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/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

Dataset Authors

Dataset Authors 1

Name	Burgers, Tonya
Type of Name	Personal
Email	tonya.burgers@umanitoba.ca
Affiliation	Centre for Earth Observation Science - University of Manitoba
ORCID ID	0000-0002-9974-6405
	ORCID
	http://orcid.org/

Contributors

Contributors 1

Name	Tremblay, Jean-Éric
Role	Producer
Email	Jean-Eric.Tremblay@bio.ulaval.ca
Affiliation	Université Laval
ORCID ID	0000-0003-0319-5723
	ORCID
	http://orcid.org/

Contributors 2

Name	Miller, Lisa
Role	ProjectMember
Email	Lisa.Miller@dfo-mpo.gc.ca
Affiliation	Fisheries and Oceans Canada
ORCID ID	0000-0001-9726-3744
	ORCID
	http://orcid.org/

Contributors 3

Name	Amundsen Science
Role	DataManager
Email	tahiana.ratsimbazafy@as.ulaval.ca
Affiliation	Amundsen Science

ORCID ID	

Contributors 4

Name	Papakyriakou, Tim
Role	ProjectMember
Email	tim.papakyriakou@umanitoba.ca
Affiliation	Centre for Earth Observation Science - University of Manitoba
ORCID ID	0000-0002-2019-9104 ORCID http://orcid.org/

Project Data Curator	Burgers, Tonya
Project Data Curator email	tonya.burgers@umanitoba.ca
Project Data Curator Affiliation	Centre for Earth Observation Science - University of Manitoba
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 concentra- tions 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., Kérouel, 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 ±1 µmol 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 ±3 µmol kg −1 (n = 23).
Laboratory	Institute for Ocean Sciences, Fisheries and Oceans Canada
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.
Terms of Use	By accessing this data you agree to [CanWIN's Terms of Use](/data/publication/canwin-data-statement/resource/5b942a87-ef4e-466e-8319-f588844e89c0).

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