
 Barrier Saltbush, Ruby Saltbush

Red Pokers, Grass Leaf Hakea

Mohan
 Shrubby Riceflower
 Lake Fringe Rhagodia

Currant Bush, Maroon Bush

Pebble Bush

Unit 5: Lateritic sandplain



Soil (a) Deep, yellow sand

Trees

Acacia acuminata
Banksia attenuata
Banksia menziesii
Banksia prionotes
Callitris arenaria
Eucalyptus eudesmioides
Eucalyptus horistes
Eucalyptus jucunda
Eucalyptus oldfieldii
Eucalyptus pyriformis
Eucalyptus subangusta ssp. *subangusta*
Santalum acuminatum
Xylomelum angustifolium

Jam, Mangard, Inland Jam (narrow leaf)
 Slender Banksia
 Firewood Banksia, Menzies' Banksia
 Acorn Banksia
 Sandplain Cypress
 Malallie
 Oil Mallee (Northern Rough Bark)
 Yuna Mallee
 Oldfield's Mallee
 Pear-fruited Mallee, Dowerin Rose
 Quandong
 Sandplain Woody Pear

Shrubs

Acacia blakelyi
Acacia rostellifera
Acacia spathulifolia
Banksia fraseri var. *ashbyi*
Banksia leptophylla var. *melletica*
Calothamnus blepharospermus
Calothamnus quadrifidus ssp. *angustifolius*
Grevillea biformis ssp. *biformis*
Grevillea biternata
Grevillea candelabroides
Grevillea leucopteris
Hakea circumalata
Hakea platysperma
Jacksonia floribunda
Petrophile conifera ssp. *conifera*
Petrophile macrostachya
Scholtzia umbellifera

Summer-scented Wattle, Black Wattle
 Spoon Leaf Wattle

White Plume Grevillea

Cricket Ball Hakea, Peach Hakea
 Holly Pea

Soil (b) Sand over gravel

Trees

Acacia acuminata
Acacia anthochaera
Banksia attenuata
Banksia prionotes
Callitris arenaria
Eucalyptus arachnaea ssp. *arachnaea*
Eucalyptus ebbanoensis ssp. *ebbanoensis*

Jam, Mangard, Inland Jam (narrow leaf)
 Slender Banksia
 Acorn Banksia
 Sandplain Cypress
 Black-stemmed Mallee
 Sandplain Mallee

Unit 5: Lateritic sandplain (contd)

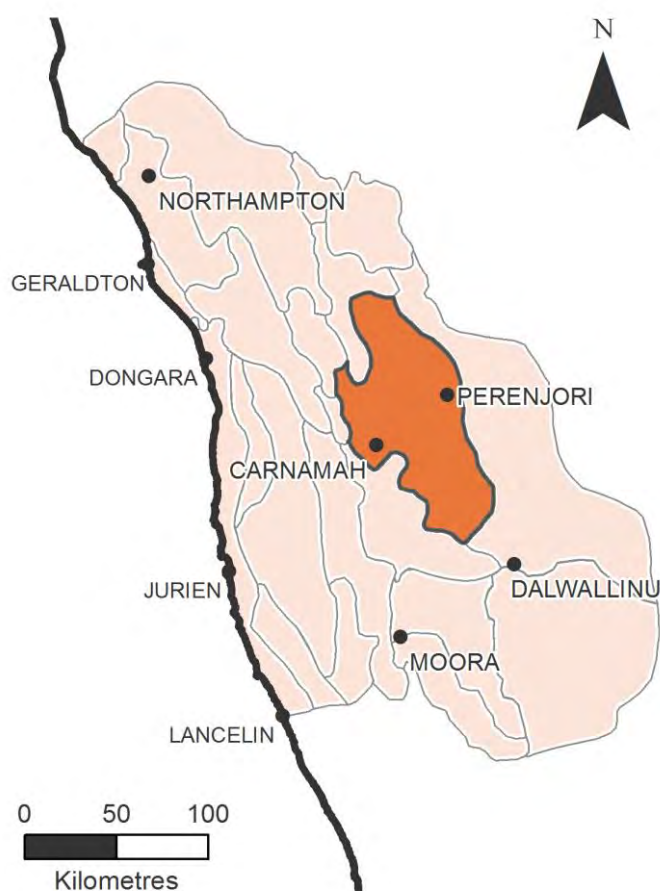
Soil (b) Sand over gravel (contd)

Shrubs	<i>Acacia blakelyi</i> <i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i> <i>Acacia leptospermoides</i> ssp. <i>leptospermoides</i> <i>Allocasuarina campestris</i> <i>Allocasuarina humilis</i> <i>Banksia lanata</i> <i>Banksia sessilis</i> var. <i>flabellifolia</i> <i>Calothamnus quadrifidus</i> ssp. <i>angustifolius</i> <i>Calothamnus sanguineus</i> <i>Eremaea beaufortioides</i> var. <i>beaufortioides</i> <i>Grevillea leucopteris</i> <i>Grevillea petrophiloides</i> ssp. <i>petrophiloides</i> <i>Hakea circumalata</i> <i>Hakea costata</i> <i>Hakea cygna</i> ssp. <i>cygna</i> <i>Hakea incrassata</i> <i>Hakea lissocarpha</i> <i>Hakea prostrata</i> <i>Melaleuca filifolia</i> <i>Melaleuca radula</i> <i>Melaleuca trichophylla</i> <i>Petrophile conifera</i> ssp. <i>conifera</i> <i>Petrophile macrostachya</i>	Panjang, Pajang Tamma, Tammar, Shrubby She-oak Dwarf Sheoak Silky-leaved Blood Flower, Pindak, Boolgalla White Plume Grevillea Pink Pokers Ribbed Hakea Swan Fruit Hakea Marble Hakea Honey Bush Harsh Hakea Wiry Honey myrtle Graceful Honey myrtle Pretty Honey Myrtle
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Soil (c) Deep, red sand

Trees	<i>Acacia acuminata</i> <i>Acacia microbotrya</i> <i>Acacia tetragonophylla</i> <i>Banksia attenuata</i> <i>Banksia prionotes</i> <i>Eucalyptus loxophleba</i> ssp. <i>supralaevis</i> <i>Eucalyptus subangusta</i> ssp. <i>subangusta</i> <i>Santalum acuminatum</i>	Jam, Mangard, Inland Jam (narrow leaf) Manna Wattle Kurara Slender Banksia Acorn Banksia Quandong
Shrubs	<i>Acacia acuarria</i> <i>Acacia oxyclada</i> <i>Acacia rostellifera</i> <i>Acacia spathulifolia</i> <i>Alyogyne hakeifolia</i> <i>Calytrix strigosa</i> <i>Grevillea bitermata</i> <i>Hakea invaginata</i> <i>Melaleuca trichophylla</i> <i>Rhagodia drummondii</i> <i>Rhagodia preissii</i> ssp. <i>preissii</i>	Sand Prickly Wattle Summer-scented Wattle, Black Wattle Spoon Leaf Wattle Red-centred Hibiscus Pretty Honey Myrtle Lake Fringe Rhagodia

PERENJORI



Location

This district lies between Morawa and Dalwallinu with Perenjori near its eastern boundary. Three Springs, Carnamah and Coorow lie near the western boundary.

Topography

Undulating dissected terrain with long narrow valleys and rock outcrops on hill crests. The major drainage systems have level to very gently inclined valley floors. The district carries saline trunk drainage from the east and north.

Soils

The elevated areas of sandplain have sand over gravel and shallow soils on granite or gneiss. The gentle slopes have areas of crabholes (gilgai) and red, sandy loams over clay. The valleys have red loams over hardpan, red sandy loams over clay, brown alkaline clays and tracts of crabholes. The undulating dissected terrain with long narrow valleys has shallow soils on granite or gneiss, sand over red clay in the upper parts and red, sandy loams over clays and crabholes in the valleys.

Problems

- Salinity of the valley floors and associated waterlogging and flooding in wet periods - unit 2.

Unit 1: Sandplain and rocky hills



Soil (a) Sand over gravel

Trees

Acacia acuminata
Acacia microbotrya
Allocasuarina acutivalvis ssp. *acutivalvis*
Banksia prionotes
Callitris arenaria
Eucalyptus eudesmioides
Eucalyptus flocktoniae ssp. *flocktoniae*
Eucalyptus horistes
Eucalyptus kochii ssp. *plenissima*
Eucalyptus leptopoda ssp. *arctata*
Eucalyptus oldfieldii
Eucalyptus pyriformis
Hakea francisiana
Xylomelum angustifolium

Jam, Mangard, Inland Jam (narrow leaf)
 Manna Wattle
 Black Tammar
 Acorn Banksia
 Sandplain Cypress
 Malallie
 Merrit
 Oil Mallee (Northern Rough Bark)
 Oil Mallee

Oldfield's Mallee
 Pear-fruited Mallee, Dowerin Rose
 Emu Tree, Pink Spike Hakea
 Sandplain Woody Pear

Shrubs

Acacia assimilis ssp. *assimilis*
Acacia blakelyi
Acacia coolgardiensis
Acacia lasiocarpa var. *lasiocarpa*
Acacia latipes ssp. *latipes*
Acacia neurophylla ssp. *erugata*
Acacia resinimarginea
Calothamnus quadrifidus ssp. *angustifolius*
Grevillea didymobotrya ssp. *didymobotrya*
Grevillea eriostachya
Grevillea juncifolia ssp. *temulenta*
Grevillea obliquistigma ssp. *obliquistigma*
Grevillea paradoxa
Grevillea petrophiloides ssp. *petrophiloides*
Hakea circumalata
Hakea erecta
Hakea invaginata
Melaleuca concreta
Melaleuca conothamnoides
Melaleuca cordata
Melaleuca fabri
Melaleuca radula
Ricinocarpos velutinus
Verticordia chrysanthella

Wodjil

Spinifex Wattle
 Panjang, Pajang

Flame Grevillea

Bottlebrush Grevillea
 Pink Pokers

Purple Pom Pom Myrtle
 Heart Leaf Honey Myrtle

Graceful Honeymyrtle

Unit 1: Sandplain and rocky hills (contd)

Soil (b) Shallow soil over granite or gneiss

Trees	<i>Acacia acuminata</i> <i>Acacia daphnifolia</i> <i>Acacia tetragonophylla</i> <i>Allocasuarina acutivalvis</i> ssp. <i>acutivalvis</i> <i>Allocasuarina acutivalvis</i> ssp. <i>prinsepiana</i> <i>Allocasuarina huegeliana</i> <i>Eremophila oldfieldii</i> ssp. <i>oldfieldii</i> <i>Eucalyptus kochii</i> ssp. <i>borealis</i> <i>Eucalyptus loxophleba</i> ssp. <i>loxophleba</i> <i>Hakea recurva</i> ssp. <i>recurva</i> <i>Melaleuca eleuterostachya</i> <i>Santalum acuminatum</i> <i>Santalum spicatum</i>	Jam, Mangard, Inland Jam (narrow leaf) Kurara Black Tammar Rock Sheoak, Rock Oak, Kwowl Pixie Bush (in north) Oil Mallee York Gum Djarnokmurd, Bag-needle Bush Quandong Sandalwood
Shrubs	<i>Acacia acuaria</i> <i>Acacia erinacea</i> <i>Acacia leptospermoides</i> <i>Acacia longiphylloidea</i> <i>Acacia restiacea</i> <i>Allocasuarina campestris</i> <i>Hakea scoparia</i> ssp. <i>scoparia</i> <i>Melaleuca fulgens</i> ssp. <i>steadmanii</i> <i>Melaleuca hamata</i> <i>Melaleuca marginata</i> <i>Melaleuca radula</i> <i>Melaleuca stereophloia</i> <i>Rhagodia drummondii</i> <i>Verticordia chrysanthella</i>	Sand Prickly Wattle Spiny Wattle Long-leaved Wattle Tamma, Tammar, Shrubby She-oak Broom Bush Graceful Honeymyrtle Lake Fringe Rhagodia

Unit 2: Gentle slopes



Soil (a) Red, sandy loam over clay

Trees

Acacia acuminata
Acacia tetragonophylla
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus arachnaea ssp. *arachnaea*
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus salmonophloia
Hakea francisiana
Melaleuca atroviridis
Melaleuca eleuterostachya

