There are approximately 1000 species of earthworms in Australia, they are great improvers of the soil, and are popular with gardeners and invertebrates fans, but are regarded as boring and unappealing by most other people. Actually they are quite complex animals and although they are very familiar to us, how they live is quite unfamiliar.

Earthworms are terrestrial and are found in soil, leaf litter, under stones and logs in many habitats. They excavate tunnels through the soil.

Earthworms are segmented worms that belong to the class Oligochaeta, a name that describes their bristles or setae. The earthworms move by contracting and relaxing the muscles in successive segments, which produces a wave-like movement, while gripping the side of the tunnel with the front setae and drawing up their rear setae.

They do not have an external skeleton like an insect or an internal skeleton like a snake; they rely on their muscles alone to maintain their structure. They also do not have eyes but can detect light through light sensitive tissues on their head.

Earthworms do not have lungs, they breathe through their skin and consequently their outermost layer of skin must remain moist, this restricts their area of habitation.

The diet of earthworms consists of organic matter and debris To feed, the earthworm everts a pharynx through its mouth which grabs the food, which then passes to a gizzard which contains grit (much like a bird) and grinds the food. The food then passes to the intestine where it is digested and absorbed. The waste products or castings are excreted.

Earthworms have five hearts to pump fluid around their bodies.

Earthworms are hermaphrodite i.e. single individuals possess both eggs and sperm. To reproduce, two worms mate, they then separate and each produces an egg in a cocoon. The egg cocoon is laid in the soil and after incubation one young worm hatches, then continues to grow until reaching maturity.

Many species of earthworm possess an amazing ability to repair injuries and even to regenerate.

Some earthworms possess bioluminescence – the ability to glow.

Although the average common earthworm is of little interest to the general public, giant earthworms are a different story. They seem to provoke a squeamish fascination, which makes them objects of curiosity. Large terrestrial invertebrates are uncommon because their body is not supported or protected by a skeleton, however giant earthworms can be large specimens. The largest earthworm ever recorded was found in South Africa and measured over 7 metres.

A number of giant earthworms live in Australia. The most famous is the Gippsland Giant Earthworm (Megascolides australis), which may reach 3 metres and lives in complex permanent burrows about 2 metres below the surface. This worm has achieved almost celebrity status. There is a giant earthworm museum, a giant earthworm festival and a colony was even visited by iconic naturalist David Attenborough when they were filmed as part of the “Life in the Undergrowth” TV series. The Gippsland Giant Earthworm was once widespread, but now is classified as vulnerable and lives in fragmented colonies. It is fragile, bruises and dies easily, it is also believed to be a long lived species, it is thought that worms take a year to incubate and 5 years to reach sexual maturity. Recently a colony threatened by new roadworks was re-located in an effort to preserve the species.

The Giant Earthworms of Tamborine Mountain Digaster longmani are a different species from their more famous Victorian counter-parts, however they occupy the same ecological role and probably share many characteristics. As can be imagined they are difficult to study and much information remains undiscovered. They grow to over 1 metre and can be the same circumference as a garden hose.
The worms live in deep permanent burrows and are not seen, unless they come to the surface when their burrows are flooded by heavy rain, or when excavations or landslips disturb their burrows.

The status of the Giant Earthworms is not known, certainly soil disturbance, reduction or pollution of the water table, drought, pesticides and herbicides can all have a negative impact on the population. Although the worms underground life means they are seldom seen, they may sometimes be heard. If they are disturbed by footsteps, they may slide along their waterlogged tunnels producing a strange gurgling sound from under the ground.