

Wheatstone Project

This field guide is part of a series of books created to inform personnel and visitors of the Chevron-operated Wheatstone Project about the diversity of plant life in the Project area and the Onslow region. This book describes some of the common flora species in the area, some species of conservation significant and new flora species yet to be formally described.

Enjoy reading about the flora of the Onslow region and look out for additional books in the series.

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The Chevron-operated Wheatstone Project is one of Australia's largest resource projects. Located at Ashburton North, 12 kilometres west of Onslow in Western Australia, the project will consist of two liquefied natural gas (LNG) trains with a combined capacity of 8.9 million tonnes per annum and a domestic gas plant.

The Wheatstone Project is a joint venture between Australian subsidiaries of Chevron, Kuwait Foreign Petroleum Exploration Company (KUFPEC), Woodside Petroleum Limited and Kyushu Electric Power Company, together with PE Wheatstone Pty Ltd (part owned by TEPCO).

## Introduction

#### Thalanyji Connection to Country

The Thalanyji people are the Native Title holders of land and waters in the Pilbara region near Onslow, on which their ancestors have resided for tens of thousands of years.

Thalanyji have a strong connection to the country around the Ashburton River and Onslow region, and believe their ancestors gave form to the landscape, inhabiting the land since time immemorial. These creator ancestors provided Thalanyji with language and are the source of customs, law and tradition. Thalanyji believe that the spirits of ancestors who have passed away are also present within Thalanyji country, mediating the relationship between the living Thalanyji and the land. Thalanyji people live in harmony with the environment and carefully manage the landscape. They have a strong



Thalanyji Native Title Determination Area



Soft Spinifex (Ngajarri) flowers and seeds Photo - Paul Hoffman

connection to the land and waters, and the animals and plants that reside within.

Thalanyji people have many uses for the native plants of their homeland. Women in particular have maintained knowledge on local plants for thousands of years; understanding when to harvest seeds and fruit for food, which plants are potent medicines and which can be poisonous. Some plants can be used as tools or artefacts and for beauty and hygiene. The Soft Spinifex (Thalanyji name: Ngajarri) has multiple uses, it can be laid flat and used as a mattress or bed, and its seeds can be ground to make flour for damper.

We request you respect the land and plants in this region, as Thalanyji people have done for generations.



Onslow town Photo - Chevron Australia

#### About the Onslow Region

The town of Onslow is located approximately 1150 kilometres (km) north of Perth on the Pilbara coast of Western Australia (WA). Established in 1885, Onslow is the oldest town in the Shire of Ashburton and has historically supported a variety of industries including gold mining, pearling and sheep and cattle farming. Today Onslow also supports fishing, tourism, salt mining and natural gas industries.

Located approximately 12 km west of Onslow, the Chevron-operated Wheatstone Project is one of Australia's largest resource projects. The foundation project will consist of two liquefied natural gas (LNG) trains with a combined capacity of 8.9 million tonnes per annum (MTPA), and a domestic gas plant.

The Onslow region experiences an arid-tropical climate, with hot summers and mild winters. The town of Onslow is located in one of the most cyclone-prone regions in Australia and, on average, has experienced a cyclone event once every two years since 1910. Between December and April each year, cyclones form over warm



Termite mounds near Onslow Photo - Chevron Australia

ocean waters to the north of WA and contribute to Onslow's yearly rainfall average of 328 millimetres (mm). Despite extreme rainfall during storm events, Onslow also experiences periods of extreme drought. Evaporation exceeds rainfall in the Pilbara region, which means water is a limiting resource. As well as influencing the location of the town, these extreme weather patterns have shaped the landscape and allowed only the hardiest animals and plants to survive.

The area surrounding Onslow and the Wheatstone Project is dominated by topography of undulating dunes, sand plains and low-lying coastal systems supporting samphire communities, salt flats, claypans, tidal creeks and regionally significant mangrove communities. The major soil types present in the shallow soil profile of the Onslow region are coastal mudflats, sand plains and red sand dunes.