Jam, Mangard, Inland Jam (narrow leaf)
 Kurara
 Pixie Bush
 Black-stemmed Mallee
 York Gum
 Salmon Gum, Wurak
 Emu Tree, Pink Spike Hakea
 Broom Bush

Shrubs

Acacia andrewsii
Acacia ligustrina
Allocasuarina campestris
Eremophila decipiens ssp. *decipiens*
Hakea invaginata
Melaleuca acuminata
Pimelea microcephala ssp. *microcephala*
Rhagodia drummondii
Scaevola spinescens

Tamma, Tammar, Shrubby She-oak
 Slender Fuchsia

Shrubby Riceflower
 Lake Fringe Rhagodia
 Currant Bush, Maroon Bush

Soil (b) Crabholes (gilgai)

Trees

Acacia acuminata
Acacia daphnifolia
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus myriadena
Eucalyptus salmonophloia
Melaleuca atroviridis
Melaleuca eleuterostachya
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)

Pixie Bush
 York Gum

Salmon Gum, Wurak
 Broom Bush

Quandong

Shrubs

Acacia acuarria
Acacia aestivalis
Acacia anthochaera
Acacia colletioides
Acacia hemiteles
Acacia merrallii
Melaleuca adnata
Rhagodia drummondii

Sand Prickly Wattle

Wait-a-while
 Tan Wattle
 Merrill's Wattle

Lake Fringe Rhagodia

Unit 3: Very gentle inclined valleys



Soil (a) Red, sandy loam over hardpan

Trees	<i>Acacia acuminata</i> <i>Acacia tetragonophylla</i> <i>Eucalyptus camaldulensis</i> <i>Eucalyptus loxophleba</i> ssp. <i>supralaevis</i> <i>Eucalyptus salubris</i> <i>Hakea francisiana</i> <i>Melaleuca atroviridis</i> <i>Melaleuca eleuterostachya</i>	Jam, Mangard, Inland Jam (narrow leaf) Kurara River Red Gum, River Gum Gimlet Emu Tree, Pink Spike Hakea Broom Bush
Shrubs	<i>Acacia acutaria</i> <i>Acacia colletioides</i> <i>Acacia eremaea</i> <i>Acacia erinacea</i> <i>Acacia fragilis</i> <i>Acacia hemiteles</i> <i>Acacia ligustrina</i> <i>Atriplex bunburyana</i> <i>Eremophila decipiens</i> ssp. <i>decipiens</i> <i>Olearia muelleri</i> <i>Pimelea microcephala</i> ssp. <i>microcephala</i> <i>Rhagodia drummondii</i> <i>Rhagodia preissii</i> ssp. <i>preissii</i> <i>Senna artemisioides</i> ssp. <i>filifolia</i>	Sand Prickly Wattle Wait-a-while Spiny Wattle Tan Wattle Silver Saltbush Slender Fuchsia Goldfields Daisy Shrubby Riceflower Lake Fringe Rhagodia

Soil (b) Red, sandy loam over clay

Trees	<i>Acacia acuminata</i> <i>Acacia tetragonophylla</i> <i>Casuarina obesa</i> <i>Eucalyptus camaldulensis</i> <i>Eucalyptus loxophleba</i> ssp. <i>supralaevis</i> <i>Eucalyptus salmonophloia</i> <i>Eucalyptus salubris</i> <i>Hakea francisiana</i> <i>Melaleuca atroviridis</i>	Jam, Mangard, Inland Jam (narrow leaf) Kurara Swamp Sheoak River Red Gum, River Gum Salmon Gum, Wurak Gimlet Emu Tree, Pink Spike Hakea Broom Bush
Shrubs	<i>Acacia andrewsii</i> <i>Acacia ligustrina</i> <i>Eremophila decipiens</i> ssp. <i>decipiens</i> <i>Grevillea paniculata</i> <i>Hakea recurva</i>	Slender Fuchsia Djarnokmurd, Bag-needle Bush

Unit 3: Very gentle inclined valleys (contd)

Soil (b) Red, sandy loam over clay (contd)

Shrubs	<i>Melaleuca acuminata</i>	
	<i>Melaleuca cordata</i>	Heart Leaf Honey Myrtle
	<i>Melaleuca viminea</i> ssp. <i>viminea</i>	Mohan
	<i>Rhagodia drummondii</i>	Lake Fringe Rhagodia
	<i>Rhagodia preissii</i> ssp. <i>preissii</i>	

Soil (c) Brown, alkaline clay

Trees	<i>Acacia daphnifolia</i>	
	<i>Eremophila oldfieldii</i> ssp. <i>oldfieldii</i>	Pixie Bush
	<i>Eucalyptus loxophleba</i> ssp. <i>supralaevis</i>	
	<i>Eucalyptus salmonophloia</i>	Salmon Gum, Wurak
	<i>Melaleuca eleuterostachya</i>	
Shrubs	<i>Acacia aestivalis</i>	
	<i>Acacia andrewsii</i>	
	<i>Acacia anthochaera</i>	
	<i>Acacia colletioides</i>	Wait-a-while
	<i>Acacia eremaea</i>	
	<i>Acacia erinacea</i>	Spiny Wattle
	<i>Acacia hemiteles</i>	Tan Wattle
	<i>Acacia ligustrina</i>	
	<i>Atriplex bunburyana</i>	Silver Saltbush
	<i>Pimelea microcephala</i> ssp. <i>microcephala</i>	Shrubby Riceflower
	<i>Rhagodia drummondii</i>	Lake Fringe Rhagodia
	<i>Scaevola spinescens</i>	Currant Bush, Maroon Bush

Soil (d) Crabholes (gilgai)

Trees	<i>Acacia acuminata</i>	Jam, Mangard, Inland Jam (narrow leaf)
	<i>Acacia daphnifolia</i>	
	<i>Eremophila oldfieldii</i> ssp. <i>oldfieldii</i>	Pixie Bush
	<i>Eucalyptus loxophleba</i> ssp. <i>loxophleba</i>	York Gum
	<i>Eucalyptus myriadena</i>	
	<i>Eucalyptus salmonophloia</i>	Salmon Gum, Wurak
	<i>Melaleuca atroviridis</i>	Broom Bush
	<i>Santalum acuminatum</i>	Quandong
Shrubs	<i>Acacia acuarria</i>	Sand Prickly Wattle
	<i>Acacia aestivalis</i>	
	<i>Acacia andrewsii</i>	
	<i>Acacia anthochaera</i>	
	<i>Acacia erinacea</i>	Spiny Wattle
	<i>Acacia hemiteles</i>	Tan Wattle
	<i>Acacia ligustrina</i>	
	<i>Acacia merrallii</i>	Merrall's Wattle
	<i>Eremophila decipiens</i> ssp. <i>decipiens</i>	Slender Fuchsia
	<i>Melaleuca adnata</i>	
	<i>Rhagodia drummondii</i>	Lake Fringe Rhagodia
	<i>Rhagodia preissii</i> ssp. <i>preissii</i>	

Unit 4: Undulating country with long, narrow valleys



Soil (a) Red, sandy loam over clay

Trees

Acacia acuminata
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus loxophleba ssp. *supralaevis*
Eucalyptus obtusiflora ssp. *obtusiflora*
Hakea preissii
Hakea recurva ssp. *recurva*
Melaleuca eleuterostachya
Santalum acuminatum
Santalum spicatum

Jam, Mangard, Inland Jam (narrow leaf)
 Pixie Bush

Dongara Mallee
 Needle Tree, Needlebush, Dandjin, Tanjinn
 Djarnokmurd, Bag-needle Bush

Quandong
 Sandalwood

Shrubs

Acacia acutaria
Acacia colletioides
Acacia erinacea
Acacia hemiteles
Eremophila decipiens ssp. *decipiens*
Hakea invaginata
Melaleuca conothamnoides
Melaleuca hamata
Melaleuca lateriflora
Pimelea microcephala ssp. *microcephala*
Rhagodia drummondii
Rhagodia preissii ssp. *preissii*

Sand Prickly Wattle
 Wait-a-while
 Spiny Wattle
 Tan Wattle
 Slender Fuchsia

Purple Pom Pom Myrtle
 Broom Bush
 Gorada
 Shrubby Riceflower
 Lake Fringe Rhagodia

Soil (b) Shallow soils over granite or gneiss

Trees

Acacia acuminata
Acacia tetragonophylla
Allocasuarina acutivalvis ssp. *acutivalvis*
Allocasuarina huegeliana
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus kochii ssp. *borealis*
Eucalyptus loxophleba ssp. *loxophleba*
Melaleuca eleuterostachya
Santalum acuminatum
Santalum spicatum

Jam, Mangard, Inland Jam (narrow leaf)
 Kurara
 Black Tammar
 Rock Sheoak, Rock Oak, Kwool
 Pixie Bush
 (in north) Oil Mallee
 York Gum

Quandong
 Sandalwood

Shrubs

Acacia hemiteles
Acacia longiphylloidea
Allocasuarina campestris
Melaleuca fulgens ssp. *steadmanii*
Melaleuca hamata

Tan Wattle
 Long-leaved Wattle
 Tamma, Tammar, Shrubby She-oak

Broom Bush

Unit 4: Undulating country with long, narrow valleys (contd)

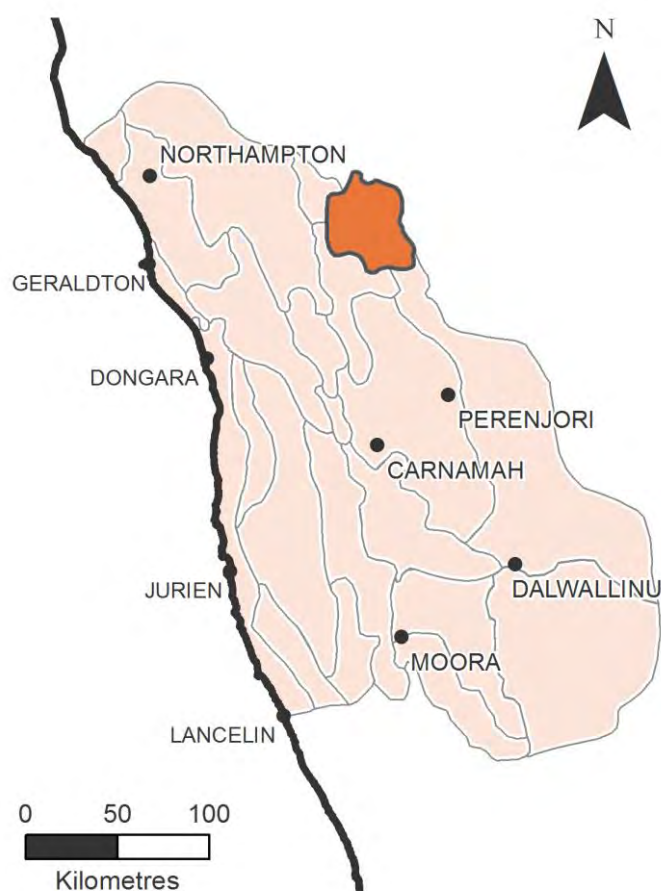
Soil (b) Shallow soils over granite or gneiss (contd)

Shrubs	<i>Melaleuca hamulosa</i>	
	<i>Melaleuca lateriflora</i>	Gorada
	<i>Melaleuca marginata</i>	
	<i>Melaleuca radula</i>	Graceful Honeymyrtle
	<i>Melaleuca sclerophylla</i>	

Soil (c) Crabholes (gilgai)

Trees	<i>Acacia acuminata</i>	Jam, Mangard, Inland Jam (narrow leaf)
	<i>Eremophila oldfieldii</i> ssp. <i>oldfieldii</i>	Pixie Bush
	<i>Eucalyptus loxophleba</i> ssp. <i>supralaevis</i>	
	<i>Eucalyptus myriadena</i>	
	<i>Eucalyptus salmonophloia</i>	Salmon Gum, Wurak
	<i>Hakea recurva</i> ssp. <i>recurva</i>	Djarnokmurd, Bag-needle Bush
	<i>Melaleuca eleuterostachya</i>	
	<i>Melaleuca leiocarpa</i>	(in east) Pungent Honey Myrtle
Shrubs	<i>Acacia acuaria</i>	Sand Prickly Wattle
	<i>Acacia aestivalis</i>	
	<i>Acacia andrewsii</i>	
	<i>Acacia anthochaera</i>	
	<i>Acacia colletioides</i>	Wait-a-while
	<i>Acacia erinacea</i>	Spiny Wattle
	<i>Acacia hemiteles</i>	Tan Wattle
	<i>Acacia ligustrina</i>	
	<i>Pimelea microcephala</i> ssp. <i>microcephala</i>	Shrubby Riceflower
	<i>Rhagodia drummondii</i>	Lake Fringe Rhagodia
	<i>Rhagodia preissii</i> ssp. <i>preissii</i>	
	<i>Senna artemisioides</i> ssp. <i>filifolia</i>	

PINDAR



This district lies east of the town of Mullewa and extends south-east to the Rabbit Proof Fence.

