



Scottish Forests (Tree Biomass) Project Assistant

Future Leaders Programme 2024

Application form: <https://forms.office.com/e/AjrD52Bani>

Application deadline: 11:59pm GMT on Monday 11 March 2024

Position with: [Centre for Landscape Regeneration](#), University of Cambridge

Manager: Will Flynn, Department of Plant Sciences

Location: Cairngorms, Scotland*

*Please note that all project assistants on the Future Leaders Programme must be in person in Cambridge for the week commencing 15 July and the week commencing 2 September.

Programme dates: 15 July to 13 September 2024

Project Overview

Forests are a significant carbon sink and account for half of the terrestrial carbon globally. The measurement of forest carbon in the Scottish Cairngorms is of importance as forest restoration can mitigate climate change, while increasing biodiversity and providing long-term benefits to people and nature.

Forest carbon estimates are typically obtained by multiplying individual tree biomass by an assumed fraction of carbon. This means that, while accurate quantification of individual tree carbon is important to understand the role of forests in mitigating climate change, it is rarely measured directly.

Usually, biomass is estimated by connecting easily measurable characteristics, like simplified structure, to traits that are more challenging to measure (biomass). To improve these models, calibration of specific species or sites is required. One solution for calibration is measurement through destructive sampling however these often favour small trees and rarely include endangered, old growth or repeat measurements, leading to bias and a critical knowledge gap, as the scalability of this method remains uncertain.

This project will generate new measurements of carbon using high-resolution remote sensing. Combining landscape-scale 3D data with direct field measurements of tree height and diameter to produce a highly accurate, spatially explicit map of forest carbon over multiple habitat types across a sequence of forest regeneration. These new data will fill a critical carbon knowledge gap.

Specifically, the project assistant will be undertaking:

- Measurements of individual trees; inc. location, tree height and crown width.
- Using these data to calculate above ground biomass and carbon storage.

- Scaling these equations to the landscape scale using airborne LiDAR and/ or satellite data.

This research project will involve extensive fieldwork in the Cairngorms throughout the placement. You will be part of a small team working in the field. You should be willing to be outdoors for long periods, possibly in adverse weather conditions. We are committed to ensuring an inclusive approach to fieldwork.

We strongly encourage and welcome applications from those who are reflected in widening participation criteria below, as part of our commitment to improving diversity and inclusion and widening access to conservation and environmental science careers.

- Those who come from an under-represented ethnic group
- Those who are care experienced
- Those who have been granted refugee status in the UK
- Those who are estranged from both primary carers (e.g. both parents/carers)
- Those who were eligible for the 16-19 Bursary/ Pupil Premium and/or those who were in receipt of Free School Meals
- Those who are a young carer, defined as being the primary carer for a parent or sibling
- Those who have experienced disruption to their education, for example due to health issues, family circumstances or homelessness.

Person Specification

Essential criteria

- Applicants must have a knowledge of climate, conservation and/or environmental issues as well as a passion for the subject.
- You should be willing to work in the field under variable weather conditions.
- Good analytical skills; able to collate, understand and draw conclusions from quantitative and qualitative information.
- Good interpersonal skills; confident in meeting and working with people from a range of backgrounds and disciplines.
- Well-developed organisational and timekeeping skills and the ability to manage projects.
- Ability to prioritise own workload and plan effectively as part of a small team.
- Competent in standard software packages e.g. Word, Excel, Powerpoint.

Desirable criteria

- Studying, or have completed a degree in a relevant subject such as conservation, environmental sciences, biological sciences or similar.
- Knowledge, for example as part of your studies, of forest ecosystems, carbon storage, forest biomass measurement and/or habitat restoration would be beneficial
- Previous field work experience, for example as part of your studies, is desirable.

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