



## WELSH GOVERNMENT RESEARCH FELLOWSHIP OPPORTUNITY

<b>Research Project Title/Question</b>	<b>Soil Functions Map for Wales</b>
<b>Department</b>	Climate Change & Rural Affairs – Soil, Peatland and Agricultural Land Use Policy Team
<b>Contact Name</b>	Name: James Cooke  Role: Agricultural Land Use & Soil Policy Manager  Email: researchplacements@gov.wales
<b>Proposed start date</b>	October 2024 - January 2025 Depending on availability, contract negotiations and pre-employment checks)
<b>Duration</b>	6 months (with a possibility of a 6 month extension)
<b>Funding</b>	The post will be funded by Welsh Government via a contract with the host university and subject to agreement of project costings submitted by the applicant. Indicative budget of £22 - £42K per 6 months period depending on experience.
<b>Working arrangements</b>	Welsh Government supports 'Smart Working'; working remotely while also enabling people to come together in an office environment to connect and collaborate where that is beneficial. The successful candidate will be expected to work remotely with periodic attendance at meetings in Welsh Government Offices when relevant and required.  The Fellowship opportunity will be part-time (2-3 days a week) for an initial 6 month period from October 2024, with the possibility of a 6 month extension. <b>Working pattern will need to be submitted with the application.</b>  Access to relevant WG advisors, analysts and policy colleagues will be available to support this role, as well as access to wider UK Government and academic science networks.

## RESEARCH SPECIFICATION

### Summary of the policy area

The Welsh Government Soil, Peatland and Agricultural Land Use Policy Team is seeking to recruit a Research Fellow to work with the team to develop a project specification for the development of a Soil Functions Map of Wales. The Welsh Government would welcome applications from candidates who meet the required skill set including early career researchers who have recently completed PhD/ postgraduate and non-academics.

The map will allow specialists and non-specialists to understand and quantify the impact of land use and policy decisions on a range of soil functions.

Soil is a vital but finite resource that sustains life and provides crucial ecosystem functions to society. These functions include food, fibre, water and important contributions to climate regulation, biodiversity and protection from natural disasters. Where there are competing and conflicting demands on our soils and land use, it is important that any potential trade-off of soil functions is considered in the balance of decisions. This is key to meet the requirement of the sustainable management of our natural resources (SMNR)<sup>1</sup>.

### Summary of the research area and policy context

<sup>1</sup> Env Act and NRP <https://www.gov.wales/sites/default/files/publications/2019-06/natural-resources-policy.pdf>

To support and balance land use decisions where there are trade-offs between the delivery of soil functions and competing demands on land use, we will be commissioning a project to develop a map of soil functions for Wales. Understanding the spatial distribution of different soil functions across Wales, enables informed and balanced considerations by decision makers to ensure soil functions are not unduly compromised by different decisions. The map will be developed by an external contractor, through a project commissioned by Welsh Government Soil, Peatland and Agricultural Land Use Policy Team.

We are looking for an experienced researcher with substantial expertise in creating, interpreting and using environmental spatial data, and a good understanding of soil functions, to develop the project specification. The successful research fellowship candidate will have previous experience in this area (nationally / internationally) and excellent project development and management skills, be proficient in using GIS, and able to appreciate different user needs and how to present complex information for diverse audiences (policy makers, general public and academics). Previous experience of project management is essential. Following development of the specification and completion of this Fellowship placement, an indicative procurement budget for the development of the map is expected to be £90,000. The Fellowship will inform whether the budget estimate requires revision.

An important objective of the project is to ensure a range of users are able to understand and quantify the impact of land use and policy decisions on a range of soil functions. It is expected the map will be used mainly by policy and decision makers, planners and developers, but would also be of interest to academic research and the public. The Soil Functions Map should allow users to monitor and report against natural resource commitments and assess the impacts of policy decisions.

Familiarity with land policy in Wales will be important in developing the specification. For example, any planning applications and development plans in Wales need to be in general conformity with [Future Wales: The National Plan 2040 | GOV.WALES](#). It may be necessary to consider weighting scores, where it will be necessary to consider the relevance of Policy 9 Future Wales and the resilience of ecosystem functions and services.

