The Southampton Island Marine Ecosystem Project

2019 Cruise Report
5-29 August
MV William Kennedy

Table of Contents

Section 1. Introduction

Climate warming is forcing rapid change to Canada's marine Arctic icescape (Hochheim and Barber 2010) and its associated ecosystem, while the increasing ice-free season is supporting an ever-increasing industrial presence in the North. With over two thirds of Canada's coastline being located in the North and the fact that nearshore waters represent some of the most productive Arctic regions, there is a need to improve our understanding of marine ecosystem processes in the sensitive Arctic coastal zone. The marine region around Southampton Island, northwest Hudson Bay (Nunavut), encompasses one of Canada's largest summer and winter aggregations of Arctic marine mammals, providing multiple ecosystem services. This biological hotspot has supported local human habitation for millennia with confirmed Dorset, Thule, and Sadlermiut occupation sites (Collins 1956; Clark 1980; McGhee 1970), and is still crucial to the subsistence economy of local communities today. The region has also been a marine mammal management focus of Fisheries and Oceans Canada (DFO) for decades and supports two sea bird sanctuaries, yet we know surprisingly little of the region's oceanography, productivity or biological community below these top trophic levels. This fact highlights a major management risk, severely limiting our ability to understand and predict changes to this unique and productive marine ecosystem. Exacerbating this risk are pressures posed by the ongoing climate changes and an increasing industrial presence. Therefore, we undertook an oceanographic study called the Southampton Island Marine Ecosystem Project (SIMEP), funded by the MEOPAR Network of Centres of Excellence (NCE).

The SIMEP network assumes a bottom up driven ecosystem, hypothesizing that the enhanced biological productivity can be explained by: 1) Winter pre-conditioning of surface waters associated with large polynyas that form along the western coasts of Foxe Basin and Hudson Bay. Also known as ice factories, these polynyas produce dense salty brine that can sink, ventilating deeper waters while associated mixing replenishes surface nutrients and therefore, primary production. 2) Tidal and wind-driven mixing along shallow nearshore as well as shoaled and constricted waterways of Roes Welcome Sound, Frozen Strait and Fisher Strait. Some of the world's largest tides are observed in Hudson Bay and as they move water back and forth across these areas, currents and mixing intensify, increasing water mass exchange and thus nutrient supply in the area. 3) East and north of Southampton Island, water masses originating in the Atlantic (via Hudson Strait) and Pacific (via Foxe Basin) Ocean are mixed and modified, and greatly influence production as large inventories of new nutrients are imported to the region (Harvey et al. 2006; Ferland et al. 2011). To test these hypotheses, we assembled a network of university and government scientists seeking to obtain a food web-based understanding of the ecosystem.

Our scientific cruise in August 2018 was set to circumnavigate Southampton Island collecting data at nearshore and offshore stations. However, August 2018 was one of the windiest (5 storms with > 40 kn winds during the cruise) on record for the island, causing our scientific cruise to loose 8 out of 17 days at sea. A decision was made to cancel our northern stations to focus on the southern side of the island (Figure 1.1). In support of our hypotheses, we discovered extensive macroalgal beds covering the seafloor down to at least 35 m depths, large aggregations of shrimp along the southeastern coast at depths >40 m, and wind-driven mixing that supported new phytoplankton production in surface waters. Although the data we collected will add greatly to our understanding of the system, we are missing key information on the deeper northern coast where, for instance, a major tidal strait exists that rapidly transitions from 400 to <100 m through Frozen Strait. The northern coast appears to support a different ecosystem structure and function with large aggregations of whales as the top trophic level versus the predominately Atlantic walrus population in the south. Therefore, we applied and were successful with an NSERC ship time grant to augment our 2019 research cruise to sample along the northern coast of the island to obtain a more complete understanding of the Southampton Island marine ecosystem. In response to our observations of macroalgal beds made in 2018, we were able to secure a SCUBA dive program to better document species diversity, biomass, and annual production of benthic macroalgae in nearshore environments. Furthermore, to improve our understanding of the marine system and its future response to the current warming trends we added a focus on marine production associated with past climatic fluctuations using marine sediment paleo-records.

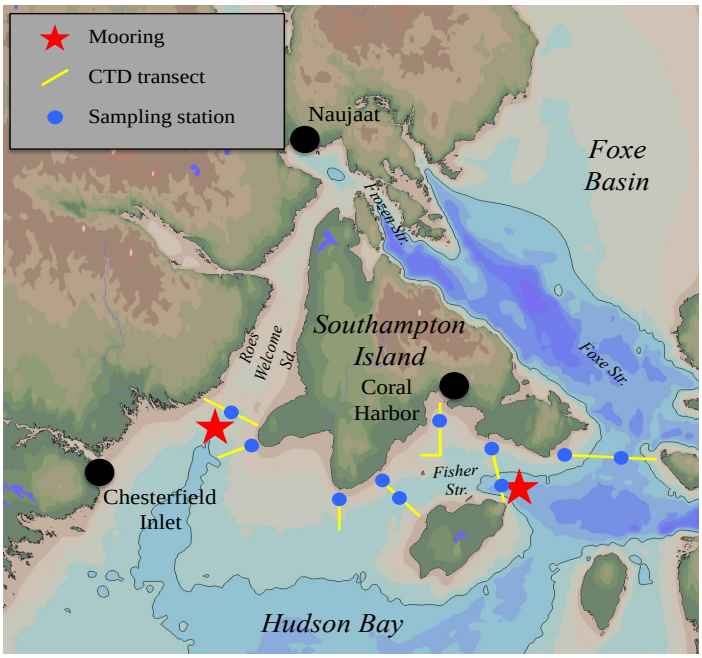


Figure 1.1. Map of mooring locations, transects, and stations sampled during the 2018 SIMEP scientific cruise aboard the *William Kennedy*.

The 2019 SIMEP cruise aboard the *MV William Kennedy* was a complete success. During the 24-day cruise, C.J. Mundy (U. Manitoba) was chief scientist from Coral Harbour to Naujaat (5-16 August) and Audrey Limoges (U. New Brunswick) from Naujaat to Coral Harbour (16-29 August). Science personnel over the two legs included 2 guides from the Hunters and Trapper Organizations of Coral Harbour (Logan Kudlak) and Naujaat (Phillip Angotautok), U. Manitoba's seagoing technician (Keesha Peterson), 4 students and postdocs from U. Manitoba (Yekaterina Yezhova, Elizabeth Kitching, Jillian Reimer,

Laura Castro de la Guardia), 4 students and postdocs from U. Laval (Karen Filbee-Dexter, Ignacio Garrido, Gabrielle Martineau, Paulina Bruning), a student (Kelsey Koerner) and a technician (Nicolas Van Nieuwenhove) from U. New Brunswick, and 2 biologists from Fisheries and Oceans Canada (Kevin Jacobs, Adam O'Dell). The *MV William Kennedy* crew consisted of Arctic Research Foundation employees and included David McIsaac (Captain), Daniel McIsaac (First mate), Matthew Rose (Bridgewatch), Tyson Arsenault (Bridgewatch), James Stosky (Oceans Technician), and Billy Gaudet (Cook). Photos of participants from the two legs are provided at the end of this Introduction.

With fair weather over most of the 24-day cruise, we were able to collect data at 26 full stations and over 30 sites were sampled in total (Figure 1.2). During a full station, the ship's crew and science personnel were very active. A typical full station included: 1) deployment of the diver team on one of the ship's two zodiacs (***Kelp*** group), 2) a pelagic trawl for 15 minutes approaching the full station for the ***Zooplankton and Fish*** group, 3) 1-2 rosette casts and an extra CTD cast for the ***Physical Oceanography, Biogeochemistry*** and ***Phytoplankton*** groups, 4) vertical and oblique net tows for the ***Phytoplankton*** and ***Zooplankton and Fish*** groups, 5) Ponar grab, box core, and gravity core collections for the ***Sediment*** group, and 6) a 15 minute benthic trawl while leaving the station for the ***Zooplankton and Fish*** group. Summing up all deck operations over the cruise shows that we undertook >470 sampling activities (r.e., data entries in the ship log – *see Appendix Ship Log*) and >200 conductivity, temperature, and depth (CTD) casts providing an incredible coverage of data around the island in a short period of time. There was a total of 87 dives from the ship's zodiac over 42 excursions, which enabled collection of macroalgal abundance, biomass and diversity around the island's coast. Including on-deck incubator measurements of kelp primary production and drop-cameras to document depth distributions perpendicular to shore, these data are not only the first observations of macroalage in the region, but also will contribute to pushing forward our understanding of kelp dynamics in the Arctic. Greater than 300 samples of fish and invertebrates were collected and sediment sampling was very successful during the cruise, including the collection of a gravity core >75 cm long. In addition to sampling, during the SIMEP cruise we recovered and deployed 2 oceanographic moorings south of Southampton Island and after the cruise in September, we recovered and re-deployed 3

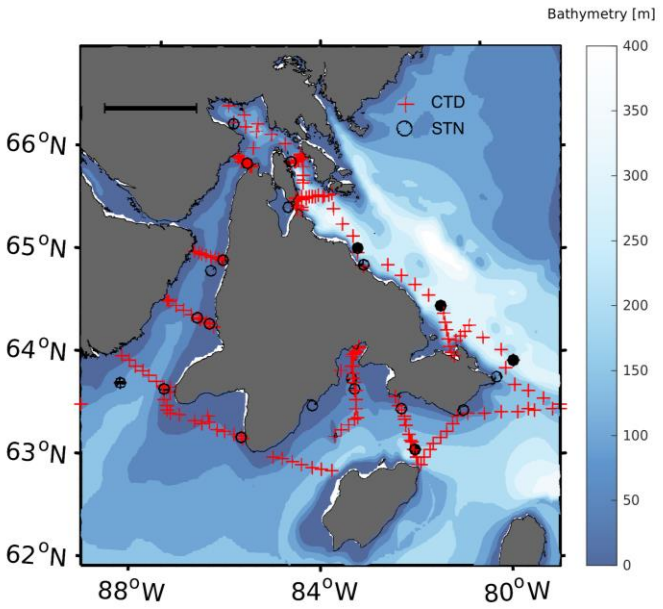


Figure 1.2. Map of CTDs and full sampling stations during SIMEP 2019.

additional moorings within Hudson Bay as part of the Churchill Marine Observatory (CMO) mooring leg in September. Finally as part of the scientific cruise, we were able to undertake community visits with the ship, where community members were shuttled onto (or travelled with their own boat) onto the ship for a science and ship tour. These visits were very successful with over 100 community members visiting the ship during each of the community stops.

The 24-day cruise *MV William Kennedy* was supported by the following grants: a NSERC ship time grant of $168,000 (Mundy lead PI with 3 others), a MEOPAR NCE grant of $30,000 (Mundy lead PI with 2 others), a Belmont Forum BiodivERsA (NSERC for Canada) grant of $12,000 (Mundy, co-PI with 6 others), a NERC grant from the UK (Brown, lead PI), and by the CMO-IOF operating fund with $60,000 dedicated to mooring operations (Barber, lead PI with 9 others; Mundy, chief scientist of observatories). Additionally, operating funds from MEOPAR NCE, NSERC, ArcticNet NCE, CMO-IOF, DFO, and NERC contributed by individual SIMEP principal investigators (Mundy, Limoges, Ehn, Kuzyk, Papakyriakou, Johnson, Archambault, Niemi, Hedges, Michel, Ferguson) helped to make the project the success it is. The 2019 Scientific Cruise was supported by the Aiviit and Aviq Hunters and Trappers Organizations, a Nunavut Research Licence (# 03 009 19R-M) and a DFO Licence to Fish for Scientific Purposes (S-19-20 1046-NU). Once analysed, data from the project will be housed at U. Manitoba within the Canadian Watershed Information Network (CanWIN) (http://lwbi.cc.umanitoba.ca/).

References:

Clark, B. The Lake site (KkHh-2), Southampton Island, N.W.T. and its position in Sadlermiut prehistory. *Canadian Journal of Archaeology*, 4 (1980): 53 - 81.

Collins, H. B., Jr. Archaeological Investigations on Southampton and Coats Island, N.W.T. *National Museum of Canada Bulletin*, 142 (1956): 82-113.

Ferland, J. et al. Environmental control of summer primary production in the Hudson Bay system: The role of stratification. *Journal of Marine Systems*, 88 (2011): 385 - 400.

Harvey, M., et al. MERICA-Nord Program: monitoring and research in the Hudson Bay complex. *AZMP Bulletin*, 5 (2006): 27-32.

Hochheim, K. P., and D. G. Barber. Atmospheric forcing of sea ice in Hudson Bay during the fall period, 1980–2005. *Journal of Geophysical Research: Oceans*, 115.C5 (2010).

McGhee, R. A Quantitative Comparison of Dorset Culture Microblade Samples. *Arctic*, 7(1970):89-96.

Section 2. Physical Oceanography

Cruise Participants: Keesha Peterson, C.J. Mundy, Kaushik Gupta (CMO mooring leg) and all 2019 SIMEP cruise participants
Principal Investigators: C.J. Mundy and Jens Ehn

Named participants from Centre for Earth Observation Science, University of Manitoba

Introduction:
The SIMEP network assumed a bottom up driven ecosystem, hypothesizing that the enhanced biological productivity can be explained by water mass properties and modifying processes (e.g., winter mixing, tides, wind, and advection) that occur around the island. The physical oceanographic portion of SIMEP sought to observe the physical marine system and its processes to examine the abovementioned hypothesis. In the following, we report on hydrographic profiles during the 2019 SIMEP cruise (Aug. 4 to 29) as well as mooring recovery and deployments that occurred during the 2019 SIMEP cruise and during the Churchill Marine Observatory (CMO) mooring leg (Sept. 19-25).

Data Collection:

Hydrographic Profiles

Hydrographic profiles using conductivity, temperature and depth (CTD) sondes were obtained across straits and along channels to best cover water column structure around the island. Two separate, but identical pumped Seabird 19plus CTDs with Biospherical scalar photosynthetically active radiation (PAR) and Seabird ECOtriplet fluorometer sensors, were used to collect hydrographic profiles, one standalone CTD and one mounted on the ship's rosette (Figure 2.1). It is noted that the ship's rosette also had a Seabird dissolved oxygen sensor. Figure 2.2 maps out all the stand alone CTDs and station-based rosette casts that collected hydrographic profiles during the cruise. There were more than 200 profiles collected in total with very good coverage around the island. Locations and time of casts can be found in the *Appendix: Ship Log*. Samples for salinity calibration were collected from the rosette casts and are included in the biogeochemical oceanography section of this data report (Section 3).

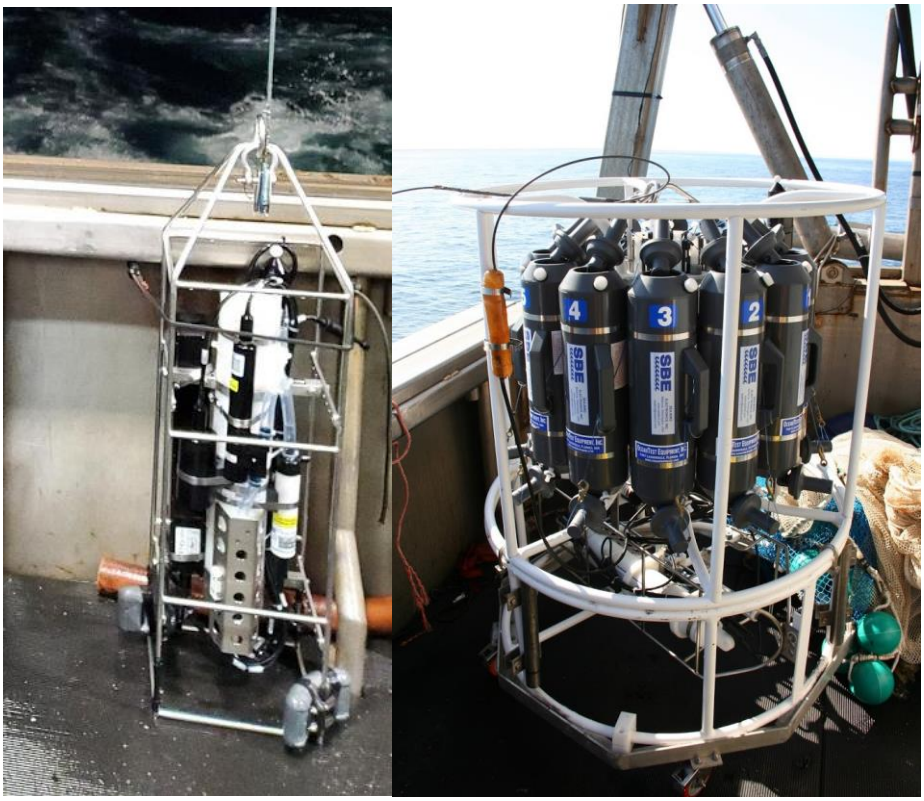


Figure 2.1. Pictures of the stand lone (left) and rosette (right, bottom cage below rosette) CTDs. Photos by Colleen Turlo.

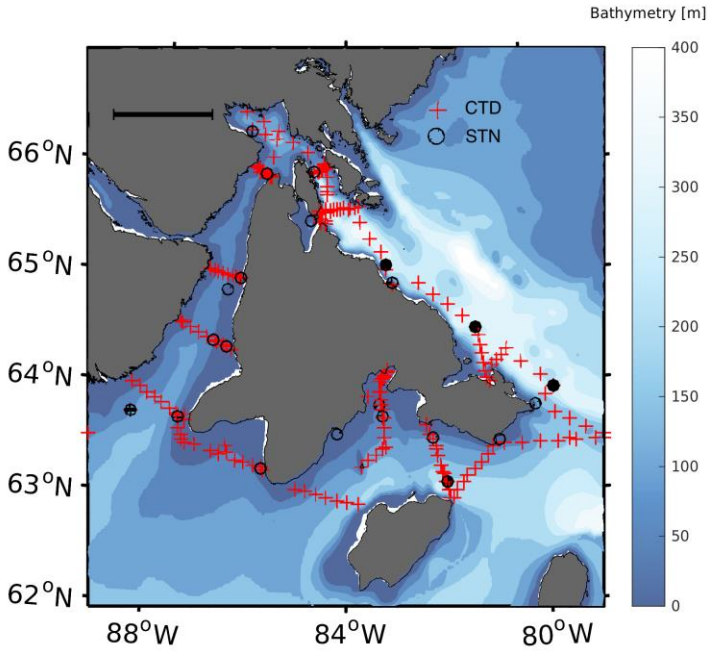


Figure 2.2. Map of CTDs and full sampling stations where hydrographic profiles were collected. Map made by Laura Castro de la Guardia.

Mooring Deployment

Mooring deployment and recovery took place along the main shipping channels across Hudson Bay on the *MV William Kennedy* during the SIMEP cruise and CMO mooring leg, August & September 2019. The mooring locations are mapped on Figure 2.3, including recovery of moorings CMO-A, -B, -C, and -D, as well as CHST (Coral Harbour Short-term deployment from the sea ice in May, 2019) and the deployment of CMO-A, -B, -C, CH01 (new deployment in collaboration with DFO), and RWS (Roes Welcome Sound). Mooring CHST was recovered on August 6, 2019. The release system didn't work and so SIMEP SCUBA divers assisted in finding the subsurface float of the mooring to perform a successful recovery. Mooring CMO-D was successfully recovered from Southern Roes Welcome Sound on August 10, 2019, with RWS being successfully deployed in place of CMO-D. Mooring CH01 was successfully deployed just South of Coral Harbour inner bay area on September 2, 2019. CMO A was successfully recovered on September 17, 2019, and subsequently re-deployed on September 20, 2019. CMO B, & C were successfully recovered and re-deployed on September 23 & 24, 2019 from the *MV William Kennedy* (see Table 2.1).

Figure 2.3. Positions of moorings recovered and deployed in Hudson Bay during August and September 2019.

Table 2.1. Positions of recovered and deployed moorings.

Date (UTC)	CTD Cast	Mooring ID	LAT (N)	LON (W)	Operation	Time (UTC)	Water Depth (m)
6-Aug	CTD3	CHST	64°12.098'	83°12.18.62’	Mooring recovery	01:00	30
10-Aug	CTD 40	CMO-D	63°42.760’	88°25.583’	Mooring recovery	01:00	119
10-Aug	CTD 40	RWS	63°42.777’	88°25.117’	Mooring deployment	7:50	118
02-Sept	n/a	CH01	63°48.257’	83°17.044’	Mooring deployment	02:26	52.2
17-Sept	n/a	CMO-A	59° 58.678’	91°56.347’	Mooring recovery	18:56	103
20-Sept	CTD 204	CMO-A	59° 58.782’	91°56.268’	Mooring deployment	21:17	103
23-Sept	n/a	CMO-B	61° 45.613’	84°18.172’	Mooring recovery	01:50	179
23-Sept	CTD 205	CMO-B	61° 45.591’	84°18.347’	Mooring deployment	03:51	182
24-Sept	n/a	CMO-C	63° 11.001’	81°58.873’	Mooring recovery	09:00	194
24-Sept	CTD 206	CMO-C	63° 11.342’	81°58.752’	Mooring deployment	02:24	195

Post-recovery, the instruments were examined to confirm functionality and data records of each unit. Pressure records from the respective sensors were also examined to confirm depths for final mooring configuration schemes. Preliminary results indicate the recovered moorings yielded functional instruments (Table 2.2) with the exception of CMO-C, a passive organic contaminant sampler failed to be recovered. The wire rope used to secure the sampler to CMO-C appeared to have been damaged resulting in the loss of the sampler.

Table 2.2. Data status of recovered moorings.

Mooring	Instrument	Depth (m)	Start Date	End Date	Period	Data Status	Notes
CHST	HOBO Pressure	10	05/06/2019	08/06/2019			Not retrieved yet
	PAR	10	05/06/2019	08/06/2019	15 s	OK	
	RBR CT	11	05/06/2019	08/06/2019	15 min	OK	
	ECO	11	05/06/2019	08/06/2019	15 min	OK	
	RBR CTTu	20	05/06/2019	08/06/2019	15 min	OK	
	ADCP	20	05/06/2019	07/07/2019	30 mins	OK	Power consumption issues
CMO-A	IPS5	30	06/28/2018	09/17/2019	3 hrs/5mins		Not retrieved yet
	SBE-37 ODO	26	06/28/2018	12/25/2018	15 mins	OK	Power consumption issues
	ECO	30	06/28/2018	09/17/2019	30 mins	OK	
	WH300	56	06/28/2018	09/17/2018	15 mins	OK	
	SBE-37 ODO	56	06/28/2018	08/07/2018	15 mins	OK	Power consumption issues
	TR-ORCA	78	06/28/2018	06/28/2019	6 mins (56 mins sleep)	OK	
	SBE-37 ODO	92	06/28/2018	12/06/2018	15 mins	OK	Power consumption issues
CMO B	IPS5	30	06/14/2018	09/23/2019	3 hrs/5mins	OK	
	SBE-37 ODO	29	06/16/2018	11/12/2018	15 mins	OK	Power consumption issues
	ECO	30	06/16/2018	09/23/2019	30 mins	OK	
	WH300	55	06/17/2018	09/05/2019	15 mins	OK	
	SBE-37 ODO	58	06/16/2018	12/23/2018	15 mins	OK	Power consumption issues
	TR-ORCA	150	06/16/2018	09/23/2019	6 mins (56 mins sleep)	OK	
	SBE-37 ODO	163	06/16/2018	11/19/2018	15 mins	OK	Power consumption issues
CMO-C	IPS5	30			3 hrs/5mins	OK	
	SBE-37 ODO	32	06/04/2018	12/05/2018	15 mins	OK	Power consumption issues
	ECO	30			30 mins	OK	
	WH300	55	06/04/2018	09/19/2019	15 mins	OK	
	SBE-37 ODO	59	06/04/2018	09/28/2018	15 mins	OK	Power consumption issues
	TR-ORCA	142	06/04/2018	09/24/2019	6 mins (56 mins sleep)	OK	

	Sediment Trap	63	06/05/2018	09/24/2019	36 days	OK	
	Sediment Trap	167	06/04/2018	09/24/2019	36 days	OK	
	SBE-37 ODO	178	06/04/2018	01/05/2019	15 mins	OK	Power consumption issues
	SeaFET pH	30	06/04/2018	09/24/2019			Not retrieved yet
CMO-D	IPS5	30	06/05/2018	08/10/2019	3 hrs/5mins		Not retrieved yet
	SBE-37 ODO	31	06/05/2018	07/26/2018	15 mins	OK	Power consumption issues
	ECO	30	06/05/2018	08/10/2019	30 mins	OK	
	WH300	58	06/05/2018	08/10/2019	15 mins	OK	
	SBE-37 ODO	62	06/05/2018	12/05/2018	15 mins	OK	Power consumption issues
	TR-ORCA	90	06/05/2018	08/10/2019	6 mins (56 mins sleep)	OK	
	SBE-37 ODO	104	06/05/2018	11/25/2018	15 mins	OK	Power consumption issues

Figures 2.4 through 2.6 present schematics of the various oceanographic moorings.

The CMO moorings were equipped with the following set of instruments:

- Ice Profiling Sonar (IPS5) at 25 m
- Acoustic Doppler Current Profiler (WH300 Sentinel ADCP) at 55 m
- A Gurney Baker Sediment Trap at 60 m
- Acoustic Zooplankton Fish Profiler (AZFP). Depths of this unit ranged from 75 to 90 m
- A broadband underwater acoustic recorder (TR-ORCA). Depths of this unit ranged from 80 & 150 m
- WetLab ECO triplet logger (logging turbidity, chlorphyll-a, and CDOM fluorescence) at 25 m
- 3 SBE37-ODO CTD (conductivity-temperature-depth) and dissolved oxygen sensors deployed at 30, 60, and bottom depths

The CH01 mooring was equipped with the following set of instruments:

- PAR recorder (RBR*solo*^{3}) at 15 m
- WetLab ECO triplet logger (logging turbidity, chlorphyll-a and CDOM fluroescense) at 20 m
- SBE37-ODO CTD (conductivity-temperature-depth) and dissolved oxygen sensor at 20 m
- 3 CT (conductivity-temperature) sensors deployed at 28, 40 & 25 m
- Hydrophone acoustic recorded (Aural M2) at 34 m
- Acoustic Doppler Current Profiler (RDI WorkHorse 300Hz) at 45 m

The RWS mooring was equipped with the following set of instruments:

- Acoustic Doppler Current Profiler (Signature 500) at 18 m
- 4 SBE37-ODO CTD's (conductivity-temperature-depth) and dissolved oxygen sensors deployed at 20, 33, 64, and 104 m
- Acoustic Doppler Current Profiler (RDI WorkHorse 300Hz) at 102 m

The CHST mooring was equipped with the following set of instrumentsL

- HOBO Absolute Pressure logger at 10 m
- RBR PAR solo sensor at 10 m
- RBR CT (conductivity-temperature) logger at 11 m
- WetLab ECO triplet logger (logging turbidity, chlorphyll-a and CDOM fluroescense) at 11 m
- RBR CTTu (conductivity-temperature-turbidity) logger at 20 m
- Nortek Acoustic Doppler Current Profiler (Aquadopp 600 kHz) at 20 m

Each mooring was programmed to accommodate a ~15 month deployment, with recovery and turnover planned for the fall 2020. All moorings were deployed anchor last from the stern of the *MV William Kennedy* using the A-frame and crane (Figure 2.7).

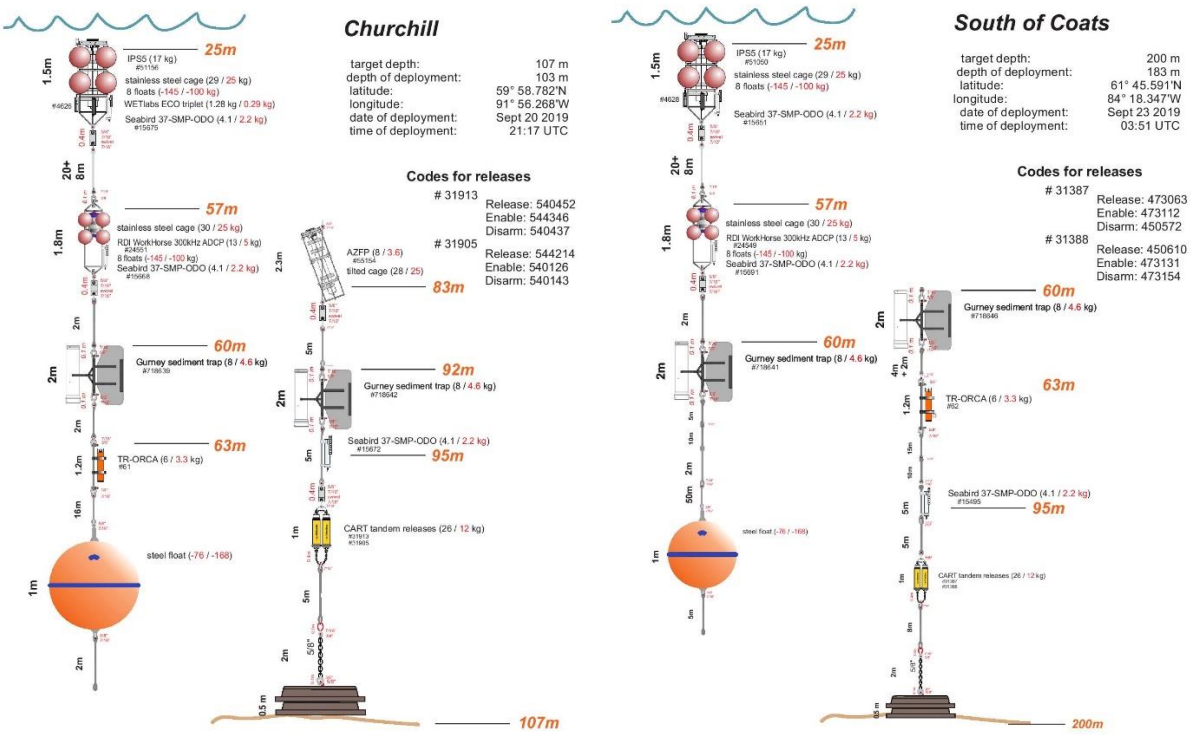


Figure 2.4. Mooring configuration schemes of CMO-A (Churchill) and CMO-B (South of Coats).

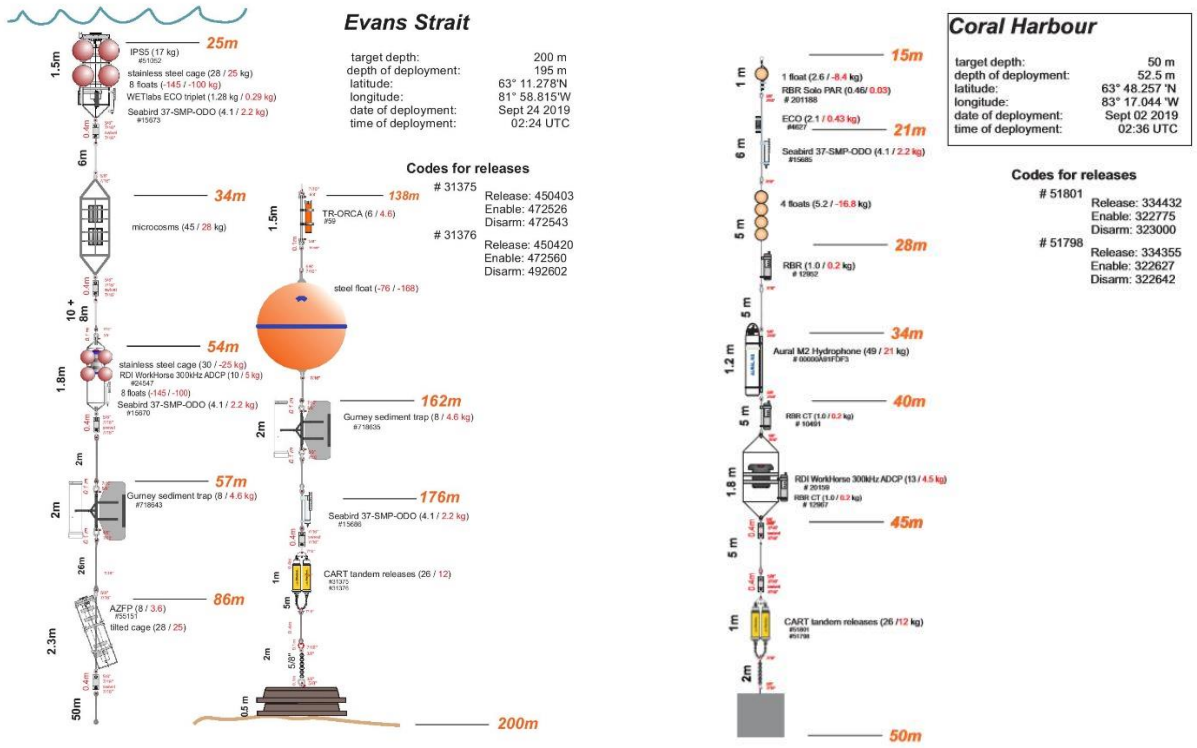


Figure 2.5. Mooring configuration schemes of CMO-C (Evans Strait) and CH01 (Coral Harbour).

