

Superb Blue-wrens

The Superb Blue-wren can be seen in two different colours and patterns. The adult males have blue plumage and females and immature males are brown. If you manage to see a male strutting his stuff, somewhere nearby will be a group of small brown birds. These are the mother, and 'stay at home' sons and daughters of previous broods. The Superb Fairy-wren mainly eats insects and supplements its diet with seeds.



If you are lucky enough to be here in spring (Sept–Dec) you might see the Chocolate Lily *Arthropodium strictum* in flower. The Chocolate Lily displays beautiful purple flowers that give off a pleasant chocolate smell during spring. This is a great plant to impress your friends in your own garden.



photo - Luke Hynes

MMMMM Chocolate....



photo - Luke Hynes

A similar looking plant in this area which flowers from August to May is the native Flax Lily *Dianella breviculmis*. Aborigines ate the purple berries and used them to obtain blue dye.

Changing vegetation communities

Look at the vegetation where we are and then towards the beach. Notice the change in plants? Vegetation reacts to the environment and different species are adapted to different conditions.

It is easy to see the difference of the low, salt pruned coastal plants to the south moving into the trees and shrubs of this area. Different vegetation types, require different management techniques.

Deep Creek has three main vegetation types. A small area of endangered Coastal Alkaline Scrub containing old Moonahs and Sheoaks can be found at the mouth of the Deep Creek corridor near the Esplanade. Grass trees and Yellow Gums (Eucalypt trees) characterise the Heathy Woodland/Heath Scrub Complex running through the creek.

The flats above the creek are home to small patches of endangered Grassy Woodland containing native Wallaby, Tussock, Spear and Kangaroo grass.



The Australian Sweet Potato, great bush tucker that is a shadow of its former self.



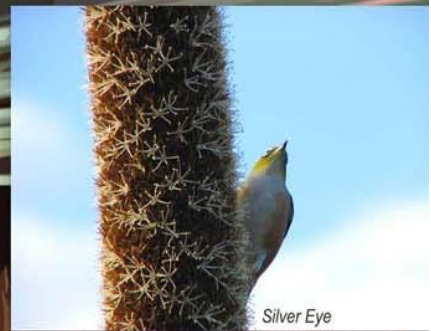
Yam Daisies
Microseris lanceolata,
or as they are known to the
Wathaurong people as 'Myrnong',
were once an important part of the aboriginal diet.
Flowering from July to November this plant has
edible tuberous roots.

The introduction
of cattle, sheep and goats
by Europeans has led to
the near extinction of Murnong,
with calamitous results for
the aboriginals who depended upon
this plant for a large part of their diet.
When eaten raw, yam daisy tubers are
said to be crisp and juicy, if roasted; the taste is
described as "sweet with a flavor of coconut"

Written by - Luke Hynes
Design and photography by - Mark Trinham.



photo - Luke Hynes



Silver Eye

The Grass Tree Xanthorrhoea australis

Deep Creek Reserve contains remnant (original) Grass Trees, that are estimated to be hundreds of years old.

This species was once common across the Torquay region forming large swathes as can be seen nearby at Grasstree Park.

Grass Trees were very useful to the Aborigines.

Nectar provided drinks and roots were eaten.

Flint and greenstone axes with ground edges were bound into cleft sticks using kangaroo sinew and grass tree resin.

The sinews contracted and tightened as they dried while the resin acted as a super bonding glue. The flowering stem also provided spears and fire sticks.

They are a very slow growing plant, the trunk takes a decade to form initially and the species grows at approximately 1cm per year.

However, once established, they can live for up to 600 years!

The Grass tree spikes are packed with strongly scented flowers and attract a wide variety of insect, bird, and mammal pollinators.

Over 315 invertebrates and nearly 100 vertebrate species have been recorded using Grasstrees.



Australian Admiral Butterflies

Design and photography by - Mark Trinham
Written by - Luke Hynes
(including photography where indicated)

Cinnamon fungus...the silent killer

Cinnamon Fungus (*Phytophthora cinnamomi*) is a soil-borne water mould that produces an infection which causes a condition in plants called "root rot" or "dieback". Early symptoms of infection include wilting, yellowing and retention of dried foliage and darkening of root color. Infection often leads to death of the plant, especially in dry summer conditions when plants may be water stressed.

