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Master of Philosophy – Natural History Illustration
A study of the Flora of the National Parks Authority Controlled and Managed Saltwater National Park and Khappinghat Reserve.

Saltwater National Park and the Khappinghat Nature Reserve is a large area bushland consisting many vegetation communities, which contain a wide variety of flora and fauna. This study will concentrate on illustrating and documenting the many varieties of plants found in these areas in particular The Saltwater National Park. There is not a great deal of information recorded about these parks and the vegetation they contain, which inspired me to undertake this study and document the information obtained for future generations.

Chapter 1: The Study
The purpose of this study is to research and document the information found of the flora found in this unique region visually through artworks and text through the written word. The Saltwater National Park and Khappinghat Reserve lie along the coastline of the Manning Valley on the mid north coast of New South Wales is approximately 20 kilometres from the town of Taree. The reserve and park contain many environmental ecosystems and vegetation communities, which makes them a very special and significant area for the region of the Manning Valley and one which is well worth protecting environmentally, documenting and illustrating the flora found there for now and for future generations.

This body of work consists of written and illustrated documentation of the flora which is found in the Saltwater National Park and the Khappinghat Nature Reserve and will include field and diary sketches of all the aspects of the plants, photos of the plants and their habitats, scientific and colour botanical plates and a written exegesis on the various aspects of the area including Indigenous, Historical and Environmental Heritages. Included also in this research will be descriptions of the plants and animals found there including the marine habitats.
The primary reason for studying this location is because it is where I live. During the course of my research I have found there are very limited resources or information, written or illustrated, about the Saltwater National Park and Khappinghat Nature Reserve and I believe it is important that a record be made available to the public of this special area with its diverse range of flora and fauna species, especially for the education and general interest for future generations. Many of the animals and plants in this area are listed as vulnerable and/or endangered which is another important reason for doing the study.

I have made numerous trips during the different seasons to the parks to study, sketch and photograph the flora found growing there in order to gain the most comprehensive information of the plants as possible therefore enabling me to better illustrate, identify and research all aspects of the park’s flora species.

I have also contacted the Office of Environment and Heritage, New South Wales National Parks and Wildlife Service (Council) to gain information and resource material to further identify the flora species found in this area and have received an updated version of the Environmental Study of the region, which has been a helpful resource to my research. I was given a list of the plants contained in the park which mainly consisted of the trees and shrubs in addition to these I have also found many plants growing in the under growth. I have illustrated approximately eighty-seven plants most of which I have found during my many trips to the reserve and park.

The Methodologies employed for my research are listed below:

* Frequent visits to the park and reserve were carried out throughout the year, taking into account the seasonal variations of the plants, enabling me to study, sketch and photograph all aspects of the plants and the habitats in which they grow.

* Consultation with New South Wales Parks and Wildlife and other Government authorities to gain information and resource material to further identify the species found in these areas.
A review of the most recent version of the Khappinghat Nature Reserve and Saltwater National Park Draft Plan of Management. (Sept 2012) to better understand and identify what is growing in the park and reserve, and what measures have been taken and are being taken to protect this special area.

The process in which I use to accomplish this outcome is as follows:

* Photograph a plant in its habitat, including as many of the features of the plant as possible and recording when and where they were found.

* Complete field sketches in my diary, recording the many aspects of the plant using the information taken from the photographs and information from the web and books.

* Record the colours and any defining markings or patterns on the plants.

* Document the location where I observed the plant growing.

* Document the time and date I observed the plant.

* Document any information found during the field visits, which might be of assistance in identifying, illustrating and producing the final colour botanical plates.

* Plant identification, which involves conducting an internet search, comparing images of documented species to the photos I obtained to determine the family and species. This process can take many hours as most of the species have a large number of plants in the same family, some of which may only have the slightest difference between them which makes it difficult to identify the particular plant.

* Review the Royal Botanic Gardens (RBG) Plantnet website to determine the correct botanical name and species of the plant.

As well as the previously mentioned web site there are many other sites available which aid me
in my research. Some of these include: Australian Tropical Rainforests

Native Plants Society of Australia

APII (Australian Plant Image Index)

Carrying out book and journal searches is also a major component of my research. Some of the books I have found helpful include:

‘Australian Trees’ by Leonard Cronin.

‘Colour Guide to the Wildflowers of Eastern Australia’.

(A full list of books and resource material is listed in the Bibliography)

The use of a microscope was also a great help in identifying the smaller parts of the plant and the surfaces of the petals and leaves thus enabling me to illustrate them correctly. But this was only possible when I could obtain a specimen of the plant. Because the plants growing in these areas are protected, taking samples wasn’t an option, so I had to rely in the most part on photographs, books and other materials to gain the information I needed.
Chapter 2: The Saltwater National Park & Khappinghat Nature Reserve

The Saltwater National Park and Khappinghat Nature Reserve is situated along the coastline of the Manning Valley on the mid north coast of NSW approximately 20 kilometres from Taree. During the early Pleistocene era the headland at Saltwater formed a narrow peninsular. At this time the areas known now as Diamond Head, Grants Head, Korogoro Point and Smokey Cape northward and Cape Hawke southward were islands and it wasn’t until the Holocene era (11,000 years ago to present age) that these islands were joined to the mainland. (Council) The Khappinghat Nature Reserve and Saltwater National Park contain one of the last remaining areas of undeveloped wetlands. The park consists of a peninsular, with Walabi Beach to the north and Saltwater Beach to the south. The peninsula is relatively small in area and length and is surrounded by rocky platforms, abounding in marine, animal and plant life, and an extensive estuarine system. There is a walking track along the headland with a viewing platform at the end of the walk, which is used by the public for whale watching and viewing the beaches and rocky shores on either side. The main park has the Khappighat Creek has many tributaries (Allard, Magpie, Muddy, Moor Creeks and Duckhole and Saltwater Gullies) running through it which enter the sea on the south side of the headland. The creek system is instrumental in the feeding of the natural vegetation of the areas of the park, which include, mangroves, wetlands, rain forests and salt flats. At times when the creek is closed off due to a build up of sand, the heathland and the waterways suffer, this then in turn affects the plant and animal life and the many ecosystems situated there.
Chapter 3: Aboriginal Heritage:

The Saltwater National Park and Khappinghat Nature Reserve is steeped in Aboriginal Heritage. For over a thousand years the people of the Biripi and Worimi tribes have inhabited the Manning Valley and in particular the Saltwater area, and the plants, animals, land and water of this area have been and still is today an integral part of their culture and history. From the 1900’s to the 1960’s, the area was used exclusively by the Aboriginal people and during that time the land was inhabited by many feral goats, which were another source of food for the Aboriginal people as well as the locals who lived in the area. (Council)

There have been burial and ceremonial sites found and recorded in the reserves, as well as artifacts including tools and weapons, scarred trees (this refers to parts of a tree that has been carved out or removed to make weapons or tools) fish traps and middens (these are the remains of shellfish or animal bones used for meals and they were often left lying in the same place for many years) discovered. (Government, 2009) The land is still used today for ceremonies, medicines, bush food and camping by the Biripi people, which occurs for a period of six weeks at Christmas time(Council) The national park is under the protection and care of the Parks and Wildlife Authority with close consultation with the Aboriginal tribal elders, whose aim it is to preserve this historic and culturally significant place for future generations.
Chapter 4: Historical Heritage:

Captain Cook, during his sea voyage in the Endeavour in 1770 passed by the coastline of the Mid North Coast and noticed numerous fires burning along the shore. These fires could possibly have been started by the people of the Biripi and Worimi Aboriginal Tribes, as they were the only inhabitants of the land at the time. It wasn’t until quite a few years later in October 1818 that John Oxley with a party of men explored the NSW coast between the Hastings River and Port Stevens. According to historical reports, they camped at Blackhead (which is a few kilometers south of Saltwater). On his journey, Oxley discovered two inlets into the sea from the Manning River, one of these was the Harrington inlet and the other the inlet at Old Bar, which is just north of Saltwater. During the late 1800’s and early 1900’s the land now known as Khappinghat Nature Reserve was mainly used extensively for logging. From the turn of the century to 1920, many people owning selections in the Bohnock and Beryan parishes were forced to hand over their land to the Crown because they could not keep up with their rental payments. The land was then designated to become state forest and in 1916 The Forestry Commission was formed whose job it was to regulate and record the logging of the trees in the area. It wasn’t until the 1950’s that a quota was placed on the number of trees to be logged, therefore slowing down the clearing of land to some extent. However there was still some remaining freehold land and in 1907 a man by the William J. Palmer purchased 1,000 acres on which he built a cottage, it is situated off the Five Islands Walking Track in the Khappinghat reserve, this cottage was used by the Palmer family for holidays up until the fifties. During the 1950’s the homestead was destroyed by fire but a small portion of the cottage remains can still be seen today. The remains of the cottage along with the wooden bridge, which crosses the Khappinghat Creek, are in the process of being reviewed for classification as places of cultural significance. During the late sixties a hut was built on the headland, which was used as a shop to serve groceries at Christmas to the visitors to the area and the
locals of the area and was run by George Bunyan and his Brother. The reserve became popular with surfers and still is to this day a very popular surfing and holiday destination. (Davis-Hurst, 2010)

*Remains of the Palmers Cottage* (Photo by Bev Hawkins 2012)
Chapter 5: Botanical Illustration in Australia: A Brief Historical Overview

For hundreds of years there has been an interest in botanical art and natural history both for recreation and for documentation of flora, dating back to the 1700’s through to the early settlers and to the botanical artists of today. Up until the invention of photography the only way flora and fauna could be documented was by botanical illustration. One book recording the theory of and the interest in natural history is called “Systema Naturae” which was published by a Swedish botanist by the name of Carl Linnaeus during the 1700’s. It wasn’t only the naturalists and botanical artists that had a great passion for Natural History but members of the public also were very interested in and intrigued by the natural world, some thinking it brought them closer to god. The invention of photography in the 1870’s was to have an impact on the role of the botanical artist but this didn’t make them completely obsolete as the equipment was large and cumbersome and couldn’t be taken out into the field to document the specimens. As technology advanced and cameras became smaller and therefore more portable it was easier to take them into the field to record the subjects, but botanical artists were still utilized to produce scientific illustrations for educational publications. (Neville, 2012)

Probably the most famous or well-known botanist was Joseph Banks (1743-1820). He was invited to join Captain James Cook on his expedition to Australia 1768 to document and illustrate the flora and fauna found in the new settlement at Botany Bay. They arrived at Botany Bay in 1770 and after settling into the new settlement Banks was successful in collecting and illustrating many species of the flora and fauna in the area, this new collection consisted of 110 new genera and 1,300 new species. (Council of Heads of Australasian Herbaria, 2007b) As well as Joseph Banks, many other botanists and artists came out from England during that time to explore the new land and its diverse natural flora and fauna, some of these artists included, Daniel Solander (1733-1782), Sydney Parkinson (1745-1771), George Bentham (1800-1884), Ferdinand L. Bauer (1760-1826) and Robert Brown (1773-1858) to name a few. Robert Brown, was responsible for recording and illustrating the thousands of plants discovered in the new settlement at Botany Bay (GTCC)(Council) and was considered by
his peers to be one of the leading Botanists in the country and was instrumental in collecting specimens in excess of 3,000 in number. He came out with Matthew Flinders on his voyage to chart the coast of Australia in 1801. He remained in Australia until 1805 and during that time published a book of his findings and illustrations, which is the famous “Prodromus Flora Novae Hollandiae”. (Council of Heads of Australasian Herbaria, 2007a)

There have been many artists recording and illustrating plant species since that time some of these include Louisa Atkinson, Collin Woolcock (1914-1990), Helen Hewson (1938-2007) and the well known Scott sisters, Harriet and Helena who with their mother and father moved from Sydney to Ash Island in the Hunter region in 1846. Their father, Alexander Walker Scott was an entomologist and artist and as they were surrounded by a variety of natural flora and fauna he encouraged them to illustrate the many species of plants, animals and insects found on the island. They were instrumental in illustrating much of the flora and fauna of the Hunter Region. (Docker, 11th October 2011).

Even now in the 21st century botanical illustration still plays a very important part as a means of documenting plant species and is a popular past time for many artists. The art of illustration is not only aesthetically pleasing to look at but it is a very precise practice which enables the artist to depict the many aspects of the plants and with the aid of a microscope accurately draw the minute parts that are not so easily seen by the naked eye.
Chapter 6: Native Vegetation

The Saltwater National Park and Khappinghat Nature Reserve contain a number of vegetation communities, which are listed below:

Heathland
Dry & Sclerophyll Forest
Swamp Sclerophyll Forest
Littoral Rainforest
Estuarine Complex
Wetland
Dunal Complex
Marine

The reserve and national park cover an area of 3,547 hectares of which Saltwater National Park consists of 33 hectares and Khappinghat Nature Reserve 3, 514 hectares, the area also includes a number of marine habitats and is situated on the Mid North Coast approximately 7 kilometers south east of Taree. The reserve and park are not only of great environmental significance but a great place of recreation for local community with surfing, fishing and picnicking among the popular pastimes.