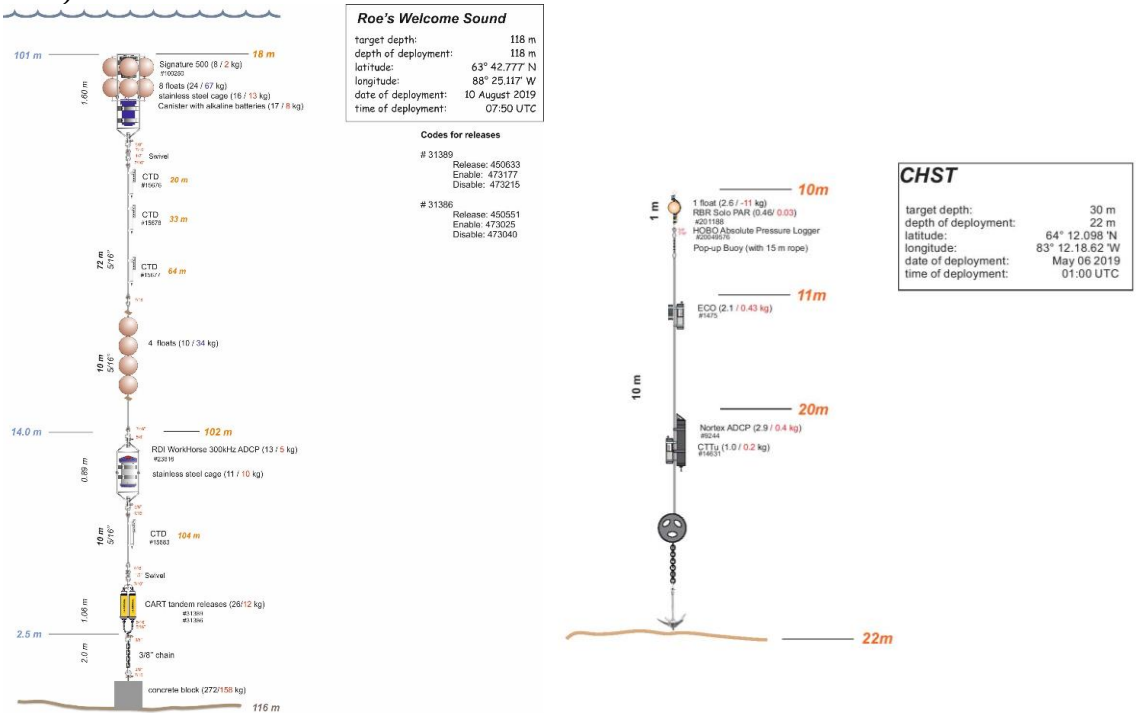


Figure 2.6. Mooring configuration scheme of RWS (Roes Welcome Sound) and CHST (Coral Harbour Short-term).

Figure 2.7. Example pictures of anchor-last deployment during SIMEP 2019 cruise.

Section 3. Biogeochemistry

An Investigation into Water Masses, Circulation, and the Carbon Cycle around Southampton Island, Nunavut

Cruise Participant: Yekaterina Yezhova
Principal Investigators: Zou Zou Kuzyk and Tim Papakyriakou
Named participants and PIs from Centre for Earth Observation Science, University of Manitoba

Objectives:
The objectives of water sampling for the water masses, circulation, and carbon cycling program (WMCCP) within the larger SIMEP project were to:

1) Use chemical characteristics ($\delta^{18}O$, alkalinity, dissolved inorganic carbon (DIC)) of the water column to identify water masses and their sources (eg., Hudson Strait and Labrador Sea, Foxe Basin, and Arctic Ocean), allowing for a better understanding of biological productivity
2) Understand the fundamental processes creating and driving circulation of these water masses in Northwest Hudson Bay and use this information to infer larger scale circulation in the Hudson Bay complex
3) Use newly collected summer (SIMEP 2018, 2019) data of DIC, DOC, and CDOM along with recently collected winter (POLAR 2018, 2019) and spring (BaySys 2018) data to better understand and quantify seasonal carbon cycling within the region.

Methods and Data Collection:
Sample collection took place from 6 to 27 August 2019 aboard the *MV William Kennedy*. Water samples were collected using a Seabird rosette equipped with 12 × 5 L Niskin bottles and a seabird 19+ V2 CTD. At each selected depth, at least one niskin bottle was "fired" and closed to ensure there was enough sample water for both the primary production group (nutrients, POC/PON, Chlorophyll *a*, and primary production) and our biogeochemical requirements. This allowed for a maximum of six depths to be sampled during one rosette cast. The necessary number of casts were deployed to sample the target depths of the water column, which are outlined in Table 3.1. Depth of the subsurface chlorophyll maximum (SCM) was selected based on CTD profiles by the primary production group.
Water samples were usually sampled from all odd numbered Niskin bottles (i.e., 1, 3, 5, etc.) in the following order: DIC, CH_4/N_2O, 13C-DIC, and bulk water. The number of the Niskin bottle sampled was recorded in the logbook. First, sampling tubing was connected to the niskin spigot to sample DIC directly from the niskin into 250 mL or 500 mL glass bottles (60 mL glass vials with rubber stopper and aluminum crimp seal were used after all regular DIC bottles were used up). After allowing water to run through the tubing to clean and remove any air bubbles, the glass bottles were filled smoothly from the bottom, with tubing touching the bottom of the bottle, and were overflowed one and a half times its volume. The glass stopper was gently placed on top of the bottle to prevent contamination. CH_4/N_2O and 13C-DIC were sampled using the same

technique. Using pre-acid washed 500 mL Nalgene bottles, rinsed 3 times with sample water, 400 mL of bulk sample water was collected directly from the rosette. After all sampling from the rosette cast was completed (10-15 minutes), one percent of the stoppered DIC sample volume was removed to prevent the bottles from breaking in case of freezing temperatures. The DIC, CH_4/N_2O, and 13C-DIC samples were then spiked with saturated mercuric chloride solution, with volumes of $HgCl_2$ used outlined in Table 3.2. Once the samples were spiked, the DIC stopper was greased and the sample was securely closed with electrical tape around the bottle and stopper, CH_4/N_2O samples were crimped, and 13C-DIC samples were parafilmed. The CH_4/N_2O and 13C-DIC samples will be analyzed at UBC and McGill Universities, respectively. Location where DIC analyses will take place is to be determined at the time of this report.
Bulk water was subsampled within an hour for $d^{18}O$, DOC, CDOM, and salinity. Water was poured from the 500 mL Nalgene bottles into 20 mL glass scintillation vials for 18O isotope ratio. A concave bubble was created on top of the vial for a watertight seal, then the samples were parafilmed and stored in a dry, dark place. 18O samples will be analyzed at GG Hatch Labs in Ottawa.
Using 60 mL syringes (cleaned with 10% HCL and rinsed 3 times with sample water), water was drawn from the Nalgene bottles for DOC. Using pre-baked Whatman GF/F and Sweenex (cleaned with 10% HCL), samples were filtered into 15mL acid washed, baked ($500^{\mathbf{0}}$C for 4 hours), and pre-spiked with 100 µL of 2N HCl vials. After the samples were filtered, they were parafilmed, wrapped in pre-baked tin foil, and stored in fridge onboard. DOC samples will be analyzed at CEOS.
CDOM samples were filtered after the DOC samples, using the same Sweenex and GF/F filter per station and depth. However, a second filter (0.2 µm disposable membrane filter) was added in-line after the 0.7 µm filter. CDOM was filtered into pre-cleaned (10% HCL acid washed and baked a $450^{\mathbf{0}}$C for 8 hours) 40 mL amber glass vials, parafilmed, and stored in a refrigerator.

Samples will be analyzed at Celine Gueguen's laboratory at Trent University.
For salinity samples, water was poured into 250 mL glass bottles. The bottles were rinsed 3 times with sample water before filling. Salinity samples will be analyzed at the Freshwater Institute (DFO).

Table 3.1. Target sampling depths

Depth (m)	DIC	CH_4/N_2O	13C-DIC	DOC	CDOM*	Salinity	18-Oxygen
0	X	X	X	X	X	X	X
10	X	X	X	X		X	X
20	X	X	X	X	X	X	X
Subsurface chlorophyll maximum	X	X					
30	X	X	X	X		X	X
40	X	X	X	X		X	X
60	X	X	X	X	X	X	X
100	X	X	X	X		X	X
150	X	X	X	X	X	X	X
200	X	X	X	X		X	X
250	X	X	X	X	X	X	X
300	X	X	X	X	X	X	X
Or 5-10m off the bottom	X	X	X	X	X	X	X

* CDOM was collected at surface from every station, from multiple depths at Stations 7, 8, 13, and 15, and at all depths (except SCM) starting with Station 18.

Table 3.2. Volumes of saturated mercuric chloride solution used to spike gas samples

Parameter	Vial type	Volume of $HgCl_2$ used (µL)
DIC	250 mL bottle	100
	500 mL bottle	200
	60 mL clear glass vial with rubber stopper and aluminum crimp seal	40
	12 mL exetainer vial	20
CH_4/N_2O	60 mL clear glass vial with rubber stopper and aluminum crimp seal	40
13C-DIC	50 mL amber glass vial with conical screw caps	20

Section 3. Appendix: Details on sample collection

Stn	dd/mm/yyyy	Time (UTC)	Lat (deg)	Long (deg)	Bot. Depth (m)	Water Depths Sampled (m)	Salinity	$\delta^{18}O$	CDOM[2]	DOC	DIC	CH_4/N_2O	13C-DIC
3	6/8/2019	16:30	63.5194	-82.2176	95	60, 86	✓	✓	✓	✓	✓	✓	✓
3	6/8/2019	17:30	63.5205	-82.2309	95	0, 10, 20, 25[1], 30, 40	✓	✓	✓	✓	✓	✓	✓
5	8/8/2019	14:15	63.2362	-85.7199	38	0, 10, 17[1], 20, 30, 37	✓	✓	✓	✓	✓	✓	✓
6	9/8/2019	12:20	63.6931	-87.4448	44	0, 10, 15[1], 20, 30, 40	✓	✓	✓	✓	✓	✓	✓
7	9/8/2019	23:40	63.7153	-88.4311	116	10, 20, 30, 40[1], 60, 100	✓	✓	✓	✓	✓	✓	✓
7	10/8/2019	1:35	63.7163	-88.4208	119	0	✓	✓	✓	✓	✓	✓	✓
8	11/8/2019	1:10	64.3406	-86.5075	40	0, 10, 15[1], 20, 30, 35	✓	✓	✓	✓	✓	✓	✓
9	11/8/2019	17:20	64.3929	-86.7200	98	10, 30, 40, 65[1], 95	✓	✓	✓	✓	✓	✓	✓
9	11/8/2019	18:50	64.4019	-86.7170	96	0, 20	✓	✓	✓	✓	✓	✓	✓
10	12/8/2019	12:30	64.9705	-86.2652	37	0, 10, 20, 30	✓	✓	✓	✓	✓	✓	✓
11	12/8/2019	16:20	64.9966	-86.5424	95	10, 20[1], 30, 40, 60, 83	✓	✓	✓	✓	✓	✓	X
11	12/8/2019	19:15	64.9974	-86.5400	90	0	✓	✓	✓	✓	✓	✓	X
12	13/8/2019	14:00	65.9182	-85.7575	83	10, 20[1], 30, 40, 60, 79	✓	✓	✓	✓	✓	✓	✓

12	13/8/2019	16:50	65.9216	-85.7539	85.5	0	✓	✓	✓	✓	✓	✓	✓
13	14/8/2019	12:15	66.3131	-86.0871	184	60, 100, 150, 177	✓	✓	✓	✓	✓	✓	✓
13	14/8/2019	14:10	66.3081	-86.0933	188	0, 10, 18.6[1], 30, 40	✓	✓	✓	✓	✓	✓	✓
14	17/8/2019	14:00	65.9389	-84.6606	280	0, 100, 200, 237	✓	✓	✓	✓	✓	✓	✓
14	17/8/2019	15:30	65.9449	-84.6584	310	10, 20[1], 30, 40, 60, 150	✓	✓	✓	✓	✓	✓	✓
15	18/8/2019	12:40	65.5004	-84.4503	175	60, 100, 150, 165	✓	✓	✓	✓	✓	✓	✓
15	18/8/2019	14:00	65.5003	-84.4499	187	0, 10, 20, 30[1], 40	✓	✓	✓	✓	✓	✓	✓
16	19/8/2019	18:50	65.1045	-83.1081	326	0, 10, 20, 30, 40[1], 60	✓	✓	✓	✓	✓	✓	✓
16	19/8/2019	20:45	65.1059	-83.1345	323	100, 150, 200, 250, 315	✓	✓	✓	✓	✓	✓	✓
17	20/8/2019	12:20	64.9191	-82.9959	145	0, 10, 20, 30, 40, 50[1]	✓	✓	✓	✓	✓	✓	X
17	20/8/2019	14:30	64.9207	-83.0012	139	60, 100, 115	✓	✓	✓	✓	✓	✓	X
18	21/8/2019	2:10	64.5175	-81.2379	299	60, 100, 150, 200, 250, 290	✓	✓	✓	✓	✓	✓	✓
19	22/8/2019	14:20	63.9667	-79.7000	324	60, 100, 150, 200, 250, 300	✓	✓	✓	✓	✓	✓	✓
19	22/8/2019	15:30	63.9460	-79.6947	324	0, 10, 20, 35[1], 40	✓	✓	✓	✓	✓	✓	✓
20	22/8/2019	21:40	63.7864	-80.1034	160	60, 100, 150	✓	✓	✓	✓	✓	✓	✓

20	22/8/2019	22:30	63.7938	-80.0905	159	0, 10, 20, 30[1], 40	✓	✓	✓	✓	✓	✓	✓
21	23/8/2019	17:10	63.4824	-80.8600	32	0, 10, 18, 23[1]	✓	✓	✓	✓	✓	✓	✓
22	24/8/2019	15:50	63.1193	-81.9636	215	60, 100, 150, 200	✓	✓	✓	✓	✓	✓	✓
22	24/8/2019	16:55	63.1193	-81.9644	217	0, 10, 20, 30[1], 40	✓	✓	✓	✓	✓	✓	✓
23	25/8/2019	0:35	63.5365	-82.2298	90	60, 85	✓	✓	✓	✓	✓	✓	✓
23	25/8/2019	1:10	63.5193	-82.2111	96	0, 10, 20, 30[1], 40	✓	✓	✓	✓	✓	✓	✓
25	26/8/2019	18:20	63.4889	-84.1444	29	0, 10, 20	✓	✓	✓	✓	✓	✓	✓
26	27/8/2019	12:50	63.8200	-83.2662	45	0, 10, 20, 25[1], 30, 40	✓	✓	✓	✓	✓	✓	✓

1. Subsurface chlorophyll maximum. Only DIC (always) and CH_4/N_2O (frequently) were sampled from this depth.
2. CDOM was collected at surface from every station, from multiple depths at Stns 7, 8, 13, and 15, and at all depths (except SCM) starting with Stn 18.

Section 4. Phytoplankton

Cruise Participants: Elizabeth Kitching[1], Jillian Reimer[1], C.J. Mundy[1], and Audrey Limoges[2]
Principal Investigators: C.J. Mundy[1], Christine Michel[3], and Audrey Limoges[2]

[1] *Centre for Earth Observation Science, University of Manitoba*
[2] *University of New Brunswick*
[3] *Freshwater Institute, Fisheries and Oceans Canada*

Objectives:

The objectives of the phytoplankton group within the Southampton Island Marine Ecosystem Project (SIMEP) were to:

1) Characterize the separate physical processes that define different regions around Southampton Island
2) Examine differences in phytoplankton taxonomic composition, standing stocks and primary production in different regions around Southampton Island, and
3) Relate the driving physical processes in the different regions to phytoplankton production around Southampton Island

Sample Collection:

Water samples and conductivity, temperature and depth (CTD) profiles were collected between 6-27 August 2019 aboard the *MV William Kennedy* using a Seabird rosette with 12 x 5-L niskin bottles and CTD . Target depths were chosen prior to the cruise, while the number of depths were determined upon arrival at each station. The pre-chosen depths were 0 (surface water), 10, 20, 30, 40, 60, 100, 200, and 300 m, and bottom. If not captured by a listed depth, a chlorophyll *a* (chl*a*) maximum depth was determined via the down cast data of the rosette or CTD. Primary production samples were taken at three depths, 10 and 40 m, and the depth of the chla maximum. At many stations, two rosette cast were required, but depths selected for primary production incubation were always taken from the same cast. Table 4.1 provides a list of samples collected during the 2019 SIMEP cruise.

Acid washed tygon tubing and polyethylene bulk water containers were first rinsed in sample water three times before being filled with the sample. The bulk water containers came in two sizes, 9-L and 20-L bottles, and the larger bottles were used for 10 and 40 m, and the chl*a* maximum depth as greater volumes were needed. Collected water samples were then transferred to the lab for filtration and taxonomy. The work occurred behind dark blinds to prevent light contamination. Water needed for primary production was subsampled from the bulk water containers and then moved to the radiation lab. The bulk water was then subsampled for specific analyses in the following order: nutrient concentration, flow cytometry, chla concentration, particulate organic carbon and nitrogen (POC/N), particulate absorption (a_p), lugol taxonomy (only at 10 m and chl*a* maximum), high performance liquid chromatography (only at chl*a* maximum), and fatty acids (only at chl*a* maximum).

Two nutrient samples were taken at each depth. Water sample was drawn through an acid washed 60-ml syringe and then a swinnex filter with a 25-mm combusted GFF was attached. The syringe, filter, and acid washed 15-ml falcon tube were rinsed 3x with sample before the falcon

tube was filled with 12 ml and stored in the -20°C freezer until analysis down south. Four flow cytometry samples were collected using the same 60-ml syringe used for nutrient sample collection without a swinnex filter. A subsample of 4-ml was added to pre-spiked cryovial containing 20-µl of glutaraldehyde. They were placed in the dark for 15 minutes before being stored in the -80°C freezer until analysis down south.

Two chl*a* samples were filtered for each sampling depth through a 25-mm GFF. The amount of water filtered varied between 270 and 1400 ml depending on the colour seen upon the filter. The filters were then placed into unburnt tinfoil sleeves and stored in the -80°C freezer until analysis down south. The a_p sample was filtered through a 25-mm GFF. The amount filtered per depth at each station ranged between 300 and 1400 ml depending on the colour seen upon the filter. After filtration, each GFF was placed in a capsule and then stored in the -80°C freezer until analysis down south. A blank filter was also collected at each station using the same procedure. Two POC/PON samples were filtered at each depth. The volume filtered varied between 400 and 1600 ml depending on the colour seen upon the filter. Subsamples were filtered on a 25-mm pre-combusted GFF and then placed in a pre-combusted tinfoil sleeve. The sleeves were then stored in the -80°C freezer until analysis down south.

A fatty acid sample was collected once at each station at the chl*a* maximum. The amount filtered ranged between 500 and 2000 ml depending on the colour seen upon the filter. Fatty acid samples were filtered through a 47-mm glass fiber filter and then the filter was placed into an unburnt tinfoil sleeve. The sleeve was stored in the -80°C freezer until analysis down south. One high performance liquid chromatography for measurement of algal pigment composition was also collected from the chl*a* maximum depth. The amount filtered at each station ranged between 400 and 1200 ml depending on the colour seen upon the filter. The samples were filtered on a 25-mm pre-combusted GFF and then placed in a burnt tinfoil sleeve. A blank filter was also collected at each station using the same procedure. The sleeves were then stored in the -80°C freezer until analysis down south. Lugol taxonomy samples were collected at the 10 m and chl*a* maximum depths. Subsamples of 200 ml were collected at each depth and placed in amber bottles. Following this, 0.8 ml of Lugol was added and the bottle was inverted five times gently. Each bottle was then sealed with parafilm and stored in the fridge (4°C) until analysis down south.

For primary production (PP) incubations, 800 ml of bulk water was subsampled into an opaque Nalgene bottle for each 10, 40 m, and chl*a* maximum depths. Each subsample was then spiked with 200 µl of the radioactive isotope, Carbon-14 (C14) in the form of sodium bicarbonate. The inoculated water was then separated into 12 x 50-ml vials and placed in the incubator for 2-3 hours. Theses incubated bottles were exposed to a light gradient that was measured after filtration through the use of a light meter. One dark bottle (50 ml) was taken at each depth and incubated for 3 hours in the dark. 50 µl of inoculated sample was subsampled from each spiked Nalgene bottle to provide the initial amount of C14 within the sample (t0 samples) and added to a solution of 50 µl ethanolamine (to prevent degassing) and 7 ml of scintillation fluid. The light and dark samples were filtered onto pre-combusted (450 degrees for 5 hours) 25-mm glass fibre filters (GFF). Filters were placed into scintillation vials and 200 µl of 0.5N HCL was added to remove any non-fixed C14. The filters were allowed to degas under a fumehood for 8+ hours and

then 10 ml of scintillation fluid was added. The scintillation vials were sealed with parafilm for transport back to University of Manitoba.

Additional to the above data collection, the paleo group of SIMEP, led by Audrey Limoges, coordinated phytoplankton vertical net tows to quantify taxonomic composition of phytoplankton > 20 µm integrated over the water column. A phytoplankton net (30 cm opening with 20-µm mesh) sample was collected at almost every full station. All nets were deployed vertically. A RBR and an acoustical tag (v16tp) were attached to the net to record information about the deployment. The phytoplankton net was uplifted at a speed of 10 m min^{-1}. Excess water was drained; the content of the phytoplankton net was concentrated before being poured in a plastic bottle. Before cold storage (+4°C), 5 ml of formol was added to each sample. Figure 4.1 provides a photo of an example phytoplankton tow. Table 4.2 provides a list of all phytoplankton net samples collected. *Appendix: Phyto Net Log* provides a more detailed description of each tow.

Figure 4.1. Photo of a phytoplankton vertical net tow deployment.

Table 4.1. List of rosette-based samples collected with station coordinates and parameters during 2019 SIMEP cruise.

STN	yyyy-mm-dd	Cast number	Coordinates	Bottom Depth (m)	Time Start (CST)	Time End (CST)	Depths (m) (chla max*) (bottom– b)	Nuts	FC	Chl a	AP	POC/ PON	PP	Lugol	FA	HPLC
3	2019-08-06	1	63º31.194'/82º13.233'	97.2	11:15:00	11:33:00	60, 86 (b)	✓	✓	✓	✓	✓	X	X	all depths, no 20m	✓
3	2019-08-06	2	63º31.250'/82º14.253'	98	12:01:00	12:23:00	0, 10, 20, 25*, 30, 40	✓	✓	✓	no 20m	no 20m	✓	✓	all depths, no 20m	✓
5	2019-08-08	1	63º14.192'/85º43.683'	42	08:58:00	09:11:00	0, 10, 17*, 20, 30, 37 (b)	✓	✓	✓	✓	✓	✓	✓	✓	✓
6	2019-08-09	1	63º41.593'/87º26.668'	44.6	07:01:00	07:19:00	0, 10, 15*, 20, 30, 40 (b)	✓	✓	✓	✓	✓	✓	✓	✓	✓
7	2019-08-09	1	63º42.966'/88º26.028'	116	18:29:00	18:51:00	10, 20, 30, 40*, 60, 100 (b)	✓	✓	✓	✓	✓	✓	✓	✓	✓
7	2019-08-09	2	63º42.977'/88º25.256'	119	20:35:00	20:38:00	0	✓	✓	✓	✓	✓	X	X	X	X
8	2019-08-10	1	64º20.504'/86º30.709'	36.3	19:49:00	20:07:00	0, 10, 15*, 20, 30, 35 (b)	✓	✓	✓	✓	✓	✓	✓	✓	✓
9	2019-08-11	1	64º23.645'/86º43.275'	98	11:52:00	12:16:00	10, 30, 40, 65*, 95 (b)	✓	✓	1x 30m	no 30m	no 30m	✓	✓	✓	✓
9	2019-08-11	2	64º24.161'/86º43.163'	97.9	13:31:00	13:48:00	0, 20	✓	✓	✓	✓	✓	X	X	X	X
10	2019-08-12	1	64º58.234'/86º15.914	37.1	07:10:00	07:30:00	0, 5*, 10, 20, 30 (b)	✓	✓	✓	✓	✓	X	✓	✓	✓
11	2019-08-12	1	64º59.725'/86º32.601'	93.2	12:52:00	13:17:00	10, 20*, 30, 40, 60, 83 (b)	✓	✓	✓	✓	✓	✓	✓	✓	✓
11	2019-08-12	2	64º59.818'/86º32.329'	90.7	13:57:00	14:14:00	0	✓	✓	✓	✓	✓	X	X	X	X
12	2019-08-13	1	65º56.518'/85º44.308'	84.5	08:30:00	08:54:00	10, 20*, 30, 40, 60, 79 (b)	✓	✓	✓	✓	✓	✓	✓	✓	✓
12	2019-08-13	2	65º54.841'/85º46.315'	85.8	11:31:00	11:50:00	0	✓	✓	✓	✓	✓	X	X	X	X
13	2019-08-14	1	66º18.910'/86º05.466	184	06:45:00	07:13:00	60, 100, 150, 177 (b)	✓	✓	✓	✓	✓	X	X	X	X
13	2019-08-14	2	66º18.296'/86º05.695'	188	08:33:00	09:03:00	0, 10, 18.6*, 31.1, 40	✓	✓	✓	✓	✓	✓	✓	✓	✓
14	2019-08-17	1	65º54.450'/84º39.857'	280	08:16:00	08:55:00	0, 100, 200, 237 (b)	✓	✓	✓	✓	✓	X	X	X	X
STN	yyyy-mm-dd	Cast number	Coordinates	Bottom Depth (m)	Time Start (CST)	Time End (CST)	Depths (m) (chla max*) (bottom– b)	Nuts	Flow	Chl a	AP	POC/ PON	PP	Lugol	FA	HPLC

14	2019-08-17	2	65º56.206'/84º39.822	310	09:53:00	10:29:00	10*, 20, 30, 40, 65	✓	✓	✓	✓	✓	✓	✓	✓	✓
15	2019-08-18	1	65º29.824'/84º27.898'	175	07:15:00	07:40:00	60, 100, 165 (b)	✓	✓	✓	✓	✓	X	X	X	X
15	2019-08-18	2	65º30.123'/84º27.461'	199	08:32:00	09:00:00	0, 10, 20, 30*, 40	✓	✓	✓	✓	✓	✓	✓	✓	✓
16	2019-08-19	1	65º06.358'/83º06.807'	326	13:08:00	13:50:00	0, 10, 20, 30, 40*, 60	✓	✓	✓	✓	✓	✓	✓	✓	✓
16	2019-08-19	2	65º06.258'/83º08.577'	323	14:58:00	15:45:00	55, 100, 200, 315 (b)	✓	✓	✓	✓	✓	X	X	X	X
17	2019-08-20	1	65º54.940'/82º59.311'	147	06:54:00	07:20:00	0, 10, 20, 30, 40, 50*	✓	✓	✓	✓	✓	✓	✓	✓	✓
17	2019-08-20	2	64º55.080'/82º59.916	142	09:07:00	09:23:00	60, 100	✓	✓	✓	✓	✓	X	X	X	X
18	2019-08-20	1	64º30.645'/81º13.993'	299	20:38:00	21:20:00	60, 100, 200, 289 (b)	✓	✓	✓	✓	✓	X	X	X	X
19	2019-08-22	1	63º56.183'/79º40.548'	324	08:32:00	09:13:00	60, 100, 200, 300 (b)	✓	✓	✓	✓	✓	X	X	X	X
19	2019-08-22	2	63º56.274'/79º40.811'	324	09:47:00	10:15:00	0, 10, 20, 30, 35*, 40	✓	✓	✓	✓	✓	✓	✓	✓	✓
20	2019-08-22	1	63º47.656'/80º05.879'	154	16:12:00	16:32:00	60, 100, 150 (b)	✓	✓	✓	✓	✓	X	X	X	X
20	2019-08-22	2	64º47.800'/80º05.543'	159	16:54:00	17:19:00	0, 10, 20, 30*, 40	✓	✓	✓	no 30m	1x 40m	✓	✓	✓	✓
21	2019-08-23	1	63º29.152'/80º51.407'	32	12:48:00	13:03:00	0, 10, 18, 23*(b)	✓	✓	✓	✓	✓	✓	✓	✓	✓
22	2019-08-24	1	63º07.133'/81º57.394'	216	10:15:00	10:43:00	60, 100, 200 (b)	✓	✓	✓	✓	✓	X	X	X	X
22	2019-08-24	2	63º07.176'/81º57.394'	216	11:26:00		0, 10, 20, 30*, 40	✓	✓	✓	✓	✓	✓	✓	✓	✓
23	2019-08-24	1	63º31.615'/82º13.002'	90.2	19:13:00	19:28:00	60, 84 (b)	✓	✓	✓	✓	✓	X	X	X	X
23	2019-08-24	2	63º31.207'/82º12.634'	96	19:46:00	20:04:00	0, 10, 20, 30*, 40	✓	✓	✓	✓	✓	✓	✓	✓	✓
26	2019-08-27	1	63º49.311'/83º15.969'	49	7:21:00	7:42:00	0, 10, 20, 25*, 30, 40 (b)	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 4.2. List of phytoplankton vertical net tows.