Welsh Government have commissioned a scoping study to identify relevant data sets, work undertaken in developing soil functions maps to date (internationally), and any data gaps. The collated report will be available to the successful candidate to inform the development of the project specification.

The completed map is expected to be hosted on Data Map Wales. The successful candidate will be required to work with colleagues in NRW, Planning Directorate, Farming Connect etc. on, for example, outlining the project specification parameters for interpretation and a user guide.

This Fellowship is solely in relation to developing a specification for the development of a Soils Functions Map for Wales. There may be an opportunity to extend the Fellowship to include the management of the development of the map with the successful contractor, subject to future funding and timescales.

#### **Outline of Project Activities**

Welsh Government is seeking to develop a Soil Functions Map for Wales.

Welsh Government have commissioned a scoping study to identify relevant data sets, work undertaken in developing soil functions maps to date (internationally), and any data gaps –The collated report will be available to the successful candidate to inform the development of the project specification.

The existing digitised resource of relevance to this project has been reviewed as part of the scoping study. This resource includes the following (links included in Annex 2):

- Soils of Wales Map (CSCP02) – (data under licence, LandIS)
- Peatlands of Wales Map - SPEP2020/21-03 (data partly under licence and partly OGL).
- NSI / Landis – Cranfield
- Predictive ALC Map (2019)
- Digitised ALC survey information (Welsh Government OGL)

- [Land Use / LPIS]

The successful applicant will initially be required to review the findings of this scoping study and identify any necessary further research. The successful applicant will develop the specification and project plan.

It is envisaged that the map will initially focus on 2-3 key soils regulating functions as a starting point: e.g., carbon and water storage capacity of soils. Both are important proxies /indicators of sustainable soil management and are key regulating functions for wider society.

The map, and methodology behind its production, will need to be able to accommodate future additions/functions (regulating, provisioning, and updates/datasets to ensure information is the best available and current). The map will need to provide a clear and easily interpretable visual value and spatial distribution of a selected function(s). The methodology will need to define how individual soil functions combine/link to benefit wider society (e.g. flood management, climate regulation, ecosystem resilience/biodiversity, water quality, primary production, nutrient cycling, etc.). The map will need to reflect the range/capability/index [High, Med, Low] of function delivery as well as geographic distribution. Weighted scores will need to be provided for areas of multiple functions value and size.

The successful candidate, working with the project steering group, will be responsible for the following key activities:

- Review findings of contractor’s data set review, identify data gaps and any necessary further research.
- Discuss and agree with the steering group the structure of a base soil data/map (i.e. by soil series, association or a broader / higher classification groups).
- Develop the specification for the Soil Functions Map of Wales.
- Produce a project plan.

The successful applicant will also be expected to undertake the following activities:

- Engage with relevant organisations (NRW, Environment Agency, Natural England etc) to understand the issues and considerations around soil functions.
- Promote the findings to WG Departments (and others e.g. NRW, Defra) and invite discussion / feedback through face to face and virtual workshops.
- Act as key technical lead in the above process, in consultation with WG soil policy team and key NRW staff.
- Opportunities to contribute to similar projects e.g. Soil Policy Evidence Programme
- Engagement with WG Knowledge and Analytical services (KAS) and Behavioural Insights Group and other relevant groups within WG.

#### Proposed timetable

Review scoping study and develop specification October 2024/ January 2025 – March 2025/July 2025 depending on start date.

#### **Expected Project Outputs**

The successful candidate will be responsible for:

- Producing a detailed specification and project plan for the Soil Functions Map project by March 2025 (dependent on start date), supported by the Welsh Government Soils, Peatland and Agricultural Land Use Policy Team and other relevant actors.

Some indicative final outputs that could be included in the project specification for the Soil Functions Map project (to be delivered by the successful contractor) are given below:

- Collation, and evaluation of soil property data for Wales [and relevant climate data sets for the soil / climatic interaction].
- Develop a base soil properties map of expected range of soils functions [grouping]

- 2-3 Individual soil function ‘supply’ maps – visual and index/value score for each map.
- Soil functions distribution and ‘score’ map produced providing an overall aggregated rank and weight.
- Report for publication on methodology and approach and integration with the Soils Data Portal for Wales (under development – separate contract)

### Expected benefits to Welsh Government

The benefits of the role of the research fellowship are:

- Strengthening the relationship between academic research and government.
- Increasing soils expertise in government.
- New ideas/innovation from an experienced and innovative specialist.
- Recommendations that will inform decision-making associated with, for example, planning applications, agricultural policy, land use and management.
- Opportunity to demonstrate impact of research (e.g. REF impact) outside academia on society, public policy and the environment.

