Project acronym: INFARI-DOM

Project title: Investigating Faroe Island Dissolved Organic Matter

Project leader: Catherine Moody

Discipline: Earth Sciences & Environment: Water sciences/Hydrology

Station(s): Faroe Islands Nature Investigation (FINI) (Faroe Islands)

Peatlands cover only 2.8% of the Earth but store 50% of the global soil carbon (C) pool, and 10% of the world's freshwater. Peatland rivers are significant sources of fluvial C, and therefore dissolved organic matter (DOM), and concentrations in the northern hemisphere have doubled in the last 20 years. The composition of DOM controls its susceptibility to degradation, thus its greenhouse gas (GHG) emission potential.

This research project will investigate how the composition of DOM is affected by vegetation cover, land use and climate through catchments, and how this relates to the processing and GHG potential production from water. In the Faroe Islands, I will carry out a field survey of surface and soil water from areas of high organic soil contents, including peatlands, with subsequent laboratory analysis of water and DOM extraction. I will include sites with existing data or previous research, such as areas on Eysturoy, Mykines, Sandoy, Streymoy, Suðuroy and Vágar. I will collect water samples from small pools, headwater streams, rivers, and inflows, outflows and surface waters of lakes. Samples of soil water will be taken by installing a series of piezometers to collect 'shallow' and 'deep' soil water. The DOM will be extracted from the water and analysed to determine its chemical composition. Catchment characteristics, climate variables, water chemistry and discharge data will be collated for each site, combined with measured characteristics of DOM and analysed, in context of a wider spatial survey underway across the UK.