

Violet Oil beetle

(*Meloe violaceus*)



Left: Violet oil beetle (*Meloe violaceus*); Right: Violet oil beetle triungulins

Oil beetles are distinctive insects with one of the most extraordinary life-cycles of any British insect. Violet oil beetles are associated with wildflower-rich habitats such as unimproved grasslands and woodland edges, and have suffered drastic declines over the past 100 years due to changes in countryside management. It is a UK Biodiversity Action Plan priority species, on the Scottish Biodiversity List species, and is a species for priority action in the Cairngorms Nature Action Plan.

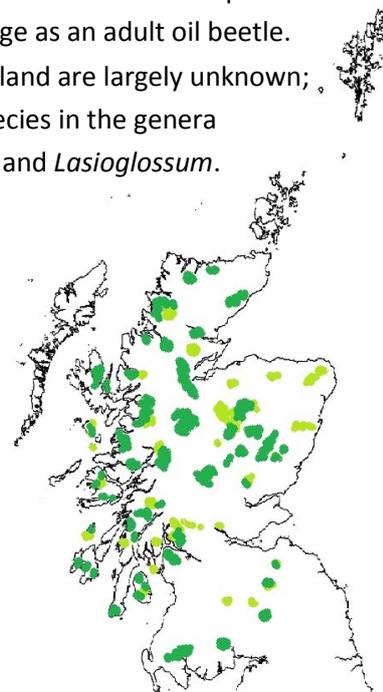
Life cycle

Adults and their larvae, (called triungulins) are active in the spring from March to June. Oil beetles are nest parasites of solitary mining bees. Female oil beetles dig burrows in bare ground, to lay their eggs. Once hatched, the active triungulins climb onto flowers and wait for a suitable host bee to visit the flower to collect pollen or nectar. The triungulins attach themselves to hairs on the bee's back using

hooks on their feet. Once in a suitable bee's nest burrow, the larva disembarks and feeds on the bee's store of pollen and nectar until it is ready to emerge as an adult oil beetle. The specific bee hosts used in Scotland are largely unknown; but potential hosts include bee species in the genera *Andrena*, *Halictus*, *Colletes*, *Osmia* and *Lasioglossum*.

Distribution map

The Violet oil beetle is the most widely distributed of the three oil beetle species found in Scotland, with populations hotspots in up the west coast and in the Cairngorms. In England and Wales the species is mainly found



Dark green post-1980, light green pre-1980

in the south west, the Peak District, and the Lake District.

Habitat

The Violet oil beetle has the most varied habitat preferences of all the oil beetles and can be found on



Left: Violet oil beetle (*Meloe violaceus*); Right: Carmen Muir, Renton (typical upland habitat)

woodland edge habitats, glades and rides, upland unimproved grasslands and on coastal cliff-top grasslands. Lesser celandine and dandelion are thought to be the preferred adult food source. Adults also feed on a variety of soft grasses and Cleavers (*Galium aparine*).

Reasons for decline

The loss of wildflower-rich habitats, habitat fragmentation, changes to land management and a decline in host bee species have all contributed to the decrease in oil beetle numbers.

Habitat management

Measures to help conserve the Violet oil beetle in Scotland include:

- Grazing open upland areas and banks within moorland mosaic, either by domestic stock or through the action of wild animals such as deer and rabbits can help maintain an open wildflower-rich sward.
- Maintain bare ground at the edges of footpaths and animal trails which can be used by host solitary bees for nesting and female oil beetles for laying eggs. Ground disturbance by livestock can also create and help maintain suitable areas of bare ground.

- Increase the abundance of wildflowers in neighbouring areas of species poor grassland, especially in areas with known populations of oil beetles. This will be beneficial to the solitary bee hosts of oil beetles, and other pollinators.
- Extending areas of wildflower-rich grassland may also allow oil beetle populations to expand and could help to reconnect fragmented populations.

Survey methodology

- Surveying should ideally take place between March - June in warm, sunny weather conditions.
- For larvae: sweep wildflowers with a white net near solitary bee nest aggregations. Check flower heads and examine solitary bees for triungulins.
- For adults: search areas of suitable habitat with bare ground and plentiful wildflower such as footpaths and exposed sunny banks where nesting burrows occur. Carefully searching around common food plants may be productive (Lesser celandine, dandelions, Cleavers etc.).

References:

This sheet can be accessed on the web at www.buglife.org.uk.

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