
WAITOMO GLOWWORM CAVE

For more than 100 years the Glowworm Cave of Waitomo has attracted millions of people from all over the world. A small glowing insect has fascinated and intrigued people from all walks of life.

A guided tour of the limestone cave followed by a boat ride through the darkness of the Glowworm Grotto to view the thousands of glowworm lights is a trip not to be missed.



History

A local Maori Chief, Tane Tinorau and an English surveyor, Fred Mace, first explored the Glowworm Cave in December 1887. They built a raft of flax stems and with candles as their only light; they floated into the cave where the stream emerges from underground. Visitors now exit the cave at this point.



Fred Mace

As their eyes adjusted to the darkness they saw a myriad of lights reflecting off the water. Looking up they discovered that the ceiling was dotted with the lights of thousands of glowworms.

Debris and logs littered the waterway but by poling themselves toward the embankment they were able to leave the raft and explore the lower levels of the cave. Here they found themselves surrounded by the glitter of beautiful cave decorations.

They returned many times to explore further, and on an independent trip Tane discovered the upper level of the cave and an easier access. Authorities were advised and government surveyors mapped the cave. By 1888 Tane Tinorau had opened the cave to tourists.

The government acquired the cave in 1904. It was not until 1990 that the land and cave were returned to the descendants of the original owners, who now receive a percentage of the cave's revenue and participate in the management and development of the cave.



Tane Tinorau

GEOLOGY

Limestone

Limestone in this area was formed 30 million years ago when Waitomo was under the sea. Shells and shell fragments accumulated on the sea floor. Over time these thick layers of shells were buried and compacted to create limestone.

In time, movements in the earth's crust lifted the limestone above sea-level. Cracks and weaknesses were created in the limestone, providing tiny channels through which water could begin to flow.



Caves

Caves form along cracks in the limestone where rainwater has begun to flow downward. Rainwater mixes with a small amount of carbon dioxide in the air forming a weak acid. The acid strengthens as more carbon dioxide is absorbed from the soil. As it seeps through cracks in the rock the acidic water dissolves the limestone and enlarges any cracks and joints. Eventually streams flow through the enlarged cracks helping to create the caves as we see them today.

Cave Decoration

Stalactites, stalagmites and other cave decoration begin to grow once the cave has formed. Water dripping from the cave roof or flowing over cave walls leaves behind a deposit of limestone crystal. As time passes, these accumulate to form beautiful cave decorations.

Glowworm

The New Zealand Glowworm is the larval stage of a small fungus-gnat (*Arachnocampa luminosa*), which emits a light to attract its food. Although they are most spectacular in caves, glowworms are found wherever conditions are damp, food is in good supply and there is an over-hanging wall. A walk through the New Zealand bush in the evening can sometimes reveal the many lights of the tiny glowworm.

Feeding

The larva of the glowworm emits a bright light to attract food. The glowworm builds a nest of mucus and silk in the shape of a hollow tube, which is attached to the cave roof by a series of fine silk threads. About 20-30 threads - fishing lines - each coated with sticky mucus are hung underneath the tube.

Midges or other flying insects are attracted to the light where they become trapped in the sticky lines. The glowworm draws in the fishing line and devours the insect.

Life Cycle of the Glowworm

Eggs - The eggs are laid by the adult and hatch into larvae about three weeks later.

Larva - The larva is a few millimetres long when it hatches but slowly grows to the shape and size of a matchstick. After 6-9 months the larva will pupate. The larval stage is the only time the insect can feed and throughout its time as a larva the glowworm emits a bright light.

Pupa - The pupal stage is like the cocoon stage of the moth's life. The larva encases itself in a pupal skin while it changes from the simple larva to the more complex adult fly.

Adult - When the adult fly emerges from the pupa the male seeks a female with whom it can mate. After mating the female lays about 120 eggs. The adult flies have no mouthparts, cannot eat and therefore only live a few days.