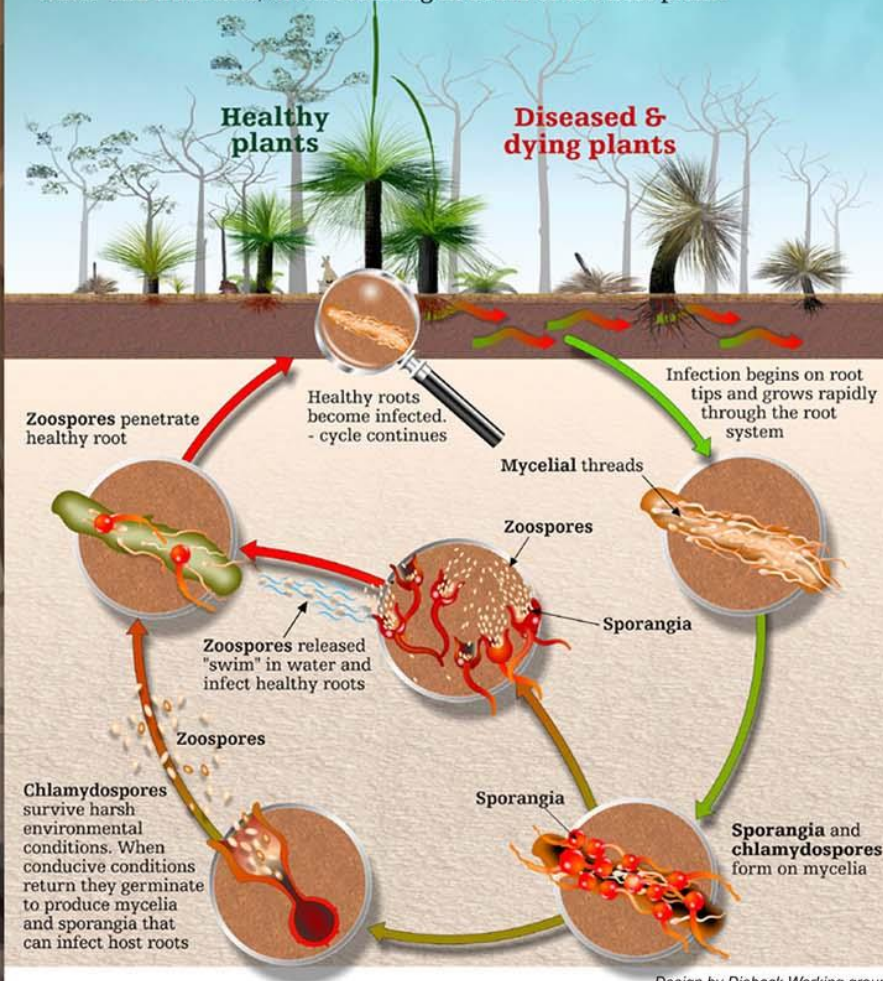
The best indicator species for the showing first symptoms of Cinnamon Fungus infection is the highly susceptible Grass-tree. Some dead grass trees can be seen in this area and it is likely that Cinnamon Fungus has contributed to their deaths.

When visiting known locations of this destructive disease it is important to wash down vehicles and footwear to ensure that the infection is limited.



Phytophthora Life Cycle

Phytophthora cinnamomi feeds on living plant roots and stems. It invades the roots of plants to get the nutrients it needs. This invasion and growth within the plant reduces the plant's ability to transport water and nutrients, often resulting in death of the host plant.



Sign design and photography - Mark Trinham.
Written by Luke Hynes



Design by Dieback Working group

*Meet
one of
Torquay's
oldest
locals.*

This Manna Gum
Eucalyptus viminalis
is one of the
oldest trees

in Torquay and is likely
to be over 150 years old.

Large trees such as this one form
an integral part of a healthy bush system.

