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AN ECOSYSTEM-BASED APPROACH IN THE EASTERN ARCTIC: KEBABB (KNOWLEDGE AND ECOSYSTEM-BASED APPROACH IN BAFFIN BAY) 2022 EXPEDITION REPORT

by

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Abstract

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The marine ecosystem of Baffin Bay not only represents an area of scientific interest, it is also one of economic, ecological, and cultural importance. Economically, the region hosts commercial fisheries for Greenland Halibut (*Reinhardtius hippoglossoides*) and Northern and Striped Shrimp (*Pandalus borealis* and *P. montagui*, respectively). Baffin Bay also contains conservation areas such as Davis Strait and Disko Fan, and the Tallurutiup Imanga National Marine Conservation Area (TINMCA), targeted to preserve ecological biodiversity and/or cultural heritage. Arctic marine ecosystems have been changing, and due to the rapidity of these changes, consistent studies assessing anthropogenic and climate-change related impacts on key marine habitat components are important. This is likewise true for the Arctic marine ecosystem of Baffin Bay, and consistent sampling is critical for a better understanding of the region's current state, of the ongoing changes, and of these changes' potential economic impacts on fisheries. The KEBABB (Knowledge and Ecosystem Based Approach in Baffin Bay) program was developed to conduct regular sampling operations in the Baffin Bay region. This program aims to integrate physical, chemical, and biological oceanographic data to provide baseline ecosystem characterization in support of sustainable fisheries management and to assess changes along spatial gradients and interannually. This report presents an overview of the sampling and logistics of the 2022 KEBABB field expedition, which took place during Leg 2 of the 2022 CCGS *Amundsen* expedition between 22 September and 20 October 2022.

Résumé

Kitching, E., Pućko, M., Capelle, D., Hedges, K., Kuzyk, Z., Pierrejean, M., Villeneuve, V., Vandenbyllaardt, L., Marcil, C., Ciastek, S., Hammett D., Nakashuk, S., Charette, J., Matthes, L.C., Michel, C. 2026. An ecosystem-based approach in the eastern Arctic: KEBABB (Knowledge and Ecosystem-Based Approach in Baffin Bay) 2022 expedition report. Can. Manuscr. Rep. Fish. Aquat. Sci. 3336: viii + 36 p.
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L'écosystème marin de la baie de Baffin ne représentent pas seulement une région d'intérêt scientifique, il s'agit également d'une région d'importance économique, écologique et culturelle. Économiquement, cette région abrite des pêches commerciales du flétan du Groenland (*Reinhardtius hippoglossoides*), de la crevette nordique et de la crevette ésope (*Pandalus borealis* et *P. montagui*, respectivement). La baie de Baffin comprend aussi des zones de conservation, comme celles du détroit de Davis et de Disko Fan, et l'aire marine nationale de conservation Tallurutiup Imanga (AMNCTI), qui visent à préserver la biodiversité écologique et/ou le patrimoine culturel. Les écosystèmes marins arctiques sont en plein changement et en raison de la rapidité de ces changements, les études systématiques, évaluant les impacts anthropogéniques et ceux liés aux changements climatiques sur les composantes clés de l'habitat marin, sont importantes. Ceci est également vrai pour l'écosystème marin arctique de la baie de Baffin où l'échantillonnage systématique est essentiel afin d'acquérir une meilleure compréhension de l'état actuel de la région, des changements qui s'y produisent et des impacts économiques potentiels de ces derniers sur les pêches. Le programme KEBABB (Approche basée sur les connaissances et les écosystèmes dans la baie de Baffin) a été développé afin de mener des opérations d'échantillonnage régulières dans la région de la baie de Baffin. Ce programme vise à intégrer des données océanographiques physiques, chimiques et biologiques, afin de fournir une caractérisation écosystémique de référence visant à supporter une gestion de pêche durable, et d'évaluer les changements interannuels et spatiaux le long de gradients. Ce rapport

présente un aperçu de l'échantillonnage et de la logistique de l'expédition KEBABB 2022, qui s'est déroulée du 22 septembre au 20 octobre, durant le leg 2 de l'expédition du NGCC *Amundsen*.

1. Rationale and overview of KEBABB and related programs

The Arctic Ocean is warming three to four times faster than the rest of the planet; and as the impacts from this changing climate have become increasing visible in Arctic marine ecosystems, it has become increasingly important to not only understand these ecosystems, but also to document how climate change is impacting them (AMAP 2022). As Fisheries and Oceans Canada (DFO) regularly conducts stock assessment surveys in many Arctic marine ecosystems, it is well positioned to document ongoing ecosystem alterations. One such area of interest, Baffin Bay, is the site of major commercial fisheries forGreenland Halibut (*Reinhardtius hippoglossoides*) and Northern and Striped Shrimp (*Pandalus borealis* and *P. montagui*) (Government of Canada, Fisheries and Oceans Canada, Communications Branch, 2023).

Baffin Bay is located in the northwestern portion of the Atlantic Ocean separating Greenland to the east and Canada to the west. Currents drive the warmer and saltier Atlantic water north up the coast of Greenland, while colder fresher Arctic water is driven south along the coast of Nunavut, Canada. The complex hydrography of the region supports high chlorophyll *a* (chl *a*) concentrations in the subsurface during late summer/early fall (Charette et al. 2020, Saint-Béat et al. 2020; Pućko et al. 2022), benthic coral ecosystems along the western coast of Baffin Bay (Gilkinson and Edinger, 2009; Kenchington et al. 2011; Pierrejean et al. 2020), and the above-mentioned commercial fisheries. Climate change in Baffin Bay has incurred documented changes in sea ice thickness and longevity (Landy et al. 2017; Bliss et al. 2019), warmer sea surface temperatures (Timmermans and Labe 2020), and increased freshwater input from sea ice melt (Carmack et al. 2016) and glacier runoff (Bamber et al. 2018). An increase in freshwater input can increase stratification and impede phytoplankton biomass (Bergeron and Tremblay 2014; Blais et al. 2017). However, this is contrasted with documented increases in primary production in the Arctic, attributed to greater open water area and longer growing season (Pabi et al. 2008; Arrigo et al. 2008; Arrigo and van Dijken 2011). While previous research in Baffin Bay has provided valuable insights into the region's ocean circulation, productivity and sea-ice conditions, these studies rarely provide the consistent repeated sampling needed to assess trends and variability in marine ecosystem components as they relate to stock assessment (Tang et al. 2004; Meier et al. 2006; Michel et al. 2015).

In order to bridge the gap in scientific knowledge between fish stock assessments and ecosystem-based science, Fisheries and Oceans Canada (DFO) established the Knowledge and Ecosystem-Based Approach in Baffin Bay (KEBABB) program (**Figure 1**) in 2019 as a regular, cohesive ecosystem sampling program within the productive Baffin Bay region. The regularity of this sampling program provides environmental data to support fisheries management and conservation of marine habitat and biodiversity, and to inform ecosystem responses to climate change in the region. Since its inception, the KEBABB program has expanded to relate seawater biochemistry with observations collected by autonomous moorings in the productive ecosystem of Barrow Strait within the Tallurutiup Imanga National Marine Conservation Area (TINMCA), through the KEBABS (Knowledge and Ecosystem-Based Approach in Barrow Strait) program (Pućko et al. 2022). In 2022, the KEBABS program sampling could not be carried out due to poor weather and resulting operational time constrains.

DFO's KEBABB/S programs also benefit from synergies with partnering institutions involved in the CCGS *Amundsen* expedition. During the 2022 expedition, additional sampling was carried out along a transect in the North Water polynya (NOW) (**Figure 2**). This transect links to DFO's ArcticCORE (Conservation, Observation, Research and Engagement) program studying Tuvaijjuittuq and its connectivity with adjacent ecosystems, including downstream ecosystems in Baffin Bay.

The general objective of the KEBABB program is to characterize the variability and trends in physical, chemical and biological oceanographic conditions in order to evaluate their influence on fisheries resources of western Baffin Bay. Five main ecosystem components are being described in the KEBABB program (Pućko et al. 2019): (1) physical and chemical oceanographic conditions; (2) abundance and composition of phytoplankton and microbial communities; (3) abundance and composition of zooplankton; (4) benthic communities and biogeochemistry; and (5) ecosystem health and interactions. This report summarizes the 2022

KEBABB expedition and DFO sampling activities conducted during Leg 2 of the 2022 CCGC *Amundsen* expedition.

Figure 1. General sampling locations of the KEBABB and KEBABS programs in relation to existing marine conservation measures in the region (map data sources: Canadian Protected/Conserved Areas Database 2020 https://www.canada.ca/en/environment-climate-change/services/national-wildlife-areas/protected-conserved-areas-database.html, Base Map (Land, Communities, Exclusive Economic Zone) Atlas of Canada National Scale Data 1:1,000,000 2013-2017 https://open.canada.ca/data/en/dataset/6a8e6c9f-72a7-4bae-8613-40d39c8a1520, Treaty Boundaries (Post 1975 Treaty https://open.canada.ca/data/en/dataset/be54680b-ea62-46f3-aaa9-7644ed970aef#wb-auto-6).

2. Program highlights 2022

The 2022 CCGS *Amundsen* expedition continued the KEBABB program for its third year collecting core marine ecosystem baseline data in Baffin Bay. Notably, sampling occurred during leg 2 in late September/early October (22 September – 20 October, 2022), which was later than previous KEBABB sampling periods (22 – 31 August 2019; Charette et al. 2020; 13 – 18 August 2021; Pućko et al. 2022). A total of 42 stations were sampled for physical and biogeochemical data. The KEBABB sampling team, referred to as the DFO team, included one Nunavut resident (Sikulia Nakashuk) worked in close collaboration with partnering institutions onboard, leveraging DFO's efforts to include additional sampling at historical transects in Lancaster Sound and the North Water Polynya, the later having connectivity with the DFO-led ArcticCORE (Conservation, Observation, Research and Engagement) program, as well as in Baffin Island fjords. Due to time constraints resulting from poor weather and ice conditions, the KEBABB E transect stations were cancelled.

3. Program participants

Program Lead:

Christine Michel, Senior Research Scientist, Fisheries and Oceans Canada

Program Co-lead and Scientific Coordinator:

Monika Pućko, Biologist, Fisheries and Oceans Canada

Principal Investigators:

David Capelle, Research Scientist, Fisheries and Oceans Canada

Maxime Geoffroy, Research Scientist, Memorial University of Newfoundland

Brent Else, Associate Professor, University of Calgary

Kevin Hedges, Research Scientist, Fisheries and Oceans Canada

Zou Zou Kuzyk, Assistant Professor, University of Manitoba

Clark Richards, Research Scientist, Fisheries and Oceans Canada

Virginie Roy, Research Scientist, Fisheries and Oceans Canada

Jean-Eric Tremblay, Professor, Laval University

Field participants:

David Capelle, Research Scientist, Fisheries and Oceans Canada; Field Lead

Elizabeth Kitching, Biologist, Fisheries and Oceans Canada

Vincent Villeneuve, Biologist, Fisheries and Oceans Canada

Marie Pierrejean, Postdoc fellow, Laval University; Fisheries and Oceans Canada

Catherine Marcil, Biologist, Fisheries and Oceans Canada

Lenore Vandenbyllaardt, Biologist, Fisheries and Oceans Canada

Sikulia Nakashuk, Technician, Fisheries and Oceans Canada

Stephen Ciastek, Technician, University of Manitoba

Devin Hammett, Technician, University of Manitoba

4. Sampling overview

The 2022 KEBABB program took place during leg 2 of the CCGS *Amundsen* expedition between 22 September and 20 October 2022, with dedicated sampling time occurring between 24 September and 15 October 2022. Leg 2 departed from Iqaluit, Nunavut, Canada and ended in Quebec City, Quebec, Canada (Amundsen Science, 2023). Sampling followed the sampling plan of previous years (Pućko et al. 2019; Charette et al. 2020; Pućko et al. 2022) along five transects (A, B, C, D, E) covering the coastal – offshore gradient adjacent to Qikiqtarjuaq, Nunavut, Canada. The northernmost transect of the KEBABB grid (transect E) was cancelled due to weather and ice constraints (**Figure 2**). The KEBABS Barrow Strait transect could not be sampled due to inclement weather and ice conditions, instead stations were sampled in Lancaster Sound. Stations were also sampled in the North Water polynya (NOW transect), at the BioArgo float deployment location, the entrance to Hudson Strait, as well as additional "opportunistic" sampling stations in Clark Fiord, Scott Inlet, and Clyde River (**Figure 2**). Sampling was carried out on a 24-hr schedule throughout the 22 sampling days. **Table 1** summarizes the KEBABB 2022 sampling operations. The CTD-Rosette system was operated by two Amundsen Science staff members, P. Guillot and C. Morrissey. The CCGS *Amundsen* crew provided support for winch operations and coordination with the bridge, as well as being involved in the deployment of oceanographic instruments and sampling equipment. The DFO team was split into three main teams based on sampling targets:

- Water biogeochemistry: D. Capelle, E. Kitching, and V. Villeneuve, working in collaboration with B. Else's team (G. Nickoloff - University of Calgary)
- Zooplankton: C. Marcil, S. Nakashuk, and L. Vandenbyllaardt , working in collaboration with M. Geoffroy's team (J. Herbig, E. Jacobsen, and A. Oates - Memorial University of Newfoundland)
- Benthic sampling and sediment coring: S. Ciastek, D. Hammett (University of Manitoba), and M. Pierrejean (DFO)

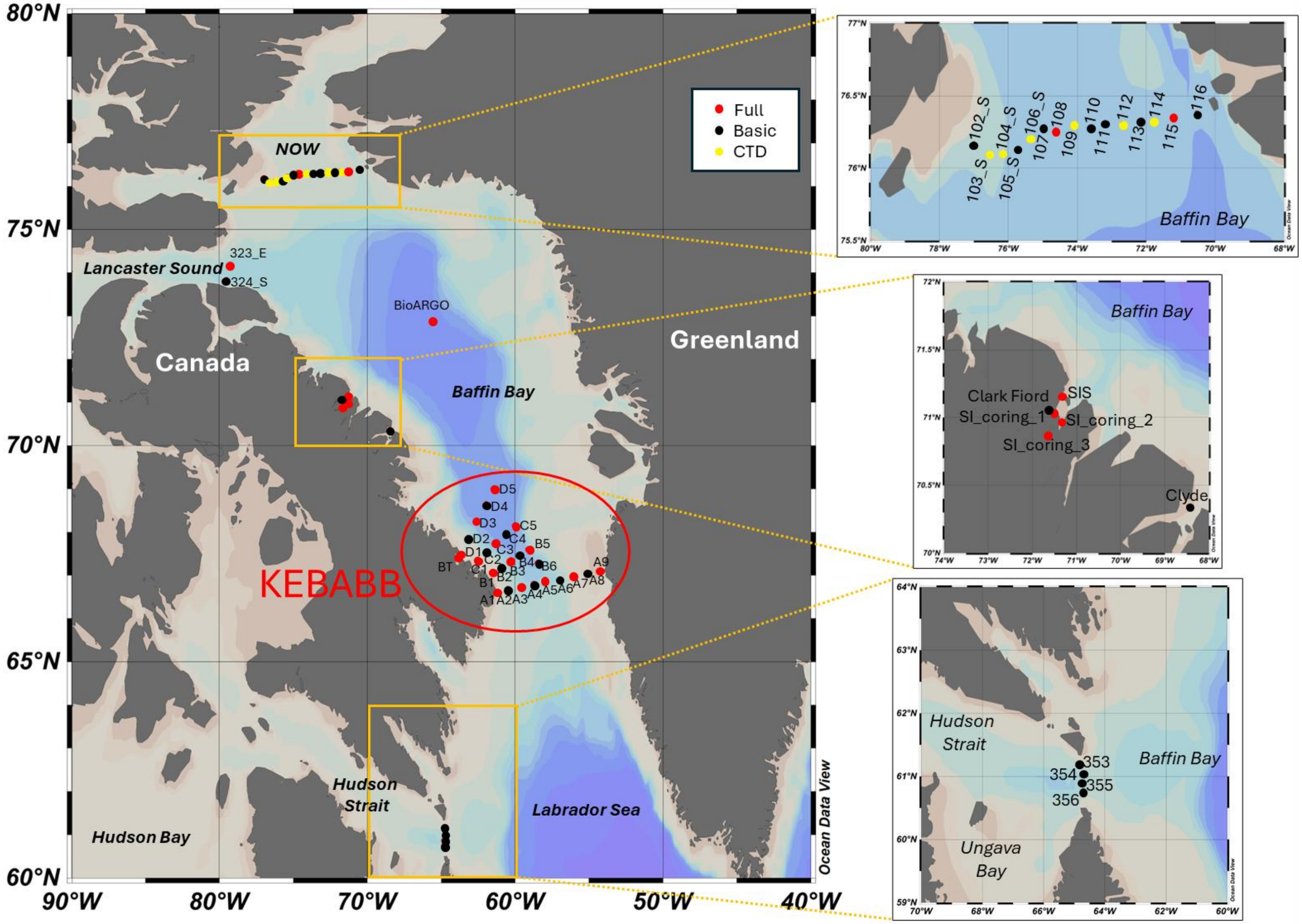

Figure 2: Map of KEBABB transects (A, B, C, and D transects), opportunistic sampling stations (Clyde, Clark Fiord, Scott Inlet Sill (SIS and SI_coring), Hudson Strait transect, Lancaster Sound transect, and the North Water Polynya (NOW) transect sampled during leg 2 of the 2022 CCGS *Amundsen* expedition. Color of symbols indicates station type. Full: red; Basic: black, CTD: yellow.

Table 1. Summary of sampling operations conducted by the DFO team during leg 2 of the 2022 CCGS *Amundsen* expedition for each sampling date (dd-mm-yyyy). X indicates the type(s) of sampling conducted at a given station. Sampled variables include water biogeochemistry at full (F) stations and basic (B) stations, zooplankton (integrated taxonomy, stratified taxonomy, oblique tow fatty acids, oblique tow taxonomy), sediment biogeochemistry (V = Van Veen, C = Box Core, S = Bulk Surface, P = Push Core, I = Benthic Incubations), and benthic epifauna.

Station name	Latitude (Deg N)	Longitude (Deg W)	Station Depth (m)	Date	Water biogeo-chemistry	Zooplankton				Sediment biogeo-chemistry	Benthic epifauna
						integrated taxonomy	stratified taxonomy	oblique tow fatty acids	oblique tow taxonomy		
A1	66.60666	-61.18852	109	24-09-2022	F		X	X			X
A2	66.6694	-60.4756	525	24-09-2022	B						
A3	66.73082	-59.608	870	25-09-2022	F		X	X		C,S,P,I	
A4	66.79768	-58.73792	897	25-09-2022	B					C,S,P	
A5	66.87664	-57.95712	828	25-09-2022	F		X	X		C,S	
A6	66.88712	-56.93088	655	26-09-2022						C,S	
A7	66.98324	-56.06718	130	26-09-2022	F**		X		X		X
A8	67.04428	-55.09574	56	27-09-2022	B*					V	
A9	67.08512	-54.2036	73	27-09-2022	F**				X	V,C,S	X
B6	67.28522	-58.43684	1134	28-09-2022						C,S,P	
B5	67.58724	-59.02384	1212	28-09-2022	F		X	X	X		
B4	67.46662	-59.63544	1446	28-09-2022	B						
B3	67.32946	-60.27714	1090	28-09-2022	F		X	X	X	C,S,P,I	
B2	67.19518	-60.89636	541	29-09-2022	B						
B1	67.06014	-61.50838	115	29-09-2022	F			X	X		X
C5	68.14592	-59.9731	1403	29-09-2022	F		X	X	X		
C4	67.9579	-60.62494	1616	30-09-2022	B					C,S,P,I	
C3	67.74784	-61.26864	1585	30-09-2022	F			X	X	C,S,P	
C2	67.54752	-61.90764	423	30-09-2022	B						
C1	67.34838	-62.53066	147	30-09-2022	F		X	X	X		
BT	67.39604	-63.84868	466	1-10-2022	F					C,S	
D1	67.47434	-63.68532	676	2-10-2022	F	X		X	X		X
D2	67.85626	-63.1448	266	2-10-2022	B						
D3	68.2449	-62.59526	1570	2-10-2022	F	X		X	X	C,S,P,I	
D4	68.62838	-61.98124	1829	3-10-2022	B						

D5	69.00236	-61.4055	1862	3-10-2022	F		X	X	X		
Clyde river	70.34794	-68.45464	345	4-10-2022	B						
Scott Inlet sill	71.15394	-71.26854	463	5-10-2022	F					C,S,I	X
Clark Fiord	71.05054	-71.59096	660	5-10-2022	B				X		
324	73.8251	-79.60446	865	8-10-2022	B**						
323	74.15138	-79.30468	805	8-10-2022	F**		X			C,S,P,I	
102	76.17866	-76.9801	297	9-10-2022	B**						
105	76.1222	-75.76466	353	9-10-2022	B**				X		
108	76.26452	-74.61174	449	9-10-2022	F**				X		X
115	76.33378	-71.20374	674	10-10-2022	F**				X	C,S,P,I	
116	76.38166	-70.51848	136	10-10-2022	B**						
111	76.30568	-73.20742	595	11-10-2022	B**					C,S,P,I	
BioArgo	72.89636	-65.60316	2380	12-10-2022	F**						
353	61.154	-64.78216	386	14-10-2022	B**						
354	61.00472	-64.72826	518	14-10-2022	B**	X			X		
355	60.85378	-64.71846	431	15-10-2022	B**						
356	60.7407	-64.71442	291	15-10-2022	B**						

* only Dissolved Inorganic Carbon and Total Alkalinity (DIC/TA), salinity, and oxygen isotopes ($\delta^{18}O$) sampled at this location
** only DIC/TA, salinity, and $\delta^{18}O$, flow cytometry (FC), chlorophyll *a* concentration, phytoplankton taxonomy (lugol and formol), particulate organic carbon/ nitrogen (POC/PON), fast repetition rate fluorometry (FRRF) sampled at this location

4.1. Seawater biogeochemistry

Water column sampling was conducted using a 24 x 12-L Niskin bottle Rosette system equipped with a Sea-Bird SBE 911plus CTD Profiler and additional sensors for measuring dissolved oxygen, colored dissolved organic matter (CDOM) fluorescence, chlorophyll *a* fluorescence, transmissometer, photosynthetically available radiation (PAR, 400 – 700 nm) and nitrate. These sensors collect continuous measurements to produce corresponding depth profiles at each rosette sampling station, along with discrete measurements corresponding to specific depths at which water was sampled (rosette bottle data). Discrete water samples were collected from the Rosette at a maximum of 19 depths. Most depths were chosen prior to arrival at station (**Table 2**), while the bottom depth (collected 10 m above the bottom), and the depth of maximum chlorophyll *a* fluorescence (SCM) were determined on site. The depth of the SCM was determined using the *in situ* fluorescence upcast profile. During the 2022 KEBABB expedition a SCM was detected at each station with depths ranging between 20 – 40 m. Continuous surface PAR was measured with radiometers located on the bridge of the ship.

Water sample collection at the rosette was completed within 2 hours of rosette recovery. Water was collected directly at the rosette for dissolved inorganic carbon/ total alkalinity (DIC/TA), salinity, and $\delta^{18}O$ (ratio of Oxygen-18 isotope and Oxygen-16 isotope). Water for the remaining analyses was pre-filtered into larger sampling containers (2 L, 9 L, and 20 L) through a 350-µm mesh to remove large grazers. Pre-filtered water was taken to the laboratory for immediate processing. The measurement of chlorophyll *a* concentrations and the estimation of primary production parameters via fast repetition rate fluorometry (FRRF) were completed on board while all other water samples were adequately stored or preserved for later analysis, either at the Freshwater Institute (DFO, Winnipeg) or in other laboratories. All filtrations and sample processing were completed within 3 hours of sample collection. Field sampling procedures for seawater measurements are summarized below.

Dissolved inorganic carbon and total alkalinity

One DIC/TA sample was collected at each designated sampling depth (**Table 2**), with the exception of 100 m, where a triplicate was taken. Samples for DIC/TA were collected immediately following the opening of the sampler to minimize the CO_2 exchange. Borosilicate glass reagent Corning bottles (250 mL) were filled with seawater allowing the bottle to overflow by three volumes. After a headspace of 1% volume was created, the samples were spiked with 100 µL of saturated mercuric chloride and capped with tapered glass stoppers with three stipes of Apiezon M grease. Afterwards, stoppers were secured with rubber bands and plastic hose clamps. The samples were stored at 4°C until further analysis following Dickson (2007) and Raimondi et al. (2019).

Salinity

One salinity sample was collected at every sampling depth (**Table 2**). Plastic 125-mL HDPE bottles were rinsed three times with sample water from the Niskin bottle using tygon tubing attached to the nozzle. Bottles were filled to the neck with sample water, sealed with electrical tape, and stored at 4°C in the dark until analysis.