Event #	Station #	*Latitude Longitude	Location	Water depth (m)	Sampling device	Type	Samples
16	SIMEP19-STN3	63°31,395' N 82°15.213' W	South Southampton Island	97m	PHN	Vertical	[N=1] A. Limoges (teaching material)
39	SIMEP19-STN5	63°14.170' N 83°43,058' W	Southwest Southampton Island	38.9m	PHN	Vertical	[N=1] A. Rochon
65	SIMEP19-STN6	63°41,598' N 87°26,648' W	Southwest Southampton Island	44.6m	PHN	Vertical	[N=1] A. Rochon
76	SIMEP19-STN7	63°42,840' N 88°25,017' W	Entrance Roes Welcome Sound	115	PHN	Vertical	[N=1] A. Rochon
102	SIMEP19-STN8	64°20,392' N 86°30,301' W	Roes Welcome Sound	40.6 m	PHN	Vertical	[N=1] A. Rochon
140	SIMEP19-STN10	64°58,229' N 86°15,910' W	Center Roes Welcome Soun	36.8 m	PHN	Vertical	[N=1] A. Rochon
170	SIMEP19-STN12	65°56,196' N 85°42,974' W	North Entrance Roes Welcome Sound	83.7 m	PHN	Vertical	[N=1] A. Rochon

195	SIMEP19-STN13	66°18,831’ N 86°05,508’ W	Repulse Bay	184	PHN	Vertical	[N=1] A. Rochon
223	SIMEP19-STN14	65°55,587’ N 84°39.877’ W	Frozen Strait	266	PHN	Vertical	[N=1] A. Rochon
247	SIMEP19-STN15	65°29,997’ N 84°27.036’ W	Frozen Strait	200	PHN	Vertical	[N=1] A. Rochon
284	SIMEP19-STN16	65°06,136’ N 83°09.372’ W	Entrance Frozen Strait	330	PHN	Vertical	[N=1] A. Rochon
292	SIMEP19-STN17	64°54,524’ N 82°58.424’ W	Foxe Basin – Nearshore	168	PHN	Vertical	[N=1] A. Rochon
304	SIMEP19-STN18	64°30,681’ N 81°12.699’ W	Near East Bay – Northeast Island	298	PHN	Vertical	[N=1] A. Rochon
332	SIMEP19-STN19	63°56,181’ N 79°42.060’ W	Northeast Island	325	PHN	Vertical	[N=1] A. Rochon
370	SIMEP19-STNLP	63°29,770’ N 80°51.718’ W	Southeast Island (Shrimp station)	33	PHN	Vertical	[N=1] A. Rochon

390	SIMEP19-STN22	63°07,067’ N 81°56.701’ W	North of Coats Island	216	PHN	Vertical	[N=1] A. Limoges (teaching material)
408	SIMEP19-STN24	62°54,141’ N 83°32.087’ W	Southwest Coats Island	35.5	PHN	Vertical	[N=1] A. Rochon
420	SIMEP19-STN25	63°29,260’ N 84°08.786’ W	Bear Cove – South Island	28	PHN	Vertical	[N=1] A. Rochon
448	SIMEP19-STN26	63°49,445’ N 83°16.379’ W	Entrance Bay to Coral Harbour	48.4	PHN	Vertical	[N=1] A. Rochon

Section 5. Kelp

Cruise Participants: Karen Filbee-Dexter[1], Ignacio Garrido[1], Gabrielle Martineau[1], Paulina Bruning[1], C.J. Mundy[2], Jillian Reimer[2], and Laura Castro de la Guardia[2]
Principal Investigators: C.J. Mundy, Philippe Archambault, Ladd Johnson, and Brenda Konar

[1] *Universitié Laval*
[2] *Centre for Earth Observation Science, University of Manitoba*

Introduction:
In response to our observations of extensive macroalgal beds covering the seafloor down to 35 m during the 2018 SIMEP cruise, we were able to add a SCUBA dive program to better document species diversity, biomass, and annual production of benthic macroalgae in nearshore environments. In addition to the dive program, we also made measurements of kelp primary production with an on deck incubator and collected drop camera and echosounder data along transects perpendicular to shore. As each project was led by a different group, we decided to split this section into two: 5.1) Kelp forests and associated fauna of Southhampton Island, and 5.2) Kelp primary production.

5.1. Kelp forests and associated fauna of Southhampton Island

Project Goals:
1. Collect baseline data on kelp cover and depth range across a gradient of abiotic conditions (e.g., sea ice, currents, temperature) in the study area
2. Measure macroalgal diversity and community composition of kelp forests
3. Obtain kelp biomass and morphology data to compare to other kelp forests in the Canadian Arctic

Summary of Data Collected:
1. Kelp biomass from 4 small 0.25 m^2 quadrats
2. Kelp density, cover, substrate and invertebrate species counts from 8 × 1-m^2 quadrats
3. Morphology data for 10 individuals of each kelp species

Methods:
At each site 2 divers sampled 10 and 15 m depth. On each dive, divers laid a 30 m transect along the depth contour. Along the transect, 8 haphazardly placed 1 x 1 m quadrats were placed and photographed. We estimated and recorded the percent cover and density of each species of macroalgae, the percent encrusting coralline algae (under the canopy), then classified the substrate as percent 'bedrock', 'boulder', 'cobbles' and 'sand'. The number of sea stars, sea urchins, and sea cucumbers were recorded. Juvenile plants (< 20 cm and >1 year) were counted and identified to species when possible. Observations of the fish community were noted (e.g., sculpin present, shoals of fish, cod, gunnel). We also collected all algae and invertebrates in four 0.25 m^2 quadrats. Additional adult kelps were collected to ensure we had at least 10 individuals of the dominant species. On the ship, all collected kelps were identified to species and measured for stipe, blade and holdfast wet weight (WW).

Additional morphology measures were taken on a subset of adult kelps (n = 10). These included blade and stipe length, blade width, stipe diameter, and fouling (epiphytes). Kelps were aged by slicing a thin portion of the stipe base and counting the rings. For *Laminaria solidungula* the number of blades and the length of the first blade was recorded. This was also done for some *S. longicruris*, which had a narrowing section partway up the blade from slow overwinter growth.

Peliminary Results:

Kelp forest diversity

Kelp forests were the dominant coastal habitat around the island, occurring at 10 and 15 m depth at every dive site. The dominant kelp species were *Saccharina latissima, Saccharina longicruris, Agarum clathratum, Laminaria solidungula, Alaria esculenta*, and *Sacchorhiza dermatoda*. There was clear differences in kelp habitats among sites and between depths. At 10 m depth kelps were present, but often smaller or at low densities than deeper areas. At 15 m depth kelp forests became incredibly dense at some sites, particularly in Rose Welcome Sound. Beyond 20-30 m depth, drop camera surveys showed the kelps becoming smaller and sparser, grading to *Agarum clathratum* and red algae. In general, at 5 m depth there was little to no algae and observations of bare topsides of rocks and turned over substrate suggest this is likely due to ice scour. Figures 5.1 and 5.2 depict density of the main kelp species and kelp biomass observed at each station sampled, respectively.

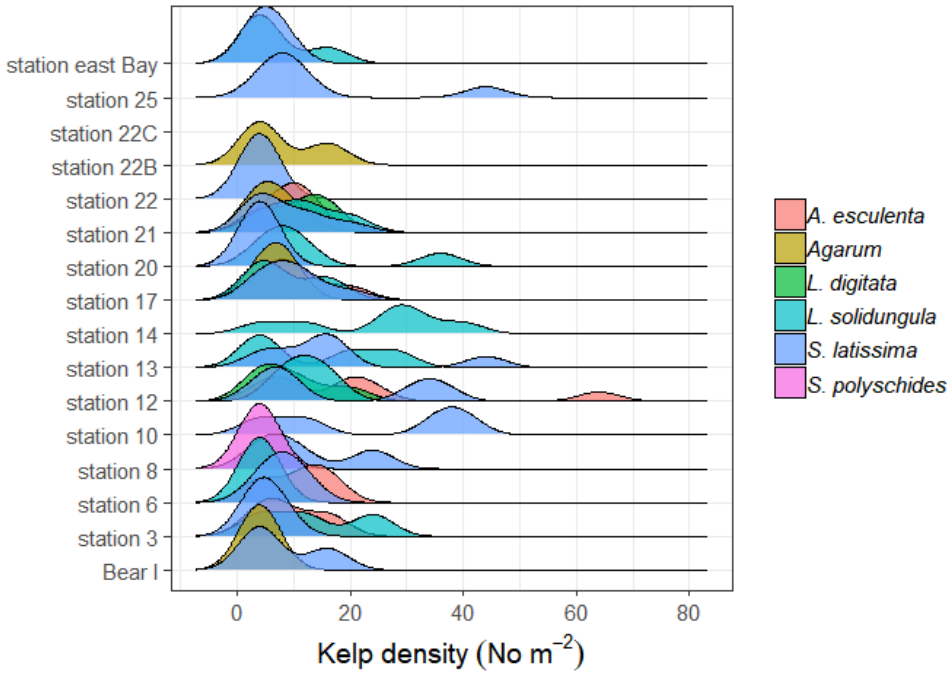


Figure 5.1. Number of kelp species collected from quadrats at 10 and 15 m depth at all dive stations.

Average kelp biomass was 6.2 kg m^{-2} (± 6.8 SD). At some stations, extensive forests of *Saccharina longicrurus, L. solidungula* and *A. esculenta* formed canopies 3 to 4 m high, and reached biomasses of 34 kg m^{-2}. These kelps were remarkably large and fragile, often breaking apart on collection. They were usually attached by a small holdfast to cobbles or boulders. This

is to our knowledge, the highest kelp biomass reported for the Canadian Arctic. Drop camera surveys and echosounder recordings showed these forests to be extensive (i.e., extending several km offshore). This was largely due to the shallow sloping bathymetry and ubiquitous rocky substrate.

Other stations on the northern side of the island had the more classically described 'high Arctic' character, with patchy, smaller kelps. These areas were more steeply sloping. A few shallow, high current stations had lush forests dominated by *Alaria esculenta*. The ages of kelp stands were mixed. Most *Saccharina longicrurus* were young, around 2 years old and 3 m long. *L. solidungula* were 3-4 years old with thick blades and with most biomass in the new blade.

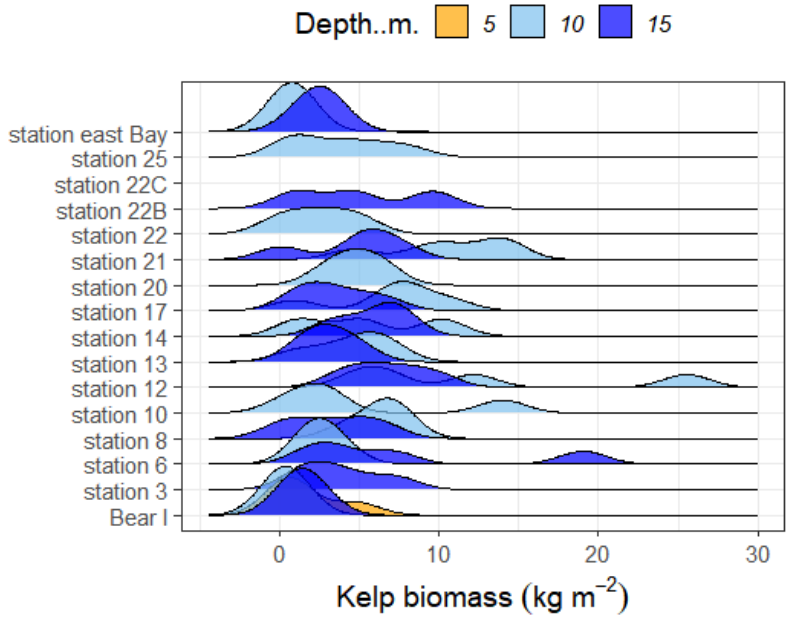


Figure 5.2. Average kelp biomass at 5, 10 and 15 m depth at dive stations.

Associated fauna

The invertebrate diversity was remarkable inside the kelp forests, namely consisting of seastars, brittlestars, gastropods, isopods, small crustaceans and anemones. There were few observations of fish (apart from a few gunnels), however large clouds of mysid shrimps were observed under the canopy at numerous sites. Interestingly, sea urchins were rare and there was little evidence of direct grazing on kelp tissue. This is strikingly different from observations in northern Labrador and southeastern Baffin Island, where sea urchins are abundant and graze attached kelps to form incipient 'barren' patches. Epiphtye cover on the kelps (both on the stipes and blades) was also low, and consisted of clusters of bryozoans, gastropod eggs and small (<1 cm) mussels.

5.2 Kelp Primary Production (PP)

Objectives:

1. To make the first primary production estimates of kelp (*Saccharina longicrurus)* around Southampton Island.
2. To extract photosynthetic parameters (listed below) from kelp photosynthesis-irradiance relationships (P-I curve) for the purpose of developing a primary production model of Arctic kelp.

Photosynthetic parameters of interest to be extracted from the P-I curve:
Pmax – maximum net photosynthetic rate at saturating irradiance
alpha – photosynthetic efficiency
Rd – dark respiration rate
Ek – saturation irradiance, Pmax/alpha
Ec – compensation irradiance, Rd/alpha

Methods:

The basis of production measurements was to collect kelp specimens and incubate them in sealed bags within an on-deck incubator that continually pumped surface sea water through it. Respiration of kelp inside the sealed bag was monitored over a 24-h period with P-I curve irradiance variation a function of the diel insolation cycle.

Kelp Collection

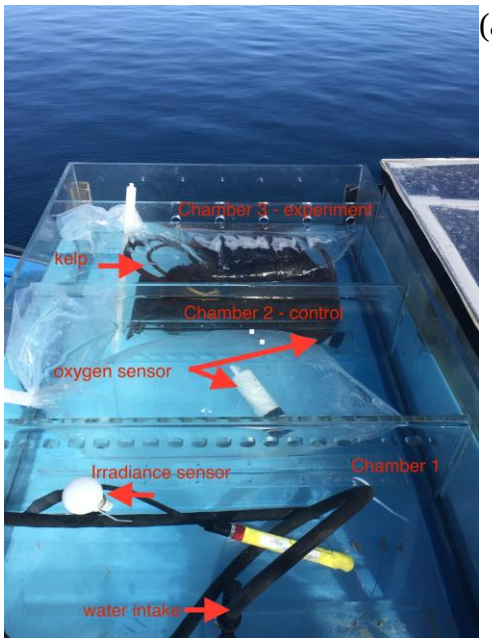
A team of divers collected kelp from 10- and 15-m depths using a quadrant or transect sampling technique (*see section 5.1*). They selected the "healthiest" *Sacharina latissima* from their sample for our incubation. The kelp was kept in a cool dark environment from the time of collection to the start of incubation. Sometimes divers were not able to dive at a station due to bad weather or the presence of dangerous wildlife (e.g., polar bears or walrus) near the dive location. To account for these lost days of incubation, we used a dissected kelp from the previous day's station that was kept in the dark over 24 h prior to incubation (e.g., STN14b), and a drifting kelp (e.g., STN24-drift). Table 5.1 lists all the samples and location where collected.

Table 5.1. Station and event associated with kelp collection. Rosette or CTDs casts from these stations are used to estimate in-situ temperature and salinity of the collected kelp habitat. Listed coordinates refers to coordinates where the dives took place, except for, STN24 in which the kelp incubated was drifting and collected during a drop camera event.

Station & Event	Latitude-degrees	Latitude-min	Longitude-degrees	Longitude-min
STN BearI & E15	64	00.349	83	13.148
STN05 & E44	63	14.194	85	44.251
STN06 & E64	63	41.501	87	19.953
STN08 & E108	64	19.756	87	24.34
CTD68 & E138	64	58.437	86	14.767
STN12 & E176	65	57.02	85	46.035
STN13 & E194	66	24.22	86	16.014
STN14a & E222	65	56.041	84	44.03
STN14b & E222	65	56.041	84	44.03
STN17 & E291	64	55.251	83	0.063
STNEB = CTD143 /E318 CTD144/E325	64	0.513	82	59.477
STN20/E348	63	47.371	80	8.236
STN21/E361	63	30.145	80	40.747
STN22/E389	62	56.628	81	58.104
STN 25/E419	63	32.824	84	12.276
STN24 – drift a	62	54.916	83	32.947

Kelp Incubation

The incubator was located on the Starboard side on top of the wheelhouse of the *MV William Kennedy*. The incubator was divided into three baffled chambers. A light sensor (RBRsolo^{3}PAR, serial# 201187) was fixed to the chamber that received the sea surface water intake, a control bag was placed on the middle chamber and an experiment bag was placed on the remaining outer chamber (Figure 5.3a,b).



(a)


(b)

Figure 5.3. Kelp primary production experiments aboard the *MV William Kennedy*. Pictures showing (a) the incubator on the upper deck with three chambers and (b) pail used to fill the bags after setting up a kelp PP incubation.

Kelps were incubated inside a 20- by 36-inch clear 4-mil poly bag purchased from ULINE (model # S-1521). Two bags were filled to a volume of 35 L with surface seawater from the incubator intake tube (Figure 5.3a). The volume was measured using a 19-L pail marked at 17.5 L (Figure 1b). The water was not filtered. No kelp was added into the control bag in chamber 2, while an entire intact kelp (blade, stipe and holdfast) was added into the experiment bag in chamber 3. An oxygen-temperature sensor (PME miniDO$_2$T Logger) was placed inside each bag and was set-up to record one measurement every sixty seconds. The miniDOT with serial # 725622 was placed inside the control bag, and miniDOT with serial # 704331 was inside the experiment bag. The control chamber 2 served to measure plankton community production, while the experiment chamber 3 measured plankton community and kelp primary production. Given that surface water was close to oxygen saturation, the incubation experiments were started in the late afternoon so that respiration would help lower oxygen concentration overnight (Table 5.2-incubation time). The kelp was not cleaned of epiphytes prior to incubations.

Environmental measurements: Temperature, salinity and nutrients

Temperature and salinity influence the saturation of oxygen. At the beginning of each incubation the temperature and salinity of the seawater was recorded using one of the conductivity-temperature-depth (CTD) sensors aboard the *MV William Kennedy*. Since temperature may change during the 24-h incubation period and this may influence kelp productivity, the temperature inside the bags was recorded throughout the incubation period at a frequency of 60 s using the built-in temperature sensor within the miniDOT.

Temperature and salinity of the water that was used to filled the bags was measured from the sensors installed on the flowthrough system in the *MV William Kennedy*. We measured the amount of nutrients within the water by taking two water samples of 12 ml at the start and at the

end of the incubation period following collection procedure outlined in Section 4 of this data report. Samples were immediately frozen at -20 C. Nutrient analysis of this water will help estimate if nutrient limitation played a role on the productivity of the incubated kelp. Collected water samples need to be sent for analysis to a lab.

Table 5.2. Kelp incubation information. Weather and sea conditions was obtained from the *MV William Kennedy* log book.

Sample ID	Water in bag: CTD cast number (event#)	Time IN (Central Time)	Time OUT (Central Time)	Weather/Sea
STN BearI	CTD16 (E28)	Aug, 7, 15:51	Aug 8 15:55	Cloudy and showers/ rough
STN05	CTD26 (E51)	Aug, 8, 17:01	Aug, 9, 16:52	Cloudy/ rough
STN06	CTD40 (E74)	Aug, 9, 1732	Aug 10, 23:35	Cloudy and showers/ wavy
STN10	ROS-STN10 (E153)	Aug, 12, 17:00	Aug, 13 17:25	sunny/very calm
STN12	CTD80 (E185)	Aug, 13, 18:20	Aug, 14 17:13	sunny/very calm
STN13	ROS-STN13 (E197)	Aug, 14, 18:00	Aug 15, 20:00	Sunny/ calm
STN14a	CTD105 (E235)	Aug, 17, 17:30	Aug, 18, 17:10	sunny/calm
STN14b	CTD117 (E265)	Aug, 18, 17:54	Aug, 19, 17:20	sunny/calm
STN17	CTD133 (E301)	Aug, 20, 17:49	Aug, 21, 17:22	Sunny/calm
STNEB	CTD147 (E321)	Aug, 21, 18:00	Aug, 22, 17:00	Sunny/calm
STN20	CTD153 (E351)	Aug 22, 20:000	Aug, 23, 18:50	Sunny/rough swells
STN21	ROS-STN23 (E 398)	Aug, 24, 18:30	Aug, 26, 18:30	sunny/rough swells
STN22	ROS-STN23 (E 398)	Aug, 24, 18:30	Aug, 26, 18:30	sunny/rough swells
STN25	CTD 184 (E428)	Aug, 26, 19:40	Aug, 27, 19:20	Over cast/ rough and wavy
STN24 drift a	CTD 199	Aug, 27, 20:00	Aug, 28, 19:30	Anchor: Over cast/ wavy

Preliminary Results:

Temperature during each incubation period was stable (within 3 ºC) for the most part, but was different between stations. The lowest incubation temperature was 2.5 ºC at STN14a, and the highest was 10 ºC at STN20 (Figure 5.4).

(a) (b)

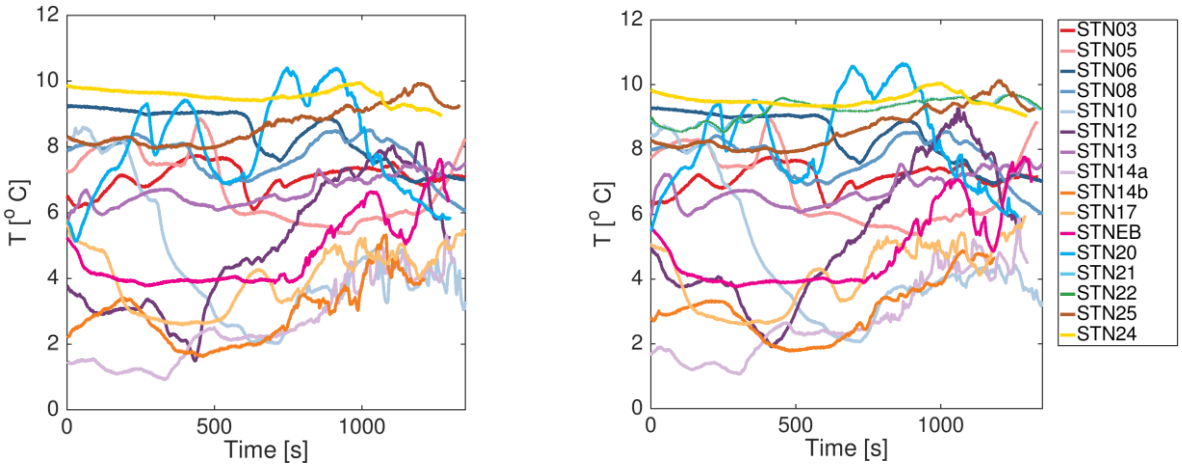


Figure 5.4. Water temperature inside (a) the control and (b) the experiment bag during the incubation period. The two bags were kept at similar temperature. Unfortunately, during STN12 the pump shut down for an unknown period due to electrical problems, but was fixed before the end of the incubation.

After each incubation the kelp was weighed and the maximum length and width of the blade was measured (Figure 5.5). The age was estimated by counting growth rings on a cross-section of the stipe.

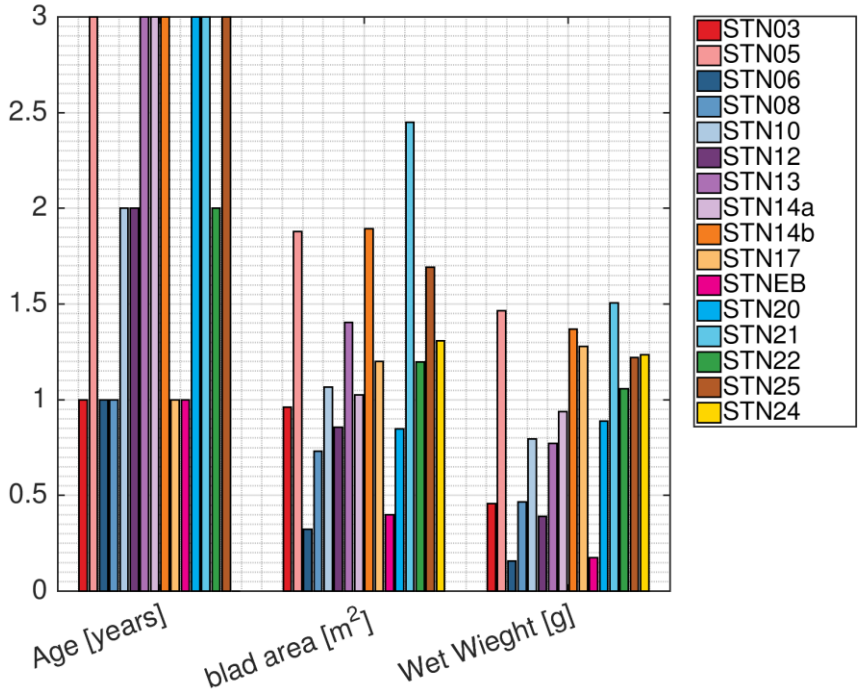


Figure 5.5. Weight, area and age of kelp incubated aboard the RV. Kennedy.

Dissolved oxygen in the control bag was very stable throughout the day (Figure 5.6a). On the other hand, the dissolved oxygen recorded within the experiment bag show pronounce oxygen consumption during the night (first half of incubation period) and oxygen production during the day (second half of the incubation period) (Figure 5.6b; refer also to Figure 5.7).

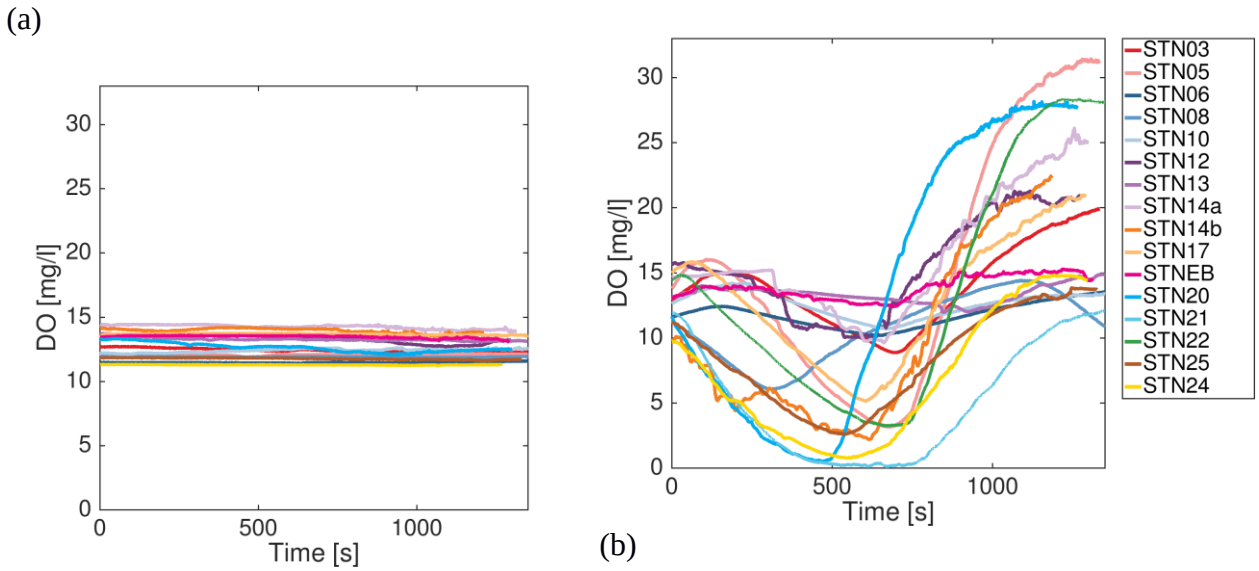


Figure 5.6. Dissolved oxygen concentration over incubation runs (a) inside the control bag without kelp, and (b) inside the experiment bag with kelp.

Irradiance reaching the incubations was measured throughout the entire duration of the cruise from 7 August at 19:32 until 30 August at 13:56 (UTC). Raw values reflect the daily light cycle (Figure 5 bottom). Days with low light intensity were almost always overcast (Table 5.2). Most of the incubation took place during sunny days.

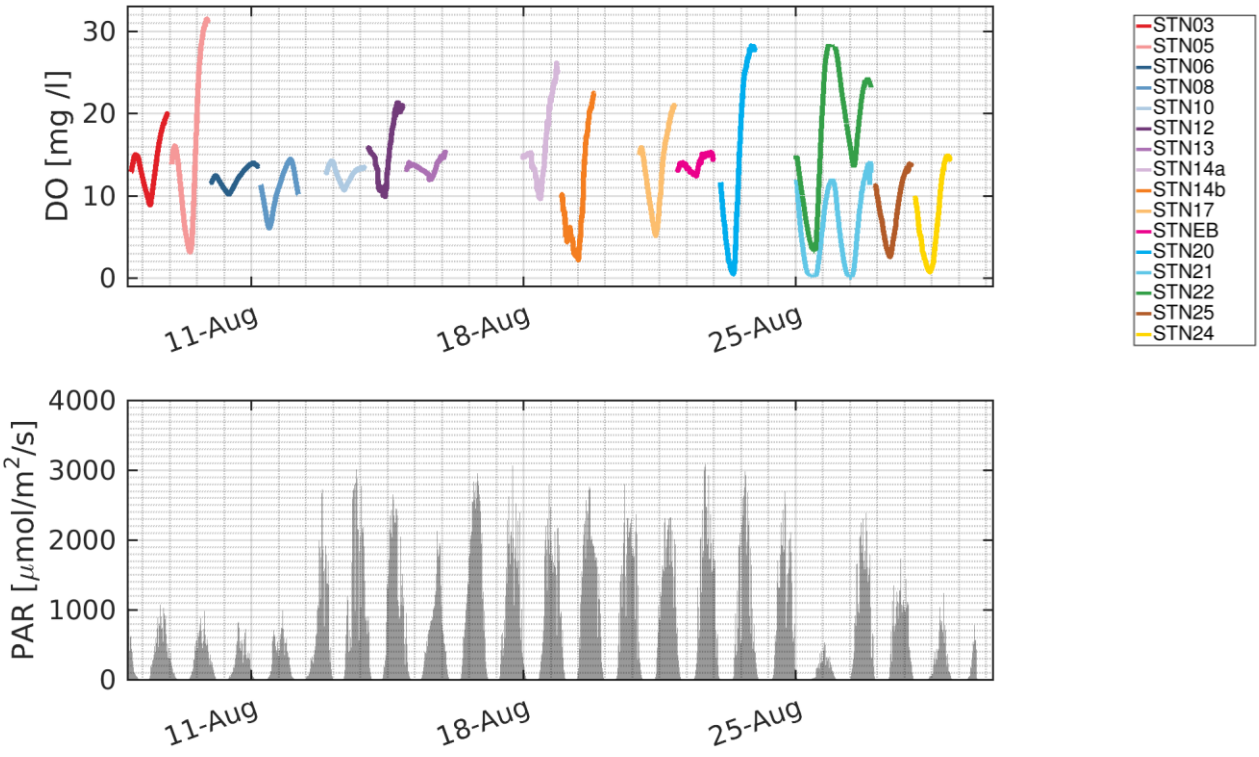


Figure 5.7. Output from the PAR sensor installed in the incubator. This is the light to which the kelp incubated was exposed too.

Further analysis is needed to obtained a P-I curve for each kelp incubated. For statistical comparisons of the different kelp incubation there is also a need to standardize the data by either weight or blade area. Furthermore, including geographical context (depth and location of collection) to the analysis could help explain some of the observed variance in productivity. Salinity and temperature still need to be extracted from the CTD and Rosette casts as well as from the flow-through data.

Section 6. Zooplankton and Fish

Cruise Participants: Kevin Jacobs[1], Adam O'Dell[1], and Laura Castro De La Guardia[2]
Principal Investigators: Andrea Niemi[1], Kevin Hedges[1], Steve Ferguson[1], Thomas Brown[3]

[1] *Central and Arctic Region, Department of Fisheries & Oceans Canada*
[2] *Centre for Earth Observation Science, University of Manitoba*
[3] *Previously at the Scottish Association for Marine Sciences (UK)*

Purpose:
The purpose of this project was to assess marine fish and invertebrate biodiversity in relation to oceanographic conditions and locality around Southampton Island, Nunavut. Resulting data will be used for biodiversity monitoring and reporting, and to identify potential subsistence or commercial fishery resources accessible by residents of Coral Habour and Naujaat, Nunavut.

The main objectives of the program were to:

1. Characterize the distribution and biomass of zooplankton around Southampton Island.
2. Identify oceanographic drivers of community structure, with implications for food-web linkages.
3. Assess taxon-specific fatty acids and stable isotopes signatures for key zooplankton taxa of the Southampton Ecosystem.
4. Provide target validation data for Acoustic Zooplankton Fish Profiler (AZFP) moorings.

Methods:

Trawls

A 3-m pelagic trawl was towed at between 2-3 knots for 15 minutes at a target depth during the approach to each station and a 3-m benthic trawl was towed at 2-3 knots for 15 minutes on bottom when leaving each station. The target depth for the pelagic trawl was determined by monitoring the vessel acoustic sounder. If a significant return was observed in the sounder profile (i.e. indicative of a concentration of biota) while approaching the station, the pelagic trawl was to be fished at the same depth as the return; if the sounder profile was clear, the trawl was to be fished in the middle of the water column, at a constant depth throughout the tow. No indicative returns were noted during the SIMEP cruise, and therefore, the trawl was towed at the middle of the water column. An acoustic transmitter (Vemco acoustic tag) was attached to the pelagic trawl and the depth of the transmitter was monitored using a Vemco VR100 transceiver to determine the depth of the trawl. The benthic trawl was fished in contact with the bottom. Benthic trawl depth was also be monitored using an acoustic tag and the VR100. An RBR temperature/depth/ time recorder was affixed to both trawls to verify the depth of the trawl and trajectory.

