

# Life cycles of brown butterflies: part 3: Scotch Argus, Mountain Ringlet, Grayling

This is the final part of the series of lessons on Brown butterflies and covers three of the species which are only found in particular habitats, including the UK's only truly montane species, the Mountain Ringlet.

**Grayling:** Grayling butterflies are remarkably well camouflaged against the rocks and gravel where they are normally found. The upperwings are like other brown butterflies, with patterns of brown and orange patches. But when they land, the wings are closed immediately and the butterfly can disappear in front of your eyes as the underwings are mottled with varying fine grey and brown patches with an almost grainy texture.

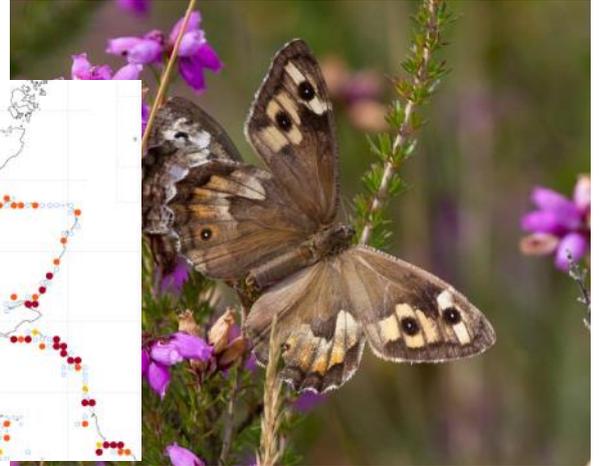
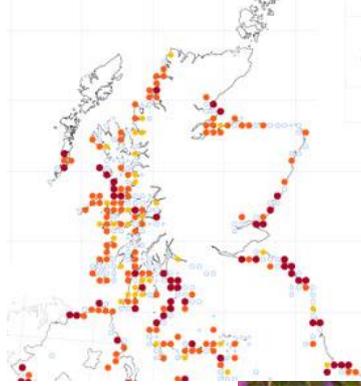
Graylings are also the largest of the brown butterflies, with wingspans over 6cm, so perhaps their camouflage may have evolved to help them avoid predators which can more easily find large butterflies like this.

Graylings are only found in places where it is dry, hot, and with a lot of exposed earth and rocks. Typical habitats include sand dunes, quarries and railway lines and grasslands with very thin soil. Some excellent places to see them are at the very heart of Edinburgh, as the city has the remains of several extinct volcanoes, including **Holyrood Park, Calton Hill and Blackford Hill**. This species has undergone severe declines in the UK and has been lost from 60% of its range in the past four decades alone. Much of the habitat has been lost to coastal development such as golf courses, and agricultural intensification, so it is now mostly found on coastal cliffs which cannot be worked or developed.

The adults emerge in Scotland from late June, and peak in mid-July and fly through to August. On warm days they can be very active, with males holding territories from which they keep other males by 'fighting'. Like some other butterflies, much of the interesting behaviour of Graylings happens during the courtship of the female by the male. The courtship includes steps such as wing quivering, antennae spinning, bowing and claspng. During the bowing step, he bows forward with his wings open, then closes them to hold the female's antennae with his wings where they can pick up the pheromones being released from his wings.

The caterpillars eat fine-leaved grasses such as **Fescues**, but the eggs are normally laid on dead plant material near the grasses, which may be a strategy to avoid having the eggs be eaten by grazing mammals. They mostly feed at night, and like many other brown butterfly species they spend the winter as caterpillars at the base of plant, resuming feeding in spring. When ready to pupate, the caterpillars burrow into the soil slightly and make a cell from silk, and emerge as adults about a month later.

Grayling are well-distributed around the coast of Scotland, but particular good places to see them include **Holyrood Park in Edinburgh, Tentsmuir LNR near Dundee and the Moray and Ayrshire coasts**.

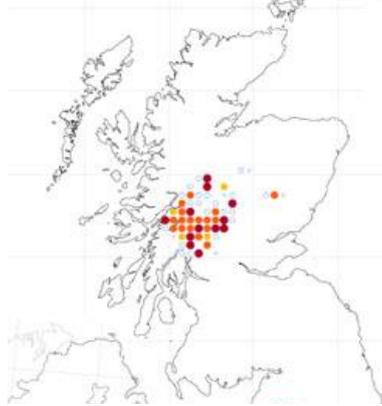


Graylings (Top—Bottom; Chris Rowland, Patrick Clement, Anthony McCluskey)

**Mountain Ringlet:** The Mountain Ringlet is one of the most elusive species of butterfly, and one which really requires you to be in the right place at the right time. It's our only truly montane species and is at home on grassy hillsides between **350m and 900m**. The majority of the UK population is found in Scotland, with the rest being confined to Cumbria.