Oxygen isotopes

One $\delta^{18}O$ sample was collected at every sampling depth (**Table 2**). Plastic 30-mL Nalgene bottles were rinsed three times with sample water from the Niskin bottle using Tygon tubing attached to the nozzle. Bottles were filled to the neck with sample water, sealed with electrical tape, and stored at 4°C in the dark until further processing following Rosa et al. (2016).

Bacteria and protist abundance by flow cytometry

Samples for bacterial and protist abundance using flow cytometry were both collected in duplicates at each designated sampling depth (**Table 2**). From the large sampling containers, 4 mL of sample was added to 5-mL plastic vials which had been pre-spiked with 20 µl of 25% glutaraldehyde (grade II). Samples were gently inverted, allowed to sit in the dark for 15 minutes, frozen and stored at –80°C until analysis following Belzile et al. (2008).

Bacteria abundance by epifluorescence microscopy

To validate flow cytometry results, samples for bacterial abundance measurements by the epifluorescence microscopy after staining with DAPI (4,6-diamidino-2-phenylindole) were collected at 5 m and at the SCM (**Table 2**). Ten (10) mL seawater samples were poured into a dark scintillation vial and spiked with borate-buffered formaldehyde solution for a final concentration of 1% by volume. Samples were capped, sealed with Parafilm, and stored at 4°C in the dark until analysis.

Size-fractionated chlorophyll a (total and >5 µm) concentration

Chlorophyll *a* samples were collected in duplicates for the determination of total chl *a* and sized-fractioned chl *a* (>5µm) at each designated sampling depth (**Table 2**). Between 250 – 500 mL of sample was filtered onto 25-mm Whatman GF/F filters for total chl *a* and onto 25 mm 5 µm Nucleopore membrane filters for size-fractionated chl *a*. Filters were placed in 10 mL of 90% Acetone in 20-mL scintillation vials and stored in the dark at 4°C for 18-24 hours for pigment extraction. After extraction, samples were read using a Turner Designs fluorometer (10- AU -005 -CE fluorometer previously calibrated using pure chl *a* extract (Anacystis nidulans, Sigma Chemicals)), acidified with three drops of 5% hydrochloric acid, and read again. The concentration of chl *a* and phaeopigments were calculated according to Parsons et al. (1984).

Phytoplankton Taxonomy

Cell taxonomy samples were collected at 5 m and SCM depths in duplicates, with one sample being preserved with 1 mL of acidic Lugol's solution, while the other was spiked with 1 mL of buffered formaldehyde (**Table 2**). Plastic 250 mL HDPE bottles were filled to the neck with sample water, spiked and stored 4°C in the dark until further analysis. Lugol samples were analyzed following the inverted microscope method (Lund et al. 1958).

Phytoplankton fatty acid composition

Fatty acid samples were collected from the 5 m and SCM depths in duplicates (**Table 2**). Between 1800 – 2000 mL of sample water was filtered onto combusted (450°C for 4 hours) 47 mm 0.7 µm Whatman GF/F filters. Sample filters were placed in sterile 2-mL cryovials, frozen and stored at –80°C until analysis.

Particulate Organic Carbon and Particulate Organic Nitrogen

Particulate organic carbon and particulate nitrogen (POC/PN) samples were collected at the SCM and bottom depths in triplicates (**Table 2**). Between 345 – 500 mL of sample water was filtered onto combusted (450°C for 4 hours) 21 mm 0.7 µm Whatman GF/F filters. Immediately after filtration, filters were placed in 2 mL acid-washed cryovials, frozen and stored at –80°C following Barrios-Guzman et al. (2019).

Fast repetition rate fluorometry

Photosynthetic parameters and gross primary production rates of the phytoplankton community were estimated using a FastOcean FRR fluorometer and the Act2Run software (Chelsea Technologies) at the 5 m and SCM depths (**Table 2**). Approximately 2 mL of seawater was exposed to irradiance ranging from 0 to 2000 μmol photons m^{-2} s^{-1} for 40 to 120 seconds, with three dark periods of 20 seconds, for a total exposition of 21 minutes 40 seconds.

Table 2. Sampling schedule for seawater biochemistry at KEBABB Full and Basic stations during leg 2 of the 2022 CCGS *Amundsen* expedition. Number of replicate sub-samples is indicated in the Table; SCM – subsurface chlorophyll maximum; DIC/TA – dissolved inorganic carbon/total alkalinity; δ18O – oxygen isotopes; POC/PN – particulate organic carbon/particulate nitrogen; FA – fatty acids; FRRF – Fast Repetition Rate Fluorometry.

Depth (m):	**DIC/TA**	**$\delta^{18}O$**	**Salinity**	**Flow Cytometry**		**DAPI**	**Chl *a***		**Phyto taxonomy**	**Phyto FA**	**POC/PN**	**FRRF**
				Bacteria	**Protists**		**Total**	**>5 µm**				
5	x1	x1	x1	x2	x2	x2	x2	x2	x2*	x2		x1
7	x1	x1	x1									
10		x1	x1				x2	x2				
20	x1	x1	x1	x2	x2		x2	x2				
30		x1	x1				x2	x2				
SCM	x1	x1	x1	x2	x2	x2	x2	x2	x2*	x2	x3	x1
40	x1	x1	x1	x2	x2		x2	x2				
50	x1	x1	x1				x2	x2				
60	x1	x1	x1	x2	x2		x2	x2				
80	x1	x1	x1	x2	x2		x2	x2				
100	x3	x1	x1	x2	x2							
150	x1	x1	x1									
200	x1	x1	x1									
250		x1	x1									
300		x1	x1									
500	x1	x1	x1									
750	x1	x1	x1									
1000	x1	x1	x1									
bottom	x1	x1	x1								x3	

* One sample preserved with formaldehyde solution, and one with acidic Lugol's solution

4.2. Zooplankton

Vertical zooplankton tows were carried out at 14 stations (**Table 1**) using a 3-Net Vertical Sampler (3NVS) Monster net, consisting of two 1 m^2 nets (200 µm mesh size), and a single 1 m^2 net (50 µm mesh size). The zooplankton samples, which represent the community over the whole water column depth, were collected and preserved in HDPE jars with a 4% v/v borate-buffered formaldehyde solution for later taxonomic composition analysis. Stratified zooplankton tows were carried out using a Hydrobios MultiNet closing net (200 µm mesh size, 0.5 m^2 collection area, 9 nets) following the sampling strategy described in **Table 3**. Stratified zooplankton net samples were preserved for later taxonomic composition analysis using the same method as for vertical net tows. Oblique zooplankton tows targeting the 0 – 100 m strata were carried out at three stations per transect, using a Double Square Net (DSN) (Tucker net, two 1 m^2 nets, 500 µm mesh size with an auxiliary 50 µm mesh size). During sampling in very shallow depths (station 198, 74-82 m), a W-shaped tow was undertaken in order to ensure that sufficient material was sampled. The actual depth of the Tucker net during deployment was monitored using a Kongsberg Maritime HiPAP MiniS34 cNODE acoustic transponder system attached to the cable just over the net. Specimens collected were immediately sorted to the lowest taxonomic level possible using a dissecting microscope and kept frozen at –80 °C for subsequent fatty acid biomarker analyses. Subsamples of the Tucker and Monster nets were given to Contaminants teams; G. Stern/U.Manitoba team, J. Gigault/CNRS-Takuvik team, and the T. Brown team. All samples preserved in formalin were sent to Maxime Geoffroy's team (Memorial University of Newfoundland) for taxonomic analysis after the cruise. A total of 11 vertical net tows, 9 stratified net tows, and 12 oblique net tows were carried out during the 2022 KEBABB expedition. The stratified zooplankton sampling resulted in the characterization of 145 strata, while the oblique tows produced 37 zooplankton samples, resulting in a total of 182 individually-sorted zooplankton samples for fatty acid analyses.

Table 3. Zooplankton stratified sampling strategy at KEBABB stations > 150 m during Leg 2 of the 2022 CCGS *Amundsen* expedition. S = (station depth -130)/3.

Strata/net#	Depth Strata start (m)	Strata thickness (m)
1	10 m above bottom	20
2	30 m above bottom	20
3	50 m above bottom	20
4	70 m above bottom	S
5	70 m + S	S
6	70 m + 2S	S
7	60	20
8	40	20
9	20	18

4.3. Sediments

The biogeochemical sampling and analyses of sediments for the KEBABB 2022 program was under the responsibility of Prof. Kuzyk (University of Manitoba). Sediments were collected using a box core (BX 650 MK III, 160 L) with a Kongsberg Maritime HiPAP MiniS34 cNODE acoustic transponder system (S/N# 17570) attached to the winch cable and sub-sampled with push cores (10 cm diameter) and stored at 4 °C in the dark. The sediment cores were sectioned into layers within 12 hours of collection. Layers were individually bagged and stored at –20°C until further analyses. Cores were sectioned according to the strategy described in **Table 4**. Sampled layers will be analyzed for sedimentation rate, radioisotope dating, porosity, total carbon and total inorganic carbon content, and concentrations of organic contaminants including total mercury, polycyclic aromatic hydrocarbons (PAHs), n-alkanes, and polychlorinated biphenyls (PCBs). Bulk surface samples were collected at box core sites and kept at 4°C for archival purposes. Subcores of sediments were collected for sediment pigment content, organic matter, compound specific isotope analysis (SIA) and biomarkers (HBIs) collected in the first centimeter of core. Sediment samples for pigment analysis were frozen at –80°C, and SIA and HBI sediment samples were frozen at –20°C for later analysis.

Additional sediment cores (3) were sub-sampled from the box cores to evaluate remineralization in the sediments. Water collected 10 m above the seafloor with the CTD-Rosette was added to each core prior to starting the experiments. Flux incubations were conducted over a period of 48 hours in a ~4°C cold room in the dark. Oxygen measurements were made every ~4 hours and dissolved nutrient samples (NO_x^-, NH_4^+, PO_4^{3-}, SiO_2) were collected at the beginning, after 24 h, and at the end of the incubations. Nutrient samples were frozen at –80°C for later analysis. These experiments were coupled with macrofauna sampling in order to assess interactions between benthic biogeochemical processes and benthic macrofauna. Benthic macrofauna was collected from cores that were sieved on a 2-mm mesh sieve. Organisms retained onto the sieve were frozen at –20°C for subsequent compound-specific isotope analysis. In addition to these samples, Beam trawl sampling provided numerous benthic specimens including decapods, amphipods, echinoderms, and cnidarians. Organisms from the beam trawl were sorted, identified, counted, and weighted. Specimens were frozen at –20°C for compound specific isotope and HBI analysis. The benthos team also provided organisms and surface sediment to other teams for nanoparticles (Gigault team, Takuvik) and contaminant analyses (Jantunen/Stern teams).

Table 4. Number and thickness of core layers sectioned from push cores, according to their position in the core, during the 2022 CCGS *Amundsen* expedition.

Core segment (cm)	Core layer thickness (cm)	Number of core layers
0-10	1	10
10-20	2	5
20-Bot	5	(Core length – 20) / 5

5. Logistical overview and recommendations

All KEBABB field participants boarded the CCGS *Amundsen* on 22 September 2022 in Iqaluit. There were two days of transit before reaching the first KEBABB sampling station, which allowed for the setup of the water filtration, zooplankton, and sediment laboratories. The laboratory space allocated to the DFO team and the general scientific capacities of the CCGS *Amundsen* were highly satisfactory and largely contributed to the successful execution of the field sampling plan. The ship's "live" sampling scheduling system, made available to everyone through their mobile devices, in addition to daily science meetings, greatly contributed to successful sampling. Unfortunately, due to a combination of frequent storms and ice conditions, the E transect of the KEBABB sampling plan and the Barrow Strait KEBABS transect could not be sampled. For future missions, increasing pre-scheduled contingency time to buffer weather events could help prevent the cancellation of transects and program components. The return transit to Quebec City allowed the team to dismantle and pack all laboratory and sampling equipment, and to safely prepare samples for shipping, allowing for quick and efficient demobilization upon the ship's arrival in Quebec City.

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8. Appendix A

The CCGS *Amundsen* ship log for leg 2 of 2022 expedition.

