

Metadata

Dataset Name	Ocean biogeochemical measurements from the eastern Canadian Arctic - 2014
Dataset General Type	biogeochemical data
Dataset Type	Dataset
Dataset Level	1.2
Program Website	https://arcticnet.ulaval.ca/project/a-co-op
Keyword Vocabulary	Polar Data Catalogue
Keyword Vocabulary URL	https://www.polardata.ca/pdcinput/public/keywordlibrary
Theme	
Title	Marine
URL	https://canwin-datahub.ad.umanitoba.ca/data/en/group/marine
Dataset Status	Complete
Maintenance and Update Frequency	Not planned
Dataset Last Revision Date	2023-03-30
Dataset DOI	
Metadata Creation Date	2024
Publisher	CanWIN

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Dataset Collection Start Date 2014-07-15

Dataset Collection End Date 2014-07-15

Sample Collection

Sample Collection 1

Sampling Instrument Name Sea Bird 911plus+

Standardized Sampling Instrument Name CTD

Sample Collection Method Name CTD profile

Comment

Method Link

Method Summary The CTD sensor is lowered and raised through the water column, capturing measurements of seawater temperature, salinity, and seawater pressure

Method Description Type Methods

Sample Collection 2

Sampling Instrument Name SeaPoint sensor

Standardized Sampling Instrument Name Probe/Sensor

Sample Collection Method Name Chlorophyll-a fluorescence measurements

Comment

Method Link

Method Summary The SeaPoint sensor is lowered and raised through the water column, capturing measurements of chlorophyll-a fluorescence.

Method Description Type Methods

Sample Collection 3

Sampling Instrument Name Seabird SBE-43

Standardized Sampling Instrument Name

Sample Collection Method Name Oxygen concentration measurement

Comment

Method Link

Method Summary The Seabird SBE-43 sensor is lowered and raised through the water column, measuring the dissolved concentration of oxygen.

Method Description Type Methods

Sample Collection 4

Sampling Instrument Name WetLabs ECO

Standardized Sampling Instrument Name

Sample Collection Method Name Dissolved organic matter fluorescence measurements

Comment

Method Link

Method Summary The WetLabs ECO sensor is lowered and raised through the water column, measuring the fluorescence of dissolved organic matter (FDOM).

Method Description Type Methods

Activity Collection Type

Field Observation

Preferred citation**Analytical Instrument****Analytical Instrument 1**

Analytical Instrument Name Bran and Luebbe AutoAnalyzer III

Standardized Analytical Instrument Name

Analytical Instrument Identifier Id

Analytical Instrument Title Type Alternative Title

Analytical Instrument Identifier Type

Analytical Instrument 2

Analytical Instrument Name SOMMA or VINDTA 3D (MARIANDA)

Standardized Analytical Instrument Name

Analytical Instrument Identifier Id

Analytical Instrument Title Type Alternative Title

Analytical Instrument Identifier Type

Analytical Instrument 3

Analytical Instrument Name Home-built open-cell potentiometric titration system

Standardized Analytical Instrument Name

Analytical Instrument Identifier Id

Analytical Instrument Title Type Alternative Title

Analytical Instrument Identifier Type

Analytical Method

Analytical Method 1

Analytical Method Name Nitrate, nitrite, ammonium, phosphate, and silicate analysis

Method Link <https://doi.org/10.1002/9783527613984.ch10>

Method Summary Nutrient samples were collected directly from the Niskin-type bottles with syringes, filtered in-line (Swinnex-mounted, Whatman GF/F), and captured in acid-cleaned polyethylene tubes. Nutrient concentrations for nitrate + nitrite, ammonium, phosphate, and silicate were measured colorimetrically with a Bran and Luebbe AutoAnalyzer III (Hansen & Koroleff, 1999) onboard the ship within a few hours of collection. Working standards were prepared at each station and checked against certified reference material (KANSO CRM) inserted into the sample runs. Analytical detection limits were 0.03 μM for nitrate, 0.02 μM for nitrite, 0.05 μM for phosphate, and 0.1 μM for silicate. Ammonium concentrations were measured using the method of Holmes et al. (1999) with a detection limit of 0.02 μM .