Adults have a rather dark appearance, with dark brown upper- and under-wings and faint orange markings on the upperwings. In photographs they can appear similar to the much more widespread Scotch Argus, but the Scotch Argus has black eyespots with white dots on the upperwings, and is notably larger and easier to spot.

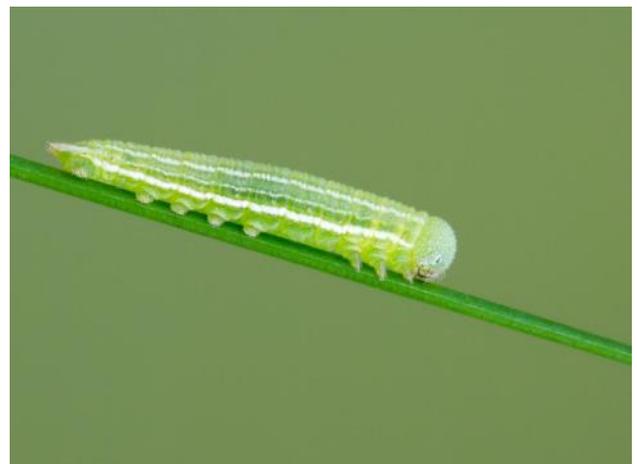


The flight period of Mountain Ringlets is short, and in Scotland they emerge around late June and fly for just a few weeks, only taking flight when it is sunny and not so windy. Given its hardiness, it is believed that the Mountain Ringlet was one of the first butterflies to recolonise what is now Britain after the last ice age, around 12,000 years ago. While the caterpillar foodplants (mostly Mat-grass and Sheep's-fescue) are fairly widespread on the hills, the butterfly is usually found in moist, sheltered depressions in the land which must offer some shelter from the wind. The wings are also covered in brown hairs, which may conserve heat.



Mountain Ringlet (Top, Tim Melling; Bottom, David Morris)

Females conserve energy by spending most of their time roosting in the vegetation, but after mating will be seen flying to find places to lay eggs and take nectar. Like the Grayling, Mountain Ringlet females usually lay their eggs on dead material close to the caterpillar foodplants – again, possibly a strategy to avoid the eggs being eaten by grazing mammals. As the conditions on the sites are so cold, caterpillars can take two years to reach the sizes where they are ready to pupate, and pupae are formed around the bases of grasses.



Mountain Ringlet Caterpillar (Peter Eeles)

Because of their locations and difficulty in getting suitable weather to monitor Mountain Ringlets, there is some uncertainty over their status. Recent research has suggested that the average elevation of some colonies has risen by 200m over the past 40-50 years, possibly because of climate change. As the uplands become ever warmer, this species may be pushed toward the exposed mountaintops, and colonies would become more separated and at risk of extinction.

An excellent place to see Mountain Ringlets is **Ben Lawers NNR in Perthshire**, where the butterflies can be seen close to the main walking tracks just beyond the nature trail. Otherwise, it can be found on hills around Mid-Perthshire, West Inverness-shire and Argyllshire.

**Scotch Argus:** The Scotch Argus is a close relative of the Mountain Ringlet but has a wider distribution. Freshly emerged adults are very dark, almost black, and rather velvety. Like Mountain Ringlet, it is a butterfly more often found in the north of the UK as possibly arrived shortly after the last ice age too. It is a larger species and very easy to spot as they fly a lot more, and colonies can be very large. There are orange markings on the upperwings, with black eyespots with white dots in the centre (Mountain Ringlets lack the white dots). The undersides are more variable in the species, with a 'violet' form and a 'yellow' form



Scotch Argus (Mark Searle)

The 'Argus' part of the name can be found in other, unrelated species such as the Northern Brown Argus. It possibly comes from the Greek myth of the Argus, a many-eyed giant. This may relate to the eyespots found on the butterflies.

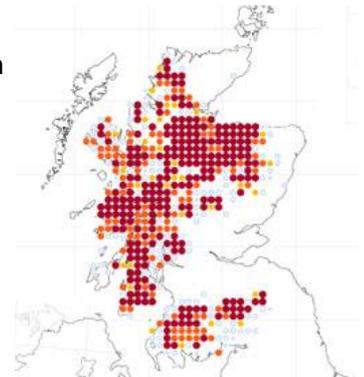


Scotch Argus violet form (Bob Eade) and yellow form (Iain Leach)

Scotch Argus are mostly found in tall damp grassland, and the main caterpillar foodplant is Purple Moor-grass though it can use other grasses and even sedges.

Females seem to select only certain grasses in sheltered spots which are more likely to remain green through the autumn as the caterpillars need a long season in which to feed to be large enough to survive winter. They continue to feed in the spring before pupating at the base of grass stems.

Scotch Argus are one of the final species to emerge as adults, usually flying from Mid-July and finishing by late August. Despite some declines in its distribution because of land-use changes, the population numbers appear to be increasing so this butterfly is not considered threatened.



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