Giant Gippsland Earthworm - "Nature's Plough"

Land for Wildlife Note No. 11 *July 1991*

LAND FOR WILDLIFE
VOLUNTARY WILDLIFE CONSERVATION

Key words: Giant Gippsland Earthworm, streambank conservation, threatened species, habitat protection
W: 12-Ex-11
Area: Cent. Gipps, Yarram, Dandenong
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One of the world's largest earthworms

The Giant Gippsland Earthworm *Megascolides australis* is one of the world's largest earthworms and is restricted to a small area in the Bass River Valley of South Gippsland. Despite wide publicity in the 100 years since its discovery, very little is known about the worm's basic biology. It is listed by the International Union for the Conservation of Nature (IUCN) as a 'vulnerable' species. This means that the species may be at risk of becoming extinct if there is continued pressure on the population through habitat destruction and disturbance.

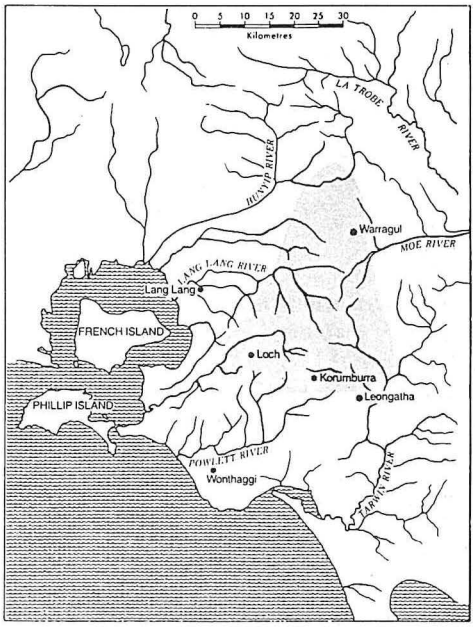
What do the worms look like?

The Giant Gippsland Earthworm is certainly a giant amongst the 3,000 known species of earthworms. It has an average length of 80cm with a diameter of 2cm. When a worm is relaxed, it can more than double in length and worms of up to 2 metres have been reported. The worm has 300-500 body segments, and the first one third of the body (including the head) is dark purple with the remainder of the body being a pinkish-grey colour. The worms lay large, amber coloured egg capsules that range in size from 4-8cm in length by 2cm in diameter. The egg capsule is made of a tough, semi-transparent, horny material called chitin, which gives it the appearance of being made of plastic and resemble cocktail sausages in shape. They are laid close to the soil surface at an average depth of 20cm.

Egg capsules of the Giant Gippsland Earthworm.

Where are the worms found?

The Giant Gippsland Earthworm is thought to be found in only 100,000 ha of the Bass River Valley in an area roughly bounded by Loch, Korumburra and Warragul (Figure 1.) Within this area the distribution of the worm is very patchy, and is generally confined to dark blue-grey clay soils. Worms are found mainly on creek or river banks, associated with springs or soaks, and sometimes on the south or west facing slopes of hills.



Distribution of the Giant Gippsland Earthworm.

How do I know if I have worms on my property?

One of the easiest ways to tell if worms are present in a particular area, without disturbing the soil, is to stamp on the ground and listen. In wet conditions worms often make a loud gurgling sound as they retreat down their tunnels (it sounds like water draining out of a bath!) However, this is not as obvious in the warmer months when the ground is dry.

Although the worms are not normally seen, as they spend the whole of their lives under the soil, they have been seen in exceptional circumstances. Flooding has been reported as driving them onto the surface and there have been many reports of the worms being eaten by kookaburras and occasionally magpies.

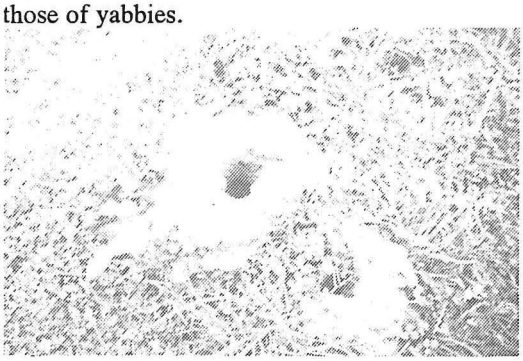
The Giant Gippsland Earthworm. At an average length of 80cm, it is one of the world's largest earthworms.

