

Cruise track position data from R/V Melville cruise MV1310 in the North Pacific Gulf of Alaska; 48N to 59N and 129W to 153W in 2013 (North Pacific RDOC project)

Website: <https://www.bco-dmo.org/dataset/526942>

Version: 29 August 2014

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Project

» [Characterizing a refractory DOC sink in the deep northern North Pacific](#) (North Pacific RDOC)

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Dataset Description

Cruise tracks generated from R2R Archive file
Cruise Id, Date/Time UTC, Lat, Lon, SOG, COG
1 minute fixes

Methods & Sampling

Generated from R2R archive file by BCO-DMO staff

Data Processing Description

Generated from R2R archive file by BCO-DMO staff

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Data Files

File
CruiseTrack.csv (Comma Separated Values (.csv), 1.71 MB) MD5:497f4e3f4cd33a30fb2f1c010e6356d8 Primary data file for dataset ID 526942

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Parameters

Parameter	Description	Units
CruiseId	Official UNOLS cruise id	text
ISO_DateTime_UTC	ISO formatted UTC Date and Time	YYYY-MM-DDTHH:MM:SSZ
Latitude	Latitude Position (South is negative)	decimal degrees
Longitude	Longitude Position (West is negative)	decimal degrees
SOG	Instantaneous Speed-over-ground	meters/sec
COG	Instantaneous Course-over-ground [deg. clockwise from North]	decimal degrees

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Instruments

Dataset-specific Instrument Name	GPS
Generic Instrument Name	Global Positioning System Receiver
Generic Instrument Description	The Global Positioning System (GPS) is a U.S. space-based radionavigation system that provides reliable positioning, navigation, and timing services to civilian users on a continuous worldwide basis. The U.S. Air Force develops, maintains, and operates the space and control segments of the NAVSTAR GPS transmitter system. Ships use a variety of receivers (e.g. Trimble and Ashtech) to interpret the GPS signal and determine accurate latitude and longitude.

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Deployments

MV1310

Website	https://www.bco-dmo.org/deployment/526876
Platform	R/V Melville
Report	http://dmoserv3.whoi.edu/data_docs/NorthPacific_RDOC/MV1310_Preliminary_Report_2.pdf
Start Date	2013-08-04
End Date	2013-08-23
Description	Original data are available from the NSF R2R data catalog

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Project Information

Characterizing a refractory DOC sink in the deep northern North Pacific (North Pacific RDOC)

Website: <http://yyy.rsmas.miami.edu/groups/biogeochem/>

Coverage: North Pacific, Gulf of Alaska: 48°N to 59°N and 129°W to 153°W

Extracted from the NSF award abstract:

Refractory dissolved organic carbon (RDOC) in the ocean has long been recognized as highly resistant to removal. It has a mean lifetime in the ocean of thousands of years, so it is generally thought of as a recalcitrant pool that is transported mostly conservatively with the thermohaline circulation. But unlike RDOC in the present-day ocean, this vast reservoir has been implicated by paleoceanographic research as a relatively rapid-turnover carbon source/sink involved in past climate changes. Accordingly, the RDOC reservoir in ancient oceans must at times have been much larger than today, and that large reservoir must have been rapidly mobilized to release its carbon to the atmosphere. There is a clear need to understand how RDOC source and sink processes operate in the modern ocean in order to understand its potential role in past or future oceans.

In this project, a researcher at the Rosenstiel School of Marine and Atmospheric Science of the University of Miami hopes to fill knowledge gaps in the RDOC-climate connection. Inasmuch as mapping of its global distribution was accomplished only within the past few years, few solid facts about processes controlling the RDOC pool have been established. One particularly important RDOC sink is in the northern North Pacific. The PI believes that RDOC carried in bottom waters from the Southern Ocean to the far north is conserved, but once in the vicinity of Pacific Deep Water formation there is a rather abrupt loss of carbon. His immediate goal in this project is to characterize the RDOC sink in the North Pacific, an objective that is one part of the larger goal of understanding the role of ocean RDOC in global climate.

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1153930

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