

**Palaeo-climate modeller (Research Fellow): Peatlands**

# **Recruitment Pack**

**UHI | NORTH HIGHLAND**



# Summary

**JOB TITLE:** Research Fellow – Palaeo-climate modeller

**SECTION:** Environmental Research Institute (ERI)

**SCALE POINT RANGE:** £31,066-33,641

**TERM:** Fixed-term contract, 18 months

**START DATE:** Negotiable, available immediately

**PENSION:** Local Government Superannuation Scheme

**ANNUAL LEAVE:** 31 days + 14 days public holidays

**RESPONSIBLE TO:** Prof. Roxane Andersen

**CLOSING DATE:** 30<sup>th</sup> June 2023

The Environmental Research Institute (ERI) is part of UHI North Highland, Thurso, one of the academic partners of UHI. Our mission is to ‘provide dynamic leadership in research, innovation and education that advances understanding and informs management of our natural environment’. Located in Thurso, on the north coast of Scotland and close to many outstanding natural environments, the ERI is engaged in research, knowledge exchange and education across the areas of ‘energy’ (renewable energy and the environment); ‘pollution’ (understanding environmental contamination and developing sustainable solutions); ‘peatlands’ (linking carbon, water, biodiversity and climate) and ‘society’ (connecting environment, economy and society).

The ERI’s ‘Peatlands’ theme aims to study peatland resilience across scales and discipline boundaries. The team benefits from unrivalled access to The Flow Country peatlands of Caithness and Sutherland: covering 4000 km<sup>2</sup>, they represent largest expanse of blanket bog in Europe and a site of global significance. The Flow Country is also a changing landscape where large-scale restoration and infrastructure development are rolled out at pace, and where climate extremes like wildfires and droughts have become more frequent. Our research seeks to provide underpinning evidence that can drive changes in policy and practice to ensure a resilient future for the Flow Country peatlands and rivers, and a just transition for its people. We now seek to appoint a highly motivated Research Fellow to contribute to the ‘Peatlands’ theme. The post will provide an exciting opportunity to contribute to current projects.

The successful candidate researcher will be based at the ERI’s facilities in the centre of Thurso, and will contribute to teams at the ERI, UHI North Highland, and the UHI with the shared mission of having a “transformational impact on the prospects of our region, its economy, its people and its communities”.



## Palaeoclimate modeller (Research Fellow) : Peatlands

### Job Description

The successful candidate will contribute to the delivery of the Work Package “The Future of Blanket bogs” from the Leverhulme Leadership Award “*Developing a new understanding of blanket bog resilience: from molecules to landscapes*”. This will include:

- + Delivery of peatland research combining field-based and modelling to assess how peatland biodiversity and processes respond to the compounding effects of land use and climate change, including droughts and wildfires.
- + Contribution to the development of innovative solutions where peatland management can support climate change mitigation, economic growth, circular economy and just transition for rural highland communities.
- + Contribute to development of ERI’s portfolio of peatland research, through input in formulation of new ideas, grant capture and KE activity.
- + Contribute to the publication of work in high impact peer-reviewed journals an important element of the University’s next REF submission.
- + Contribute to teaching activity at undergraduate level on field and monitoring skills.
- + Where appropriate contribute to knowledge exchange and external engagement activity.