Department of Conservation & Environment

Bird Observers Club of Australia

The worms make large tunnels that do not usually come to the surface and may reach depths of up to 2 metres. These tunnels are about 2cm in diameter and are very noticeable if one is digging in Giant Worm habitat. Unlike many other earthworms, that leave their waste products (casts) above ground, the Giant Gippsland Earthworm leaves its cast material below ground inside its tunnel. The mounds surrounding the entrances to yabbie burrows are often mistaken as cast material of the giant worm. Yabbies and Giant Gippsland Earthworms are often found in the same area.

It has been claimed that the tunnels of the Giant Gippsland Earthworm can undermine the walls of farm dams. This is unlikely as these walls will be of well compacted soil. The holes seen in these situations are more likely to be those of yabbies.



The Giant Gippsland Earthworm rarely comes to the soil surface. These holes are produced by yabbies.

The farmer's friend

The beneficial effects of earthworms on soil fertility have long been recognised. The terms 'Farmer's Friend' or 'Nature's Plough' have been aptly used to describe the worm's actions. Some of the ways in which earthworms help to improve the soil include:

* Breaking up organic materials and mixing them into the soil
* Breaking up root mats in pastures and thick layers of leaf litter
* Increasing microbial activity in the soil
* Increasing the availability to plants of nutrients in soils and organic matter
* Improving crumb structure of soils, and so
* Increasing the amount of water that can be held in soils
* Allowing better penetration of plant roots, oxygen and water into soil and
* Increasing crop and pasture yields.

What can I do to help conserve the worm?

Recent studies showed that the worm was only found in 6% of the area surveyed and that over 80% of the worms were found within 40m of creek banks. **Therefore the most important way of conserving the earthworm is to protect its habitat - the stream banks.**

Specific measures for conserving stream banks are outlined in *Land For Wildlife* Notes 2 & 8. Some of the most important points are briefly summarized here:

1. Fence sensitive areas along stream banks to restrict livestock access. This helps avoid soil disturbance caused by trampling and allow regeneration of native vegetation.

2. When natural revegetation is not possible, vegetate streams with local native species such as gums, wattles, native ferns and grasses appropriate for your area, the soil type and associated conditions. Vegetation will help bind the soil and thus help prevent soil erosion.

3. Allow leaf litter, fallen logs and branches to accumulate in habitat areas. This provides a food source for the worm and a refuge for many other species.

Other ways you can help protect the worm are:

4. By refraining from ploughing or using pesticides or herbicides in and near the worm's habitats such as near stream banks and wet gullies. Ploughing and stumping can cause direct damage to worms and pesticides can be carried into the worm's habitat by run-off and natural drainage.

5. Because of the size of the worms, they are extremely fragile and even slight bruising kills them. Their soft body means that they are easily broken. If you cut a Giant Gippsland Earthworm in two, the pieces will not regenerate and the worm will die. If you unearth an intact Giant Gippsland Earthworm or an egg capsule you should rebury it gently and carefully as the weight of large clods of wet soil can damage otherwise intact worms.

Protection of stream sides has many additional benefits to the land owner (see *Land for Wildlife* Notes 3, 8 & 9) such as improved water quality, flood mitigation, land conservation and recreational fishing.

By helping to protect and conserve the habitat of the Giant Gippsland Earthworm you will not only be helping to improve the soil and the land you live off but also helping to conserve an important part of the South Gippsland Heritage and one of Australia's unique native animals.

As information on the worm is still being collected, you can help in furthering our knowledge by reporting any Giant Gippsland Earthworm sightings to the *Land for Wildlife* Extension Officer, Department of Conservation and Environment, 310 Commercial Road, Yarram, 3971. Telephone (051) 825 155.

or

Museum of Victoria, Survey Department, 71 Victoria Crs, Abbotsford, 3067. Telephone (03) 419 5200

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