

The Darwin Tree of Life at Beinn Eighe NNR

Reading the genomes of all life: a new platform for understanding our biodiversity



The **Darwin Tree of Life** project aims to sequence the **genomes** of all **70,000 species of eukaryotic organisms in Britain and Ireland**. A genome is an organism's complete set of genetic instructions.

The project is a **collaboration between biodiversity, genomics and analysis partners** and will transform our understanding of the British and Irish fauna and flora, providing **new insights from the level of the gene to the entire ecosystem**.

In this first phase of the project (Nov 2019 - Nov 2022) the Darwin Tree of Life project partners aim to collect, catalogue and deliver >8,000 species specimens, one representative species from each of the families of animals, fungi, plants and other life found in Britain.



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The Darwin Tree of Life at Beinn Eighe



From ancient pinewoods to mountain summits, Beinn Eighe National Nature Reserve is **a landscape of magnificent diversity** and the site has become a focus for the Darwin Tree of Life.

Working in collaboration with NatureScot, Beinn Eighe is providing the Darwin Tree of Life opportunities to sample species difficult to find elsewhere in Britain and Ireland.



The Darwin Tree of Life project is supporting Beinn Eighe's status as the UK's first **Genetic Conservation Unit**.



Bryophyte sampling at Beinn Eighe

Beinn Eighe boasts a diverse range of habitats and species assemblages, including good examples of the internationally important **Atlantic liverwort heath**.





It is also home to the **endemic Scottish liverwort** *Herbertus borealis*.



Vascular plant targets at Beinn Eighe

With **over 250 species**, Beinn Eighe also hosts a rich assemblage of vascular plants.



Diphasiastrum alpinum



Sampling other taxa at Beinn Eighe

In 2021, the Darwin Tree of Life sampled **128 invertebrate species** at Beinn Eighe in collaboration with NatureScot, National Museums Scotland, Natural History Museum, and Highland Biological Recording Group.





The Northern Emerald Dragonfly (Somatochlora arctica) is an uncommon species restricted to north-west Scotland and south-west Ireland



Sampling Species Interactions at Beinn Eighe

In addition to providing insight into individual species, the Darwin Tree of Life can uncover **genetic aspects of species interactions**.

Plant-invertebrate species interactions can motivate exciting **Darwin Tree of Life sampling targets at Beinn Eighe**. For example, the rare moth *Plutella haasi* and its larval food plant Northern Rock-cress *Arabidopsis petraea*.

Until 2009, Beinn Eighe was the only known UK locality for *P. haasi* and the majority of records for *A. petrea* are in the mountains of Scotland.





The Future of Darwin Tree of Life at Beinn Eighe

Darwin Tree of Life partners and collaborators are busy planning spring, summer, and autumn sampling visits to Beinn Eighe for the 2022 field season.

Beinn Eighe is currently under discussion as a potential 'Genomic Observatory' for the next phase of the Darwin Tree of Life, with the aim of obtaining a complete genome for each species at the site.



Would you like to be involved?

You can suggest a species of ecological or evolutionary interest for us to prioritise on our Suggest as Species page



The Darwin Tree of Life project is a collaboration between biodiversity, genomics and analysis partners:



Our work in Scotland is also made possible by the generous support of:



