FACT SHEET

Australian Government
Department of Resources, Energy and Tourism

Lady Elliot Island
GREAT BARRIER REEF

eco CERTIFIED Advanced Ecotourism

LADY ELLIOT ISLAND

Vegetation

NO TREES, NO ISLAND!

Vegetation is an essential component for the establishment of a coral cay island such as Lady Elliot Island (LEI).

The Island first appeared above sea level roughly 3,500 years ago as a coral rubble spit. Over the next 3,000 years, storms deposited shingle ridges known as 'berms' and coarse coral rubble provided a suitable resting point for various seabirds. Guano (seabird droppings) fertilized the soil, providing suitable conditions to form the mature, vegetated coral cay seen today. All the plants found on a shingle coral cay must be salt tolerant and wind resistant to survive along the harsh coastal fringing environment. This has resulted in a number of adaptions by plants such as hairs on leaves, reduced leaf area, waxy leaves, stomata only on the underside of the leaves, prop roots and the ability to deal with excess salt through sacrificial leaves.

WHERE DID ALL THE TREES GO?

Seabirds nesting over thousands of years ensured the island was recognised as a rich source of guano. Guano mining conducted on LEI (1863-1873) resulted in the removal of all the vegetation except for a few Pisonia trees which still remain today near the pool. Roughly one metre of surface soil (20,000 tonnes of guano) was removed from the island during this period. Guano was a valuable fertiliser and gunpowder ingredient.

Humans continued to have an effect on the island's ecology by introducing goats as a food source for stranded sailors and the lighthouse keepers. Goats are extremely hardy and graze any vegetation that would start to grow (even eating the algae from the reef flat at low tide).

The Island remained mostly barren for almost 100 years until an active revegetation program was initiated by Sir Don Adams in the 1960's and is continued by resort operators. Read our History factsheet to gain further insights.

NATIVE COLONISERS

- **Bird's-beak Grass** *Thuarea involute*
  This perennial grass is among the first plants to stabilise newly deposited sand on islands. It has long creeping runners bearing light green leaves densely covered with short hairs and white flowers. Named so because of the look of the fruiting structure. It is well adapted for dispersal by sea due to the large air space surrounding the two enclosed seeds.

Bird's-beak Grass

Goats Foot Convolvulus

- **Goats Foot Convolvulus**
  Ipomoea pes-carprae subsp. brasiliensis
  One of the first plants to colonise a sand dune and is a primary sand stabiliser. It is a prostrate, spreading vine with milky sap. Stems can reach up to 8 metres long and tap roots can penetrate 3m to find fresh water. Name derived from shape of the leaf blade, which resembles the footprint of a goat. Pink-purple funnel –shaped flowers. One of the best known examples of oceanic dispersal as the seeds float and are not affected by salt water.

Octopus Bush - Shrub

Octopus Bush - Fruit

- **Octopus Bush** *Heliotropium foertherianum*
  One of the first shrubs to colonise a coral cay, forming a ring around the island providing protection from the wind, increasing soil stability and attracting the birds that allow other trees to grow. Name derived from the fruit which look like octopus tentacles. Seeds need to be immersed in salt water before they can germinate and will float about in the sea until they eventually wash up on to an island. The bush uses salt water for its water supply and has developed the adaption of removing excess salt through its own desalination plant. The plant sends the salt to sacrifical leaves, which will turn yellow and drop to the ground when saturated with salt. There is generally one sacrificial leaf per branch and it is one of the older leaves at the base.

- **She Oak** *Casuarina equisetifolia subsp. incana*
  This fast growing tree is an early coloniser of a coral cay, important in stabilising the foredunes and is tolerant of harsh conditions such as strong winds and sea spray. Can reach up to 10 metres. The grey-green needle-like leaves are actually branchlets, the leaves are tiny serrations that appear at each joint. This adaptation permits the tree to conserve moisture. Flowers are unisexual, with male and female flowers occurring on different trees. This tree was revegetated in large numbers on the island due to a nitrogen fixing bacteria found in the root nodules which allow the tree to grow in poor quality soils and improving soil quality for other trees to establish.

She Oak

Pandanus Palm

- **Pandanus Palm** *Pandanus tectorius*
  Distinctive strong roots above ground that help secure themselves to the unstable ground in harsh conditions and increase surface area to allow the plant to uptake all available water and nutrients. This is in contrast to *Pandanus spiralis* which has no supports. Flowers are small and produced in a dense cluster which develops into pineapple like fruits. Green when immature and orange when ripe. Male and female flowers are found on different trees. Leaves are fibrous with sharp spines along the edges.
- **Pisonia Tree** *Pisonia grandis*
  These trees require a mature coral cay with rich top soil to germinate. Therefore they are one of the final trees to establish on the island but become the most dominant species and naturally would form an inland forest. These ancient trees (hundreds of years old) in the centre of the island (next to the swimming pool) are the only remaining original trees on the island. In the summer these trees produce clusters of sticky seeds that stick to the wings of birds. It's so sticky that some of the birds find themselves covered in seeds and unable to fly. They fall to the ground and eventually die providing instant compost for the seeds. Can reach heights of 20 metres.

Pisonia

Pisonia leaves

INTRODUCED SPECIES

There is an active program on LEI to revegetate with native species and remove introduced species. This is an ongoing program that will take many years to accomplish.

- **Lantana** *Lantana camara*
  Declared weed of National significance. Spread mainly by birds. Flowers are yellow, orange, red, pink, purple, white or a combination of these colours and will flower most of the year. Forms dense, sprawling thickets that take over native bushland. This hardy shrub smothers vegetation and can grow to 5 metres in height. Native to tropical America.

Lantana

Mother of Millions

- **Mother of Millions** *Bryophyllum delagoense*
  Erect, smooth, fleshy succulent that grows to 1 metre or more in height. Form tall flower spikes in winter with clusters of bell shaped flowers. Flowers are orange-red in colour. Native to Madagascar.
- **Pink Periwinkle** *Catharanthus roseus*
  Slender erect perennial shrub reaching 1 metre high. Flowers are pink and white. Leaves are elliptic with rounded ends. Native to tropical Americas.

Pink Periwinkle

Umbrella Tree

- **Umbrella Tree** *Schefflera actinophylla*
  From the rainforest of northern Qld, can start life as an epiphyte on a host's branch. Bright red flowers and each leaf comprises of large deep green leathery leaflets on individual stalks which are attached to the main stalk in a circular (umbrella like) formation. Distinctive tree has become popular as an indoor plant overseas and can reach 15metres in height, but rarely exceeds 8m. Seeds distributed by birds that eat the fruit..

WHAT **YOU** CAN DO TO HELP TREES

Reduce dune erosion by only using designated paths.
Participate in revegetation programs
Remove exotic species.