For each set, all catch was sorted to the lowest taxon possible for accurate identification aboard the ship. For each species the total number of individuals and their combined weight will be recorded as a batch count and a batch weight, respectively. Data were entered into field sheets and then transcribed into Excel spreadsheets. Representative samples were obtained and frozen for lab identification and further processing. The survey was Multi-Species in nature with information collected on all taxa caught in each trawl.

Zooplankton

Conical (WP2) net (150 µm mesh) samples were collected primarily for taxonomy. One vertical tow was conducted at each site covering the entire water column. A RBR duo temperature/depth sensor was attached to obtain the depth of each cast. A flow meter (General Oceanics) number was recorded just prior to deployment. The net was lowered at 1 m s^{-1} to within 10 m of the bottom. Briefly paused at the bottom and then recovered at 0.5 m s^{-1}. Once at the surface, the outside of the net was sprayed with saltwater hose prior to brining the net onboard. The final flow meter number was recorded and RBR – downloaded. Samples were preserved with formalin and retained for future analysis.

Oblique integrated samples were collected by towing Bongo paired nets at each station (2 nets, 500 µm mesh). The Bongo net is used primarily to collect high biomass samples for the study of larger zooplankton and fish larvae. A RBR temperature and pressure sensor was attached to the nets. Flow metres were recorded before and after each deployment on each net. Nets were deployed at approximately 2 knots speed-over-ground with a vertical line out of 1 m s^{-1} to within 10 of the bottom. Line out was estimated using a line counter on the vessel, using the VEMCO acoustic tag (described in the fish section) and estimating 2 times the water depth. Once near bottom (within 10 m of bottom, or 5 m the net was retrieved at a winch speed of 0.5 m s^{-1}. The procedure was repeated until the net had been towed for 15 minutes. At stations 200 m and deeper, the bongo nets were deployed only to 200 m and recovered. Prior to bringing on board the outside of the nets were rinsed with a gentle saltwater spray. The final flow meter numbers were recorded and tow data were downloaded. Samples were sorted into main groups of zooplankton. They were then frozen at -80 Celsius for later food web analysis.

Work Schedule

The work hours were varied depending on weather and arrival time at a particular station. In most cases trawling took place during daylight hours however occasionally trawling occurred at night. Figure 6.1 plots out all locations where trawls and nets were deployed.

Figure 6.1. SIMEP net deployment locations

Cruise Summary:
This years cruise was highly successful and achieved its objective of circumnavigating and sampling around Southampton Island. The trip benefitted significantly from favourable weather and seas that reduced the need for weather delays. The vessel comfortably accommodated the scientific party for approximately one month and was able to work in conditions up to 2.5 metres and 25 knots wind. Stronger winds and sea state decreased the quality of the zooplankton sampling due to difficulty in keeping nets in the desired position, controlling rate of descent and determining the instantaneous depth of the equipment. The VEMCO acoustic tag became less reliable when there was a stronger sea state likely due to acoustic interference from the waves.

The trawl depth was limited by the amount of warp available for trawling. Generally a 3.5 to 1 ratio of line to depth seemed to be effective at keeping the benthic trawl at the target depth. The vessel had approximately 1000 metres of line, which made a maximum trawl depth of approximately 250 metres. In total 43 trawls were attempted including 20 pelagic trawls and 23 benthic trawls. There were 27 Bongo deployments and 25 deployments of the WP2 conical net. The number of deployments may not be equal for all sites due to re-deployments. The pelagic trawl was difficult to handle by the crew due to the design of two doors being pulled by a centre line. Additionally the doors created a significant residence on the line which while trawling overcame the capacity of the winch motor to pull in the trawl. It was necessary to slow down the vessel when bringing in the pelagic trawl. After 20 August, a decision was made to only use the beam trawl for both benthic and pelagic sampling. The pelagic trawl would often ride up from the target depth requiring additional line deployment. It was difficult to determine the exact depth while deployed due to the erratic functioning of the VEMCO acoustic tag and receiver. Similarly the bongo paired nets were somewhat difficult to reach target depth when the acoustic tag depth failed as the line counter was also not reliable. In total, approximately 300 samples of fish and benthic invertebrates were obtained. A similar number of zooplankton samples were obtained.

Photos:

Figure 6.2. Photo of benthic trawl deployed.

Figure 6.3. Example catch from benthic trawl.

Figure 6.4. Ice was encountered on the north east side of Southampton Island which prevented trawling and posed a navigational hazard.

Figure 6.5. Example of benthic trawl catch.

Figure 6.6. Example of benthic trawl catch.

Section 7. Sediments

Cruise Participants: Audrey Limoges[1], Yekaterina Yezhova[2], Kelsey Koerner[1], Nicolas Van Nieuwenhove[1]
Principal Investigators: Audrey Limoges[1] and Zou Zou Kuzyk[2]

[1] *University of New Brunswick*
[2] *Centre for Earth Observation Science, University of Manitoba*

Objectives:
The objectives were to collect 1) surface sediment samples for the development of a modern database linking the distribution of sedimentary proxies to sea-surface conditions, and 2) sediment cores to constrain organic matter sources and rates of carbon burial, and reconstruct changes in sea-surface conditions (e.g. sea ice, salinity, temperature, etc.) and primary production at a time scale spanning the last hundreds to thousands of years.

Sampling devices:
Petite PONAR: 15 cm x 16 cm x 7 cm
Box core: 35 cm x 35 cm x 90 cm
Gravity corer: Mooring System, Inc., GC-075-Gravity Corer, Ballast weight (total of 80kg)

Operations/Methodology:
The selection of sampling sites was based on available sub-bottom profiles (Ocean Mapping Group, 2007) and the oceanographic/ecological significance of sites (e.g., gateways, polynya and non-polynya conditions). The PONAR was deployed at stations where no information about the seafloor was available in order to prevent damaging the box core's blades on rocky surfaces. When appropriate, the box corer was deployed. The box corer was lowered as fast as possible > 1 m s^{-1}. All sediment samples were collected in plastic bags and immediately stored at -20°C. At each station, duplicates were collected to allow analyses by teams from Universities of Manitoba and New Brunswick. Figure 6.1 provides a map of all stations sampled for sediments with locations and additional information on the samples provided in Table 6.1.

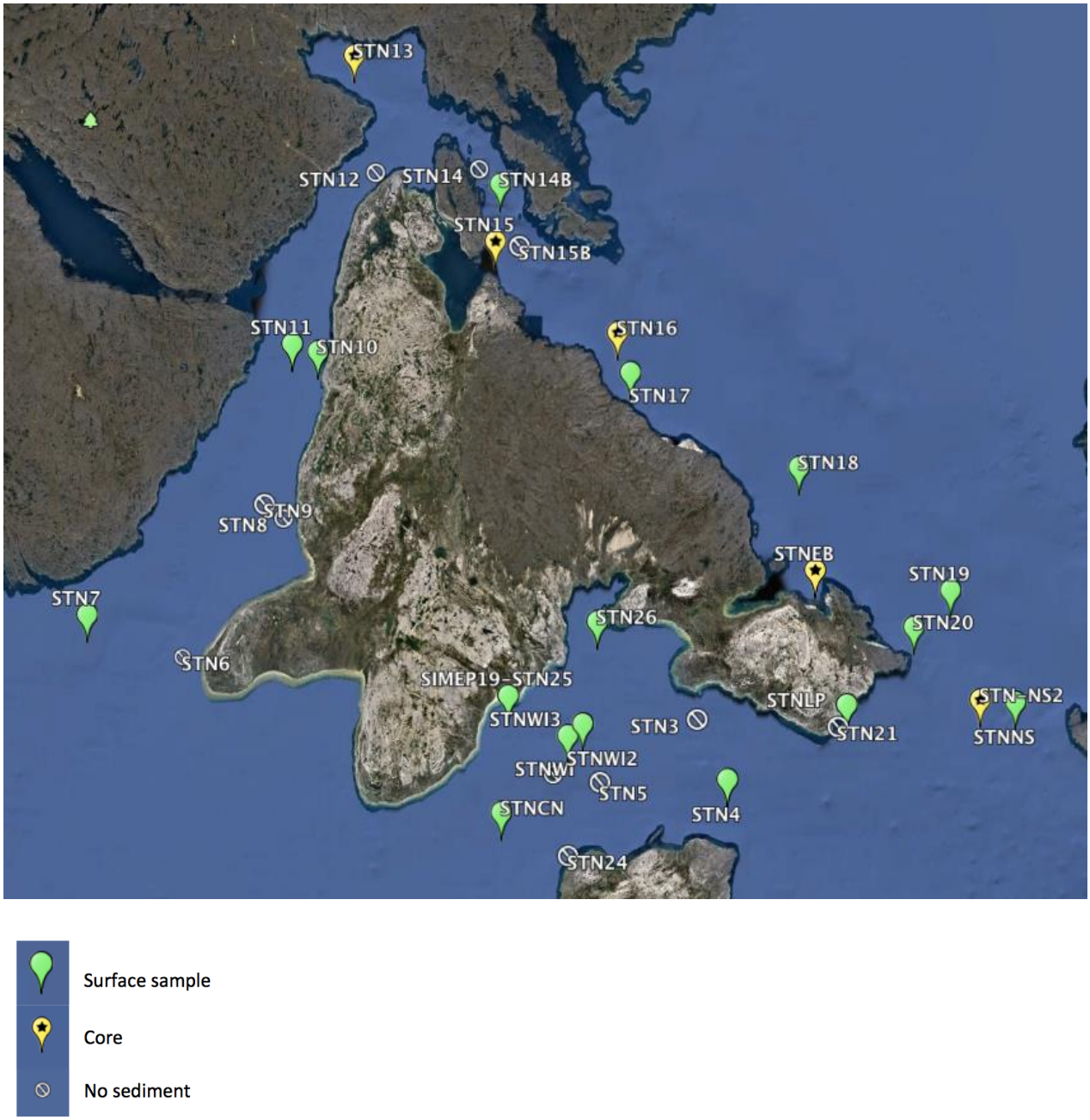


Figure 6.1. Map sediment sampling sites of the 2019 SIMEP cruise aboard the *MV William Kennedy*.

Table 6.1. List of sediment stations and samples collected during 2019 SIMEP cruise aboard the *MV William Kennedy*.

Event nr	Station number	*Latitude Longitude	Location	Water depth (m)	Sampling device	Length (cm)	Samples
22-23	SIMEP19-STN3	63°31,395'N 82°15.213'W	South Southampton Island	97	Ponar and Box core	n/a	Rocks
35-38	SIMEP19-STN4	BC2: 63°07,683'N 82°57,646'W BC4: 63°07,716'N 81°58,129'W	Near Coat Island	BC2: 217 BC4: 218	Box core	n/a	Surface samples
45-46	SIMEP19-STN5	63°14.139'N 85°44.594'W	Southwest Southampton Island	42.9	Ponar	n/a	Rocks
67-68	SIMEP19-STN6	63°41.598'N 87°26.648'W	Southwest Southampton Island	44.6	Ponar	n/a	Rocks
80-84 89-91	SIMEP19-STN7	BC0: 63°43,036'N 88°25,512'W BC1: 63°42,813'N 88°25,074'W BC2: 63°42,854'N 88°25,188'W BC3: 63°42,765'N 88°25,329'W BC4: 63°42,898'N 88°25,413'W +++ BC5: 63°42,231'N 88°24,999'W BC6: 63°42,176'N 88°25,233'W BC7: 63°42,107'N 88°25,520'W	Entrance Roes Welcome Sound	BC0: 115 BC1: 117 BC2: 120 BC3: 119 BC4: 118 +++ BC5: 119 BC6: 120 BC7: 118	Box core	n/a	Surface samples
105-106	SIMEP19-STN8	64°20,392'N 86°30,301'W	Roes Welcome Sound	40.6	Ponar	n/a	No sediment
121-124	SIMEP19-STN9	64°24,006'N 86°43,680'W	Roes Welcome Sound	95.5	Ponar	n/a	No sediment
145	SIMEP19-STN10	64°58,228'N 86°15,911'W	Center Roes Welcome Sound	36	Box core	n/a	Surface sample
155-158	SIMEP19-STN11	BC1: 64°59,800'N 86°32,471'W BC2: 64°59,788'N 86°32,397'W BC3: 64°59,776'N 86°32,209'W BC4: 63°59,766'N 86°32,204'W	Center Roes Welcome Sound	BC1: 98.1 BC2: 97.9 BC3: 91 BC4: 90	Box core	n/a	Surface samples
177-179	SIMEP19-STN12	65°54,270'N 85°47.556'W	Entrance to Repulse Bay	85.5	Ponar and box core	n/a	No Sediment
198-202	SIMEP19-STN13	BC1: 66°18,155'N 86°05,794'W BC2:	Repulse Bay	BC1: 194 BC2: 195 BC3: 195 BC4: 197	Box Core	BC3: 19.5 cm BC4: 12.5 cm BC5: 16.5cm	Surface samples

		66°18,038'N 86°30.885'W BC3: 66°17,863'N 86°06.036'W BC4: 66°17,497'N 86°06,378'W BC5: 66°17,187'N 86°06,757'W		BC5: 201			
203-204		GAC1: 66°16,907'N 86°07,192'W GAC2: 66°16,562'N 86°07,948'W		GAC1: 205 GAC2: 208	Gravity core	GAC1: 75 cm GAC2: 74 cm	[N=2] Gravity cores
227-229	SIMEP19-STN14	65°56,367'N 84°39,678'W	Frozen Strait	315	Box core	n/a	No sediment
239-240	SIMEP19-STN14B	BC1: 65°45,337'N 84°25,213'W BC2: 65°45,770'N 84°25,116'W	Frozen Strait	BC1: 430 BC2: 415	Box core	n/a	Surface samples
250-252	SIMEP-STN15	BC1: 65°30,028'N 84°26,690'W BC2: 65°30,098'N 84°26.864'W BC3: 65°30,202'N 84°27.017'W	Frozen Strait	BC1: 207 BC2: 206 BC3: 200	Box core		Surface samples *Not thick enough to insert push core
254-255		GAC1: 65°29,976'N 84°26.819'W GAC2: 65°30,081'N 84°27.262'W		GAC1: 201 GAC2: 195	Gravity Core	GC1: 21 cm GC2: 23 cm	[N=2] Gravity cores
267-268	SIMEP19-STN15B	65°36,317'N 84°11.895'W	Frozen Strait	316	Box core	n/a	No sample
278-280	SIMEP19-STN16	BC1: 65°06,522'N 83°07,594'W BC2: 65°06,613'N 83°09.429'W BC3: 65°06,719'N 83°09.852'W	Foxe Basin	BC1: 322 BC2: 318 BC3: 320	Box core	Push cores BC1: 14.5 cm BC2: 17.5 cm BC3: 18 cm	Surface samples and push cores
287-288		GAC1: 65°06,495'N 83°08.054'W GAC2: 65°06,491'N 83°08.094'W		GAC1: 321 GAC2: 310	Gravity cores	GAC1: 52 cm GAC2: 17 cm	[N=2] Gravity cores
296	SIMEP19-STN17	64°54,944'N 82°58.973'W	Foxe Basin near shore	167	Box core	n/a	Surface sample
307-309	SIMEP19-STN18	65°30,828'N 81°13,808'W	Near East Bay	299	Box core	n/a	Surface sample
319-322	SIMEP19-EB	BC1: 64°01,295'N	Terror Point	BC1: 30 BC2: 76.8	Box Core	BC3: 15.5 cm BC4: 5 cm	Surface samples and push cores

		81°00,119'W BC2: 64°03,368'N 81°04.778'W BC3: 64°03,328'N 81°04.676'W BC4: 64°03,364'N 81°04.784'W		BC3: 76.8 BC4: 76.7			
323-324		GC1: 64°03,348'N 81°04.699'W GC2: 64°03,374'N 81°04.835'W		GC1: 77.2 GC2: 77.2	Gravity Core	GC1: 66 cm GC2: 50 cm	[N=2] Gravity cores
335-337	SIMEP19-STN19	63°57,014'N 79°42.121'W	Northeast corner Island	326	Box cores	n/a	Surface sample
349-350	SIMEP19-STN20	BC1: 63°47.533'N 80°05.367'W BC2: 63°47,595'N 80°05.033'W	Northeast corner Island	BC1: 162 BC2: 161	Box cores	n/a	Surface samples
358-359	SIMEP19-STNNS	BC1: 63°26.254'N 79°05.367'W BC2: 63°47,595'N 79°05.033'W	Nottingham Strait	BC1: 217 BC2: 220	Box cores	n/a	Surface samples
361	SIMEP19-STNNS2	63°27.225'N 79°26.511'W	Nottingham Strait	204	Box core	n/a	Surface sample
362-362		GAC1: 63°27.329'N 79°26.308'W GAC2: 63°27.352'N 79°26.370'W		GAC1: 205 GAC2: 200	Gravity core	GAC1: 66 cm GAC2: 57 cm	[N=2] - Gravity cores
368	SIMEP19-STNLP	63°27.296'N 80°46.731'W	Leyson Point	67	Box core	n/a	Surface sample
373-374	SIMEP19-STN21	63°28.819'N 80°52.001'W	Southeast Island	29	Ponar	n/a	No sample
405-407	SIMEP19-STN24	62°54.205'N 83°31.400'W	Southeast Island	33.7	Ponar	n/a	No sample
416	SIMEP19-STNCN	62°57.948'N 84°10.832'W	Cape Netcher	127	Box core	n/a	Surface sample
425	SIMEP19-STN25	63°29.197'N 84°09.223'W	Bear Cove – South Island	26.6	Ponar	n/a	Surface sample
431-433	SIMEP19-STNWI	63°15.983'N 83°41.305'W	Walrus Island	95.5	Ponar and box core	n/a	No sample
434	SIMEP19-STNWI2	63°19.035'N 83°32.971'W	North Walrus Island	112	Box core	n/a	Surface sample
437	SIMEP19-STNWI3	63°22.265'N 83°24.176'W	North Walrus Island	110	Box core	n/a	Bulk sediment sample
449	SIMEP19-STN26 (STN1)	63°49.571'N 83°16.700'W	Ice edge – Coral Harbour	48.4	Ponar	n/a	Surface sample

*Coordinates at bottom.

Appendix: Ship Log

EVENT CODES	
MWT	Pelagic Trawl
DiPr	Divers Prepare and Out
ROS	Rosette
WP2	Vertical Zooplankton Net
PHN	Phytoplankton Net
BON	Bongo Net
PON	Ponar
BOX	Box Core
GAC	Gravity Core
BMT	Beam Benthic Trawl
DCM	Drop Camera
KMR	Surface Water
CTD	Conductivity-Temperature-Depth
2ZO	Second Zodiac Out

TIME CODES	
BE	Beginning
BO	Bottom
EN	End
BOS	Bottom-Start
BOE	Bottom-End

EVENT #	EVENT # (as in logbook)	STATION	EVENT CODE	LOCATION START	WATER DEPTH (m)	TIME BE	DATE	TIME BO	TIME BOS	LOCATION BOTTOM	TIME BOE	TIME EN	SHIP SPEED (KN)	COMMENTS

1	CTD 1	CTD	64°07.707'/ 83°08.336'	10.3	18:12:00	19-08-05	18:16:00		18:16:00	64°07.706'/ 83°08.336'	18:18:00	18:18:00	0.00	0.5 m/s
2	CTD 2	CTD	64°04.843'/ 83°11.289'	20.4	18:58:00	19-08-05	19:03:00	X		64°05.247'/ 83°11.983'	X	19:04:00	0.00	
3	CTD 3	CTD	64°03.880'/ 83°15.260'	29.7	19:23:00	19-08-05	19:27:00	X		64°03.875'/ 83°14.704'	X	19:28:00	0.00	
4	CTD 4	CTD	64°01.967'/ 83°18.341'	32.4	21:46:00	19-08-05	21:49:00	X		64°01.974'/ 83°18.393	X	21:51:00	0.00	
5	CTD 5	CTD	63°57.018'/ 83°17.570'	28.7	22:35:00	19-08-05	22:37:00	X		63°57.018'/ 83°17.614'	X	22:39:00	0.00	
6	CTD 6	CTD	63°51.994'/ 83°16.801'	47.5	23:27:00	19-08-05	23:33:00	X		63°52.030'/ 83°16.949'	X	23:32:00	0.00	
7	CTD 7	CTD	63°49.446'/ 83°16.394'	47.5	23:57:00	19-08-05	00:03:00	X		63°49.474'/ 83°16.551'	X	0:03:00	0.00	touched bottom
8	CTD 8	CTD	63°47.157'/ 83°15.521'	54.4	0:28:00	19-08-06	00:32:00	X		63°47.178'/ 83°15.581'	X	0:33:00	0.00	touched bottom
9	CTD 9	CTD	63°42.049'/ 83°14.549'	71.9	1:21:00	19-08-06	01:26:00	X		63°42.436'/ 83°12.374'	X	1:30:00	0.00	touched bottom
10	CTD 10	CTD	63°36.896'/ 83°13.495'	85.9	2:15:00	19-08-06	02:19:00	X		63°36.828'/ 83°13.711'	X	2:23:00	0.00	strong angle
11	CTD 11	CTD	63°32.116'/ 83°12.577'	100	3:02:00	19-08-06	03:07:00	X		63°31.994'/ 83°12.875'	X	3:12:00	0.00	
12	CTD 12	CTD	63°26.988'/ 83°11.743'	113	3:51:00	19-08-06	03:57:00	X		63°26.692'/ 83°12.135'	X	no time entered	no speed entered	
13	STN 3	MWT	63°31.164'/ 82°12.072'	95	9:59:00	19-08-06	10:01:00		10:01:00	63°30.812'/ 82°12.440'	10:16:00	10:22:00	1.70	
14	STN 3	ROS	63°31.227'/ 82°13.851'	97.2	11:15:00	19-08-06	11:26:00	X		63°31.194'/ 82°13.233'	X	11:33:00	0.40	Target depths: 85 & 60
15	STN 3	ROS	63°31.346'/ 82°14.847'	98	12:01:00	19-08-06	12:09:00	X		63°31.250'/ 82°14.253'	X	12:23:00	0.80	Target depths: 0-10, 20-25, 40
16	STN 3	PHN	63°31.346'/ 82°14.847'	97	12:32:00	19-08-06	12:37:00	X		63°31.395'/ 82°15.213'	X	12:48:00	descent (10 m/min)	
17	STN 3	WP2	63°31.207'/ 82°13.089'	97	13:20:00	19-08-06	13:29:00		13:29:00	63°31.360'/ 82°13.796'	X	13:36:00	2.00	
18	STN 3	WP2	63°31.165'/ 82°12.762'	98	14:32:00	19-08-06	14:36:00	X		63°31.208'/ 82°12.985'	X	14:43:00	2.00	
19	STN 3	BON	63°31.401'/ 82°14.677'	101	15:04:00	19-08-06	15:10:00	15:11 to 15:15		63°31.352'/ 82°14.300'			1.70	1st cycle bottom to top
20	STN 3	BON	63°31.120'/ 82°12.692'	97.1	15:45:00	19-08-06		15:52 to 16:01		63°31.016'/ 82°12.238'		16:02:00	2.20	bottom to surface, only 40 m
21	STN 3	PON	63°31.010'/ 82°13.332'	99.4	16:26:00									abandoned
22	STN 3	PON	63°32.678'/ 82°16.041'	100	16:46:00	19-08-06	16:49:00	X		63°31.166'/ 82°16.228'	X	16:51:00	0.00	mud!

23	STN 3	BOX	63°31.116'/ 82°12.757'	97.4	17:10:00	19-08-06	17:11:00	X		63°31.138'/ 82°12.848'	X	17:13:00	0.00	no sediment
24	STN 3	BMT	63°31.339'/ 82°13.920'	97.5	17:46:00	19-08-06	17:50:00		17:52:00	63°31.172'/ 82°13.067'	18:08:00	18:16:00	2.00	
25	CTD13	CTD	63°38.096'/ 82°21.140'	12.4	19:46:00	19-08-06	19:47:00	X		63°38.100'/ 82°21.142'	X	19:49:00		
26	CTD14	CTD	63°32.158'/ 82°19.336'	65.4	21:27:00	19-08-06	21:33:00	X		63°34.755'/ 82°16.379'	X	21:34:00	0.50	
27	CTD15	CTD	63°29.659'/ 82°12.716'	94.3	22:08:00	19-08-06	22:14:00	X		63°30.981'/ 82°12.833'	X	22:17:00	0.50	
28	CTD16	CTD	63°26.594'/ 82°10.633'	102	22:55:00	19-08-06	23:01:00	X		63°24.235'/ 82°10.790'	X	23:04:00	0.50	strong angle
29	CTD17	CTD	63°21.714'/ 82°07.660'	122	23:52:00	19-08-06	23:58:00	X		63°21.700'/ 82°07.659'	X	0:01:00	0.60	touched bottom
30	CTD18	CTD	63°16.126'/ 82°04.202'	163	0:55:00	19-08-07	01:05:00	X		63°16.046'/ 82°04.279'	X	1:09:00	0.80	paused in the centre of the cast
31	CTD19	CTD	63°11.993'/ 82°02.066'	193	2:27:00	19-08-07	02:36:00	X		63°12.061'/ 82°02.637'	X	2:45:00	no speed entered	
32	CTD20	CTD	63°07.313'/ 81°59.303'	218	3:40:00	19-08-07	03:49:00	X		63°07.375'/ 81°59.939'	X	3:56:00	no speed entered	waves
33	CTD21	CTD	63°02.473'/ 81°56.186'	224	4:48:00	19-08-07	04:58:00	X		63°02.564'/ 81°56.819'	X	5:04:00	no speed entered	
34	CTD22	CTD	62°58.528'/ 81°54.184'	206	5:54:00	19-08-07	06:02:00	X		62°57.229'/ 81°45.453'	X	6:08:00		
35	STN 4	BOX 1	63°09.802'/ 81°57.312	216	11:05:00	19-08-07	11:11:00	X		63°09.811'/ 82°04.819'	X	11:16:00	no speend entered	not success
36	STN 4	BOX 2	63°09.846'/ 82°05.008'	217	11:22:00	19-08-07	11:24:00	X		63°07.683'/ 81°57.646'	X	11:27:00	no speend entered	sample taken
37	STN 4	BOX 3	63°09.845'/ 82°05.347'	219	11:43:00	19-08-07	11:45:00	X		63°07.672'/ 81°57.987'	X	11:47:00	no speed entered	rocks in corer
38	STN 4	BOX 4	63°07.705'/ 81°58.077'	218	11:48:00	19-08-07	11:50:00	X		63°07.716'/ 81°58.129'	X	11:54:00	no speed entered	sample taken
39	STN 5	PHN	63°14.170'/ 83°43.060'	38.9	6:59:00	19-08-08	07:02:00	X		63°14.170'/ 83°43.058'	X	7:08:00	no speed	35 m hold

40	STN 5	WP2	63°13.163'/ 85°43.071'	39.3	7:15:00	19-08-08	07:16:00	X		63°14.324'/ 85°43.070'	X	7:19:00	entered no speed entered	starting log may be off, originally showed 83 in book
41	STN 5	BON	63°14.264'/ 85°43.547'	41.9	7:50:00	19-08-08	07:51:00		07:52:00	63°14.324'/ 85°43.619'	no time entered	8:10:00	2.00	5 cycles
42	CTD23	CTD	63°15.006'/ 85°44.251'	42	8:19:00	19-08-08	08:23:00	X		63°15.032'/ 85°44.383'	X	8:25:00	no speed entered	
43	STN 5	ROS	63°14.177'/ 85°43.313'	42	8:51:00	19-08-08								cancelled - problem
44	STN 5	ROS	63°14.194'/ 85°42.634'	42	8:58:00	19-08-08	09:00:00	X		63°14.192'/ 85°43.683'	X	9:11:00	no speed entered	off by ~5m in depth readings
45	STN 5	PON	63°14.141'/ 85°44.559'	42.9	9:20:00	19-08-08	09:21:00	X		63°14.139'/ 85°44.594'	X	9:22:00	no speed entered	rocks in corer
46	STN 5	PON	63°14.125'/ 85°44.725'	45.8	9:25:00	19-08-08	09:26:00	X		63°14.121'/ 85°44.767'	X	9:27:00	no speed entered	
47	STN 5	MWT	63°14.248'/ 85°43.971'	43	9:48:00	19-08-08	09:49:00		09:50:00	63°14.318'/ 85°43.991'	10:05:00	10:08:00	~2	
48	STN 5	BHT	63°15.030'/ 85°44.516'	42	10:32:00	19-08-08	10:35:00		10:35:00	63°14.892'/ 85°44.433'	no time entered	10:47:00	2.30	
49	CTD 24	CTD	63°13.711'/ 85°41.269'	18.3	11:17:00	19-08-08	11:19:00	X		63°13.695'/ 85°41.337'	X	11:20:00	no speed entered	
50	CTD25	CTD	63°15.794'/ 85°53.914'	54.1	16:00:00	19-08-08	16:03:00	X		63°15.800'/ 85°54.129'	X	16:06:00	1.40	
51	CTD 26	CTD	63°17.360'/ 86°04.480'	51.9	16:56:00	19-08-08	16:57:00	X		63°17.381'/ 86°04.572'	X	17:00:00		
52	CTD 27	CTD	63°18.870'/ 86°14.626'	47.9	17:49:00	19-08-08	17:51:00	X		63°18.869'/ 86°14.717'	X	17:53:00		
53	CTD 28	CTD	63°20.408'/ 86°25.051'	41.9	18:46:00	19-08-08	18:50:00	X		63°20.415'/ 86°25.134'	X	18:53:00		
54	CTD 29	CTD	63°21.954'/ 86°35.669'	38.6	19:42:00	19-08-08	19:47:00	X		63°21.945'/ 86°35.933'	X	19:50:00		
55	CTD 30	CTD	63°23.494'/ 86°45.935'	30.1	20:32:00	19-08-08	20:33:00	X		63°23.487'/ 86°46.055'	X	20:35:00	2.30	
56	CTD 31	CTD	63°27.044'/ 86°00.717'	23.3	21:14:00	19-08-08	21:15:00	X		63°25.060'/ 86°56.435'	X	21:17:00	1.40	