Topography

Gently undulating sandplain with long, gentle slopes is interspersed with relatively minor areas of stony, low rises and hill crests. Very gently inclined small valleys occur as inclusions within the sandplains and hills.

Soils

Acid and neutral, deep, yellow sands, sometimes over lateritic gravel, occur on the sandplains with shallow soil over granite or gneiss on the stony hills. Red, sandy loams over hardpan occur in the valleys which are occasionally affected by salt.

Problems

- Wind erosion on the sandy soils - units 1 and 4.
- Salinity in the valley floors - unit 2.
- Water erosion on the long slopes, particularly below rock outcrops - unit 3.

Unit 1: Acid sandplain



Soil Deep, yellow sand, acid

Trees

Acacia acuminata
Acacia burkittii
Allocasuarina acutivalvis ssp. *acutivalvis*
Banksia benthamiana
Eucalyptus eudesmioides
Eucalyptus jucunda
Eucalyptus leptopoda ssp. *arctata*
Eucalyptus oldfieldii
Hakea francisiana
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)
 Sandhill Wattle
 Black Tammar

Malallie
 Yuna Mallee

Oldfield's Mallee
 Emu Tree, Pink Spike Hakea
 Quandong

Shrubs

Acacia assimilis ssp. *assimilis*
Acacia cavealis
Acacia comans
Acacia coolgardiensis
Acacia effusifolia
Acacia lasiocarpa var. *lasiocarpa*
Acacia neurophylla ssp. *erugata*
Acacia resinimarginea
Acacia stereophylla var. *stereophylla*
Allocasuarina campestris
Hakea cygna ssp. *cygna*
Hakea francisiana
Hakea invaginata
Hibbertia arcuata
Hibbertia stenophylla
Melaleuca cordata
Melaleuca filifolia
Ricinocarpos velutinus

Wodjil

Spinifex Wattle

Panjang, Pajang

Tamma, Tammar, Shrubby She-oak
 Swan Fruit Hakea
 Emu Tree, Pink Spike Hakea

Heart Leaf Honey Myrtle
 Wiry Honey myrtle

Unit 2: Small valleys



Soil Red, sandy loam over hardpan, occasionally salt-affected

Trees

Acacia acuminata
Acacia anthochaera
Acacia sclerosperma ssp. *sclerosperma**
Acacia tetragonophylla
Allocasuarina acutivalvis ssp. *acutivalvis*
Callitris columellaris
Casuarina obesa
Eremophila oldfieldii ssp. *oldfieldii*
*Eucalyptus brachycorys**
Eucalyptus horistes
Eucalyptus loxophleba ssp. *supralaevis**
Eucalyptus subangusta ssp. *pusilla*
Grevillea juncifolia ssp. *temulenta*
Hakea francisiana
Hakea preissii
Hakea recurva ssp. *recurva*
Melaleuca atroviridis
Melaleuca eleuterostachya
Santalum spicatum

Jam, Mangard, Inland Jam (narrow leaf)

Limestone Wattle

Kurara

Black Tammar

White Cypress Pine

Swamp Sheoak

Pixie Bush

Cowcowing Mallee

Oil Mallee (Northern Rough Bark)

Emu Tree, Pink Spike Hakea

Needle Tree, Needlebush, Dandjin, Tanjinn

Djarnokmurd, Bag-needle Bush

Broom Bush

Sandalwood

Sand Prickly Wattle

Wodjil

Spinifex Wattle

Horse Mulga

Turpentine Bush

Slender Fuchsia

Wilcox Bush

Broom Bush

Gorada

Lake Fringe Rhagodia

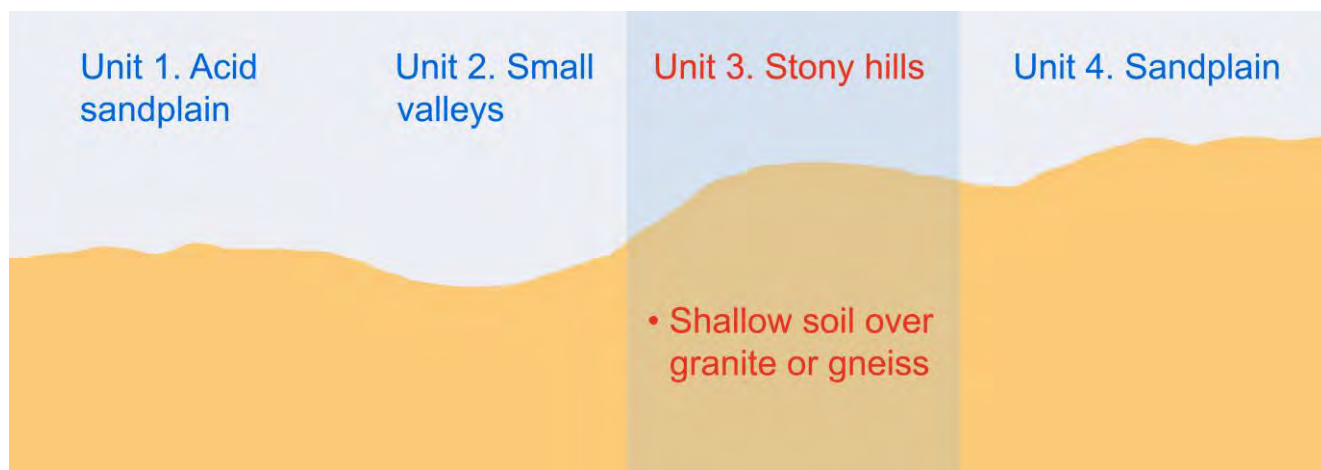
Currant Bush, Maroon Bush

Shrubs

*Acacia acuaria**
Acacia assimilis ssp. *assimilis*
Acacia coolgardiensis
Acacia ramulosa var. *ramulosa*
Acacia restiacea
Eremophila clarkei
Eremophila decipiens ssp. *decipiens*
Eremophila forrestii ssp. *forrestii*
Melaleuca acuminata
Melaleuca adnata
Melaleuca hamata
*Melaleuca lateriflora**
Melaleuca stereophloia
*Rhagodia drummondii**
Scaevola spinescens

*Suitable for saline sites

Unit 3: Stony hills



Soil Shallow soil over granite or gneiss

Trees

Acacia acuminata
Acacia tetragonophylla
Allocasuarina acutivalvis ssp. *prinsepiana*
Allocasuarina huegeliana
Callitris columellaris
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus ewartiana
Eucalyptus kochii ssp. *plenissima*
Eucalyptus loxophleba ssp. *supralaevis*
Hakea recurva ssp. *recurva*
Melaleuca eleuterostachya
Santalum acuminatum
Santalum spicatum

Jam, Mangard, Inland Jam (narrow leaf)
 Kurara

Rock Sheoak, Rock Oak, Kwool
 White Cypress Pine
 Pixie Bush
 Ewart's Mallee
 Oil Mallee

Djarnokmurd, Bag-needle Bush

Quandong
 Sandalwood

Shrubs

Acacia acuaria
Acacia andrewsii
Acacia assimilis ssp. *assimilis*
Acacia ramulosa var. *ramulosa*
Acacia restiacea
Acacia rostellifera
Allocasuarina campestris
Astroloma serratifolium
Dodonaea inaequifolia
Eremophila clarkei
Eremophila decipiens ssp. *decipiens*
Melaleuca filifolia
Melaleuca fulgens ssp. *steadmanii*
Melaleuca hamata
Melaleuca nematophylla
Melaleuca radula
Petrophile conifera ssp. *conifera*
Rhagodia drummondii
Thryptomene australis

Sand Prickly Wattle

Wodjil
 Horse Mulga

Summer-scented Wattle, Black Wattle
 Tamma, Tammar, Shrubby She-oak
 Kondrung

Turpentine Bush
 Slender Fuchsia
 Wiry Honeymyrtle

Broom Bush
 Wiry Honey-myrtle
 Graceful Honeymyrtle

Lake Fringe Rhagodia
 Hook-leaf Thryptomene

Unit 4: Sandplain



Soil Deep, yellow sand, neutral

Trees

Acacia acuminata
Allocasuarina acutivalvis ssp. *acutivalvis*
Banksia benthamiana
Callitris arenaria
Eucalyptus eudesmioides
Eucalyptus horistes
Eucalyptus jucunda
Eucalyptus kochii ssp. *borealis*
Eucalyptus kochii ssp. *plenissima*
Eucalyptus leptopoda ssp. *arctata*
Eucalyptus oldfieldii
Eucalyptus subangusta ssp. *pusilla*
Grevillea juncifolia ssp. *temulenta*
Hakea francisiana

Jam, Mangard, Inland Jam (narrow leaf)
 Black Tammar

Sandplain Cypress
 Malallie
 Oil Mallee (Northern Rough Bark)
 Yuna Mallee
 Oil Mallee
 Oil Mallee

Oldfield's Mallee

Emu Tree, Pink Spike Hakea

Wodjil

Shrubs

Acacia assimilis ssp. *assimilis*
Acacia blakelyi
Acacia cavealis
Acacia comans
Acacia coolgardiensis
Acacia effusifolia
Acacia spathulifolia
Acacia stereophylla var. *stereophylla*
Allocasuarina campestris
Daviesia benthamii ssp. *benthamii*
Eremophila forrestii ssp. *forrestii*
Grevillea obliquistigma ssp. *obliquistigma*
Grevillea paniculata
Grevillea paradoxa
Hakea invaginata
Malleostemon roseus
Melaleuca cordata
Melaleuca nematophylla
Petrophile conifera ssp. *conifera*

Spinifex Wattle

Spoon Leaf Wattle

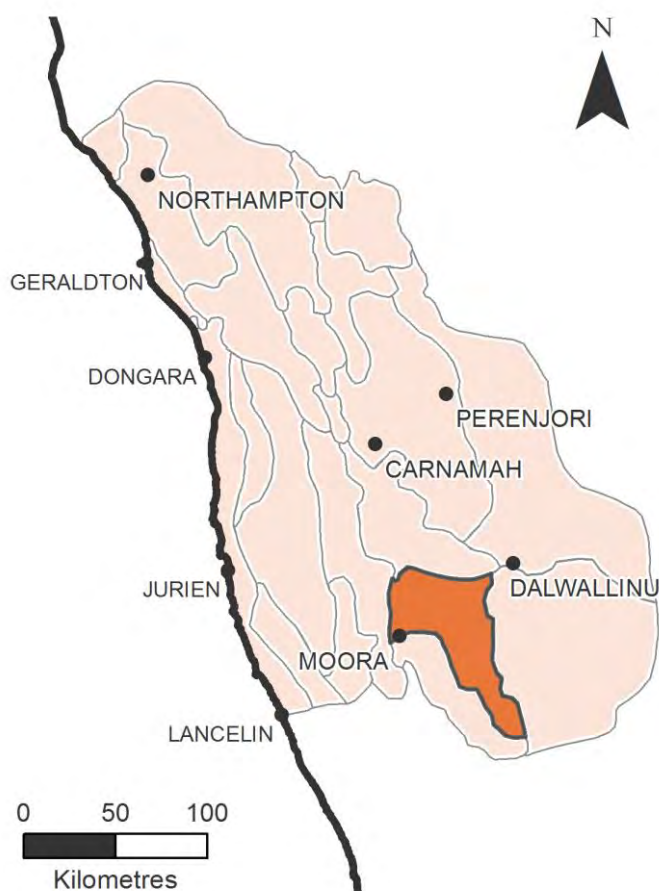
Tamma, Tammar, Shrubby She-oak

Wilcox Bush

Bottlebrush Grevillea

Heart Leaf Honey Myrtle
 Wiry Honey-myrtle

VICTORIA PLAINS



Location

This district extends from Watheroo in the north-west almost to Goomalling in the south-east. Milng lies in the north-east of the district and Moora is on the western boundary.

