

RRS Discovery Sets Sail Along the Drake Passage for Hydrographic Survey



Recently, RRS *Discovery* set sail from Chile to begin a hydrographic survey along the Drake Passage. As part of the ORCHESTRA programme, the expedition team will take measurements of ocean temperature, salinity, oxygen isotopes, and currents to help them quantify how the Southern Ocean stores and transports heat. They will also be taking measurements of nutrient cycles and of microplastic pollution.

ORCHESTRA is a NERC-funded Long Term Science programme that involves scientists from many NERC Centres. This ambitious 5-year project began in spring 2016 and will use a combination of data collection, analyses and computer simulations to radically improve our ability to understand and predict the circulation of the Southern Ocean and its role in the global climate, with particular emphasis on the way that the Southern Ocean

absorbs and stores heat and carbon.

[ORCHESTRA](#) is led by BAS ([British Antarctic Survey](#)) with NOC (British National Oceanography Centre) playing a major role, particularly in the measurement and modelling aspects of the project. The intensive 5-year observational programme will involve ORCHESTRA scientists undertaking 12 expeditions on research ships in the Southern Ocean, with US collaborators performing a 13th.

Ten of these expeditions will be annual north/south transects across the Antarctic Circumpolar Current, to evaluate how the ocean changes from one year to the next. The other three will form 'boxes' around the Atlantic sector of the Southern Ocean so that budgets can be performed. All this data, along with historical measurements, will be combined and analysed together. The observations will be used to inform and test a range of models.

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