Laboratory Université Laval

Comments Additional method citation: Holmes, R. M., Aminot, A., K rouel, R., Hooker, B. A., & Peterson, B. J. (1999). A simple and precise method for measuring ammonium in marine and freshwater ecosystems. <https://doi.org/10.1139/f99-128>

Variables Measured Nitrate, nitrite, ammonium, phosphate, and silicate

Analytical Method 2

Analytical Method Name Coulometric titration (Dissolved inorganic carbon analysis)

Method Link

Method Summary Samples were collected in 250-mL glass bottles, preserved with 100 μL of saturated mercuric chloride solution, capped with ground glass stoppers greased with Apiezon M, and sealed with electrical tape. Samples were then stored in the dark at 4°C until analysis at the Institute for Ocean Sciences in Sidney, British Columbia, within 10 months of collection. The coulometric DIC analysis utilized either a SOMMA or VINDTA 3D (MARIANDA) extraction system. Measurements were calibrated against certified reference materials (CRM batches 88, 115, and 133, provided by Andrew Dickson, Scripps Institute of Oceanography). Analyses of duplicate DIC samples indicated a precision of $\pm 1 \mu\text{mol kg}^{-1}$ ($n = 27$).

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Comments

Variables Measured Dissolved inorganic carbon

Analytical Method 3

Analytical Method Name Titration

Method Link

Method Summary Samples were collected in the field following the same protocol as DIC samples. Measurements of TA used open-cell potentiometric titrations with nonlinear least squares end-point determination. These measurements were calibrated against certified reference materials (CRM batches 88, 115, and 133, provided by Andrew Dickson, Scripps Institute of Oceanography). Analyses of duplicate TA samples indicated a precision of $\pm 3 \mu\text{mol kg}^{-1}$ ($n = 23$).

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Comments

Variables Measured Total Alkalinity

License Name	Creative Commons Attribution 4.0 International
Licence Type	Open
Embargo Date	
Licence URL	https://spdx.org/licenses
Terms of Access	CanWIN datasets are licensed individually, however most are licensed under the Creative Commons Attribution 4.0 International (CC BY 4.0) Public License. Details for the licence applied can be found using the Licence URL link provided with each dataset. By using data and information provided on this site you accept the terms and conditions of the License. Unless otherwise specified, the license grants the rights to the public to use and share the data and results derived therefrom as long as the proper acknowledgment is given to the data licensor (citation), that any alteration to the data is clearly indicated, and that a link to the original data and the license is made available.
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Awards	
Awards 1	
Award Title	
Website	
Funder Name	
Funder Identifier Code	
Funder Identifier Type	
Funder Identifier Scheme	
Grant Number	
Related Resources	
Related Resources 1	
Related Resource Name	
Resource Code	
Identifier Type	

Relationship To This Dataset

Resource Type Online Resource

Type

Series Name

Publications

Publications 1

Publication Name Distinguishing Physical and Biological Controls on the Carbon Dynamics in a High-Arctic Outlet Strait

Identifier Code 10.1029/2022JC019393

Identifier Type DOI

Relationship to this dataset Describes

Resource Type Online Resource

Publication Type JournalArticle

Spatial regions

pikialasorsuaq-north-water-polynya-sarvarjuaq

Spatial extent West Bound Longitude

282.0

Spatial extent East Bound Longitude

298.0

Spatial extent South Bound Latitude

75.0

Spatial extent North Bound Latitude

83.0

Data and Resources

URL	https://canwin-datahub.ad.umanitoba.ca/data/dataset/af2a032d-0873-4432-be16-64e2638ef2e6/resource/1cb92861-6d1e-452f-986c-06ff45f67a30/download/nutrients.csv
Name	Physical and biogeochemical data from the eastern Canadian Arctic waters- 2014
Description	### Physical and biogeochemical data from the eastern Canadian Arctic waters- 2014 CTD measurements as well as measurements of various biogeochemical parameters in eastern Canadian Arctic waters.
Format	CSV
Resource Category	data