### Expected Benefits to the Research Fellow

- Strengthening understanding of the needs of government.
- The opportunity to sit on commissioning panel and evaluate tenders.
- Understanding the requirements of evidence in policy design and implementation.
- Understanding how government use analytical products for policy.
- The opportunity to contribute to how the impacts of policy can be measured.
- Closer working relationship with WG and the Soils Policy Group.
- Opportunity for a high-profile Research Excellence Framework (REF) impact case.
- Opportunities to go out on site visits to inform practical considerations.

### Welsh Government Support

The successful applicant will be supported throughout the research programme by working within the Soils, Peatland and Agricultural Land Use Team and regular engagement with the Soils Evidence Group (working group between WG and NRW). We will agree regular opportunities to review progress to an agreed work plan and generally support the individual to achieve a successful outcome and rewarding experience. There is also opportunity to commission some supporting evidence projects to support the development of the Map via the Soil Policy Evidence Programme (SPEP).

The successful applicant will be expected to provide their own IT equipment.

### External Stakeholder Engagement

The successful candidate will be invited to become a member of the WG/NRW Soil Evidence Group for the duration of the role (meeting monthly).

There may be opportunities to work collaboratively with colleagues in Defra on some aspects of the Fellowship.

Engagement with NRW, Natural England, Environment Agency etc to understand ways in which soils functions are approached in their work and considerations for functions map.

Liaison with academia via you own networks and those facilitated by [Environment Platform Wales](#) would also be expected.

## PERSON SPECIFICATION

### Education

- PhD/post-doc/Early career academic or equivalent experience

### Experience

- Experienced researcher with substantial expertise in creating, interpreting and using spatial data.
- Proficient in using ARC GIS.
- Understanding of soil functions and services, especially in Wales.

- Experience of directing, management and delivery of research projects.

### Skills / Abilities

- Able to appreciate different user needs and how to present complex information for a wide audience.
- Excellent communication skills and able to present to different audiences.

### Personal Attributes

- Creative thinker
- People person
- Excellent communicator

Applicants can be at any career stage but are expected to have a PhD by the start date of the Fellowship position or be able to demonstrate equivalent professional experience gained in a stakeholder organisation.

Applicants with a permanent academic position (or equivalent in institutions other than universities) are also eligible.

Applicants will not be employed by Welsh Government and will remain under the terms and condition of the host University. The Welsh Government will enter a contract with the employer (host university).

The applicant must be the Principal Investigator and may only submit one proposal to this specification. Co-Investigators or other named researchers are not eligible.

## WELSH GOVERNMENT COMMITMENTS

### Equality & Diversity

The Welsh Government is committed to providing services which embrace diversity, and which promote equality of opportunity. This is underpinned by the Equality Act 2010 and will be adhered to at each stage of the recruitment process. Our goal is to ensure that these commitments are also embedded in our day-to-day working practices with all our customers, colleagues and partners.

We are committed to being an anti-racist organisation and increasing diversity in the Welsh Government by removing barriers and supporting all our staff to reach their potential. We are committed to recruiting Black, Asian and Minority Ethnic people and disabled people who are currently under-represented in Welsh Government.

We welcome applications from everyone regardless of age, marriage and civil partnership (both same sex and opposite sex), impairment or health condition, sex, sexual orientation, pregnancy and maternity, race, religion or belief, gender identity or gender expression.

We are a Stonewall Diversity Champion and a Disability Confident Level 3 (Leader) organisation. Key to supporting this work and providing peer support are five Board sponsored Staff Networks (Disability Awareness and Support (DAAS); Minority Ethnic Support Network (MESN); Mind Matters (Mental health and well-being); PRISM (Lesbian, Gay, Bisexual, Transgender, Intersex +) and Women Together.