The National Park and Nature Reserve are currently in the care and jurisdiction of the New South Wales Parks and Wildlife Service and it is their responsibility to oversee the maintenance and restoration of the many vegetation communities found in the planning area.

The vegetation communities and plants recorded to be growing in this area according to the Office of Environment and Heritage New South Wales National Parks & Wildlife Service
Heathlands are quite common along the coast of New South Wales and although they can have a bare and barren appearance and quite often wind swept in some places, host a wide variety of plant life. When Captain James Cook first arrived at Botany Bay after a long voyage from England, Botanists Joseph Banks and Daniel Solander, who were invited to take the voyage with Cook as, were instrumental in documenting and illustrating many of the plants found there on the heathlands of Botany Bay (Keith, 2006)

Some of the plants found in this area include, Casuarina, Banksia species and Westringia.
Sclerophyll and Dry Sclerophyll

This vegetation community is widespread and comprises one quarter of the total vegetation in New South Wales. The soils in these forests are low in fertility and the vegetation growing there has been largely left untouched by humans due to the fact that the soils are infertile and therefore not suitable for growing crops. (N. Government)

Some of the plants found in this area include, Eucalyptus tereticornis, Eucalyptus propinqua, Eucalyptus paniculata, Eucalyptus siderophloia and Eucalyptus grandis and native grasses including Imperata, Lomandra and Elaeodendron.
Swamp Sclerophyll

Swamp Sclerophyll forests consist of sandy soil and humic clay loams, they are often waterlogged floodplains. Some of the species found in this area include, Cupaniopsis, Guioa, Rapeae and Ficus, Pittosporum, Melaleuca.

Photo by Bev Hawkins 2013
Littoral Rainforest:

Many of the areas of littoral rainforests have been destroyed by urban development, logging and mining leaving only a few pockets scattered along the coast and as a result are also listed on the Endangered Ecological Community list. (Keith, 2006) Saltwater has a small littoral rainforest pocket, which is another reason why it is imperative that the Khappinghat Nature Reserve and Saltwater National Park be saved, preserved and documented for future education and records. Some of the plants found in this area include, Ficus, Cupaniopsis, Guioa, Eupomatia and Synoum, Duboisia, Lophostemon, Alphitonia, Achronychia and Eucalyptus.

Photo by Bev Hawkins 2013
Plants in these areas include mangroves.

Photo by Bev Hawkins 2013
Some of the plants found in this area include, Casuarina, Melaleuca, Eucalyptus and Restio.
The vegetation growing along sand dunes has adapted to the sandy soil, salt air and wind resulting in the plants having deep root systems enabling them to grow deep into the ground searching for water, this in turn helps to stabilize the dunes themselves.

Some of the plants found in this area include, Banksia and Leptospermum (Council)
Chapter 7: Plant List

Below is a list of the plants I have found and identified in the reserve but mainly in the Saltwater National Park along the Five Islands Walking Track:

*Bossiaea ensata* (Sword Bossiaea), *Bossiaea heterophylla* (Variable Bossiaea), *Hibbertia linearis, Hibbertia scandens* (Climbing Guinea Flower), *Caladenia catenata* (White Fingers), *Pteridium esculentum* (Common Bracken), *Allocasuarina littoralis* (Black She-oak), *Dillwynia retorta*, *Boronia pinnata, Banksia integrifolia* (Coastal Banksia), *Banksia serrata* (Old Man Banksia), *Banksia aemula* (Wallum Banksia), *Correa reflexa* (Common Correa), *Leucopogon lanceolatus, Westringia fruticosa* (Coastal Rosemary) *Melaleuca sieberi, Myoporum boninense* (Common Mangrove Boobialla),

*Boryonia pinnata, Banksia integrifolia* (Coastal Banksia), *Banksia serrata* (Old Man Banksia), *Banksia aemula* (Wallum Banksia), *Correa reflexa* (Common Correa), *Leucopogon lanceolatus, Westringia fruticosa* (Coastal Rosemary) *Melaleuca sieberi, Myoporum boninense* (Common Mangrove Boobialla),

*Corymbia intermedia* (Pink Bloodwood), *Eucalyptus tereticornis* (Forest Red Gum), *Eucalyptus paniculata* (Grey Ironbark), *Eucalyptus racemosa* (Scribbly Gum), *Caladenia carnea* (Pink Fingers),

*Dipodium punctatum, Persoonia virgata, Eustrephus latifolius* (Wombat Berry), *Daviesia acicularis*,


This vegetation community has been declared as an Endangered Ecological Community by the The Scientific Committee established by the Threatened Species Conservation Act. (N. Government) The soils in this community consist of humic clay and sandy loams.

The plants I have found on the Dunes along the Saltwater Beach are:

*Canavalia rosea* (Coastal Jack Bean), *Rhagodia candolleana* (Sea Salt Bush), *Ficinia nodosa* (Knobby Club-rush), *Scaevola calendulae* (Dune Fan Flower), *Kennedia rubicunda* (Dusky Coral Pea), *Dianella caerulea* (Blue Flax-lily), *Casuarina equisetifolia* (Coastal She-oak), *Carpobrotus glaucescens* (Pigface), *Commelina cyanea* (Native Wandering Jew)

The list below contains is a small explanation of the plants found in and around the Saltwater National Park. Most of the information found was from the NSW Government site, Plantnet.

*Westringia fruticosa*
Common Name-Coastal Rosemary or Native Rosemary
Family-Lamiaceae
This plant is classified as a medium shrub growing in coastal areas and heathlands with silver grey leaves 10-30 mm long and small white to pale mauve flowers 10-14 mm long. I found this plant growing on the headland and along the foreshore in the park. This bush flowers throughout the year.

*Dillwynia retorta*
Common Name-Twisted Parrot-pea
Family-Fabaceae
This plant is classified as a medium shrub and can be found in heathlands and dry sclerophyll forests. It grows to 3 metres high and has spirally twisted narrow leaves 4-12mm long with small bright yellow flowers with red markings usually nine clustered on the end of the branch.

*Boronia pinnata*
Common Name-Pinnate Boronia
Family-Rutaceae
This plant is classified as a small shrub and can be found in heathlands and dry sclerophyll forests. It grows ½-1½ metres high and has pointed narrow leaves 6-20mm long; flowers have four petals and are a deep to pale pink in colour, usually flowering in spring.

*Banksia integrifolia*
Common Name-Coast Banksia
Family-Proteaceae
This plant is classified as a tree and grows in dry sclerophyll forests. The height of these trees range from 5-25 metres, it has a rough bark. The leaves are narrow-ovate to elliptic growing 4-20cm long and 10-36mm wide, the flowers are 5-12cm long and perianth 22-25mm long and pale yellow in colour. The tree flowers from January to June.

*Banksia aemula*
Common Name-Wallum Banksia
Family-Proteacea
This plant is classified as a bushy shrub or robust tree and grows in dry sclerophyll forests. It grows to a height of 8 metres with a brown warty bark. The leaves can narrow to ovate to oblong with a prominent midrib. The flowers grow from 4-20cms long and are pale yellow to greenish cream, and consists of many perianth 35-45mm long. The flowering time is mainly March to June.

*Banksia serrata*
Common Name- Old Man Banksia
Family- Proteaceae
This plant is classified as an evergreen tree and grows in dry sclerophyll forests to a height of 16 metres, while in coastal areas grows only to 3metres high, it has grey-brown warty bark. The leaves are narrow with serrated edges and the flowers are 7-15cms long. The perianth is 40mm long and creamy/grey in colour. This plant flowers from January to June.
Allocasuarina littoralis
Common Name-Black She Oak
Family-Casuarinaceae
This plant is classified as a tree and is usually dioecious (Unisexual-male and female reproductive parts on different plants) and grows in woodlands or heathlands. It grows to a height of 5-15metres; it consists of branchlets to 20cm long with 4-10mm joins along the length of the branchlet. The cones of this tree grow to a length of 10-30mm. (N. Government)

Leucopogon parviflorus
Common Name-Coastal Beard-heath, Native Currant
Family-Ericaceae
This plant is classified as an erect shrub or small tree found in coastal heaths and dunes. It grows to a height of 120-500 cm high. The leaves are elliptic to oblanceolate 11-29mm long. The small white flowers are erect and consist of 7-13 on clustered spikes, they have light yellow/brown stamens and the petals have tiny hairs on the surface. The fruit is white and 4.3-5mm long. This plant flowers throughout the year.

Leucopogon lanceolatus
Common Name- Lance Beard Heath
Family-Ericaceae
This plant is classified as an erect bushy shrub is found in eucalypt woodlands. It grows to a height of 70-30cm; the leaves are elliptic or ovate 6-34 mm long. The flowers are white, and 2to16 in spikes and grow 3-39 mm long; there are small hairs on the upper side of the petal. The fruit is oval in shape and measures 2.1-3.3 mm. Flowers throughout the year.

Pteridium esculentum
Common Name – Common Bracken, Austral Bracken or Bracken
Family – Dennstaedtiaceae
This plant is classified as a fern and is found in open woodlands It has a long creeping rhizome which is 2-10mm in diameter, it is covered with dense dark brown/red hairs. The fronds are stiff and erect and reach a height of 0.6–1.5 metres, they are coloured green on top surface and silvery green on the underside. While this is a native plant it can sometimes colonise and become a weed.

Hibbertia scandens
Common Name – Climbing Guinea Flower
Family – Dilleniaceae
This plant is classified as a climber growing in heaths and dry sclerophyll forests. It has 4m long stems. The leaves are obovate or elliptic 30-80 mm long and 15-25mm wide. The flowers are yellow with five petals 20-30 mm long. This climber flowers most of the year.

Hibbertia linearis
Common Name – Showy Guinea Flower
Family- Dilleniaceae
This plant is classified as an erect shrub growing in heaths and dry sclerophyll forests. It grows to a height of 50-100cm; Leaves are linear and oblong to obovate and are 8-30mm long and 1-10mm wide. The flowers are yellow and the petals are 8-10mm long with stamens 15-25mm long. This shrub flowers in spring to summer.

Caladenia *catenata*
Common Name – White Caladenia or White Fingers
Family – Orchidaceae
This plant is classified as an orchid and is a terrestrial herb found in dry sclerophyll forests, it has a long leaf 12cm long and 4cm wide, the plant has a single white flower and grows to a height of 30cm, the sepals and petals are 2cm long. The throat is green with red/maroon stripes. This plant flowers August – October.

*Correa reflexa*
Common Name - Common Correa or Native Fuchsia
Family – Rutaceae
This plant is classified and as an erect shrub found in dry sclerophyll forests and heathlands It grows 0.5 –1.5m high, the stems are rusty coloured and have a woolly surface. Leaves are narrow to broad ovate, 1.5–5cm long and the surface are green and sparsely covered with rusty coloured hairs while the underside is a paler green. The flowers are bright pink with light green at the tip and grows to a length of 20-35mm the anthers are 2.5-3.5mm long. This plant flowers April to September.

*Bossiaea heterophylla*
Common Name – Variable Bossiaea
This plant is classified as a shrub found in heathlands grows to a height of 1m and has flat stems. Leaves are mostly linear and often have varying shapes of leaves on the same plant. The flowers are 7-15mm long; the petals are orange/yellow with darkish red at the centre. This shrub flowers April to May.

*Bossiaea ensata*
Common Name – Sword Bossiaea
Family – Fabaceae
This plant is classified as an erect shrub found in heathlands. It grows to a height 1.5metres and the branches are flat. The flowers are usually 6-10mm long and the petals are unequal in length and the colour is orange/yellow with red on outside and flowering late winter to spring.

*Myoporum boninense* subsp. *austral*
Common Name- Mangrove Boobilal
Family-Myoporaceae
This plant is classified as an erect shrub found in coastal heaths and dunes. It grows to 2m high; the leaves are elliptic, ovate to obovate or oblanceolate and have a shiny surface. The flowers grow in 1-8 axils and are 10-15mm long and coloured white, the fruit is ovoid to globular in shape and the surface is smooth the colour is light purple.
Melaleuca sieberi
Common Name- Siebers Paperbark
This plant is classified as a shrub found in wet heaths. It grows to 5m and has a papery bark. The leaves are narrow-elliptic to lanceolate, 4-15mm long and 1-4mm wide. The flowers consist of few to many spikes 1-4mm long, white sometimes tinged with pink. The fruit is barrel shaped.

Ozothamnus diosmifolius
Common Name-Rice Flower, White Dogwood, Pill Flower and Sago Bush
Family-Asteraceae
This plant is classified as an erect shrub found in heaths and edges of rainforests. It grows to a height of 5 metres. The leaves are linear, growing 10-15mm long and 1-2mm wide, the upper side is green and scabrous while the under side is woolly and white in colour. There are many heads on the plant and they grow to 2-3mm long and 2-3mm in diameter. The heads contain twenty to twenty two florets white to pink in colour. The plant flowers from late winter to spring.

