

**Project title:** Understanding the legacy of Cenozoic climates to better inform future forest conservation and management strategies

**Ref:** OP2436

**Keywords:** biodiversity, palaeobotany, extinction, climate

**One Planet Research Theme:**

Climate & Climate Change  | Earth System Processes  | Anthropocene  | Environmental Informatics

**Lead Supervisor:**

Matthew Pound, Northumbria University

**Key Research Gaps and Questions:**

- 1) Combining modern and palaeo niche space, how might relic conifers respond to future climate change?
- 2) What sort of conservation strategies are necessary for relic conifers with anthropogenic climate change?

**Project Description:**

Understanding how individual plant taxa will respond to climate change is critical for conserving biodiversity. This is especially true for trees with relict distributions, vulnerable to endangered status or monotypic members of genera and families. In this project you will have the opportunity to investigate how conifers, with former widespread biogeographical distributions, responded to past climate change and how their habitable space will be determined by ongoing anthropogenic climate change.

In the Cenozoic, many conifers had much broader biogeographical distribution that has been attributed to warmer and wetter climates. The successful candidate will have the opportunity to investigate this hypothesis in detail and determine specific controls for each taxon, generating new knowledge of relevance to ecologists, palaeoclimatologists and conservationists.

During this project the successful candidate will generate new palaeobotanical data from the field, work with museum collections, secondary data and ecological niche models. This can be a full study of the Cenozoic, or a higher-resolution investigation of a specific time interval of interest. The successful candidate will have the chance to work with the supervisory team to further develop their ideas and interests in this field.

**Prerequisites:**

Full training and support will be provided throughout the project. A background in geology, palaeontology, botany, environmental science or other related discipline would be beneficial.

For more information, please contact Matthew Pound ([matthew.pound@northumbria.ac.uk](mailto:matthew.pound@northumbria.ac.uk)).