**A number of things help
make a bush system healthy.**

**A thin layer of mosses and lichens
on the ground provides a space for new
seedlings to grow. Leaves, twigs and sticks
protect the soil from rain and wind, and provides
habitat for invertebrates and spiders. Larger branches and logs are home to
many fauna species such as reptiles. Groundcovers (grasses, wildflowers, sedges
and shrubs) and small trees make up the understory, which is particularly important
for native birds. The overstorey contains large trees like the Yellow Gum that can be
home to bats, birds, insects and nocturnal arboreal marsupials like possums and gliders."**

Manna Gum



Conserving existing old
native trees and planting new
ones is vital to the wellbeing
of ecological processes and
native fauna species.



Eastern Blue-tongue Lizard



Torquay's prime real estate!

Hollows of mature and old trees are extremely valuable habitats, providing homes for birds, possums and bats. Hollows in fallen timber are also very important for animals such as echidnas and many reptiles.



In streams, hollow logs may be important to aquatic animals for shelter and egg attachment. Also loose bark of mature trees can provide a home for small bats and reptiles. The size of hollows may depend on the age of the tree. Gum trees such as this one develop hollows at all ages, but only from when the trees are 120 years old do they form hollows suitable for animals. It may take up to 220 years for hollows suitable for larger species to form. In Australia, over 300 fauna species are known to use tree hollows. Approximately one third of these are considered rare, threatened or near-threatened partly because of the removal of hollow-bearing trees.

Hello Possum!

Possoms were an important source of food for the aboriginals and large hollow bearing trees such as this one would be scaled and holes cut into the trunk where a possum would be hiding in a hollow and quickly pulled out and killed before it was given a chance to bite. The most common possum in this area is the Brushtail Possum which was once extremely common across Australia but its distribution is now reduced by half. Early reports by settlers note that possums were so common that at night 'they could be seen in clusters like fruit laden on a tree' and up to 60 possums could be seen in one tree! While Possum meat is purportedly delicious they also provided other uses other than food. Possum-skin cloaks were important clothing to rug up against the cold for Aborigines from Victoria, as well as being clan heirlooms and the fur could be made into a string used for fishing.



Sweet Bursaria *Bursaria spinosa*



"Bursaria" derives from the Greek word "bursa". Used to describe a sack, pouch or purse-like structure. Relating to the many purse like seed capsules that are prominently displayed from late summer onwards. "Spinosa" refers to the spiny/thorny nature of the plant.

A spidery business

If you look closely at the Sweet Bursaria bushes you will notice an intricate architecture of thorns and twiggy foliage, which is perfect for spiders to construct their webs. When the bushes are flowering, their sweet nectar attracts a myriad of insects, only to be entrapped in these three dimensional spider snares. These spider webs also have an important role in attracting a diversity of birds. In order for successful nest building to be completed by a number of our native birds, such as Grey Fantails, Crescent, Black Headed and New Holland Honeyeaters, Brown Thornbills, and Robins, they are reliant on spider web spinnings to knit their nests together.

Bursaria sunscreen? Aesculin, a chemical found in the leaves of Bursaria absorbs ultra-violet light. This was recognised by early settlers and also resulted in the commercial exploitation of the plant for sunscreen in the 1940's

Each "Bursaria" bush offers a nectar and larval food source for birds, beetles, butterflies, moths, wasps, bees, ants, etc. This in turn, allows pollination, seed dispersal and nutrient cycling processes to be initiated. These are important components of natural ecosystem processes.

A Butterfly's best friend

Sweet Bursaria is a well-known butterfly plant. Its anthers bearing the pollen are well outside the flower which dab all over the visiting insect's body. One butterfly in particular, the Bright Copper Butterfly relies solely on "Bursaria" for its larval food. This butterfly has a symbiotic relationship with black ants that attend its caterpillars protecting them from predators, in exchange for their honey-like fluid secretions.



*Common
Brown
Butterfly*



Meadow Argus Butterfly





Farming with fire...

Fire-stick farming is a term used to describe the practice of indigenous Australians where fire was used regularly to burn vegetation to help with hunting and to change the composition of plant and animal species in an area.

An increase in the regularity of fire had the long-term effect of turning scrub into grassland, increasing the population of nonspecific grass eating species like the kangaroo.

