

Continuous Plankton Recorder Research in the Scotia Sea and its Origins at South Georgia

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In the 1920s and 30s, South Georgia was the focus of the Discovery Investigations, initiated to provide scientific foundations for the management of whale stocks in the Falkland Island Dependencies regions. During 1926/1927 Alister Hardy, zoologist on board RRS *Discovery*, undertook scientific surveys around South Georgia, in particular studying the plankton. In 1936, he published the results of his surveys, including the use of the prototype Continuous Plankton Recorder (CPR), in volume 11 of the *Discovery Reports*. His vision of a machine to record plankton along a continuous line of observation that could build broad periodic surveys, using ships of opportunity, is now a reality with the CPR Survey, managed by SAHFOS. CPRs have regularly collected pelagic plankton from the North Atlantic (since 1946) and North Pacific (since 1997), building an unrivalled time series to reveal the occurrence, distribution and variability of planktonic species.

Over the last five years, BAS, in partnership with SAHFOS, has undertaken a series of CPR tows, using the BAS ship RRS *James Clark Ross*, in the Scotia Sea. Spatial distributions of some zooplankton and phytoplankton collected on tows between the Falkland Islands and South Georgia show a small part of the information obtained. We are negotiating with the South Georgia Government to undertake regular tows between the Falkland Islands and South Georgia, year round, to continue our observations and complement the Australian Antarctic Division's Southern Ocean CPR survey.

Contemporary research has shown that the Southern Ocean is warming and that there is strong upper-layer salinification. It has been difficult to observe links between plankton and climate change in the area because of the seasonal restrictions on plankton collections and lack of oceanographic data from earlier decades. The CPR initiative in the Scotia Sea will build a knowledge base of the spatial distributions of planktonic species, over all seasons. This knowledge can be linked with physical data and will gradually improve our ability to predict the ways in which change will affect the Southern Atlantic.

References

Hardy, A.C., The Continuous Plankton Recorder, *Discovery Reports* 11, 457-510, 1936.

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