Platylobium formosum
Common Name – Handsome Flat Pea
Family – Fabaceae
Erect shrub found in areas of heath to rainforests. It grows to a height of 2.5m
Leaves narrow to ovate, flowers orange yellow dark red markings.

Pimelea linifolia
Common Name – Slender Rice Flower
Family – Thymelaeaceae
Variable prostrate shrub common in most areas. It grows 1.5m high.
Leaves narrow elliptic to oblanceolate, flowers white or sometimes pink.
Fruit green.

Ricinocarpos pinifolius
Common Name – Wedding Bush
Family – Euphorbiaceae
Shrub found in sandy soils growing 1-3 metres high.
Leaves 1-4cm long, flowers white in terminal clusters.

Pandorea pandorana
Common Name-Wonga Wonga Vine
Family-Bignoniaceae
This plant is classified as a woody scrambler or climber with a fawn coloured bark found in rainforest and sclerophyll forests. The leaves are ovate and a glossy green colour, the flowers are long and white, and are tubular in shape with purple markings at tips. The flowering time is June to December.

*Acacia suaveolens*
Common Name- Sweet Wattle
Family- Fabaceae
This plant is classified as an erect shrub with smooth purplish/brown or light green in colour found growing in heathlands and dry sclerophyll forests. The leaves are linear with a prominent midrib 5-15cm long and 2-10 mm wide. There are three to ten flowers in clusters on the stem and are pale yellow/creamy white in colour. This plant flowers in April to September.

*Acacia ulicifolia*
Common Name- Prickly Moses
Family- Fabaceae
This plant is classified as an erect shrub found in dry sclerophyll forests. It grows to 0.5-2metres in height with smooth grey bark. The leaves are straight, pointed and angled to branch and are 0.8-1.5cm long, 1-2mm wide. The flowers are single and pale cream to white and 4-10mm in diameter, flowering usually between April and October. (N. Government)

*Acacia longifolia* subsp.
Common Name- Coastal Wattle
Family- Fabaceae
This plant is classified as a prostrate or decumbent shrub found in heaths and sand dunes. It grows to 0.5-3metres in height. The leaves are elliptic or ovate to narrowly elliptic or oblanceolate and the veins are prominent growing 4-11cm long and 10-3-mm wide. The flowers are rod like pale to bright yellow clusters.

*Dodonaea triquetra*
Common Name- Large-leaf Hop-bush
Family- Sapindaceae
This plant is classified as an erect shrub found in wet sclerophyll or dry sclerophyll forests. It grows to 3metres high. The leaves are elliptic and sometimes ovate 4.7-12cm long and 10-47mm wide. The female flowers are broad and triangular and yellowish/green in colour, the male flower has mult tubular projections and is yellow in colour.

*Aotus ericoides*
Common Name- Common Aotus
Family- Fabaceae
This plant is classified as a medium shrub found in dry sclerophyll forests. It grows to 2 metres in height and the stems are often rusty. The leaves are ovate, elliptic, lanceolate or linear 6-20mm long and 1-5mm wide. The flowers are small and yellow with red/orange marking in centre and grow to 2mm long.

*Elaeodendron austral*
Common Name-Red Olive Berry, Red Fruited Olive Plum or Cassine
Family- Celastraceae
This plant is classified as a shrub or small tree found in littoral rainforests. It grows to a height of 8 metres. The leaves are elliptic or ovate 4-10 cm long and 1.5-5cm wide. The flowers are small and creamy/white growing in clusters. The fruit is red in colour and 9-15mm in diameter. This plant is naturalised in this area.

*Glochidion ferdinandi*
Common Name- Cheese Tree
Family-Phyllanthaceae
This plant is classified as a shrub or medium sized tree and is common in coastal areas. It grows to a height of 6 metres. The leaves are elliptic/oblong-elliptic, 3-10cm long and 1.5-4cm wide. The flowers are small and greenish/yellow in colour, the male and female flowers grow separately on same tree. The fruit is 12-20 mm in diameter and is whitish green turning pink to deep red when ripe.

*Dampiera sylvestris*
Common Name- Blue Fan Flower
Family-Goodeeniaceae
This plant is classified as an erect perennial sub-shrub growing to 70cm high, the stem branches at three acute angles. The leaves are narrow-oblong to lanceolate and grow 5-8cm long and 8-30mm wide. There are four to five flowers on one branch and are mauve in colour and are 20-32 mm in length. Long grey spreading hairs grow on the outside. This plant flowers mostly in August and February.

*Lomandra spicata*
Common Name- Rush
Family-Lomandraceae
This plant is classified as a perennial tufted herb found in most types of rainforest. The leaves thin and flat 40-80cm long and 4-12 mm wide. The flowers are male and female and are ellipsoidal or cylindrical. The male flowers are 3-3.5mm long and the female flowers are 4.5mm long. The capsule is yellow/orange in colour. This plant flowers mainly during spring.

*Euryomyrtus ramosissima*
Common Name-Rosy Baeckea
Family-Myrtaceae
This plant is classified as a small spreading shrub found in heaths and dry sclerophyll forests. It grows to a height of 60cm. The leaves are dark green in colour linear or narrow ovate and grow 3-13mm long and 1-3mm wide. The solitary flowers are small and the petals are circular and are pink in colour.

*Hybanthus stellarioides*
Common Name-Spade Flower.
Family-Violaceae
This plant is classified as an annual herb found in coastal and eucalypt areas. It grows to a height of 30cm, the stems have scattered hairs. The leaves are linear to lanceolate to elliptic-ovate 1-8 cm long and 2-8mm wide. The plant has solitary flowers, which are yellow in colour and the petals are 4-5mm long. The capsule grows to 5.5-7.5 mm long with five to ten seeds.

*Hardenbergia violacea*
Common Name- Purple Coral Pea, False Sarsparilla or Waraburra.
This plant is classified as a climbing sub-shrub with stems growing to 2metres long and is found in a variety of habitats. The leaves are lamina ovate to narrow-lanceolate and grow 3-10cm long and 1-5cm wide with leathery veins. There are 20-30 flowers growing along the stems and they are coloured purple. This plant flowers mostly in spring. (N. Government)

*Caladenia carnea*
Common Name- Pink Fairy, Pink Fingers
Family- Orchidaceae
This plant is classified as a terrestrial herb and is found growing in coastal heathland, dry sclerophyll forests and woodlands. The leaf is narrow and linear growing to 15cm long and 4mm wide with spares hairs. The plants consist of 1 to 3 flowers with petals coloured white to pink. This orchid flowers from August to December.

*Leptospermum laevigatum*
Common Name- Coast Teatree
Family- Myrtaceae
This plant is classified as a shrub or small tree growing to 4 metres high, its bark shed in strips and the younger stems are silky, it is found growing in coastal heath and dry sclerophyll forests. The leaves are narrow-ovate growing 15-3-mm long and 5-8 mm wide. The flowers usually grow in twos and are coloured white with pink to maroon centre. The fruit is usually 7-8mm in diameter with a flat top. This plant flowers in August to October.

*Melaleuca nodosa*
Common Name- Prickly-leaved Paperbark
Family- Myrtaceae
This plant is classified as a small shrub usually reaching a height of 1-4 metres with a corky papery bark. It is found growing in coastal heathlands and dry sclerophyll forests. The leaves are linear or oblong usually 10-40mm long and 1-3 mm wide. The flowers grow in a dense manner and grow solitary or in groups of 2 or 3 and are coloured white to yellow. The fruit grows 2-3mm in diameter. This tree flowers in spring and summer.

*Eucalyptus tereticornis*
Common Name- Forest Red Gum or Buringoa.
Family- Myrtaceae
This plant is classified as a tree and grows to a height of 50m, it has smooth bark coloured white or grey and the bark sheds in flakes or large plates. It grows widespread in wet to dry sclerophyll forests. The leaves are narrow-lanceolate and grow 10-20cm long and 1-3cm wide, the colour of the adult leaves are a dull green and the young leaves are glossy green. The flowers grow in clusters and are white in colour. The buds are cylindrical and grow 10-20-mm long and are 4-8 mm in diameter, the fruit oval in shape and grows 4-6mm long and 4-8 in diameter.

*Corymbia intermedia*
Common Name- Pink Bloodwood
Family- Myrtaceae
This plant is classified as a tree grows to a height of 30metres, it has persistent bark, red-brown or grey-brown in colour. It can be found in coastal forests areas. The adult leaves are lanceolate and grow 10-15cm long and 2-3cm wide, while the young leaves are elliptic to ovate in shape and they are glossy green in colour. The flowers grow in clusters of seven and are white in colour. The buds are oval in shape 6-8mm long and 3-4mm in diameter. The fruit grows 12-20mm long and 10-15mm in diameter.

*Daviesia acicularis*
Common Name – Needle-leaved Daviesia
Family – Fabaceae
This plant is classified as a small wiry shrub found in dry sclerophyll forests. It grows to a height of 1 metre. The leaves are linear to narrow elliptic 10-40mm long and 0.5-4mm wide with a prominent midrib. The flowers are yellow with a maroon centre and the flower stalk is 1-2mm long. The seedpod grows to 6-9mm long and 3.5-7 mm wide. The plant flowers in August.

*Eustrephus latifolius*
Common Name – Wombat Berry
Family – Luzuriagaceae
This plant is classified as a vine with stems growing to 6m long sometimes with many branches. It can be found growing in sclerophyll forests, heathlands and edges of rainforests. The leaves are lamina elliptic or ovate to lanceolate or linear growing 3-10cm long and 3-35mm wide. The flowers are pink to mauve white and the capsule is yellow with black seeds. This vine flowers in spring and summer.

*Persoonia virgate*
Common Name – Geebung
Family – Proteaceae
This plant is classified as an erect shrub found in dry sclerophyll forests. It grows to a height of 3-6 metres. The leaves are linear growing 2-5cm long and 1-2mm wide. The flowers are yellow and the tepals are 9-11mm long.

*Persoonia levis*
Common Name- Broad-leaved Geebung
Family- Proteaceae
Erect shrub or tree found in heathlands or dry sclerophyll forests. Leaves vary from obovate to narrow elliptic 6-14 cm long. Flowers are small and yellow in colour.

*Dipodium punctatum*
Common Name – Christmas Orchid or Hyacinth Orchid.
Family – Orchidaceae
This plant is classified as a terrestrial herb found in swamp to dry sclerophyll forests. The flowers are 40-100cm long and are mottled mauve and pink in colour. The fruit is long and ovate and green with maroon stripes.

*Lomandra longifolia*
Common Name- Spiny-headed Mat-rush, Honey Reed
Family- Lomandraceae
This plant is classified as a tufted perennial herb found in numerous habitats. The leaves are flat and slightly concave/convex. They grow 50-100cm in length and 5-7.5mm wide. The male and female flowers are similar but differ in size, the male flower grows 3-3.5mm and the female grows 4.5mm long. This plant flowers in spring.

*Acacia maidenii*
Common Name – Maiden's Wattle
Family – Fabaceae
This plant is classified as an erect or spreading tree found in coastal areas. It grows to a height of 5-20metres. The leaves are narrow elliptic and grow 8-18cm long and 7-22 mm wide, they have 1-5 longitudinal veins. The flowers are cylindrical and yellow/pale yellow in colour and are hairy, the heads are cylindrical and grow 4-6cm long. The seedpods are twisted or curled growing 5-15cm long and 2-5mm wide and are of a leathery texture. This plant flowers from January to June.

*Smilax australis*
Common Name-Lawyer Vine, Wait-a-while, Barbwire Vine
Family-Smilacaceae
This plant is classified as a dioecious climber with prickly stems reaching 8 metres long. It can be found growing in rainforests, sclerophyll forests, woodlands and heaths. The leaves are lanceolate to broad elliptic or ovate mostly 5-15 cm long and 3-10cm wide, they are leathery in
texture and have 5 prominent veins. They have tendrils, which can reach up to 20cm long. The flowers are simple or compound umbels (flat topped or rounded in which individual flowers rise from the same point) greenish white in colour. The fruit is round and dark purple-black in colour. It flowers all year round but mainly in spring and summer.

*Ficus rubiginosa*
Common Name- Port Jackson Fig, Rusty Fig
Family-Moraceae
This plant is classified as a small to large spreading tree found in open forest and littoral rainforests. The leaves are obovate to ovate-elliptic growing 7-10cm long and 5-6cm wide, while they rarely grow 20cm long and 10cm wide. The upper surface is smooth while the under surface is hairy and rusty-coloured. The fruit usually grows in pairs and is yellow/ turning red in colour. The fruit is ripe from January to June.

*Alpinia arundelliana*
Common Name- Native Ginger
Family-Zingiberaceae
This plant is classified as a perennial herb found in littoral rainforests. It grows to 2metres high. The leaves are lanceolate growing 12-25mm long and 2-4mm wide. The flowers are rose-red in colour and grow 5-8cm long. The capsule is dark blue and is 10cm in diameter. This plant flowers from November to January.