57	CTD 32	CTD	63°26.576'/ 87°06.507'	14.3	22:02:00	19-08-08	22:03:00	X		63°26.576'/ 87°06.557'	X	22:05:00	1.60		
58	CTD 33	CTD	63°28.066'/ 87°16.965'	10.2	22:51:00	19-08-08	22:52:00	X		63°28.063'/ 87°16.993'	X	22:54:00	1.20		
59	CTD 34	CTD	63°28.754'/ 87°21.891'	21.6	23:24:00	19-08-08	23:28:00	X		63°28.690'/ 87°22.043'	X	23:32:00			
60	CTD 35	CTD	63°31.641'/ 87°22.968'	17.1	12:06:00	19-08-09	12:08:00	X		63°31.591'/ 87°23.060'	X	12:12:00		forgot to turn off	
61	CTD 36	CTD	63°35.038'/ 87°25.786'	38.6	1:00:00	19-08-09	01:02:00	X		63°34.991'/ 87°25.821'	X	1:08:00		switched off, then on again	
62	CTD 37	CTD	63°41.540'/ 87°26.654'	42.3	2:27:00	19-08-09	02:29:00	X		63°41.571'/ 87°26.593'	X	2:33:00			
63	CTD 38	CTD	63°41.573'/ 87°26.708'	43.9	6:32:00	19-08-09	06:36:00	X		63°41.577'/ 87°26.700'	X	6:38:00	0.00		
64	STN 06	ROS	63°41.590'/ 87°26.680'	44.6	7:01:00	19-08-09	07:07:00	X		63°41.593'/ 87°26.668'	X	7:19:00	0.00		
65	STN 06	PHN	63°41.598'/ 87°26.648'	44.6	7:26:00	19-08-09	07:30:00	X		63°41.598'/ 87°26.648'	X	7:32:00	0.00		
66	STN 06	WP2	63°42.221'/ 87°28.854'	44.6	7:43:00	19-08-09	07:44:00	X		63°41.601'/ 87°26.636'	X	7:47:00	0.00		
67	STN 06	PON	63°41.221'/ 87°28.844'	44.6	7:54:00	19-08-09	07:56:00	X		63°42.222'/ 87°28.844'	X	no time entered		did not trigger	
68	STN 06	PON	63°42.222'/ 87°26.625'	44.1	7:56:00	19-08-09	07:57:00	X		63°41.600'/ 87°26.	X	7:59:00		did not trigger, full lat/long not written down	
69	STN 06	PON	63°41.600'/ 87°26.	44.1	8:00:00	19-08-09	08:01:00	X		63°41.600'/ 87°26.620'	X	8:02:00			
70	STN 06	BON	63°41.723'/ 87°26.843'	45.6	8:25:00	19-08-09	08:28:00	X		63°42.250'/ 87°29.020'	X	8:40:00	~2	5 cycles	
71	STN 06	MWT	63°42.411'/ 87°26.615'	43	9:00:00	19-08-09	09:01:00		09:02:00	63°41.352'/ 87°26.531'	09:17:00	9:19:00	~2		
72	STN 06	BMT	63°41.459'/ 87°25.881'	40.2	10:03:00	19-08-09	10:04:00		10:04:00	63°41.512'/ 87°25.885'	10:20:00	10:22:00	~2		
73	CTD 39	CTD	63°42.047'/ 87°19.331'	13	16:46:00	19-08-09	16:47:00	X		63°42.414'/ 87°19.382'	X	16:49:00	~1.2	UTC time	
74	CTD 40	CTD	63°42.841'/ 88°25.424'	113	17:54:00	19-08-09	17:58:00	X		63°42.839'/ 88°25.507'	X	18:02:00	0.00		
75	STN 7	ROS	63°42.918'/ 88°25.867'	116	18:29:00	19-08-09	18:38:00	X		63°42.966'/ 88°26.028'	X	18:51:00			
76	STN 7	PHN	63°42.826'/ 88°25.002	115	19:56:00	19-08-09	19:59:00	X		63°42.840'/ 88°25.017'	X	20:12:00		up ~ 10m/min	
77	STN 7	WP2	63°42.900'/ 88°25.108'	121	20:15:00	19-08-09	20:20:00	X		63°42.914'/ 88°25.129'	X	20:24:00			
78	STN 7	ROS	63°42.976'/ 88°25.246'	119	20:35:00	19-08-09	20:37:00	X		63°42.977'/ 88°25.256'	X	20:38:00			
79	STN 7	PON	63°43.021'/ 88°25.362'	120	20:51:00	19-08-09	20:53:00	X		63°43.026'/ 88°25.386'	X	20:57:00			

80	STN 7	BOX 0	63°43.035'/ 88°25.502'	115	21:06:00	19-08-09	21:07:00	X		63°43.036'/ 88°25.512'	X	21:08:00			
81	STN 7	BOX 1	63°42.808'/ 88°25.039'	117	21:16:00	19-08-09	21:19:00	X		63°42.813'/ 88°25.074'	X	21:20:00			
82	STN 7	BOX 2	63°42.851'/ 88°25.177'	120	21:27:00	19-08-09	21:28:00	X		63°42.854'/ 88°25.188'	X	21:29:00			
83	STN 7	BOX 3	63°42.762'/ 88°25.313'	119	21:39:00	19-08-09	21:39:00	X		63°42.765'/ 88°25.329'	X	21:40:00	0.40		
84	STN 7	BOX 4	63°42.894'/ 88°25.393'	118	21:43:00	19-08-09	21:44:00	X		63°42.898'/ 88°25.413'	X	21:46:00	0.40		
85	STN 7	BON	63°42.671'/ 88°25.102'	118	22:02:00	19-08-09	22:10:00	X		63°42.300'/ 88°24.838'	X	22:29:00	2.00		
86	STN 7	MWT	63°41.505'/ 88°24.803'	123	22:52:00	19-08-09	22:56:00		22:56:00	63°41.627'/ 88°24.885'	23:10:00	23:15:00	2.00		
87	STN 7	BMT	63°42.235'/ 88°25.852'	113	23:34:00	19-08-09	23:38:00		23:38:00	63°42.437'/ 88°25.728'	23:54:00	0:00:00	2.00		
88	STN 7	BMT	63°42.252'/ 88°24.866'	125	0:13:00	19-08-10	00:20:00		00:22:00	63°42.029'/ 88°24.690'	00:35:00	0:42:00			
89	STN 7	BOX 5	63°42.239'/ 88°24.955'	119	1:13:00	19-08-10	01:14:00	X		63°42.231'/ 88°24.999'	X	1:16:00			empty
90	STN 7	BOX 6	63°42.189'/ 88°25.171'	120	1:19:00	19-08-10	01:20:00	X		63°42.176'/ 88°25.233'	X	1:22:00			sediment
91	STN 7	BOX 7		118	1:24:00	19-08-10	01:25:00	X		63°42.107'/ 88°25.520'	X	1:26:00			sediment
92	MOORIN G STN		63°42.732'/ 88°25.211'	115	2:40:00	19-08-10						2:50:00			
93	CTD 41	CTD	63°59.270'/ 88°25.827'	25.9	5:36:00	19-08-10	05:37:00	X		63°59.266'/ 88°25.910'	X	no time entered			
94	CTD 42	CTD	63°56.462'/ 88°16.120'	54.5	6:30:00	19-08-10	06:33:00	X		63°56.461'/ 88°16.227'	X	no time entered			
95	CTD 43	CTD	63°53.692'/ 88°06.806'	108	7:02:00	19-08-10	07:24:00	X		63°53.729'/ 88°06.941'	X	no time entered			
96	CTD 44	CTD	63°50.851'/ 87°57.292'	142	8:15:00	19-08-10	08:24:00	X		63°50.930'/ 87°57.334'	X	8:30:00			
97	CTD 45	CTD	63°48.082'/ 87°48.155'	159	9:15:00	19-08-10	09:23:00	X		63°48.168'/ 87°48.135'	X	9:27:00			
98	CTD 46	CTD	63°45.156'/ 87°38.560'	116	10:15:00	19-08-10	10:23:00	X		63°45.318'/ 87°38.488'	X	10:25:00			
99	CTD 47	CTD	63°42.384'/ 87°29.479'	53.6	11:10:00	19-08-10	11:14:00	X		63°42.276'/ 87°31.124'	X	no time entered			
100	CTD 48	CTD	63°39.522'/ 87°20.067'	13.7	12:00:00	19-08-10	12:02:00	X		63°39.536'/ 87°20.129	X	no time entered			
101	CTD 49	CTD	64°20.327'/ 86°30.007'	37.9	19:26:00	19-08-10	19:28:00	X		64°20.348'/ 86°30.084'	X	19:29:00	x		
102	STN 8	PHN	64°20.376'/ 86°30.234'	40.6	19:36:00	19-08-10	19:37:00	X		64°20.392'/ 86°30.301'	X	19:41:00	x		
103	STN 8	ROS	64°20.441'/ 86°30.474'	36.3	19:49:00	19-08-10	19:56:00	X		64°20.504'/ 86°30.709'	X	20:07:00	x		

104	STN 8	WP2	64°20.597'/ 86°31.101'	37	20:11:00	19-08-10	20:14:00	X		64°20.609'/ 86°31.135'	X		20:17:00	0.00	
105	STN 8	PON	64°20.637'/ 86°31.268'	39.8	20:25:00	19-08-10	20:27:00	X		64°20.642'/ 86°31.281'	X		20:28:00		
106	STN 8	PON	64°20.649'/ 86°31.329'	45.8	20:29:00	19-08-10	20:30:00	X		64°20.652'/ 86°31.345'	X		20:32:00		
107	STN 8	BON	64°20.590'/ 86°30.974'	37.3	20:39:00	19-08-10	20:53:00	X		64°20.370'/ 86°30.041'	X		20:54:00		
108	STN 8	MWT	64°20.226'/ 86°29.911'	38.7	21:09:00	19-08-10	X		21:09:00	64°19.689'/ 86°29.919'	21:25:00	X		2.10	Bottom coordinates are the end coordinates
109	STN 8	BMT	64°19.381'/ 86°29.833'	32.7	21:49:00	19-08-10	21:51:00		21:51:00	64°19.485'/ 86°29.840'	21:07:00		21:09:00	1.90	
110	CTD50	CTD	64°19.086'/ 86°24.912'	16.6	22:53:00	19-08-10	22:53:00	X		64°19.076'/ 86°24.916'	X		22:55:00	0.40	
111	CTD51	CTD	64°21.285'/ 86°35.032'	64.5	23:38:00	19-08-10	23:41:00	X		64°21.315'/ 86°35.039'	X		23:43:00	1.00	
112	CTD52	CTD	64°23.503'/ 86°45.370'	107	0:25:00	19-08-11	00:29:00	X		64°23.523'/ 86°45.388'	X		0:32:00	0.00	
113	CTD53	CTD	64°25.678'/ 86°55.601'	108	1:20:00	19-08-11	01:25:00	X		64°25.630'/ 86°55.711'	X		1:29:00	0.40	
114	CTD54	CTD	64°27.934'/ 87°05.973'	107	2:12:00	19-08-11	02:17:00	X		64°27.872'/ 87°06.066'	X		no time entered		
115	CTD55	CTD	64°30.128'/ 87°16.381'	60.2	3:05:00	19-08-11	03:07:00	X		64°30.087'/ 87°16.400'	X		no time entered		
116	CTD56	CTD	64°32.405'/ 87°26.892'	28.7	3:55:00	19-08-11	03:57:00	X		64°32.379'/ 87°26.951'	X		no time entered		
117	CTD57	CTD	64°33.185'/ 87°30.262'	12.9	4:14:00	19-08-11	04:15:00	X		64°33.169'/ 87°30.298'	X		no time entered		
118	CTD 58	CTD	64°23.144'/ 86°43.032'	101	11:19:00	19-08-11	11:24:00	X		64°23.221'/ 86°43.059'	X		11:28:00		
119	STN 9	ROS	64°23.574'/ 86°43.201'	98	11:52:00	19-08-11	12:02:00	X		64°23.645'/ 86°43.275'	X		12:16:00		
120	STN 9	WP2	64°23.875'/ 86°43.456'	96.7	12:34:00	19-08-11	12:37:00	X		64°23.900'/ 86°43.487'	X		12:42:00		
121	STN 9	PON	64°23.975'/ 86°43.580'	97.3	12:46:00	19-08-11	12:49:00	X		64°23.994'/ 86°43.615'	X		12:51:00		did not trigger
122	STN 9	PON	64°24.008'/ 86°43.664'	95.5	12:53:00	19-08-11	12:55:00	X		64°24.006'/ 86°43.680'	X		12:58:00		
123	STN 9	PON	64°24.026'/ 86°43.718'	96.2	13:00:00	19-08-11	13:03:00	X		64°24.046'/ 86°43.751'	X		13:06:00		
124	STN 9	PON	64°24.063'/ 86°43.777'	96.6	13:07:00	19-08-11	13:10:00	X		64°24.065'/ 86°43.806'	X		13:13:00		
125	STN 9	ROS	64°24.113'/ 86°43.020'	97.9	13:31:00	19-08-11	13:38:00	X		64°24.161'/ 86°43.163'	X		13:48:00		
126	STN 9	BON	64°24.183'/ 86°44.304'	98.3	13:55:00	19-08-11				64°23.575'/ 86°43.771'			14:13:00		5 cycles, coordinates bottom

															are the coordinates at the surface
127	STN 9	MWT	64°23.295'/ 86°43.375'	101	14:33:00	19-08-11	14:37:00		14:37:00	64°23.062'/ 86°43.427'	14:52:00	15:02:00	2.50		
128	STN 9	BMT	64°22.163'/ 86°43.680'	103	15:24:00	19-08-11	15:28:00		15:28:00	64°22.312'/ 86°43.527'	15:42:00	15:47:00	~2		
129	CTD 59	CTD	65°02.323'/ 86°55.580'	15	22:12:00	19-08-11	22:15:00	X		65°02.279'/ 86°55.647'	X	22:16:00	1.20		
130	CTD 60	CTD	65°01.739'/ 86°50.179'	28	22:50:00	19-08-11	22:51:00	X		65°01.695'/ 86°50.266'	X	22:53:00	1.40		
131	CTD 61	CTD	65°01.163'/ 86°44.363'	56	23:17:00	19-08-11	23:21:00	X		65°01.070'/ 86°44.420'	X	23:23:00	1.60		
132	CTD 62	CTD	65°00.585'/ 86°38.643'	59	23:47:00	19-08-11	23:49:00	X		65°00.506'/ 86°38.730'	X	23:53:00	1.40		
133	CTD 63	CTD	64°59.680'/ 86°32.794'	82	0:17:00	19-08-12	00:24:00	X		64°59.936'/ 86°32.854'	X	0:24:00	1.00		
134	CTD 64	CTD	64°59.516'/ 86°26.972'	70	0:48:00	19-08-12	00:46:00	X		64°59.504'/ 86°27.018'	X	0:49:00	0.40		
135	CTD 65	CTD	64°58.875'/ 86°21.398'	60	1:14:00	19-08-12	01:17:00	X		64°58.884'/ 86°21.427'	X	1:20:00	0.40		
136	CTD 66	CTD	64°58.326'/ 86°16.489'	51	1:42:00	19-08-12	01:44:00	X		64°58.323'/ 86°16.534'	X	1:48:00	0.40		
137	CTD 67	CTD	64°58.181'/ 86°14.914'	20	2:00:00	19-08-12	02:02:00	X		64°58.178'/ 86°14.944'	X	2:04:00	0.40		
138	CTD 68	CTD	64°58.229'/ 86°15.969'	36.6	6:24:00	19-08-12	06:25:00	X		64°58.230'/ 86°15.907'	X	6:27:00	0.00		
139	STN10	WP2	64°58.220'/ 86°15.906'	36.5	6:36:00	19-08-12	06:38:00	X		64°58.225'/ 86°15.906'	X	6:40:00			
140	STN10	PHN	64°58.227'/ 86°15.914'	36.8	6:52:00	19-08-12	06:55:00	X		64°58.229'/ 86°15.910'	X	6:57:00			
141	STN10	ROS	64°58.228'/ 86°15.914'	37.1	7:10:00	19-08-12	07:22:00	X		64°58.234'/ 86°15.914	X	7:30:00			
142	STN10	PON	64°58.230'/ 86°15.911'	36	7:36:00	19-08-12	07:36:00	X		64°58.227'/ 86°15.914'	X	7:37:00			
143	STN10	PON	64°58.228'/ 86°15.910'	36.2	7:39:00	19-08-12	07:39:00	X		64°58.227'/ 86°15.912'	X	7:40:00			
144	STN10	BOX1	64°58.233'/ 86°15.918'	36.4	7:49:00	19-08-12	07:49:00	X		64°58.231'/ 86°15.913'	X	7:49:00			Rock Jam
145	STN10	BOX2	64°58.229'/ 86°15.909'	36	7:53:00	19-08-12	07:53:00	X		64°58.228'/ 86°15.911'	X	7:54:00			sample
146	STN10	BON	64°58.267'/ 86°15.978'	38.2	8:24:00	19-08-12	08:27:00	X		64°58.411'/ 86°16.084'	X	8:42:00			
147	STN10	MWT	64°59.113'/ 86°16.805'	54.3	8:58:00	19-08-12	09:00:00		09:02:00	64°59.125'/ 86°16.757'	09:17:00	9:18:00			
148	STN10	BMT	64°58.221'/ 86°16.458'	48.5	9:38:00	19-08-12	09:40:00		09:41:00	64°58.084'/ 86°16.421'	09:50:00	9:51:00	~2		
149	STN11	BMT	64°58.023'/ 86°16.505'	38.4	9:52:00	19-08-12	09:57:00		09:58:00	64°58.136'/ 86°16.505'	10:12:00	10:15:00	~2		second trial

150	STN11	ROS	64°59.796'/ 86°32.542'	93.2	12:52:00	19-08-12	13:04:00	X		64°59.725'/ 86°32.601'	X	13:17:00		
151	STN11	WP2	64°59.656'/ 86°32.624'	85.8	13:24:00	19-08-12	13:27:00	X		64°59.637'/ 86°32.618'	X	13:30:00		twisted
152	STN11	WP2	64°59.631'/ 86°32.611'	83.7	13:34:00	19-08-12	13:37:00	X		64°59.630'/ 86°32.593'	X	13:42:00		
153	STN11	ROS	64°59.843'/ 86°32.401'	90.7	13:57:00	19-08-12	14:10:00	X		64°59.818'/ 86°32.329'	X	14:14:00		
154	STN11	PON	64°59.832'/ 86°32.490'	99.1	14:20:00	19-08-12	14:20:00	X		64°59.827'/ 86°32.484'	X	14:24:00	0.20	
155	STN11	BOX1	64°59.806'/ 86°32.502'	98.1	14:35:00	19-08-12	14:37:00	X		64°59.800'/ 86°32.471'	X	14:39:00	0.40	sample
156	STN11	BOX2	64°59.789'/ 86°32.411'	97.9	14:42:00	19-08-12	14:44:00	X		64°59.788'/ 86°32.397'	X	14:45:00	0.20	sample
157	STN11	BOX3	64°59.777'/ 86°32.300'	91	14:55:00	19-08-12	14:56:00	X		64°59.776'/ 86°32.289'	X	14:57:00	0.40	rocks
158	STN11	BOX4	64°59.786'/ 86°32.223'	90	15:00:00	19-08-12	15:01:00	X		64°59.766'/ 86°32.204'	X	15:02:00	0.40	sample
159	STN11	BON	64°59.745'/ 86°32.523'	92.1	15:22:00	19-08-12	15:23:00	X		64°59.640'/ 86°32.947'	X	15:47:00	1.90	2 cycles
160	STN11	MWT	64°59.313'/ 86°33.247'	86.1	16:01:00	19-08-12	16:06:00		16:07:00	64°59.522'/ 86°32.814'	16:22:00	16:25:00		net caught on prop, damaged net
161	STN11	BMT	65°00.130'/ 86°32.093'	89.1	18:15:00	19-08-12	18:20:00		18:21:00	65°00.256'/ 86°32.062'	18:36:00	18:43:00	2.30	
162	CTD69	CTD	65°59.017'/ 85°59.604'	15.1	4:03:00	19-08-13	04:08:00							up + down a couple times
163	CTD70	CTD	65°58.628'/ 85°58.084'	32.7	4:22:00	19-08-13	04:24:00	X		64°58.669'/ 85°57.914'				
164	CTD71	CTD	65°57.585'/ 85°54.073'	44.8	5:04:00	19-08-13	05:06:00	X		65°57.638'/ 85°54.913'				
165	CTD72	CTD	65°56.499'/ 85°49.880'	54.2	5:26:00	19-08-13	05:28:00	X		65°56.595'/ 85°49.657'				
166	CTD73	CTD	65°55.468'/ 85°45.735'	85.2	5:51:00	19-08-13	05:54:00	X		65°55.613'/ 85°45.383'				
167	CTD74	CTD	65°54.446'/ 85°41.611'	51.3	6:18:00	19-08-13	06:20:00	X		65°54.562'/ 85°41.308'				
168	CTD75	CTD	65°53.579'/ 85°39.924'	29	6:55:00	19-08-13	06:56:00	X		65°53.590'/ 85°39.828'				drifting to shallow water
169	STN12	ROS	65°55.161'/ 85°45.307'	84.5	8:30:00	19-08-13	08:39:00		08:39:00	65°56.518'/ 85°44.308'	08:41:00	8:54:00		very mixed
170	STN12	PHN	65°56.081'/ 85°43.225'	83.7	8:57:00	19-08-13	09:00:00	X		65°56.196'/ 85°42.974'	09:06:00		1.90	
171	STN12	BON	65°56.312'/ 85°42.913'	82.1	9:17:00	19-08-13								cancelled-changed cable
172	STN12	BON	65°55.804'/ 85°43.852'	83.4	9:34:00	19-08-13								cancelled-against tide
173	STN12	BON	65°55.339'/ 85°44.864'	84.4	10:06:00	19-08-13								cancelled - hooked kelp

174	STN12	BON	65°55.064'/ 85°45.584'	85.1	10:26:00	19-08-13	X	X		65°54.557'/ 85°46.716'	X	10:45:00		coordinates bottom - surface coordinates	
175	STN12	WP2	65°54.493'/ 85°46.782'	86.8	10:55:00	19-08-13	10:58:00	X		65°54.452'/ 85°46.834'	X	11:02:00	1.00		
176	STN12	ROS	65°55.297'/ 85°45.231'	85.8	11:31:00	19-08-13	11:40:00	X		65°54.841'/ 85°46.315'	X	11:50:00			
177	STN12	PON	65°54.731'/ 85°46.557'	88.3	11:54:00	19-08-13	11:56:00	X		65°54.673'/ 85°46.671'	X	11:58:00			
178	STN12	PON	65°54.540'/ 85°46.924'	85.6	12:01:00	19-08-13	12:02:00	X		65°54.270'/ 85°47.556'	X	12:09:00			
179	STN12	BOX	65°54.011'/ 85°48.079'	89.6	12:17:00	19-08-13	12:18:00	X		65°53.966'/ 85°48.179'	X	12:19:00			
180	STN12	BMT	65°52.879'/ 85°48.460'	89.9	12:37:00	19-08-13	12:38:00		12:39:00	65°53.910'/ 85°48.407'	12:57:00	13:03:00	0.80	did not get box	
181	CTD76	CTD	65°59.011'/ 85°59.766'	16	15:10:00	19-08-13	15:11:00	X		65°59.012'/ 85°59.779'	X	15:12:00	0.00		
182	CTD77	CTD	65°58.610'/ 85°58.172'	32.9	15:26:00	19-08-13	15:28:00	X		65°58.607'/ 85°58.187'	X	15:30:00	0.40		
183	CTD78	CTD	65°57.539'/ 85°54.151'	47.1	15:50:00	19-08-13	15:52:00	X		65°57.520'/ 85°54.162'	X	15:54:00	0.40	equilibriated at 5 m for 30 seconds	
184	CTD79	CTD	65°56.448'/ 85°49.908'	55.5	16:14:00	19-08-13	16:16:00	X		65°56.131'/ 85°48.971'	X	16:19:00	0.40		11
185	CTD80	CTD	65°55.473'/ 85°45.728'	87	16:39:00	19-08-13	16:42:00	X		65°55.202'/ 85°45.694'	X	16:45:00	0.80		11
186	STN12	BMT	65°56.040'/ 85°45.472'	83.7	17:23:00	19-08-13	17:34:00		17:34:00	65°55.645'/ 85°45.388'	17:47:00	17:54:00	1.80		
187	STN12	MWT	65°55.241'/ 85°45.337'	82.7	18:27:00	19-08-13	18:29:00		18:29:00	65°54.696'/ 85°45.627'	18:45:00	18:49:00	1.70		
188	CTD81	CTD	65°54.438'/ 85°41.620'	51.9	20:51:00	19-08-13	20:53:00	X		65°54.430'/ 85°41.631'	X	20:56:00	0.20		
189	CTD82	CTD	65°53.522'/ 85°40.069'	30.6	23:07:00	19-08-13	23:09:00	X		65°53.475'/ 85°40.118'	X	23:11:00	1.70		
190	CTD83	CTD	65°04.053'/ 85°37.698'	83.4	0:48:00	19-08-14	00:53:00	X		66°03.931'/ 85°37.930'	X	0:55:00	1.60		
191	CTD84	CTD	66°13.827'/ 85°32.735'	209	2:47:00	19-08-14	02:56:00	X		66°13.777'/ 85°32.875'	X	3:04:00	0.60		
192	CTD85	CTD	66°16.404'/ 85°49.429'	177	4:05:00	19-08-14	04:13:00	X		66°16.457'/ 85°49.422'	X	4:20:00	0.20		
193	CTD86	CTD	66°18.933'/ 86°05.294'	183	5:51:00	19-08-14	05:59:00	X		66°18.907'/ 86°07.928'	X	6:06:00	0.20	touched bottom	
194	STN13	ROS	66°18.787'/ 86°05.227'	184	6:45:00	19-08-14	07:01:00	X		66°18.910'/ 86°05.466	X	7:13:00			
195	STN13	PHN	66°18.851'/ 86°05.486'	184	7:23:00	19-08-14	07:29:00	X		66°18.831'/ 86°05.508'	X	7:39:00	0.40		
196	STN13	WP2	66°18.741'/ 86°05.537'	185	7:51:00	19-08-14	07:57:00	X		66°18.685'/ 86°05.541'	X	8:03:00	0.40		

197	STN13	ROS	66°18.484'/ 86°05.595'	188	8:33:00	19-08-14	08:47:00	X		66°18.296'/ 86°05.695'	X	9:03:00			
198	STN13	BOX1	66°18.155'/ 86°05.794'	194	9:14:00	19-08-14	09:16:00	X		66°18.140'/ 86°05.805'	X	9:19:00			
199	STN13	BOX2	66°18.038'/ 86°05.885'	195	9:32:00	19-08-14	09:33:00	X		66°18.023'/ 86°05.894'	X	9:43:00			
200	STN13	BOX3	66°17.863'/ 86°06.036'	195	10:00:00	19-08-14	10:00:00	X		66°17.832'/ 86°06.047'	X	10:09:00			
201	STN13	BOX4	66°14.511'/ 86°06.366'	197	10:50:00	19-08-14	10:51:00	X		66°17.497'/ 86°06.378'	X	10:59:00			
202	STN13	BOX5	66°17.198'/ 86°06.743'	201	11:29:00	19-08-14	11:30:00	X		66°17.187/ 86°06.757'	X	11:38:00	0.40		
203	STN13	GAC1	66°16.907'/ 86°07.192'	205	12:21:00	19-08-14	12:23:00	X		66°16.891'/ 86°07.213'	X	12:26:00	0.40	missing top 4 cm + core catcher	
204	STN13	GAC2	66°16.562'/ 86°07.948'	208	13:35:00	19-08-14	13:36:00	X		66°16.561'/ 86°07.963'	X	no time entered			
205	STN13	BON	66°16.666'/ 86°08.270'	206	14:24:00	19-08-14	14:39:00	X		66°17.017'/ 86°07.779'	X	14:53:00			
206	STN13	BMT	66°18.393'/ 86°05.810'	193	15:20:00	19-08-14	15:25:00		15:25:00	66°18.579'/ 86°05.575'			2.50		
207	STN13	MWT	66°18.826'/ 86°05.629'	187	16:25:00	19-08-14	16:31:00		16:31:00	66°18.657'/ 86°05.843'	16:46:00	16:54:00	2.10		
208	STN13	BMT	66°18.364'/ 86°06.324'	193	17:40:00	19-08-14	17:40:00		17:55:00	66°18.988'/ 86°05.454'		18:00:00	1.40		
209	CTD87	CTD	66°28.690'/ 83°13.966'	42	19:09:00	19-08-16								cancelled	
210	CTD88	CTD	66°28.674'/ 86°13.923'	41	19:13:00	19-08-16	19:16:00	X		66°28.671'/ 86°13.904'	X	19:18:00	0.20		
211	CTD89	CTD	66°23.643'/ 85°51.731'	136	20:48:00	19-08-16	20:54:00	X		66°23.647'/ 85°51.864'	X	21:00:00	0.40	stopped on the way up for a drill	
212	CTD90	CTD	66°18.178'/ 85°31.907'	162	22:23:00	19-08-16	22:29:00	X		66°18.186'/ 85°31.823'	X	22:33:00	0.40		
213	CTD91	CTD	66°12.212'/ 85°10.905'	97.6	0:02:00	19-08-17	0:006	X		66°12.221'/ 85°11.002	X	0:09:00	1.20		
214	CTD92	CTD	66°06.904'/ 84°51.496'	235	2:25:00	19-08-17	02:35:00	X		66°07.206'/ 84°52.393'	X	2:44:00	2.50		
215	CTD94	CTD	66°01.126'/ 84°29.733'	94.2	4:48:00	19-08-17	04:51:00	X		66°01.124'/ 84°29.719'	X	4:51:00		Hit the bottom > 10m	
216	CTD95	CTD	65°59.378'/ 84°24.255'	115	5:25:00	19-08-17	05:29:00	X		65°59.339'/ 84°24.221'	X	5:34:00		" cable will be adjusted	
217	CTD96	CTD	65°58.574'/ 84°28.179'	108	5:50:00	19-08-17	05:54:00	X		65°58.512'/ 84°28.257'	X	5:59:00			
218	CTD97	CTD	65°57.685'/ 84°32.643'	197	6:16:00	19-08-17	06:23:00	X		65°57.566'/ 84°32.516'	X	6:27:00	1.40		
219	CTD98	CTD	65°56.732'/ 84°37.087'	176	7:06:00	19-08-17	07:15:00	X		65°56.568'/ 84°36.661'	X	7:20:00	1.50	depth bottom: 220 m	
220	CTD99	CTD	65°55.326'/ 84°41.979'	123	7:45:00	19-08-17	07:48:00	X		65°55.712'/ 84°41.815'	X	7:51:00	3.50	" 85m	

221	STN14	ROS	65°56.473'/ 84°39.649'	280	8:16:00	19-08-17	07:35:00	X	65°54.450'/ 84°39.857'	X	8:55:00		cancelled, hooked on ice
222	STN14	ROS	65°56.696'/ 84°39.501'	310	9:53:00	19-08-17	10:10:00	X	65°56.206'/ 84°39.822	X	10:29:00		
223	STN14	PHN	65°55.664'/ 84°39.903'	266	10:30:00	19-08-17	10:42:00	X	65°55.587'/ 84°39.877'	X	11:07:00	0.80	
224	STN14	WP2	65°560.44'/ 84°41.398'	192	12:05:00	19-08-17	12:11:00	X	65°56.173'/ 84°41.770'	X	12:30:00	1.40	west of station
225	STN14	PON	65°56.336'/ 84°39.862'	312	12:57:00	19-08-17							cancelled
226	STN14	PON	65°56.349'/ 84°33.808'	314	13:12:00	19-08-17	13:13:00	X	65°56.512'/ 84°40.055'	X	13:26:00	1.40	
227	STN14	BOX	65°56.289'/ 84°39.566'	315	13:50:00	19-08-17	13:54:00	X	65°56.367'/ 84°39.678'	X	14:00:00	1.40	did not close
228	STN14	BOX	65°56.261'/ 84°39.659'	308	14:10:00	19-08-17	14:14:00	X	65°56.352'/ 84°39.854'	X	14:21:00	1.90	rock
229	STN14	BOX	65°56.624'/ 84°40.182'	256	14:25:00	19-08-17	14:30:00	X	65°56.790'/ 84°40.398'	X	14:33:00	1.90	rock
230	CTD100	CTD	65°56.000'/ 84°41.999'	146	14:55:00	19-08-17	15:00:00	X	65°56.341'/ 84°42.506'	X	15:05:00	2.30	Depth at bottom:161m
231	STN14	BON	65°36.017'/ 84°41.956'	150	15:20:00	19-08-17	15:27:00	X	65°56.131'/ 84°46.333'	X	15:41:00	1.70	
232	CTD101	CTD	65°56.740'/ 84°37.024'	176	16:01:00	19-08-17	16:07:00	X	65°56.790'/ 84°37.093'	X	16:12:00	0.40	
233	CTD102	CTD	65°57.591'/ 84°32.794'	155	16:37:00	19-08-17							cancelled
234	CTD103	CTD	65°57.571'/ 84°32.884'	148	16:40:00	19-08-17	16:50:00	X	65°57.637'/ 84°32.973'	X	16:54:00	0.50	touched bottom?
235	CTD104	CTD	65°58.574'/ 84°28.200'	110	17:22:00	19-08-17	17:26:00	X	65°58.601'/ 84°28.147'	X	17:29:00	0.60	
236	CTD105	CTD	65°59.359'/ 84°24.433'	128	17:48:00	19-08-17	17:53:00	X	65°59.371'/ 84°24.385'	X	17:57:00	0.20	
237	CTD106	CTD	65°54.352'/ 84°24.667'	282	18:55:00	19-08-17	19:09:00	X	65°54.360'/ 84°24.613'	X	19:15:00	0.40	
238	CTD107	CTD	65°49.511'/ 84°25.187'	105	19:57:00	19-08-17	20:03:00	X	65°48.371'/ 84°25.178'	X	20:06:00	1.00	depth at bottom:115m
239	STN14B	BOX	65°46.118'/ 84°85.348'	430	20:34:00	19-08-17	20:38:00	X	65°45.337'/ 84°25.213'	X	20:45:00	1.00	big rock with sediment
240	STN14B	BOX	65°45.832'/ 84°25.146'	415	20:51:00	19-08-17	20:55:00	X	65°45.770'/ 84°25.116'	X	20:59:00	1.00	big rock with sediment
241	CTD108	CTD	65°44.425'/ 84°25.562'	420	21:13:00	19-08-17	21:30:00	X	65°44.322'/ 84°25.600'	X	21:44:00	0.20	
242	CTD109	CTD	65°39.414'/ 84°26.272'	235	22:23:00	19-08-17	22:32:00	X	65°33.307'/ 84°26.318'	X	22:38:00	0.40	
243	CTD110	CTD	65°34.475'/ 84°26.524'	300	0:04:00	19-08-18	00:15:00	X	65°34.656'/ 84°26.154'	X	0:23:00	1.40	
244	CTD111	CTD	65°30.019'/ 84°26.992'	200	1:20:00	19-08-18	01:28:00	X	65°30.200'/ 84°27.067'	X	1:35:00	1.60	

