### Bass River: Wildlife of the waterways

The areas surrounding the Bass River are home to a range of animals including birds, frogs, fish and mammals. Native animals include the swamp wallaby, common brushtail possum, laughing kookaburra, white-fronted chat, ringtail possum and echidna. The area is also home to the rare swamp antechinus (a small marsupial mouse).

Revegetation projects have enabled wildlife to thrive and this means we can enjoy them in their natural surrounds.

We have provided an overview of some of the animals you may see in the area but don't be surprised if you see more!

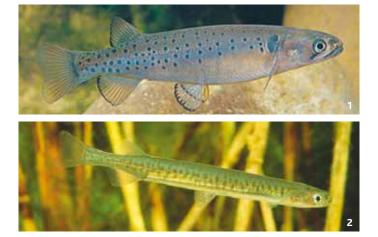
## Fish

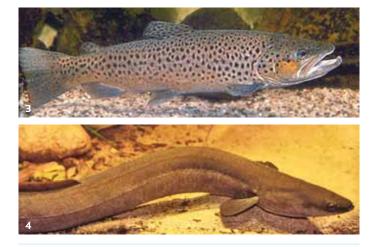
The Bass River supports a variety of fish, making it an ideal place for recreational angling.

Surveys dating to 1972 recorded 19 species of fish living in the Bass River catchment, including 15 estuarine and four freshwater species. Anecdotal information suggests a further three species – goldfish, river blackfish and flathead.

Streamflows significantly affect the abundance of freshwater fish living in the Bass River. Drought conditions can drastically limit the distribution of fish species as sections of the main channel and possibly tributaries dry out, restricting fish passage. Estuarine species and brown trout are more likely to be affected by water quality conditions in the catchment.

## Fish





#### SPOTTED GALAXIAS

GALAXIAS TRUTTACEUS SIZE: UP TO 20CM

These migratory fish, also known as trout minnow or spotted minnow, are brown to olive overall, they have pale-edged dark spots on the upper sides and a dark diagonal stripe below the eye. Galaxiids are characterised by long, streamlined bodies and are found in habitats including slow lowland rivers, rapid upland streams and inland lakes. They eat mainly terrestrial insects deposited on the water surface, aquatic insects and crustaceans.

#### COMMON GALAXIAS GALAXIAS MACULATUS

SIZE: UP TO 19CM

This slender-bodied galaxiid is olive-grey to amber overall, with darker spots and mottling on the sides. Adults move downstream to estuaries to spawn. Common galaxias are found through most of the Bass River.

#### **BROWN TROUT**

*SALMO TRUTTA* SIZE: UP TO 90CM

Trout, which were introduced for angling, are silvery to brownisholive fish with dark spots on the sides. They feed on insects and smaller fish especially the less aggressive native species. The female digs a nest into which she lays her eggs and then covers it with gravel.

#### SHORT-FINNED EEL

ANGUILLA AUSTRALIS

SIZE: MALES GROW UP TO 60CM, FEMALES UP TO 90CM

These native and migratory fish have uniform colouration – golden to olive-green overall. Their body is snake-like, elongated and tubular. Eels are active at night, and eat crustaceans, insects, yabbies, fish and frogs. Sexual maturity is attained at 14 years for males and 18-24 years for females.

### Fish







#### RIVER BLACKFISH GADOPSIS MARMARATUS

#### SIZE: 30-60CM

These nocturnal, non-migratory native fish usually dwell near the bottom of the river. They eat a variety of insects, crustaceans, worms, small fish and fish eggs. Their colour ranges from uniform grey overall to paler brown with irregular darker bands, blotches or mottling on the sides. Overfishing has decreased their numbers significantly.

#### FLAT-HEADED GUDGEON PHILYPNODON GRANDICEPS SIZE: UP TO 13CM

This native Australian species has a broad and flat head with a large mouth. It has variable colourings from black, brown, grey or reddish to greenishbrown all over. Their underbody is yellow with irregular faint brown markings on the sides and a dark spot at the base of the caudal fin. This bottomdwelling species is found in a wide variety of freshwater and estuarine habitats, in still and flowing water, especially among thick cover. The female lays up to 900 elongated eggs which are attached to a solid object such as a small rock in a single mass. They eat small fish. insects and crustaceans.

#### TUPONG

#### PSEUDAPHRITIS URVILLII

SIZE: UP TO 30CM

These fish are whitish with an irregular series of dark brown blotches on their sides. Tupong are usually bottom dwellers and eat a variety of crustaceans, molluscs, worms, insects and small fish. They sit camouflaged on the river bed waiting to ambush smaller animals.