#### Native Flora of the Onslow Region

The Onslow region lies across the Carnarvon and Fortescue Botanical Districts of the Eremaean Botanical Province and falls within the



Regionally significant mangrove community within the Ashburton Delta Photo - Chevron Australia

Cape Yannarie Coastal Plain. Three broad vegetation complexes occur in this area including mangroves, samphire communities growing in tidal mud flats, and low shrubs growing on claypans and sand hills. Vegetation in the region is typically open and frequently dominated by spinifex, wattles and occasional eucalypts.

A number of conservation significant vegetation communities exist in the region including inland sand dune vegetation that support priority flora, samphire shrublands, cracking clay grasslands and mangrove vegetation.

Studies around Onslow and the Wheatstone Project area recorded a total of 422 species of native vascular plants belonging to 58 families. One threatened species, the Dwarf Desert Spike Rush (*Eleocharis papillosa*) is listed as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and has been recorded within the Project area. Five Priority flora species as defined under the *Western Australian Wildlife Conservation Act 1950* (WC Act) have been recorded in the Project area: the Dwarf Desert Spike Rush, *Abutilon* sp. *Onslow* (F.Smith s.n 10/9/61), Saltbush



Spinifex-dominated coastal plain Photo - Mike Edmondson/Nexus Public Relations Pty. Ltd.

(Atriplex flabelliformis), Eremophila forrestii subsp. viridis and Triumfetta echinata. Five flora species observed in the Wheatstone Project area are of conservation significance as they represent new or undescribed taxa, are poorly collected or recorded a considerable distance from their previously understood range.

# Conservation Codes used in this book

### Western Australian Conservation Codes

## Conservation Categories according to the *Western Australian Wildlife Conservation Act 1950*

Department of Parks and Wildlife Priority Codes

Priority 1	Taxa with few, poorly known populations on threatened lands
Priority 2	Taxa with few, poorly known populations on conservation lands, or taxa with several, poorly known populations not on conservation lands
Priority 3	Taxa with several, poorly known populations, some on conservation lands
Priority 4 and 5	Taxa considered rare but not threatened or near threatened, and in need of monitoring

### Commonwealth Conservation Codes

#### Conservation Categories according to the *Environment* Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Critically Endangered	A native species facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria
Endangered	A native species that is: a) not critically endangered; and b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria
Vulnerable	A native species that is: a) not critically endangered or endangered; and b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria



Smooth-barked Coolibah (*Eucalyptus victrix*) Photo - Paul Hoffman

#### Understanding this book

Map data has been sourced from NatureMap (Western Australian Department of Parks and Wildlife) and the Atlas of Living Australia (CSIRO), and was current at the time of publication. Maps denote positive records of flora occurrence only, and the absence of a record does not mean flora are absent from an area.

The conservation significance of fauna described within this book was current at the time of publication. Species identified as not conservation significant are not listed as threatened within the Western Australian Wildlife Conservation Act 1950 or the Environment Protection and Biodiversity Conservation Act 1999.

## Dwarf Desert Spike Rush (Eleocharis papillosa)

Family Cyperaceae

#### **Conservation Significance**

Commonwealth Listed: Vulnerable

Western Australian Listed: Priority 3

#### Ecology

The Dwarf Desert Spike Rush is a small annual herb that grows to around 10 centimetres (cm) in height. In response to water inundation or flooding it regenerates from below-ground tubers or germinates from soil-stored seed. Shoots emerge as water subsides and the soil starts to dry out.

#### Habitat

The Dwarf Desert Spike Rush prefers ephemeral wetlands, clay pans and open silty-clay flats. It can also be observed growing along the edge of drainage lines.

This species has been observed in only a small number of widespread, fragmented locations. It is under threat from trampling by stock, competition with introduced pests (such as Couch Grass) and hydrological (surface water and groundwater) changes to its habitat.



Dwarf Desert Spike Rush (*Eleocharis papillosa*) Photos - Paul Hoffman



Data sourced from NatureMap (Department of Parks and Wildlife)

# Abutilon sp. Onslow (F.Smith s.n 10/9/61)

Family Malvaceae

#### **Conservation Significance**

Western Australian Listed: Priority 1

#### Ecology

Abutilon sp. Onslow is currently undescribed and very little is known about its biology. Flora surveys in the Onslow region have revealed that this small, perennial herb grows in a flat, spreading shape to about 10 cm in height and 100 cm in diameter. It has green-grey foliage, yellow flowers and pinwheel like seed pods.

