

Invertebrates of Wellington Park



The full species list for Wellington Park would be dominated by invertebrates with an estimated five to six thousand listings, and new species continue to be discovered. With limited understanding of invertebrate distribution it is difficult to know if a species is only found in a restricted area. Many early records exist regarding invertebrate studies. Some species recorded many years ago have not been found since however it is not possible to conclude extinction due to lack of research.

Invertebrates play important roles in all ecosystems. In forested environments they chew and skeletonise leaves, suck sap and inject cancer forming substances into plants to provide food for larvae. It is estimated that approximately one-third of the leaf area of eucalypts is lost each year to animal activity in the forest foothills. A large proportion of this loss is attributed to invertebrates. Invertebrates play a major role in the breakdown and recycling of organic matter on the forest floor and in the soil. They also provide sustenance for a large number of vertebrate species.

Some invertebrates feed on the lichens covering the surface of the rocks that they use for basking, particularly in the alpine area. There is a high proportion of flightless alpine species including certain grasshoppers, crickets (*Bobilla*, *Kinermania*), beetles (*Carabidae*, *Tenebrionidae*, *Lucanidae*), bugs (*Lygaeidae*, *Pentatomidae*, *Reduviidae*), flies (*Boreides*) and moths (*Pterolocera*, *Phaos*, *Psychidae*).

Many noctuid moths are alpine specialists. Eighty seven species have been recorded on Mount Wellington – 18 are believed to be endemic to Tasmania, and 10 of these are presently only found on the Mountain. Little is known about the biology of nearly all the noctuid moths.

Twenty two snails are recorded within the Park with at least two have highly restricted distributions. This includes the rare Mount Wellington Snail *Roblinella agnewi*, found on the eastern foothills of the Mountain between 600m – 1000m.

The sandstone cliffs in the Park provide a specialised habitat for invertebrates. Raphidophorid crickets occur in crevices which provide dark, cool micro- environments. These flightless crickets are endemic to Tasmania and show Gondwanan affinities.

A high percentage of endemism exists among freshwater invertebrate fauna. Seventy four percent of the Trichoptera (caddis-flies) and 82% of the Plecoptera (stoneflies) are endemic. Some appear to have restricted distributions. The trichopteran *Hydrobiosella armata* is only known from streams on Mount Wellington and is classified as rare.

Another significant freshwater invertebrate is the syncarid *Anaspides tasmaniae*. This mountain shrimp was discovered in tarns near the summit of Mount Wellington in 1893 and was previously only known from other parts of the world in fossils dating 230-330 million years ago. The species represented the early evolution of crustaceans, and was an exciting discovery for zoologists worldwide.

At least 23 species of invertebrate have been recorded in the pseudo-karst environment at Lost World in Wellington Park where dolerite columns have collapsed to form underground caverns. Local endemism is typical in cave environments. Species adapt with morphological changes including loss of eyes and wings, depigmentation and long hairs and antennae. Little migration outside the cave system occurs and species unique to particular caves eventually evolve. Invertebrates present at Lost World included three troglotic species (ie obligate cave dwellers unable to survive outside underground habitats) and three troglophiles (ie species which can live permanently in caves but which also live in specialised above ground habitats such as sheltered cliff overhangs). *Hickmania troglodytes*, the endemic Tasmania cave spider is also present.

The scale, diversity and integrity of the Park's ecosystems is illustrated by the complex range of known invertebrates. Mountains often act as biological islands especially for species that specialise in these habitats. Many invertebrates remain unknown or poorly understood.

Sourced from:

- Draft Wellington Park Values, Use and Management Inventory, 1996
- Tasmanian Threatened Species Handbook, Bryant and Jackson, 1999
- On the Mountain, Dombrovskis, Flanagan, Kirkpatrick, 1996

An Introduction to a few of the better known invertebrates of Wellington Park

	Latin name	Endemic	Threatened	Notes
Caddisfly	<i>Hydrobiosella armata</i>	*	*	Similar in appearance to moths except they do not have a coiled sucking proboscis and their wings are covered with hairs rather than scales. Occurs in freshwater habitats including springs and streams. Eggs are laid in water where the larvae hatch
Mount Wellington Snail	<i>Roblinella agnewi</i>	*	*	Believed to only be found on the eastern face of Mount Wellington in extremely low numbers in an area probably less than 10 sq km. Appears to be restricted to areas between 600m – 1000m in subalpine wet eucalypt forest in leaf litter and under rocks. Herbivorous and prefer to feed on the rare local tree daisy <i>Brachyglottis brunonis</i> . Early records suggest <i>R. agnewi</i> at lower altitudes however it is believed to have disappeared from these areas due to fire and habitat decline.
Tasmanian scorpionfly	<i>Apteropanorpa tasmanica</i>	*	*	Found on the summit of Mount Wellington Only member of its family Apteropanorpidae and a critical taxon for understanding the evolutionary relationships of the many panorpid scorpion-flies of the northern hemisphere. Considered rare
Velvet Worms	<i>Tasmanipatus sp.</i>	*	*	The late Prof V. V. Hickman collected velvet worms on Mount Wellington for many years and had noted a dramatic reduction in their numbers after the 1967 fires. In more recent years they