# Key Duties

## Research:

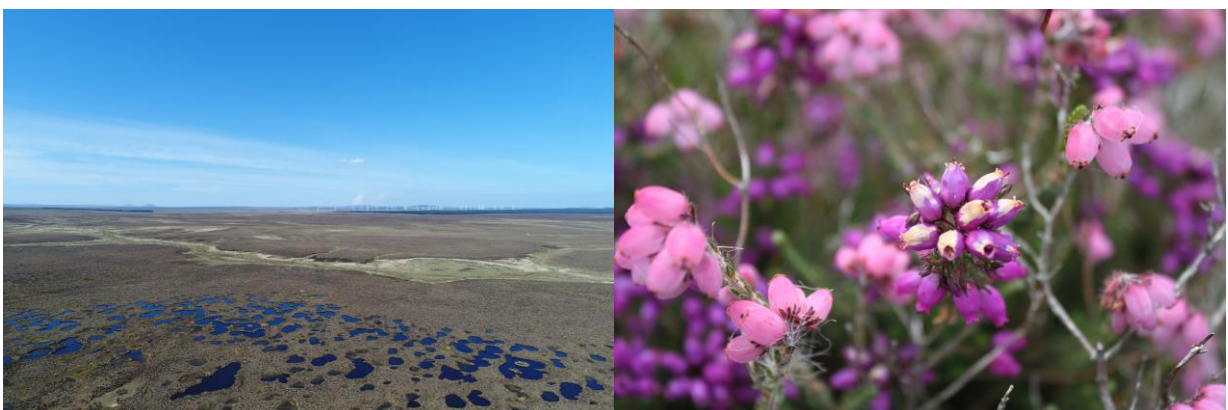
- + To use a combination of palaeoecological techniques and climate modelling approach(es) to help predict how blanket bog processes and distribution may respond to the combined pressures of land-use and climate change.
- + To generate internationally recognised outputs of originality and scientific insight
- + Contribute to income generation at the ERI through grant capture, commercial activity or knowledge exchange activity in line with strategic objectives.
- + To seek opportunities to contribute to project development and supervision of UG and MRes students.

## Networking and engagement:

- + To seek to contribute to outreach and public engagement activities within ERI
- + To build new collaborations and partnerships in response to emerging challenges or opportunities.

## Teaching:

- + Contribute to relevant modules within the Environmental Science programme or other relevant programmes and courses.



# Person specification

## Required

We welcome applications from candidates with PhD degree in Environmental Sciences or equivalent experience in relevant disciplines including Archaeology, Biology, Geography, Applied sciences, etc.

Candidates should be able to demonstrate evidence of:

Experience of applying palaeoecological techniques relevant to peatland research within multi-disciplinary teams

Experience can be exemplified by:

- + Research outputs (papers, presentations, etc.)
- + Research grants and/or knowledge exchange and innovation activity
- + Contribution to postgraduate supervision
- + Commercial or consultancy work

Applicants should have:

- + Relevant field and laboratory skills such as peat coring, sample preparation for radiocarbon dating, microscopy, etc
- + Good IT skills, including basic data curation and wrangling skills
- + A willingness to live within commutable distance of Thurso to access field sites and laboratory facilities
- + Effective communication skills (oral and written) and comfortable interacting with students and staff as well as external stakeholders, so must be self-disciplined, well organised and able to present themselves in a professional manner with the ability to prioritise a busy and varied workload

## Desirable:

- + Knowledge and understanding of peatland processes and attributes
- + Experience of peer-review publication process
- + Basic GIS and modelling skills (e.g. bioclimatic envelope models, etc)
- + Data analysis (e.g. multivariate) and coding skills (e.g. R, Python, Matlab)
- + Full clean driving licence



# About the area

## Caithness & Sutherland

The North Highlands is home to Scotland's most famous drive - the North Coast 500, and to one of our most famous destinations - John O'Groats. It is no surprise that when people discover Caithness and Sutherland they want to stay.



The landscape is breath-taking, featuring iconic mountains and flat rolling moorlands. High tech companies sit side-by-side with vibrant, innovative SMEs. The area is also home to Scotland's portal to the final frontier. The A'Mhoine Peninsula will become the UK's first space port, from where rockets carrying satellites will be launched into space in the near future.



Back on earth, the Beatrice offshore wind project, based in Wick, is a leading example of development in the green energy sector, with the recent ScotWind plans announced around the coast of Scotland. Decommissioning of the former nuclear power plant at Dounreay has seeded many supply chain opportunities in the region. Rolls Royce, Subsea 7 and BT are among the global companies investing in employment in the far north of Scotland.



With the world famous Royal Dornoch golf course and an internationally recognised surf spot around the Thurso East reef, the area is a draw for outdoor sports enthusiasts. With beautiful beaches and bays, wildlife, high hills and big skies, the region of Caithness and Sutherland has much to offer.

