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Why are the Cairngorms so special?

From bees to beetles, and spiders to snails, invertebrates make up 98% of our animal life and these creatures without backbones enable life on earth, as we experience it, to continue.

The Cairngorms is one of the best places in the UK for invertebrates, especially for species associated with mountains, woodlands and cooler climates. Increasingly the Cairngorms is the last stronghold for many invertebrate species that are becoming rare or extinct elsewhere in Britain. Despite this some are suffering declines and others may be at risk of extinction. We must prioritise the protection of many of these species to protect some of Scotland's special wildlife.

Unique pine woodland

The Cairngorms woodland of pine, aspen and birch are the westernmost examples of the boreal forest that stretches across most of northern Europe.

However the composition of the Scottish forest is different as trees such as larch and spruce, common in European woods, do not naturally occur here. These ancient pine forests also contain many large, old trees in open, park-like woodland, unlike in Scandinavia, where intensive forestry practices have removed the larger, older trees.

These forests also receive a high rainfall making them particularly good for invertebrate species that depend upon damp decaying wood - such as the Pine hoverfly (*Blera fallax*) and the Aspen hoverfly (*Hammerschmidtia ferruginea*).



Woodland at Cairnbridge © S Falk

These factors enable the Cairngorms to host an invertebrate fauna unique from the other boreal woodlands of northern Europe.

Freshwater from lochs and rivers

The Cairngorms has some of the finest rivers and lochs in the British Isles. The River Spey is exceptional in Britain having a naturally dynamic, shifting mosaic of small channels, islands and wetlands along the majority of its length.



Freshwater pearl mussel © S Scott

For example, the flood plain at Insh Marshes is the largest transitional mire in Britain and is comprised of a variety of specialist wetland habitats that are home to many rare invertebrates.

One of the largest intact river confluences in Europe can be found where the River Feshie enters the Spey. This large delta of sand and gravel is an important habitat for a variety of rare and threatened invertebrates, including the Northern silver stiletto-fly (*Spiriverpa lunulata*).

Around a half of the world's population of Freshwater pearl mussels (*Margaritifera margaritifera*) are found in Scottish rivers. Freshwater pearl mussels can live for up to 100 years, but most populations are at risk from a wide range of activities including collecting. Action to conserve these populations will make a major contribution to the global survival of this species.

Globally rare peatland

Blanket bog covers over 1 million hectares of Scotland; this represents over 70% of the habitat in Britain, and the majority of blanket bog in north-west Europe.



Azure hawker dragonfly © R Key

These bogs support a number of specialist beetles, dragonflies and flies including the Azure hawker dragonfly (*Aeshna caerulea*) and the Bog dance-fly (*Rhamphomyia obscura*).

Diverse mountain ranges

The Cairngorms mountain range is one of the largest areas of land, over 1,000 metres, in Britain. Their location further south than other Arctic mountains means that they feature a range of climatic conditions in a relatively small area.

As well as being important for a range of cold-loving species they are home to Britain's only truly montane invertebrate species, such as the Arctic whorl snail (*Vertigo modesta*) and the Scottish mountain spider (*Mecynargus paetulus*). These species live above the tree-line where they thrive in seemingly severe natural conditions.

Increased recreational pressure, overgrazing and trampling are all threatening these fragile habitats, however the greatest threat is from climate change - the species that live here are adapted to colder climates, and even a small rise in temperature could jeopardise their survival.

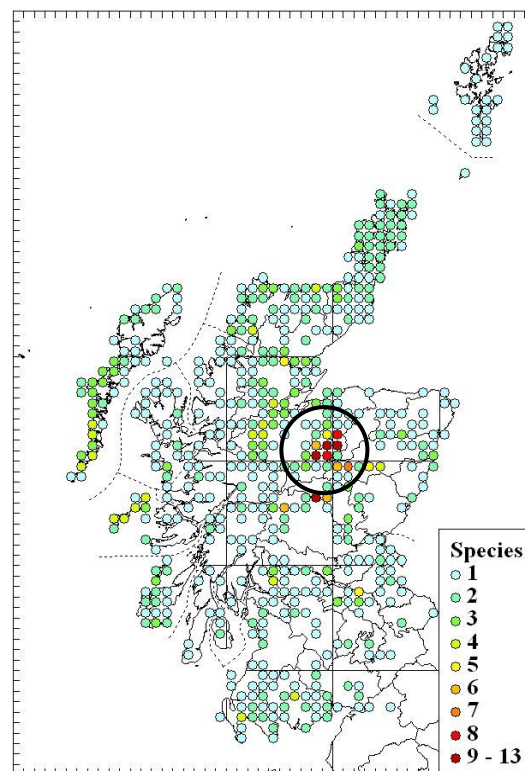


Cairngorms © C Cathrine

Important for invertebrates

All of these varied and unusual features contribute to an exceptionally rich invertebrate fauna.

Recent research carried out for Scottish Natural Heritage clearly shows the value of the Cairngorms. The number of invertebrates of conservation concern, per 10km square, was assessed and the number of rare species in Strathspey was found to be almost double that of most other areas in Scotland (Littlewood and Stockan, 2013).



An extract from Littlewood and Stockan (2013) depicting numbers of terrestrial invertebrates, that are species of conservation concern, per 10km square in Scotland. The Cairngorms is circled.

References

Littlewood, N.A. & Stockan, J.A. 2013. Surveillance of priority terrestrial invertebrates in Scotland. Scottish Natural Heritage Commissioned Report No. 609.