

SFT OUTCOMES 2023

IoT project aims to revolutionise peatland restoration

PRIMARY OUTCOME

07

PUBLIC ASSET CONDITION AND PERFORMANCE IS IMPROVED

SECONDARY

09

10

OUR CORPORATE PRIORITIES



NET
ZERO



SUSTAINABLE
PLACES



INCLUSIVE
GROWTH

Peatlands are incredibly special habitats, made up of highly adapted plant species and home to a range of rare and important wildlife. They absorb carbon from the atmosphere and lock it up in peat, which in turn helps tackle climate change.



In Scotland, peatland covers approximately 20% of Scotland's landmass and is vitally important to the environment as it stores 1.7bn tons of carbon – the equivalent of around 140 years of Scotland's annual greenhouse gas emissions.

However, it is estimated that 80% of this peatland is damaged and if this continues it will release a significant amount of CO₂ back into the atmosphere. This deteriorating nature of peatlands is a problem that impacts not only Scotland but ecosystems across the whole of Europe.

To help address the challenge, our Digital Connectivity team has been working with partners, FarrPoint, NatureScot Peatland Action, the Carloway Estate Trust, and Scottish Water with funding support from Scottish Government to develop a year-long trial by using an 'Internet of Things' (IoT) solution.

Monitoring peatland has traditionally been a manual task, with regular travel to monitoring stations in often remote locations and often on foot. Using an IoT solution to monitor peatland would provide real-time information to inform how restoration work impacts the health of the peatland.

The IoT sensors are currently gathering a baseline dataset prior to restoration of an area in the Western Isles by Peatland ACTION. Post restoration monitoring is also planned using the same technology.

The pilot – which picked up the 'Product/Service Innovation' award at the ScotlandIS 2023 Digital Technology Awards – used ten strategically placed IoT sensors to capture reliable real-time information.



Our team worked with the partners to design the pilot so that it could produce data that would lead to impactful change. The aim was to create a simple understandable use case that showed the benefit of IoT technology to addressing environmental problems and help improve operational efficiencies.

Connecting remote and rural areas with digital technologies can be extremely challenging, and whilst benefits have been shown for larger cities, this trial will create key learnings that can be applied to other remote regions of Scotland and Europe.

A comprehensive evaluation of the pilot found the technology could result in:

- A reduction in the cost of monitoring the peatland site
- A reduction in the environmental impact of monitoring by removing the need to travel to the site, as well as reducing the disruptive impact of visits on the natural peatland
- An improvement in the quality and timeliness of the monitoring data
- An enhanced ability to remotely monitor issues with sensors

Based on this success, NatureScot has now confirmed additional funding to allow the project to continue for another year, with a view to potentially rolling the technology out to other locations.