

# Metadata

<b>Dataset Name</b>	Ocean biogeochemical measurements from the eastern Canadian Arctic - 2014
<b>Dataset General Type</b>	biogeochemical data
<b>Dataset Type</b>	Dataset
<b>Dataset Level</b>	1.2
<b>Program Website</b>	<a href="https://arcticnet.ulaval.ca/project/a-co-op">https://arcticnet.ulaval.ca/project/a-co-op</a>
<b>Keyword Vocabulary</b>	Polar Data Catalogue
<b>Keyword Vocabulary URL</b>	<a href="https://www.polardata.ca/pdcinput/public/keywordlibrary">https://www.polardata.ca/pdcinput/public/keywordlibrary</a>
<b>Theme</b>	
<b>Title</b>	Marine
<b>URL</b>	<a href="https://canwin-datahub.ad.umanitoba.ca/data/en/group/marine">https://canwin-datahub.ad.umanitoba.ca/data/en/group/marine</a>
<b>Dataset Status</b>	Complete
<b>Maintenance and Update Frequency</b>	Not planned
<b>Dataset Last Revision Date</b>	2023-03-30
<b>Dataset DOI</b>	
<b>Metadata Creation Date</b>	2024
<b>Publisher</b>	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  $\mu\text{M}$  for nitrate, 0.02  $\mu\text{M}$  for nitrite, 0.05  $\mu\text{M}$  for phosphate, and 0.1  $\mu\text{M}$  for silicate. Ammonium concentrations were measured using the method of Holmes et al. (1999) with a detection limit of 0.02  $\mu\text{M}$ .

**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  $\mu\text{L}$  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  $\pm 1 \mu\text{mol kg}^{-1}$  ( $n = 27$ ).

**Laboratory** Institute for Ocean Sciences, Fisheries and Oceans Canada

**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  $\pm 3 \mu\text{mol kg}^{-1}$  ( $n = 23$ ).

**Laboratory** Institute for Ocean Sciences, Fisheries and Oceans Canada

**Comments**

**Variables Measured** Total Alkalinity

<b>License Name</b>	Creative Commons Attribution 4.0 International
<b>Licence Type</b>	Open
<b>Embargo Date</b>	
<b>Licence URL</b>	<a href="https://spdx.org/licenses">https://spdx.org/licenses</a>
<b>Terms of Access</b>	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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<b>Awards</b>	
<b>Awards 1</b>	
<b>Award Title</b>	
<b>Website</b>	
<b>Funder Name</b>	
<b>Funder Identifier Code</b>	
<b>Funder Identifier Type</b>	
<b>Funder Identifier Scheme</b>	
<b>Grant Number</b>	
<b>Related Resources</b>	
<b>Related Resources 1</b>	
<b>Related Resource Name</b>	
<b>Resource Code</b>	
<b>Identifier Type</b>	



**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

<b>URL</b>	<a href="https://canwin-datahub.ad.umanitoba.ca/data/dataset/af2a032d-0873-4432-be16-64e2638ef2e6/resource/1cb92861-6d1e-452f-986c-06ff45f67a30/download/nutrients.csv">https://canwin-datahub.ad.umanitoba.ca/data/dataset/af2a032d-0873-4432-be16-64e2638ef2e6/resource/1cb92861-6d1e-452f-986c-06ff45f67a30/download/nutrients.csv</a>
<b>Name</b>	Physical and biogeochemical data from the eastern Canadian Arctic waters- 2014
<b>Description</b>	### 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.
<b>Format</b>	CSV
<b>Resource Category</b>	data