

Cruise track from the USCGC Healy HLY1401 cruise in the Chukchi Sea during 2014 (SUBICE project)

Website: <https://www.bco-dmo.org/dataset/547782>

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Project

» [Contrasting Under-Ice and Open-Water Phytoplankton Blooms in the Chukchi Sea](#) (SUBICE)

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Dataset Description

Cruise track 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), 4.06 MB) MD5:4edaf3f9349fc7cc399d21e4b7d40664 Primary data file for dataset ID 547782

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

Instruments

Dataset-specific Instrument Name	GPS
Generic Instrument Name	Global Positioning System Receiver
Dataset-specific Description	Navigation Equipment HEALY is outfitted with Sperry Marine's Voyage Management System (VMS). This system utilizes multiple heading, position, environmental, and navigation inputs to steer the ship along a desired course. Currently, HEALY has the following GPS receivers: GPS, DGPS, P-Code GPS, and 3-D GPS. Heading inputs include two gyrocompasses and the 3-D GPS heading information. The ship is also outfitted with an electronic magnetic compass. A Dynamic Positioning System (DPS) is available for station keeping and slow speed transits (towing, dredging). HEALY's DPS attempts to do with props and a bowthruster what smaller ships do with fore and aft thrusters, so it has limitations. It was designed and built by ALSTOM and integrates the use of propellers, rudders, and the bow thruster to accomplish ship movement. DPS Limitations: At best heading in openwater, in a 20 kt wind, seas with a significant wave height of 4.0 feet and a 1 knot currents, HEALY shall be capable of maintaining a position of +/- 150 feet or 3% of water depth (whichever is greater) from a point or trackline and maintain a heading of +/- 5 degrees. The seas and wind shall be from the same direction, with the current from less the 45 degrees off the wind. Antenna Layout Top View PDF
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.

Deployments

HLY1401

Website	https://www.bco-dmo.org/deployment/546824
Platform	USCGC Healy
Report	http://icefloe.net/hly1401
Start Date	2014-05-13
End Date	2014-06-23
Description	Study of Under-ice Blooms In the Chukchi Ecosystem (SUBICE) Original cruise data are available from the NSF R2R data catalog USCGC Healy Science-Technical Support

Project Information

Contrasting Under-Ice and Open-Water Phytoplankton Blooms in the Chukchi Sea (SUBICE)

Website: <http://ocean.stanford.edu/subice/>

Coverage: Chukchi Sea

Over the last several decades, Arctic Ocean ice cover has become substantially thinner and more prone to melting, extending the period of open water. Associated with the loss of sea ice has been an increase in light penetration and a dramatic rise in the productivity of phytoplankton. The Pls' primary objectives are to determine the spatial distribution of large under-ice phytoplankton blooms on the Chukchi Shelf and the physical mechanisms that control them. The project proposed herein will utilize new data obtained from both remote instrumentation (e.g. moorings and satellites) and an interdisciplinary ship-based field program to gain a better understanding of the physical/chemical conditions that favor under-ice bloom development as well as the physiological adaptations that allow phytoplankton to flourish beneath sea ice. Outreach and education components of this project include participation in Stanford's Summer Program for Professional Development for Science Teachers and Stanford's School of Earth Sciences high school internship program, a compilation of professionally written short stories in the website by WHOI group, and incorporation of results by CRREL.

Funding

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