Date/time (UTC)	Station	Type	Depth (m)	Latitude	Longitude	Activity	Event
2022/09/24 17:29:49	A1	Full	105	66.5941812	-61.1996057	Baited camera	Deployment
2022/09/24 17:34:23	A1	Full	105	66.5939235	-61.1996450	Baited camera	Bottom
2022/09/24 18:25:42	A1	Full	105	66.6044372	-61.1987130	Trace metals Rosette	Deployment
2022/09/24 18:40:18	A1	Full	105	66.6021365	-61.2002418	Trace metals Rosette	Bottom
2022/09/24 18:48:49	A1	Full	105	66.6010742	-61.2005927	Trace metals Rosette	Recovery
2022/09/24 19:23:11	A1	Full	105	66.6073282	-61.1885375	CTD Rosette	Deployment
2022/09/24 19:35:05	A1	Full	105	66.6062933	-61.1876643	CTD Rosette	Bottom
2022/09/24 19:56:39	A1	Full	105	66.6060418	-61.1807190	CTD Rosette	Recovery
2022/09/24 20:16:01	A1	Full	105	66.6092565	-61.1747413	Tucker Net	Deployment
2022/09/24 20:26:50	A1	Full	105	66.6137955	-61.1769783	Tucker Net	Bottom
2022/09/24 20:40:27	A1	Full	105	66.6118438	-61.1937108	Tucker Net	Recovery
2022/09/24 21:14:28	A1	Full	105	66.6060487	-61.1933338	Hydrobios	Deployment
2022/09/24 21:17:58	A1	Full	105	66.6068803	-61.1928225	Hydrobios	Bottom
2022/09/24 21:23:27	A1	Full	105	66.6081247	-61.1924305	Hydrobios	Recovery
2022/09/24 22:09:43	A1	Full	105	66.5953885	-61.1996862	Baited camera	Recovery
2022/09/24 22:32:59	A1	Full	105	66.6087440	-61.1849192	Beam trawl	Deployment
2022/09/24 22:41:34	A1	Full	105	66.6150073	-61.1829622	Beam trawl	Bottom
2022/09/24 22:57:19	A1	Full	105	66.6156418	-61.1891925	Beam trawl	Recovery
2022/09/25 01:17:37	A2	Basic	525	66.6693380	-60.4755428	CTD Rosette	Deployment
2022/09/25 01:28:05	A2	Basic	525	66.6702798	-60.4740420	CTD Rosette	Bottom
2022/09/25 02:18:51	A2	Basic	525	66.6716070	-60.4843195	CTD Rosette	Recovery
2022/09/25 02:34:15	A2	Basic	525	66.6684318	-60.4756397	Bongo Net	Deployment
2022/09/25 02:37:30	A2	Basic	525	66.6687943	-60.4778905	Bongo Net	Bottom
2022/09/25 02:39:51	A2	Basic	525	66.6691093	-60.4799913	Bongo Net	Recovery
2022/09/25 06:26:30	A3	Full	869	66.7308333	-59.6080493	CTD Rosette	Deployment
2022/09/25 06:45:34	A3	Full	869	66.7280120	-59.6061660	CTD Rosette	Bottom
2022/09/25 07:48:12	A3	Full	869	66.7219288	-59.5889913	CTD Rosette	Recovery
2022/09/25 08:09:47	A3	Full	869	66.7321127	-59.6042983	Tucker Net	Deployment
2022/09/25 08:23:14	A3	Full	869	66.7361670	-59.6184013	Tucker Net	Bottom
2022/09/25 08:36:24	A3	Full	869	66.7377580	-59.6360637	Tucker Net	Recovery
2022/09/25 09:08:47	A3	Full	869	66.7332872	-59.6138627	Hydrobios	Deployment
2022/09/25 09:14:40	A3	Full	869	66.7331953	-59.6116620	Hydrobios	Recovery
2022/09/25 09:20:00	A3	Full	869	66.7326578	-59.6115547	Hydrobios	Deployment
2022/09/25 09:25:11	A3	Full	869	66.7326370	-59.6100405	Hydrobios	Deployment
2022/09/25 09:47:12	A3	Full	869	66.7321567	-59.6021330	Hydrobios	Bottom
2022/09/25 10:14:09	A3	Full	869	66.7338585	-59.5967388	Hydrobios	Recovery
2022/09/25 10:50:46	A3	Full	869	66.7354322	-59.6167188	IKMT	Deployment

2022/09/25 11:05:03	A3	Full	869	66.7422468	-59.6287325	IKMT	Bottom
2022/09/25 12:14:55	A3	Full	869	66.7682065	-59.7229758	IKMT	Recovery
2022/09/25 13:34:08	A3	Full	869	66.7326953	-59.6052962	Box Core	Deployment
2022/09/25 13:58:01	A3	Full	869	66.7334642	-59.6038893	Box Core	Bottom
2022/09/25 14:22:52	A3	Full	869	66.7339415	-59.6058962	Box Core	Recovery
2022/09/25 15:10:19	N/A	MVP	869	66.7088667	-59.6031787	MVP	Deployment
2022/09/25 18:12:03	N/A	MVP	869	66.7941615	-58.7393082	MVP	Recovery
2022/09/25 18:45:39	A4	Basic	930	66.7952278	-58.7443173	Trace Metals Rosette	Deployment
2022/09/25 18:53:35	A4	Basic	930	66.7950328	-58.7404107	Trace Metals Rosette	Bottom
2022/09/25 19:01:55	A4	Basic	930	66.7948010	-58.7375317	Trace Metals Rosette	Recovery
2022/09/25 19:26:20	A4	Basic	930	66.7976792	-58.7380565	CTD Rosette	Deployment
2022/09/25 19:44:08	A4	Basic	930	66.7964273	-58.7348638	CTD Rosette	Bottom
2022/09/25 20:43:03	A4	Basic	930	66.7915193	-58.7282030	CTD Rosette	Recovery
2022/09/25 21:14:36	A4	Basic	930	66.7896908	-58.7303998	Trace Metals Rosette	Deployment
2022/09/25 21:24:45	A4	Basic	930	66.7887063	-58.7304710	Trace Metals Rosette	Bottom
2022/09/25 21:34:54	A4	Basic	930	66.7884843	-58.7307772	Trace Metals Rosette	Recovery
2022/09/25 22:09:55	A4	Basic	930	66.7969250	-58.7597542	Box Core	Deployment
2022/09/25 22:33:12	A4	Basic	930	66.7975600	-58.7553918	Box Core	Bottom
2022/09/25 22:56:17	A4	Basic	930	66.7981800	-58.7510997	Box Core	Recovery
2022/09/25 23:38:05	N/A	MVP	930	66.7998285	-58.7421218	MVP	Deployment
2022/09/26 02:16:09	N/A	MVP	831	66.8708370	-57.9605958	MVP	Recovery
2022/09/26 02:35:59	A5	Full	831	66.8766342	-57.9571188	CTD Rosette	Deployment
2022/09/26 02:51:56	A5	Full	831	66.8779817	-57.9575802	CTD Rosette	Bottom
2022/09/26 03:48:41	A5	Full	831	66.8852758	-57.9678043	CTD Rosette	Recovery
2022/09/26 04:05:33	A5	Full	831	66.8814813	-57.9698952	Tucker Net	Deployment
2022/09/26 04:20:05	A5	Full	831	66.8777127	-57.9512715	Tucker Net	Bottom
2022/09/26 04:30:18	A5	Full	831	66.8790745	-57.9360925	Tucker Net	Recovery
2022/09/26 05:18:06	A5	Full	831	66.8739872	-57.9489810	Hydrobios	Deployment
2022/09/26 05:40:49	A5	Full	831	66.8729853	-57.9448525	Hydrobios	Bottom
2022/09/26 06:11:42	A5	Full	831	66.8708505	-57.9421385	Hydrobios	Recovery
2022/09/26 06:39:23	A5	Full	831	66.8723967	-57.9480898	IKMT	Deployment
2022/09/26 07:00:18	A5	Full	831	66.8650322	-57.9254350	IKMT	Bottom
2022/09/26 07:45:25	A5	Full	831	66.8667503	-57.9010563	IKMT	Recovery
2022/09/26 08:19:27	A5	Full	831	66.8710243	-57.9450607	Box Core	Deployment
2022/09/26 08:40:54	A5	Full	831	66.8700842	-57.9420198	Box Core	Bottom
2022/09/26 09:00:47	A5	Full	831	66.8682572	-57.9391675	Box Core	Recovery
2022/09/26 09:32:48	N/A	MVP	831	66.8623097	-57.9172693	MVP	Deployment
2022/09/26 13:02:57	A6	Basic	676	66.8871537	-56.9308232	CTD Rosette	Deployment
2022/09/26 13:14:44	A6	Basic	676	66.8871127	-56.9345287	CTD Rosette	Bottom
2022/09/26 14:03:05	A6	Basic	676	66.8915382	-56.9590867	CTD Rosette	Recovery
2022/09/26 14:25:09	A6	Basic	676	66.8913197	-56.9219293	Box Core	Deployment
2022/09/26 14:43:28	A6	Basic	676	66.8909048	-56.9290617	Box Core	Bottom
2022/09/26 14:56:20	A6	Basic	676	66.8921588	-56.9326692	Box Core	Recovery

2022/09/26 15:38:40	N/A	MVP	676	66.8956427	-56.9421667	MVP	Deployment
2022/09/26 20:18:29	A7	Full	124	66.9832297	-56.0672190	CTD Rosette	Deployment
2022/09/26 20:21:20	A7	Full	124	66.9833280	-56.0673782	CTD Rosette	Bottom
2022/09/26 20:46:32	A7	Full	124	66.9852000	-56.0645105	CTD Rosette	Recovery
2022/09/26 20:51:37	A7	Full	124	66.9857985	-56.0653860	Zodiac	Recovery
2022/09/26 21:31:15	A7	Full	124	66.9935275	-56.0664207	Tucker Net	Deployment
2022/09/26 21:46:24	A7	Full	124	66.9991028	-56.0783150	Tucker Net	Bottom
2022/09/26 21:51:31	A7	Full	124	66.9994373	-56.0855995	Tucker Net	Recovery
2022/09/26 22:28:51	A7	Full	124	66.9840377	-56.0671785	Trace Metals Rosette	Deployment
2022/09/26 22:38:47	A7	Full	124	66.9847608	-56.0672608	Trace Metals Rosette	Bottom
2022/09/26 22:49:14	A7	Full	124	66.9855053	-56.0678783	Trace Metals Rosette	Recovery
2022/09/27 00:00:56	A7	Full	124	66.9915623	-56.0781935	Hydrobios	Deployment
2022/09/27 00:06:19	A7	Full	124	66.9925462	-56.0782903	Hydrobios	Bottom
2022/09/27 00:13:08	A7	Full	124	66.9935522	-56.0764440	Hydrobios	Recovery
2022/09/27 00:35:30	A7	Full	124	66.9844192	-56.0702487	Trace Metals Rosette	Deployment
2022/09/27 00:43:22	A7	Full	124	66.9851690	-56.0724312	Trace Metals Rosette	Bottom
2022/09/27 00:50:18	A7	Full	124	66.9862128	-56.0714720	Trace Metals Rosette	Recovery
2022/09/27 01:11:44	A7	Full	124	66.9895067	-56.0806087	Beam Trawl	Deployment
2022/09/27 01:20:40	A7	Full	124	66.9939160	-56.0914312	Beam Trawl	Bottom
2022/09/27 01:37:00	A7	Full	124	66.9984305	-56.1187627	Beam Trawl	Recovery
2022/09/27 04:41:34	A8	Basic	72	67.0442210	-55.0955957	CTD Rosette	Deployment
2022/09/27 04:44:17	A8	Basic	72	67.0443352	-55.0969645	CTD Rosette	Bottom
2022/09/27 04:58:54	A8	Basic	72	67.0441215	-55.1019103	CTD Rosette	Recovery
2022/09/27 05:21:26	A8	Basic	72	67.0442045	-55.0862398	Van Veen	Deployment
2022/09/27 05:24:32	A8	Basic	72	67.0444135	-55.0866995	Van Veen	Bottom
2022/09/27 05:28:26	A8	Basic	72	67.0446067	-55.0870143	Van Veen	Recovery
2022/09/27 13:25:14	A9	Full	83	67.0873100	-54.1977417	Trace Metals Rosette	Deployment
2022/09/27 13:32:36	A9	Full	83	67.0900182	-54.1956702	Trace Metals Rosette	Bottom
2022/09/27 13:36:46	A9	Full	83	67.0911118	-54.1948773	Trace Metals Rosette	Recovery
2022/09/27 14:03:07	A9	Full	83	67.0850243	-54.2037050	CTD Rosette	Deployment
2022/09/27 14:05:11	A9	Full	83	67.0856195	-54.2031773	CTD Rosette	Bottom
2022/09/27 14:24:04	A9	Full	83	67.0911637	-54.1979702	CTD Rosette	Recovery
2022/09/27 14:42:11	A9	Full	83	67.0930797	-54.1943827	Zodiac	Deployment
2022/09/27 14:59:21	A9	Full	83	67.0852470	-54.2031118	Tucker Net	Deployment
2022/09/27 15:04:09	A9	Full	83	67.0876825	-54.2054897	Tucker Net	Bottom
2022/09/27 15:17:42	A9	Full	83	67.0882268	-54.2013207	Tucker Net	Recovery
2022/09/27 15:31:06	A9	Full	83	67.0911717	-54.2000990	Zodiac	Recovery
2022/09/27 17:03:17	A9	Full	83	67.0820067	-54.1949218	Beam trawl	Deployment
2022/09/27 17:10:27	A9	Full	83	67.0847698	-54.1906722	Beam trawl	Bottom
2022/09/27 17:31:32	A9	Full	83	67.0824330	-54.1982723	Beam trawl	Recovery
2022/09/27 17:53:01	A9	Full	83	67.0846018	-54.2004422	Van Veen	Deployment
2022/09/27 17:56:13	A9	Full	83	67.0845350	-54.2000187	Van Veen	Bottom
2022/09/27 18:00:28	A9	Full	83	67.0844737	-54.1994645	Van Veen	Recovery

