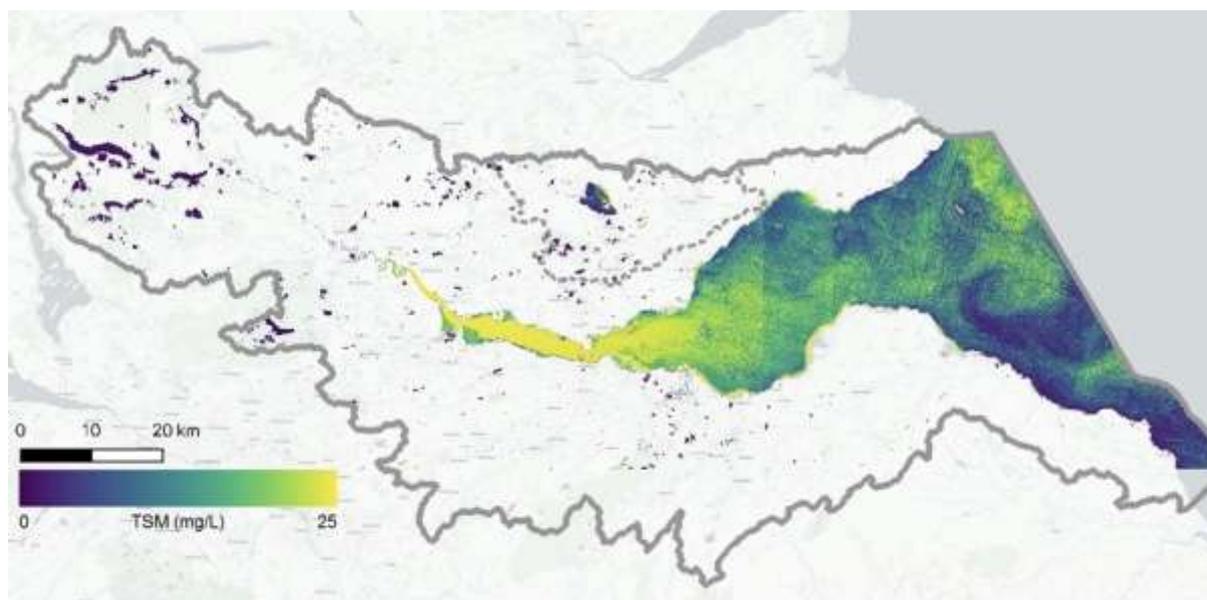


Forth is first with “living laboratory”

A state-of-the-art environmental monitoring system – the first of its kind - is coming to the River Forth catchment area and wider Firth of Forth coastal region.

The Forth Environmental Resilience Array (Forth-ERA) will be a world-leading “living laboratory” – capturing, processing and sharing data from across the Forth Region using 5G. It will use sensors, satellite data and artificial intelligence to provide vital information in real-time on water quality and other factors to inform decisions that could provide major economic and sustainability benefits to the area.



The multi-million-pound project, led by the University of Stirling in partnership with BT Group, is bringing together scientific research, business, environmental agencies, and regulation from the outset.

Forth Estuary Forum is introducing the first phase of the Forth-ERA project to its regional stakeholder network and has already attracted use case partners that will demonstrate the benefits and value of Forth-ERA across a range of business sectors as well as public authorities and conservation organisations. Other stakeholders already involved include SEPA (the Scottish Environment Protection Agency), Scottish Water, Diageo, Nature Scot, and Forth Valley Chamber of Commerce. EE, part of BT Group, recently switched on 5G in the Stirling area enabling the demonstrator phase to proceed imminently.

Professor Andrew Tyler, of the University’s Faculty of Natural Sciences, is leading the project. He said: “The Forth Valley played a major role in Scotland’s industrial revolution and we are excited about the part it will play in driving the next digital revolution and helping the just transition to a net-zero economy. This is the first project of its kind in the world – where we will use sensors,

satellites and artificial intelligence across a region to capture, process and push out environmental data to businesses and organisations through the 5G network.

“In phase one, working with BT and regional stakeholders, we will demonstrate how providing information on the quality and quantity of water across the continuum of inland to coastal waters can support and inform the actions of our project use case partners. In the long-term, it will provide benefits to businesses, organisations and communities across the region – supporting the local and national economy – and become a global exemplar, delivering a solution that can be easily scaled and replicated.”

The web-based software platform – designed by 3DEO – and toolkit will provide a single point of access to real-time environmental data and analytics for the region – facilitating world-leading scientific research, promoting more efficient environmental management and regulation, and stimulating business innovation in support of Scotland’s transition to a net zero carbon society.

Initially, the team will demonstrate how the platform can be used to: monitor water quality in drinking water reservoirs; provide near real-time forecasts of bathing water quality; provide early warning and monitoring of floods; and provide real time data on water temperature to help inform the brewing and distilling sector. Initially, the water quality monitoring element will span the full catchment of the River Forth, while the other cases will focus on the River Leven sub catchment.

In the medium-long term, the technology could be applied in a wide range of settings and across multiple sectors, including agriculture, fisheries, shipping and navigation, food and drink, biodiversity and conservation, oil and gas, renewables and low carbon, green tourism and heritage, local and national governance and public health.

As the project progresses, the team and Forth Estuary Forum will reach out to coastal and marine businesses and organisations with interests around the Firth of Forth, and similarly with Forth Valley Chamber of Commerce will engage with enterprises in the river catchment area.

Alan Lees, Director of BT’s Enterprise business in Scotland, said: “We’re excited to be powering this innovative project through our new 5G network in Stirling as technology partners. 5G will be a catalyst for a revolution in how technology supports people, enables workplaces and simplifies operations. As our economy begins to build again following the impacts from COVID-19, technology and skills can help to enable new jobs and part of Scotland’s green recovery. There are no limits to what we can achieve by harnessing the right partners and technologies in this way.”

Professor Tyler added: “Businesses and organisations need to understand the benefits of taking action on the environment and developing environmental-based solutions. Our vision is that this development programme will provide the evidence and knowledge to help businesses bring the environment to the heart of decision making, working with the nature to build a prosperous future and provide the commercial leadership to drive that transition to a net zero carbon economy.”

Additional information

Funded by BT and the University of Stirling, phase one of Forth-ERA is the first project to be enabled by Scotland’s International Environment Centre (SIEC), announced under the Stirling and Clackmannanshire City Region Deal (CRD), and the first major private sector partnership to support the CRD.

SIEC is a partnership between the University, the Scottish Government, the UK Government, Clackmannanshire Council, and Forth Valley College. It aims to support the transition to a more sustainable future for businesses and communities by tackling the climate change emergency, ensuring communities prosper and delivering real-world solutions.

The Stirling and Clackmannanshire City Region Deal is a £214 million investment in the Forth Valley region, aimed at boosting productivity and sustainable, inclusive growth. The deal will unlock £90.2m in UK and Scottish Government funding, with a further £123.8m from regional partners.

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