

# MILES felled birch plots: MOORCO – Moorland colonisation



We study the durability of the impacts of trees on moorland communities

## Background

These plots are part of the [MOORCO](#) <sup>[1]</sup> project. A replicated [experiment](#) was established at one [site](#) in the early 1980s to test the durability of the engineering effects of birch on soil properties. Birch woodland established on previously heather dominated moorland was felled and heather planted. Our [data](#) is allowing us to assess how long it takes for woodland soils to revert to a soil characteristic of moorland.

## Key results

- After 20 years soil chemical properties, microarthropod communities and decomposition rates were not significantly different between plots with and without the birch.
- However, the mass of the soil O-horizon was significantly greater in the felled birch plots than in the control birch plots, providing the first indication of a change towards soil properties more typical of a *Calluna* moorland.
- The work also shows that the role of birch in driving changes in the ecosystem is durable 20 years after the removal of the birch.

See [Publications](#) <sup>[2]</sup> for further details of results.

## Sites

Site Name	Grid reference
Craggan (b)	NJ197327

## Experimental design

### Treatments

- Mature birch woodland naturally colonised on heather moorland (Birch control)
- Planted heather plots where birch was felled and heather planted (Felled plots)

### Replication

Paired plot design, 6 control plots and 6 felled plots

## Data collected

Data type	Date	Details
Vegetation	1985, 2003	Species composition (% cover)
Soil chemistry	1978, 1986, 2003	Al, C, C:N, Ca, Ca, Fe, K, LOI, Mg, Mn, moisture, N, Na, N-mineralization, P, pH
Soil microbial	2003	PLFAs and DGGE
Decomposition rates	2003	Filter papers and wooden sticks
Soil physical properties	1978, 2003	LFH depth, O depth, bulk density
Tree density and size	2003	Number, height and DBH
Soil invertebrates	2004	Collembolla and mites (to species) Enchytraeidaes numbers

## Contact

MOORCO <sup>[1]</sup> is a collaborative project across several groups and themes within the James Hutton Institute and with many different staff involved. In the first instance please contact Dr Ruth Mitchell <sup>[3]</sup> for further details.

Related Staff

### Related staff

Ruth Mitchell <sup>[4]</sup>

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### Links:

[1] <http://www.hutton.ac.uk/research/groups/ecological-sciences/community-ecology/moorco>

[2] <https://www.hutton.ac.uk/research/departments/ecological-sciences/research-facilities/moorco/publications>

[3] <mailto:ruth.mitchell@hutton.ac.uk?subject=Enquiry%20about%20MOORCO>

[4] <https://www.webarchive.hutton.ac.uk/staff/ruth-mitchell>