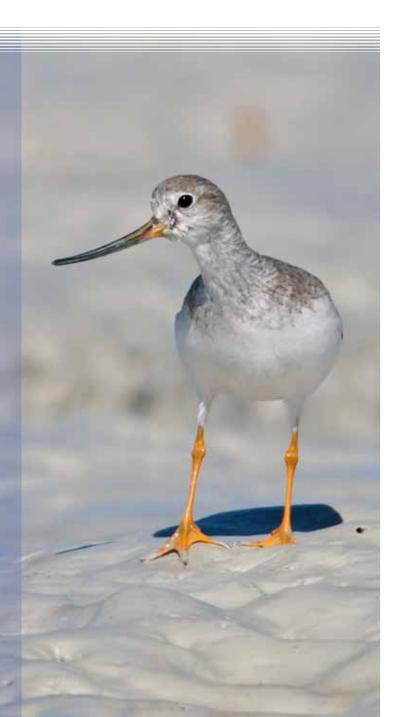
#### COMMON JOLLYTAIL

*GALAXIAS MACULATUS* SIZE: FROM 7.8 TO 11.5CM

These fish have an elongated body, dorsal and anal fins located opposite each other at the rear of the body and a forked tail. They are green to amber, with a variety of spots and blotches.

Common jollytail tolerate salinity well in excess of seawater and are commonly found in still or gently flowing waterways. They migrate downstream to spawn in estuaries, however landlocked populations have been recorded in Victoria and Tasmania. The increased occurrence of lower flows during summer in the Bass River may lead to a loss of connectivity in the main channel and tributaries.

The Bass River is home to a variety of bird species including the iconic laughing kookaburra. More than 140 bird species live in the Bass Valley. The whitefronted chat, powerful owl and barking owl are among the most common.









#### LITTLE EGRET EGRETTA GARZETTA SIZE: UP TO 65CM

These waterbirds, also known as the lesser egret, are small and white with dark grey-black legs, a black bill and a bright yellow naked face. Two ribbon-like head plumes and abundant plumes on the back and breast occur in the breeding season.

Little egret feed on a variety of invertebrates, as well as fish and amphibians. They hunt in shallow water by shuffling a foot to stir aquatic prey, which they then take in a very quick movement. They also raise their wings as they chase small fish. Breeding occurs in colonies with other waterbirds.

#### LATHAM'S SNIPE GALLINAGO HARDWICKII SIZE: UP TO 33CM

Latham's snipe is the largest in Australia. They have brown plumage, short legs, a long straight bill, short pointed wings and a long tail. The upper body features bold black, brown and white patterns, a narrow dark brown cheek stripe and a dark line through the eye.

Snipe are very shy and wary, bursting from cover when disturbed. They are found around wetlands, sedges, grasses, lignum, reeds and rushes, in saltmarsh and creek edges, and crops and pasture.

They feed by thrusting their bill into mud in soft mudflats or shallow water. They roost by day, feeding at night, dawn or dusk. They're omnivorous, eating seeds, plant material, worms, spiders and insects, some molluscs, isopods and centipedes.

#### RED KNOT

CALIDRIS CANUTUS SIZE: UP TO 25CM

These medium-sized dumpy grey waders have a short neck and long body. Their bill is short and straight and they have a faint pale brow line. They have short green-grey legs and a brownish grey upper body with fine dark streaks on the head and neck. The underbody is white with some light streaking. In breeding plumage, the upper body is boldly marked, contrasting with the chestnut-red body.

They walk fast, probing rapidly in soft sand and mud for worms, molluscs and crustaceans. They also eat spiders, insects, seeds and shoots. They feed by day and night, regulated by the tide.

#### SOOTY OYSTERCATCHER HAEMATOPUS FULIGINOSUS SIZE: UP TO 51CM

These striking black shorebirds have a long red bill, red eyes and pink legs. They are strictly coastal, usually living within 50m of the ocean, and drink seawater. They prefer rocky shores, but will be seen on coral reefs or sandy beaches near mudflats.

The sooty oystercatcher feeds on molluscs, crabs and other crustaceans, marine worms, starfish and sea urchins, and small fish, using its bill to stab at prey or to lever, prise or hammer open food items.

They breed in colonies, with both members of a breeding pair incubating eggs and caring for the young in a scrape on the ground among pebbles or shells on rocky shores or cliffs.







#### SWIFT PARROT LATHAMUS DISCOLOUR SIZE: AVERAGE 25CM

The swift parrot is a slim, medium-sized parrot with a streamlined shape in flight, angular pointed wings and a long, pointed purple-red tail. The body is mostly bright green, with a dark blue patch on the crown. The forehead to throat is crimson and there is a crimson patch at the bend of the wing. The female is slightly duller, with a creamy underwing bar.

Swift parrots are noisy, active and showy, with a very fast, direct flight. They roost communally, often in the same tree each night. They are almost always in trees, only coming to ground to drink.

Swift parrots feed in the outer canopy of flowering eucalypts, eating nectar, seeds and flowers, secretions from leaves and jumping plant lice.

#### WHIMBREL

#### NUMENIUS PHAEOPUS SIZE: UP TO 45CM

The whimbrel is a medium-sized curlew, which is mainly streaked brown with twin dark streaks along the crown and bill. The bill is long and slightly curved downwards, with a pink lower base. The legs and neck are long. The body is white below, with coarsely streaked brown upper parts. In flight, the light-coloured rump and streaked tail are obvious.

Whimbrels feed in small groups and roost in large flocks, often with other waders. They feed on intertidal mudflats by day and night, eating worms, crustaceans and occasionally fish and nestling birds. They run nimbly and take prey by probing with their bills in the mud or pecking briskly at the surface.

#### **BLACK FALCON**

FALCO SUBNIGER SIZE: UP TO 55CM

The black falcon is a raptor (bird of prey) and the largest Australian falcon. It is slim and dark brown to sooty black, with a pale throat. The bill and feet are bluish-white and its feathered legs are short. Females are larger than males. In flight, the broad wings taper to a fine point and the long narrow tail has a squared tip, with a step at the corners. It glides with slightly drooped wings.

Black falcons eat other birds, small mammals, insects and reptiles and sometimes carrion (dead animals) and also steal prey from other raptors. The birds swoop and grasp prey in their claws (talons), killing with a bite to the spine. Their powerful bill has specialised 'tomial teeth' and matching notches for this purpose.

#### POWERFUL OWL NINOX STRENUA SIZE: AVERAGE SIZE 55CM

As Australia's largest nocturnal bird, it has a relatively small head and rounded tail, is dark grey to dark grey-brown and off-white below with distinctive dark v-shaped chevrons. The eyes are yellow, set in a dark grey/brown face mask. The legs are feathered and the large yellow to orange feet with sharp talons.

Powerful owls are carnivores, mainly eating medium to large tree-dwelling mammals, like the ringtail possum and the great glider. They also take roosting birds and small mammals like rabbits. They forage mainly in trees, swooping and taking prey with their feet.

The powerful owl, which nest in old growth trees, mates for life (over 30 years in some cases) and pairs defend their territory year-round.









#### TEREK SANDPIPER

XENUS CINEREUS

The terek sandpiper is a small

dumpy bird with short orange legs. The long slightly upturned bill is orange at the base. The body is brownish-grey above and on the sides of the breast, and white below. The crown appears high, with a steep forehead. Its flight is strong and direct, with flickering wings and a distinctly visible white trailing edge.

Terek sandpipers roost in groups and eat crustaceans and insects, adding seeds, molluscs and spiders in their breeding grounds. They feed at high and low tides.

#### BARKING OWL

#### NINOX CONNIVENS SIZE: UP TO 45CM

The barking owl is a mediumsized hawk-owl. Hawk-owls lack the definite heart-shaped face of the tyto-owls (which include the barn owl). Adult barking owls are grey-brown above, with white spots on the wings, and whitish below, heavily streaked with grey-brown. Their heads are almost entirely grey-brown, with large yellow eyes. Young barking owls have less streaking on the underparts and the back of their necks is mottled white and grey-brown.

Barking owls are nocturnal, although may occasionally be seen hunting during the day. They feed on small to medium-sized mammals, birds, reptiles and insects and locate prey from the air or an exposed perch. They generally hunt in the first few hours of the night and the just before dawn.

#### **ROYAL SPOONBILL**

*PLATALEA REGIA* SIZE: UP TO 81CM

The Royal Spoonbill, also known as the Black-billed Spoonbill lives in wetlands and feeds on crustaceans, fish and small insects by sweeping its bill from side to side. It always flies with its head extended.

The Royal Spoonbill is a large, approximately 80 cm tall, white bird with a black, spoon-shaped bill. It is a wading bird and has long legs for walking through water.

When breeding, long white plumes grow from the back of their heads and coloured patches appear on the face. The nest is an open platform of sticks in a tree, where a female lays two or three eggs. The chicks hatch after 21 days. During breeding season they are highly sensitive to disturbance, potentially deserting their eggs after a minor upset.

#### EASTERN CURLEW

#### NUMENIUS MADAGASCARIENSIS SIZE: UP TO 65CM

The eastern curlew is the largest wader that visits Australia. It has a very long down-curved bill. The female's bill, which is usually longer than the male's, is an average of 185cm. This bulky, dark-streaked brown wader also has a long neck and legs.

These wary birds are quick to take flight. When flying, the barred flight feathers are visible, lighter under the wings and dark above.

The eastern curlew eats mainly small crabs and molluscs. Foraging by day and night, it is slow and deliberate, stalking on sandy and muddy flats, picking from the surface or probing deep with its bill.





#### PACIFIC GULL LARUS PACIFICUS SIZE: UP TO 67CM

These very large black-backed gull have a massive yellow bill, broadly tipped with scarlet. The upper wings and wingtips are wholly black with a narrow white inner trailing edge; the tail is white with a broad black band near the end. The legs are yellow to orange-yellow.

The juveniles are mottled dark brown with a pale face, and the bill is pink with a black tip. The immature birds have dark brown wings, a whitish mottled body and a black-tipped yellow bill.

Pacific gulls forage along coasts between the high watermark and shallow water on sandy beaches, feeding mainly on molluscs, fish, birds and other marine animals.