2022/09/27 18:12:24	A9	Full	83	67.0843772	-54.1983548	Box Core	Deployment
2022/09/27 18:15:33	A9	Full	83	67.0842733	-54.1979173	Box Core	Bottom
2022/09/27 18:18:36	A9	Full	83	67.0842303	-54.1975390	Box Core	Recovery
2022/09/27 20:24:52	N/A	MVP	1082	67.0674538	-54.4789845	MVP	Deployment
2022/09/28 08:52:31	B6	Basic	1082	67.2851470	-58.4366773	CTD Rosette	Deployment
2022/09/28 09:11:58	B6	Basic	1082	67.2830602	-58.4321132	CTD Rosette	Bottom
2022/09/28 09:35:24	B6	Basic	1082	67.2804267	-58.4265570	CTD Rosette	Recovery
2022/09/28 09:46:45	B6	Basic	1082	67.2792350	-58.4250102	Bongo Net	Deployment
2022/09/28 09:50:47	B6	Basic	1082	67.2788830	-58.4242382	Bongo Net	Bottom
2022/09/28 09:53:57	B6	Basic	1082	67.2786537	-58.4238693	Bongo Net	Recovery
2022/09/28 10:21:51	B6	Basic	1082	67.2869710	-58.4471972	Box Core	Deployment
2022/09/28 10:53:27	B6	Basic	1082	67.2877692	-58.4472820	Box Core	Bottom
2022/09/28 11:22:15	B6	Basic	1082	67.2891507	-58.4475898	Box Core	Recovery
2022/09/28 14:04:11	B5	Full	1228	67.5872858	-59.0237987	CTD Rosette	Deployment
2022/09/28 14:25:35	B5	Full	1228	67.5899290	-59.0327932	CTD Rosette	Bottom
2022/09/28 15:25:57	B5	Full	1228	67.5939008	-59.0653487	CTD Rosette	Recovery
2022/09/28 15:39:23	B5	Full	1228	67.5895572	-59.0571638	Bongo Net	Deployment
2022/09/28 15:42:48	B5	Full	1228	67.5895003	-59.0571560	Bongo Net	Bottom
2022/09/28 15:45:27	B5	Full	1228	67.5891753	-59.0573917	Bongo Net	Recovery
2022/09/28 16:26:51	B5	Full	1228	67.5830510	-59.0350595	Tucker Net	Deployment
2022/09/28 16:40:21	B5	Full	1228	67.5786652	-59.0209637	Tucker Net	Bottom
2022/09/28 16:49:33	B5	Full	1228	67.5783342	-59.0080420	Tucker Net	Recovery
2022/09/28 17:30:01	B5	Full	1228	67.5850065	-59.0192095	Hydrobios	Deployment
2022/09/28 17:58:58	B5	Full	1228	67.5850297	-59.0168123	Hydrobios	Bottom
2022/09/28 18:34:00	B5	Full	1228	67.5842113	-59.0108057	Hydrobios	Recovery
2022/09/28 19:05:01	B5	Full	1228	67.5884300	-59.0128552	IKMT	Deployment
2022/09/28 19:35:38	B5	Full	1228	67.5779222	-58.9802325	IKMT	Bottom
2022/09/28 20:37:20	B5	Full	1228	67.5802628	-58.8737890	IKMT	Recovery
2022/09/28 23:05:52	B4	Basic	1411	67.4665233	-59.6353110	CTD Rosette	Deployment
2022/09/28 23:31:53	B4	Basic	1411	67.4648217	-59.6341528	CTD Rosette	Bottom
2022/09/29 00:52:27	B4	Basic	1411	67.4646322	-59.6419228	CTD Rosette	Recovery
2022/09/29 02:44:18	B3	Full	1111	67.3294782	-60.2771493	CTD Rosette	Deployment
2022/09/29 03:04:34	B3	Full	1111	67.3305378	-60.2767812	CTD Rosette	Bottom
2022/09/29 04:12:17	B3	Full	1111	67.3339963	-60.2613988	CTD Rosette	Recovery
2022/09/29 05:16:31	B3	Full	1111	67.3297208	-60.2676668	Tucker Net	Deployment
2022/09/29 05:24:43	B3	Full	1111	67.3258538	-60.2595950	Tucker Net	Bottom
2022/09/29 05:32:52	B3	Full	1111	67.3225927	-60.2500988	Tucker Net	Recovery
2022/09/29 06:01:20	B3	Full	1111	67.3274180	-60.2665043	Hydrobios	Deployment
2022/09/29 06:26:22	B3	Full	1111	67.3243642	-60.2524847	Hydrobios	Bottom
2022/09/29 06:59:35	B3	Full	1111	67.3172675	-60.2386282	Hydrobios	Recovery
2022/09/29 07:33:05	B3	Full	1111	67.3286585	-60.2739643	Box Core	Deployment
2022/09/29 08:02:40	B3	Full	1111	67.3264307	-60.2721530	Box Core	Bottom
2022/09/29 08:28:34	B3	Full	1111	67.3222122	-60.2675067	Box Core	Recovery

2022/09/29 10:26:31	B2	Basic	636	67.1961792	-60.8966340	CTD Rosette	Deployment
2022/09/29 10:42:04	B2	Basic	636	67.1939878	-60.8962197	CTD Rosette	Bottom
2022/09/29 11:31:32	B2	Basic	636	67.1871528	-60.9040777	CTD Rosette	Recovery
2022/09/29 11:43:28	B2	Basic	636	67.1951442	-60.8989812	Bongo Net	Deployment
2022/09/29 11:47:34	B2	Basic	636	67.1949673	-60.9005753	Bongo Net	Bottom
2022/09/29 11:50:28	B2	Basic	636	67.1947187	-60.9012570	Bongo Net	Recovery
2022/09/29 14:38:52	B1	Full	120	67.0601792	-61.5084300	CTD Rosette	Deployment
2022/09/29 14:42:46	B1	Full	120	67.0611852	-61.5094498	CTD Rosette	Bottom
2022/09/29 15:03:19	B1	Full	120	67.0658905	-61.5155233	CTD Rosette	Recovery
2022/09/29 15:22:30	B1	Full	120	67.0662043	-61.5092432	Tucker Net	Deployment
2022/09/29 15:30:00	B1	Full	120	67.0692902	-61.5016380	Tucker Net	Bottom
2022/09/29 15:37:47	B1	Full	120	67.0733963	-61.5015733	Tucker Net	Recovery
2022/09/29 15:59:47	B1	Full	120	67.0595187	-61.5055508	Beam trawl	Deployment
2022/09/29 16:10:21	B1	Full	120	67.0634605	-61.4961322	Beam trawl	Bottom
2022/09/29 16:32:01	B1	Full	120	67.0776150	-61.4861957	Beam trawl	Recovery
2022/09/29 23:11:46	C5	Full	1430	68.1458848	-59.9730353	CTD Rosette	Deployment
2022/09/29 23:35:43	C5	Full	1430	68.1456242	-59.9735033	CTD Rosette	Bottom
2022/09/30 00:47:19	C5	Full	1430	68.1411477	-59.9872883	CTD Rosette	Recovery
2022/09/30 00:59:31	C5	Full	1430	68.1457942	-59.9772863	Bongo Net	Deployment
2022/09/30 01:02:22	C5	Full	1430	68.1458735	-59.9777892	Bongo Net	Bottom
2022/09/30 01:05:41	C5	Full	1430	68.1459168	-59.9791803	Bongo Net	Recovery
2022/09/30 01:17:47	C5	Full	1430	68.1423442	-59.9806975	Tucker Net	Deployment
2022/09/30 01:26:53	C5	Full	1430	68.1427358	-59.9678468	Tucker Net	Bottom
2022/09/30 01:37:26	C5	Full	1430	68.1452998	-59.9728813	Tucker Net	Recovery
2022/09/30 02:06:27	C5	Full	1430	68.1465950	-59.9775133	Hydrobios	Deployment
2022/09/30 02:36:04	C5	Full	1430	68.1468152	-59.9847933	Hydrobios	Bottom
2022/09/30 03:19:27	C5	Full	1430	68.1465485	-59.9914543	Hydrobios	Recovery
2022/09/30 03:45:58	C5	Full	1430	68.1386718	-60.0042243	IKMT	Deployment
2022/09/30 04:05:03	C5	Full	1430	68.1422732	-59.9973762	IKMT	Bottom
2022/09/30 04:52:11	C5	Full	1430	68.1194907	-59.9479017	IKMT	Recovery
2022/09/30 07:06:41	C4	Basic	1610	67.9579280	-60.6247940	CTD Rosette	Deployment
2022/09/30 07:37:36	C4	Basic	1610	67.9568673	-60.6166033	CTD Rosette	Bottom
2022/09/30 08:55:40	C4	Basic	1610	67.9480103	-60.6019143	CTD Rosette	Recovery
2022/09/30 09:28:04	C4	Basic	1610	67.9619078	-60.6302962	Box Core	Deployment
2022/09/30 10:04:54	C4	Basic	1610	67.9588187	-60.6272465	Box Core	Bottom
2022/09/30 10:42:41	C4	Basic	1610	67.9542700	-60.6256595	Box Core	Recovery
2022/09/30 12:56:29	C3	Full	1531	67.7478217	-61.2686312	CTD Rosette	Deployment
2022/09/30 13:23:58	C3	Full	1531	67.7482460	-61.2730652	CTD Rosette	Bottom
2022/09/30 14:29:11	C3	Full	1531	67.7475365	-61.2793393	CTD Rosette	Recovery
2022/09/30 14:45:43	C3	Full	1531	67.7411180	-61.2786812	Tucker Net	Deployment
2022/09/30 14:53:51	C3	Full	1531	67.7373895	-61.2749382	Tucker Net	Bottom
2022/09/30 15:03:35	C3	Full	1531	67.7368022	-61.2617970	Tucker Net	Recovery
2022/09/30 16:17:18	C3	Full	1531	67.7413983	-61.2800247	IKMT	Deployment