# Thurso



Thurso (population c. 8000) is a long-established town with origins dating back to Viking times when it was an important Norse settlement, the major gateway to mainland Scotland (its name comes from the Norse, from *Thorsa* meaning *Thor's River*). Thurso later grew to become a market town and was noted for its trade with Scandinavian and Baltic ports from as early as the 14<sup>th</sup> century.



Situated on the Pentland Firth in the beautiful, sheltered Thurso Bay it is the most northerly town on the Scottish mainland. The bay sweeps from Holborn Head in the west to Dunnet Head in the east. Thurso has a fine harbour, beach and looks out over the Firth to the Orkney Island of Hoy and the famous towering Old Man of Hoy (a 449-foot sea stack on Hoy). Just west of Thurso lies Scrabster, the main ferry port for Orkney.

For a town of its size, Thurso has numerous amenities including:

- A vibrant local shopping centre
- Three primary schools and one secondary school, and a college of further and higher education (UHI North Highland)
- Several hotels, lively bars and restaurants
- Leisure facilities including gyms and a swimming pool, tennis & squash courts, yoga studio, and a cinema
- Clubs and societies including dancing, drama, walking, kayaking, surfing, sailing, music, community greenhouse, etc.
- Railway, bus, ferry connections and Wick airport within 30 minutes

## Further information

[Things to do | Venture North \(venture-north.co.uk\)](https://venture-north.co.uk)

[Things to Do & Tourist Guide, North Caithness | Venture North \(venture-north.co.uk\)](https://venture-north.co.uk)

[Venture North Discovery: Summer in Caithness & Sutherland - YouTube](https://www.youtube.com/watch?v=...)

[Venture North to Caithness & Sutherland - YouTube](https://www.youtube.com/watch?v=...)

# Key Terms and Conditions of Employment

Hours of Work	A full-time working week is one of 35 hours. This may include evening and weekend work, where required.
Holidays	A full year's holiday entitlement is 31 days. In addition, there are 14 days public holidays of which 10 are taken at Christmas and 2 at Easter, the remaining 2 are treated as floating.
Salary	To be negotiated within advertised range, i.e., £31,066-33,641 (Research Fellow)
Location	The position is planned to be based at the ERI in Thurso although you may be required to work from other sites as appropriate to the duties.
Pension	You will be contractually enrolled into the Local Government Superannuation Scheme. Further details are available on joining.
References / PVG Scheme	For external candidates, appointment will be subject to references and admission to the PVG Scheme.





# Further information

The following websites may be useful in providing further information.

**The University of the Highlands and Islands:** <http://www.uhi.ac.uk/>

**UHI North Highland:** <http://www.northhighland.uhi.ac.uk/>

**The Environmental Research Institute (ERI):** <http://www.eri.ac.uk/>

The ERI's Strategic Plan 2022-25 is provided as an attached document to this pack. Key elements of the strategy are presented below.

For further information on this position, please contact Prof. Roxane Andersen, leader of the ERI's 'Peatlands' theme: [roxane.andersen@uhi.ac.uk](mailto:roxane.andersen@uhi.ac.uk).

## Completing the Application Form

Please read the application form thoroughly and complete it electronically (preferred) or in black ink. Please ensure that you complete all sections.

Where answers require additional detail, this should be provided on a continuation sheet and attached to the form.

**A current CV and covering letter should also be provided in addition to the application form.**

The information that you provide in your application form & other supporting information is the only information we will use in deciding whether or not you will be short listed for interview. Your application will be treated in the strictest confidence.

## References

Please give the name, address, telephone number and email address (if known) of two referees, including your existing or last employer, to whom reference may be made in support of your application concerning your professional ability and performance at work. References will only be taken up for short-listed candidates.

Please ensure your referees are able to respond promptly as no appointment will be made without receipt of satisfactory references.

Please note that any offer of employment will be conditional upon receipt of satisfactory references from your current/last employer or academic institution, unless advised otherwise.