### ARDEA IBIS

#### SIZE: UP TO 53CM

This relatively small snowywhite egret is distinguished during breeding season by its orange crown, neck and breast, and neck plumes. The long, sharp, slightly down-curved bill is yellow to pinkish, but becomes bright red during breeding season. The legs are grey-green, turning bright red or orangebrown during breeding. It is a sociable species and is most commonly seen foraging with grazing stock and in wetlands.

The cattle egret prefers grasshoppers, especially during breeding season, but eats many other invertebrates along with frogs, cane toads, lizards and some small mammals. It often feeds by following large animals such as cattle, grabbing insects and worms disturbed by their feet. It also sits on cattle to watch for insects.

#### **CASPIAN TERN**

STERNA CASPIA SIZE: 60CM

This tern is the largest in Australia. It has long, slender backswept wings and a slightly forked tail. The heavy bill is red with a dusky tip. When breeding, this tern is white except for a black crown from bill to nape and a short shaggy black crest. The mantle and upperwings are grey and the flight feathers are darker. The eye is dark brown and legs are black. When not breeding, the crown is finely streaked white. Younger birds are mottled grey and brown.

Caspian terns feed almost entirely on fish. They usually feed by shallow plunging: hovering up to 15m above the water with their bill pointing down, before folding in their wings and diving, fully submerged, to quickly re-emerge. They usually swallow fish in flight, head first.

#### HARDHEAD

AYTHYA AUSTRALIS

SIZE: UP TO 60CM

Hardheads (also known as white-eyed ducks, barwings or brownheads) are medium-sized ducks that appear chocolate brown when swimming. In flight, the underwings are white, edged with brown. During flight and when standing in the shallows a white breast patch is visable. The bill has a pale blue tip. Males have a distinct white eye, which is brown in females. In flight, their wings make a distinctive whirring sound and they are rarely seen on land.

Hardheads roost on low branches and stumps near the water, breeding in densely vegetated wetlands and diving smoothly underwater for aquatic plants and animals, particularly mussels and freshwater shellfish. The female nests alone in a trampled platform of reeds, sticks, vegetation.







#### MUSK DUCK BIZIURA LOBATA SIZE: UP TO 73CM

Musk ducks get their name from the strong musk odour produced from a gland on the rump. They are sooty-brown in plumage, with paler brown barring on the body and fine spots on the head. Paler below, they become whiter towards the abdomen. The larger male is decorated with a large bulbous lobe of skin hanging under its bill. The smaller female has a much-reduced lobe on the underside of its bill. The bill is dark grey in both sexes and the eyes dark brown with the tail a collection of long, stiff feathers.

Musk ducks are found most often in deep, freshwater lagoons, with dense reed beds. They eat aquatic insects, crustaceans, snails, shellfish, fish, frogs, ducklings and some seeds. The nest is a large cup of trampled vegetation hidden in dense reeds.

#### BLUE-BILLED DUCK OXYURA AUSTRALIS SIZE: UP TO 44CM

The adult male has a distinctive sky-blue bill, glossy black head and chestnut body plumage, which is most evident during the breeding season but may remain throughout the year. Nonbreeding plumage in males can vary and the bill can appear grey in partial eclipse or dark green in full eclipse plumage. Females are brownish-grey with pale barring. It can be difficult to distinguish between males in full eclipse plumage, females and juveniles.

Nests are mostly solitary and constructed in spring on low trampled swamp vegetation such as rushes and sedges.

Blue-billed ducks eat aquatic insect larvae, molluscs and aquatic plant material including leaves and seeds. They stay underwater for up to 30 seconds per dive.

#### LAUGHING KOOKABURRA DACELO NOVAEGUINEAE

SIZE: UP TO 45CM

The laughing kookaburra is one of the larger members of the kingfisher family.

It is not really laughing when it makes its familiar call. The cackle is a territorial call to warn other birds to stay away.

The laughing kookaburra is instantly recognisable in plumage as well as voice. It is generally off-white below, faintly barred with dark brown, and brown on the back and wings. The tail is more reddish-brown, broadly barred with black. A dark brown eye-stripe is conspicuous through the face. Laughing kookaburras are believed to pair for life. Their nest is a bare chamber in a naturally occurring tree hollow or in a burrow excavated in an arboreal (tree-dwelling) termite mound. Males and females share the incubation and care for the young. Other laughing kookaburras, usually offspring of the previous one to two years, act as 'helpers' during the breeding season.

Kookaburras are carnivorous. They eat lizards, snakes, insects, mice, other small birds and raw meat. The most social birds will accept handouts from humans and will take raw or cooked meat (even if at high temperature) from or near open-air barbecues.

# Frogs

Frogs are extremely important to our ecology. Many people are unaware that frogs are recognised as good indicators of a healthy environment, especially water quality and toxins. This is because amphibians are covered in skin that must stay moist at all time, making them susceptible to foreign substances entering waterways. You may spot any of the following frogs in the Bass River area.