The ecological disturbance caused by fire-stick farming has been implicated in the extinction of the Australian Megafauna which included giant wombats and kangaroos.

Communities and ecology, finding the balance...

As a community we can assist ecological processes and enhance biodiversity through supporting council and local friends groups to undertake prescribed burning, environmental weed control, supplementary planting with locally indigenous plants and revegetating of new habitat corridors.



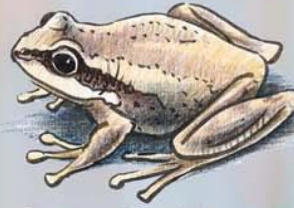
Nature and urbanization working together.

The wetlands you see here have been created to treat stormwater (rainwater runoff from houses and streets) before it enters Deep Creek and then the ocean. The aquatic and semi-aquatic plants remove nitrogen, pollutants and sediments and slow the water flow. This storm water management wetland is a great example of how ecological processes can be used in urbanized environments.

Teeming with life!

Wetlands provide food, water, shelter, breeding sites and foraging habitat for many different fauna species including birds, reptiles, frogs, mammals and insects. Wetland birds that might be seen here include: Chestnut Teal, Pacific Black Duck, White-faced Heron, Black-fronted Dotterel, Cormorant, Swamphen, Spoon-bills and Ibis.

Frogs that might be seen (and heard!) here



Southern Brown Tree Frog.
Call: The male mating call is a rising "cree" repeated every half a second

Common Froglet.

Call: The call sounds like crickets and may be a single squelchy 'crick' or many repeated 'crick-crick-cricks'.



Southern Bullfrog.
Call: It has a very distinctive call, ending with a loud 'bonk' and is often called the Pobblebonk or Banjo Frog

Spotted Marsh Frog.

Call: a single sharp call- "click" or "plock", which is similar to the sound of stones being hit together.



Wetlands, the planets sponges!

Wetlands are areas of land covered by shallow water and can be natural or artificial, permanent or temporary. Wetlands cover only about 3% of the Earth's surface, but are vital to our environment because they act as sponges (storing and soaking up excess water) and filters (cleaning water as it flows through).



Design, illustrations and photography
Mark Trinham.
Written by - Luke Hynes

The Original Locals



Torquay was originally occupied by the “Mon-mart” clan of the “Wathaurong” tribe of Aboriginal people – the “People of the Rivers”. The Wathaurong area stretches south of Geelong toward Lorne, north toward Ballarat and then south-east to the Werribee River. The Wathaurong language was spoken by 15 clans south of the Werribee River and the Bellarine Peninsula to Streatham. They were sometimes referred to by Europeans as the Barrabool people. The standard of living of Koori people has been measured as one of the best in the world. To collect food and shelter materials, took on average, less than 2.5 hours each day, leaving a large part of the day for recreation and cultural activities