#### Habitat

Surveys in the Onslow region recorded *Abutilon* sp. *Onslow* on flat, stony plain habitats common within the west Pilbara.

This species likes disturbed areas and can be seen growing along roadside verges in the Onslow region.





Abutilon sp. Onslow (F.Smith s.n 10/9/61) Photos - Paul Hoffman





## Eremophila forrestii subsp. viridis

Family Scrophulariaceae

#### **Conservation Significance**

Western Australian Listed: Priority 3

#### Ecology

*Eremophila forrestii* subsp. *viridis* is a many-branched shrub that grows to 100 cm in height and produces pink-cream flowers annually in August. Flora surveys in the Onslow region located a number of individuals of this species but they are not considered common.

#### Habitat

Surveys in the Onslow region revealed this species prefers red sand dune habitats.

Plants of the genus Eremophila, commonly known as Emu Bush, have been used by Aboriginal people for medicinal and ceremonial purposes. Studies show Eremophila species contain potent antiinflammatory, antimicrobial and antiviral agents.



Eremophila forrestii subsp. viridis Photos - Astron Environmental Services



Data sourced from the Atlas of Living Australia CC BY 3.0 AU (http://creativecommons.org/licenses/by/3.0/au/)

## Triumfetta echinata

Family Malvaceae

#### **Conservation Significance**

Western Australian Listed: Priority 3

#### Ecology

*Triumfetta echinata* is a low growing shrub reaching a maximum of 30 cm in height. This species produces yellow flowers in July and August, and is easily recognised by its spiky, round seed pods approximately 2-3 cm in diameter.

#### Habitat

Found scattered around the Ashburton North region along the crest of dune ridges, *Triumfetta echinata* prefers red sandy soils and sand dune habitats.

*Triumfetta echinata* is often absent in vegetation that has not been exposed to fire in a number of years because its seeds require fire to germinate. Individuals were observed regenerating after fire in the Onslow area in 2011, sprouting from the base of the burnt parent plant.





Triumfetta echinata Photos - Astron Environmental Services



Data sourced from NatureMap (Department of Parks and Wildlife)

## Aenictophyton aff. reconditum

Family Fabaceae

#### **Conservation Significance**

This species is undescribed

#### Ecology

Aenictophyton aff. reconditum is a wiry, leafless shrub that grows between 30 and 60 cm in height. It produces yellow, orange and brown pea flowers and is considered to be geographically restricted to the Onslow region.

#### Habitat

Red sand dune habitats only.

This species contains the abbreviation aff. meaning 'affinis'. This indicates that this species appears very similar to *Aenictophyton reconditum* but may be a new species. Further investigation is required.



Aenictophyton aff. reconditum Photos - Paul Hoffman



Data sourced from NatureMap (Department of Parks and Wildlife)

## Abutilon sp.

Family Malvaceae

#### **Conservation Significance**

This species is undescribed and its distribution is yet to be mapped.

#### Ecology

Yet to be formally described, *Abutilon* sp. was discovered in 11 locations during a Flora survey of the Onslow region in 2009. A tall shrub growing to about 200 cm in height, it has maple-like leaves and produces bright yellow flowers annually in August.

#### Habitat

Most commonly found on the crest of red sand dunes.

This species is common in the Onslow region, and surveys suggest it appears to favour disturbed areas.



Abutilon sp. Photo - Tegan Ridgeway

# Stemodia sp. Onslow (A.A. Mitchell 76/148)

Family Plantaginaceae

#### **Conservation Significance**

This species is undescribed

#### Ecology

*Stemodia* sp *Onslow* is a small, spreading, aromatic shrub yet to be formally described. Growing around 60–100 cm in height, this species produces blue-purple flowers in May to June and September each year.

#### Habitat

*Stemodia* sp *Onslow* is widespread across the Onslow region, and has been recorded growing on recently burnt spinifex plains and red sand and clay soils.