Topography

In the western half, rolling to hilly terrain occurs with rock outcrops and flat, fairly extensive valley floors. The eastern part comprises gently rolling terrain separated by valleys with secondary salinity. The southern portion is mainly gently undulating sandplain.

Soils

Hilly areas are mainly shallow soil over granite or gneiss with red sandy loam over clay soils on longer slopes. The flat valley floors and gentle slopes are commonly sand over yellow mottled clay soils with patches of crabholes (gilgai) on both valley floors and gentle slopes. The gently rolling terrain has sand over yellow clay. The sandplain has mainly deep, yellow sands with small areas of gravel ridges and spurs.

Problems

- Water erosion on the hilly slopes - unit 1.
- Salinity in the valleys and many hillside seepages - unit 2.
- Waterlogging of valleys - unit 2.
- Wind erosion on the sandplain - unit 4.

Unit 1: Hilly country



Soil (a) Shallow soil over granite or gneiss

Trees

Acacia acuminata
Acacia daphnifolia
Acacia microbotrya
Acacia tetragonophylla
Allocasuarina huegeliana
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus kochii ssp. *plenissima*
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus salubris
Eucalyptus wandoo ssp. *pulverea*
Eucalyptus wandoo ssp. *wandoo*
Hakea recurva ssp. *recurva*
Melaleuca eleuterostachya
Santalum acuminatum
Santalum spicatum

Jam, Mangard, Inland Jam (narrow leaf)

Manna Wattle
 Kurara
 Rock Sheoak, Rock Oak, Kwool
 Pixie Bush
 Oil Mallee
 York Gum
 Gimlet

Wandoo, White Gum
 Djarnokmurd, Bag-needle Bush

Quandong
 Sandalwood

Sand Prickly Wattle

Shrubs

Acacia acuaria
Acacia bidentata
Acacia ericksoniae
Acacia lasiocarpa var. *sedifolia*
Acacia restiacea
Acacia rostelifera
Allocasuarina campestris
Allocasuarina humilis
Banksia armata var. *armata*
Banksia carlinoides
Banksia fraseri var. *fraseri*
Banksia sessilis var. *sessilis*
Calothamnus sanguineus
Dodonaea inaequifolia
Eremophila decipiens ssp. *decipiens*
Gastrolobium spinosum
Grevillea paniculata
Grevillea paradoxa
Hakea lissocarpa
Hakea scoparia ssp. *scoparia*
Isopogon divergens
Melaleuca concreta
Melaleuca hamulosa
Melaleuca marginata

Summer-scented Wattle, Black Wattle
 Tamma, Tammar, Shrubby She-oak
 Dwarf Sheoak
 Prickly Dryandra
 Pink Dryandra

Parrot Bush
 Silky-leaved Blood Flower, Pindak, Boolgalla

Slender Fuchsia
 Prickly Poison

Bottlebrush Grevillea
 Honey Bush

Spreading Coneflower

Creekline Honey Myrtle

Unit 1: Hilly country (contd)

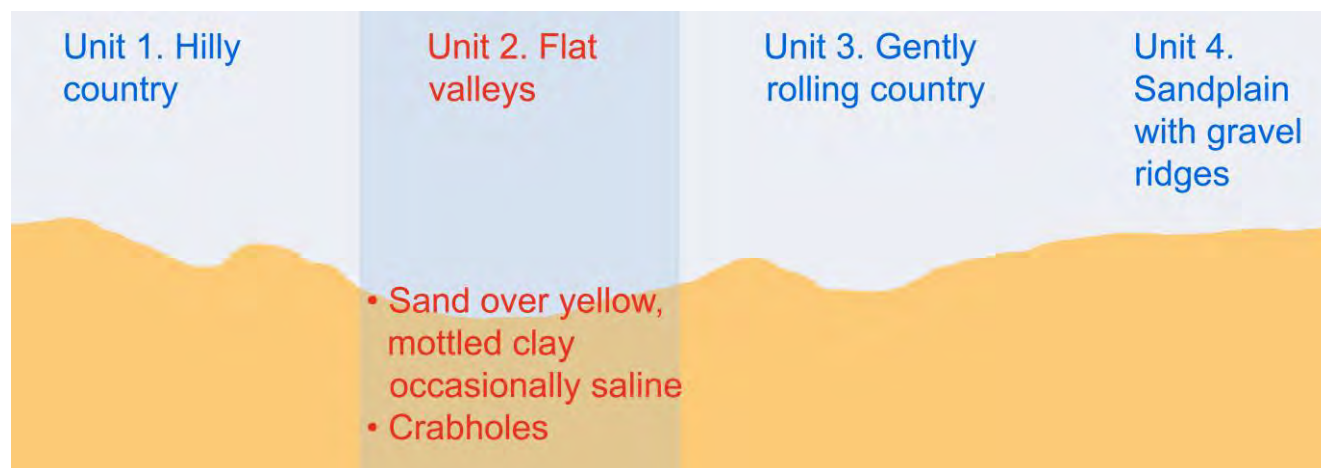
Soil (a) Shallow soil over granite or gneiss (contd)

Shrubs	<i>Melaleuca platycalyx</i> <i>Melaleuca radula</i> <i>Melaleuca stereophloia</i> <i>Thryptomene mucronulata</i> <i>Verticordia chrysanthella</i>	Graceful Honeymyrtle
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Soil (b) Red, sandy loam over clay

Trees	<i>Acacia acuminata</i> <i>Acacia daphnifolia</i> <i>Acacia microbotrya</i> <i>Casuarina obesa</i> <i>Eremophila oldfieldii</i> ssp. <i>oldfieldii</i> <i>Eucalyptus drummondii</i> <i>Eucalyptus ebbanoensis</i> ssp. <i>ebbanoensis</i> <i>Eucalyptus flocktoniae</i> ssp. <i>flocktoniae</i> <i>Eucalyptus loxophleba</i> ssp. <i>loxophleba</i> <i>Eucalyptus obtusiflora</i> ssp. <i>obtusiflora</i> <i>Hakea recurva</i> ssp. <i>recurva</i> <i>Santalum acuminatum</i>	Jam, Mangard, Inland Jam (narrow leaf) Manna Wattle Swamp Sheoak Pixie Bush Drummond's Gum Sandplain Mallee Merrit York Gum Dongara Mallee Djarnokmurd, Bag-needle Bush Quandong
Shrubs	<i>Acacia acuaria</i> <i>Acacia colletioides</i> <i>Acacia hemiteles</i> <i>Acacia rostelifera</i> <i>Dodonaea inaequifolia</i> <i>Gastrolobium spinosum</i> <i>Melaleuca concreta</i> <i>Melaleuca conothamnoides</i> <i>Melaleuca lateriflora</i> <i>Melaleuca platycalyx</i> <i>Rhagodia drummondii</i>	Sand Prickly Wattle Wait-a-while Tan Wattle Summer-scented Wattle, Black Wattle Prickly Poison Purple Pom Pom Myrtle Gorada Lake Fringe Rhagodia

Unit 2: Flat valleys



Soil (a) Sand over yellow, mottled clay, occasionally saline

Trees

Acacia acuminata
Acacia aestivalis
*Acacia daphnifolia**
Acacia microbotrya
Acacia saligna ssp. *lindleyi*
*Callitris pyramidalis**
*Casuarina obesa**
Eremophila oldfieldii ssp. *oldfieldii*
*Eucalyptus baudiniana**
*Eucalyptus brachycorys**
Eucalyptus loxophleba ssp. *supralaevis**
Eucalyptus myriadena ssp. *myriadena**
Eucalyptus salmonophloia
Eucalyptus subangusta ssp. *subangusta*
*Hakea preissii**
Melaleuca atroviridis
*Melaleuca lanceolata**
*Melaleuca lateriflora**

Jam, Mangard, Inland Jam (narrow leaf)

Manna Wattle

Swamp Cypress
 Swamp Sheoak
 Pixie Bush

Cowcowing Mallee

Salmon Gum, Wurak

Needle Tree, Needlebush, Dandjin, Tanjinn
 Broom Bush
 Rottnest Teatree
 Gorada

Shrubs

Acacia blakelyi
Acacia colletioides
Acacia erinacea
Acacia hemiteles
*Acacia ligustrina**
Acacia rostellifera
Acacia spathulifolia
*Enchylaena tomentosa**
Eremophila decipiens ssp. *decipiens**
Hakea erinacea
Hakea incrassata
Hypocalymma angustifolium
Jacksonia hakeoides
Leptospermum erubescens
*Maireana brevifolia**
Melaleuca adnata
Melaleuca brevifolia
Melaleuca cordata
Melaleuca hamulosa
*Melaleuca lateriflora**

Wait-a-while
 Spiny Wattle
 Tan Wattle

Summer-scented Wattle, Black Wattle
 Spoon Leaf Wattle
 Barrier Saltbush, Ruby Saltbush
 Slender Fuchsia
 Hedge-hog Hakea, Echidna Hakea
 Marble Hakea
 White Myrtle, Kudjid

Roadside Teatree, Pink Teatree
 Small Leaf Bluebush

Mallee Myrtle, Mallee Honey-myrtle
 Heart Leaf Honey Myrtle
 Creekline Honey Myrtle
 Gorada

Unit 2: Flat valleys (contd)

Soil (a) Sand over yellow, mottled clay, occasionally saline (contd)

Shrubs

<i>Melaleuca marginata</i>	Mohan
<i>Melaleuca stereophloia</i>	Goldfields Daisy
<i>Melaleuca viminea</i> ssp. <i>viminea</i>	
<i>Olearia muelleri</i>	
<i>Regelia ciliata</i>	
<i>Rhagodia drummondii</i> *	Lake Fringe Rhagodia
<i>Rhagodia preissii</i> ssp. <i>preissii</i>	
<i>Scaevola spinescens</i>	Currant Bush, Maroon Bush
<i>Scholtzia parviflora</i>	
<i>Tecticornia halocnemoides</i> *	Shrubby Samphire

*Suitable for saline sites

Soil (b) Crabholes (gilgai)

Trees

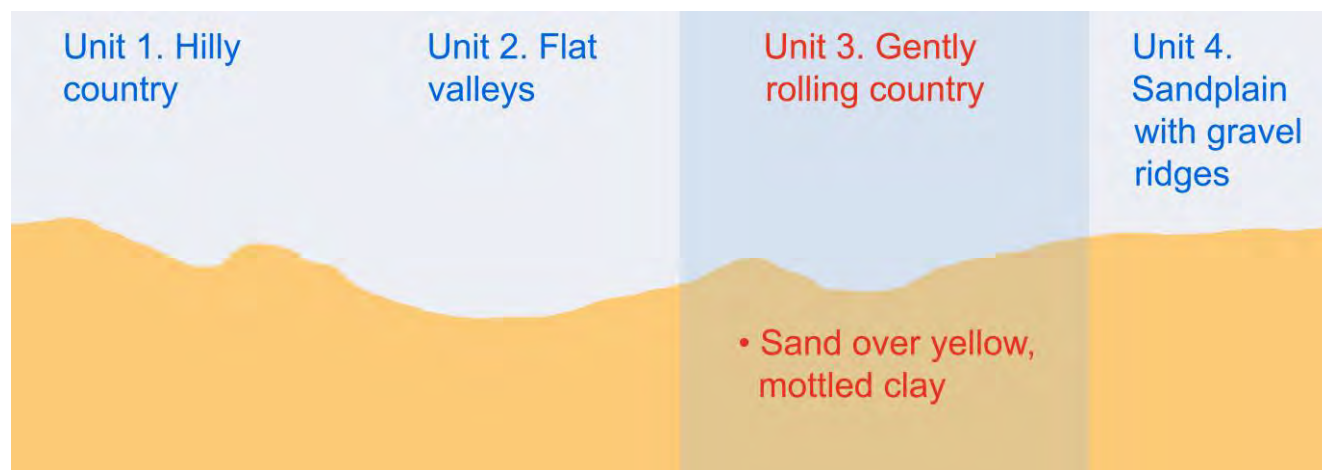
<i>Acacia acuminata</i>	Jam, Mangard, Inland Jam (narrow leaf)
<i>Acacia aestivalis</i>	
<i>Eremophila oldfieldii</i> ssp. <i>oldfieldii</i>	Pixie Bush
<i>Eucalyptus loxophleba</i> ssp. <i>loxophleba</i>	York Gum
<i>Eucalyptus loxophleba</i> ssp. <i>supralaevis</i>	
<i>Eucalyptus myriadena</i> ssp. <i>myriadena</i> *	
<i>Eucalyptus salmonophloia</i>	Salmon Gum, Wurak
<i>Hakea preissii</i> *	Needle Tree, Needlebush, Dandjin, Tanjinn
<i>Melaleuca atroviridis</i>	Broom Bush
<i>Melaleuca lateriflora</i> *	Gorada