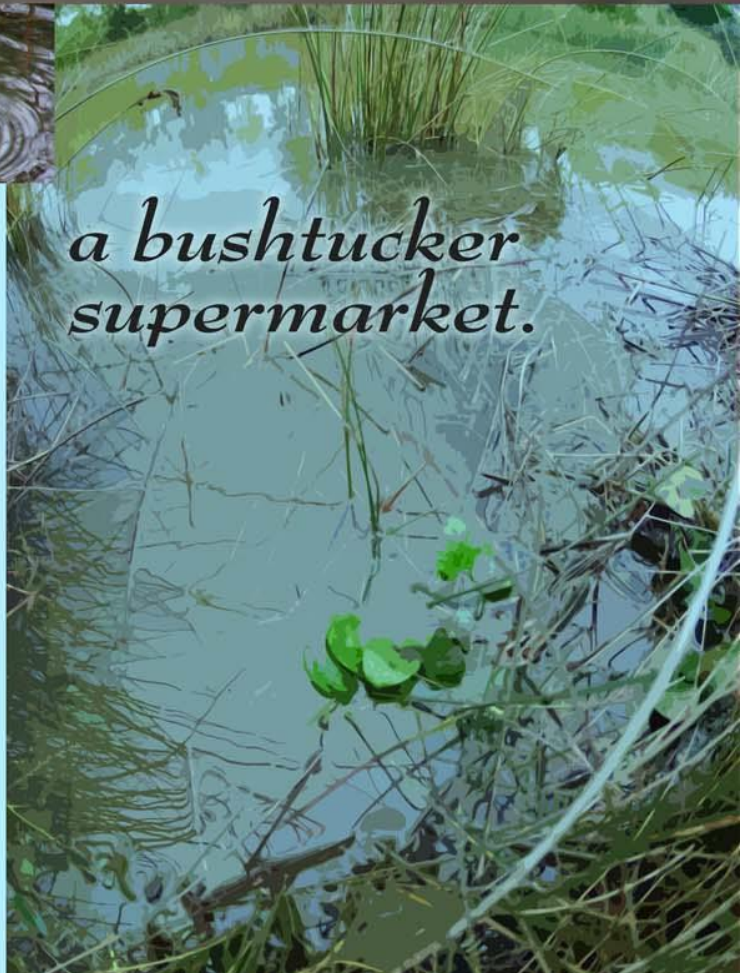


Its no wonder, considering wetlands were such fertile places, that they would be great food sources for Aboriginal peoples. Fish could be caught with hand made fishing line and spears and eel traps were made from reeds. Also if the wetland was small enough and a closed system, the crushed bark of the Silver Wattle *Acacia dealbata* could be used as a poison to stun fish and bring them to the surface where they could be collected, cooked and eaten, with no ill effects.



Design and photography - Mark Trinham. Written by - Luke Hynes

a bushtucker supermarket.



Bellarine Yellow Gum

Eucalyptus leucoxylon subsp. bellarinensis

This tree is only found in the Bellarine peninsula with Torquay and Jan Juc supporting the western most limit of its distribution. It's winter flowering provides an important source of nectar during this period when little else is flowering.

It has been listed as 'threatened' under the Flora and Fauna Guarantee Act 1988 and is considered 'endangered' in Victoria.

Bellarine Yellow Gum recruitment is currently insufficient adequately replace senescence of mature trees and propagation is required to maintain populations.

In the Surf Coast Shire 86% of sites are without regeneration. There are some seedlings in the area which can be seen with large heart-shaped, opposite leaves often joined at the base.



Photo - Luke Hynes



*Stop and listen...
How many birds
can you hear?*



Some birds calls you might hear:

1. **Magpie-lark:** A 'pee-o-wit' or 'pee-wee'
2. **Grey Butcherbird:** a rich piping with some mimicry and harsher notes.
3. **Australian Raven:** slow, high ah-ah-ah-aaaah with the last note drawn out.
4. **Sulphur-crested Cockatoo:** a distinctive loud screech, ending with a slight upward inflection
5. **New Holland Honeyeater:** a loud 'chik', a fainter 'pseet' and some chattering notes. If danger, such as a bird of prey approaches, a group of honeyeaters will join together and give a loud alarm call.
6. **Grey Shrike-thrush:** The call varies throughout its range and between individuals, but typical phrases include "pip-pip-pip--pip-hoe", "pur-pur-pur-kwee-yew", and a sharp "yorrick".
7. **Rainbow lorikeet:** call in flight is a loud, metallic, rolling screech, interspersed with a chattering trill.



Deep Creek: an important wildlife corridor

A wildlife or habitat corridor is a strip of habitat connecting wildlife populations separated by human activities. The Deep Creek Reserve connects the Torquay foreshore with patches of inland heathy woodland vegetation. Habitat corridors allow an exchange of individuals between populations, increasing effective population size, and help re-establish populations that have been decimated or eliminated. Habitat corridors may potentially moderate some of the worst effects of habitat fragmentation as can be seen in the ongoing urbanization of the Torquay area.

Riparian vegetation is the term given to vegetation along watercourses. These areas are important natural biofilters. They protect aquatic environments from excessive sedimentation, polluted surface runoff and erosion. Further, they supply shelter and food for many aquatic animals and shade that is an important part of stream temperature regulation.

Luckily, vegetation is often retained along waterways in urban environments due to the steep banks and lack of suitability to build.