This species has a restricted distribution in the Carnarvon bioregion, preferring well drained calcareous sands (sands containing calcium carbonate or chalk) and limestone soils.



Stemodia sp. Onslow (A.A. Mitchell 76/148) Photos - Tegan Ridgeway



Data sourced from NatureMap (Department of Parks and Wildlife)

## COMMON NATIVE FLORA Acanthaceae (Acanthus)

## White Mangrove (Avicennia marina)

Family	Acanthaceae
Thalanyji Name	Ngajurrba
Other Names	Grey Mangrove

#### **Conservation Significance**

Not conservation significant

#### Ecology

The White Mangrove is a shrub or small tree that grows to over 600 cm tall. It has smooth grey bark and thick leaves with small hairs on the reverse side. The White Mangrove has pneumatophores (air breathing roots) that protrude from the ground to supply the waterlogged root system with oxygen. Orange flowers are produced between November and March each year and its fruit is dispersed by ocean tidal movements.

#### Habitat

The White Mangrove can be observed growing in the intertidal zone and mud flats of the Ashburton River Delta and surrounding tidal creeks. It is the most dominant of all six mangrove species growing in the Onslow region, and the most widespread and abundant mangrove species in the Pilbara coastal region.

Mangroves provide important habitat, feeding and nursery grounds for a myriad of fauna including crabs, juvenile fish, birds, reptiles and even sawfish.



White Mangrove (Avicennia marina) whole plant (left) pneumatophores (right) Photos - Chevron Australia



Data sourced from NatureMap (Department of Parks and Wildlife)

## COMMON NATIVE FLORA Boraginaceae (Borages)

## Camel Bush (Trichodesma zeylanicum var. grandiflorum)

Family

Boraginaceae

#### **Conservation Significance**

Not conservation significant

#### Ecology

This robust species of shrub grows between 100 and 200 cm tall and has short hairs along its stems. An annual or perennial species, it produces white to blue flowers from July to October each year.

#### Habitat

This shrub can be observed growing in white or red sand environments, on coastal dunes and in creek beds.

The variety name '*grandiflorum*' describes the large flowers this plant produces in spring.



Camel Bush (*Trichodesma zeylanicum* var. *grandiflorum*) Photos - Biota Environmental Sciences (left) Astron Environmental Sciences (right)



Data sourced from NatureMap (Department of Parks and Wildlife)

## Two-nerved Wattle (Acacia bivenosa)

Family	Fabaceae
Thalanyji Name	Garrbirri
Other Names	Two-veined Wattle

#### **Conservation Significance**

Not conservation significant

#### Ecology

The Two-nerved Wattle is a dense, bushy shrub whose smooth leaves enclose two distinct veins that give this species its common name. Growing to around 300 cm in height, it produces yellow flowers from April to November each year.

#### Habitat

The Two-nerved Wattle grows in a variety of soils and habitats including shrublands, woodlands, coastal sands, and on rocky slopes. This species is commonly observed growing alongside spinifex.

Thalanyji people gather live bardi grubs from amongst the roots of this wattle to use as bait for fishing. The branches of this plant can also be used as a broom for sweeping the floor.



Two-nerved Wattle (*Acacia bivenosa*) Photo - Paul Hoffman



Data sourced from NatureMap (Department of Parks and Wildlife)

## Bardi Bush (Acacia synchronicia)

Family	Fabaceae
Thalanyji Name	Thambarli
Other Names	Barbi Bush

#### **Conservation Significance**

Not conservation significant

#### Ecology

The Bardi Bush is a spreading shrub or small tree that grows to 400 cm in height. Its flowers, which bloom between August and December each year, are a light golden colour and around 8 mm in diameter.

#### Habitat

The Bardi Bush is found scattered throughout the Onslow region and is often observed growing along drainage lines and in clay depressions. It prefers limestone, quartz and rocky sand habitats.

The sap from the Bardi Bush is harvested by Thalanyji people and eaten as a candy, or boiled with sugar for extra sweetness.