# Submitting your application

Completed applications must be returned by the closing date indicated Applications (preferably by e-mail) should be sent to [NHCHR@uhi.ac.uk](mailto:NHCHR@uhi.ac.uk)

Or: Human Resources, North Highland College-UHI, Ormlie Road, Thurso, Caithness, Scotland KW14 7EE.

We will acknowledge receipt of completed applications by e-mail. Written acknowledgement of completed applications will only be provided where requested and where a stamped addressed envelope is enclosed with your application for this purpose.

We will contact you concerning your application once shortlisting has been completed.

## Key dates

The closing date for receipt of applications is 30<sup>th</sup> June 2023.

Interviews are planned for 10<sup>th</sup> July 2023 onwards.

Initial interviews may be conducted online.

Starting date for successful candidates: Starting date may be negotiated – the position is available immediately (subject to receipt of satisfactory references and securing PVG Scheme membership via Disclosure Scotland).

# Our Strategic Aims

- + To develop and sustain a vibrant and dynamic centre of excellence in the environmental sciences that is valued in the region and recognised internationally
- + To advance the UHI and UHI North Highland missions of having a 'transformational impact on the prospects of our region, its economy, its people and its communities'.
- + To make an effective contribution to the portfolio and strategic priorities of UHI North Highland in Research, Learning & Teaching and Partnerships.

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## Research:

To develop a vibrant culture of research that is recognised for its regional impact & international excellence.

Specific ERI aims:

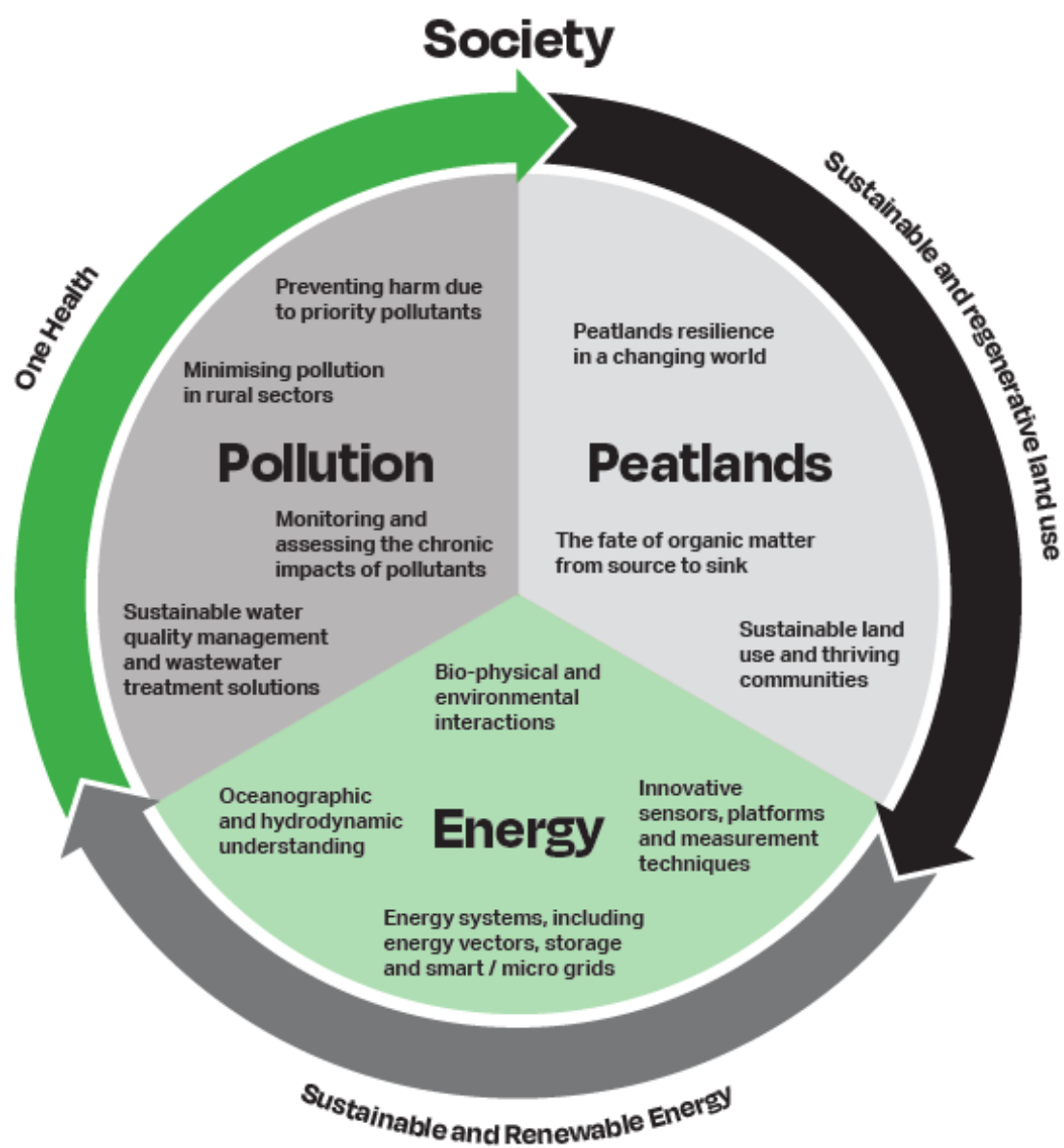
- + To address key environmental issues impinging upon environment, economies, societies and cultures of the Highland and Islands region and comparable regions around the world.
- + To undertake environmental research that generates outputs of an internationally recognised standard.
- + Ensure that our key stakeholders are engaged and informed and that our research is accessible and valued.