### Frogs





#### EASTERN FROGLET

CRINIA SIGNIFERA SIZE: UP TO 28MM

A small ground-dwelling frog, the common froglet is one of Victoria's most common and widespread species. Its cricket-like chirping can be heard all day and all year round. Males call from among vegetation at the water's edge or floating in open water supported by vegetation. Three to five pulsed calls, with a chirping quality, are repeated rapidly in a long series – "crick crick crick crick."

#### SOUTHERN TOADLET PSEUDOPHRYNE

SEMIMARMORATA

SIZE: UP TO 30MM

The southern toadlet is a native frog. It is very similar in size, ecology and behaviour to Bibron's toadlet, but with a more restricted distribution. The southern toadlet is small, with short legs and numerous large warts on its back. It is bright orange under the limbs and throat.

The southern toadlet is a terrestrial species, found in open forest, woodlands, grasslands and heaths, wherever sufficient damp soil and cover is present. Its breeding season extends through late summer to autumn. The species is listed as vulnerable in Victoria.

#### SOUTHERN BROWN (EWING'S) TREE FROG

*LITORIA EWINGII* SIZE: UP TO 60MM

This is a widespread and common species found in great numbers in flooded grassland or marshes. An agile climber and jumper, like most of our small tree frogs, it is a voracious insectivore capable of leaping to catch a fly in mid-flight.

Males usually call from the ground or in low vegetation, at the water's edge or in water, floating among the vegetation. The call is a series of rapid harsh, whirring pulsing notes repeated 5-15 times – "creeeeeee creee creee cree cree cree." The first note is usually the longest.

### WHISTLING TREE FROG

SIZE: UP TO 40MM

This highly variable species

is abundant in a variety of habitats, a clumsy climber but a strong swimmer and fair jumper. These frogs usually live on the ground near water.

Males call more commonly from the ground, often several metres from a pond, or floating among vegetation, sometimes in low vegetation near water. The call is a rapidly repeated burst of 10-20 short notes with an almost whistling quality – "tweee tweee twee twee ..."

## Mammals

The Bass River is home to a range of mammals including three varieties of possums. Vegetation along the river provides shelter to mammals.

The river provides valuable habitat to one of Australia's most loved and recognised animals, the platypus, which is classified as a regionally significant species.

### Mammals









#### LEADBEATER'S POSSUM GYMNOBELIDEUS LEADBEATERI

#### SIZE: HEAD-BODY 15-17CM, TAIL SAME AS HEAD-BODY

Leadbeater's possums are small nocturnal animals that move rapidly in mid-storey vegetation. Distinguishing features include a dark line that runs from their nose along the middle of their back to the base of their tails, which are pendulous (narrowest where they join the body).

Their cream-coloured underside is distinct from the olive-grey upper parts, and a clear narrow black line is present across their cream cheeks, distinguishing them from other similar looking gliders. Like all marsupials, their young are born blind, and undergo much of their early development in the mother's pouch.

#### SOUTHERN BROWN BANDICOOT

#### ISOODON OBESULUS OBESULUS SIZE: 28CM-36CM

The southern brown bandicoot is a moderate sized mammal with brown to black brindled fur and a relatively short tail. It has a conical-shaped head and a pointed muzzle, and short round ears that barely extend above the head. Its range is restricted to heath forests and heathlands, or coastal scrubs which are prone to clearance as a result of development.

These animals are predominantly nocturnal, however in the absence of predators can be active during the day. They shelter in nests of litter beneath dense cover. They are solitary omnivorous animals, digging through litter and soil for arthropods, fungi and tubers. Key threats include habitat fragmentation and clearance, and predation by foxes and cats.

#### PLATYPUS

#### ORNITHORHYNCHUS ANATINUS SIZE: UP TO 60CM

This top predator is found in waterways across much of eastern Australia, including the Bass River. This unique monotreme is a valuable indicator of the health of aquatic ecosystems.

The platypus makes its home burrowing into the banks of the river. It collects food in large cheek pouches and feeds on yabbies, worms and shrimp and small shellfish.

#### ECHIDNA

ECHIDNA HYSTRIX SIZE: 35-50 CM

The echidna (also known as the spiny anteater) is a solitary, primitive mammal that lives in Australia and Papua New Guinea.

When attacked, the echidna will burrow into the ground or curl into a ball using its spines to defend itself against the predator. Its spines cover the top of its body.

It has long sharp claws on its feet, and a 10cm long tail. It uses its very sensitive nose to find food, and its long sticky tongue to catch ants, worms and other such insects. On average, echidnas weigh 2-7kg.

### Mammals





#### SWAMP WALLABY

#### WALLABIA BICOLOR

#### SIZE: BODY 70-76CM LONG AND UP TO 17KG

The swamp wallaby is a common, medium-sized, browsing marsupial that is unique in many ways. It is distinguished from other wallabies by its dark colour, gait and straight tail. Its broad fourth premolar tooth, which is never shed, is used for eating course plant material.

