Plan Overview

A Data Management Plan created using DMPTool

DMP ID: https://doi.org/10.48321/D1461N

Title: The Continuous Plankton Recorder (CPR) Survey of the Plankton of the North Atlantic

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Grant: https://www.bco-dmo.org/project/879000

Template: BCO-DMO NSF OCE: Biological and Chemical Oceanography

Project abstract:

The Continuous Plankton Recorder (CPR) survey (1931 to present) is the only long-term and ocean-basin-wide in-situ survey of plankton in the world. This award continues the CPR survey in the western Atlantic from Iceland to the eastern margin of the United States. It uses a consistent, cost-effective methodology deployed from ships-of-opportunity to continue a unique and invaluable time series of phytoplankton and zooplankton observations in the surface ocean. The primary objective of this project is to maintain the spatial and temporal integrity of the CPR time series and facilitate marine ecological research. Because plankton form the base of the marine food web, long-term and basin-scale observations allow us to understand how marine ecosystems respond to stressors such as climate change, acidification, eutrophication, and loss of biodiversity from fishing pressure, ultimately enabling ecosystem-based management of marine resources. Broader impacts include contributions to U.S. and international and integrated observing systems, marine policy, and marine resource management. Data from the CPR survey are made publicly accessible through the Biological and Chemical Oceanography Data Management Office. In addition, maintenance of a sample archive will maximize its use by the wider scientific community.

This project observes and describes long-term, pelagic plankton variability and diversity in the Northwest

Atlantic Ocean. The data are enabling scientists to interpret marine biological change and assess anthropogenic, climatically forced, and natural plankton variability over multi-decadal time scales. Scientific research is anticipated to advance a number of key lines of scientific inquiry that will incorporate responses of the marine plankton community to large-scale environmental change, how changes can impact ecosystem productivity, and how connected these changes are across the wider Atlantic. In addition, CPR research focuses on biodiversity and invasive species; sustainable use of marine bio-resources; and ecosystem health, ocean acidification, and micro-plastics. These themes are highly relevant to timely and compelling scientific questions, marine policy and management interests of the United States, and broad societal concerns regarding the marine environment.

This award reflects NSF's statutory mission and has been deemed worthy of support through evaluation using the Foundation's intellectual merit and broader impacts review criteria.

Start date: 09-01-2022

End date: 08-31-2023

Last modified: 01-18-2024

The Continuous Plankton Recorder (CPR) Survey of the Plankton of the North Atlantic

The project investigators will comply with the data management and dissemination policies described in the NSF Award and Administration Guide (AAG, Chapter VI.D.4) and the NSF Division of Ocean Sciences Sample and Data Policy.

Additionally, as the CPR Survey data is archived at DASSH (Data Archive for Marine Species and Habitats), we use the DASSH Data Policy.

1. The CPR Survey uses vessels of opportunity to tow a sampling device (the CPR — Continuous Plankton Recorder). Cruise plans are generally made in the month prior to deployment.
2. The CPR samples plankton on a continuous roll of silk, sieving approximately 3m³ per sample.
3. Ship movement is recorded through a combination of paper logs and AIS (automatic identification system) data from marinetraffic.com. Sampling events are then calculated after the fact.
4. There will be no cruise reports.

Plankton sampling logs: Plankton will be sampled via CPR tow during the cruise. Shoot, haul, and course change times and locations are hand recorded on a log form (supplemented by AIS data) The silk cartridge used in the CPR is returned to the Marine Biological Association for cutting into individual samples and analysis. Cutting points are calculated to ensure each sample has filtered the same amount of water and time and position for each sample is calculated and stored in a database. Species identified on each sample will be recorded by hand on log sheets, and then transferred to the database. Sampling methodology is described in https://doi.org/10.1016/j.pocean.2005.09.011. The resulting data is available on the DASSH server at https://www.dassh.ac.uk/ipt/resource?r=bco-dmo and saved to the BCO-DMO repository.

Data is published as a Darwin Core Archive (DwC-A) using the GBIF IPT (Global Biodiversity Information Facility - Integrated Publishing Toolkit), which is a standardized format for sharing biodiversity data as a set of one or more data tables.

Metadata is as required by GBIF. Vocabularies are used from WoRMS (World Register of Marine Species) and the NERC Vocabulary Server - British Oceanographic Data Centre

The CPR Survey is a member of the NE Atlantic Marine Biological Analytical Quality Control (NMBAQC) Scheme and uses these standards.

Data is continuously available from https://www.dassh.ac.uk/ipt/resource?r=bco-dmo and updated annually.

The data is initially stored in a Microsoft SQL Server database, backed up offsite daily. It's also copied daily to a PostGreSQL server.

Estimated data volume is < 0.5MB annually.

The data will generally be available within a year after collection from https://www.dassh.ac.uk/ipt/resource?r=bco-dmo.

There are currently no concerns of sensitivity.

CPR Survey data is archived at DASSH, a UK national Data Archive Centre. BCO-DMO will also ensure that project data are submitted to the appropriate US national data archive

Derek Broughton is responsible for Data Management. David Johns is responsible for metadata and coordinating the the analysis of samples to ensure data is available in a timely manner.