### Disability Confident

The Welsh Government has adopted the social definition of disability, in which it is recognised that barriers in society act to disable people who have impairments or health conditions, who are neurodivergent or who use British Sign Language. We are committed to removing barriers so that all (or potential new) staff can perform at their best.

We guarantee to interview any disabled person who meets the minimum criteria for the post. By 'minimum criteria' we mean that you must provide us with evidence, at each stage of the assessment process before interview, which demonstrates you generally meet the job description requirements. We are committed to the employment and career development of disabled people.

If you have an impairment or health condition, or use British Sign Language and need to discuss reasonable adjustments, or wish to discuss how we will support you if you are to be successful, please contact: Simon Baldwin Head of Research And innovation: [Simon.Baldwin@gov.wales](mailto:Simon.Baldwin@gov.wales) as soon as possible to discuss your requirements and any questions you may have.

## Welsh Language Requirements

The Welsh Government is a bilingual organisation and Welsh language skills are considered an asset to the organisation. We encourage and support staff to learn, develop and use their Welsh language skills in the workplace.

## General Data Protection Regulations (GDPR)

This privacy notice tells you what to expect when you contact Welsh Government and provide us with your personal information: <https://gov.wales/welsh-government-privacy-notice#section-8567> All of the information you provide during the selection process will only be used for the purpose of progressing the application, or to fulfil legal or regulatory requirements where necessary.

## HOW TO APPLY

This Fellowship appointment process will be managed by Environment Platform Wales on behalf of Welsh Government. Applicants should submit the following documents in response to this research specification to [andy.schofield@epwales.org.uk](mailto:andy.schofield@epwales.org.uk)

1. Cover letter, CV and academic experience.
2. Overview of proposed approach to the development of a Soil Functions Map of Wales (max. 4 pages)
3. Letter of support from your academic institution Working pattern will need to be submitted with the application. It is likely the applicant will need to have a flexible approach to the working pattern working more or less days per week to meet the needs of the project.

### Deadline:

The deadline for submitting the above documentation is **14<sup>th</sup> August, 4pm (BST)**.

## ASSESSMENT PROCESS

The assessment process for applications will involve a two-stage process.

### **Stage One:**

Applicants may approach Welsh Government to discuss the specification in advance of their final submission. Please contact **James Cooke** via [researchplacements@gov.wales](mailto:researchplacements@gov.wales).

All applications received will be assessed by an Independent Expert Panel of Government researchers and users convened by Environment Platform Wales. The panel will make recommendations on those suitable to progress to stage two of the application process.

The assessment criteria to be used are as follows and **please note** are not weighted:

1. Understanding of the analytical needs of the host and an ability to grasp and respond to these effectively at pace
2. Subject matter or methodological expertise relevant to the requirements of the specific fellowship
3. The ability to translate complex information and analysis into meaningful narrative for a non-academic audience, verbally and in writing
4. An understanding of the challenges and opportunities of collaboration including with non-academics and the ability to design and lead activity that supports effective knowledge exchange between research and policy
5. Value for money including where relevant for wider institutional mentorship and support

The grading scale used at assessment stage is given at **Annex 3**

Applicants will be notified of the outcome of Stage One of the application process.

### Stage Two:

For applications that progress to Stage Two, applicants will be invited to attend an interview panel and present their proposed approach for further discussion with the panel.

All interviews will be undertaken via the Microsoft Teams platform and will be used to further probe against the assessment criteria.

It is anticipated that virtual interviews will take place during the weeks commencing 26<sup>th</sup> August and 2<sup>nd</sup> September.

All applicants will be notified of the outcome of Stage Two of the application process and provided with feedback on request.

- Welsh Government will use the recommendations of the interview panel along with the overall call requirements and the available budget in making the final funding decisions.
- Welsh Government reserve the right to use the recommendations to create a balanced portfolio for this Fellowship opportunity.
- Welsh Government Vetting Checks will be required to be carried out with the successful candidate prior to any appointment being made.