Swamp wallabies are solitary animals but will gather when feeding. They breed all year round, and are sexually mature at 15-18 months. After a gestation period of 33-38 days, only one young is born. The joey stays in the pouch until it is 8-9 months old.

### BRUSHTAIL POSSUM

#### SIZE: HEAD AND BODY 50CM, TAIL 38CM

This is the best known of our possums because it has adapted to living in our cities and suburbs. The brushtail possum is nocturnal, spending the daytime asleep in its nest (which can be anything from a tree hollow, a rock crevice or a lovely warm roof!) and coming out at dusk to feed.

As an adult, it is typically cat-sized with a pointed face, long oval ears, pink nose and bushy black tail. A common mistake is to feed captive possums solely on fruit and vegetables, which inhibits development of gut microbes required for digestion, and can cause death.

#### RINGTAIL POSSUM

#### PSEUDOCHEIRUS PEREGR INES SIZE: BODY 30-35CM, TAIL

30-35CM

If you visit the bush at night you might hear ringtail possums leaping around in search of food. They use their white-tipped tails as a fifth limb to manoeuvre through trees, fences and powerlines. These possums usually build neat, ball-shaped nests of shredded bark and grass in dense bush but will take to nesting boxes. They have not fared as well as brushtail possums in the city and often fall victim to cats. About the size of a cat, the common ringtail possum is grey with white patches behind the eyes and on the belly, and orange-brown tinges on the tail and limbs. The structure of its forefeet, with a gap between the second and third fingers, enables the possum to grasp branches securely.

Australia is sometimes called the "Land of the Lizards" due to its spectacular diversity of these animals. Victoria has over 80 species of lizard and a wonderful snake fauna of almost 30 species.

Reptiles are an essential part of many food chains, both as food for other animals and as predators of small animals, for example, mice, rats and frogs.

If you look hard enough you might be able to find the following reptiles in and around the Bass river area.







#### **SWAMP SKINK**

EGERNIA COVENTRYI SIZE: UP TO 25CM

Swamp skinks have various shades of greenish-brown, olive-brown or yellow-brown on their backs. They live in densely vegetated swamps and associated watercourses, and adjacent wet heaths, sedgelands and saltmarshes. They can be found basking on fallen timber, driftwood, sedges and tussocks and are generally active from early September to early May.

Swamp skinks feed on small invertebrates. Mating occurs in October, and females give birth to live offspring. These skinks are relatively rare and are listed as vulnerable in Victoria.

#### DELICATE SKINK

LAMPROPHOLIS DELICATA SIZE: UP TO 40MM

The delicate skink has a ground colour of chocolate brown, with a bronze coloured stripe beginning on the shoulder and continuing to the base of the tail.

This sun-loving species is active by day and feeds on small invertebrates. The females lay 2-6 eggs in a communal nest that can contain up to 250 eggs. Females often produce more than one clutch per season.

#### **GARDEN SKINK**

LAMPROPHOLIS GUICHENOTI SIZE: UP TO 40MM

These skinks are dark grey, with a darker stripe beginning in front of the nostril, continuing through the eye and above the ear onto the tail. A broad dark vertebral stripe starts about the level of the forelimbs and continues onto the tail.

Garden skinks are the most common in suburban gardens around Melbourne and are found in most areas of the State except the semi-arid northern and western regions. They live in a variety of treed habitats.

Active by day, this sun-loving species feeds on small invertebrates. Females lay 2-6 eggs in a communal nest that can contain up to 250 eggs. Females often produce more than one clutch per season.

#### TREE GOANNA OR LACE MONITOR

VARANUS VARIUS

SIZE: UP TO 200CM

The tree goanna or lace monitor is Victoria's largest lizard. It is very dark, usually with lighter yellowish banding. It is quite common from far East Gippsland to the Healesville area, and along the Murray River system and lakes of northwestern Victoria.

This semi-arboreal species lives in holes in trees. It is an opportunistic carnivore, feeding mainly on mammals, birds, reptiles and carrion. Females lay 4-14 eggs in a clutch, often in an active termite mound, where the constant temperature and humidity are ideal for incubation.







#### TIGER SNAKE NOTECHIS SCUTATUS SIZE: UP TO 2.1M

Tiger snakes are part of the Elapidae family and are a large group of distinct populations, which may be isolated or overlapping, with extreme variance in size and colour. Individuals also show seasonal variation in colour. The total length may be up to 2.1 metres. Coloration is composed of olive, yellow, orange-brown, or jet-black, the underside of the snake is lighter and yellow or orange.

The tiger snake uses venom to dispatch their prey, and may bite an aggressor; they are potentially fatal to humans. Tiger snakes are not aggressive and will often give warning strikes with a closed mouth. When threatened, they will flatten their body and raise their head above the ground in a classic pre-strike stance.

### COPPERHEAD SNAKE

AUSTRELAPS SUPERBUS SIZE: UP TO 1.5M

The copperhead inhabits marsh areas where it feeds on frogs, tadpoles, mice, birds, other reptiles and frogs.

