



University of the
Highlands and Islands
Oilthigh na Gàidhealtachd
agus nan Eilean

ERI

ENVIRONMENTAL
RESEARCH INSTITUTE

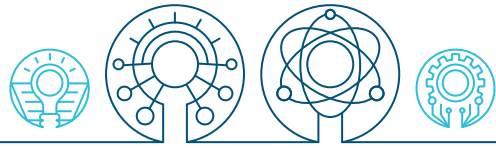


UHI-North Highland, one of thirteen academic partners, delivers further and higher education programmes at campuses in Thurso, Halkirk, Dornoch and Alness. Research is also delivered through the Environmental Research Institute (ERI) based in Thurso. With easy access to outstanding natural resources in the Pentland Firth and Flow Country, and a wide range of analytical and field equipment, the ERI seeks to address emerging issues related to improving our understanding of terrestrial, freshwater and marine environments.

Within our 'Environmental Contamination and Ecological Health' theme, researchers aim to quantify the impacts of contaminants on natural systems (including on wildlife, water and soil). Using state-of-the-art analytical chemistry facilities, we aim to gain a better understanding of contaminants (i.e., pharmaceuticals, heavy metals, plastics) and their fate and behaviour in the environment.

Research includes:

- **Sustainable wastewater treatment** – developing new approaches and technology to provide low-cost, sustainable approaches including resource recovery and recycling.
- **Novel monitoring** – developing new ways to monitor environmental contamination and change - including new passive water sampling approaches, novel biomonitoring techniques and remote sensing.



Services to the Aquaculture industry

The ERI offers a variety of Analytical Services utilising its range of state-of-the-art equipment and laboratory facilities supported by an expert team of scientists and technicians. It has longstanding experience in successfully working with a multitude of industries, delivering the highest quality service, and establishing long term client relations.

Based in the Highlands the ERI seeks to understand and respond to our customers changing requirements, both in terms of adapting methodologies in response to regulatory change and through to focused bespoke research.

Specifically in relation to Aquaculture, we currently offer sediment analysis services for chemical residue monitoring as required for regulatory compliance by SEPA. Other services include particle size analysis and loss on ignition (total carbon). We can also undertake analysis for inorganics (i.e., heavy metals) and for a wide range of organic compounds (including pesticides and pharmaceuticals).

Our range of analytical instrumentation includes:

- Ultra High Performance Liquid Chromatography (UHPLC) coupled with triple quadrupole Mass Spectrometry.
- Scanning Electron Microscopy (SEM) with Energy Dispersive X-Ray Analysis (EDX) allowing wet and non-conductive samples to be viewed in their original state.
- ICP-OES (Inductively Coupled Plasma Optical Emission Spectrometry) for elemental and trace metals analysis.
- Gas Chromatography (including thermal desorption) with flame ionisation and mass spectrometry detectors.
- Seal AQ2 discrete auto analyser (for nutrient work, including nitrate + nitrite, phosphate, ammonium, etc.) and Shimadzu Total Organic Carbon analyser (for DOC/TOC/IC).

At the ERI we also undertake research into renewable energy and the marine environment. Facilities available include a range of survey and monitoring instrumentation, e.g., wave buoys, ADCPs, drones and echosounders. Previous work included the tracking of salmon smolts as well as resource assessment and modelling.

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