# Our Themes

ERI activity is focused on the following issue-driven, interdisciplinary themes:

- + **Energy:** Renewable energy and the environment
- + **Pollution:** Understanding environmental contamination and developing sustainable solutions
- + **Peatlands:** Linking carbon, water, biodiversity and climate
- + **Society:** Connecting environment, economy and society



# Peatlands

## Linking carbon, water, biodiversity and climate

Peatlands may cover about 3% of the global land area but contain 25% of the global soil carbon stock: that is twice the amount found in the world's forests. In Scotland, peatland soils cover around 20% of the land area holding an estimated 1600 million tonnes of carbon and the Scottish Government's climate change plan 2018-2032 update aims to restore at least 250,000 hectares of degraded peatland by 2030.

Healthy peatlands act not only as important carbon sinks, but contain rich habitat and biodiversity, including a wide range of threatened and endemic species; improve water quality and reduce flooding risk; and provide grazing land and recreational spaces.

The ERI benefits from unrivalled access to The Flow Country peatlands of Caithness and

Sutherland: covering 4000 km<sup>2</sup>, they represent largest expanse of blanket bog in Europe and a site of global significance. The Flow Country is also a changing landscape where large-scale restoration and infrastructure development are rolled out at pace, and where climate extremes like wildfires and droughts have become more frequent.

Our research seeks to provide underpinning evidence that can drive changes in policy and practice to ensure a resilient future for the Flow Country peatlands and rivers, and a just transition for its people. The ERI also facilitates access to the Flow Country for researchers from across the UK and abroad and coordinates the Flow Country Research Hub, a network of >60 organisations and stakeholders with an interest in the Flow Country peatlands.

## Our priorities are:

### Peatlands resilience in a changing world -

Using a combination of field-based monitoring, controlled experiments, remote-sensing and modelling to assess how peatland biodiversity and processes respond to the compounding effects of land use and climate change, including droughts and wildfires.

Working across disciplines and scales to build evidence on the nexus of environmental and societal changes associated with peatland management.

**The fate of organic matter from source to sink** - Using a range of field and lab-based techniques to characterise organic matter and to measure carbon exchange between the terrestrial pool, freshwater ecosystems and the atmosphere.

Applying analytical chemistry to assess how land use change on peat-dominated catchments (restoration, wind farm construction) alters water quality and biodiversity in freshwater systems.



**Sustainable land use and thriving communities** - Contributing to the development of innovative solutions where peatland management can support climate change mitigation, economic growth, circular economy and just transition for rural highland communities.

Providing expertise to assess the economic and societal impacts linked with peatland degradation, restoration, and conservation, from the local scale to the international context.