The lowland copperhead usually has a bright iris and a narrow, somewhat pointed head that is scarcely distinct from the neck. The colour ranges from slate grey or black to coppery red-brown through to deep brick-red on the upper surface. It is usually yellow-white underneath. Most adult copperheads have a prominent orange/red to brown streak running along the lower sides of the body.

This snake is the world's 11th most venomous, but it is shy by nature.

#### WHITE-LIPPED SNAKE

#### DRYSDALIA CORONOIDES SIZE: GENERALLY LESS THAN 50CM

This snake is readily identifiable by the presence of a conspicuous white stripe along the upper lip. The back colour is variable, from brick-red through to olive-green or dark grey, while the belly is usually a salmon pink colour.

It has 15 rows of mid-body scales, a single anal scale and 38-67 single sub-caudal scales.

While active day and night, the white-lipped snake is rarely seen, preferring areas of heavy cover. It is usually encountered basking in the sun. Its diet consists of small lizards and occasionally frogs. Females produce 3-10 live young in late summer.

This snake is not usually dangerous to humans.

#### JACKY LIZARD

AMPHIBOLURUS MURICATUS

#### SIZE: BODY ABOUT 100MM, TAIL UP TO 200MM

The Jacky lizard (aka Jacky dragon or tree dragon) is pale grey to dark with black patches along the middle of the back and two paler stripes on either side of these two dark patches. The lining of the mouth is bright yellow.

This lizard has particularly large and prominent scales along its back in rows from the neck to the base of the tail and spiny scales on the sides of the neck.

They feed on insects and other small creatures. Like many reptiles, they depend on sunlight to raise body temperature for normal activity.

Adult females are likely to breed every summer with 3-9 eggs. These eggs are laid in shallow burrows and the sex of the young is partly determined by the nest temperature.





#### BLOTCHED BLUE-TONGUE LIZARD

TILIQUA NIGROLUTEA

SIZE: UP TO 250MM

The blotched blue-tongue is one of our larger skinks. It is a dark lizard with light patches, giving it the appearance of having wide broken longitudinal stripes, rather than cross bands.

The blotched blue tongue is common east and north-east of Melbourne. It is usually found basking or sheltering under cover of fallen logs or discarded rubbish such as timber or iron.

#### EASTERN BLUE-TONGUE LIZARD

TILIQUA SCINCOIDES SIZE: UP TO 290MM

This large skink is greyish brown, with seven to ten darker bars across the body.

Although more common on the basalt plains west of Melbourne, common blue-tongue lizards are also found on the Mornington Peninsula. They are usually found basking or sheltering under cover of fallen logs or discarded rubbish such as timber or iron.

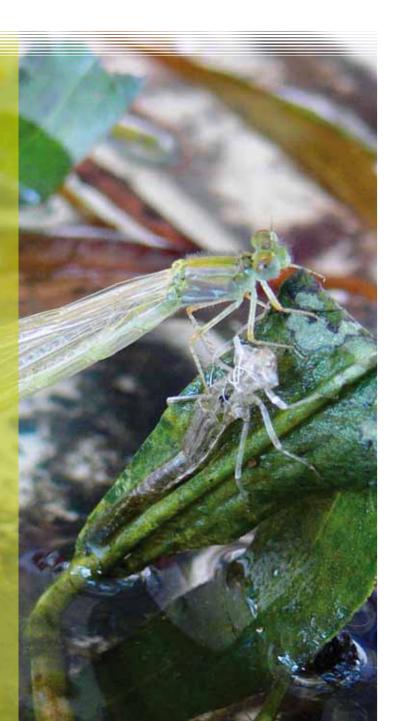
Their diet consists of plant and animal material, such as snails. Females give birth to as many as 25 live young in a litter.



# **Bugs and Insects**

Although often unseen, the role that bugs and insects play in the local and wider ecosystem is extremely important. Birds, fish, frogs, mammals and a large portion of other native species would have nothing to eat if insects and other invertebrates did not exist.

As with any other healthy waterway, an almost incalculable amount of bugs and insects inhabit the Bass River. The diets of these creatures are many and varied and can include organic material such as algae, bacteria, other bugs and fungi as well as decaying wood and leaves. So as well as providing a food base for frogs, fish and birds, waterbugs are responsible for the digestion of organic material and passing it onto the food chain.



### **Bugs and Insects**







#### GIANT GIPPSLAND EARTHWORM

MEGASCOLIDES AUSTRALIS

#### SIZE: AVERAGE 80CM

In the 1870s, surveyors around Warragul found an animal they thought may have been a snake. The then National Museum of Victoria described it as a new species of earthworm and named it the Giant Gippsland Earthworm.

Its body can expand to more than two metres long, and adults weigh about 200g. It is rarely seen because it lives deep in the soil and does not come to the surface unless flushed out by heavy rain. Its distribution is restricted to the Bass River Valley.