245	CTD112	CTD	65°28.374'/ 84°27.230'	180	6:40:00	19-08-18	06:46:00	X		65°28.328'/ 84°27.172'	X	6:51:00	1.00		
246	STN15	ROS	65°30.021'/ 84°27.020'	175	7:15:00	19-08-18	07:26:00	X		65°29.824'/ 84°27.898'	X	7:40:00	1.00		
247	STN15	PHN	65°30.014'/ 84°26.862'	200	7:52:00	19-08-18	07:57:00	X		65°29.997'/ 84°27.036'	X	8:18:00	0.80		
248	STN15	ROS	65°30.020'/ 84°26.995'	199	8:32:00	19-08-18	08:44:00	X		65°30.123'/ 84°27.461'	X	9:00:00	0.60		
249	STN15	WP2	65°30.253'/ 84°27.946'	179	9:07:00	19-08-18	09:12:00	X		65°30.305'/ 84°28.136'	X	9:21:00	0.80		
250	STN15	BOX1	65°30.028'/ 84°26.690'	207	9:37:00	19-08-18	09:39:00	X		65°30.033'/ 84°26.742'	X	9:44:00	0.80	surface sample	
251	STN15	BOX2	65°30.098'/ 84°26.864'	206	9:49:00	19-08-18	09:50:00	X		65°30.116'/ 84°26.891'	X	9:54:00	0.80	surface sample	
252	STN15	BOX3	65°30.202'/ 84°27.017'	200	9:59:00	19-08-18	10:01:00	X		65°30.225'/ 84°27.050'	X	10:04:00	0.80		
253	STN15	BON	65°30.384'/ 84°27.215'	201	10:29:00	19-08-18	10:33:00	X		65°30.153'/ 84°26.961'	X	10:45:00	2.10	1x15min cycle	
254	STN15	GAC1	65°29.963'/ 84°26.804'	201	11:06:00	19-08-18	11:07:00	X		65°29.976'/ 84°26.819'	X	11:15:00		21 cm + core catcher	
255	STN15	GAC2	65°30.061'/ 84°27.215'	195	11:38:00	19-08-18	11:40:00	X		65°30.081'/ 84°27.262'	X	11:42:00	1.20	22 cm + core catcher	
256	STN15	BMT	65°30.564'/ 84°27.796'	196	12:21:00	19-08-18	12:31:00		12:31:00	65°30.472'/ 84°27.087'	12:46:00	12:57:00	1.00		
257	STN15	MWT	65°31.084'/ 84°28.320'	218	13:57:00	19-08-18	14:03:00		14:05:00	65°30.959'/ 84°28.142'	14:20:00	14:25:00	2.90		
258	CTD113	CTD	65°28.946'/ 84°32.237'	65	15:57:00	19-08-18	16:01:00	X		65°28.930'/ 84°32.207'	X	16:03:00	0.40		
259	CTD114	CTD	65°30.880'/ 84°33.508'	351	16:21:00	19-08-18	16:25:00	X		65°30.906'/ 84°33.523'	X	16:30:00	0.20		
260	CTD115	CTD	65°33.379'/ 84°34.914'	185	16:51:00	19-08-18	16:58:00	X		65°33.457'/ 84°34.798'	X	17:04:00	0.80		
261	CTD116	CTD	65°34.951'/ 84°36.038'	31	17:50:00	19-08-18	17:52:00	X		65°34.951'/ 84°36.028'	X	17:54:00	0.20	polar bear paradise!	
262	CTD117	CTD	65°35.151'/ 84°30.971'	266	18:55:00	19-08-18	19:05:00	X		65°35.174'/ 84°30.936'	X	19:11:00	0.20	hit the bottom	
263	CTD118	CTD	65°35.417'/ 84°26.257'	128	19:28:00	19-08-18	19:33:00	X		65°35.441'/ 84°26.160'	X	19:37:00	0.60		
264	CTD119	CTD	65°35.660'/ 84°21.536'	239	19:52:00	19-08-18	20:00:00	X		65°35.601'/ 84°21.231'	X	20:06:00	1.90		
265	CTD120	CTD	65°35.939'/ 84°16.706'	290	20:25:00	19-08-18	20:35:00	X		65°35.947'/ 84°16.495'	X	20:44:00	0.40		
266	CTD121	CTD	65°36.232'/ 84°11.831'	319	20:53:00	19-08-18	21:09:00	X		65°36.290'/ 84°11.410'	X	21:17:00	1.00	angled to 60° to south	
267	STN15B	BOX	65°36.302/ 84°11.016'	316	21:22:00	19-08-18	21:24:00	X		65°36.317'/ 84°11.895'	X	21:28:00	1.00	empty	
268	STN15B	BOX	65°36.309'/ 84°10.569'	311	21:34:00	19-08-18	21:37:00	X		65°36.320'/ 84°10.460'	X	21:43:00	0.60	re-entry	

269	CTD122	CTD	65°36.487'/ 84°07.112'	230	22:01:00	19-08-18	22:10:00	X		65°36.550'/ 84°66.905'	X	22:15:00	0.80	
270	CTD123	CTD	65°36.755'/ 84°02.371'	224	22:32:00	19-08-18	22:41:00	X		65°36.834'/ 84°02.209'	X	22:46:00	0.60	
271	CTD124	CTD	65°36.975'/ 83°57.636'	137	23:04:00	19-08-18	23:09:00	X		65°36.867'/ 83°57.516'	X	23:12:00	0.40	152 @ bottom
272	CTD125	CTD	65°37.225'/ 83°57.337'	55	23:36:00	19-08-18	23:38:00	X		65°37.258'/ 83°53.036'	X	23:40:00	1.20	
273	CTD126	CTD	65°37.510'/ 83°48.162'	52	0:03:00	19-08-19	00:06:00	X		65°37.516'/ 83°48.219'	X	0:07:00	0.60	
274	CTD127	CTD	65°37.780'/ 83°43.393'	89	0:29:00	19-08-19	00:32:00	X		65°37.755'/ 83°43.427'	X	0:34:00	0.60	
275	CTD128	CTD	65°28.846'/ 83°41.732'	319	3:35:00	19-08-19	03:46:00	X		65°29.062'/ 83°41.846'	X	3:54:00	1.40	
276	CTD129	CTD	65°20.247'/ 83°30.003'	345	6:48:00	19-08-19	07:02:00	X		65°20.175'/ 83°29.894'	X	7:10:00	0.40	Hit bottom, 325m
277	CTD130	CTD	65°12.788'/ 83°14.811'	350	9:27:00	19-08-19	09:38:00	X		65°12.740'/ 83°14.463'	X	9:45:00	0.80	Hit bottom, 325m
278	STN16	BOX	65°06.520'/ 83°07.438'	322	11:22:00	19-08-19	11:24:00	X		65°06.522'/ 83°07.594'	X	11:28:00	1.00	mud!
279	STN16	BOX	65°06.611'/ 83°09.249'	318	12:03:00	19-08-19	12:05:00	X		65°06.618'/ 83°09.429'	X	12:09:00	1.70	hit at 260 m
280	STN16	BOX	65°06.692'/ 83°09.811'	320	12:15:00	19-08-19	12:17:00	X		65°06.719'/ 83°09.852'	X	12:25:00	1.00	MIZ, push core
281	STN16	ROS	65°06.272'/ 83°06.483'	326	13:08:00	19-08-19	13:28:00	X		65°06.358'/ 83°06.807'	X	13:50:00	0.40	
282	STN16	WP2	65°06.420'/ 83°07.475'	323	14:15:00	19-08-19	14:30:00	X		65°06.428'/ 83°07.731'	X	14:45:00	0.40	hit bottom, 307m
283	STN16	ROS	65°06.356'/ 83°08.071'	323	14:58:00	19-08-19	15:21:00	X		65°06.258'/ 83°08.577'	X	15:45:00	0.80	
284	STN16	PHN	65°06.212'/ 83°09.173'	330	15:50:00	19-08-19	16:09:00	X		65°06.136'/ 83°09.372'	X	16:51:00	0.40	232 depth, 420 cable
285	STN16	BON	65°05.937'/ 83°10.201'	340	17:06:00	19-08-19	17:16:00	X		65°06.05'/8 3°09.384'	X	17:27:00	1.70	
286	STN16	MWT	65°06.020'/ 83°07.968'	321	19:28:00	19-08-19	19:30:00		19:30:00	65°05.997'/ 83°07.629'	19:45:00	19:49:00	1.90	
287	STN16	GAC1	65°06.484'/ 83°07.937'	321	20:04:00	19-08-19	20:06:00	X		65°06.495'/ 83°08.054'	X	20:24:00	1.20	winch malfunction
288	STN16	GAC 2	65°06.477'/ 83°08.007'	310	21:00:00	19-08-19	21:02:00	X		65°06.491'/ 83°08.094'	X	21:04:00	1.00	
289	CTD131	CTD	65°03.224'/ 83°05.811'	315	21:43:00	19-08-19	21:56:00	X		65°03.162'/ 83°05.899'	X	22:03:00	0.40	305 hit bottom
290	CTD132	CTD	64°55.389'/ 82°59.447'	178	23:16:00	19-08-19	23:23:00	X		64°55.273'/ 82°59.236'	X	23:28:00	1.20	target 160
291	STN17	ROS	64°55.182'/ 82°59.816'	147	6:54:00	19-08-20	07:04:00	X		65°54.940'/ 82°59.311'	X	7:20:00	1.20	
292	STN17	PHN	64°62.613'/ 82°58.547'	168	7:31:00	19-08-20	07:37:00	X		64°54.524'/ 82°58.424'	X	7:55:00	1.20	

293	STN17	BON	64°54.400'/ 82°58.279'	168	8:05:00	19-08-20	08:05:00		08:06:00	64°54.520'/ 82°58.508'	08:15:00	8:24:00	2.10	
294	STN17	WP2	64°55.172'/ 82°53.754'	147	8:45:00	19-08-20	08:50:00	X		64°55.114'/ 82°59.536'	X	8:55:00	1.20	
295	STN17	ROS	64°55.251'/ 83°00.063'	142	9:07:00	19-08-20	09:16:00	X		64°55.080'/ 82°59.916	X	9:23:00	0.80	
296	STN17	BOX	64°55.961'/ 82°59.035'	167	9:52:00	19-08-20	09:53:00	X		64°54.944'/ 82°58.973'	X	9:55:00	1.20	
297	STN17	BHT	64°54.783'/ 82°58.33'	193	10:15:00	19-08-20	10:24:00		10:24:00	64°55.063'/ 82°58.880'	10:39:00	10:50:00	3.40	net twisted backwards
298	STN17	MWT	64°55.067'/ 82°59.341'	152	11:22:00	19-08-20	11:28:00		11:28:00	64°54.828'/ 82°58.909'	X		2.70	End coordinates: 64°54.399'/82°57.957', 11:43 end 11:50
299	CTD133	CTD	64°55.877'/ 82°26.574'	275	13:56:00	19-08-20	14:07:00	X		64°55.740'/ 82°28.891'	X	14:14:00	0.80	went under boat
300	CTD134	CTD	64°49.573'/ 82°08.465'	272	15:46:00	19-08-20	15:55:00	X		64°49.520'/ 82°08.550'	X	16:02:00	0.40	
301	CTD135	CTD	64°43.320'/ 81°49.642'	265	17:30:00	19-08-20	17:40:00	X		64°43.403'/ 81°49.712'	X	17:46:00	0.40	good angle
302	CTD136	CTD	64°37.057'/ 81°31.662'	272	19:07:00	19-08-20	19:17:00	X		64°36.880'/ 81°31.226'	X	19:23:00	1.70	good angle
303	STN18	ROS	64°31.097'/ 81°14.295'	299	20:38:00	19-08-20	20:53:00	X		64°30.645'/ 81°13.993'	X	21:20:00	1.40	
304	STN18	PHN	64°30.791'/ 81°13.865'	298	21:23:00	19-08-20	21:30:00	X		64°30.681'/ 81°12.699'	X	21:56:00	1.20	
305	STN18	ROS	64°31.556'/ 81°14.505'	297	22:17:00	19-08-20								cancelled
306	STN18	WP2	64°31.338'/ 81°14.95'	298	22:30:00	19-08-20	22:41:00	X		64°31.184/ 81°31.298°	X	22:50:00	0.80	PBR loose signal
307	STN18	BOX	64°30.868'/ 81°13.859'	299	23:06:00	19-08-20	23:09:00	X		64°30.828'/ 81°13.808'	X	23:12:00	0.80	
308	STN18	BOX	64°30.670'/ 81°13.607'	299	23:23:00	19-08-20	23:27:00	X		64°30.634'/ 81°13.564'	X	23:31:00	0.80	
309	STN18	BOX	64°30.574'/ 81°13.445'	299	23:35:00	19-08-20	23:38:00	X		64°30.514'/ 81°13.373'	X	23:42:00	0.80	
310	STN18	BON	64°30.455'/ 81°13.344'	301	23:55:00	19-08-20	00:05:00	X		64°30.766'/ 81°13.578'	X	0:15:00	1.80	
311	STN18	MWT	64°31.212'/ 81°14.138'	301	0:30:00	19-08-21	00:35:00		00:35:00	64°31.185'/ 81°14.114'	00:47:00	0:54:00	1.80	
312	CTD137	CTD	64°26.110'/ 81°12.271'	293	1:49:00	19-08-21	01:58:00	X		64°26.075'/ 81°12.280'	X	0:08:00	0.60	
313	CTD138	CTD	64°21.222'/ 81°10.752'	310	2:55:00	19-08-21	03:07:00	X		64°21.089'/ 81°10.995'	X	3:15:00	0.60	
314	CTD139	CTD	64°16.359'/ 81°09.169'	303	3:57:00	19-08-21	04:08:00	X		64°16.243'/ 81°09.252'	X	4:18:00	0.60	
315	CTD140	CTD	64°11.424'/ 81°07.493'	125	4:55:00	19-08-21	04:59:00	X		64°11.364'/ 81°07.542'	X	5:05:00	0.60	

316	CTD141	CTD	64°06.453'/ 81°05.742'	46.8	5:44:00	19-08-21	05:45:00	X		64°06.446'/ 81°05.703'	X	5:47:00				
317	CTD142	CTD	64°03.287'/ 81°04.748'	76.3	6:19:00	19-08-21	06:21:00	X		64°03.273'/ 81°04.695'	X	6:25:00				
318	CTD143	CTD	64°01.321'/ 81°00.191'	29.6	6:53:00	19-08-21	06:55:00	X		64°01.323'/ 81°00.197'	X					
319	STNEB	BOX1	64°01.297'/ 81°00.124'	30	7:08:00	19-08-21	07:09:00	X		64°01.295'/ 81°00.119'	X	7:10:00	X		surface sample	
320	STNEB	BOX2	64°03.360'/ 81°04.778'	76.8	8:58:00	19-08-21	08:59:00	X		64°03.368'/ 81°04.778'	X	9:01:00		0.40	surface sample	
321	STNEB	BOX3	64°03.332'/ 81°04.685'	76.8	9:09:00	19-08-21	09:10:00	X		64°03.328'/ 81°04.676'	X	9:12:00		0.40	push core 1	
322	STNEB	BOX4	64°03.365'/ 81°04.713'	76.7	9:59:00	19-08-21	10:01:00	X		64°03.364'/ 81°04.784'	X	10:02:00		0.40	push core 2	
323	STNEB	GAC1	64°03.364'/ 81°04.710'	77.2	10:43:00	19-08-21	10:44:00	X		64°03.348'/ 81°04.699'	X	10:46:00		0.40	1 full tube	
324	STNEB	GAC2	64°03.368'/ 81°04.820'	77.2	11:12:00	19-08-21	11:14:00	X		64°03.374'/ 81°04.835'	X	11:18:00		0.20	3/4 full tube	
325	CTD144	CTD	64°09.833'/ 80°57.998'	195	13:24:00	19-08-21	13:31:00	X		64°09.931'/ 80°57.930'	X	13:36:00		0.40		
326	CTD145	CTD	64°12.799'/ 80°51.137'	329	14:11:00	19-08-21	14:24:00	X		64°12.775'/ 80°51.075'	X	14:31:00		0.20		
327	CTD146	CTD	64°15.469'/ 80°44.759'	330	15:05:00	19-08-21	15:15:00	X		64°15.409'/ 80°44.755'	X	15:25:00		0.20		
328	CTD147	CTD	64°18.116'/ 80°38.680'	337	16:01:00	19-08-21	16:14:00	X		64°18.035'/ 80°39.035'	X	16:23:00		0.80		
329	CTD148	CTD	64°11.081'/ 80°20.116'	331	17:49:00	19-08-21	18:03:00	X		64°10.982'/ 80°20.156'	X	18:11:00		0.40		
330	CTD149	CTD	64°02.880'/ 79°57.481'	320	19:51:00	19-08-21	20:03:00	X		64°02.644'/ 79°57.104'	X	20:02:00		0.40		
331	CTD150	CTD	63°57.137'/ 79°42.776'	324	21:03:00	19-08-21	21:16:00	X		63°56.698'/ 79°42.419'	X	21:22:00		2.70		
332	STN19	PHN	63°56.414'/ 79°42.172'	325	21:27:00	19-08-21	21:34:00	X		63°56.181'/ 79°42.060'	X	21:57:00		1.90	high angle	
333	STN19	WP2	63°56.771'/ 79°41.771'	324	22:16:00	19-08-21	22:20:00	X		63°56.547'/ 79°41.697'	X			1.20	hit bottom, 306m	
334	STN19	BON	63°56.414'/ 79°41.587'	328	22:53:00	19-08-21	23:04:00	X		63°56.603'/ 79°41.711'	X	23:13:00		1.20	1 cycle ~20min	
335	STN19	BOX	63°56.880'/ 79°41.995'	324	23:25:00	19-08-21	23:27:00	X		63°56.861'/ 79°42.040'	X	23:32:00		0.80		
336	STN19	BOX	63°56.712'/ 79°42.040'	327	23:40:00	19-08-21	23:43:00	X		63°56.683'/ 79°42.024'	X	23:47:00		1.00		
337	STN19	BOX	63°57.016'/ 79°42.070'	326	23:59:00	19-08-21	00:02:00	X		63°57.014'/ 79°42.121'	X	0:05:00		0.80		
338	STN19	MWT	63°56.889'/ 79°39.167'	326	7:12:00	19-08-22	07:17:00		07:17:00	63°56.878'/ 79°39.438'	07:32:00	7:37:00		1.40		
339	STN19	ROS	63°56.960'/ 79°41.963'	324	8:32:00	19-08-22	08:52:00	X		63°56.183'/ 79°40.548'	X	9:13:00		1.60		

340	STN19	ROS	63°56.760'/ 79°41.682'	324	9:47:00	19-08-22	10:03:00	X		63°56.274'/ 79°40.811'	X	10:15:00	1.90	
341	CTD151	CTD	63°52.231'/ 79°52.350'	289	11:15:00	19-08-22	11:29:00	X		63°52.076'/ 79°52.404'	X	11:35:00	0.80	
342	STN20	WP2	63°47.254'/ 80°06.925'	100	13:22:00	19-08-22	13:27:00	X		63°47.330'/ 80°07.065'	X	13:31:00	3.00	
343	STN20	BON	63°47.570'/ 80°07.381'	96.4	13:43:00	19-08-22	13:37:00	X		63°47.572'/ 80°07.252'	X	13:58:00		Aborted, net tangled
344	STN20	BON	63°47.420'/ 80°06.460'	150	14:08:00	19-08-22	14:16:00	X		63°47.285'/ 80°06.162'	X	14:24:00	1.60	
345	STN20	MWT	63°47.527'/ 80°05.175'	161	14:43:00	19-08-22	14:46:00		14:46:00	63°47.675'/ 80°04.907'	15:01:00	15:06:00	2.90	
346	STN20	BMT	63°48.589'/ 80°03.479'	178	15:14:00	19-08-22	15:18:00		15:18:00	63°48.480'/ 80°03.508'	15:33:00	15:41:00	1.40	
347	STN20	ROS	63°47.175'/ 80°06.099'	154	16:12:00	19-08-22	16:22:00	X		63°47.656'/ 80°05.879'	X	16:32:00	1.20	
348	STN20	ROS	63°47.598'/ 80°05.441'	159	16:54:00	19-08-22	17:03:00	X		64°47.800'/ 80°05.543'	X	17:19:00	1.00	
349	STN20	BOX1	63°47.523'/ 80°05.257'	162	18:09:00	19-08-22	18:10:00	X		63°47.533'/ 80°05.236'	X	18:13:00	0.60	surface sample
350	STN20	BOX2	63°47.586'/ 80°05.067'	161	18:22:00	19-08-22	18:24:00	X		63°47.595'/ 80°05.033'	X	18:26:00	0.60	surface sample
351	CTD152	CTD	63°42.778'/ 79°43.151'	227	19:59:00	19-08-22	20:06:00	X		63°42.629'/ 79°42.861'	X	20:11:00	1.00	
352	CTD153	CTD	63°38.428'/ 79°24.327'	159	21:15:00	19-08-22	21:18:00	X		63°38.357'/ 79°23.893'	X	21:23:00	2.30	
353	CTD154	CTD	63°33.495'/ 79°04.830'	203	22:28:00	19-08-22	22:37:00	X		63°33.359'/ 79°04.694'	X	22:42:00	1.00	
354	CTD155	CTD	63°28.754'/ 78°44.942'	150	23:56:00	19-08-22	00:01:00	X		63°28.733'/ 78°44.683'	X	0:04:00	1.40	
355	CTD156	CTD	63°25.767'/ 78°34.229'	36.2	0:52:00	19-08-23	00:53:00	X		63°25.779'/ 78°34.222'	X	0:57:00	0.60	
356	CTD157	CTD	63°26.068'/ 78°55.577'	159	1:13:00	19-08-23	01:18:00	X		63°26.110'/ 78°55.545'	X	1:23:00	0.60	
357	CTD158	CTD	63°26.223'/ 79°17.964'	218	3:45:00	19-08-23	03:54:00	X		63°26.256'/ 79°18.021'	X	4:00:00	0.20	
358	STNNS	BOX1	63°26.240'/ 79°17.961'	217	4:03:00	19-08-23	04:06:00	X		63°26.254'/ 79°17.948'	X	4:09:00	0.60	surface sample
359	STNNS	BOX2	63°26.685'/ 79°17.706'	220	4:21:00	19-08-23	04:24:00	X		63°26.689'/ 79°17.751'	X	4:27:00	0.60	2 surface samples
360	CTD159	CTD	63°27.182'/ 79°26.725'	205	5:05:00	19-08-23	05:12:00	X		63°27.201'/ 79°26.640'	X	5:17:00	0.20	
361	STNNS2	BOX3	63°27.218'/ 79°26.530'	204	5:21:00	19-08-23	05:23:00	X		63°27.225'/ 79°26.511'	X	5:28:00	0.40	surface sample
362	STNNS2	GAC1	63°27.315'/ 79°26.328'	205	5:35:00	19-08-23	05:37:00	X		63°27.329'/ 79°26.308'	X	5:40:00	0.60	~65 cm
363	STNNS2	GAC2	63°27.335'/ 79°26.396'	200	5:52:00	19-08-23	05:56:00	X		63°27.352'/ 79°26.370'	X	5:58:00	0.80	~58cm

364	CTD160	CTD	63°26.464'/ 79°39.949'	195	7:10:00	19-08-23	07:14:00	X		63°26.537'/ 79°39.781'	X	7:19:00	0.80		
365	CTD161	CTD	63°26.658'/ 80°02.512'	172	8:45:00	19-08-23	08:47:00	X		63°26.718'/ 80°02.474'	X	8:56:00	0.80		
366	CTD162	CTD	63°26.918'/ 80°24.912'	99	10:17:00	19-08-23	10:21:00	X		63°26.986'/ 80°24.851'	X	10:23:00	1.00		
367	CTD163	CTD	63°27.180'/ 80°47.084'	69	11:51:00	19-08-23	11:53:00	X		63°27.218'/ 80°47.002'	X	11:55:00	0.60		
368	STNLP	BOX	63°27.281'/ 80°46.775'	67	11:59:00	19-08-23	12:00:00	X		63°27.296'/ 80°46.731'	X	12:01:00	1.00	surface sample	
369	STN21	ROS	63°28.941'/ 80°51.601'	32	12:48:00	19-08-23	12:55:00	X		63°29.152'/ 80°51.407'	X	13:03:00	1.00		
370	STN21	PHN	63°28.742'/ 80°51.702'	33	13:38:00	19-08-23	13:39:00	X		63°29.770'/ 80°51.718'	X	13:42:00	0.60		
371	STN21	WP2	63°28.891'/ 80°51.572'	33	13:50:00	19-08-23	13:51:00	X		63°28.705'/ 80°51.557'	X	13:52:00	0.60		
372	STN21	BON	63°28.998'/ 80°51.477'	34	14:00:00	19-08-23	14:06:00	X		63°29.188'/ 80°50.596'	X	14:15:00	2.70		
373	STN21	PON	63°28.811'/ 80°52.002'	29	14:48:00	19-08-23	14:49:00	X		63°28.819'/ 80°52.001'	X	14:50:00	0.80	water	
374	STN21	PON	63°28.848'/ 80°51.982'	29	14:51:00	19-08-23	14:52:00	X		63°28.862'/ 80°51.975'	X	14:53:00	0.80	rock	
375	STN21	BMT	63°29.141'/ 80°51.449'	35	15:14:00	19-08-23	15:15:00		15:15:00	63°29.217'/ 80°51.366'	15:30:00		2.00		
376	STN21	MWT		44		19-08-23	15:47:00		15:47:00	63°29.696'/ 80°50.123'	16:03:00	16:05:00	2.50		
377	CTD163	CTD	63°25.677'/ 80°59.807'	57	23:17:00	19-08-23	23:18:00	X		63°24.69'/8 0°59.748'	X	23:20:00	1.00		
378	CTD164	CTD	63°21.028'/ 81°07.550'	103	0:10:00	19-08-24	00:13:00	X		63°21.016'/ 81°07.436'	X	0:17:00	1.20		
379	CTD165	CTD	63°17.349'/ 81°15.092'	137	1:05:00	19-08-24	01:09:00	X		63°17.322'/ 81°14.922'	X	1:15:00	0.40		
380	CTD166	CTD	63°13.686'/ 81°22.415'	157	2:00:00	19-08-24	02:06:00	X		63°13.685'/ 81°22.460'	X	2:12:00	0.40		
381	CTD167	CTD	63°10.065/ 81°30.335'	193	2:55:00	19-08-24	03:02:00	X		63°10.043'/ 81°36.220'	X	3:03:00	0.40		
382	CTD168	CTD	63°06.422'/ 81°37.687'	216	3:49:00	19-08-24	03:57:00	X		63°06.358'/ 81°37.598'	X	4:05:00	0.20		
383	CTD169	CTD	63°02.780'/ 81°45.193'	220	4:45:00	19-08-24	04:53:00	X		63°02.759'/ 81°45.117'	X	4:59:00	0.40		
384	CTD170	CTD	62°58.478'/ 81°53.755'	200	5:48:00	19-08-24	05:57:00	X		62°58.423'/ 81°53.472'	X	6:02:00	1.00		
385	CTD171	CTD	63°02.338'/ 81°56.069'	225	7:23:00	19-08-24	07:31:00	X		63°02.334'/ 81°55.977'	X	7:36:00	0.40		
386	STN22	CTD	63°06.744'/ 81°39.407'	220	8:20:00	19-08-24	08:30:00	X		63°07.096'/ 81°59.606'	X	8:40:00	2.10		
387	STN22	ROS	63°07.172'/ 81°59.593'	215	8:51:00	19-08-24	09:05:00	X		63°07.192'/ 81°58.957'	X	9:17:00	1.00		