Shrubs

<i>Acacia acuarria</i>	Sand Prickly Wattle
<i>Acacia aestivalis</i>	
<i>Acacia andrewsii</i>	
<i>Acacia anthochaera</i>	
<i>Acacia colletioides</i>	Wait-a-while
<i>Acacia erinacea</i>	Spiny Wattle
<i>Acacia hemiteles</i>	Tan Wattle
<i>Acacia ligustrina</i>	
<i>Acacia merrallii</i>	Merrall's Wattle
<i>Enchylaena tomentosa</i>	Barrier Saltbush, Ruby Saltbush
<i>Eremophila decipiens</i> ssp. <i>decipiens</i>	Slender Fuchsia
<i>Melaleuca brevifolia</i> *	Small Leaf Bluebush
<i>Melaleuca hamulosa</i>	Creekline Honey Myrtle
<i>Melaleuca viminea</i> ssp. <i>viminea</i>	Mohan
<i>Olearia muelleri</i>	Goldfields Daisy
<i>Rhagodia drummondii</i> *	Lake Fringe Rhagodia
<i>Rhagodia preissii</i> ssp. <i>preissii</i>	
<i>Scaevola spinescens</i>	Currant Bush, Maroon Bush
<i>Senna artemisioides</i> ssp. <i>filifolia</i>	

*Suitable for saline sites

Unit 3: Gently rolling country



Soil Sand over yellow, mottled clay

Trees

Acacia acuminata
Acacia microbotrya
Acacia saligna ssp. *lindleyi*
Casuarina obesa
Corymbia calophylla
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus arachnaea ssp. *arachnaea*
Eucalyptus loxophleba ssp. *loxophleba**
*Eucalyptus salmonophloia**
Eucalyptus subangusta ssp. *subangusta*
*Hakea preissii**
Melaleuca atroviridis
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)
 Manna Wattle

(valley floor) Swamp Sheoak
 Marri, Red Gum
 Pixie Bush
 Black-stemmed Mallee
 York Gum
 Salmon Gum, Wurak

Needle Tree, Needlebush, Dandjin, Tanjinn
 Broom Bush
 Quandong

Shrubs

Acacia colletioides
Acacia erinacea
*Acacia ligustrina**
Acacia multispicata
Daviesia benthamii ssp. *benthamii*
*Enchylaena tomentosa**
Eremophila decipiens ssp. *decipiens**
Gastrolobium spinosum
Hakea incrassata
Hakea invaginata
Melaleuca cordata
Melaleuca hamata
Melaleuca marginata
Melaleuca stereophloia
Olearia muelleri
*Rhagodia drummondii**
Rhagodia preissii ssp. *preissii**
Scaevola spinescens

Wait-a-while
 Spiny Wattle

Barrier Saltbush, Ruby Saltbush
 Slender Fuchsia
 Prickly Poison
 Marble Hakea

Heart Leaf Honey Myrtle
 Broom Bush

Goldfields Daisy
 Lake Fringe Rhagodia

Currant Bush, Maroon Bush

*Suitable for saline sites

Unit 4: Sandplain with gravel ridges



Soil (a) Deep, yellow sand

Trees

Acacia acuminata
Allocasuarina acutivalvis ssp. *acutivalvis*
Banksia attenuata
Banksia prionotes
Callitris arenaria
Eucalyptus drummondii
Eucalyptus gittinsii
Eucalyptus horistes
Eucalyptus pyriformis
Eucalyptus subangusta ssp. *subangusta*
Hakea francisiana

Jam, Mangard, Inland Jam (narrow leaf)
 Black Tammar
 Slender Banksia
 Acorn Banksia
 Sandplain Cypress
 Drummond's Gum
 Northern Sandplain Mallee
 Oil Mallee (Northern Rough Bark)
 Pear-fruited Mallee, Dowerin Rose

Emu Tree, Pink Spike Hakea

Shrubs

Acacia blakelyi
Acacia dilatata
Acacia lasiocarpa var. *sedifolia*
Acacia leptospermoides ssp. *leptospermoides*
Acacia multispicata
Acacia neurophylla ssp. *erugata*
Acacia pulchella var. *glaberrima*
Allocasuarina campestris
Allocasuarina humilis
Banksia hewardiana
Calothamnus quadrifidus ssp. *angustifolius*
Calothamnus sanguineus
Grevillea biformis ssp. *biformis*
Grevillea leucopteris
Grevillea petrophiloides ssp. *petrophiloides*
Grevillea polybotrya
Hakea multilineata
Hakea scoparia
Melaleuca concreta
Melaleuca conothamnoides
Melaleuca cordata
Petrophile macrostachya
Verticordia densiflora var. *densiflora*

Tamma, Tammar, Shrubby She-oak
 Dwarf Sheoak

Silky-leaved Blood Flower, Pindak, Boolgalla

White Plume Grevillea
 Pink Pokers

Grass Leaf Hakea

Purple Pom Pom Myrtle
 Heart Leaf Honey Myrtle

Compact Featherflower

Soil (b) Sand over gravel

Trees

Acacia acuminata
Allocasuarina huegeliana
Eucalyptus arachnaea ssp. *arachnaea*

Jam, Mangard, Inland Jam (narrow leaf)
 Rock Sheoak, Rock Oak, Kwool
 Black-stemmed Mallee

Unit 4: Sandplain with gravel ridges (contd)

Soil (b) Sand over gravel (contd)

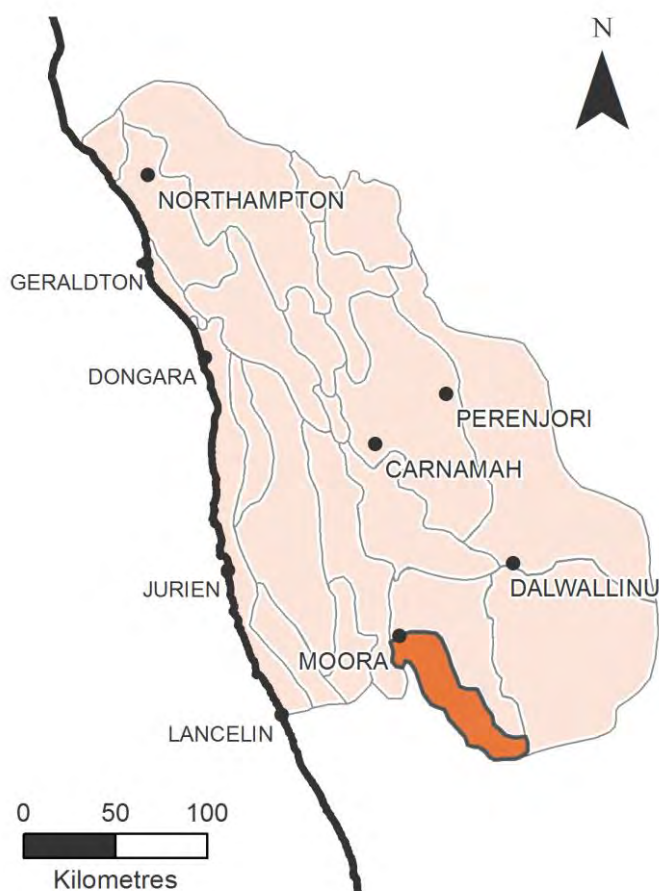
Trees

<i>Eucalyptus drummondii</i>	Drummond's Gum
<i>Eucalyptus ebbanoensis</i> ssp. <i>ebbanoensis</i>	Sandplain Mallee
<i>Eucalyptus eudesmioides</i>	Malallie
<i>Eucalyptus horistes</i>	Oil Mallee (Northern Rough Bark)
<i>Eucalyptus subangusta</i> ssp. <i>subangusta</i>	
<i>Eucalyptus wandoo</i> ssp. <i>pulverea</i>	
<i>Eucalyptus wandoo</i> ssp. <i>wandoo</i>	Wandoo, White Gum
<i>Hakea francisiana</i>	Emu Tree, Pink Spike Hakea

Shrubs

<i>Acacia bidentata</i>	
<i>Acacia dilatata</i>	
<i>Acacia leptospermoides</i> ssp. <i>leptospermoides</i>	
<i>Acacia neurophylla</i> ssp. <i>erugata</i>	
<i>Acacia pulchella</i> var. <i>glaberrima</i>	
<i>Allocasuarina campestris</i>	Tamma, Tammar, Shrubby She-oak
<i>Allocasuarina humilis</i>	Dwarf Sheoak
<i>Baeckea crispiflora</i> var. <i>tenuoir</i>	
<i>Banksia armata</i> var. <i>armata</i>	Prickly Dryandra
<i>Banksia carlinoides</i>	Pink Dryandra
<i>Banksia hewardiana</i>	
<i>Banksia sessilis</i> var. <i>sessilis</i>	Parrot Bush
<i>Calothamnus sanguineus</i>	Silky-leaved Blood Flower, Pindak, Boolgalla
<i>Daviesia hakeoides</i> ssp. <i>subnuda</i>	
<i>Daviesia nudiflora</i> ssp. <i>nudiflora</i>	
<i>Grevillea biformis</i> ssp. <i>biformis</i>	
<i>Grevillea biternata</i>	
<i>Grevillea paniculata</i>	
<i>Grevillea paradoxa</i>	Bottlebrush Grevillea
<i>Grevillea petrophiloides</i> ssp. <i>petrophiloides</i>	Pink Pokers
<i>Hakea brownii</i>	
<i>Hakea circumalata</i>	
<i>Hakea cygna</i> ssp. <i>cygna</i>	Swan Fruit Hakea
<i>Hakea incrassata</i>	Marble Hakea
<i>Hakea lissocarpa</i>	Honey Bush
<i>Hakea multilineata</i>	Grass Leaf Hakea
<i>Hakea scoparia</i> ssp. <i>scoparia</i>	
<i>Isopogon divergens</i>	Spreading Coneflower
<i>Melaleuca calyptroides</i>	
<i>Petrophile macrostachya</i>	
<i>Petrophile shuttleworthiana</i>	

WALEBING



Location

This district runs in a south-easterly direction from Moora almost to Goomalling with Walebing in the north, and New Norcia on the south-western boundary.

Topography

In the north the district is mainly rolling to hilly terrain with some steep slopes. The balance of the area is low, hilly terrain with frequent narrow valleys with short, steep-sided slopes. Breakaways are common.

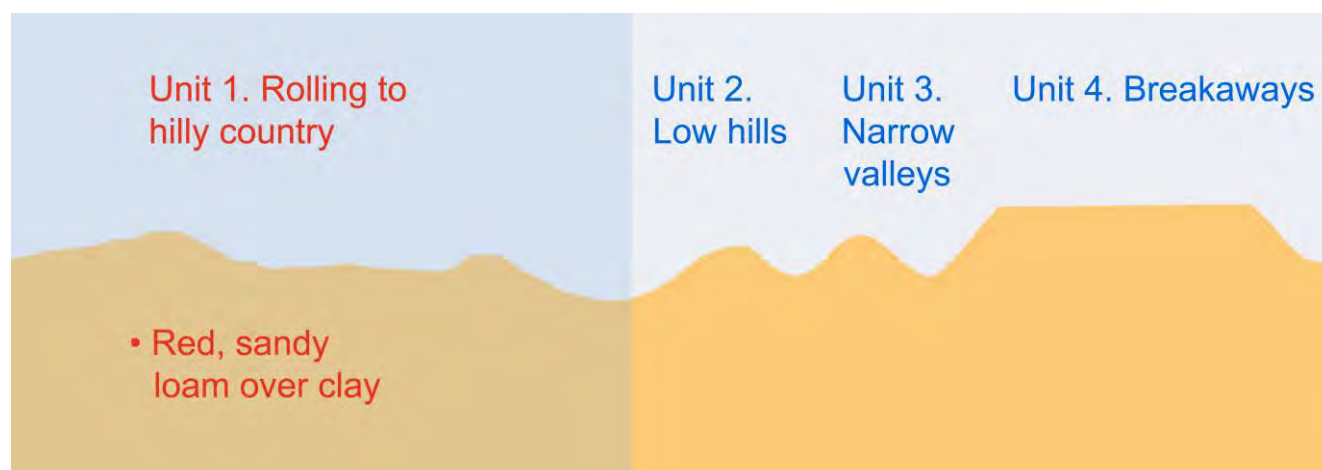
Soils

Red sandy loams over clay soils predominate in the rolling terrain to the north. Loamy sands over mottled yellow clay soils with variable amounts of gravel dominate the valleys with sand over gravel on hill ridges and crests. The breakaways are capped by gravel at the surface with exposures of massive laterite.