*Eucalyptus microcorys*
Common Name- Tallowwood
Family-Myrtaceae
This tree grows to a height of 40metres high, sometimes growing to 60metres. The bark is persistent and red-brown or brown-black in colour. The leaves are lanceolate and glossy green in colour growing 8-12 cm long and 1.5-2.5cm wide. The flowers grow in groups of 7-11 and are white in colour. The buds grow 406mm long and 2-3 mm in diameter. The fruit grows in a conical shape and is 5-9mm long and 4-6mm in diameter.

*Pittosporum undulatum*
Common Name- Sweet Pittosporum, Native Daphne, Snowdrop Tree or Mock Orange.
Family- Pittosporaceae
This plant is classified as a tall shrub or tree found growing in rainforests, sclerophyll forest or woodlands. It grows to a height of 15 metres. The leaves are ovate to elliptic to narrowly obovate and grow 6-15cm long and 15-40mm wide. The fragrant flowers grow in terminal clusters and are white/cream in colour, the petals grow 10-12mm long. The capsule grows 10-14mm long and is 10mm in diameter. The plant flowers in spring.

*Nematolepis squamea*
Common Name- Satinwood
Family- Rutaceae
This plant is classified as a shrub or tree with smooth stems found in swamp sclerophyll forests. It grows to a height of 12m. The leaves are narrow to broad/elliptic growing 5-10cm long and 10-22mm wide. The upper side of the leaf is smooth and glossy green in colour while the underside is scaly and silvery/green in colour with a prominent midrib. The flowers grow in groups of 3-20 and are white in colour, and the petals are 4-5mm long. This plant flowers in spring.

**Pittosporum revolutum**
Common Name- Wild Yellow Jasmine, Rough Fruit Pittosporum  
Family- Pittosporaceae  
This plant is classified as a shrub found in swamp sclerophyll forests and rainforests. It grows to a height of 3m. The leaves are ovate to elliptic growing 5-15cm long and 15-16mm wide. The flowers grow in groups of few to several in terminal clusters and are yellow in colour and have a fragrant odour. The capsule is oval in shape and has a thick warty skin. The seeds are a reddish/brown colour and a numerous in number. This tree flowers in spring.

**Melaleuca quinquenervia**
Common Name- Broad-leaved Paperbark  
Family- Myrtaceae  
This plant is classified as a tree found in coastal swamps. It grows to a height of 10-15 metres. The leaves are lanceolate to elliptic growing 30-70mm long and 8-24mm wide with five prominent longitudinal veins. The flowered spikes grow 2-5cm long and have many cream-white and sometime greenish flowers; the stamens are 8-12mm long and comprise of 6-10 each bundle. The fruit is broad to cylindrical and 4-5mm in diameter. This plant flowers in autumn to winter.

**Pseuderanthemum variabile**
Common Name- Pastel Flower, Love Flower  
Family- Acanthaceae  
This plant is classified as a perennial herb found in rainforests and wet sclerophyll forests. It has hairy branches and grows to a height of 15-30cm high. The leaves are lanceolate to ovate growing 2-7mm long and 3-40mm wide, the lower surface is sometimes purple and spotted with glands. The terminal flowers are coloured white to mauve, with darker spots on the lower lobe. The lobes are 5-8mm long. The capsule is smooth and hairless and 10-15mm long. This plant flowers from December to May.

**Hakea salicifolia**
Common Name- Willow-leaved Hakea  
Family- Proteaceae  
This plant is classified as a tall shrub and is found in swamp sclerophyll forests. The leaves are narrow-elliptic to lanceolate and pale green in colour, growing 5-11cm long and 5-20mm wide and are smooth and hairless. The flowers grow in clusters of 16-28 and are white in colour. The fruit is smooth and hairless globular in shape and is covered with blunt topped warts. This plant flowers in spring.

**Elaeocarpus reticulatus**
Common Name- Blueberry Ash, Ash Quandong, Fringe Tree, Lily of the Valley Tree, Scrub Ash, Koda.
Family- Elaeocarpaceae
This plant is classified as a shrub or small tree found in eucalypt forests. The leaves are oblong-elliptic growing 5-13cm long and 1-3cm wide, they have a smooth and hairless surface with prominent veins. The flower is white occasionally pink, with petals reaching 8mm in length. The fruit is ovoid to globular and blue in colour and measures 12mm in length. This plant flowers in summer.

*Lophostemon confertus*
Common Name- Brush Box
Family- Myrtaceae
This plant is classified as a large tree with rough bark, coloured brown on lower trunk and pinkish brown on the upper trunk and branches. The leaves are broad-elliptic to ovate to lanceolate and glossy green in colour with a smooth hairless surface. They grow 9-17.5cm long and 2.5-4.5cm wide. The flowers grow in groups of three to seven; the petals are circular and 6-9mm long and white in colour. This plant flowers from October to December.

*Pterostylis nutans*
Common Name – Nodding Greenhood or Parrot’s Beak Orchid
Family – Orchidaceae
This plant is classified as a terrestrial herb found in dry and swamp sclerophyll forests. It grows to a height of up to 30cms. The leaves form a rosette of three to six leaves and are elliptic to ovate in shape and grow 2-9cm long and 10-20mm wide. The flowers are 2.5cm long with a translucent green colouring and the stem is 30cm high. The petals grow 12-16mm long and 3.5-4mm wide. These orchids flower from April to October.

*Solanum prinophyllum*
Common Name – Forest Nightshade.
Family – Solanaceae
This plant is classified as a sprawling annual herb found in sclerophyll forests and on the edge of some rainforests. It grows to a height of 0.5metres, the colour is purplish/green they are sparsely hairy with prickles on most on the parts of the plant. The prickles can grow up to 1.5cm in length. The leaves are elliptic to ovate and grow 5-8cm long and 3-5cm wide, both sides of the leaf are bright green and slightly hairy. The flowers are lilac/blue in colour. This plant flowers throughout the year. (N. Government)

*Angophora floribunda*
Common Name- Apple or Rough-barked Apple
Family- Myrtaceae
This plant is classified as a tree to growing 30m tall and is widespread. The bark short and fibrous and is persistent grey in colour The juvenile leaves are lanceolate to elliptic, while the adult leaves are lanceolate and grow 8-12cm long and 2-3cm wide. The buds are oval to globe shape 4-
7mm long and 5-7mm in diameter. The flowers are white and the petals are 3-4mm long. The fruit is ovoid or globular and grows 7-10mm long and 8-10mm in diameter.

*Eucalyptus propinqua*
Common Name – Grey Gum
Family – Myrtaceae
This plant is classified as a tree found in swamp sclerophyll forests. It grows to a height of 40 metres, the bark is smooth and sheds in flakes or large plates and is patchy grey/brown in colour. The young leaves are lanceolate and pale glossy green in colour while the adult leaves 8-14cm long and 1.5-2.5cm wide and are a dark glossy green colour. The buds are ovoid or globular 4-5mm long and 3-4mm in diameter. The flowers grow in clusters of eleven and a coloured white. The fruit is conical in shape and grow 2-5mm long and 3-6 mm in diameter.

*Eucalyptus siderophloia*
Common Name- Grey Ironbark
Family- Myrtaceae
This plant is classified as a tree found in swamp sclerophyll forests, It grows to a height of 45metres and has persistent grey-black bark. The young leaves are ovate to broad-lanceolate and dull green in colour while the adult leaves are lanceolate to broad-lanceolate and grow 8-15cm long and 1-2cm wide and are coloured dull grey/green. The flowers grow in clusters of seven flowers. The buds grow 5-8mm long, and 3-4mm in diameter.

*Eucalyptus rudderi*
Common Name- Rudders Box
Family- Myrtaceae
This plant is classified as a tree found in swamp or dry sclerophyll forests. It grows to a height of 40metres; it has persistent, fibrous and flaky bark and is grey in colour. The leaves lanceolate to broad-lanceolate and dull green in colour while the adult leaves are narrow-lanceolate growing 8-14cm long and 1-2cm wide. The buds are oval in shape growing 3-5mm long and 2-3mm in diameter, the fruit is 3-5mm long and 2-4mm in diameter.
This eucalypt is an endangered species.

*Eucalyptus pilularis*
Common Name-Blackbutt
Family- Myrtaceae
This plant is classified as a tree found in swamp sclerophyll forests. It grows to a height of 70 metres. The bark is persistent and fibrous to stringy on lower part of the trunk and grey/brown in colour, while above is smooth and white to grey in colour. The young leaves are broad-lanceolate and dull green in colour while the adult leaves are lanceolate and grow 9-16cm long and 1.5-3cm wide and glossy green in colour. The flowers are white in colour and grow in groups of eleven. The buds grow 7-10mm long and 3-5mm in diameter.

*Eucalyptus grandis*
Common Name - Flooded Gum, Rose Gum
Family - Myrtaceae
This plant is classified as a tree found in swamp sclerophyll forests. It grows to a height of 50 metres. The bark on lower trunk is persistent and grows a few metres on the lower part of the trunk while the bark above is smooth and powdery white-grey in colour. The bark sheds in small ribbons or flakes. The young leaves are ovate dark glossy green in colour while the adult leaves are lanceolate and dark glossy green in colour with the under side bluish growing 10-16cm long and 2-3cm wide. The flowers grow in groups of seven to eleven. The buds are ovoid 6-8mm long and 4-5mm in diameter and the fruit is 5-8mm long and 4-7mm in diameter.

Eucalyptus resinifera
Common Name - Red Mahogony
Family - Myrtaceae
This plant is classified as a tree found in swamp or dry sclerophyll forests. It grows to a height of 45 metres and has persistent stringy bark red/brown in colour. The young leaves are ovate to broad-lanceolate glossy dark green while the adult leaves are lanceolate and grow 9-16cm long and 2-4 cm wide and glossy dark green in colour. The white flowers grow in groups of seven to eleven. The buds grow 12-15mm long and 6mm in diameter. The fruit is ovoid and grows 5-11mm long and 5-10mm in diameter.

Eucalyptus acmenoides
Common Name - White Mahogany
Family - Myrtaceae
This plant is classified as a tree found in swamp sclerophyll forests. It grows to a height of 30metres, it has thin stringy persistent bark, grey to red/brown in colour. The young leaves are ovate and glossy green, while the adult leaves are lanceolate or broad-lanceolate growing 8-12cm long and 1.5-2.5cm wide. The flowers grow in groups of seven to eleven. The buds are ovoid and grow 5-7mm long and 3-4mm in diameter. The fruit is hemispherical growing 4-8 mm long and 4-7mm in diameter.

Eucalyptus robusta
Common Name - Swamp Mahogany
Family - Myrtaceae
This plant is classified as a tree found in heaths or swamp sclerophyll forests. It grows to a height of 25 metres and has stringy, thick and spongy persistent bark red/brown in colour. The young leaves are ovate and glossy green in colour. The adult leaves are broad-lanceolate 10-17 cm long and 2-4.5cm wide and dark glossy green in colour. The flowers grow in groups of seven to eleven. The buds grow 16-24mm long and 6-8mm in diameter. The fruit is cylindrical growing 10-18mm long and 6-11 mm in diameter.

Eucalyptus paniculata
Common Name - Grey Ironbark
Family - Myrtaceae
This tree grows to height of 30m it has persistent bark grey/black in colour. The leaves are lanceolate to broad lanceolate and grow 8-12cm long and 1.2-3cm wide and are semi glossy green in colour. The flowers grow in clusters of seven. The buds are oval in shape and 7-9mm long and 3-5mm in diameter. The fruit is conical or oval in shape 6-9 cm long and 5-8mm in diameter. This tree flowers late autumn to winter.

_Eucalyptus racemosa_
Common Name - Scribbly Gum  
Family - Myrtaceae  
This tree grows to a height of 25m and has smooth bark with a scribbly pattern white or yellow in colour and sheeding in strips. The leaves are lanceolate and glossy to semi/glossy green growing 7-14 cm long and 2-3cm wide. The flowers grow in clusters of eleven; the buds are oval in shape and grow to a length of 4-6mm and a diameter of 2-4 mm. The fruit grows 4-7mm long and 4-7mm wide.

_Eucalyptus punctate_
Common Name - Grey Gum  
Family - Myrtaceae  
This tree grows to a height of 35m and has smooth bark, patchy white, grey, grey/brown, salmon or orange in colour. The leaves are lanceolate, glossy dark green and the flowers grow in clusters of seven.

_Geitonoplesium cymosum_
Common Name - Scrambling Lily  
Family - Luzuriagaceae  
This plant is classified as a vine with stems growing up to 8m long. It can be found growing in and around rainforests and sclerophyll forests. The leaves are ovate to narrow lanceolate to linear growing 2-10cm long and 3-25mm wide. Both the upper and undersides of the leaf are glossy with a prominent midrib on the upper surface. The flowers are grouped on branches and are mauve to white in colour. The berries are globular in shape and grow 10-20mm in diameter and contain many black seeds. This vine flowers in spring to summer.

_Commissionia fraseri_
Common Name - Blackfellow's Hemp, Brush Kurrajong.  
Family - Malvaceae  
This plant is classified as a small tree or shrub found in rainforests. The leaves are ovate growing 5-17mm long and 2-7cm wide and have irregular toothed edges. The flowers are small and white in colour. The capsule is 15-25mm in diameter. This plant fruits from summer to autumn.