### FOR FURTHER INFORMATION AND BACKGROUND READING:

Useful documents to consider (not exhaustive):

#### Annex 1: Key Document Refs and Data Sources.

Document	Ref:	Report Link	OGL
Soils of Wales Map	CSCP02	<a href="https://www.gov.wales/soils-wales-map">https://www.gov.wales/soils-wales-map</a>	N
Peatlands of Wales	SPEP2020/21-03	<a href="https://www.gov.wales/production-peatlands-wales-map">https://www.gov.wales/production-peatlands-wales-map</a> <a href="https://datamap.gov.wales/maps/peatlands-of-wales-maps/">https://datamap.gov.wales/maps/peatlands-of-wales-maps/</a> <a href="#">Welsh Peatland Data Portal (arcgis.com)</a> <a href="https://naturalresources.wales/evidence-and-data/maps/peatland-data-portal-map-layers/?lang=en">https://naturalresources.wales/evidence-and-data/maps/peatland-data-portal-map-layers/?lang=en</a>	Y



ALC Predictive (2019)	CSCP03	<a href="https://www.gov.wales/predictive-agricultural-land-classification-map-production-version-2">https://www.gov.wales/predictive-agricultural-land-classification-map-production-version-2</a>  <a href="https://datamap.gov.wales/layers/inspire-wg:wg_predictive_alc2">https://datamap.gov.wales/layers/inspire-wg:wg_predictive_alc2</a>	Y/N (not soils property)
Water Storage Capacity of Soils – Scoping Study	SPEP2018/19-10	<a href="https://www.gov.wales/water-storage-capacity-soils-scoping-report">https://www.gov.wales/water-storage-capacity-soils-scoping-report</a>	
National Soil Inventory (Eng&Wal)	NSI	<a href="http://www.landis.org.uk/data/nsi.cfm">http://www.landis.org.uk/data/nsi.cfm</a>	N
Soilscapes		<a href="https://www.landis.org.uk/soilscapes/">https://www.landis.org.uk/soilscapes/</a>	N

## Annex 2

### Soil Policy Evidence Programme

Report Series Code	Report Title	Policy Area(s)
SPEP2018-19/01	Assessment of Welsh Soil Issues in Context	Soil/ BMV / Peat
SPEP2018-19/02	ALC Drought & Climate Calculators	BMV
SPEP2018-19/03	Historic BMV Loss	BMV / Soil
SPEP2018-19/04	Predicted Future BMV Loss	BMV / Soil
SPEP2018-19/05	Sustainability of BMV Agricultural Land (Wales) -Scoping Study	BMV / Soil
SPEP2018-19/06	Review of the Weight That Is Given to Best Most Versatile (BMV) Land by Local Authorities and National Policy	BMV / Soil
SPEP2018-19/07	Validation of the Predictive Map	BMV
SPEP2018-19/08	Habitat Suitability Modelling -Scoping Study	Soil
SPEP2018-19/09	Soil Loss into Water Review	Soil
SPEP2018-19/10	Water Storage Capacity of Soils -Scoping Study	Soil
SPEP2018-19/11	Soil Resource Survey Programme	BMV/ Soil
SPEP2018-19/12	ALC Technical Review -Part 1	BMV / Soil
SPEP2018-19/13	Qualitative Research -Use of Models	BMV/ Soil
SPEP2019-20/01	Agricultural Practices Review -Mitigate Against GHG Emissions	Soil
SPEP2019-20/02	Tree Planting on Organo-Mineral Soils	Soil / Peat
SPEP2019-20/03	Identify Irrigation Needs & Associated Impacts	BMV/ Soil
SPEP2019-20/04	ALC Technical Review -Part 2	BMV
SPEP2019-20/05	Review of DEFRA Project SP1101 -National Carbon Monitoring	Soil / Peat
SPEP2019-20/06	Validation Assessment of the Predictive Land Quality Map	BMV
SPEP2019-20/07	Sea Level Rise & the Loss of High Quality Agricultural Land	BMV / Soil
SPEP2019-20/08	Land Use Change Statistics	BMV/ Soil
SPEP2019-20/09	Wind Farm Peat Data Project	Peat
SPEP2019-20/10	Peatland Restoration Standard Costings Report	Peat
SPEP2019-20/11	Peatland Condition Survey	Peat
SPEP2020-21/01	Grassland Suitability Scoring & Review	Soil
SPEP2020-21/02	ALC Technical Review -Part 3	BMV
SPEP2020-21/03	Peatland Mapping	Soil/ Peat
SPEP2020-21/04	National Soil Archive Digitisation	Soil / Peat
SPEP2020-21/05	ALC Technical Review -Part 4	BMV/ Soil
SPEP2020-21/06	Peatland Bulk Density Survey	Peat
SPEP2021-22/01	ALC Technical Review - Part 5 – Wetness and Workability	BMV/Soil
SPEP2021-22/02	ALC Technical Review - Part 6 – Scoping Study	BMV



