Mountain biodiversity and ecosystems under global change

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The James Hutton Institute

Who are we?

- Based in Scotland
- Skills:
  - Plant, fungal and bacterial ecology
  - Molecular techniques
  - Bioinformatics
  - Biogeochemistry
  - Functional ecology

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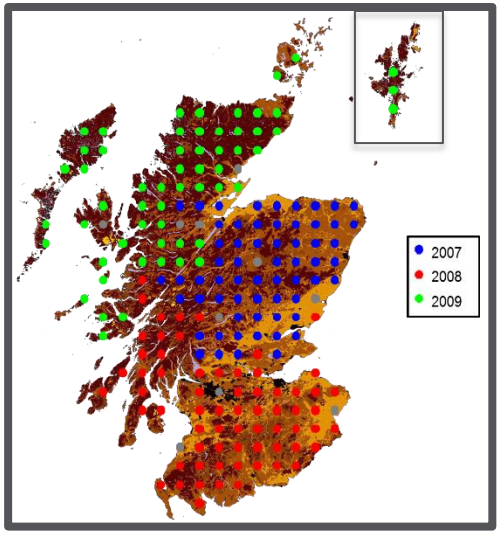
What do we do?

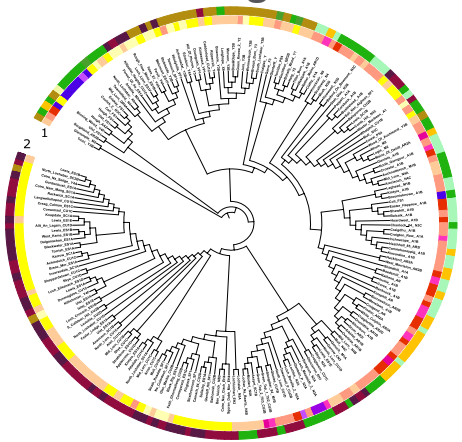
- System: Oceanic alpine
- Research focus:
  - Characterisation of fungal and bacterial communities
  - Functional biodiversity responses to climate change
  - Effect of topographic heterogeneity on below ground biodiversity and function

Alpine soil biodiversity in context

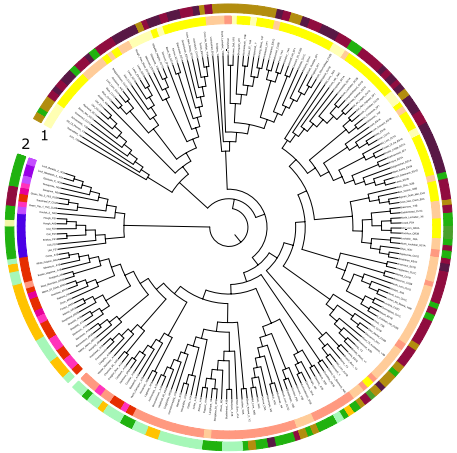
- **National scale survey of soil fungal and bacterial communities**



Fungi



Bacteria

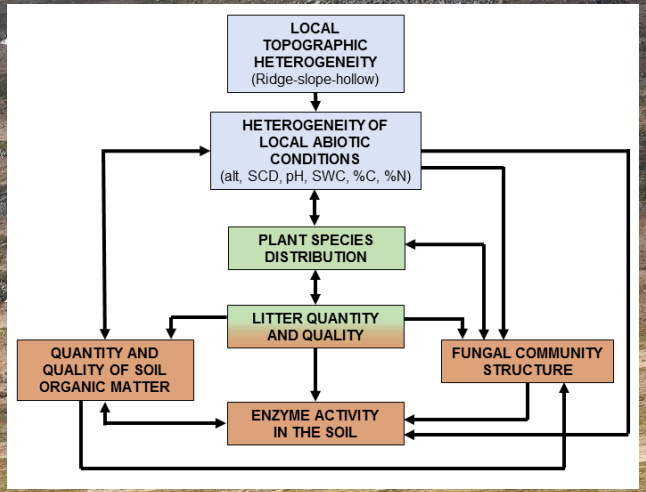


Determining drivers of community structure and function

In depth, local scale study of alpine vegetation mosaics in Scottish highlands - drivers of change

99 veg plots

- Topography
- Plants
- Fungi
- Bacteria
- Archaea
- Mesofauna
- Soil parameters
  - Nutrients
  - Org C quality
  - Soil enzymes



Predictive modelling

Ben Avon, Cairngorms