Bardi Bush (*Acacia synchronicia*) Photo - Biota Environmental Sciences



Data sourced from NatureMap (Department of Parks and Wildlife)

## Green Birdflower (Crotalaria cunninghamii)

Family	Fabaceae
Thalanyji Name	Mulhurn

#### **Conservation Significance**

Not conservation significant

#### Ecology

The Green Birdflower is a shrub found commonly throughout the Onslow region. Growing to 400 cm in height, this species has large, softly haired leaves and smooth, green seed pods. Distinctive green flowers shaped like a flying bird are produced year round, lending this species its common name.

#### Habitat

This species prefers well-drained soils and full sun and can be observed growing on sand dunes, sand plains and along drainage lines.

The Green Birdflower has numerous medicinal properties. Aboriginal people use the plant to treat swelling, headaches and earache, while the sap from the leaves is used to treat eye infections.





Green Birdflower (*Crotalaria cunninghamii*) Photos - Paul Hoffman



Data sourced from NatureMap (Department of Parks and Wildlife)

## Dampier Pea (Swainsona pterostylis)

Family

Fabaceae

#### **Conservation Significance**

Not conservation significant

#### Ecology

The Dampier Pea is a low-growing, perennial herb growing up to 40 cm in height. It produces sweetly scented, purple-violet flowers between April and October each year.

#### Habitat

This species is common in the Onslow region and can be observed growing on red sand, clay or loam soils among coastal sand hills, claypans and creek lines.

Aboriginal people mash and boil the whole plant and use it as a dressing to treat swelling and inflammation.



Dampier Pea (Swainsona pterostylis) Photos - Paul Hoffman



Data sourced from NatureMap (Department of Parks and Wildlife)

## COMMON NATIVE FLORA Myrtaceae (*Eucalyptus* and Myrtles)

## Hamersley Bloodwood (Corymbia hamersleyana)

Family	Myrtaceae
Thalanyji Name	Gulijiguliji

#### **Conservation Significance**

Not conservation significant

#### Ecology

The Hamersley Bloodwood is a small to medium sized tree growing up to 10 metres (m) in height. It has rough, tessellated bark and whitecream flowers that bloom between March and August each year.

#### Habitat

This species prefers sand or red sandy loam soils, and can be observed growing on drainage lines, stony hillsides and plains.

The common name 'Bloodwood' stems from the dark red gum produced by this *Corymbia* tree.



Hamersley Bloodwood (Corymbia hamersleyana) Photos - Paul Hoffman



Data sourced from NatureMap (Department of Parks and Wildlife)

## COMMON NATIVE FLORA Myrtaceae (*Eucalyptus* and Myrtles)

## Smooth-barked Coolibah (Eucalyptus victrix)

Family	Myrtaceae
Thalanyji Name	Gurrurdu
Other Names	Western Coolibah, Little Ghost Gum

#### **Conservation Significance**

Not conservation significant

#### Ecology

The Smooth-barked Coolibah is a small to medium sized, slow growing tree that reaches a maximum height of around 12 m. Small white flowers are produced during the summer months each year.

#### Habitat

This species prefers red loam, sandy and clay loam soils and can be observed growing on floodplains and along creek lines and rivers in the Onslow region.

The Smooth-barked Coolibah is able to survive long periods of drought by using groundwater to satisfy a portion of its water requirements, whilst still accessing water from the soil after rain. This adaptation means this coolibah is referred to as a phreatophyte.



Smooth-barked Coolibah (*Eucalyptus victrix*) Photos - Paul Hoffman



Data sourced from NatureMap (Department of Parks and Wildlife)

## COMMON NATIVE FLORA Myrtaceae (*Eucalyptus* and Myrtles)

## Forrest's Featherflower (Verticordia forrestii)

Family

Myrtaceae

#### **Conservation Significance**

Not conservation significant

#### Ecology

A small to medium sized shrub, Forrest's Featherflower grows between 30 and 200 cm in height. It flowers from May to December, producing pink, red and white flowers with a soft, feathered appearance.

#### Habitat

This species prefers red sand dune habitats, and can be observed growing predominantly between Carnarvon, the Kennedy Ranges and the Cape Range. It has also been recorded as far north as the Karratha region.

Named after explorer and statesman Sir John Forrest, Forrest's Featherflower was first described in 1883 by botanist Ferdinand von Mueller.