			have been uncommon though a new species was believed to be found near the Organ Pipes in the mid 1990s
Mountain Shrimp	<i>Anaspides tasmaniae</i>	*	Discovered in tarns near the summit of Mount Wellington in 1893. Previously only known from other parts of the world in fossils (230- 330 million ya). Resented the early evolution of crustaceans. Occurs in moorland, runnels, tarns, pools and streams with most populations occurring above 500m. Can be easily seen on the bottom of pools at the high altitudes.
Mealy bugs	<i>Pseudococcus pittospori</i>	*	Only known to exist in Wellington Park and have only been collected once at Fern Tree in 1962
	<i>Asteliacoccus margaretae</i>	*	Only known to exist in Wellington Park and have only been collected once at Collins Bonnett in 1983
Flightless log dwelling beetle	<i>Lissostes menalcas</i>		Lack of recent records suggests disappearance from the area. May be due to high frequency of hot fires across Mount Wellington since European settlement
Schizopterid bug	<i>Hypselosoma hickmani</i>		A primitive species, occurs at the Chalet amongst the vegetated scree. Probably requires areas with permanently wet soil/litter conditions
Blatellid cockroach		*	Flightless. Found at the ploughed fields and Mount Wellington summit beneath dolerite boulders
Cricket	<i>Kinermania</i>	*	Flightless. Found at the ploughed fields and Mount Wellington summit beneath dolerite boulders
Earwig	<i>Anisolabis tasmanicus</i>		Flightless. Found at the ploughed fields and Mount Wellington summit beneath dolerite boulders
Scarab beetle	<i>Telura alta</i>		The most alpine adapted Australian scarab beetle. Occurs on Mount Wellington
Predatory beetles	<i>Promecoderus</i>		Flightless. Found at the ploughed fields and Mount Wellington summit beneath dolerite boulders
Spiders	<i>Zachria spenceri</i>		Flightless. Found at the ploughed fields and Mount Wellington summit beneath dolerite boulders
Tasmania cave spider	<i>Hickmania troglodytes</i>	*	May have a leg span of up to 14cm and a web up to 1m across Occurs in the pseudo-karst environment at Lost World
Grass-hoppers	<i>Russalpia albertsi</i>		Flightless alpine grasshopper found in dolerite boulder fields. The rocks modify the microclimate near the ground and serve as a basking site
	<i>Tasmaniacris tasmaniensis</i>		Flightless alpine grasshopper found in dolerite boulder fields. The rocks modify the microclimate near the ground and serve as a basking site
Ancient bug	<i>Nymphocoris hilli</i>	*	Only known from the summit of Mount Wellington. An ancient species of great phylogenetic significance within the Heteroptera suborder
Songless hairy cicada	<i>Tettigarcta tomentose</i>		Found in the subalpine zone The only survivor of a group common in the Mesozoic
Gracillariid moth	<i>Lithocolletis acares</i>		Lack of recent records suggests disappearance from the area. May be due to high frequency of hot fires across Mount Wellington since European settlement.

Noctuid moths	Aenetus paradiseus	*	The Eucalyptus johnstonii forest near The Springs is a rare stronghold for this moth
Amphipods	Keratroides vulgaris	*	Occur in forested slopes below 1000m with clear preference for moister, cooler litter in the bottoms of gullies where it is the dominant species. Also occurs in substantial numbers with Mysticotalitrus cyrptus in local accumulations of litter under alpine shrubberies. Microclimate rather than vegetation type dictates its distribution
	Neorchestia plicibrancha	*	Found in cool, shaded sites near the summit of Mount Wellington
	Mysticotalitrus tasmaniae	*	Occur in unpredictable proportions in various vegetation associations on the open slopes. Uncommon above 1000m
	Mysticotalitrus cryptus	*	Extends from the forests into the alpine zone with microclimate rather than vegetation type dictating distribution