388		STN22	WP2	63°07.167'/ 81°58.480'	218	9:28:00	19-08-24	09:38:00	X		63°07.139'/ 81°58.067	X	9:46:00	1.00	
389		STN22	ROS	63°07.160'/ 81°57.816'	216	10:15:00	19-08-24	10:27:00	X		63°07.133'/ 81°57.394'	X	10:43:00	1.00	
390		STN22	PHN	63°07.091'/ 81°56.877'	216	10:48:00	19-08-24	10:54:00	X		63°07.067'/ 81°56.701'	X	11:12:00	1.00	
391		STN22	ROS	63°07.155'/ 81°57.862'	216	11:26:00	19-08-24	11:38:00	X		63°07.176'/ 81°57.394'	X		1.00	
392		STN22	BWT	63°07.051'/ 81°56.354'	217	12:19:00	19-08-24	12:19:00		12:25:00	63°07.120'/ 81°56.775'	12:40:00	12:49:00	1.70	
393		STN22	MWT	63°07.348'/ 81°58.922'	217	12:59:00	19-08-24	13:01:00		13:01:00	63°07.150'/ 81°56.777'	13:16:00	13:22:00	2.11	
394	384	CTD172	CTD	63°11.994'/ 82°01.812'	186	14:00:00	19-08-24	14:07:00	X		63°11.952'/ 82°01.723'	X	14:12:00	0.60	
395	395	CTD173	CTD	63°16.112'/ 82°04.258'	161	14:51:00	19-08-24	14:58:00	X		63°16.127'/ 82°04.277'	X	15:02:00	0.20	
396	394	CTD174	CTD	63°21.745'/ 82°07.765'	119	15:52:00	19-08-24	15:57:00	X		63°21.762'/ 82°07.777'	X	16:05:00	0.20	
397	395	CTD175	CTD	63°26.593'/ 82°10.665'	103	16:41:00	19-08-24	16:46:00	X		63°26.655'/ 82°10.755'	X	16:50:00	0.60	
398	396	STN23	WP2	63°31.040'/ 82°12.633'	97.3	18:12:00	19-08-24	18:14:00	X		63°31.064'/ 82°12.661'	X	18:18:00	1.40	had to fix winch
399	397	STN23	BON	63°31.280'/ 82°12.861'	96.2	18:31:00	19-08-24	18:41:00		18:41:00	63°31.714'/ 82°13.446'	X	18:50:00	2.90	
400	398	STN23	ROS	63°32.188'/ 82°13.792'	90.2	19:13:00	19-08-24	19:22:00	X		63°31.615'/ 82°13.002'	X	19:28:00	0.40	
401	399	STN23	ROS	63°31.157'/ 82°12.666'	96	19:46:00	19-08-24	19:53:00	X		63°31.207'/ 82°12.634'	X	20:04:00	0.40	
402	400	STN23	BMT	63°31.035'/ 82°13.622'	100	20:30:00	19-08-24	20:32:00		20:32:00	63°30.976'/ 82°13.821'	20:48:00	20:52:00	2.10	
403	401	STN24	BON	63°54.145'/ 83°34.391'	43	9:34:00	19-08-25	09:38:00		09:38:00	62°54.109'/ 83°34.133'	09:48:00	9:49:00	2.10	
404	402	STN24	WP2	62°54.916'/ 83°32.947'	37.4	10:00:00	19-08-25	10:02:00	X		62°53.934'/ 83°33.133'	X	10:03:00	1.60	
405	403	STN24	PON	62°54.205'/ 83°31.400'	33.7	12:20:00	19-08-25	12:22:00	X		62°54.228'/ 83.31.421'	X	12:23:00	1.00	Did not trigger
406	404	STN24	PON	62°54.252'/ 83°31.441'	34.4	12:23:00	19-08-25	12:24:00	X		62°54.265'/ 83°31.447'	X	12:25:00	1.70	
407	405	STN24	PON	62°53.687'/ 83°32.496'	33.2	13:21:00	19-08-25	13:22:00	X		62°53.706'/ 83°32.474'	X	13:22:00	1.70	
408	406	STN24	PON	62°53.725'/ 83°32.448'	33.4	13:23:00	19-08-25	13:24:00	X		62°53.744'/ 83°32.422'	X	13:25:00	1.70	
409	407	CTD176	CTD	62°53.905'/ 83°32.240'	34.6	13:30:00	19-08-25	13:31:00	X		62°53.948'/ 83°32.207'	X	13:32:00	1.90	
410	408	STN24	PHN	62°54.106'/ 83°32.087'	35.5	13:35:00	19-08-25	13:37:00	X		62°54.141'/ 83°32.087'	X	13:41:00	1.20	went down to 13.3 m only (windy)
411	409	STN24	BMT	62°54.236'/ 83°32.056'	35.4	13:53:00	19-08-25	13:53:00	X		62°53.794'/ 83°32.324'	14:06:00	14:08:00	1.70	

412	410	STN24	MWT	62°53.709'/ 83°32.682'	33	14:16:00	19-08-25	14:17:00		14:17:00	62°53.737'/ 83°32.795'	14:32:00	14:33:00	2.10	
413	411	CTD177	CTD	62°55.273'/ 83°45.809'	125	15:34:00	19-08-25	15:39:00	X		62°55.341'/ 83°45.773'	X	15:42:00	1.20	
414	412	CTD178	CTD	62°56.675'/ 83°58.555'	128	16:40:00	19-08-25	16:45:00	X		62°56.726'/ 83°58.497'	X	16:47:00	0.80	
415	413	CTD179	CTD	62°57.994/ 84°11.228'	127	17:42:00	19-08-25	17:47:00	X		62°57.000'/ 84°11.106'	X	17:50:00	0.40	
416	414	STNCN	BOX	62°57.948'/ 84°10.832'	127	18:01:00	19-08-25	18:02:00	X		6257.942'/ 84°10.812'	X	18:04:00	0.40	Cape Netcher, surface sample
417	415	CTD180	CTD	62°59.315'/ 84°23.771'	117	19:04:00	19-08-25	19:08:00	X		62°59.272'/ 84°23.795'	X	19:11:00	1.00	
418	416	CTD181	CTD	63°00.666'/ 84°36.494'	102	19:59:00	19-08-25	20:02:00	X		63°00.584'/ 84°36.595'	X	20:05:00	2.10	
419	417	CTD182	CTD	63°02.078'/ 84°49.610'	69	20:52:00	19-08-25	20:54:00	X		63°02.010'/ 84°49.705'	X	20:56:00	1.90	
420	418	CTD183	CTD	63°03.559'/ 85°02.340'	30.8	21:39:00	19-08-25	21:41:00	X		63°03.515'/ 85°02.416'	X	21:42:00	1.60	
421	419	STN25	ROS	63°29.336'/ 84°08.661'	29	13:01:00	19-08-26	13:07:00	X		63°29.302'/ 84°08.786'	X	13:11:00	0.40	
422	420	STN25	PHN	63°29.268'/ 84°08.901'	28	13:16:00	19-08-26	13:18:00	X		63°29.260'/ 84°08.786'	X	13:21:00	0.40	
423	421	STN25	WP2	63°29.236'/ 84°09.046'	27	13:30:00	19-08-26	13:31:00	X		63°29.234'/ 84°09.067'	X	13:33:00	0.20	
424	422	STN25	PON	63°29.221'/ 84°09.115'	26.5	13:41:00	19-08-26	13:42:00	X		63°29.219'/ 84°09.130'	X	13:43:00	0.60	
425	423	STN25	PON	63°29.217'/ 84°09.145'	26.6	13:44:00	19-08-26	13:45:00	X		63°29.215'/ 84°09.151'	X	13:46:00	0.40	
426	424	STN25	BOX	63°29.201'/ 84°09.208'	26.6	13:52:00	19-08-26	13:53:00	X		63°29.200'/ 84°09.215'	X	13:53:00	0.60	did not trigger
427	425	STN25	BOX	63°29.200'/ 84°09.215'	26.6	13:54:00	19-08-26	13:54:00	X		63°29.197'/ 84°09.223'	X	13:55:00	0.60	all rocks and shells
428	426	STN25	BON	63°29.084'/ 84°09.008'	27.7	14:04:00	19-08-26	14:04:00		14:04:00	63°29.060'/ 84°08.960'	X	14:19:00	2.10	
429	427	STN25	BWT	63°28.779'/ 84°08.252'	28.9	14:40:00	19-08-26	14:42:00		14:41:00	63°29.067'/ 94°08.884'	14:56:00	14:58:00	2.30	
430	428	CTD184	CTD	63°16.013'/ 83°41.145'	92.6	20:29:00	19-08-26	20:33:00	X		63°16.002'/ 83°41.173'	X	20:35:00	0.20	
431	429	STNWI	BOX	63°15.983'/ 83°41.305'	95.5	20:42:00	19-08-26	20:44:00	X		63°15.972'/ 83°41.374'	X	20:46:00	0.60	small rocks blocked grab doors
432	430	STNWI	BOX	63°15.940'/ 83°41.507'	93	20:51:00	19-08-26	20:53:00	X		63°15.933'/ 83°41.528'	X	20:54:00	0.40	small rocks blocked grab doors
433	431	STNWI	PON	63°15.909'/ 83°41.632'	96	20:59:00	19-08-26	21:01:00	X		63°15.900'/ 83°41.690'	X	21:03:00	0.60	crab!
434	432	STNWI	PON	63°15.882'/ 83°41.852'	97	21:07:00	19-08-26	21:09:00	X		63°15.868'/ 83°41.900'	X	21:11:00	0.80	
435	433	CTD185	CTD	63°19.178'/ 83°32.709'	109	22:09:00	19-08-26	22:14:00	X		63°19.152'/ 83°32.759'	X	22:16:00	0.40	

436	434	STNWI2	BOX	63°19.044'/ 83°32.953'	112	22:21:00	19-08-26	22:22:00	X	63°19.035'/ 83°32.971'	X	22:24:00	1.20	surface sample, mostly pebbles
437	435	CTD186	CTD	63°22.488'/ 83°23.726'	110	23:17:00	19-08-26	23:21:00	X	63°22.452'/ 83°23.863'	X	23:23:00	0.80	
438	436	STNWI3	BOX	63°22.402'/ 83°24.025'	110	23:27:00	19-08-26	23:28:00	X	63°22.365'/ 83°24.176'	X	23:29:00	1.00	Did not trigger
439	437	STNWI3	BOX	63°22.372'/ 83°24.154'	110	23:31:00	19-08-26	23:32:00	X	63°22.365'/ 83°24.176'	X	23:34:00	1.00	Bulk sediment sample
440	438	CTD187	CTD	63°24.332'/ 83°18.602'	107	0:11:00	19-08-27	00:15:00	X	63°24.315'/ 83°18.538	X	0:18:00	0.60	
441	439	CTD188	CTD	63°27.047'/ 83°11.601'	110	0:51:00	19-08-27	00:54:00	X	63°24.315'/ 83°18.368'	X	0:18:00	0.40	
442	440	CTD189	CTD	63°32.148'/ 83°12.488'	97.3	1:43:00	19-08-27	01:46:00	X	63°32.147'/ 83°12.596'	X	1:50:00	0.40	blue light?
443	441	CTD190	CTD	63°36.939'/ 83°13.465'	81.4	2:28:00	19-08-27	02:31:00	X	63°36.943'/ 83°13.519'	X	2:35:00	0.40	
444	442	CTD191	CTD	63°42.080'/ 83°14.609'	70.50	3:15:00	19-08-27	03:17:00	X	63°42.071'/ 83°14.700'	X	3:20:00	0.40	
445	443	CTD192	CTD	63°47.169'/ 83°15.454'	55.9	4:02:00	19-08-27	04:03:00	X	63°47.175'/ 83°15.497'	X	4:06:00	0.40	
446	444	CTD193	CTD	63°49.351'/ 83°16.140'	51.7	4:24:00	19-08-27	04:25:00	X	63°49.367'/ 83°16.163'	X	4:28:00	0.40	
447	445	STN26	ROS	63°49.216'/ 83°15.966'	49	7:21:00	19-08-27	07:28:00	X	63°49.311'/ 83°15.969'	X	7:42:00	0.40	
448	446	STN26	PHN	63°49.434'/ 83°16.358'	48.4	7:51:00	19-08-27	07:53:00	X	63°49.445'/ 83°16.379'	X	8:00:00	0.40	touched bottom
449	447	STN26	WP2	63°49.506'/ 83°66.571'	49	8:11:00	19-08-27	08:13:00	X	63°49.519'/ 83°16.600'	X	8:16:00	0.80	
450	448	STN26	PON1	63°49.571'/ 83°16.700'	48.4	8:22:00	19-08-27	08:24:00	X	63°49.577'/ 83°16.712'	X	8:26:00	0.40	empty
451	449	STN26	PON2	63°49.585'/ 83°16.747'	48.8	8:27:00	19-08-27	08:28:00	X	63°49.587'/ 83°16.762'	X	8:29:00	0.40	sediment
452	450	STN26	BOX	63°49.611'/ 83°16.860'	49.8	8:34:00	19-08-27	08:35:00	X	63°49/612' /83°16.867'	X	8:36:00	0.40	
453	451	STN26	PON3	63°49.638'/ 83°16.996'	51.2	8:48:00	19-08-27	08:49:00	X	63°49.640'/ 83°17.013'	X	8:50:00	0.40	Did not trigger
454	452	STN26	PON4	63°49.644'/ 83°17.031'	51.2	8:51:00	19-08-27	08:52:00	X	63°49.648'/ 83°17.047'	X	8:53:00	0.40	did not trigger
455	453	STN26	PON5	63°49.652'/ 83°17.079'	50.5	8:54:00	19-08-27	08:55:00	X	63°49.655'/ 83°17.115'	X	8:58:00	0.40	did not trigger
456	454	STN26	PON6	63°49.662'/ 83°17.141'	50.6	9:00:00	19-08-27	09:01:00	X	63°49.666'/ 83°17.159'	X	9:02:00	0.40	
457	455	STN26	BON	63°49.701'/ 83°16.633'	52.8	9:33:00	19-08-27	09:34:00	X	63°49.309'/ 83°15.960'	X	9:49:00	1.90	coordinates bottom - surface coordinates
458	456	STN26	PON7	63°49.252'/ 83°15.846'	51.3	9:56:00	19-08-27	09:58:00	X	63°49.252'/ 83°15.873'	X	9:59:00	0.60	did not trigger

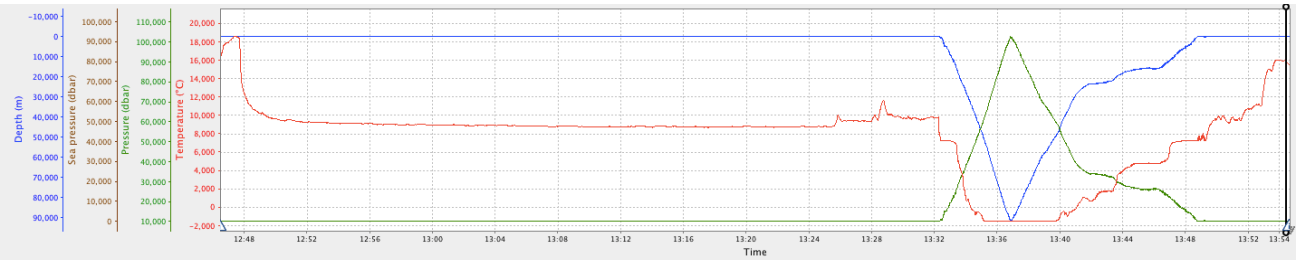
459	457	STN26	PON8	63°49.254'/ 83°15.905'	51.9	10:00:00	19-08-27	10:01:00	X		63°49.252'/ 83°15.924'	X	10:02:00	0.60	did not trigger
460	458	STN26	BMT	63°49.304'/ 83°16.592'	53	10:54:00	19-08-27	10:57:00		10:57:00	63°49.330'/ 83°16.304'	11:11:00	11:15:00	1.40	
461	459	STN26	MWT	63°49.825'/ 83°15.542'	49.8	11:35:00	19-08-27	11:38:00		11:38:00	63°49.916'/ 83°15.584'	11:51:00	11:53:00	2.10	
462	460	CTD194	CTD	63°51.988'/ 83°16.627'	48.4	12:40:00	19-08-27	12:41:00	X		63°51.996'/ 83°16.688'	X	12:43:00	0.80	
463	461	CTD195	CTD	63°56.986'/ 83°17.443'	32.2	13:49:00	19-08-27	13:50:00	X		63°56.991'/ 83°17.473'	X	13:51:00	0.80	
464	462	CTD196	CTD	64°01.941'/ 83°18.078'	31.8	14:47:00	19-08-27	14:48:00	X		64°01.950'/ 83°18.118'	X	14:49:00	0.80	
465	463	CTD197	CTD	64°03.789'/ 83°15.372'	29.1	15:10:00	19-08-27	15:11:00	X		64°03.795'/ 83°15.394'	X	15:12:00	0.40	
466	464	CTD198	CTD	64°05.265'/ 83°11.836'	20	15:34:00	19-08-27	15:35:00	X		64°05.271'/ 83°11.879'	X	15:36:00	1.40	
467	465	CTD199	CTD	64°07.856'/ 83°08.712'	8.3	11:30:00	19-08-28	11:30:00	X		64°07.857'/ 83°08.712'	X	11:31:00	Anchor	

Appendix: Phyto Net Log

Date: 06-08-2019

- **SIMEP19-STN3**

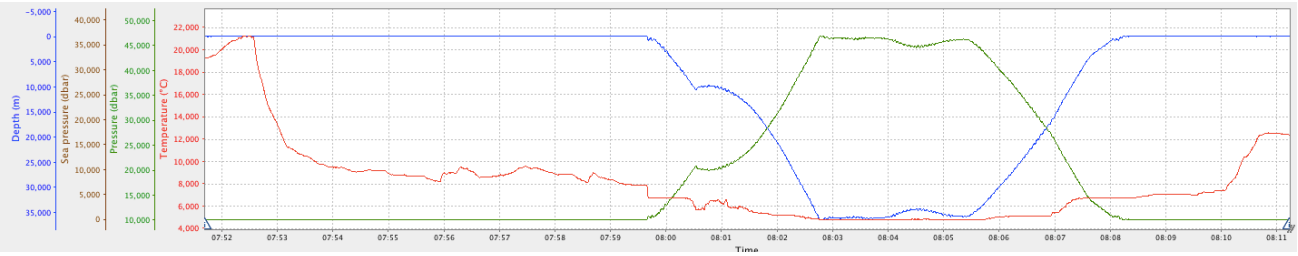
Type: <u>Phytoplankton net (vertical)</u>
Deployment time: 12:32 pm
Coordinates deployment: 63°31.346'N, 82°14.847'W
Depth: 97 m
Time bottom: 12:37 pm
Coordinates bottom: 63°31.395'N, 82°15.213'W
Time surface: 12:48 pm
Speed up: 10m/min



Date: 08-08-2019

- **SIMEP19-STN5**

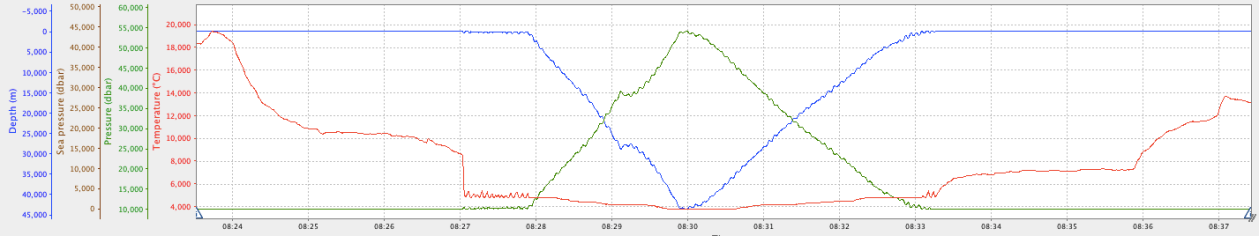
Type: <u>Phytoplankton net (vertical)</u>
Deployment time: 6:59 am
Coordinates deployment: 63°14.170'N, 83°43.060'W
Depth: 38.9 m
Time bottom: 7:02 am
Coordinates bottom: 63°14.170'N, 83°43.058'W
Time surface: 7:08 am
Speed up: 10m/min



Date: 09-08-2019

- **SIMEP19-STN6**

Type: Phytoplankton net (vertical)
Deployment time: 7:26 am
Coordinates deployment: 63°41.598'N, 87°26.648'W
Depth: 44.6 m
Time bottom: 7:30 am
Coordinates bottom: 63°41.598'N, 87°26.648'W
Time surface: 7:32 am
Speed up: 10m/min



Date: 09-08-2019

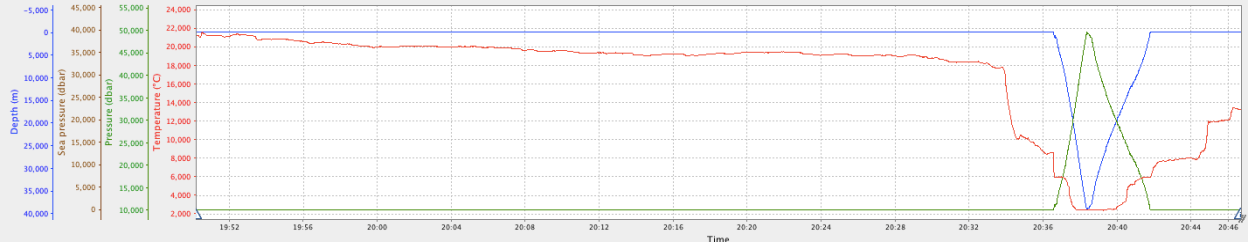
- **SIMEP19-STN7**

Type: Phytoplankton net (vertical)
Deployment time: 7:56 pm
Coordinates deployment: 63°42.826'N, 88°25.002'W
Depth: 115 m
Time bottom: 7:59 pm
Coordinates bottom: 63°42.840'N, 88°25.017'W
Time surface: 8:12 pm
Speed up: 10m/min

(RBR did not work)
Date: 10-08-2019

- **SIMEP19-STN8**

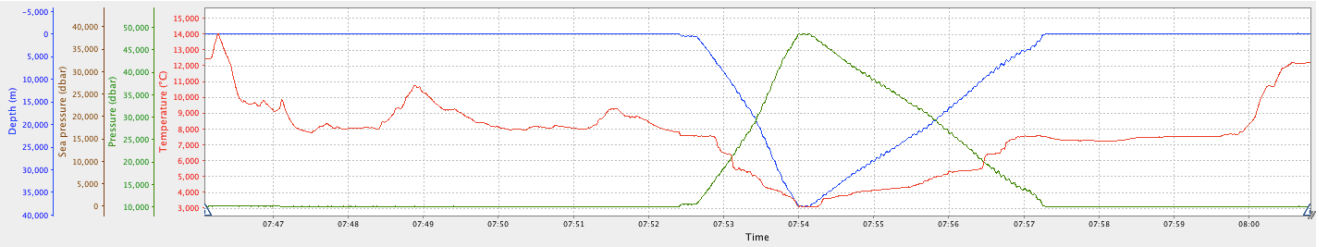
Type: Phytoplankton net (vertical)
Deployment time: 7:35 pm
Coordinates deployment: 63°20.376'N, 86°30.234'W
Depth: 40.6 m
Time bottom: 7:37 pm
Coordinates bottom: 64°20.392'N, 86°30.301'W
Time surface: 7:41 pm
Speed up: 10m/min



Date: 12-08-2019

- **SIMEP19-STN10**

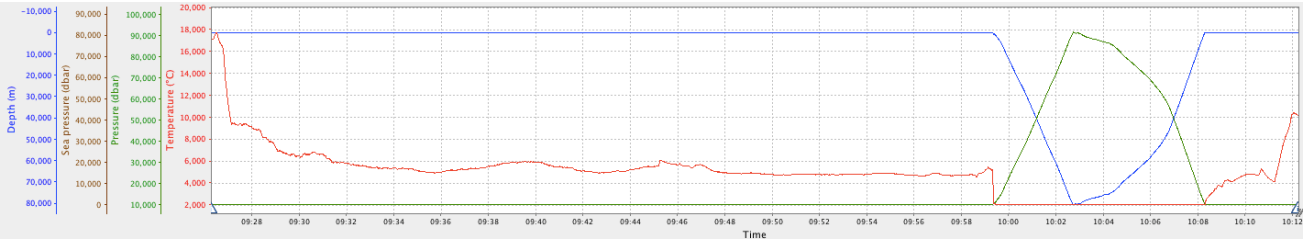
Type: Phytoplankton net (vertical)
Deployment time: 6:52 am
Coordinates deployment: 64°58.227'N, 86°15.914'W
Depth: 36.8 m
Time bottom: 6:55 am
Coordinates bottom: 64°58.229'N, 86°15.910'W
Time surface: 6:57 am
Speed up: 10m/min



Date: 13-08-2019

- **SIMEP19-STN12**

Type: Phytoplankton net (vertical)
Deployment time: 6:52 am
Coordinates deployment: 64°58.227'N, 86°15.914'W
Depth: 83.7 m
Time bottom: 6:55 am
Coordinates bottom: 65°56.196'N, 85°42.974'W
Time surface: 6:57 am
Speed up: 10m/min

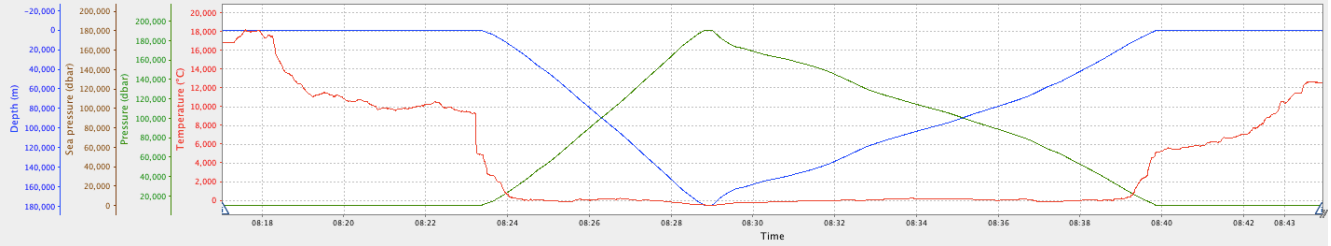


Date: 14-08-2019

- **SIMEP19-STN13**

Type: Phytoplankton net (vertical)

Deployment time: 7:23 am
Coordinates deployment: 66°18.851'N, 86°05.486'W
Depth: 184 m
Time bottom: 7:29 am
Coordinates bottom: 66°18.831'N, 86°05.508'W
Time surface: 7:39 am
Speed up: 10m/min



Date: 17-08-2019

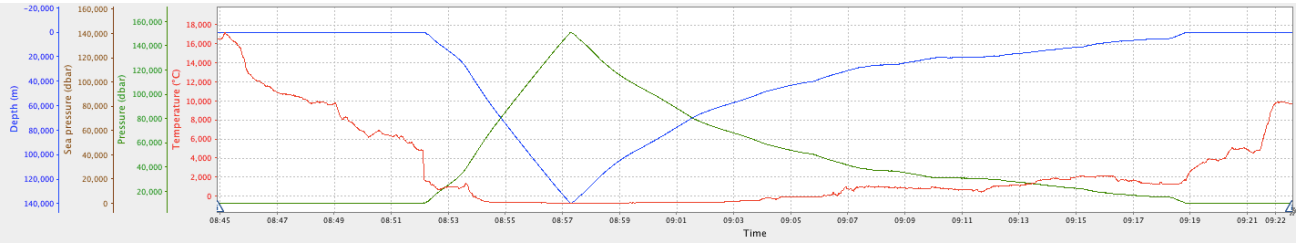
- **SIMEP19-STN14**

Type: <u>Phytoplankton net (vertical)</u>
Deployment time: 10:30 am
Coordinates deployment: 65°55.664'N, 84°39.903'W
Depth: 266 m
Time bottom: 10:42 am
Coordinates bottom: 65°55.587'N, 84°39.877'W
Time surface: 11:07 am
Speed up: 10m/min

(RBR did not work)
Date: 18-08-2019

- **SIMEP19-STN15**

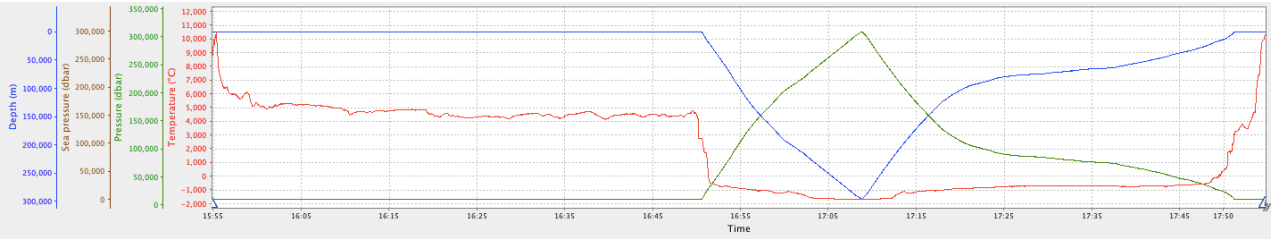
Type: <u>Phytoplankton net (vertical)</u>
Deployment time: 7:52 am
Coordinates deployment: 65°30.014'N, 84°26.862'W
Depth: 200 m
Time bottom: 7:57 am
Coordinates bottom: 65°29.997'N, 84°27.036'W
Time surface: 8:18 am
Speed up: 10m/min



Date: 19-08-2019

- **SIMEP19-STN16**

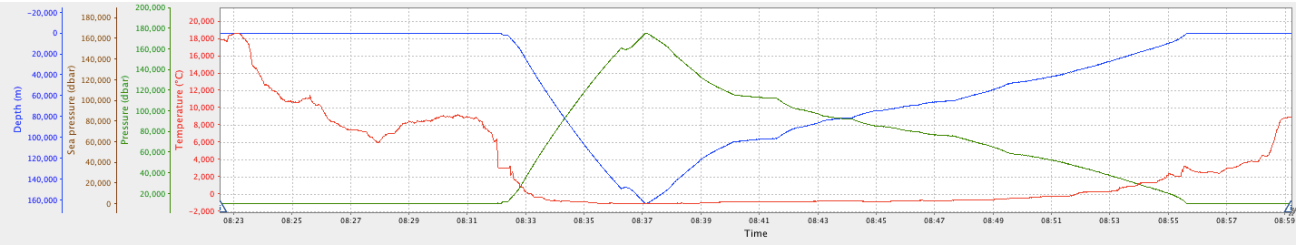
Type: Phytoplankton net (vertical)
Deployment time: 15:50
Coordinates deployment: 65°06.212'N, 83°09.173'W
Depth: 330 m
Time bottom: 16:09
Coordinates bottom: 65°06.136'N, 83°09.372'W
Time surface: 16:51
Speed up: 10m/min



Date: 20-08-2019

- **SIMEP19-STN17**

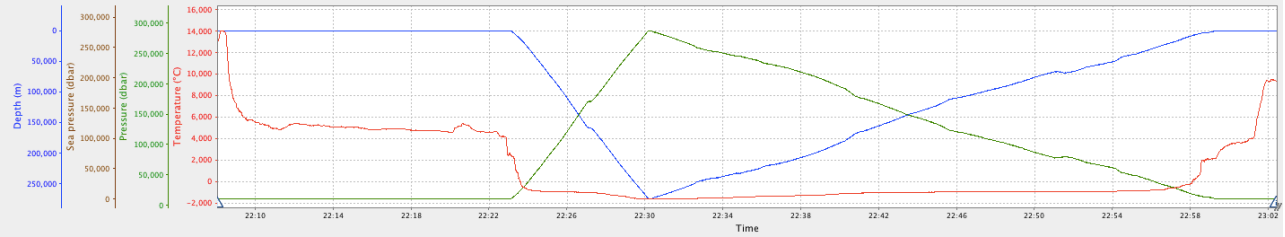
Type: Phytoplankton net (vertical)
Deployment time: 7:31
Coordinates deployment: 64°54.613'N, 82°54.700'W
Depth: 168 m
Time bottom: 7:37
Coordinates bottom: 64°54.524'N, 82°58.424'W
Time surface: 7:55
Speed up: 10m/min



Date: 20-08-2019

- **SIMEP19-STN18**

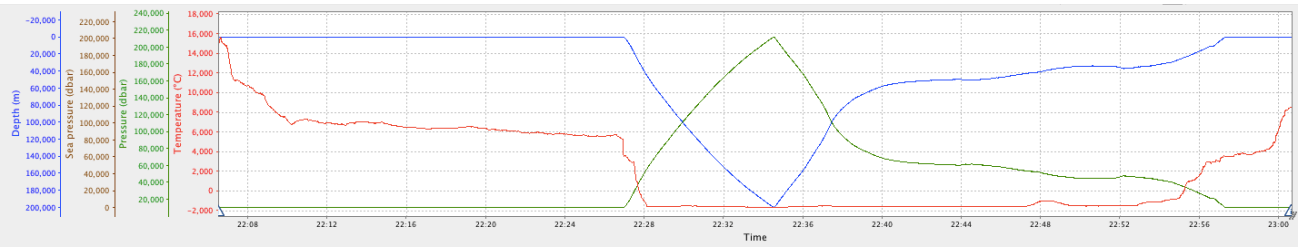
Type: Phytoplankton net (vertical)
Deployment time: 21:23
Coordinates deployment: 64°30.790'N, 81°54.700'W
Depth: 298 m
Time bottom: 7:37
Coordinates bottom: 64°30.681'N, 81°12.699'W
Time surface: 7:55
Speed up: 10m/min



Date: 20-08-2019

- **SIMEP19-STN19**

Type: Phytoplankton net (vertical)
Deployment time: 21:27
Coordinates deployment: 63°56.414'N, 79°42.172'W
Depth: 325 m
Time bottom: 21:34
Coordinates bottom: 63°56.181'N, 79°42.060'W
Time surface: 21:57
Speed up: 10m/min