CSCP01	Soil Data Digitisation	BMV/ Soil / Peat
CSCP02	Soils of Wales Map Development	BMV / Soil
CSCP03	Predictive ALC Map Version 2 Development	BMV / Soil
CSCP04	Predictive ALC Map Version 2 & Climate Change	BMV / Soil
CSCP05	Climate Change Impacts on Land Quality in Wales	BMV / Soil
CSCP06	Re-run of SP1104 with UKCP18	BMV / Soil
CSCP07	Digitising Welsh Farm Maps	Soil / Peat
CSCP08/1	Crop Requirements Report Part 1 (English)	Soil
CSCP08/2	Crop Requirements Report Part 2 (English)	Soil
CSCP09	Application of ALC and UKCP18 Data for Modelling Crop Suitability	BMV/ Soil
CSCP10	Applying ALC Data for Modelling Agricultural Flood Risk, Irrigation Suitability, and Suitability for Ecological Restoration	BMV / Soil / Peat
CSCP11	Problem Soils -New Techniques	Soil
CSCP12	Review of the Practical Implications of UKCP18 Scenarios	BMV / Soil / Peat

### Annex 3

## Welsh Government Research Fellowship Opportunity

Score	Description
<b>A score of 7 or above is a recommendation to consider shortlisting a proposal for interview. 10 is the highest score it is possible to give a proposal.</b>	
<b>10</b>	The proposal is <b>exceptional</b> in terms of overall fit to the person specification and assessment criteria. It <b>should definitely be shortlisted</b> on the basis of the applicant's skillset and research expertise.
<b>9</b>	The proposal is <b>outstanding</b> in terms of overall fit to the person specification and assessment criteria. It <b>should definitely be shortlisted</b> on the basis of the applicant's skillset and research expertise.
<b>8</b>	The proposal is <b>excellent</b> in terms of overall fit to the person specification and assessment criteria. It <b>could be shortlisted as a priority</b> but would benefit from some clarifications in interview.
<b>7</b>	The proposal is <b>very good</b> in terms of overall fit to the person specification and assessment criteria. It <b>could be shortlisted but not as a priority</b> and some clarifications in interview would be necessary.
<b>A score of 6 or below is a recommendation <u>not</u> to shortlist a proposal. 1 is the lowest score it is possible to give a proposal.</b>	
<b>6</b>	Overall, the proposal is <b>good</b> in terms of the overall fit to the person specification and assessment criteria but not of a consistently high quality. The proposal is not strong on all essential areas of the person specification, and clarifications in interview would be required to address these gaps. It <b>should not be considered for shortlisting</b> .
<b>5</b>	Overall, the proposal is <b>good</b> in terms of the overall fit to the person specification and assessment criteria but not of a consistently high quality. The proposal is weaker on multiple essential areas of the person specification, and significant clarifications in interview would be required to address this. It <b>should not be considered for shortlisting</b> .
<b>4</b>	The proposal has some strengths in terms of the person specification and assessment criteria. However, there are significant gaps that are not amenable to clarification in interview. The proposal is not of a consistently high quality and should not be considered for shortlisting.
<b>3</b>	The proposal is acceptable in terms of person specification and assessment criteria. However, there are consistent and significant weaknesses, and the proposal is not of a sufficiently high quality to be considered for shortlisting.
<b>2</b>	The proposal is acceptable on some assessment criteria but does not sufficiently fit the person specification and assessment criteria to be considered for shortlisting.
<b>1</b>	The proposal is flawed in its structure and content, does not fit with the person specification and assessment criteria, or is otherwise judged not worth pursuing.