_Viola banksii_
Common Name - Wild Violet  
Family - Violaceae
This plant is classified as a perennial herb widespread along coastal areas, and is a vigorous grower with spreading stolons. The leaves are broad-reniform forming rosettes growing 18-25mm long and 30-45mm wide. The flowers grow on stems to 15 cm long and have mauve throat and white edge. The fruit is white to pale green and the seeds are black in colour and grow 1.8-2.5mm long.

*Synoum glandulosum*
Common Name- Scentless Rosewood
Family- Meliaceae
This plant is classified as a small tree found in rainforests, growing to a height of 7metres with brown scaly bark. The leaves are oblanceolate to obovate or oblong-elliptic growing 4-10cm long and 15-30mm wide. The flowers are small and the petals are white/pinkish in colour and grow 4-6mm long. The capsule is globular in shape, three lobed and reddish in colour.

*Acronychia oblongifolia*
Common Name- White Aspen, Yellow Wood
Family- Rutaceae
This plant is classified as a shrub to medium sized tree found in rainforests and growing to 27metres high. The leaves are obovate or narrow-to oblong-elliptic growing 4-12cm long and 1.4-4.5cm wide. There are numerous oil dots on the surface of the leaf. The flowers are few in number and are creamy/white in colour, the petals are 5-7mm long. The fruit is depressed and globular, four lobed and white in colour. This tree flowers mainly in autumn.

*Cupaniopsis anacardioides*
Common Name- Tuckeroo
Family- Sapindaceae
This plant is classified as a small to medium sized tree found in littoral rainforests. The leaves are oblong to elliptic growing 15-25cm long, they are leathery and the surface is glabrous. The pannicles (branched cluster of flowers) are 8-30cm long and the petals are 1.5-3mm long and yellowish in colour. The capsule grows 15-30 mm long and 15-20mm in diameter and orange in colour and the seeds are black.

*Maclura cochinchinensis*
Common Name- Cockspur Thorn
Family- Moraceae
This plant is classified as a woody climber or straggling shrub found in rainforests, it has spines growing 0.5-2.5cm long. The leaves are oblong to elliptic and 3-8cm long. The male flower is 6-8mm in diameter. The fruit grows in abundance and is yellow to orange in colour.

*Acronychia wilcoxiana*
Common Name-Silver Aspen
Family- Rutaceae
This plant is classified as a small tree found in littoral rainforests, and growing to a height of 9metres. The leaves are obovate to oblanceolate to oblong-elliptic growing 6-22 cm long and 2.5-9cm wide both surfaces are glossy green in colour. There are oil dots but they are scattered. This
tree has many flowers, with petals growing to 8.5-10mm long, and is a whitish colour. The fruit is globular and has 4 or 5 lobes and are white in colour. This tree flowers in autumn.

*Cynanchum elegans*
Common Name-White Flowered Wax Plant
Family-Apocynaceae
This plant is classified as a climber found in rainforests, it has corky stems cream to fawn in colour. The leaves are broad-ovate to ovate growing 1.5-5.5cm long and 15-25mm wide. The flowers grow in clusters or umbels on branched peduncles and are white in colour. The fruit is ovoid 6-7cm long and the seeds are 10-20mm long. This plant flowers in autumn and is an endangered and threatened species.

*Pyrrosia confluens*
Common Name – Robber Fern, Horseshoe Felt Fern
Family –Polypodiaceae
This plant is classified as a creeping fern found in rainforests, it has a many-branched rhizome with scales brown/red in colour. The fronds narrow obovate to oblong growing 3-7cm long and 5-15mm wide.

*Drypetes deplanchei*
Common Name -Yellow Tulipwood, Grey Bark, Yellow Tulip, Grey Boxwood, White Myrtle.
Family- Putranjivaceae
This plant is classified as a small to medium size tree found in littoral rainforests. The leaves are ovate growing 4-9cm long and 1-5cm wide, they are prickly toothed when young and the adult leaves have margins, which are toothed. The male flower grows in racemes with five to ten stamens while the female flowers grow in clusters of three or four, fruit small oval bright orange.

*Diplocyclos palmatus*
Common Name- Native Bryony, Striped Cucumber
Family Name- Cucurbitaceae
This plant is classified as a perennial herb with stems growing to a length of 6 metres, it is found in littoral rainforests. The leaves have three to six lobes and grow to a length of 4-12cm, the margins are toothed and the surface is slightly hairy. The flowers grow in clusters, which contain eight male and five female flowers, the male flower grows on pedicels 1-5mm long while the female flower on 5-20mm long. The colour of the flower is greenish white or white. The fruit is 15-25mm in diameter and is bright green ripening to bright red with irregular white stripes, the seeds are oval and grow 5-8mm in diameter.

*Acronychia imperforata*
Common Name-Logan apple
Family-Rutaceae
This plant is classified as a small tree or shrub found in littoral rainforests. It grows to a height of 9 metres. The leaves are elliptic to broad elliptic to obovate and grow 3-12.5cm long and 1.6-5.5cm wide. The flowers are few in number ad are yellowish to creamy-white in colour the
petals are 6-9.5cm long. The fruit is globular to obovoid and 7-12mm in diameter and is yellow to yellow-orange in colour. This plant flowers mainly in autumn.

**Guioa semiglauca**
Common Name: Guioa
Family: Sapindaceae
This plant is classified as a tree found in rainforests, it grows to a height of 6 metres; it has smooth and often spotted grey to dark grey bark. The leaves are obovate to narrow-elliptic and grow 8-15cm long and are dull dark green smooth and hairless, the underside of the leaf is grey/green in colour and is dotted with fine hairs and glands. The panicles are 3-10cm long and are white in colour (a branched cluster of flowers in which branches are racemes (stalked flowers arranged singly along an elongated unbranched axis)) The capsule is 8-10 mm long and a reddish colour with two or three lobes.

**Eupomatia laurina**
Common Name: Bolwarra or Copper Laurel
Family: Eupomatiaceae
This plant is classified as a small shrub or tree found in littoral rainforests. The leaves are oblong-elliptic growing 7-12cm long and 2-5cm wide, the, upper surface is smooth and shiny. The flowers are 20mm in diameter and grow in a solitary manner or in pairs and are cream to white. The stamens white to cream in colour and are 8-10mm long. The berries are globose to urn-shaped growing 15-20mm in diameter and are green turning brown in colour. This plant flowers in summer.

**Dianella caerulea**
Common Name: Blue Flax Lily
Family: Phormiaceae
This plant is classified as a perennial herb with a tufted and solitary habit. The leaves are a blade shape and grow 3-25mm wide and 75cm long. The plant has three to twenty three flowers growing in groups at the end of the stem, and is whitish to dark blue or purplish green in colour. The anthers are yellow brown in colour and the stamens grow 1-3mm long. The berry measures 7-12mm long. This plant flowers in spring and summer.

**Canavalia rosea**
Common Name: Coastal Jack Bean
Family: Fabaceae
This plant is classified as a climbing or trailing herb with stems 2-3cm long. It is found growing along coastal dunes. The leaves are three foliolate and the leaflets are circular to oblong growing 4-12cm long and 3-10cm wide. The mature leaves are leathery. The flowers grow in groups of eight on a raceme and are mauve to white in colour. The pod is large and light green growing to 10-25cm long and has 6 seeds ovoid in shape. (N. Government)

**Casuarina equisetifolia**
Common Name- Coastal She-oak, Horsetail She-oak
Family- Casuarinaceae
This plant is classified as a monoecious tree found along the coast on headlands or dunes. It grows to a height of 6-12 metres with drooping branches. The leaves or articles grow 7-13mm long and 0.7-1.0mm in diameter.

*Kennedia rubicunda*
Common Name- Dusky Coral Pea
Family- Fabaceae
This plant is classified as a twining or sometimes prostrate herb found on coastal dunes. It has stems growing to 4 metres long. The leaves are 3-foliolate and ovate to lanceolate growing 3-12cm long and 2-8cm wide. The surface of the leaf is glabrous to rusty. The racemes grow 4-5cm long and consist of two to twelve flowers, dark red or purple in colour. The pod is compressed and oblong growing 5-10cm long and is hairy and rusty in colour. The pod contains fourteen oblong seeds. This herb flowers from late winter to spring.

*Commelina cyanea*
Common Name- Native Wandering Jew
Family- Commelinaceae
This plant is classified as a perennial herb with prostrate stems found in swamp forests and woodlands. The leaves are ovate to narrow ovate growing 2-7cm long and 5-15cm wide and are a glossy green colour. The flowers are deep blue with a bright yellow centre. The capsule has five seeds 2-3mm long and are dull brown or black colour. This herb flowers from spring to autumn.

*Rhagodia candolleana*
Common Name- Sea salt Bush
Family- Chenopodiaceae
This plant is classified as an erect shrub found on coastal dunes. It grows to 4 metres high. The leaves are elliptic to broad ovate to hastate growing 20-35mm long. The flowers are unisexual, and pale reddish/pink in colour. The fruit fleshy red in colour and the seed is 1.5-2.5 in diameter.

*Carpobrotus glaucescens*
Common Name- Pigface, Iceplant
Family- Aizoaceae
This plant is classified as a prostrate perennial herb with stems growing 2metres long found on coastal dunes. The leaves are glaucous and straight or slightly incurved growing 3.5-10cm long and 9-15mm wide. The flowers grow 4-6cm in diameter and are light purple with a white centre. The petals grow in three or four rows containing one hundred to one hundred and fifty. The stamens number three to four hundred and grow in five to six rows. The fruit grows 2-3cm long and 1.6-2.4cm wide and is red to purple in colour.

*Scaevola calendulacea*
Common Name- Dune Fan Flower
Family - Goodeniaceae
This plant is classified as a prostrate shrub with flowering growing 40cm tall. The leaves are oblanceolate to obovate growing 8cm long and up to 27mm wide. The flowers grow in terminal spikes 8cm long and are blue mauve in colour. The fruit is globular and white and purplish in colour growing 12mm wide. This shrub flowers throughout the year.

_Ficinia nodosa_
Common Name - Knobby Club-rush
Family - Cyperaceae
This plant is classified as a rhizomatous perennial found along the coast and growing to 15-100cm high. The leaves consist of orange to brown sheaths. The flowers are dense and globular and grow 7-20cm in diameter with numerous spikelets. The nut of this plant is an irregular ellipsoid shape, is smooth and glossy and is coloured dark brown to black. This plant flowers in spring.

_Baloskion pallens_
Common Name - Didgery Sticks
Family - Restionaceae
This plant is classified as a dioecious perennial herb growing in swampy and sandy conditions. It consists of between ten to sixty spikelets mostly crowded together on branches.

_Elaeocarpus reticulatus Sm._
Common Name - Blueberry Ash, Ash Quandong, Blue Olive Berry
Family- Elaeocarpaceae
This plant is a shrub or small tree. The leaves are oblong to elliptic growing to a length of 5-13 cm long. The flowers are white to occasionally pink with petals growing from 4-8 mm in length. There are 13-15 stamens and the fruit is coloured blue and is 12mm long.

_Alphitonia excelsa_
Common Name - Red Ash
Family- Rhamnaceae
This is a small to medium sized tree found in rainforests. Leaves are elliptic to oblong and grow 5-14 cm long. The undersides of the leaves have dense white hairs. The flowers are creamy white and the fruit is ovoid and grows 5-10mm in diameter.

_Pellaea falcata_
Common Name - Sickle fern
Family- Pteridaceae
The fronds of this fern grow to a length of 37-105cm and are widespread. The sori is continual in length 1mm wide.

_Blechnum indicum_
Common Name- Swamp Water Fern
Family- Blechnaceae
They are found in sandy soils. The fronds of this fern are erect and grow in clusters. They grow to a length of 30-70 cms long.

*Doodia aspera*
Common Name- Prickly Rasp Fern
Family- Blechnaceae
They are found in open forests and rainforest edges. The fronds are erect and grow from 20-25 cms long. The sori are circular and are places along the vein in one or two rows.

*Hypolepis muelleri*
Common Name- Harsh Ground Fern
Family- Dennstaedtiaceae
They are found growing along swamps and creeks. This fern can be seen growing in creeks and swamps in open forests or rainforests. The fronds are erect and grow to a length of 0.3-1m. The sori is round in shape growing along the central vein.

*Avicennia marina*
Common Name – Grey Mangrove
Family – Acanthaceae
Small tree or shrub to 9 metres found along coastal mud flats. It has leathery leaves, narrow-obovate to elliptical, under surface silvery grey. Flowers are small with 4 petals white turning golden yellow with reddish tinge on edges. It has a compressed capsule 20-30mm in diameter.

