



Two Arctic Postdoctoral Researcher positions at the University of Eastern Finland

We look for two motivated postdoctoral researchers to join the project “*Land use as a modulator of land cover transitions and the ecosystem–atmosphere carbon balance (LANDMOD)*” that is associated with the Digital Geosciences Research Group at the University of Eastern Finland (Joensuu campus). LANDMOD is a multi-disciplinary project unraveling the impacts of land use on land cover changes and their consequences for the climate. We particularly look at reindeer management strategies as the type of land-use and focus on depicting land cover differences on wetlands. Our main objectives are 1) to contribute understanding of the rates, magnitudes and mechanisms of land cover changes under different reindeer management strategies and 2) to quantify how the differences in land cover reflect on the release and uptake of CO₂ in a landscape level. Besides estimating the impact of land use today, we will also estimate the influence of past land use on the cumulative carbon balance. With these approaches, the project will contribute understanding on how and why the rates and magnitudes of land cover transitions vary at high-latitudes in northern Fennoscandia, and how these feedback to the atmosphere.

In the project, we open two two-year postdoctoral researcher positions:

1) Postdoctoral Researcher in Remote Sensing

The postdoctoral researcher will be in charge of creating a detailed map of wetland vegetation under the contrasting reindeer grazing regimes, and by retrospectively examining past changes in land cover under the two grazing intensities through the use of satellite archives. The researcher will make use of available remote sensing imagery (e.g. Landsat, Sentinel-2, WorldView-3 and false-color aerial photographs) and collect and process new land cover data using unmanned aircraft systems (i.e. applying structure-from-motion methods and photogrammetry). Vegetation identification skills will be a merit. According to personal preference, the postdoctoral researcher will be provided the possibility to apply collected data in dynamic vegetation models (*ArcVeg*) or apply hyperspectral data classification and analysis to gain information on plant status. Besides LANDMOD activities, the postdoctoral researcher will be provided the opportunity to participate in the activities of an EU Horizon2020 funded project “Feedbacks and Drivers of Changes in Arctic Terrestrial Biodiversity (CHARTER)” led by Prof Bruce Forbes, University of Lapland.

2) Postdoctoral Researcher in Ecosystem-Atmosphere Biogeochemistry

The postdoctoral researcher will be in charge of performing ecosystem-atmosphere carbon exchange and energy balance measurements using a combination of eddy covariance technique and chamber measurements. The postdoctoral researcher will process ecosystem-scale carbon dioxide, latent and sensible heat fluxes, albedo and short-and long-wave radiation balances collected with the eddy covariance technology and calibrate these fluxes with ancillary data and plot-wise carbon exchange measurements from the same field site and from further areas across northern Fennoscandia. Experience in the processing of eddy covariance data will be required.

Both postdoctoral researchers will take part in an international research team and collaborate with Timo Kumpula (University of Eastern Finland), Henni Yläanne (University of Eastern Finland / Lund University), Natascha Kljun (Lund University), Oliver Sonnentag (Université de Montréal), Christina Biasi (University of Eastern Finland) and Narasinha Shurpali (Natural Resources Institute Finland).

Qualifications

- PhD in the field of physical geography, remote sensing, earth system science or a related field (Position 1 in Remote sensing), or in atmospheric sciences, biogeochemistry, environmental sciences, ecology or a related field (Position 2 in Ecosystem-atmosphere biogeochemistry)
- The candidate must be excellent in spoken and written English
- Willingness and ability to travel extensively for fieldwork
- Driving license

Merits

- Experience in fieldwork in remote sites
- Experience in scientific publication, especially in English
- Experience with applying for and winning grants or other awards
- Experience in working independently and organising own work schedule to achieve a specific goal
- Experience in working successfully within a team and supervising student work
- Experience and an interest in interdisciplinary work.

The persons appointed to the postdoctoral researcher positions are required to hold doctoral degrees which may not have been completed more than five years ago at the time of accepting the position. In this context, the 5 years refer to a net period of time, which does not include maternity leaves, parental leaves or military service etc. If the applicant pleads to the above mentioned reasons, these need to be stated in the application.

The positions are filled initially **for a fixed term of two years from 1 May 2021 to 30 April 2023** (or as agreed) with a possibility of extension. According to UEF employment policy, a trial period of six months will be applied. The salary of the position is determined in accordance with the salary system of Finnish universities and is based on level 5 of the job requirement level chart for teaching and research staff (2 967.84 € / month). In addition to the job requirement component, the salary includes a personal performance component, which may be a maximum of 50% of the job requirement component.

The electronic application is required to contain the following appendices:

- Personal motivation letter, which states clearly which position the applicant is applying for (max two pages).
- CV and list of publications.
- Copy of the PhD thesis.
- Copies of the applicant's doctoral degree certificates / diplomas. Please also include copies of certificates / diplomas relating to the applicant's language proficiency, if not indicated in the academic degree certificates / diplomas.
- Contact details of at least two references.

The application needs to be submitted no later than **25 February 2021** (by 24:00 Finnish time) using the electronic application form.

For further information, please contact: Professor of Geography Timo Kumpula, Department of Geographical and Historical Studies (timo.kumpula@uef.fi) or Dr Henni Yläanne, School of Forest Sciences, University of Eastern Finland (henni.ylanne@uef.fi)

Link to applications and electronic application submission:

<https://www.uef.fi/en/open-positions>

https://rekry.saima.fi/certiahome/open_job_view.html?did=5600&jc=16&id=000010454&lang=en