#### AMPHIPODS

SIZE: UP TO 25MM

These small crustaceans have seven pairs of walking legs and three feathery swimming limbs. Amphipods feed on plants and animals. They use a range of feeding methods including shredding, filter feeding and grazing.

Ceinidae are a common type of amphipod found throughout south-eastern Australia. They are usually green, but can be other colours, including orange. Ceinidae live among aquatic vegetation in still to slowmoving water.

#### WATERBOATMEN

CORIXIDAE

SIZE: 1.5-15MM

These slightly flattened bugs have a streamlined body. Their front legs are short and scoop-like, while the middle and hind legs are covered with hairs. They are found throughout Australia usually in slow-moving or still waters among aquatic vegetation.

Waterboatmen are excellent fliers and can move easily from one water body to another. While underwater, they breathe using an air reservoir – consisting of a bubble of air covering their abdomen and the underside of their wings.

Waterboatmen feed on other insects, such as mosquito larvae and bits of vegetation, which they grind up. Waterboatmen are also a good source of food for fish.

#### DAMSELFLY LARVAE

COENAGRIONIDAE

SIZE: 13-30MM

Larval dragonflies and damselflies are hunters of prey, stealthily stalking or using a sit and wait approach. They typically have slender, brown or green bodies, sometimes with darker markings which provide good camouflage.

## Plants

The South Gippsland Basin had no widespread areas of native grassland before European settlement. Clearing of native forest and woodland created the extensive grasslands now in the study area. Native vegetation exists over only 29% of the basin.

Most vegetation of the Bass River has been modified via clearing, invasion of exotic species or both. The dominant large native tree species are the manna gum and swamp gum with the smaller blackwood also common.

Plants play an important part in maintaining the vast ecology of the river and its surrounds. Trees provide homes and nesting places for birds and some mammals while also providing an important food source. Here are some of the plants you may be able to see in the area.

### Plants





#### STRZELECKI GUM EUCALYPTUS STREZELECKII

#### SIZE: UP TO 40M

This tall forest tree is similar in appearance to the swamp gum except that it is taller and more upright. It has rough bark around the base with a clean trunk and branches, and its wavy leaves are narrower than those of the swamp gum.

The Strzelecki gum sheds its bark in ribbons, revealing smooth white bark, and featuring cream flowers in spring. It grows on deep soils from ridges to river banks. This tree is endemic to the western section of the Strzelecki Ranges and up to Neerim South. It is replaced by Eucalyptus ovata on the flats along the river valley.

#### NARROW LEAF PEPPERMINT EUCALYPTUS RADIATE SIZE: UP TO 45M

This medium to tall woodland tree has rough grey-brown bark. It has dull green narrow leaves which are 8-16cm long, and when crushed they have a strong peppermint aroma. Profuse small cream flowers can be seen in spring to early summer.

This tree requires well drained soils and tolerates dry conditions when established. It is one of the best species for producing high grade eucalyptus oil suitable for perfumes, soaps and disinfectants, as well as honey.

#### SWAMP PAPERBARK MELALEUCA ERICIFOLIA SIZE: UP TO 9M

This tall shrub to small tree is found along the length of the Bass River but predominantly in the middle sections. It has dark green narrow leaves with a blunt tip. The bark is pale and papery and cream flowers are seen on tips of branches in spring. It grows along waterways and drainage lines, in seasonally wet ground and swampy areas.

It suckers and spreads, providing excellent erosion control and habitat for many animal species. The shade it casts over small streams creates preferred conditions for some native fish species such as dwarf galaxias.

#### SHRUBBY FIREWEED SENECIO MINIMUS SIZE: UP TO 1M

This large annual herb has lanceolate mid-green toothed leaves that attach directly to the stems. The flowerheads are held above the foliage made up of hundreds of green petal-less daisy flowers, seen through summer to autumn.

The shrubby fireweed grows on moist, well drained to seasonally wet soils. It is an excellent colonising plant, following disturbance, and will take up the space of weeds such as ragwort. It is found along the length of the Bass River except the lowest tidally influenced section.

### Plants





#### COAST SAW SEDGE

#### *GAHNIA TRIFIDA* SIZE: UP TO 1.5M

This is a large tussocking sedge growing 1m wide. It has long

narrow leaves which are rolled at the margin and pendulous at the tips. It also features dark brown to honey-coloured erect flowers in spring, which persist throughout the year. This sedge grows in tidal areas around saltmarsh communities. It is found in the Bass River estuary and along the Western Port coastline.

#### BEADED GLASSWORT

SARCOCORNIA QUINQUEFLORA SSP QUINQUEFLORA

#### SIZE: UP TO 0.5M

This prostrate spreading woody plant has succulent fleshy grey-green 5-8mm diameter stems that turn woody with age. Inconspicuous flowers can be found between the fleshy segments most of the year and its seeds are eaten by the orange-bellied parrot.

The beaded glasswort grows in wet saline soils at the top of tidal mudflats and estuaries. It is found in the Bass River estuary and along the Western Port coastline.

