

## **WORK PACKAGE 1.3: BIODIVERSITY AND ECOSYSTEMS**

**The aim of Work Package (WP) 1.3 is to address key knowledge gaps in our understanding of the processes contributing to the functioning and resilience of our natural assets, in particular biodiversity. It will provide new approaches for focussing and delivering sustainable land management actions, and new metrics for monitoring the health of ecosystems and the services they provide.**

The science within WP 1.3 is relevant to a broad range of stakeholders from across multiple sectors, including Scottish Government, agencies such as the Scottish Environment Protection Agency and Scottish Natural Heritage, and environmental Non-Governmental Organisations. It aims to provide information on how biodiversity helps to regulate ecosystem functions, how environmental management can impact on biodiversity and ecosystem function, and how we can target management action to achieve the outcomes – including the delivery of ecosystem services – we want.

This WP addresses the challenge of protecting and restoring our natural capital – our biodiversity and ecosystems - by combining information on ecosystem function, delivery of benefits, resilience, and management practices. It links basic understanding of the ways in which ecosystems function – and how such functions relate to different components of an ecosystem's biodiversity – to the development of techniques for addressing and monitoring some of Scotland's major current conservation challenges.

Overall the work within the WP links to four integrating themes which run across Theme 1 (Natural Assets) of the Strategic Research Programme: the function, health and safe limits for natural assets; the resilience of natural assets; ecosystem benefits and services; and managing natural assets.

**WP 1.3 will deliver improved understanding of the processes contributing to the functioning and resilience of our natural assets, in particular biodiversity, through:**

- Delivering improved understanding of the linkages between biodiversity and ecosystem function.
- Providing improved capacity for targeted environmental management through the development of Ecosystem Health metrics, including understanding how the connectivity of ecosystems might affect ecosystem function.
- In-depth understanding of the impacts of selected management interventions (including restoration) on Ecosystem Service flows, and of associated trajectories of change.
- Investigating various components of resilience to provide information that will help predict the consequences of environmental and climate change on species, habitats and ecosystem health, and to manage them such that their resilience is enhanced.
- Research that helps Scotland meet biodiversity goals as set by the Aichi Targets, the EU Biodiversity Strategy and, specifically, the Scottish Biodiversity Strategy through considering management measures and potential options for safeguarding against biodiversity loss.

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