



CASE STUDY

The Ocean Climate Section and Deep Mooring Survey – gathering essential long-term ocean and climate data for more than two decades





The Marine Institute's Ocean Climate Section & Deep Mooring Survey is a flagship scientific cruise, collecting long-term ocean and climate data that are helping to monitor ocean climate change and support the sustainable management of our marine environment.





The survey, which takes place annually aboard the *RV Celtic Explorer*, focuses on deep waters in the Rockall Trough and the shelf waters off Ireland's west coast.



At the heart of the survey is the collection of Essential Ocean Variables including temperature, salinity, dissolved oxygen, nutrients, and carbon through Conductivity, Temperature and Depth (CTD) casts and water sampling. The variables are gathered from the surface of the ocean down to the seafloor.





Data collected are vital for understanding climate change and ocean health, and for supporting sustainable fisheries. The data help track changes in ocean properties and circulation which influence weather patterns and marine ecosystems across the North Atlantic.





The six Argo floats deployed during this latest survey contribute to the Global Argo Initiative and to expanding the global ocean dataset. Advanced hyperspectral and CTD sampling enable detailed analyses of ocean colour and water masses, supporting satellite validation and ecosystem monitoring.



The survey's data directly inform national and international marine monitoring programmes, with the farthest station in the Iceland Basin, demonstrating the survey's expanding reach and scientific significance. Data captured on the 2025 survey will feed into the ICES Report on Ocean Climate which provides summary information on climactic conditions in the North Atlantic.





The survey, which was first carried out in 2004, strengthens Ireland's role in climate and ocean observation, supports international data networks, and informs policy and management decisions.





Its integrated approach, combining infrastructure, sampling, innovation, and collaboration ensures its enduring value to science and society. The survey also demonstrates the Marine Institute's leadership in marine science and ocean climate observation.



Want to learn more about
the impact of this survey?



Read the Marine Institute's **Annual Impact Report** to see
how our organisation is committed to sustainability.