Apart from the diverse species of flora growing, there are numerous varieties of fungi and lichens growing in the national park and nature reserve. Some of these include:

*Gymnopilus austrosapineus*
Family – Cortinariaceae
This fungus grows to a size of 10-40cm in diameter and grows in rainforests and forests on rotting timber and fallen logs. It is coloured light brown/orange with a creamy white edge around the edge of the cap. The underside gills of the fungus is coloured cream when young gradually turning yellow orange. (Leithhead, 2003)

*Leucopaxillus eucalyptorum*
Family - Tricholomataceae
This fungus is creamy white in colour and the cap grows to 150mm in diameter. The underside gills are cream in colour. This fungus grows in eucalypt forests and woodlands. The surface of the cap is velvety. (A. o. L. Australia)
*Pycnoporus coccineus* (Scarlet Bracket)
Family – Polyporaceae
This is a very common fungus. It has a distinctive bright orange to red colour. They grow in many habitats on hardwood logs and fallen trees but usually near water. Spores are white. (Leithhead, 2003)

*Parmelinella wallichiana*
Family: Parmeliaceae
This fungus grows on tree trunks, fallen logs and rocks in forests and is a pale green/grey colour. The lobes are irregular and grow from 5-20cm wide. The edges range from smooth to curly. (Gardens)

Of all the plants in the park and reserve there are three that are either endangered or threatened and they are:

White flowered wax plant (*Cynachum Elegans*) I have found this plant but as yet have not found the other two.
Magenta Lilly Pilly (*Syzygium paniculatum*)
Dwarf heath casuarina (*Allocasuarina defungens*)

There have been and are strategies in place to restore and protect these plants from further destruction. Some of these are, mapping where the plants are found and protecting the plants from fire and human interaction including vehicles and horse riders. (GTCC)(Council)
Chapter: 8 Native Animals

The Khappinghat Nature Reserve and Saltwater National Park not only have a diverse range of flora but an extensive native animal population, which include birds, arboreal animals, insects and reptiles. The Khappinghat Creek and its tributaries also provide habitats for the platypus, nesting birds and other amphibians and reptiles such as snakes, lizards, bats, bandicoots to name a few. Some of the animals found in the park and reserve are:

*Osprey (Pandion haliaetus), Little tern (Sternula albifrons), Flesh-footed shearwater (Puffinus carneipes), Black-necked stork (Ephippiorhynchus asiaticus), Square-tailed kite (Lophoictinia isura)*

Powerful owl (*Ninox strenua*) Glossy black-cockatoo (*Calyptorhynchus lathami*) Wompoo fruit-dove (*Ptilinopus magnificus*) Pied Oystercatcher (*Haematopus longirostris*)

Platypus (*Ornithorhynchus anatinus*) Squirrel Glider (*Petaurus norfolcensis*) Brush-tailed Phascogale (*Phascogale tapoatafa*) (Meyer, 1973)

Below is a list of the endangered and/or threatened native fauna species:

*Pandion haliaetus*
Common Name - Osprey
Family - Pandionidae
These birds is listed as vulnerable and are found living around the coast of Australia. They feed mostly on fish and sometimes, small mammals or crustaceans. They breed at the same place in the same nest every year and their nests are called stacks. The female grows to a length of 60-66cm and the male to a length of 50-55cm. The colouring of these birds is dark brown wings and white on the underside. (Inc; Simpson, 1989)

*Sterna albifrons*
Common Name - Little Tern
Family - Sternidae
This bird is listed as endangered and grows to a size of 22-24cm. They breed on the gravel and shingle coasts and islands. The female lays two to four eggs at a time and are very protective of them. There is a tern colony living along Old Bar Beach, which is fenced off to protect them from humans and vehicles. They feed on fish, which they dive for in the ocean. (Simpson, 1989)
**Puffins carneipes**
Common Name - Flesh-footed Shearwater
Family - Procellariidae
This bird is listed as vulnerable and lives in coastal regions growing to a length of between 47-48cm. The colour of this bird is dark brown or black, the tip of the bill is black the feet are pink. This bird breeds in colonies in two zones, the first is the Southwest Pacific Ocean and the other is along the coast of Western Australia. (Simpson, 1989; Wikipedia, 2013a)

**Ephippiorhynchus asiaticus**
Common Name - Black-necked Stork
Family - Ciconiidae
This bird is on the endangered list and lives near water or in swamps and feeds on fish and crustaceans it grows to a length of between 112-115cm and standing height is 120cm. The bill and neck are a glossy black as is a large stripe along the wingspan, the remainder of the bird is white and the legs are a pinkish red colour. The nest consists of a platform of sticks and grasses arranged in tree near water. The male and female bird breed and care for their young as a couple. The eggs are a conical shape and coloured white and both the parents are responsible for incubating the eggs. (B. o. Australia; Simpson, 1989)

**Lophoictinia isura**
Common Name - Square-tailed Kite
Family - Accipitridae
This bird is listed as vulnerable and lives in forests, woodlands and heathlands. The male grows to a length of 50-51cm and the female grows to a length of 55-56cm with a wingspan of 120cm. The colour is dark to light brown with white stripes along the wingspan and the crown is white. (Simpson, 1989; Wikipedia, 2013b)

**Ninox strenua**
Common Name - Powerful Owl
Family – Strigidae
This bird is listed as vulnerable, and lives in a variety of habitats from woodland to rainforest. It is the largest in Australia and grows to a length of 40cm with a wingspan of 140cm. The owl has yellow eyes and no facial disc, the colours of the feathers are a greyish brown and the tail is brown with horizontal off white bands. The owl feeds on arboreal marsupials including ringtail possum and sugar glider. (NSW Government; Simpson, 1989)

**Calyptorhynchus lathami** (Glossy black-cockatoo)
Family – Cacatuidae
This bird is listed as vulnerable and lives along the east coast of Australia in woodland forests, it feeds on allocasuarina and breeds in tree hollows. The colour of this male and female bird is brown/black with red tail feathers and the female has yellow blotches around the neck. (B. o. Australia; Simpson, 1989)
Ptilinopus magnificus
Common Name - Wompoo Fruit-dove
Family – Columbidae
This bird is listed as vulnerable and live in three populations along the eastern Australian coast. They live in rainforests and are rarely seen in any other habitats. The colours of this bird are quite beautiful and consist of purple on the underbelly, bright green wings, bright yellow on the lower under belly and the neck is pale grey. This bird grows to a size of 35-55cm and feeds on rainforest fruit. Both parents share in the building of the nest, which consists of twigs, incubation of the white egg and care of the chick. (B. o. Australia; Simpson, 1989)

Haematopus longirostris
Common Name - Pied Oystercatcher
Family – Haematopodidae
This bird is listed as endangered. It is found around the coastline of Australia on intertidal flats, bays and sandbanks. The bird feeds on oysters and shellfish, which it opens with its chisel shaped beak. The bird grows to a size of 50cm in length. The colour of the wings is black with a white bar on the upper wing, the wings and head are black and the body and tail are white. The female bird lays 2-3 eggs in shallow nests in the sand between August and January and is the primary incubator. (NSW Government, 2013)

Petaurus norfolcensis
Common Name - Squirrel Glider
Family – Petauridae
This possum is listed as vulnerable and is quite often mistaken for a sugar glider. This animal grows to a length of 180-230mm long with the tail usually 270mm long. The colour of this animal is brown/grey with a distinctive black stripe running down the back, the under side can be creamy yellow to pale grey. These gliders live mainly in dry sclerophyll forests and woodlands and they feed at night on insects and caterpillars. They breed after the age of twelve months in nests constructed of in leaves in the hollow of trees. They bare two young who remain in the pouch for about seventy days. (Museum, 2011)

Phascogale tapoatafa
Common Name - Brush-tailed Phascogale
Family – Dasyuridae
This animal is listed as vulnerable and is weasel like in appearance. The males can grow to a length of 160-261mm and the tail 175-234mm while the female grows 148-223mm the tail 160-226mm. The colour of these animals is grey with creamy white below the fur. They live in sclerophyll forests and woodlands. They nest in hollow trees and stumps and feed on small mammals, insects and small birds. (Conservation, 2012)

Planigale maculate
Common Name - Common Planigale
Family – Dasyuridae
This little marsupial is listed as a vulnerable species. The animal grows to a length of 8cm tall and the tail is as long as the body. The female is slightly shorter than the male. The colour of these animals is a brown/grey. They live along the north coast of NSW usually close to water in rainforests, heathlands, grasslands or anywhere where there is cover and feed on small vertebrates and insects. They breed between October and January and the nest is built in hollow logs, under or in crevices of rocks and made of leaves, grass and bark. (NSW Government, 2012b)

*Petaurus australis*
Common Name - Yellow-bellied Glider
Family – Petauridae
Common Name - This animal is listed as vulnerable. It lives from Queensland to Victoria along the coast east of the Dividing Range and its habitat is nutrient rich Eucalypt forests. It is quite large and grows to a length of 30cm and the tail is 45cm long. It has grey to brown fur and a long dark stripe running down the back with cream to yellow underneath. The diet of these animals consists of plant matter, nectar and insects. They are nocturnal animals living in families of 3-6 in hollow trees and trunks. (NSW Government, 2012d)

*Pteropus poliocephalus*
Common Name - Grey-headed Flying Fox
Family – Pteropodidae
This flying fox is listed as vulnerable. It lives along the southeast coast of Australia in camps of thousands of animals hanging upside down in trees. They are nocturnal flying many kilometres to find food, which consists of flowers and fruit. They are grey in colour with a distinctive reddish/brown ring around the neck and their wingspan can grow up to 1 metre. They mate in March and April and in October and November the females give birth to one young. (Queensland Government, 2013)

*Syconycteris australis*
Common Name - Common Blossom Bat
Family – Pteropodidae
These bats are listed as vulnerable. They live along the east coast of Australia from Hawkes Nest in NSW to Cape York in Queensland, roosting alone in littoral rainforests and sometimes in coastal forests. These bats have large eyes and their fur is coloured fawn to red. They live solely on nectar and pollen, which they obtain by hovering over the flower or piece of fruit growing in heathlands and swamp areas. They grow to a length of 6cm. (NSW Government, 2012a)

*Phasclarctas Cinereus*
Family - Phascolarctidae
Common Name - Koala
The Koala is listed as vulnerable in NSW and Queensland. It grows from 60-85 cm long and is greyish/brown in colour. It feeds on eucalyptus leaves from twelve different types of eucalypt trees. (AustralianFauna.com, 2006)
Other animals found in the Saltwater National Park and Khappinghat Nature Reserve include:

Snakes, lizards, bandicoots, wallabies, possums, bats, forest birds and butterflies. Listed below are the fauna I have noticed in the park and reserve.

*Rhipidura leucophrys*
Common Name - Willie Wagtail
Family – Monarchidae
This little bird is very common both in urban areas and bushlands. It grows to a size of 20cm and is mainly black with a white underbelly and white eyebrows. It lives on insects and lives in a nest made of grass and the female lays three eggs. (OzAnimals.com)

*Strepera graculina*
Family – Artamidae
Common Name - Pied Currawong
This bird is a crow like bird and lives in forests and woodlands and visits urban areas in winter. It is coloured black with a white patch under the tail and the eye is bright yellow. It grows to a size of 48cm and feeds on small mammals, eggs, reptiles, insects and birds. They breed in nests made of sticks lined with grasses and they lay 3 eggs. (OzAnimals.com)

*Cracticus tibicen*
Family – Cracticidae
Common Name - Australian Magpie
This typical Australian bird lives in parks and gardens and I have often seen them in the picnic area at Saltwater. They are known for their beautiful song. The main colour of the bird is black with a white patches behind the neck and under the tail. There are also white patches on the wings, and the beak is a blue/grey colour. They feed on insects and beetles often foraging just under the surface of the ground. The female does most of the work when breeding, she lays 1-6 eggs and incubates them for three weeks. (Heritage, 2011)

*Dacelo novaeguineae*
Family – Artamidae
Common Name - Kookaburra
Family-Halcyonidae
This kookaburra is nick-named the laughing kookaburra. It is very common in most areas and is famous for its laughing call. They require a large amount of food and that dictates where they live. They feed on small animals, birds and insects. The kookaburra has one mate for life and nests in the same place, the nests are found in trees, on termite mounds or on the ground. (NSW Government, 2012c)
Chapter 9: Marine Habitat:

The national park has extensive marine habitats abounding with a multitude of marine animals and plants growing and living in rock pools and ledges situated on both sides of the headland. The species I have found up to date are listed below:

Shells:

*Amoria undulata
Common Name: Sea Snail
Class: Gastropoda
Family: Volutidae
The adult shell grows from 44-121mm in length. The shell is smooth and solid and fawn in colour with orange/tan wavy stripes down the length of the shell. It is found intertidally in the sand below 10 metres deep on the coast in New South Wales. (N. Government)

*Mitra carbonaria
Common Name: Mitra Shell or Mitra Snail
Class: Gastropoda
Family: Mitridae
The adult shell grows to a length of 44-80mm. The colour is dark brown and sometimes a straw coloured, it has a smooth surface and four whorls at the tip of the shell. This shell species lives among rocks on exposed rocky shores. (N. Government)