Forrest's Featherflower (*Verticordia forrestii*) Photos - Paul Hoffman



Data sourced from NatureMap (Department of Parks and Wildlife)

## COMMON NATIVE FLORA Euphorbiaceae (Spurges)

## Euphorbia myrtoides

Family

Euphorbiaceae

#### **Conservation Significance**

Not conservation significant

#### Ecology

*Euphorbia myrtoides* is a sprawling, low growing annual herb. Common in the Onslow region, this species grows 5-40 cm in height. Flowers are produced between April and July each year.

#### Habitat

This species is most commonly observed growing in white or red coastal sand dune habitats but may also be found in inland WA.

*Euphorbia* is a diverse genus, with over 2000 species distributed worldwide. Plants of this genus produce a toxic milky sap that can cause painful inflammation and, in extreme cases, blindness if it comes in contact with the eyes or skin.



Euphorbia myrtoides Photo - Paul Hoffman



Data sourced from NatureMap (Department of Parks and Wildlife)

### COMMON NATIVE FLORA

### Proteaceae (Hakea, Grevillea and other Protea)

### Rattle-pod Grevillea (Grevillea stenobotrya)

Family

Proteaceae

#### **Conservation Significance**

Not conservation significant

#### Ecology

The Rattle-pod Grevillea is a shrub or small tree growing 200-700 cm in height, and forming either an erect or flattened shape. This grevillea produces green to white flowers between May and December each year.

#### Habitat

This species is widespread in arid areas and commonly observed growing amongst medium to low trees in red sand dune environments. Found in all mainland Australian states except Victoria.

The Rattle-pod Grevillea's seed cases make a rattling noise when dry, giving rise to its common name. The scientific name 'stenobotrya' translates as narrow cluster, and refers to the shape of the flowers of this plant.



Rattle-pod Grevillea (*Grevillea stenobotrya*) Photo – Paul Hoffman



Data sourced from NatureMap (Department of Parks and Wildlife)

## COMMON NATIVE FLORA Amaranthaceae (Amaranths)

## Tangled Mulla Mulla (Ptilotus latifolius)

Family

Amaranthaceae

#### **Conservation Significance**

Not conservation significant

#### Ecology

This attractive herb or shrub is perennial (lives for more than two years) and is common in the Onslow region. Growing to 70 cm in height, the Tangled Mulla Mulla produces pink and white flowers from May to October each year.

#### Habitat

The Tangled Mulla Mulla inhabits sand dune and stony plain environments.

This *Ptilotus* is an important dune stabilising species as it can survive partial sand burial under shifting dunes.



Tangled Mulla Mulla (*Ptilotus latifolius*) Photo - Astron Environmental Services



Data sourced from NatureMap (Department of Parks and Wildlife)

## COMMON NATIVE FLORA Amaranthaceae (Amaranths)

Samphire (Tecticornia auriculata)

Family

Amaranthaceae

#### **Conservation Significance**

Not conservation significant

#### Ecology

Samphire is a many-branched, spreading shrub that grows 20–130 cm in height, and flowers from May to September each year. It is a halophyte, and able to grow and reproduce in salt water.

#### Habitat

This species grows in sandy clay, red clay and loam soils of salt marshes and seasonally waterlogged salt flats common to the Onslow region.

Scientists predict that halophytes such as Samphire will be the crop of the future due to their preference for highly saline environments and their popularity as a food. Many countries worldwide are affected by salinity and halophytes offer a solution to previously non-arable land.



Samphire (*Tecticornia auriculata*) Photo – Paul Hoffman



Data sourced from NatureMap (Department of Parks and Wildlife)

## COMMON NATIVE FLORA Goodeniaceae (Goodenia)

## Currant Bush (Scaevola spinescens)

Family	Goodeniaceae
Thalanyji Name	Gayagurra
Other Names	Spiny Fan Flower, Maroon Bush

#### **Conservation Significance**

Not conservation significant

#### Ecology

The Currant Bush is a rigid, spiny shrub that grows to 200 cm in height. Flowering all year round, this species produces small yellow to white, fan shaped flowers that develop into small purple-black fruits, each containing one seed.