2022/09/30 16:45:11	C3	Full	1531	67.7325798	-61.2485102	IKMT	Bottom
2022/09/30 17:45:25	C3	Full	1531	67.7174258	-61.1502332	IKMT	Recovery
2022/09/30 19:15:07	C3	Full	1531	67.7527358	-61.2635287	Box Core	Deployment
2022/09/30 19:50:53	C3	Full	1531	67.7501285	-61.2615038	Box Core	Bottom
2022/09/30 20:28:51	C3	Full	1531	67.7469377	-61.2517267	Box Core	Recovery
2022/09/30 22:41:19	C2	Basic	430	67.5474373	-61.9075915	CTD Rosette	Deployment
2022/09/30 22:49:16	C2	Basic	430	67.5464337	-61.9078948	CTD Rosette	Bottom
2022/09/30 23:38:21	C2	Basic	430	67.5413860	-61.9045843	CTD Rosette	Recovery
2022/10/01 01:18:14	C1	Full	141	67.3558243	-62.5165843	Tucker Net	Deployment
2022/10/01 01:34:01	C1	Full	141	67.3445600	-62.5124920	Tucker Net	Bottom
2022/10/01 01:46:21	C1	Full	141	67.3372332	-62.5140243	Tucker Net	Recovery
2022/10/01 02:19:34	C1	Full	141	67.3460642	-62.5259970	Hydrobios	Deployment
2022/10/01 02:23:12	C1	Full	141	67.3455163	-62.5262738	Hydrobios	Bottom
2022/10/01 02:28:08	C1	Full	141	67.3457217	-62.5250920	Hydrobios	Recovery
2022/10/01 03:10:29	C1	Full	141	67.3483737	-62.5306653	CTD Rosette	Deployment
2022/10/01 03:16:12	C1	Full	141	67.3481190	-62.5318952	CTD Rosette	Bottom
2022/10/01 03:43:33	C1	Full	141	67.3474920	-62.5299437	CTD Rosette	Recovery
2022/10/01 14:58:18	BT	Full	400	67.4736748	-63.8253180	Baited camera	Deployment
2022/10/01 15:07:26	BT	Full	400	67.4737918	-63.8268505	Baited camera	Bottom
2022/10/01 17:57:47	BT	Full	400	67.3960392	-63.8487060	CTD Rosette	Deployment
2022/10/01 18:07:09	BT	Full	400	67.3959762	-63.8491838	CTD Rosette	Bottom
2022/10/01 18:51:39	BT	Full	400	67.3939785	-63.8488263	CTD Rosette	Recovery
2022/10/01 19:07:54	BT	Full	400	67.3961732	-63.8542922	Box Core	Deployment
2022/10/01 19:22:02	BT	Full	400	67.3952705	-63.8527735	Box Core	Bottom
2022/10/01 19:33:33	BT	Full	400	67.3953033	-63.8502370	Box Core	Recovery
2022/10/01 22:42:05	D1	Full	400	67.4732633	-63.8223748	Baited camera	Recovery
2022/10/02 06:25:30	D1	Full	590	67.4734847	-63.6938965	Trace Metals Rosette	Deployment
2022/10/02 06:36:11	D1	Full	590	67.4726568	-63.6920452	Trace Metals Rosette	Bottom
2022/10/02 06:46:52	D1	Full	590	67.4717130	-63.6903467	Trace Metals Rosette	Recovery
2022/10/02 07:10:26	D1	Full	590	67.4743343	-63.6853400	CTD Rosette	Deployment
2022/10/02 07:23:04	D1	Full	590	67.4738283	-63.6836233	CTD Rosette	Bottom
2022/10/02 08:12:26	D1	Full	590	67.4683628	-63.6815258	CTD Rosette	Recovery
2022/10/02 08:29:39	D1	Full	590	67.4755765	-63.6863063	Trace Metals Rosette	Deployment
2022/10/02 08:42:34	D1	Full	590	67.4744067	-63.6832465	Trace Metals Rosette	Bottom
2022/10/02 08:56:16	D1	Full	590	67.4733817	-63.6810157	Trace Metals Rosette	Recovery
2022/10/02 09:13:45	D1	Full	590	67.4729617	-63.6647998	Tucker Net	Deployment
2022/10/02 09:23:22	D1	Full	590	67.4735445	-63.6496372	Tucker Net	Bottom
2022/10/02 09:31:45	D1	Full	590	67.4743287	-63.6367660	Tucker Net	Recovery
2022/10/02 10:11:58	D1	Full	590	67.4746490	-63.6834028	Monster Net	Deployment
2022/10/02 10:28:49	D1	Full	590	67.4738695	-63.6782377	Monster Net	Bottom
2022/10/02 10:48:32	D1	Full	590	67.4730968	-63.6749062	Monster Net	Recovery
2022/10/02 11:17:18	D1	Full	590	67.4744560	-63.7412503	Beam trawl	Deployment
2022/10/02 11:41:22	D1	Full	590	67.4830305	-63.7170913	Beam trawl	Bottom

2022/10/02 12:25:15	D1	Full	590	67.4993285	-63.6638598	Beam trawl	Recovery
2022/10/02 13:32:43	N/A	Zodiac	590	67.5329947	-64.0539152	Zodiac	Deployment
2022/10/02 22:04:13	D2	Basic	260	67.8561408	-63.1446705	CTD Rosette	Deployment
2022/10/02 22:09:17	D2	Basic	260	67.8555825	-63.1432262	CTD Rosette	Bottom
2022/10/02 22:45:32	D2	Basic	260	67.8497432	-63.1372118	CTD Rosette	Recovery
2022/10/02 22:57:56	D2	Basic	260	67.8580515	-63.1474463	Bongo Net	Deployment
2022/10/02 23:00:28	D2	Basic	260	67.8578403	-63.1476720	Bongo Net	Bottom
2022/10/02 23:02:51	D2	Basic	260	67.8574880	-63.1475820	Bongo Net	Recovery
2022/10/03 01:40:33	D3	Full	1545	68.2425107	-62.5919557	Trace Metals Rosette	Deployment
2022/10/03 01:49:34	D3	Full	1545	68.2426740	-62.5922047	Trace Metals Rosette	Bottom
2022/10/03 02:03:09	D3	Full	1545	68.2431698	-62.5961388	Trace Metals Rosette	Recovery
2022/10/03 02:22:52	D3	Full	1545	68.2448850	-62.5952662	CTD Rosette	Deployment
2022/10/03 02:52:08	D3	Full	1545	68.2458677	-62.5940813	CTD Rosette	Bottom
2022/10/03 04:02:28	D3	Full	1545	68.2484788	-62.5899103	CTD Rosette	Recovery
2022/10/03 04:20:01	D3	Full	1545	68.2421013	-62.5887018	Trace Metals Rosette	Deployment
2022/10/03 04:38:34	D3	Full	1545	68.2429738	-62.5861755	Trace Metals Rosette	Bottom
2022/10/03 04:53:04	D3	Full	1545	68.2435165	-62.5853243	Trace Metals Rosette	Recovery
2022/10/03 05:14:56	D3	Full	1545	68.2414413	-62.5723415	Tucker Net	Deployment
2022/10/03 05:21:39	D3	Full	1545	68.2414952	-62.5622720	Tucker Net	Bottom
2022/10/03 05:28:00	D3	Full	1545	68.2431888	-62.5532427	Tucker Net	Recovery
2022/10/03 05:52:15	D3	Full	1545	68.2410260	-62.5845073	Monster Net	Deployment
2022/10/03 06:28:37	D3	Full	1545	68.2402538	-62.5774390	Monster Net	Bottom
2022/10/03 07:28:21	D3	Full	1545	68.2380413	-62.5647363	Monster Net	Recovery
2022/10/03 07:53:00	D3	Full	1545	68.2388130	-62.5751952	IKMT	Deployment
2022/10/03 08:18:22	D3	Full	1545	68.2498825	-62.5792233	IKMT	Bottom
2022/10/03 09:11:08	D3	Full	1545	68.2260982	-62.5430190	IKMT	Recovery
2022/10/03 09:37:53	D3	Full	1545	68.2413408	-62.5949702	Box Core	Deployment
2022/10/03 10:18:20	D3	Full	1545	68.2412127	-62.5940920	Box Core	Bottom
2022/10/03 10:54:05	D3	Full	1545	68.2408323	-62.5955702	Box Core	Recovery
2022/10/03 13:52:02	D4	Basic	1834	68.6283753	-61.9812790	CTD Rosette	Deployment
2022/10/03 14:24:39	D4	Basic	1834	68.6286875	-61.9758503	CTD Rosette	Bottom
2022/10/03 15:35:10	D4	Basic	1834	68.6280447	-61.9638517	CTD Rosette	Recovery
2022/10/03 18:04:42	D5	Full	1864	69.0006717	-61.4039795	Trace Metals Rosette	Deployment
2022/10/03 18:13:21	D5	Full	1864	68.9991960	-61.4020067	Trace Metals Rosette	Bottom
2022/10/03 18:19:53	D5	Full	1864	68.9980995	-61.4021035	Trace Metals Rosette	Recovery
2022/10/03 18:41:46	D5	Full	1864	69.0024608	-61.4054290	CTD Rosette	Deployment
2022/10/03 19:15:11	D5	Full	1864	69.0015453	-61.4068447	CTD Rosette	Bottom
2022/10/03 20:21:45	D5	Full	1864	68.9973497	-61.4252785	CTD Rosette	Recovery
2022/10/03 20:39:14	D5	Full	1864	69.0034843	-61.4033155	Trace Metals Rosette	Deployment
2022/10/03 20:51:13	D5	Full	1864	69.0023318	-61.4082523	Trace Metals Rosette	Bottom
2022/10/03 20:59:08	D5	Full	1864	69.0018973	-61.4105985	Trace Metals Rosette	Recovery
2022/10/03 21:21:08	D5	Full	1864	68.9989088	-61.4230165	Bongo Net	Recovery
2022/10/03 21:33:08	D5	Full	1864	69.0028933	-61.4045202	Tucker Net	Deployment

2022/10/03 21:43:12	D5	Full	1864	68.9968720	-61.4045660	Tucker Net	Bottom
2022/10/03 21:53:02	D5	Full	1864	68.9983977	-61.3995415	Tucker Net	Recovery
2022/10/03 22:20:54	D5	Full	1864	69.0038650	-61.4178790	Hydrobios	Deployment
2022/10/03 22:58:37	D5	Full	1864	69.0040228	-61.4272917	Hydrobios	Bottom
2022/10/03 23:47:51	D5	Full	1864	69.0047177	-61.4347005	Hydrobios	Recovery
2022/10/04 00:09:21	D5	Full	1864	69.0053025	-61.4484525	IKMT	Deployment
2022/10/04 00:33:07	D5	Full	1864	68.9936612	-61.4654447	IKMT	Bottom
2022/10/04 01:27:08	D5	Full	1864	68.9600308	-61.4194687	IKMT	Recovery
2022/10/04 01:46:10	N/A	CPR	1864	68.9614045	-61.4375842	CPR	Deployment
2022/10/04 12:13:02	Ittaq_Macbeth	Mooring	227	69.9032903	-66.8120530	Mooring	Deployment
2022/10/04 12:13:21	Ittaq_Macbeth	Mooring	227	69.9032675	-66.8121467	Mooring	Bottom
2022/10/04 19:03:16	Clyde	Basic	360	70.3480070	-68.4546750	CTD Rosette	Deployment
2022/10/04 19:09:48	Clyde	Basic	360	70.3478297	-68.4561667	CTD Rosette	Bottom
2022/10/04 19:45:23	Clyde	Basic	360	70.3452128	-68.4649558	CTD Rosette	Recovery
2022/10/04 19:59:09	Clyde	Basic	360	70.3492253	-68.4656002	Bongo Net	Deployment
2022/10/04 20:02:35	Clyde	Basic	360	70.3488117	-68.4674987	Bongo Net	Bottom
2022/10/04 20:06:06	Clyde	Basic	360	70.3481750	-68.4685858	Bongo Net	Recovery
2022/10/05 14:31:59	Scott Inlet sill (SIS)	Full	460	71.1528637	-71.2628717	Trace Metals Rosette	Deployment
2022/10/05 14:42:05	Scott Inlet sill (SIS)	Full	460	71.1528088	-71.2643962	Trace Metals Rosette	Bottom
2022/10/05 14:47:14	Scott Inlet sill (SIS)	Full	460	71.1525977	-71.2646703	Trace Metals Rosette	Recovery
2022/10/05 15:09:16	Scott Inlet sill (SIS)	Full	460	71.1539635	-71.2684918	CTD Rosette	Deployment
2022/10/05 15:18:14	Scott Inlet sill (SIS)	Full	460	71.1538598	-71.2675892	CTD Rosette	Bottom
2022/10/05 15:54:38	Scott Inlet sill (SIS)	Full	460	71.1519857	-71.2721597	CTD Rosette	Recovery
2022/10/05 16:10:17	Scott Inlet sill (SIS)	Full	460	71.1533290	-71.2689707	Trace Metals Rosette	Deployment
2022/10/05 16:21:10	Scott Inlet sill (SIS)	Full	460	71.1534955	-71.2665382	Trace Metals Rosette	Bottom
2022/10/05 16:31:02	Scott Inlet sill (SIS)	Full	460	71.1533280	-71.2660112	Trace Metals Rosette	Recovery
2022/10/05 16:44:19	Scott Inlet sill (SIS)	Full	460	71.1529995	-71.2702063	Bongo Net	Deployment
2022/10/05 16:47:28	Scott Inlet sill (SIS)	Full	460	71.1526115	-71.2707165	Bongo Net	Bottom
2022/10/05 16:50:40	Scott Inlet sill (SIS)	Full	460	71.1520725	-71.2707213	Bongo Net	Recovery
2022/10/05 17:03:36	Scott Inlet sill (SIS)	Full	460	71.1488502	-71.2645483	Tucker Net	Deployment
2022/10/05 17:14:03	Scott Inlet sill (SIS)	Full	460	71.1428880	-71.2559082	Tucker Net	Bottom
2022/10/05 17:24:29	Scott Inlet sill (SIS)	Full	460	71.1429910	-71.2379818	Tucker Net	Recovery
2022/10/05 17:47:31	Scott Inlet sill (SIS)	Full	460	71.1528115	-71.2646533	Monster Net	Deployment
2022/10/05 18:01:06	Scott Inlet sill (SIS)	Full	460	71.1520453	-71.2617453	Monster Net	Bottom
2022/10/05 18:21:25	Scott Inlet sill (SIS)	Full	460	71.1509900	-71.2570635	Monster Net	Recovery
2022/10/05 18:47:39	Scott Inlet sill (SIS)	Full	460	71.1501358	-71.2599022	Beam Trawl	Deployment
2022/10/05 19:14:04	Scott Inlet sill (SIS)	Full	460	71.1512998	-71.2166178	Beam Trawl	Bottom