*Austrocochlea porcata
Common Name: Zebra Top Shell
Class: Gastropoda
Family: Trochidae
The adult shell grows to a length of 24-43mm in length. The colour and width of the stripes vary greatly. The shell is solid and has 8-10 ribbed whorls on the length of the shell. (Davey, 1988)

*Cabestana spengleri
Common Name: Spengler's Rock Whelk
Class: Gastropod
Family: Cymatiidae
The adult shell grows to a length of up to 180mm and is found in rock pools at the low-tide level along the New South Wales coast. The colour of this shell is fawn with deep tan coloured ribs along the length. (Davey, 1988)

*Cellana tramoserica*
Common Name: Variegated Limpet
Class: Gastropoda
Family: Nacellidae
The adult shell grows to a length of up to 65mm. This shell varies in height and has ribs radiating from the apex of the shell. The colour of this shell varies between yellow, pink, brown or black and is found on the mid-tide level along the New South Wales coast. (Davey, 1988)

*Lucidestea nitens*
Common Name: Shining Rice Shell
Class: Gastropoda
Family: Rissoidae
The adult shell grows to a length of up to 2mm. The shell is clear and colourless when fresh and white once it has dried out. (Grove, 2012)

*Nerita atramentosa*
Common Name: Black Nerite
Class: Gastropoda
Family: Neritidae
The adult shell grows to a length of 20-25mm and is found on rocks in the mid to high-tide levels. This shell is globe shaped and black in colour and has fine whorls around the diameter. (Davey, 1988)

*Turbo undulatus*
Common Name: Common Warrener
Class: Gastropoda
Family: Turbinidae
The adult shell grows to a length of 70mm and is found in rock pools in the mid to low-tide levels. This shell has a round turban like shape with white zig-zag shapes and is a bluish green colour. (Davey, 1988)

*Dicathais orbita*
Common Name: Cart-rut Shell
Class: Gastropoda
Family: Muricidae
The adult shell grows to a length of 60-80mm and is found along the mid to low-tide levels along the New South Wales coast in rock pools. The colour of the shell is off white to grey and sometimes yellow on the edges and has deep spiral ribs. (Davey, 1988)
*Glossaulax didyma*
Common Name: Bladder Moon Shell
Class: Gastropoda
Family: Naticidae
The adult shell grows to a length of up to 60mm and commonly lives on the sand flats along the coast. The surface is smooth and a creamy fawn to apricot in colour and is the shape of a snail. (N. Government)

*Bembicium nanum*
Common Name: Striped-mouth Coniwink
Class: Gastropoda
Family: Littorinidae
The adult shell grows to a length of up to 10mm and is conical in shape. The colour of this shell is grey or white with brown and white bands distinctly on the last whorl. The interior of the shell is shiny and has dark brown stripes on the outside edge. It lives among rocks and shore platforms on the mid to high tide level. (Davey, 1988)

*Morula marginalba*
Common Name: Mulberry Whelk
Class: Gastropoda
Family: Muricidae
The adult shell grows to a length between 25-30mm and lives in most areas of the shore and feeds on barnacles and limpets. It has spiralled rows of nodules and the colour of the shell is whitish with mulberry coloured nodules. (Davey, 1988)

*Turbo (Ninella) torquatus*
Common Name: Turban Shell
Class: Gastropoda
Family: Turbinidae
The adult shell grows to a length of up to 98mm and a width of 110mm and lives on low tide levels. The shell is whitish in colour with deep ribbed wavy depressions. (Davey, 1988)

*Conus lischkeanus*
Common Name: Cone Shell
Class: Gastropoda
Family: Conidae
The adult shell grows to a length of up to 45mm. The shell can vary greatly in colour with the base including brown, cream or blue with bands coloured pink, orange, brown or purple. (N. Government)
*Pyrazus ebeninus
Common Name: Mud Whelk
Class: Gastropoda
Family: Batillariidae

The adult shell grows to a length of up to 97mm and is commonly found along mudflats and swamps. The exterior colour of this shell is light brown to dark brown and the interior is purple/black. It is conical in shape with about five whorls spiralling to a point. (Davey, 1988)

Algae:

*Amphiroa anceps
Common Name: Geniculate Coralline Algae
Class: Florideophyceae
Family: Corallinaceae

This algae species has been hardened with lime and the segments are joined together by flexible nodes called geniculate. The colour of this algae is white to pink and has many delicate branches. It grows on the low tide level in exposed reefs and rock ledges. (Davey, 1988)

*Hormosira banksii
Common Name: Neptune’s Necklace
Class: Phaeophyceae
Family: Hormosiraceae

The algae consists of long strands of beads joined together by a short stalk and grows commonly along rocks and pools on the mid tide levels of the shore. The beads consist of water and measure 15mm in diameter while the strands grow between 100-300mm in length. The colour is a pale green to green/grey and sometimes brown. (Davey, 1988)

*Ecklonia radiata
Common Name: Common Kelp or Leather Kelp
Class: Phaeophyceae
Family: Lessoniaceae

The stems of this species of algae grow to a length of 0.3-2m. Its fronds are brown and leathery and grow to a length of 5-20cm and 1-10cm wide. The root of the algae is conical in shape. (Davey, 1988)

*Durvillaea potatorum
Common Name: Bull Kelp
Class: Phaeophyceae
Family: Durvillaeaceae
This algae has no midrib or base and can grow up to 7 metres long and 30cm wide. It has thick leathery green/brown fronds and is found growing on the low tide level. (Davey, 1988)

Marine Animals:

*Patiriella calcar*
Common Name: Common Eight-armed Sea Star or Carpet Sea Star
Class: Asteroidea
Family: Asterinidae
This sea star ranges in size from 35-60mm. The stars come in a varying range of mixed bright colours and as the common name indicates they have eight arms tapering to a rounded end and have the appearance of carpet. They can be found growing in rock pools and on the sand at low tide levels of the shore. (Davey, 1988)

Anemones:

*Actinia tenebrosa*
Common Name: Red Waratah Anemone
Class: Anthozoa
Family: Actiniidae
This anemone is very attractive and when the short tapering tentacles are opened produce a bright pink to maroon colour. When the anemone is closed it is a dark maroon colour. It grows to 40mm in length and can be found growing in crevices of rock pools. (Davey, 1988)

*Oulactis muscosa*
Common Name: Eastern Sand Anemone
Class: Anthozoa
Family: Actiniidae
This anemone grows to a length between 60-80mm and lives along the shore in the sand. It usually has sand among its tentacles, hence the common name it has been given. The colours of the centre disc of the anemone can vary between black, red, green or white colours. The tentacles are coloured pale green to greyish white. (Davey, 1988; N. Government)
Chapter 10: Environmental Impacts:

The Khappinghat Nature Reserve and Saltwater National Park are protected areas and are the responsibility of the New South Wales Parks and Wildlife Authority for their up keep, restoration, protection and regeneration. Many of the forests and vegetation areas in Australia, like Saltwater and Khappinghat are threatened in some cases to the extent of being completely destroyed. There are varying factors contributing to this including European land management, weeds, introduced naturalised plants, logging and mining. Human trampling and vehicle access also poses a major threat to the dunes and soil erosion. The New South Wales Parks and Wildlife Service has strategies in place to protect the vegetation communities, ecosystems and the flora and fauna species of these areas, especially the endangered and vulnerable species, by protecting and preserving them from further destruction. There are numerous causes for the decline of vegetation since European Settlement in these areas, and they are listed below.

1. Grazing:

After European settlement and the introduction of domestic animals into the environment and the clearing of land for grazing and agriculture, the vegetation of New South Wales began to deteriorate. As a result of this over 60% of the vegetation of New South Wales has been affected, resulting in the decline and extinction of some of the native plant species and vegetation communities even to the extent of extinction. (Benson, 1991)

2. Forestry:

The felling of trees for the numerous industries in the area from the time of the early settlers to today has also had a huge impact on the native vegetation and ecosystems. This has been the case in the Manning Valley area and the Khappinghat Nature Reserve and Saltwater National Park. (Benson, 1991)
3. Introduced Plants:

Another reason for the decline of native vegetation is the introduction of exotic plants into the country. About 20% of all the plants that were introduced by the Europeans into Australia were exotics and over time have become naturalised spreading to forests and other areas where they have become invasive weeds and therefore another reason for the decline of the native flora in this country. An example of one of these plants is the Bitou Bush, which was introduced into the country to be grown along the foreshores of the coast as a protection for the dunes from sand erosion. It has now become a major pest and a noxious weed, and it is very difficult to eradicate and control. (Benson, 1991)

Below is a list of some of the weeds I have found growing in the National Park and Reserve.

*Cakile edentula* (Bigelow) Hook.
Common Name—American Sea Rocket
Family—Brassicaceae
This plant is classified as a branched herb growing to 80cm high. The leaves are ovate to spatulate mostly 4-7cm long. The flowers are white, pink or lavender and the petals grow to a length of 4-8mm long. (N. Government)

*Convolvulus erubescens* Sims.
Common Name—Australian Bindweed
Family—Convolvulaceae
This plant is classified as a perennial herb with trailing and twining stems. The leaves are ovate, arrow or triangular shaped growing 25-55mm long and 2-4mm wide. The flowers are funnel shaped and grow 7-15mm long and 8-20 mm in diameter. The colour of these flowers is pale pink to mauve. (N. Government)

*Passiflora subpeltata* Ortega
Common Name—white Passionflower
Family—Passifloraceae
This plant is classified as a glabrous climber. The leaves usually have three lobes and pale green in colour. The flowers are 5cm in diameter and coloured white with a green tinge. The berry is ovoid, growing 40mm long and is green in colour, the fruit of this plant is not edible. (N. Government)
*Delairea odorata* Lem.
Common Name- Cape Ivy
Family- Asteraceae
This plant is classified as a climbing perennial vine with stems growing up to 3 metres long. The leaves are broad-ovate to circular and grow 4-8cm long and 4-8cm wide. The inflorescence grows longer than the leaves and consists of fifteen to fifty flower heads on stems. The florets are tubular and are 5mm long. The colour of the flowers is bright yellow. This plant flowers mainly in winter. (N. Government)

*Lantana camara*
Common Name-Lantana
Family-Verbenaceae
This plant is classified as a very aggressive creeping shrub growing 0.5-2 metres tall. The branches are very rough and invasive. The leaves are ovate and grow to a length of 10mm. The upper side of the leaf is very rough and the edges are toothed and bright green in colour while the underside is pale green and hairy. The flowers grow in clusters with each flower containing numerous tiny flowerets, they are coloured pink, orange, red, yellow, blue and white with more than one colour appearing on each flower head. (N. Government)

*Senna didymobotrya*
Common Name-Popcorn Tree or African Senna
Family-Fabaceae
This plant is classified as a shrub and grows from 5-9 metres tall. The leaves are a simple paripinnate, narrow oblong shape growing 10-15cm long. The flowers grow on racemes and are bright yellow in colour; each flower has five petals measuring 1.5-3cm in length. The flowers contain ten stamens. The fruit is a flat brown pod growing 12cms in length and contains 16 bean-like seeds. (Council)

*Senna pendular* var.
Common Name-Cassia Winter Senna
Family-Caesalpiniaceae
This shrub is classified as an environment weed and its origin is South America. The leaves grow in a compound format of opposite leaflets in pairs of 3-8. The flowers are bright yellow and grow to a length of 3cm. The seeds pods are cylindrical in shape and grow 10-20cm long. (N. Government)

*Asparagus aethiopicus*
Common Name-Asparagus
Family-Asparagaceae
This vigorous growing plant is classified as an environmental weed and poses great problems in the forests. It originated from South Africa. The leaves are small and needle like and grow to a length of 2.5cm. The colour of the leaves is light green. The flowers are very small and coloured white with a pink to orange coloured anther. The berries are green and ripen to red. The plant is very prickly. (N. Government)
*Impomoea indica*
Common Name-Morning Glory
Family-Convolvulaceae
This vine originates from South America and grows vigorously over vegetation in forests and is very invasive. The leaves are dark green in colour and the flowers are a trumpet shape and are coloured purple. (N. Government)

*Chrysanthemoides monilifera*
Common Name-Bitou Bush
Family-Asteraceae
This woody shrub originates from South Africa, it is classified as a noxious weed and has become a major problem in forests as well as dunal complexes. The leaves grow to a length of 3-8cm and are shaped ovate to spatulate. The flowers are bright yellow and daisy shaped, and grow to 2-3 cms clustered at the branch terminals. The fruit is green and fleshy becoming black. The seeds are bone colour and are very hard. (N. Government)

Some of the problems and difficulties the authority face in protecting these natural habitats, are pests including weeds and animals, which are listed below:

Weeds – *Acacia saligna* (Golden wreath wattle)
  - *Agave Americana* (Century plant)
  - *Ageratina adenophora* (Crofton weed)
  - *Aloes arborescens* (Aloe)
  - Andropogon virginicus (Whisky grass)
  - *Bryophyllum pinnatum* (Air plant)
  - *Chrysanthemoides monilifera* (Bitou bush)
  - *Delairea odorata* (Cape ivy)
  - *Datura stramonium* (Common thornapple)
  - *Erythrina x sykesii* (Coral tree)
  - *Gloriosa superba* (Glory lily)
  - *Ipomoea cairica* (Morning Glory)
  - *Juncus acutus* (Spiny rush)
  - *Lantana camara* (Lantana)
  - *Opuntia stricta* (Prickly pear)
  - *Asparagus aethiopicus* (Asparagus Fern)
  - *Rubus fruticosus* (Blackberry)
  - *Senna septemtrionalis* (Senna)
Senna pendula (Winter senna)
Sporobolus fertilis (Giant Parramatta grass)
Tradescantia albiflora (Trad)

Pest animals-
Oryctolagus cuniculus (European rabbit)
Canis lupus familiaris (Dog)
Vulpes vulpes (Fox)
Cervus timorensis (Rusa deer)
Felis catus (Feral cat)
Rattus rattus (Black rat)
Capra hircus (Feral goat)
Chapter 11: Artwork

The artistic process includes scientific drawings and full colour plates of each plant and as many aspects of the plants I could find. I use watercolour as my medium of choice because it is the traditional means of botanical illustration and also because the medium allows for the accurate depiction of delicate petals, particularly because many of the petals on the plants found were either white or a pale creamy yellow in colour and difficult to depict effectively using other media.

