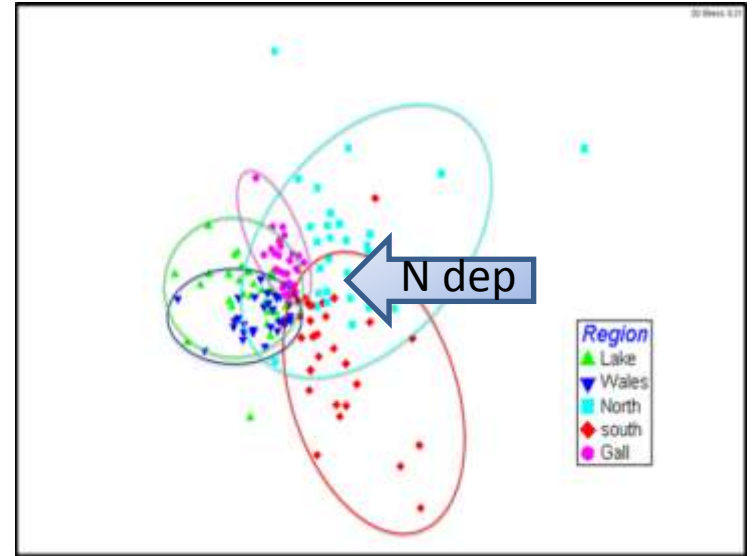


Impact of N deposition on fungal communities in *Racomitrium* heath

Questions:

- What is the composition of the fungal community?
- How do composition and diversity vary along N deposition gradient?
- How do communities within the moss mat and underlying soil compare?



Approach:

- UK N deposition gradient (15 sites)
- High resolution sequencing of fungal communities in moss and soil

Preliminary data:

- 3500 species of fungi in moss from 15 sites!!



Long term responses of alpine *Calluna* heath to N deposition, warming & management

Question:

- How do plant community composition and ecosystem function respond to long term changes in climate, N deposition and management?

Approach:

- N additions 2000-2010
- Open top chambers 2004-present
- Management – one off burning and annual clip

Key findings:

- Lichen community is most sensitive component
- N dep exacerbates environmental stress
- Rapid N saturation of plants and soils resulting in N leaching and acidification
- **Recovery from N:** soil water quality rapidly improved, soils and plants remain N enriched



Biodiversity and function of alpine soils

Questions:

- How will future changes in alpine habitat distribution impact ecosystem service delivery?
- How does vegetation relate to below ground biodiversity and soil function?

Approach:

- Measurement of soil properties:
 - C, N, P stocks & available nutrients
 - Soil fungal & bacterial community composition
 - C & N cycling enzyme activities
 - Decomposition rates
- Lab study using vegetation & soil cores:
 - How do moisture and temperature affect nutrient cycling and water quality?