Problems

- Water erosion on steep hill slopes - units 1 and 2.
- Salinity along drainage lines - unit 3.

Unit 1: Rolling to hilly country



Soil Red, sandy loam over clay

Trees

Acacia acuminata
Acacia microbotrya
Allocasuarina huegeliana
Eucalyptus accedens
Eucalyptus arachnaea ssp. *arachnaea*
Eucalyptus drummondii
Eucalyptus flocktoniae ssp. *flocktoniae*
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus salmonophloia
Eucalyptus wandoo ssp. *pulverea*
Hakea preissii
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)
 Manna Wattle
 Rock Sheoak, Rock Oak, Kwowl
 Powderbark Wandoo
 Black-stemmed Mallee
 Drummond's Gum
 Merrit
 York Gum
 Salmon Gum, Wurak

Needle Tree, Needlebush, Dandjin, Tanjinn
 Quandong

Shrubs

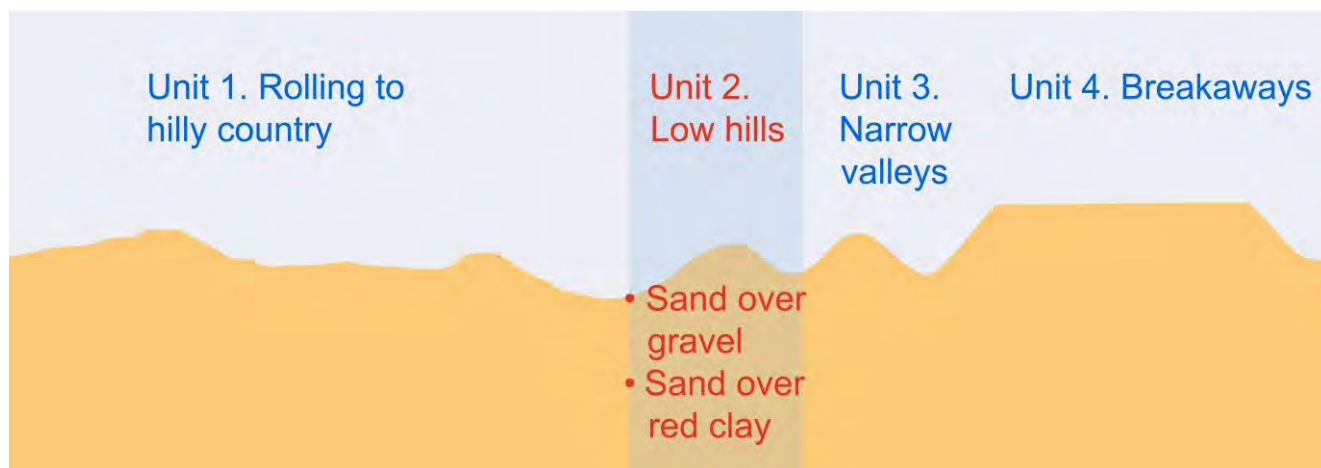
Acacia hemiteles
Allocasuarina campestris
Banksia carlinoides
Eremophila decipiens ssp. *decipiens*
Hakea scoparia ssp. *scoparia*
Maireana brevifolia
Melaleuca concreta
Melaleuca marginata
Rhagodia drummondii

Tan Wattle
 Tamma, Tammar, Shrubby She-oak
 Pink Dryandra
 Slender Fuchsia

Small Leaf Bluebush

Lake Fringe Rhagodia

Unit 2: Low hills



Soil (a) Sand over gravel

Trees

Acacia acuminata
Allocasuarina huegeliana
Eucalyptus flocktoniae ssp. *flocktoniae*
Eucalyptus gittinsii ssp. *illucida*
Eucalyptus horistes

Jam, Mangard, Inland Jam (narrow leaf)
 Rock Sheoak, Rock Oak, Kwool
 (on deeper sand) Merrit

Oil Mallee (Northern Rough Bark)

Shrubs

Acacia leptospermoides ssp. *leptospermoides*
Adenanthos cygnorum ssp. *cygnorum*
Allocasuarina campestris
Calothamnus quadrifidus ssp. *angustifolius*
Calothamnus sanguineus
Daviesia quadrilatera
Grevillea eriostachya
Hakea costata
Hakea cygna ssp. *cygna*
Hakea lissocarpa
Hakea scoparia ssp. *scoparia*
Melaleuca concreta
Melaleuca platycalyx

Common Woollybush
 Tamma, Tammar, Shrubby She-oak

Silky-leaved Blood Flower, Pindak, Boolgalla

Flame Grevillea
 Ribbed Hakea
 Swan Fruit Hakea
 Honey Bush

Soil (b) Sand over red clay

Trees

Acacia acuminata
Acacia microbotrya
Allocasuarina huegeliana
Eucalyptus flocktoniae ssp. *flocktoniae*
Eucalyptus loxophleba ssp. *supralaevis*
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)
 Manna Wattle
 Rock Sheoak, Rock Oak, Kwool
 Merrit

Quandong

Shrubs

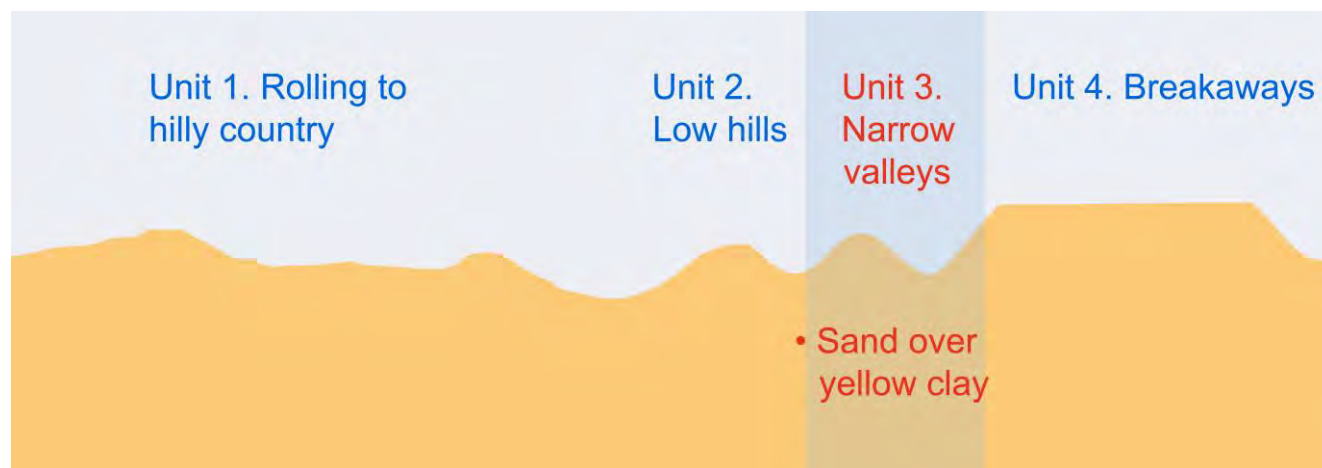
Acacia erinacea
Acacia hemiteles
Acacia leptospermoides ssp. *leptospermoides*
Allocasuarina humilis
Banksia armata var. *armata*
Daviesia podophylla
Grevillea bitermata
Hakea cygna ssp. *cygna*
Melaleuca concreta
Melaleuca marginata

Spiny Wattle
 Tan Wattle

Dwarf Sheoak
 Prickly Dryandra

Swan Fruit Hakea

Unit 3: Narrow valleys



Soil Sand over yellow clay

Trees

Acacia acuminata
Acacia microbotrya
Acacia saligna ssp. *lindleyi*
Callitris arenaria
Callitris pyramidalis
Casuarina obesa
Eucalyptus flocktoniae ssp. *flocktoniae*
Eucalyptus loxophleba ssp. *loxophleba*
Eucalyptus rudis
Eucalyptus salmonophloia
Hakea preissii
Melaleuca lateriflora
Melaleuca raphiophylla
Santalum acuminatum

Jam, Mangard, Inland Jam (narrow leaf)
 Manna Wattle

Sandplain Cypress
 Swamp Cypress
 Swamp Sheoak
 Merrit
 York Gum
 Flooded Gum, Moitch, Kulurda
 Salmon Gum, Wurak
 Needle Tree, Needlebush, Dandjin, Tanjinn
 Gorada
 Swamp Paperbark
 Quandong

Shrubs

Acacia erinacea
Acacia hemiteles
Allocasuarina campestris
Banksia armata var. *armata*
Calothamnus sanguineus
Eremophila decipiens ssp. *decipiens*
Exocarpos aphyllus
Jacksonia hakeoides
Maireana brevifolia
Melaleuca adnata
Melaleuca concreta
Melaleuca hamata
Melaleuca viminea ssp. *viminea*
Rhagodia drummondii
Rhagodia preissii ssp. *preissii*
Scaevola spinescens
Senna artemisioides ssp. *filifolia*
Verticordia chrysanthella

Spiny Wattle
 Tan Wattle
 Tamma, Tammar, Shrubby She-oak
 Prickly Dryandra
 Silky-leaved Blood Flower, Pindak, Boolgalla
 Slender Fuchsia
 Leafless Ballart

Small Leaf Bluebush

Broom Bush
 Mohan
 Lake Fringe Rhagodia

Currant Bush, Maroon Bush

Unit 4: Breakaways



Soil Gravel at surface

Trees

Eucalyptus accedens
Eucalyptus arachnaea ssp. *arachnaea*
Eucalyptus gittinsii ssp. *illucida*
Eucalyptus horistes
Eucalyptus wandoo ssp. *pulverea*
Eucalyptus wandoo ssp. *wandoo*

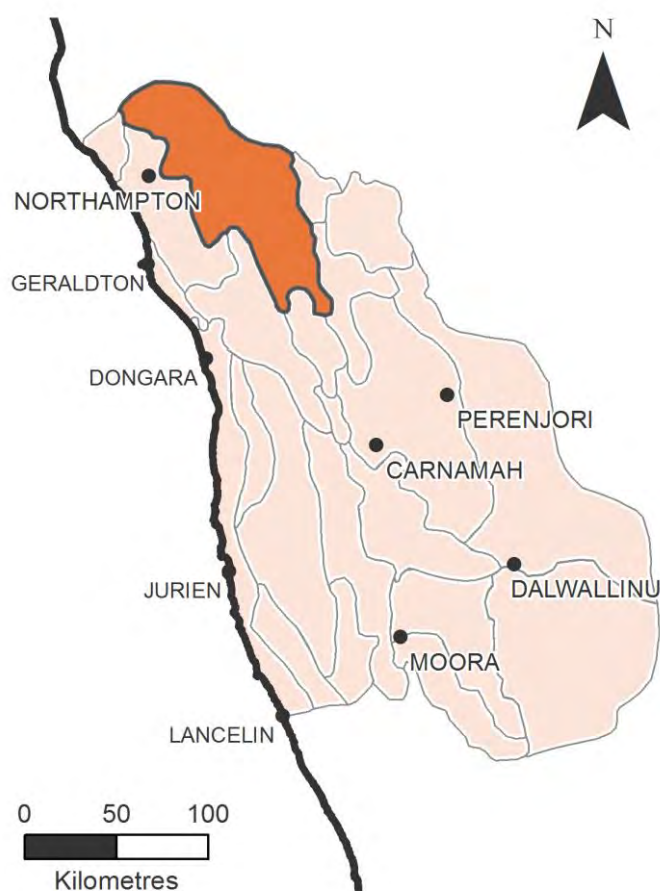
Powderbark Wandoo
 Black-stemmed Mallee
 Oil Mallee (Northern Rough Bark)
 Wandoo, White Gum

Shrubs

Acacia dilatata
Acacia ericksoniae
Acacia latipes ssp. *latipes*
Acacia leptospermoides ssp. *leptospermoides*
Acacia pulchella var. *glaberrima*
Adenanthos drummondii
Allocasuarina campestris
Allocasuarina humilis
Baeckea crispiflora var. *tenuoir*
Banksia armata var. *armata*
Banksia carlinoides
Banksia fraseri var. *fraseri*
Banksia hewardiana
Banksia nivea ssp. *nivea*
Banksia sessilis var. *sessilis*
Calothamnus quadrifidus ssp. *angustifolius*
Calothamnus sanguineus
Calytrix strigosa
Gastrolobium spinosum
Grevillea bitermata
Hakea lissocarpha
Hakea prostrata
Melaleuca aspalathoides
Melaleuca radula
Melaleuca trichophylla
Petrophile bitermata
Petrophile seminuda

Tamma, Tammar, Shrubby She-oak
 Dwarf Sheoak
 Prickly Dryandra
 Pink Dryandra
 Honey-pot Dryandra, Pudjarn
 Parrot Bush
 Silky-leaved Blood Flower, Pindak, Boolgalla
 Prickly Poison
 Honey Bush
 Harsh Hakea
 Graceful Honey-myrtle
 Pretty Honey Myrtle

YUNA



Location

This district extends from Ajana in the north towards Mingenew in the south with Yuna in the centre.

Topography

Level to gently undulating plateaux with dune ridges are common in the northern parts. There are shallow drainage systems with long gentle slopes in the east of the district leading to the Greenough River. Laterite-capped sandstone outcrops are common on the western slopes of the Greenough River.

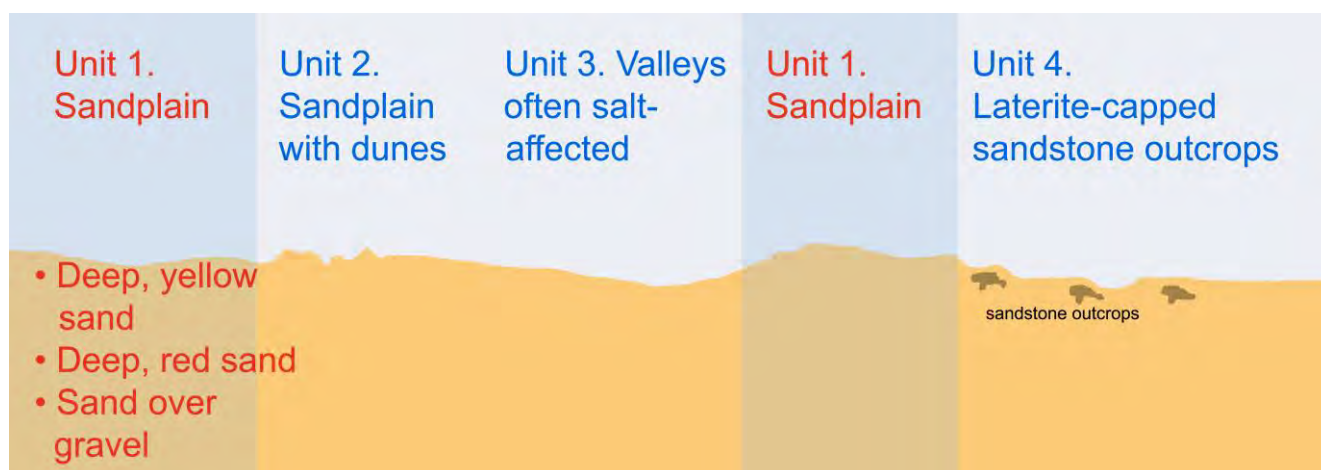
Soils

The most common soils of the sandplains are deep, yellow sands often with gravel and pale yellow sands on the dune ridges. Limited areas of deep, red sands occur to the east of the district. There are minor areas of grey sand over gravel. Soils of the shallow valleys are red, sandy loams on red-brown hardpan, usually saline.

Problems

- Wind erosion is common on the yellow sands if the soil surface is bared by overgrazing- units 1 and 2.
- Salinity is common on the red valley soils, particularly in the eastern parts of the system - unit 3.

Unit 1: Sandplain



Soil (a) Deep, yellow sand

Trees

Acacia rhodophloia
Banksia attenuata
Banksia prionotes
Callitris arenaria
Eucalyptus ebbanoensis ssp. *ebbanoensis*
Eucalyptus eudesmioides
Eucalyptus horistes
Eucalyptus jucunda
Eucalyptus leptopoda ssp. *arctata*
Eucalyptus oldfieldii
Eucalyptus subangusta ssp. *subangusta*
Hakea francisiana
Xylomelum angustifolium

Minni Ritchi
 Slender Banksia
 Acorn Banksia
 Sandplain Cypress
 Sandplain Mallee
 Malallie
 Oil Mallee (Northern Rough Bark)
 Yuna Mallee

Oldfield's Mallee

Emu Tree, Pink Spike Hakea
 Sandplain Woody Pear

Shrubs

Acacia blakelyi
Acacia comans
Acacia coolgardiensis
Acacia multispicata
Acacia spathulifolia
Acacia stereophylla var. *stereophylla*
Allocasuarina campestris
Banksia shuttleworthiana
Calothamnus blepharospermus
Calothamnus quadrifidus ssp. *angustifolius*
Daviesia hakeoides ssp. *hakeoides*
Grevillea candelabroides
Grevillea didymobotrya ssp. *didymobotrya*
Grevillea eriostachya
Grevillea leucopteris
Hakea invaginata
Hakea scoparia ssp. *scoparia*
Melaleuca conothamnoides
Melaleuca cordata
Melaleuca psammophila

Spinifex Wattle

Spoon Leaf Wattle

Tamma, Tammar, Shrubby She-oak
 Bearded Dryandra

Flame Grevillea
 White Plume Grevillea

Purple Pom Pom Myrtle
 Heart Leaf Honey Myrtle

Soil (b) Deep, red sand

Trees

Acacia acuminata
Acacia tetragonophylla
Allocasuarina acutivalvis ssp. *acutivalvis*
Banksia prionotes

Jam, Mangard, Inland Jam (narrow leaf)
 Kurara
 Black Tammar
 Acorn Banksia

Unit 1: Sandplain (contd)

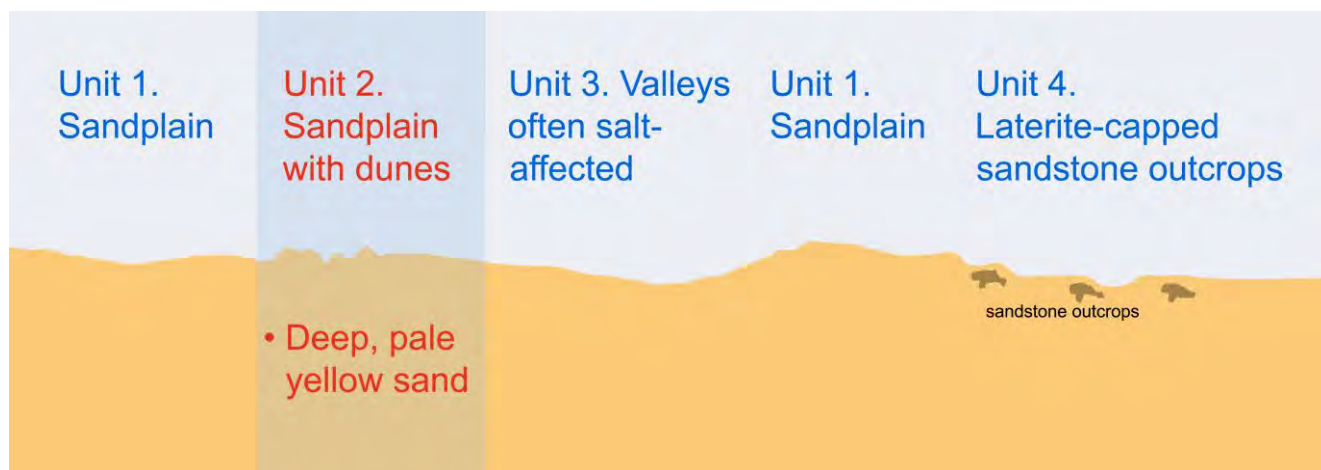
Soil (b) Deep, red sand (contd)

Trees	<i>Eucalyptus ebbanoensis</i> ssp. <i>ebbanoensis</i> <i>Eucalyptus gittinsii</i> ssp. <i>gittinsii</i> <i>Eucalyptus kochii</i> ssp. <i>borealis</i> <i>Eucalyptus leptopoda</i> ssp. <i>arctata</i> <i>Eucalyptus subangusta</i> ssp. <i>pusilla</i>	Sandplain Mallee Northern Sandplain Mallee Oil Mallee
Shrubs	<i>Acacia acuaria</i> <i>Acacia coolgardiensis</i> <i>Acacia leptospermoides</i> ssp. <i>leptospermoides</i> <i>Acacia ramulosa</i> var. <i>ramulosa</i> <i>Acacia rostellifera</i> <i>Banksia fraseri</i> var. <i>ashbyi</i> <i>Grevillea bitermata</i> <i>Grevillea didymobotrya</i> ssp. <i>didymobotrya</i> <i>Senna pleurocarpa</i> var. <i>pleurocarpa</i>	Sand Prickly Wattle Spinifex Wattle Horse Mulga Summer-scented Wattle, Black Wattle

Soil (c) Sand over gravel

Trees	<i>Acacia acuminata</i> <i>Allocasuarina acutivalvis</i> ssp. <i>acutivalvis</i> <i>Callitris arenaria</i> <i>Eucalyptus eudesmioides</i> <i>Eucalyptus horistes</i> <i>Eucalyptus subangusta</i> ssp. <i>subangusta</i>	Jam, Mangard, Inland Jam (narrow leaf) Black Tammar Sandplain Cypress Malallie Oil Mallee (Northern Rough Bark)
Shrubs	<i>Acacia andrewsii</i> <i>Acacia coolgardiensis</i> <i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i> <i>Acacia neurophylla</i> ssp. <i>erugata</i> <i>Acacia oxyclada</i> <i>Allocasuarina campestris</i> <i>Banksia fraseri</i> var. <i>fraseri</i> <i>Banksia leptophylla</i> var. <i>melletica</i> <i>Banksia sessilis</i> var. <i>flabellifolia</i> <i>Calothamnus sanguineus</i> <i>Daviesia hakeoides</i> ssp. <i>hakeoides</i> <i>Daviesia podophylla</i> <i>Grevillea candelabroides</i> <i>Hakea costata</i> <i>Hakea incrassata</i> <i>Hakea scoparia</i> ssp. <i>scoparia</i> <i>Hakea trifurcata</i> <i>Malleostemon roseus</i> <i>Melaleuca cordata</i> <i>Melaleuca nematophylla</i> <i>Melaleuca radula</i> <i>Melaleuca systema</i> <i>Petrophile seminuda</i>	Spinifex Wattle Panjang, Pajang Tamma, Tammar, Shrubby She-oak Silky-leaved Blood Flower, Pindak, Boolgalla Ribbed Hakea Marble Hakea Two-leaf Hakea Heart Leaf Honey Myrtle Wiry Honey-myrtle Graceful Honey-myrtle

Unit 2: Sandplain with dunes



Soil Deep, pale yellow sand

Trees

Banksia attenuata
Banksia prionotes
Callitris arenaria
Eucalyptus ebbanoensis ssp. *ebbanoensis*
Eucalyptus horistes
Eucalyptus obtusiflora ssp. *obtusiflora*
Eucalyptus oldfieldii
Melaleuca huegelii ssp. *huegelii*

Slender Banksia
 Acorn Banksia
 Sandplain Cypress
 Sandplain Mallee
 Oil Mallee (Northern Rough Bark)
 Dongara Mallee
 Oldfield's Mallee
 Chenille Honeymyrtle

Shrubs

Acacia cavealis
Acacia latipes ssp. *latipes*
Acacia neurophylla ssp. *erugata*
Acacia stereophylla var. *stereophylla*
Allocasuarina microstachya
Anigozanthos humilis ssp. *humilis*
Banksia sceptrum
Banksia shuttleworthiana
Beaufortia elegans
Beaufortia squarrosa
Calytrix strigosa
Conostylis candicans ssp. *candicans*
Daviesia podophylla
Ecdeiocolea monostachya
Eremaea violacea
Grevillea biformis ssp. *biformis*
Grevillea candelabroides
Hakea circumalata
Hakea scoparia ssp. *scoparia*
Jacksonia hakeoides
Melaleuca cordata
Melaleuca trichophylla
Scholtzia laxiflora
Scholtzia parviflora
Verticordia chrysanthella

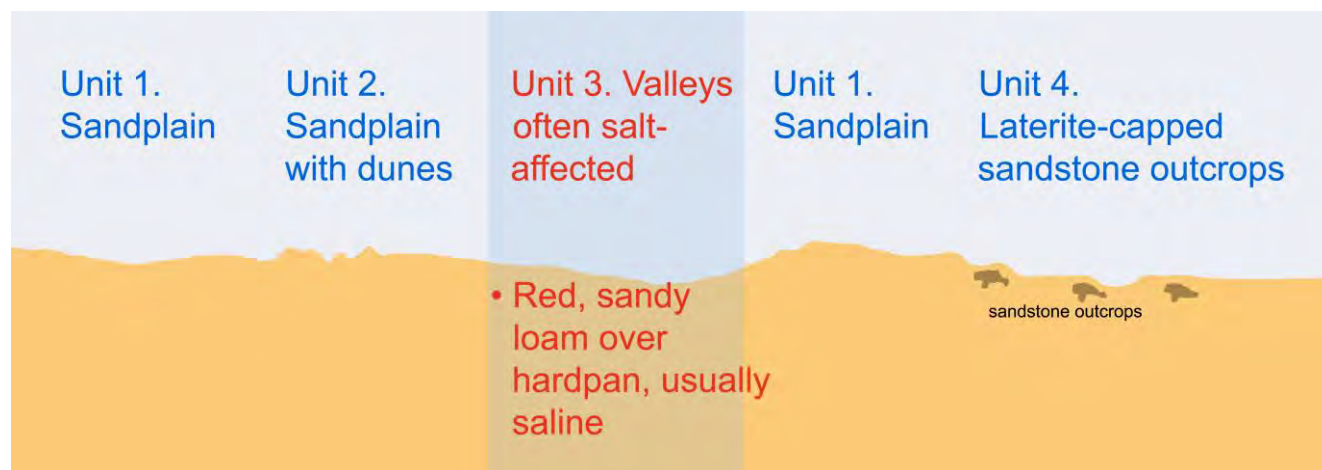
Catspaw
 Sceptre Banksia
 Bearded Dryandra
 (in depression)
 Sand Bottlebrush, Sand Flameflower, Puno

Grey Cottonhead

Sedge Rush
 Violet Eremaea

Heart Leaf Honey Myrtle
 Pretty Honey Myrtle

Unit 3: Valleys, often salt-affected



Soil Red, sandy loam over hardpan, usually saline

Trees

Acacia acuminata
Acacia saligna subsp. *lindleyi*
Acacia tetragonophylla
Callitris pyramidalis
*Eucalyptus brachycorys**
*Eucalyptus camaldulensis**
Eucalyptus loxophleba subsp. *loxophleba**
Eucalyptus loxophleba subsp. *supralaevis**
*Eucalyptus myriadena**
Eucalyptus subangusta subsp. *pusilla*
Eucalyptus subangusta subsp. *subangusta*
Hakea francisiana
Hakea preissii
Melaleuca eleuterostachya
Melaleuca lateriflora
Melaleuca raphiophylla

Jam, Mangard, Inland Jam (narrow leaf)

Kurara
 Swamp Cypress
 Cowcowing Mallee
 River Red Gum, River Gum
 York Gum

Emu Tree, Pink Spike Hakea
 Needle Tree, Needlebush, Dandjin, Tanjinn

Gorada
 Swamp Paperbark

Shrubs

Acacia anthochaera
Acacia burkittii
Acacia colletioides
*Acacia hemiteles**
Acacia ramulosa var. *ramulosa*
Acacia rostellifera
Acacia sclerosperma ssp. *sclerosperma*
*Atriplex bunburyana**
Exocarpos aphyllus
Hakea invaginata
Melaleuca adnata
Melaleuca hamata
Melaleuca viminea ssp. *viminea*
Olearia muelleri
*Rhagodia drummondii**
Rhagodia preissii ssp. *obovata*
Scaevola spinescens
Scholtzia laxiflora
Senna artemisioides ssp. *filifolia*

Sandhill Wattle
 Wait-a-while
 Tan Wattle
 Horse Mulga
 Summer-scented Wattle, Black Wattle
 Limestone Wattle
 Silver Saltbush
 Leafless Ballart

Broom Bush
 Mohan
 Goldfields Daisy
 Lake Fringe Rhagodia

Currant Bush, Maroon Bush

*Suitable for saline sites

Unit 4: Laterite-capped sandstone outcrops



Soil Shallow soil over sandstone

Trees

Acacia acuminata
Acacia tetragonophylla
Allocasuarina acutivalvis ssp. *prinsepiana*
Allocasuarina huegeliana
Eremophila oldfieldii ssp. *oldfieldii*
Eucalyptus arachnaea ssp. *arachnaea*
Eucalyptus loxophleba ssp. *loxophleba*
Hakea recurva ssp. *recurva*

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Banksia fraseri var. *fraseri*
Banksia leptophylla var. *leptophylla*
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Wiry Honeymyrtle

Wiry Honey-myrtle
 Graceful Honeymyrtle

Pretty Honey Myrtle

SOIL DESCRIPTIONS

In describing the districts of the Midlands and Northern Wheatbelt, 32 generalised terms have been used to describe the various types of soil. Definitions of each of these terms are given below.

These soil descriptions record the changes in colour and texture of the various layers or horizons from the surface down the soil profile to a depth of 1 or 2 m. The main terms used to describe the different textures are sand, loam, clay and gravel, and various combinations of these. For example:

Depth	Colour and Texture
0-10 cm	grey sand
10-30 cm	very light grey sand
30-100 cm	yellow clay

In this example, the 0-30 cm layer would be referred to as the topsoil and the clay below 30 cm as the subsoil. Also indicated is the presence of hardpans, shallow rock and saline watertables where these are typical features of a particular soil type.

Soil descriptions such as these enable comparisons to be made between one site and another and are a help in the selection of plant species for sites being revegetated.

Brown sands over red-brown clay

Brown sands and sandy loams overlying red-brown clays which may be mottled and may contain carbonate concretions at about 90 cm.

Crabholes (gilgai)

Gilgai soils (commonly called crabholes) are characterised by a surface of small hollows and hummocks occurring usually on level or very gently sloping plains. The surface features are caused by the swelling and shrinking of clays in the subsoil.

Deep, grey sand

This soil is usually a neutral deep, pale grey sand, with darkening due to organic matter at the surface. Sometimes the sand grades into a pale yellow at depth. These soils are of low fertility and water holding capacity, and plant establishment may be difficult.

Deep, pale yellow sand

Very similar in texture to the soil profile **Deep, yellow sand**, but the soil colour is noticeably paler throughout the profile. Some of these may have a grey surface. The pale yellow sands are of inherently lower fertility than the yellow sands. Plant establishment on them will be more difficult.

Deep, yellow sand

This soil type commonly consists of up to 2 m of yellow sand with a slight increase in clay content with depth. That is, the texture often increases from sand at the surface to a clayey sand and sometimes a sandy clay loam by 2 m depth. The soil is neutral or slightly acidic in reaction throughout the profile. The pH values in water are about 6. See also **Deep, yellow sand, acid**.

Deep, yellow sand, acid

This soil is very similar in colour and texture to **Deep, yellow sand**, but it is acidic to strongly acidic in reaction. The pH values in water are often well below 5.

Deep, red-brown sand

These are friable earthy sands ranging in colour from yellow-brown to red-brown.

Deep, red sand

This soil is red sand throughout the profile and is usually over 1 m in depth.

Gravel at the surface, massive laterite exposed

Small rounded nodules of ironstone gravel or laterite make up the surface of this soil, with massive cemented sheets of laterite also showing. This soil is a very shallow version of the **Sand over gravel** soil, with the surface sand layer absent. They are likely to be very harsh sites for revegetation.

Grey sand over clay or hardpan, usually seasonally wet

The soils are usually a deep, grey sand over a mottled clay or a siliceous or organic hardpan. These soils are saturated each winter. A gravel layer may be present.

Laterite; lateritic sandplain

The term laterite refers to the small rounded nodules of ironstone commonly called gravel. Where these nodules are cemented together to form a continuous sheet it is referred to as massive laterite. Sandplain overlying this material is often referred to as lateritic sandplain.

Limey sands

These are deep, white to very light grey sand composed of very finely ground shell fragments that are alkaline in reaction.

Red and brown alkaline clays

These clay soils, variously red and brown and sometimes gritty at the surface, are alkaline to very alkaline in reaction.

Red gradational

The word gradational means that the soil texture gradually increases in clay content from the topsoil down through the subsoil. Red gradational soils are red colour throughout and change in texture from sand or loamy sand at the surface through sandy loam and sandy clay loam to clay at depth.

Red gradational over hardpan

As for **Red gradational** soil, but with a cemented hardpan layer present.

Red gradational, saline

As for **Red gradational** soil, but affected by the presence of shallow saline groundwater.

Red sandy loam over clay

Typically this soil is a red sandy loam over red clay at about 15-30 cm depth.

Red sandy loam over hardpan

The soil profile is similar to the **Red sandy loam over clay** soil described above, but the upper part of the subsoil has a discontinuous, pale cemented layer (hardpan) that is sometimes exposed at the surface as a consequence of sheet erosion.

Rocky terrain

This description refers to areas dominated by outcropping rocks with very little soil development between the boulders.

Sand over gravel

Typically this soil is 15-30 cm, or up to 100 cm, of grey to pale yellow sand over ironstone gravel. The gravel is often small, rounded nodules and can comprise up to 90 per cent of the soil mass. The gravel is sometimes cemented into hard sheets. Below the gravel layer a yellow mottled clay layer is usually present. Areas of these soils are called 'lateritic sandplains' and they are very common throughout the region.

Sand over gravel - saline

As for **Sand over gravel** soils, but affected by the presence of shallow, saline groundwater.

Sand over red or yellow clay

This is usually grey sand over yellow or yellow mottled clay, or red sand over red clay at about 30 cm depth.

Sand over red or yellow clay - saline

As for **Sand over red or yellow clay** but affected by shallow saline groundwater.

Sandy loam

The one area of this soil sampled was in the Greenough district, on the landscape unit referred to as 'Black flats' and was a brown to red-brown, fine sandy loam throughout the profile.

Shallow limey sand over calcrete hardpan or limestone

This soil has up to 30 cm of fine, grey calcareous sand over a calcrete hardpan, or occasionally limestone. Shelly layers may occur in the profile.

Shallow sand over clay

This soil is commonly a sand, often only centimetres deep over a clay. These soils are at risk of becoming saline as groundwater levels rise.

Shallow soil over chert or basalt

Chert, sandstone or basalt occurs just beneath the soil surface with outcropping rock. Shallow soils vary from yellow brown loamy sand for chert or sandstone to red brown sandy loam to red brown clay loam for basalt associated with the Billeranga ranges.

Shallow soil over granite or gneiss

As the name indicates, granite or gneiss rock occurs just beneath the soil surface and frequently outcrops. The shallow soil varies in texture from coarse gritty sand to sandy loam and the colour ranges from dark grey to red-brown.

Shallow soil over sandstone

As for **Shallow soil over granite or gneiss**, but the underlying rock is sandstone. The shallow soil is usually pale yellow or red, coarse sand.

Silty clays

These soils are usually dark brown in colour, a silty clay loam at the surface merging to heavy clay at depth. They are variably neutral to alkaline at the surface and have alkaline subsoils.

Yellow loamy sand

Similar to the **Deep, yellow sand** but with slightly heavier texture.

Yellow or yellow/brown sand over limestone

This soil comprises a very variable depth of yellow or brown sand over limestone - depths range from very shallow (10 cm) to several metres. Rock outcrops may occur.

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