2022/10/05 19:48:51	Scott Inlet sill (SIS)	Full	460	71.1681518	-71.1555478	Beam Trawl	Recovery
2022/10/05 20:13:32	Scott Inlet sill (SIS)	Full	460	71.1535310	-71.2594623	Box Core	Deployment
2022/10/05 20:27:00	Scott Inlet sill (SIS)	Full	460	71.1523907	-71.2587285	Box Core	Bottom
2022/10/05 20:39:14	Scott Inlet sill (SIS)	Full	460	71.1515367	-71.2573635	Box Core	Recovery
2022/10/05 22:08:42	Clark_fiord	Basic	580	71.0505345	-71.5912012	CTD Rosette	Deployment
2022/10/05 22:20:31	Clark_fiord	Basic	580	71.0508183	-71.5930352	CTD Rosette	Bottom
2022/10/05 23:09:33	Clark_fiord	Basic	580	71.0520642	-71.5999622	CTD Rosette	Recovery
2022/10/06 00:12:47	SI_coring1	Coring	674	71.0413772	-71.5561897	Box Core	Deployment
2022/10/06 00:29:15	SI_coring1	Coring	674	71.0405855	-71.5574532	Box Core	Bottom
2022/10/06 00:45:39	SI_coring1	Coring	674	71.0413172	-71.5572117	Box Core	Recovery
2022/10/06 01:08:06	SI_coring1	Coring	674	71.0411162	-71.5552205	Gravity Core	Deployment
2022/10/06 01:23:41	SI_coring1	Coring	674	71.0414063	-71.5547550	Gravity Core	Bottom
2022/10/06 01:39:47	SI_coring1	Coring	674	71.0411082	-71.5555075	Gravity Core	Recovery
2022/10/06 02:52:08	SI_coring2	Coring	660	70.9649530	-71.3232803	CTD Rosette	Deployment
2022/10/06 03:06:23	SI_coring2	Coring	660	70.9648998	-71.3256852	CTD Rosette	Bottom
2022/10/06 03:19:31	SI_coring2	Coring	660	70.9632683	-71.3270717	CTD Rosette	Recovery
2022/10/06 03:42:46	SI_coring2	Coring	660	70.9668420	-71.3211092	Gravity Core	Deployment
2022/10/06 03:54:35	SI_coring2	Coring	660	70.9664787	-71.3224063	Gravity Core	Bottom
2022/10/06 04:10:46	SI_coring2	Coring	660	70.9664225	-71.3235513	Gravity Core	Recovery
2022/10/06 04:26:45	SI_coring2	Coring	660	70.9664590	-71.3220467	Box Core	Deployment
2022/10/06 04:41:39	SI_coring2	Coring	660	70.9663610	-71.3224957	Box Core	Bottom
2022/10/06 04:58:27	SI_coring2	Coring	660	70.9663543	-71.3241863	Box Core	Recovery
2022/10/06 06:29:51	SI_coring 3	Coring	600	70.8752817	-71.6615143	CTD Rosette	Deployment
2022/10/06 06:42:04	SI_coring 3	Coring	600	70.8755600	-71.6611040	CTD Rosette	Bottom
2022/10/06 06:56:07	SI_coring 3	Coring	600	70.8761617	-71.6599217	CTD Rosette	Recovery
2022/10/06 07:09:05	SI_coring 3	Coring	600	70.8742493	-71.6600733	Box Core	Deployment
2022/10/06 07:26:46	SI_coring 3	Coring	600	70.8745955	-71.6607957	Box Core	Bottom
2022/10/06 07:43:58	SI_coring 3	Coring	600	70.8753498	-71.6605717	Box Core	Recovery
2022/10/07 04:41:58	Ittaq_Scott	Mooring	630	71.1342760	-70.8242365	Mooring	Deployment
2022/10/07 05:03:40	Ittaq_Scott	Mooring	630	71.1717870	-70.8447222	CPR	Deployment
2022/10/08 06:11:17	324_south	Basic	779	73.8251093	-79.6046142	CTD Rosette	Deployment
2022/10/08 06:26:42	324_south	Basic	779	73.8238280	-79.5969630	CTD Rosette	Bottom
2022/10/08 07:26:57	324_south	Basic	779	73.8194712	-79.5396150	CTD Rosette	Recovery
2022/10/08 07:36:45	324_south	Basic	779	73.8186527	-79.5261968	Bongo Net	Deployment
2022/10/08 07:39:42	324_south	Basic	779	73.8181890	-79.5219732	Bongo Net	Bottom
2022/10/08 07:41:58	324_south	Basic	779	73.8181612	-79.5191393	Bongo Net	Recovery
2022/10/08 09:35:51	323_east	Full	792	74.1488387	-79.3015433	Trace Metals Rosette	Deployment
2022/10/08 09:46:39	323_east	Full	792	74.1496598	-79.3022280	Trace Metals Rosette	Bottom
2022/10/08 09:55:08	323_east	Full	792	74.1495767	-79.3022542	Trace Metals Rosette	Recovery
2022/10/08 10:12:41	323_east	Full	792	74.1514797	-79.3047585	CTD Rosette	Deployment
2022/10/08 10:27:04	323_east	Full	792	74.1521293	-79.3053977	CTD Rosette	Bottom
2022/10/08 11:21:58	323_east	Full	792	74.1531943	-79.3025818	CTD Rosette	Recovery

2022/10/08 12:11:53	323_east	Full	792	74.1260697	-79.3597570	Trace Metals Rosette	Deployment
2022/10/08 12:24:20	323_east	Full	792	74.1257598	-79.3591400	Trace Metals Rosette	Bottom
2022/10/08 12:33:01	323_east	Full	792	74.1258265	-79.3593873	Trace Metals Rosette	Recovery
2022/10/08 13:19:37	323_east	Full	792	74.1291033	-79.3519308	Hydrobios	Deployment
2022/10/08 13:40:22	323_east	Full	792	74.1307148	-79.3556113	Hydrobios	Bottom
2022/10/08 14:08:24	323_east	Full	792	74.1324028	-79.3564262	Hydrobios	Recovery
2022/10/08 14:31:03	323_east	Full	792	74.1310962	-79.3079518	IKMT	Deployment
2022/10/08 14:57:07	323_east	Full	792	74.1461227	-79.2962710	IKMT	Bottom
2022/10/08 15:56:38	323_east	Full	792	74.1870262	-79.2647518	IKMT	Recovery
2022/10/08 16:40:58	323_east	Full	792	74.1361188	-79.3408128	Box Core	Deployment
2022/10/08 17:00:12	323_east	Full	792	74.1370052	-79.3387020	Box Core	Bottom
2022/10/08 17:24:26	323_east	Full	792	74.1373343	-79.3395185	Box Core	Recovery
2022/10/09 07:56:38	102_south	Basic	151	76.1785172	-76.9804557	CTD Rosette	Deployment
2022/10/09 08:03:49	102_south	Basic	151	76.1775553	-76.9844525	CTD Rosette	Bottom
2022/10/09 08:43:35	102_south	Basic	151	76.1755102	-77.0011670	CTD Rosette	Recovery
2022/10/09 08:54:20	102_south	Basic	248	76.1749583	-77.0105113	Bongo Net	Deployment
2022/10/09 08:57:02	102_south	Basic	248	76.1749297	-77.0113797	Bongo Net	Bottom
2022/10/09 08:59:28	102_south	Basic	248	76.1749027	-77.0123340	Bongo Net	Recovery
2022/10/09 12:40:26	103_south	CTD	151	76.0873632	-76.5942668	CTD Rosette	Deployment
2022/10/09 12:45:40	103_south	CTD	151	76.0875440	-76.5968283	CTD Rosette	Bottom
2022/10/09 12:51:40	103_south	CTD	151	76.0876125	-76.6002078	CTD Rosette	Recovery
2022/10/09 13:41:54	104_south	CTD	191	76.1100943	-76.1635903	CTD Rosette	Deployment
2022/10/09 13:47:53	104_south	CTD	191	76.1099735	-76.1670562	CTD Rosette	Bottom
2022/10/09 13:54:02	104_south	CTD	191	76.1100220	-76.1696888	CTD Rosette	Recovery
2022/10/09 14:38:11	105	Basic	324	76.1195055	-75.7485003	Trace Metals Rosette	Deployment
2022/10/09 14:48:25	105	Basic	324	76.1198717	-75.7462855	Trace Metals Rosette	Bottom
2022/10/09 14:54:56	105	Basic	324	76.1203208	-75.7462295	Trace Metals Rosette	Recovery
2022/10/09 15:22:32	105_south	Basic	324	76.1221580	-75.7644625	CTD Rosette	Deployment
2022/10/09 15:29:21	105_south	Basic	324	76.1224938	-75.7632727	CTD Rosette	Bottom
2022/10/09 16:02:01	105_south	Basic	324	76.1213837	-75.7725737	CTD Rosette	Recovery
2022/10/09 16:42:36	105_south	Basic	324	76.1228410	-75.7552370	Trace Metals Rosette	Deployment
2022/10/09 16:55:57	105_south	Basic	324	76.1228105	-75.7521845	Trace Metals Rosette	Bottom
2022/10/09 17:05:47	105_south	Basic	324	76.1225405	-75.7513662	Trace Metals Rosette	Recovery
2022/10/09 17:18:35	105_south	Basic	324	76.1247267	-75.7563262	Tucker Net	Deployment
2022/10/09 17:30:37	105_south	Basic	324	76.1191743	-75.7658155	Tucker Net	Bottom
2022/10/09 17:39:26	105_south	Basic	324	76.1159527	-75.7494457	Tucker Net	Recovery
2022/10/09 17:58:49	105_south	Basic	324	76.1217023	-75.7538333	Monster Net	Deployment
2022/10/09 18:11:18	105_south	Basic	324	76.1209790	-75.7530160	Monster Net	Bottom
2022/10/09 18:24:07	105_south	Basic	324	76.1199633	-75.7573833	Monster Net	Recovery
2022/10/09 19:32:51	106_south	CTD	380	76.2094723	-75.3751828	CTD Rosette	Deployment
2022/10/09 19:40:58	106_south	CTD	380	76.2078143	-75.3788575	CTD Rosette	Bottom
2022/10/09 19:48:41	106_south	CTD	380	76.2071573	-75.3855933	CTD Rosette	Recovery
2022/10/09 20:37:30	107	Basic	439	76.2724547	-74.9974857	CTD Rosette	Deployment