The methodology I used in my studio is quite detailed and labour intensive. After I have identified the plant, several drawings of the plant and its various parts are sketched using the photos I have taken and any images I have found either on the web or in books. I also worked out the colours of the plant in my photographs, by mixing up watercolour until I found a colour that was as close as possible to the true colour of the plant and recorded this in my diary for future reference. Although time consuming, it is a vital step in the process to be able to achieve the successful completion of the final colour artwork. Once this step is completed I trace the sketches onto drawing paper to execute a final drawing outline, this then becomes a template for the final work. The next step involves tracing the image again onto good quality watercolour paper adjusting where needed the position of the plant parts to produce a pleasing composition. The final step in the process is the finished colour work, these can take up to a couple days depending on the complexity of the plant and its parts.

Below are some examples of the process I undertook to achieve the final outcome.
An example of a field drawing of a mangrove in my diary.
Methodology - The Art Process
The process: photo, diary sketches and final artwork.
Blechnum indicum Burm.f.

Hypolepis muelleri N.A. Wakef.

Pellaea falcata (R.Br.) Fee

Doodia aspera R.Br.
Pittosporum undulatum

Pittosporum revolutum

Lophostemon confertus

Melaleuca quinquenervia
Boronia pinnata

Euryomyrtus ramosissima

Leptospermum laevigatum

Leucopogon lanceolatus
Dipodium punctatum

Pterostylis nutans

Caladenia carnea

Caladenia catenata
Chapter 12: Conclusion

In the process of studying and researching the Saltwater National Park and Khappinghat Nature Reserve and the many species of flora I have found there I hope it has become evident the importance of protecting these areas and illustrating the plants found there for the enjoyment and education of future generations as well as the current generation. As there are increasing numbers of national parklands and reserves under the threat of destruction and extinction around the country, caused by humans and environmental forces, I think it is imperative that these areas be protected at all costs. In only a relatively small area of the Saltwater National Park I have found approximately eighty-five plants and trees growing, most of these I have been able to document and illustrate and some are endangered. I'm sure there are many other species I have not found. It never ceases to amaze me that whenever I walk through there, there is always something new to see and discover and that is why it I think it is important that recording and documenting these plants be carried out.
Book Reviews:

*The natural Art of Louisa Atkinson* by Elizabeth Lawson.

This book is a collection of the visual and written work of Louisa Atkinson. She was born in New South Wales in 1934 and was one of the early female illustrators of the natural world and is mostly known for her botanical drawings. The book consists of many coloured reproductions of her field diaries including flowers, birds, insects, shells, animals and habitats, as well as completed colour plates all of which are illustrated in great detail. This book was an inspiration to me for the skill and detail in which she illustrated her subjects and the way in which she documented the species of plant she was illustrating.

There are many other books which have been helpful in my research of plants and the techniques of illustrating them some of these include:

*Australian Trees*, by Leonard Cronin.

This book is a collection of illustrations of Australian trees including a comprehensive list of eucalypts. It has detailed illustrations and descriptions of the various parts of the plant and where they are commonly found growing.

*A Collection of Australian Wildflower Illustrations* by Patricia Weare.

This book is a comprehensive collection of wildflower illustrations and although there is no written information of the plants, the illustrations themselves and the family they belong to are a good source for research and reference.

*The Art of Botanical Drawing* by Ravet-Haevermans.

This book is a practical guide to illustrating plants with step-by-step instructions on how to initially compose drawing of the plant and the detail needed to depict the plant accurately.

*Botanical Illustration – Painting with Watercolours* by Siriol Sherlock.
This book shows step-by-step instructions on how to illustrate the plant using watercolours, which is the traditional medium, used in botanical illustration and how to mix colours to show the accurate colour of the parts of the plant.

Mr J W Lewin – Painter and Naturalist by Richard Neville

This book is a detailed account of the life and work of J W Lewin, a professional artist who, at the age of thirty left his family and friends, came to New South Wales from England in 1800 to follow his passion for documenting and illustrating all the aspects of the natural world. He was widely respected by his peers and came from a family who were passionate about natural history, he was renown for his paintings of the natural world, his work was varied and although not always atomically correct was widely sought after by the members of the general public, adorning the walls of government buildings and the stately homes of the wealthy.

He was New South Wales’s first printmaker and was the first person to publish a book on natural history. His illustrations and prints are of a high quality and are inspiring to observe.

Below is a monthly account of some of the plants and vegetation I observed while walking through the reserve.

January 2012

Westringia (Coastal Rosemary) on the headland walk of Saltwater Beach.
Cupaniopsis anarcardioides (Tuckeroo) Dunes Saltwater Beach
Dianella caerulea (Blue Flax Lily)

March 2012

Elaeodendron austral (Red Olive Plum) Headland walk of Saltwater Beach
Banksia integrifolia (Coast Banksia) Saltwater National Park
Euryomyrtus ramosissima (Rosy Baeckea)
April 2012

*Melaleuca quinquenervia* (Broad Leaf Paperbark) *Saltwater National Park*
* Banksia serrata (Old Man Banksia)
* Casuarina equisetifolia (Coastal She Oak, Horsetail She Oak)
* Lomandra spicata
* Hybanthus stellarioides (Spade Flower)
* Leptospermum squarrosum (Pink tea Tree)
* Viola banksia (Wild Violet)

*Marine life:*
* Amoria undulate *Saltwater Back Beach*
* Austrocochlea porcata (Zebra Topped Shell)
* Nerita atramentosa (Black Nerite)
* Bembicium nanum (Striped Mouth Conniwink)
* Turbo undulate (Common Warrener)
* Dicathais orbita (Cart Rut Shell)
* Cellana tramoserica (Variegated Limpet)
* Morula marginalba (Mulberry Whelk)
* Conus papilliferus (Cone Shell)

On this excursion I also found a sea slug and an octopus among the rock pools.

May 2012

*Acacia ulicifolia* (Prickly Moses) *Saltwater National Park*

June 2012

*Acronychia wilcoxonia* (Silver Aspen) *Saltwater National Park*
* Canavalia rosea (Coastal Jack Bean)
* Rhagodia candolleana (Sea Berry Saltbush)
* Scaevola calendulaecea (Dune Fan Flower)
* Synoum glandulosum (Scentless Rosewood)
* Alpinia arundelliana (Native Ginger)
* Pittosporum revolutum (Wild Yellow Jasmine, Rough Fruit Pittosporum)
* Pittosporum undulatum (Mock Orange)
* Correa reflexa (Common Correa, Native Fuchsia).
Fungus:
*Pycnoporus coccineus*

**July 2012**

*Acacia longifolia* (Coastal Wattle) *Saltwater National Park*
*Acacia suaveolens* (Sweet Wattle)
*Ficus rubiginosa* (Port Jackson Fig)
*Smilax australis* (Barbed Wire Vine, Lawyer Vine, Wait-a-While Vine)

**August 2102**

*Aotus ericoides* (Common Aotus) *Saltwater National Park*
*Caladenia catenata* (Pink Fingers)
*Hardenbergia violacea* (Purple Coral Pea)
*Pandorea pandorana* (Wonga Wonga Vine)

**September 2012**

*Kennedia rubicunda* (Dusky Coral Pea) *Dunes Saltwater Beach*
*Commersonia frasier* (Bush Kurragong)
*Rhagodia candelleana* (Salt Berry Bush)
*Dampiera sylvestris*
*Boronia pinnata* (Boronia) *Saltwater National Park*
*Dillwynia retorta* (Eggs & Bacon Plant)
*Dodonaea triquetra* (Large Leaf Hop Bush)
*Nematelepis squamea* (Satinwood)
*Melaleuca nodosa* (Prickly Leaved Paperbark)
*Gietonoplesium cymosum* (Scrambling Lilly)

**January 2013**

*Solanum ditrichum* (Mt Maroon Nightshade) *Saltwater National Park*
*Ficinia nodosa* (Australian Bindweed)
*Commelina cyanea* (Native Wandering Jew)
*Leucopogon lanceolatus*
Myoporum boninense (Boobialla)  
Maclura cochinchinensis (Cockspur Thorn) Dunes Saltwater Beach  
Carpobrotus glaucescens (Pig Face, Ice Plant)  
Cakile edentula (American sea Rocket)  
Marine Life:  
Actinia tenebrosa (Waratah Anemone)  
Eastern Sand Anemone (Sand Anemone)  
Patiriella calcar (Common Eight-armed Seastar)  
Hormosira banksii (Neptune’s Necklace)  

March 2013  
Hakea salicifolia (Willow Leaved Hakea)  
Acacia Maidenii (Maidens Wattle)  

April 2013  
Eucalyptus paniculata (Grey Ironbark)  
Melaleuca sieberi (Siebers Paperbark)  
Drypetes deplanchei (Grey Boxwood)  
Eupomatia laurina (Copper Laurel)  
Acronychia imperforata (Logan Apple)  
Cynanchum elegans (White Flowered Flax Plant)  
Leucopogon parviflorus (Coastal Bearded Heath)  
Elaeocarpus reticulatus (Blueberry Ash)  
Hibbertia scandens (Climbing Guinea Flower)  

May 2013  
Persoonia virgate (Geebung)  
Dipodium punctatum (Christmas Orchid)  
Eustrephus latifolius (Wombat Berry)  

July 2013
Pterostylis nutans (Nodding Greenhood)
Allocasuarina littoralis (Black She Oak)

August 2013

Lophostemon confertus (Brush Box)
Guiana semiglauc (Wild Quince)
Lomandra longifolia (Spiny-headed Mat-rush)
Pyrrosia confluens (Robber Fern)
Pteridium esculentum (Common Bracken)
Bossiaea heterophylla (Variable Bossiaea)
Caladenia carnea (Pink Fingers)
Hibbertia linearis (Showy Guinea Flower)
Bossiaea ensata (Sword Bossiaea)

January 2014

Platylobium formosum (Handsome Flat Pea)
Pimelea linifolia (Slender Rice Flower)
Ricinocarpus pinifolius (Wedding Bush)
Hypolepis muelleri (Harsh Ground Fern)
Blechnum indicum (Swamp Water Fern)
Pellaeae falcata (Sickle Fern)
Doodia aspera (Prickly Rasp Fern)
Persoonia levis (Broad-leaved Geebung)
Alphitonia excelsa (Red Ash)
Glossary

Ovate – Refering to a leaf, broad and rounded base narrowing toward the tip.

Obovate – Refering to a leaf, similar to ovate but broader towards the tip.

Perianth – The section of a flower containing the petal and sepal.

Dioecious – Having male and female unisexual flowers on different plants.
  Monoecious – Having male and female unisex flowers on the same plant.

Globular – A three dimensional shape, spherical and circular in outline.

Lanceolate – Refering to a leaf, tapering at each end but broadest below the middle.

Oblanceolate – Refering to a leaf, tapering at each end but broadest above the middle.

Elliptic – Refering to a leaf, shaped like an ellipse.

Terrestrial – Growing on the ground.

Tepal – A petal or a sepal.

Umbel – Flat topped or rounded flower cluster where the stalks rise from above the same point.

Glaucous – Refers to a blue/green colour in a white flower.

Spathulate – Refering to a leaf, shaped like a sparular.

Reniform – Refering to a leaf, shaped like a kidney.

Panicle – A branched cluster of flowers in which the branches are racemes.

Raceme - Stalked flowers borne along an unbranched axis.

Rhizome – Stem usually growing underground producing new shoots and roots.
Hastate – Refering to a leaf, spearhead shaped with flaring pointed lobes.

Pinnate – A compound leaf with leaflets growing on both sides of a common leaf stalk.

Paripinnate – A pinnate leaf with even number of leaflets but without a terminal leaflet.

Pedicel – A small stalk bearing a single flower.

Margins – The edge of a leaf.
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