#### Habitat

The Currant Bush prefers red sand and clay loam soils and is distributed throughout drier regions of WA.

Aboriginal people use the Currant Bush as a traditional medicine due to its antiviral and antibacterial properties. The small black currants are eaten and the branches are boiled to create a perfumed fragrance.



Currant Bush (*Scaevola spinescens*) Photos - Paul Hoffman



Data sourced from NatureMap (Department of Parks and Wildlife)

### COMMON NATIVE FLORA

#### Poaceae (Grasses)

## Soft Spinifex (Triodia epactia)

Family	Poaceae
Thalanyji Name	Ngajarri

#### **Conservation Significance**

Not conservation significant

#### Ecology

Soft Spinifex is a perennial grass that grows in tussock formations around 45-200 cm in height. Flowers are produced year round, except in December.

#### Habitat

This species of spinifex commonly grows in deep sandy soils on sandhills, sand plains and coastal sand dunes, as well as in sandstone and limestone soils on rocky and gravelly hills and along river banks.

Soft Spinifex is a useful plant to the Thalanyji people. The plant can be laid on the ground as a soft mattress or placed on top of a bough shed to create a shelter. The seeds (thuwalga) can be ground to make flour for damper.



Soft Spinifex (*Triodia epactia*) Photos - Astron Environmental Services (left) Paul Hoffman (right)





## Glossary

Annual	Completing the full cycle of germination to fruiting within a single year and then dying
Calcareous	Containing calcium carbonate
Clay pan	A shallow depression or hollow in the ground with an impermeable clay base that holds water
Ephemeral	Short-lived
Fragmented	[Populations] Isolation of one population from another as a result of land-use changes
Halophyte	A plant adapted to highly saline environments that is able to grow and reproduce in saltwater
Herb	A non-woody plant (or woody at the base only), with ephemeral above-ground stems that dies after flowering
Perennial	Living for more than two growing seasons
Phreatophyte	A groundwater-dependent plant that relies upon groundwater to satisfy a portion, or all, of its water requirements
Pneumatophore	Roots that grow vertically upwards and project from the ground, transporting oxygen to the submerged root system.
Taxon (plural taxa)	A taxonomic group of any rank such as species, family or phylum
Tuber	An underground stem that acts as a storage organ with small scale-like leaves and buds
Tussock	A dense tuft or clump of vegetation
Undescribed	A species that is yet to be formally named that requires comparison with all known closely related species



Trichodesma zeylanicum var. grandiflorum Photo - Biota Environmental Sciences

## Sighting Records

	Species	Date	Location		
Conservation Significant Flora					
An Inde	Dwarf Desert Spike Rush (Eleocharis papillosa)				
	Abutilon sp. Onslow (F.Smith s.n 10/9/61)				
1	Eremophila forrestii subsp. viridis				
	Triumfetta echinata				
	Aenictophyton aff. reconditum				
32	Abutilon sp.				
	<i>Stemodia</i> sp. <i>Onslow</i> (A.A. Mitchell 76/148)				
Common Native Flora					
	White Mangrove (Avicennia marina)				
1 A	Camel Bush (Trichodesma zeylanicum var. grandiflorum)				
	Two-nerved Wattle (Acacia bivenosa)				
-	Bardi Bush (Acacia synchronicia)				
**	Green Birdflower (Crotalaria cunninghamii)				
一樣	Dampier Pea (Swainsona pterostylis)				

	Species	Date	Location
	Hamersley Bloodwood (Corymbia hamersleyana)		
	Smooth-barked Coolibah (Eucalyptus victrix)		
5.07	Forrest's Featherflower (Verticordia forrestii)		
	Euphorbia myrtoides		
TO NOR	Rattle-pod Grevillea (Grevillea stenobotrya)		
× ×	Tangled Mulla Mulla (Ptilotus latifolius)		
N.S.	Samphire (Tecticornia auriculata)		
	Currant Bush (Scaevola spinescens)		
N/	Soft Spinifex (Triodia epactia)		



Tall Mulla Mulla (*Ptilotus nobilis*) Photo - Astron Environmental Services

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