2022/10/09 20:46:10	107	Basic	439	76.2717050	-75.0006995	CTD Rosette	Bottom
2022/10/09 21:27:27	107	Basic	439	76.2679502	-75.0175592	CTD Rosette	Recovery
2022/10/09 21:39:39	107	Basic	439	76.2679275	-75.0257628	Bongo Net	Deployment
2022/10/09 21:44:06	107	Basic	439	76.2678455	-75.0310695	Bongo Net	Bottom
2022/10/09 21:47:59	107	Basic	439	76.2676660	-75.0353953	Bongo Net	Recovery
2022/10/09 22:32:15	108	Full	446	76.2641705	-74.6048647	Trace Metals Rosette	Deployment
2022/10/09 22:41:20	108	Full	446	76.2639607	-74.6070317	Trace Metals Rosette	Bottom
2022/10/09 22:50:33	108	Full	446	76.2640293	-74.6066723	Trace Metals Rosette	Recovery
2022/10/09 23:15:45	108	Full	446	76.2645208	-74.6118452	CTD Rosette	Deployment
2022/10/09 23:23:46	108	Full	446	76.2650650	-74.6131193	CTD Rosette	Bottom
2022/10/10 00:08:45	108	Full	446	76.2693648	-74.6295302	CTD Rosette	Recovery
2022/10/10 00:31:38	108	Full	446	76.2641782	-74.6038298	Trace metals Rosette	Deployment
2022/10/10 00:45:45	108	Full	446	76.2655488	-74.6081160	Trace metals Rosette	Bottom
2022/10/10 00:59:59	108	Full	446	76.2671927	-74.6098443	Trace metals Rosette	Recovery
2022/10/10 01:18:14	108	Full	446	76.2675318	-74.6209460	Tucker Net	Deployment
2022/10/10 01:27:16	108	Full	446	76.2638893	-74.6373983	Tucker Net	Bottom
2022/10/10 01:36:44	108	Full	446	76.2600388	-74.6530440	Tucker Net	Recovery
2022/10/10 02:14:08	108	Full	446	76.2639487	-74.6063125	Hydrobios	Deployment
2022/10/10 02:25:15	108	Full	446	76.2647122	-74.6088390	Hydrobios	Bottom
2022/10/10 02:40:14	108	Full	446	76.2654355	-74.6118140	Hydrobios	Recovery
2022/10/10 03:05:12	108	Full	446	76.2648165	-74.6180963	Beam trawl	Deployment
2022/10/10 03:29:57	108	Full	446	76.2517172	-74.6357065	Beam trawl	Bottom
2022/10/10 03:56:39	108	Full	446	76.2346110	-74.6093550	Beam trawl	Recovery
2022/10/10 06:03:01	109	CTD	451	76.2876072	-74.1094295	CTD Rosette	Deployment
2022/10/10 06:11:24	109	CTD	451	76.2861387	-74.1061505	CTD Rosette	Bottom
2022/10/10 06:20:06	109	CTD	451	76.2852252	-74.1071762	CTD Rosette	Recovery
2022/10/10 07:17:35	110	Basic	528	76.2973833	-73.6176503	CTD Rosette	Deployment
2022/10/10 07:28:02	110	Basic	528	76.2961618	-73.6133243	CTD Rosette	Bottom
2022/10/10 08:14:34	110	Basic	528	76.2877987	-73.6028617	CTD Rosette	Recovery
2022/10/10 08:24:19	110	Basic	528	76.2853233	-73.5998798	Bongo Net	Deployment
2022/10/10 08:31:32	110	Basic	528	76.2833652	-73.6037347	Bongo Net	Bottom
2022/10/10 08:33:39	110	Basic	528	76.2830005	-73.6049198	Bongo Net	Recovery
2022/10/10 16:40:16	115	Full	650	76.3337297	-71.2036957	CTD Rosette	Deployment
2022/10/10 16:53:49	115	Full	650	76.3347162	-71.2118698	CTD Rosette	Bottom
2022/10/10 17:40:36	115	Full	650	76.3369330	-71.2377183	CTD Rosette	Recovery
2022/10/10 18:12:03	115	Full	650	76.3312027	-71.1940240	Trace Metals Rosette	Deployment
2022/10/10 18:18:09	115	Full	650	76.3311933	-71.1945843	Trace Metals Rosette	Bottom
2022/10/10 18:25:53	115	Full	650	76.3311722	-71.1943308	Trace Metals Rosette	Recovery
2022/10/10 18:45:40	115	Full	650	76.3318715	-71.2257918	Tucker Net	Deployment
2022/10/10 18:55:45	115	Full	650	76.3278600	-71.2431538	Tucker Net	Bottom
2022/10/10 19:07:39	115	Full	650	76.3222767	-71.2616702	Tucker Net	Recovery
2022/10/10 19:42:28	115	Full	650	76.3355582	-71.1894907	Trace Metals Rosette	Deployment
2022/10/10 19:53:06	115	Full	650	76.3349070	-71.1884478	Trace Metals Rosette	Bottom

2022/10/10 20:05:52	115	Full	650	76.3337947	-71.1931633	Trace Metals Rosette	Recovery
2022/10/10 20:33:13	115	Full	650	76.3333810	-71.1981863	Hydrobios	Deployment
2022/10/10 20:50:45	115	Full	650	76.3327730	-71.1997038	Hydrobios	Bottom
2022/10/10 21:15:45	115	Full	650	76.3321653	-71.2075050	Hydrobios	Recovery
2022/10/10 21:55:51	115	Full	650	76.3348302	-71.2629837	IKMT	Deployment
2022/10/10 22:15:57	115	Full	650	76.3273283	-71.2729145	IKMT	Bottom
2022/10/10 23:02:27	115	Full	650	76.3466055	-71.2927232	IKMT	Recovery
2022/10/10 23:33:42	115	Full	650	76.3291768	-71.2176257	Box Core	Deployment
2022/10/10 23:50:20	115	Full	650	76.3289365	-71.2216905	Box Core	Bottom
2022/10/11 00:07:18	115	Full	650	76.3298492	-71.2263538	Box Core	Recovery
2022/10/11 02:00:28	116	Basic	150	76.3814493	-70.5179303	CTD Rosette	Deployment
2022/10/11 02:04:20	116	Basic	150	76.3822988	-70.5218878	CTD Rosette	Bottom
2022/10/11 02:28:09	116	Basic	150	76.3873562	-70.5381752	CTD Rosette	Recovery
2022/10/11 02:38:56	116	Basic	150	76.3901403	-70.5539515	Bongo Net	Deployment
2022/10/11 02:41:54	116	Basic	150	76.3908260	-70.5570893	Bongo Net	Bottom
2022/10/11 02:44:20	116	Basic	150	76.3914758	-70.5598925	Bongo Net	Recovery
2022/10/11 04:43:10	114	CTD	617	76.3273158	-71.7937322	CTD Rosette	Deployment
2022/10/11 04:54:38	114	CTD	617	76.3275558	-71.7963535	CTD Rosette	Bottom
2022/10/11 05:05:31	114	CTD	617	76.3272407	-71.8026342	CTD Rosette	Recovery
2022/10/11 06:02:52	113	Basic	554	76.3228323	-72.2008787	CTD Rosette	Deployment
2022/10/11 06:14:23	113	Basic	554	76.3228977	-72.2021375	CTD Rosette	Bottom
2022/10/11 07:02:01	113	Basic	554	76.3228365	-72.1792647	CTD Rosette	Recovery
2022/10/11 07:12:32	113	Basic	554	76.3230238	-72.1763998	Bongo Net	Deployment
2022/10/11 07:15:45	113	Basic	554	76.3228990	-72.1758403	Bongo Net	Bottom
2022/10/11 07:17:35	113	Basic	554	76.3228318	-72.1756473	Bongo Net	Recovery
2022/10/11 08:17:20	112	CTD	565	76.3151500	-72.6999350	CTD Rosette	Deployment
2022/10/11 08:28:02	112	CTD	565	76.3140812	-72.6994730	CTD Rosette	Bottom
2022/10/11 08:39:17	112	CTD	565	76.3128628	-72.7008025	CTD Rosette	Recovery
2022/10/11 09:25:54	111	Basic	586	76.3056973	-73.2072842	CTD Rosette	Deployment
2022/10/11 09:37:07	111	Basic	586	76.3046757	-73.2073837	CTD Rosette	Bottom
2022/10/11 10:24:48	111	Basic	586	76.2995088	-73.2100598	CTD Rosette	Recovery
2022/10/11 10:43:41	111	Basic	586	76.3066308	-73.2146242	Box Core	Deployment
2022/10/11 11:00:35	111	Basic	586	76.3066542	-73.2150083	Box Core	Bottom
2022/10/11 11:17:47	111	Basic	586	76.3060398	-73.2165082	Box Core	Recovery
2022/10/11 11:50:35	111	Basic	586	76.2849928	-73.2069543	CPR	Deployment
2022/10/12 05:35:07	Bio-Argo_2022	Full	2380	72.9198938	-65.6423667	CPR	Recovery
2022/10/12 06:01:43	Bio-Argo_2022	Full	2380	72.8987960	-65.5986700	Trace Metals Rosette	Deployment
2022/10/12 06:23:24	Bio-Argo_2022	Full	2380	72.8977328	-65.5844485	Trace Metals Rosette	Bottom
2022/10/12 06:37:35	Bio-Argo_2022	Full	2380	72.8967957	-65.5786472	Trace Metals Rosette	Recovery
2022/10/12 06:59:44	Bio-Argo_2022	Full	2380	72.8964155	-65.6032095	CTD Rosette	Deployment
2022/10/12 07:43:31	Bio-Argo_2022	Full	2380	72.8947802	-65.5968073	CTD Rosette	Bottom

2022/10/12 09:21:34	Bio-Argo_2022	Full	2380	72.8884617	-65.5787060	CTD Rosette	Recovery
2022/10/12 09:43:17	Bio-Argo_2022	Full	2380	72.8968767	-65.6046793	Trace Metals Rosette	Deployment
2022/10/12 09:57:01	Bio-Argo_2022	Full	2380	72.8966655	-65.6037128	Trace Metals Rosette	Bottom
2022/10/12 10:11:28	Bio-Argo_2022	Full	2380	72.8966767	-65.6017782	Trace Metals Rosette	Recovery
2022/10/12 10:29:34	Bio-Argo_2022	Full	2380	72.8961597	-65.5976987	Bongo Net	Deployment
2022/10/12 10:34:47	Bio-Argo_2022	Full	2380	72.8957762	-65.5980440	Bongo Net	Bottom
2022/10/12 10:38:26	Bio-Argo_2022	Full	2380	72.8953897	-65.5984765	Bongo Net	Recovery
2022/10/12 10:49:13	Bio-Argo_2022	Full	2380	72.8942250	-65.6002357	Bio Argo	Bottom
2022/10/12 10:56:15	Bio-Argo_2022	Full	2380	72.8928478	-65.5950202	Bio Argo	Bottom
2022/10/12 11:10:21	Bio-Argo_2022	Full	2380	72.8695970	-65.5883160	CPR	Deployment
2022/10/13 05:15:34	N/A	CPR	ND	69.1886085	-63.9792162	CPR	Recovery
2022/10/13 05:27:30	N/A	CPR	ND	69.1558818	-63.9670998	CPR	Deployment
2022/10/14 15:41:37	N/A	CPR	ND	61.2732553	-64.6017978	CPR	Recovery
2022/10/14 17:15:18	353	Basic	386	61.1539837	-64.7821137	CTD Rosette	Deployment
2022/10/14 17:23:52	353	Basic	386	61.1538985	-64.7844757	CTD Rosette	Bottom
2022/10/14 17:58:38	353	Basic	386	61.1594747	-64.7879808	CTD Rosette	Recovery
2022/10/14 18:11:03	353	Basic	386	61.1657792	-64.7883818	Plankton Net	Deployment
2022/10/14 18:13:58	353	Basic	386	61.1673473	-64.7874948	Plankton Net	Bottom
2022/10/14 18:15:54	353	Basic	386	61.1681178	-64.7876288	Plankton Net	Recovery
2022/10/14 19:34:52	354	Basic	518	61.0054302	-64.7283290	Trace Metals Rosette	Deployment
2022/10/14 19:52:29	354	Basic	518	61.0098863	-64.7151010	Trace Metals Rosette	Bottom
2022/10/14 20:04:00	354	Basic	518	61.0122993	-64.7018513	Trace Metals Rosette	Recovery
2022/10/14 20:38:36	354	Basic	518	61.0048183	-64.7279242	CTD Rosette	Deployment
2022/10/14 20:49:44	354	Basic	518	61.0056103	-64.7163263	CTD Rosette	Bottom
2022/10/14 21:34:48	354	Basic	518	61.0058997	-64.6963588	CTD Rosette	Recovery
2022/10/14 21:52:53	354	Basic	518	61.0118188	-64.7142425	Tucker Net	Deployment
2022/10/14 22:03:42	354	Basic	518	61.0147410	-64.7272682	Tucker Net	Bottom
2022/10/14 22:13:18	354	Basic	518	61.0159877	-64.7382525	Tucker Net	Recovery
2022/10/14 22:45:14	354	Basic	518	61.0231912	-64.7518905	Monster Net	Deployment
2022/10/14 22:56:04	354	Basic	518	61.0230502	-64.7530950	Monster Net	Bottom
2022/10/14 23:10:29	354	Basic	518	61.0222170	-64.7580835	Monster Net	Recovery
2022/10/15 00:40:11	355	Basic	431	60.8537535	-64.7183612	CTD Rosette	Deployment
2022/10/15 00:48:56	355	Basic	431	60.8547992	-64.7256832	CTD Rosette	Bottom
2022/10/15 01:35:00	355	Basic	431	60.8649762	-64.7655093	CTD Rosette	Recovery
2022/10/15 02:47:11	356	Basic	291	60.7406525	-64.7143657	CTD Rosette	Deployment
2022/10/15 02:53:46	356	Basic	291	60.7411417	-64.7227703	CTD Rosette	Bottom
2022/10/15 03:29:47	356	Basic	291	60.7441105	-64.7608330	CTD Rosette	Recovery
2022/10/16 10:15:31	N/A	CPR	ND	55.0863085	-57.3694212	CPR	Recovery
2022/10/16 10:38:03	N/A	CPR	ND	55.0564482	-57.2595813	CPR	Deployment