JOB DESCRIPTION

JOB TITLE:	Data Analyst – ecological time series modelling
MANAGED BY:	Senior Environment Manager – nature recovery
GRADE:	9

ROLE OVERVIEW

Key accountabilities:	Identify, process, and manage historical data on the abundances of wildlife populations across the southwest of England. Model these abundance time series to understand how abundances are changing across space and through time.
Key relationships:	Project Manager, Ecologist, Bristol Regional Environmental Records Centre

THE ROLE

The West of England Mayoral Combined Authority (MCA) is seeking to appoint a Data Analyst/Scientist to work on an innovative approach to assessing the change in species abundance/biodiversity across the region. You will join the Combined Authority nature recovery team and be based predominantly at the Bristol University within the research group of Dr Chris Clements, with time also spent at the Bristol Environmental Records Centre and Unitary Authorities.

Reporting into the Senior Environment Manager for nature recovery and alongside a project manager and field ecologist, the data analyst will work with ecological data and contribute to evidence-based nature recovery. This is a Mayoral priority within the West of England's Climate and Ecological Strategy and Action Plan.

The role will be central to developing an index to assess the change in species abundances (biodiversity) in the West of England. This is a crucial measure needed to direct nature recovery investment and to help evaluate the effectiveness of nature recovery measures.

KEY RESPONSIBILITIES

The post is focused on two broad themes:

1) Identifying, processing, and managing historical data on the abundances of wildlife populations across the southwest of England.

- You will process and manage biodiversity abundance records to build and maintain a database which can be analysed to understand the current biodiversity crisis in the context of historic biodiversity change.
- This will involve seeking out new data and creating an open-access online resource where data on different species (location, abundance time series, red list status etc) can be visualised.
- This database will be updated as new data comes in each year from both national and local studies.
- This will necessitate close collaboration with Bristol Regional Environmental Records Centre and with a new field ecologist who will be setting up new long-term monitoring sites across the southwest.

2) Modelling these abundance time series to understand how abundances are changing across space and through time.

- To understand how biodiversity is changing regionally the data will be analysed using advanced statistical tools which account for the spatial and temporal complexity of biodiversity data.
- To do this you will fit Bayesian hierarchical models using the statistical language R and be able to interpret these and visualise these for the general public and policy makers.
- The outputs from these models will also be made available through the open access public data repository.
- You will suggest and learn new analytical tools which will help visualise and model these populations across space (e.g. gaussian random field models).
- Communicating the results of these models through conference talks, white papers, and in the scientific literature is also a key aim of this project.

PERSON SPECIFICATION

ESSENTIAL (MUST HAVE)

Qualifications and Knowledge

- Educated to degree level (with a strong analytical component) or with equivalent experience.

Experience

- Proficiency in data analysis and visualization tools (R)
- Experience with ecological or environmental data
- Very strong background in statistics (ideally Bayesian)
- Experience of communicating (written and oral) with a wide range of people, particularly external stakeholders, and of explaining technical/complex information in an easy-to-understand manner.

Skills and Competencies

- Highly organised with the ability to prioritise and focus on what is important and with the confidence to constructively challenge existing working practices.
- Ability to work individually with minimum supervision and as part of a multi-disciplinary team.
- Proficient numeracy skills.
- Fluent in using the R language for statistical computing.
- Proficient in the use of standard Microsoft Office products including Power BI.
- Good problem-solving skills and a willingness to continually learn.
- Able to manipulate and present data effectively.
- Knowledge of effective records management process and their application, particularly in ensuring files remain audit proof and that file security is upheld.
- Highly motivated with demonstrable experience of achieving personal objectives and contributing to the achievement of team objectives.

DESIRABLE

Qualifications and Knowledge

- Experience of working in a public sector organisation.
- Knowledge of data governance protocols including adherence to data quality standards and data protection legislation.
- Experience with database administration and SQL.