Date: 23-08-2019

- **SIMEP19-STNLP**

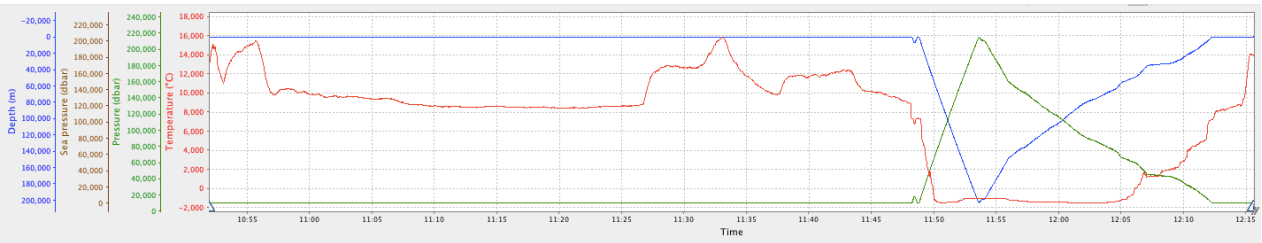
Type: Phytoplankton net (vertical)
Deployment time: 13:38
Coordinates deployment: 63°28.742'N, 80°51.702'W
Depth: 33 m
Time bottom: 13:39
Coordinates bottom: 63°28.770'N, 80°51.718'W
Time surface: 13:42
Speed up: 10m/min
(no RBR)

Date: 24-08-2019

- **SIMEP19-STN22**

Type: Phytoplankton net (vertical)
Deployment time: 10:48
Coordinates deployment: 63°07.091'N, 81°56.877'W
Depth: 216 m
Time bottom: 10:50

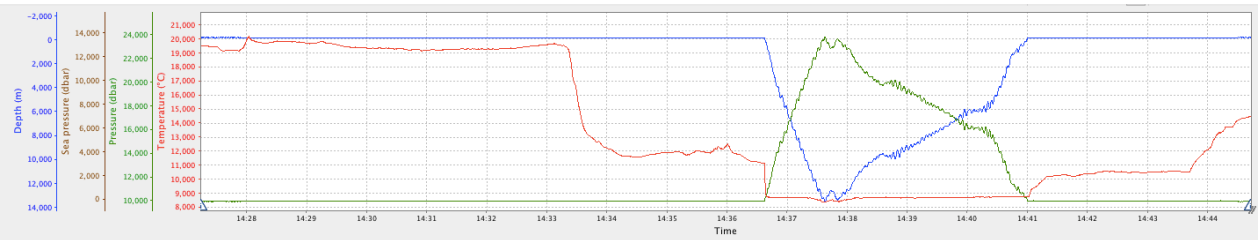
Coordinates bottom: 63°07.067’N, 81°56.701’W
Time surface: 11:12 am
Speed up: 10m/min



Date: 24-08-2019

- **SIMEP19-STN24**

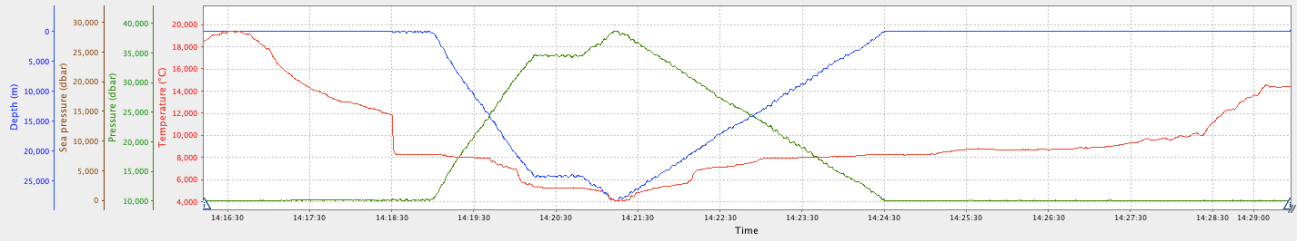
Type: <u>Phytoplankton net (vertical)</u>
Deployment time: 13:35
Coordinates deployment: 62°54.106’N, 83°32.087’W
Depth: 35.5 m
Time bottom: 13:37
Coordinates bottom: 62°54.141’N, 83°32.087’W
Time surface: 13:41 am
Speed up: 10m/min



Date: 26-08-2019

- **SIMEP19-STN25**

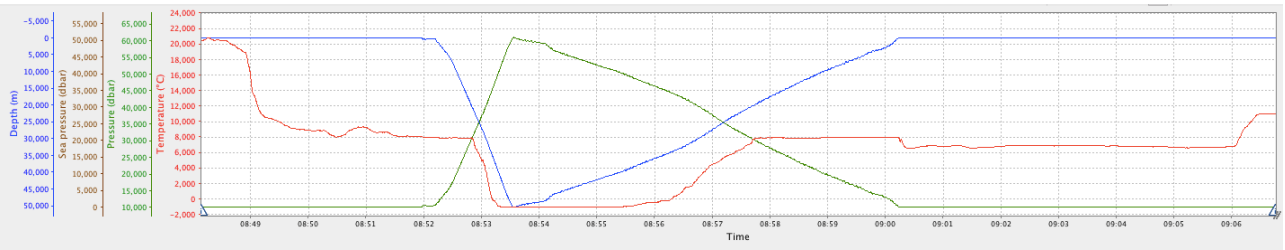
Type: <u>Phytoplankton net (vertical)</u>
Deployment time: 13:16
Coordinates deployment: 63°29.268’N, 84°08.901’W
Depth: 28 m
Time bottom: 13:18
Coordinates bottom: 63°29.260’N, 84°08.786’W
Time surface: 13:21 am
Speed up: 10m/min



Date: 27-08-2019

- **SIMEP19-STN26**

Type: Phytoplankton net (vertical)
Deployment time: 7:51
Coordinates deployment: 63°49.434'N, 83°16.358'W
Depth: 48.4 m
Time bottom: 7:53
Coordinates bottom: 63°49.445'N, 83°16.379'W
Time surface: 8:00
Speed up: 10m/min



Appendix: Sediment stations

Date: 07-08-2019

- **SIMEP19-STN4**

Type: Box Core
Location: Evans Strait
Deployment time: 11:05; 11:22; 11:43; 11:48 am
Coordinates deployment:
BC1: 63°09.802'N, 81°57.312'W;
BC2: **63°09.846'N, 82°05.008'W;**
BC3: 63°09.845'N, 82°05.327'W;
BC4**: 63°07.705'N, 81°58.077'W**
Depth: 216; **217**; 219; **218** m
Time bottom: 11:11; **11:24**; 11:45; **11:50** am
Coordinates bottom:
BC1: 63°09,811'N¬82°04,819'W;
BC2**: 63°07,683'N¬81°57,646'W;**
BC3: 63°07,872'N¬81°57,987'W;
BC4**: 63°07,716'N¬81°58,129'W**
Time surface: 11:16; **11:27;** 11:47; **11:54** am
Apparent penetration: ~5 cm
Comments: 4 attempts; gravel, rocks and some sediment
Surface samples (N=3)

Date: 09-08-2019

- **SIMEP19-STN7**

Type: Box Core
Location: Entrance Roes Welcome Sound
Deployment time: 9:06; 9:16; 9:27: 9:39; 9:43 pm
Coordinates deployment:
BC0: 63°43.035'N, 88°25.502'W;
BC1: 63°42.808'N, 88°25.039'W;
BC2: 63°42.851'N, 88°25.177'W;
BC3: 63°42.762'N, 88°25.313'W
BC4: 63°42.894'N, 88°25.393'W;
Depth: 115; 117; 120; 119; 118 m
Time bottom: 9:07; 9:19; 9:28; 9:39; 9:44 pm
Coordinates bottom:
BC0: 63°43,036'N¬88°25,512'W;
BC1: 63°42,813'N¬88°25,074'W;
BC2: 63°42,854'N¬88°25,188'W;
BC3: 63°42,765'N¬88°25,329'W;
BC4: 63°42,898'N¬88°25,413'W
Time surface: 9:08; 9:20; 9:29; 9:40; 9:46 pm
Surface samples (N=4)

Date: 12-08-2019

- **SIMEP19-STN10**

Type: Box Core
Location: Center Roes Welcome Sound
Deployment time: 7:53 am
Coordinates deployment: 64°58.229'N, 86°15.909'W;
Depth: 36 m
Time bottom: 7:53 am
Coordinates bottom: 64°58,228'N¬86°15,911'W;
Time surface: 7:54 am
Apparent penetration: ~5 cm
Surface samples (N=1)

- **SIMEP19-STN11**

Type: Box Core
Location: Center Roes Welcome Sound
Deployment time: 2:35; 2:42; 2:55; 3:00 pm
Coordinates deployment:
BC1: 64°59,806'N¬86°32,502'W;
BC2: 64°59,789'N¬86°32,411'W;
BC3: 64°59,777'N¬86°52,300'W;
BC4: 64°59,786'N¬86°32,223'W;
Depth: 98; 97.9; 91; 90 m
Time bottom: 2:37; 2:44; 2:56; 3:01 pm
Coordinates bottom:
BC1: 64°59,800'N¬86°32,471'W;
BC2: 64°59,788'N¬86°32,397'W;
BC3: 64°59,776'N¬86°32,289'W;
BC4: 64°59,766'N¬86°32,204'W;
Time surface: 2:39; 2:45; 2:57; 3:02 pm
Surface samples (N=3)

Date: 13-08-2019

- **SIMEP19-STN13**

Type: Box Core
Location: Repulse Bay
Deployment time: 9:14; 9:32; 10:00; 10:50; 11:29 am
Coordinates deployment:
BC1: 66°18,155'N¬86°05,794'W;
BC2: 66°18,038'N¬86°05,885'W;
BC3: 66°17,863'N¬86°06,036'W;
BC4: 66°17,511'N¬86°06,366'W;
BC5: 66°17,198'N¬86°06,743'W;
Depth: 194; 195; 195; 197; 201 m
Time bottom: 9:16; 9:33; 10:00; 10:51; 11:30 pm
Coordinates bottom:
BC1: 66°18,140'N¬86°05,805'W;
BC2: 66°18,023'N¬86°05,894'W;
BC3: 66°17,852'N¬86°06,047'W;
BC4: 66°17,497'N¬86°06,378'W;
BC5: 66°17,187'N¬86°06,757'W;
Time surface: 9:19; 9:43; 10:09; 10:59; 11:38 am
Surface samples (N=5)
Push cores (N=3) from BC3, BC4 and BC5

BC3: 19.5 cm

0-3 cm	– Light brown-green
3-4 cm	– Dark spots (high OM), but same matrix
5-6 cm	– Dark spots less prominent
6-7 cm	– Darker and denser
7-8 cm	– Sticky
10-11 cm	– Very dense

BC4: 12.5 cm

0-4 cm	– Light brown-green
4-5 cm	– Dark spots (high OM), but same matrix
5-7 cm	– Darker and denser
>7 cm	– Very dense and sticky

BC5: 16.5 cm

4-5 cm – Becomes darker and denser
(see also description from other two push cores)

Type: Gravity Core
Location: Repulse Bay
Deployment time: 12:21; 1:35 pm
Coordinates deployment:
GC1: 66°16,907'N¬86°07,192'W;
GC2: 66°16,562'N¬86°07,948'W;
Depth: 205; 208 m
Time bottom: 12:23; 1:36 pm
Coordinates bottom:
GC1: 66°16,891'N¬86°07,213'W;
GC2: 66°16,561'N¬86°07,963'W;
Time surface: 12:26; 1:39 pm

GC1: 75 cm
Lost the upper 4 cm
Water until ~45 cm
*Core catcher (bulk bottom)

GC2: 74 cm
Lost the upper 4 cm
Verify depth labelling (missed one bag) → 16-17 cm skipped
* Core catcher (bulk bottom)

Gravity cores (N=2) + core catchers (bottom)

Date: 19-08-2019

- **SIMEP19-STN14B**

Type: Box Core
Location: Frozen Strait
Deployment time: 20:34; 20:51
Coordinates deployment:
BC1: 65°46,118'N¬84°85,348'W;
BC2: 65°45,832'N¬84°25,146'W;
Depth: 430; 415 m
Time bottom: 20:38; 20:55
Coordinates bottom:
BC1: 65°45,337'N¬84°25,213'W;
BC2: 65°45,770'N¬84°25,116'W;
Surface samples (N=2)

Date: 18-08-2019

- **SIMEP19-STN15**

Type: Box Core
Location: Frozen Strait
Deployment time: 9:37; 9:49; 9:59 am
Coordinates deployment:
BC1: 65°30,028'N¬84°26,690'W;
BC2: 65°30,098'N¬84°26,864'W;
BC3: 65°30,202'N¬84°27,017'W;
Depth: 207; 206; 200 m
Time bottom: 9:39; 9:50; 10:01 am
Coordinates bottom:
BC1: 65°30,033'N¬84°26,742'W;
BC2: 65°30,116'N¬84°26,891'W;
BC3: 65°30,225'N¬84°27,050'W;
Time surface: 9:44; 9:54; 10:04 am
Surface samples (N=3)

Type: Gravity Core
Location: Frozen Strait
Deployment time: 11:06; 11:38 am
Coordinates deployment:
BC1: 65°29,963'N¬84°26,804'W;
BC2: 65°30,061'N¬84°27,215'W;
Depth: 201; 195 m
Time bottom: 11:07; 11:40 am
Coordinates bottom:
BC1: 65°29,976'N¬84°26,819'W;
BC2: 65°30,081'N¬84°27,262'W;
Time surface: 11:15; 11:42 am

GC1: 21 cm
0-1 cm – Bioturbated
1-2 cm – 1 large pebble

11-12 cm – Shell fragments
12-13 cm – Shell fragments
13-14 cm – Large shell fragment

GC2: 23 cm
0-1 cm – Large pebbles
2-3 cm – Large pebbles
3-4 cm – Large pebbles
7-8 cm – Large pebbles
8-9 cm – Shell fragments
13-14 cm – Shell fragments
18-19 cm – Organic, black varves

Gravity cores (N=2)

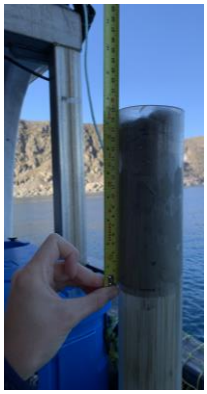
Date: 19-08-2019

- **SIMEP19-STN16**

Type: Box Core
Location: Foxe Basin – Marginal ice zone
Deployment time: 11:22; 12:03 am; 12:15 pm
Coordinates deployment:
BC1: 65°06,525'N¬83°07,478'W;
BC2: 65°06,611'N¬83°09,249'W;
BC3: 65°06,692'N¬83°09,811'W;
Depth: 322; 318; 320 m
Time bottom: 11:24 am; 12:05; 12:14 pm
Coordinates bottom:
BC1: 65°06,522'N¬83°07,594'W;
BC2: 65°06,613'N¬83°09,429'W;
BC3: 65°06,719'N¬83°09,852'W;
Time surface: 11:28 am; 12:09; 12:25 pm

BC1: 15 cm
5-6.5 cm – Verify depth (one of the pegs came out)
6.5-7 cm – Verify depth (one of the pegs came out)
6.5-7 cm – Large pebble
8-9 cm – Large pebble

BC2: 18 cm
(see description two other push cores)



BC3: 18 cm
4-5 cm – Light-brown stopped
8-9 cm – possible shell fragment
9-10 cm – Woody fragment, pulled out
10-11 cm – Woody fragment, too small to pull out
12-13 cm – Big shell

Surface samples (N=3) and push cores (N=3)

Type: Gravity Core
Location: Foxe Basin – Marginal ice zone
Deployment time: 8:04; 9:00 pm
Coordinates deployment:
GC1: 65°06,484'N¬83°07,037'W;
GC2: 65°06,477'N¬83°08,007'W;
Depth: 321-310 m
Time bottom: 8:06; 8:02 pm
Coordinates bottom:
GC1: 65°06,495'N¬83°08,054'W;
BC2: 65°06,491'N¬83°08,094'W;
Time surface: 20:24; 21:04 pm

GC1: 55 cm
4-5 cm – 1 large pebble

7-8 cm – 1 large pebble
11-12 cm – 1 large pebble
13-14 cm – 1 large pebble
15-16 cm – 1 large pebble
22-23 cm – 2 large pebbles; high organic matter
23-24 cm – 1 large pebble
30-31 cm – 1 large pebble
33-34 cm – 1 small pebble
34-35 cm – 1 large rock
35-36 cm – 1 large rock
36-37 cm – 2 large pebbles
37-38 cm – 3 large pebbles
38-39 cm – dropped on desk; recovered intact
39-40 cm – 1 large rock
<2 cm that crossed over to 40-41 cm
41-42 cm – 1 large pebble
42-43 cm – 1 small pebble
43-44 cm – 1 small pebble
47-48 cm – 1 few small pebbles
49-50 cm – 1 few small pebbles

GC3: 19 cm
4-5 cm – Light-brown stopped
8-9 cm – possible shell fragment
9-10 cm – Woody fragment, pulled out
10-11 cm – Woody fragment, too small to pull out
12-13 cm – Big shell

Date: 20-08-2019

- **SIMEP19-STN17**

Type: Box Core
Location: Foxe Basin; Nearshore
Deployment time: 9:52 am
Coordinates deployment: 64°55,961'N¬82°59,035'W;
Depth: 167 m
Time bottom: 9:53 am
Coordinates bottom: 64°54,944'N¬82°58,973'W;
Time surface: 9:55 am

- **SIMEP19-STN18**

Type: Box Core
Location: Near East Bay
Deployment time: 23:06; 23:23; 23:35

Coordinates deployment:
BC1: 64°30,868'N¬81°13,859'W;
BC2: 64°30,670'N¬81°13,607'W;
BC3: 64°30,574'N¬81°13,445'W;
Depth: 299; 299; 299 m
Time bottom: 23:09; 23:27; 23:38
Coordinates bottom:
BC1: 64°30,828'N¬81°13,808'W;
BC2: 64°30,634'N¬81°13,564'W;
BC3: 64°30,514'N¬81°13,373'W;
Time surface: 23:12; 23:31; 23:42

Date: 21-08-2019

- **SIMEP19-STNEB**

Type: Box Core
Location: Near East Bay – Terror Point
Deployment time: 7:08; 8:58; 9:59
Coordinates deployment:
BC1: 64°01,297'N¬81°00,124'W;
BC2: 64°03,360'N¬81°04,778'W;
BC3: 64°03,892'N¬81°04,685'W;
BC4: 64°03,365'N¬81°04,773'W;
Depth: 30; 76.8; 76.8; 76.7 m
Time bottom: 7:09; 8:59; 9:10; 10:01
Coordinates bottom:
BC1: 64°01,295'N¬81°00,119'W;
BC2: 64°03,368'N¬81°04,778'W;
BC3: 64°03,328'N¬81°04,676'W;
BC4: 64°03,364'N¬81°04,784'W;
Time surface: 7:10; 9:01; 9:12; 10:02
Surface samples (N=4) and push cores (N=2)

BC3: 15.5 cm

BC4: 5 cm

Type: Gravity Core
Location: Near East Bay – Terror Point
Deployment time: 10:43; 11:12
Coordinates deployment:
GC1: 64°03,364'N¬81°04,310'W;
GC2: 64°03,368'N¬81°04,820'W;
Depth: 77.2; 77.2 m
Time bottom: 10:44; 11:14
Coordinates bottom:
GC1: 64°03,348'N¬81°04,699'W;
GC2: 64°03,374'N¬81°04,835'W;
Time surface: 10:46; 11:18

Gravity cores (N=2)

GC1: 66 cm

8-9 cm	– Shell fragment
*18-19 cm	– Shell fragment
19-20 cm	– Shell fragment
30-31 cm	– Shell fragment
36-37 cm	– Shell fragment
39-40 cm	– Shell fragment
48-49 cm	– Shell fragment
52-52 cm	– Shell fragment
*56-57 cm	– Shell fragment
57-58 cm	– Shell fragment
62-63 cm	– Shell fragment

* Sampled

GC2: 50 cm

12-13 cm	– Small shell fragment
15-17 cm	– Large rock (removed)
19-20 cm	– Small shell fragments
22-23 cm	– Shell fragments
23-24 cm	– Shell fragments
26-27 cm	– Lots of big shell fragments
28-29 cm	– Lots of big shell fragments
29-30 cm	– Lots of big shell fragments
30-31 cm	– Lots of big shell fragments
33-34 cm	– Large shell fragments
34-35 cm	– Large shell fragments
36-37 cm	– Shell bagged separate
37-38 cm	– Large shell fragments
38-39 cm	– Small shell fragments
40-41 cm	– Small shell fragments
41-42 cm	– Shell fragments
42-43 cm	– Shell fragments
43-44 cm	– Shell fragments
44-45 cm	– Shell fragments
45-46 cm	– Shell fragments

- **SIMEP19-STN19**

Type: Box Core
Location: Northeast Island
Deployment time: 23:25; 23:40; 23:59
Coordinates deployment:
BC1: 63°56,880'N¬79°41,995'W;
BC2: 63°56,712'N¬79°42,040'W;
BC3: 63°57,016'N¬79°42,070'W;
Depth: 324; 327; 326 m
Time bottom: 23:27; 23:43; 00:02
Coordinates bottom:
BC1: 63°56,861'N¬79°42,040'W;
BC2: 63°56,683'N¬79°42,024'W;
BC3: 63°57,014'N¬79°42,121'W;
Time surface: 23:32; 23:47; 00:05
Surface samples (N=3)

Date: 22-08-2019

- **SIMEP19-STN20**

Type: Box Core
Location: Northeast Island
Deployment time: 18:09; 18:22
Coordinates deployment:
BC1: 63°47,523'N¬80°05,257'W;
BC2: 63°47,580'N¬80°05,067'W;
Depth: 162; 161 m
Time bottom: 18:10; 18:24
Coordinates bottom:
BC1: 63°47,533'N¬80°05,236'W;
BC2: 63°47,595'N¬80°05,033'W;
Time surface: 18:15; 18:29
Surface samples (N=2)

Date: 23-08-2019

- **SIMEP19-STNNS**

Type: Box Core
Location: Nottingham Strait
Deployment time: 4:03; 4:21
Coordinates deployment:
BC1: 63°26,240'N¬79°17,961'W;
BC2: 63°26,685'N¬19°17,706'W;
Depth: 217; 220 m
Time bottom: 4:06; 4:24
Coordinates bottom:
BC1: 63°26,254'N¬79°17,948'W;
BC2: 63°26,689'N¬79°17,751'W;
Time surface: 4:05; 4:23
Surface samples (N=2)

- **SIMEP19-STNNS2**

Type: Box Core
Location: Nottingham Strait
Deployment time: 5:21
Coordinates deployment: 63°27,218'N¬79°26,530'W;
Depth: 204 m
Time bottom: 5:23
Coordinates bottom: 63°27,225'N¬79°26,511'W;
Time surface: 5:28
Surface samples (N=1)
Type: Gravity Core
Location: Nottingham Strait
Deployment time: 5:25; 5:52
Coordinates deployment:
GC1: 63°27,315'N¬79°26,328'W;
GC2: 63°27,335'N¬79°26,396'W;
Depth: 205; 200 m
Time bottom: 5:37; 5:56
Coordinates bottom:
GC1: 63°27,324'N¬79°26,308'W;
GC2: 63°27,352'N¬79°26,370'W;
Time surface: 5:40-5:58

GC1 : 66 cm

21-22 cm	– Large shell fragments
*23-24 cm	– Large shell fragments
27-28 cm	– Possible shell fragments
29-30 cm	– Possible shell fragments
30-31 cm	– Possible shell fragments
*31-32 cm	– Large shell fragments
*32-33 cm	– Large shell fragments
33-34 cm	–Shell fragments
38-39 cm	–Shell fragments
44-45 cm	–Shell fragments
*45-46 cm	–Shell fragments
51-52 cm	–Shell fragments
*54-55 cm	–Shell fragments
55-56 cm	–Shell fragments
56-57 cm	–Shell fragments
62-63 cm	–Very low water content / highly consolidated

GC2: 57 cm

0-2 cm	– Rocks/small pebbles
*7-9 cm	– Large rock and shell fragments (bagged separate)

9-10 cm – Lots of shell fragments
10-11 cm – Lots of shell fragments
11-12 cm – Large shell fragments
*11-13 cm – Shell fragments (bagged separate)
12-13cm – Shell fragments
35-37 cm cm – Large rock
39-40 cm –Shell fragments
50-51 cm – Rock

- **SIMEP19-STNLP**

Type: Box Core
Location: Nottingham Strait – Leyson Point
Deployment time: 11:59
Coordinates deployment: 63°27,281'N¬80°46,775'W;
Depth: 67 m
Time bottom: 12:00
Coordinates bottom: 63°27,296'N¬80°46,731'W;
Time surface: 12:02
Surface samples (N=1)

- **SIMEP19-STNCN**

Type: Box Core
Location: Cape Netcher
Deployment time: 18:01
Coordinates deployment: 62°57,948'N¬84°10,832'W;
Depth: 127 m
Time bottom: 18:02
Coordinates bottom: 63°57,942'N¬84°10,812'W;
Time surface: 18:04
Surface samples (N=1)

Date: 26-08-2019

- **SIMEP19-STN25**

Type: Box Core
Location: Bear Cove – South Southampton Island
Deployment time: 13:54
Coordinates deployment: 63°29,200'N¬84°09,215'W;
Depth: 27 m
Time bottom: 13:54
Coordinates bottom: 63°29,197'N¬84°09,223'W;
Time surface: 13:55
Surface samples (N=1) – ca. 0-2 cm

- **SIMEP19-STNWI2**

Type: Box Core
Location: Fisher Strait – North Walrus Island

Deployment time: 22:21
Coordinates deployment: 63°19,044'N¬83°32,953'W;
Depth: 112 m
Time bottom: 22:22
Coordinates bottom: 63°19,035'N¬83°32,971'W;
Time surface: 22:24
Surface samples (N=1)

- **SIMEP19-STNWI3**

Type: Box Core
Location: Fisher Strait – North Walrus Island
Deployment time: 23:31
Coordinates deployment: 63°22,372'N¬83°24,154'W;
Depth: 110 m
Time bottom: 23:32
Coordinates bottom: 63°22,365'N¬83°24,176'W;
Time surface: 23:34
Surface samples (N=2.5)

Date: 27-08-2019

- **SIMEP19-STN26**

Type: Ponar
Location: Entrance Bay to Coral Harbour – South Southampton Island
Deployment time: 8:22
Coordinates deployment: 63°49,571'N¬83°16,700'W;
Depth: 48.7 m
Time bottom: 8:28
Coordinates bottom: 63°49,587'N¬83°16,762'W;
Time surface: 8:29
Surface samples (N=1) – Bulk ponar (0-2 cm)

Sediment Logbook:

EVENT#	STATION	EVENT CODE	COORDINATES DEPLOYMENT	WATER DEPTH (m)	TIME BE	DATE	TIME BO	COORDINATES BOTTOM	TIME EN	COMMENTS
21	STN	PON	63°31.010'/82°13.332'	99,4	16:26:00					abandoned
22	STN	PON	63°32.678'/82°16.041'	100	16:46:00	19-08-06	16:49:00	63°31.166'/82°16.228'	16:51:00	no sediment
23	STN	BOX	63°31.116'/82°12.757'	97,4	17:10:00	19-08-06	17:11:00	63°31.138'/82°12.848'	17:13:00	no sediment
35	STN	BOX1	63°09.802'/81°57.312	216	11:05:00	19-08-07	11:11:00	63°09.811'/82°04.819'	11:16:00	not success
36	STN	BOX2	63°09.846'/82°05.008'	217	11:22:00	19-08-07	11:24:00	63°07.683'/81°57.646'	11:27:00	sample taken
37	STN	BOX3	63°09.845'/82°05.347'	219	11:43:00	19-08-07	11:45:00	63°07.672'/81°57.987'	11:47:00	rocks in corer
38	STN	BOX4	63°07.705'/81°58.077'	218	11:48:00	19-08-07	11:50:00	63°07.716'/81°58.129'	11:54:00	sample taken
45	STN	PON	63°14.141'/85°44.559'	42,9	9:20:00	19-08-08	09:21:00	63°14.139'/85°44.594'	9:22:00	rocks
46	STN	PON	63°14.125'/85°44.725'	45,8	9:25:00	19-08-08	09:26:00	63°14.121'/85°44.767'	9:27:00	rocks
67	STN6	PON	63°41.221'/87°28.844'	44,6	7:54:00	19-08-09	07:56:00	63°42.222'/87°28.844'	not time entered	did not trigger
68	STN6	PON	63°42.222'/87°26.625'	44,1	7:56:00	19-08-09	07:57:00	63°41.600'/87°26.	7:59:00	did not trigger
69	STN6	PON	63°41.600'/87°26.	44,1	8:00:00	19-08-09	08:01:00	63°41.600'/87°26.620'	8:02:00	did not trigger
79	STN	PON	63°43.021'/88°25.362'	120	20:51:00	19-08-09	20:53:00	63°43.026'/88°25.386'	20:57:00	no sample
80	STN	BOX0	63°43.035'/88°25.502'	115	21:06:00	19-08-09	21:07:00	63°43.036'/88°25.512'	21:08:00	no sample
81	STN	BOX1	63°42.808'/88°25.039'	117	21:16:00	19-08-09	21:19:00	63°42.813'/88°25.074'	21:20:00	surface sample
82	STN	BOX2	63°42.851'/88°25.177'	120	21:27:00	19-08-09	21:28:00	63°42.854'/88°25.188'	21:29:00	surface sample
83	STN	BOX3	63°42.762'/88°25.313'	119	21:39:00	19-08-09	21:39:00	63°42.765'/88°25.329'	21:40:00	no sample
84	STN	BOX4	63°42.894'/88°25.393'	118	21:43:00	19-08-09	21:44:00	63°42.898'/88°25.413'	21:46:00	surface sample
89	STN	BOX5	63°42.239'/88°24.955'	119	1:13:00	19-08-10	01:14:00	63°42.231'/88°24.999'	1:16:00	no sample
90	STN	BOX6	63°42.189'/88°25.171'	120	1:19:00	19-08-10	01:20:00	63°42.176'/88°25.233'	1:22:00	surface sample
91	STN	BOX7		118	1:24:00	19-08-10	01:25:00	63°42.107'/88°25.520'	1:26:00	no sample
105	STN	PON	64°20.637'/86°31.268'	39,8	20:25:00	19-08-10	20:27:00	64°20.642'/86°31.281'	20:28:00	no sample
106	STN	PON	64°20.649'/86°31.329'	45,8	20:29:00	19-08-10	20:30:00	64°20.652'/86°31.345'	20:32:00	no sample
121	STN	PON	64°23.975'/86°43.580'	97,3	12:46:00	19-08-11	12:49:00	64°23.994'/86°43.615'	12:51:00	did not trigger
122	STN	PON	64°24.008'/86°43.664'	95,5	12:53:00	19-08-11	12:55:00	64°24.006'/86°43.680'	12:58:00	no sample
123	STN	PON	64°24.026'/86°43.718'	96,2	13:00:00	19-08-11	13:03:00	64°24.046'/86°43.751'	13:06:00	no sample
124	STN	PON	64°24.063'/86°43.777'	96,6	13:07:00	19-08-11	13:10:00	64°24.065'/86°43.806'	13:13:00	no sample
142	STN10	PON	64°58.230'/86°15.911'	36	7:36:00	19-08-12	07:36:00	64°58.227'/86°15.914'	7:37:00	
143	STN10	PON	64°58.228'/86°15.910'	36,2	7:39:00	19-08-12	07:39:00	64°58.227'/86°15.912'	7:40:00	
144	STN10	BOX1	64°58.233'/86°15.918'	36,4	7:49:00	19-08-12	07:49:00	64°58.231'/86°15.913'	7:49:00	did not trigger
145	STN10	BOX2	64°58.229'/86°15.909'	36	7:53:00	19-08-12	07:53:00	64°58.228'/86°15.911'	7:54:00	surface sample
154	STN11	PON	64°59.832'/86°32.490'	99,1	14:20:00	19-08-12	14:20:00	64°59.827'/86°32.484'	14:24:00	
155	STN11	BOX1	64°59.806'/86°32.502'	98,1	14:35:00	19-08-12	14:37:00	64°59.800'/86°32.471'	14:39:00	surface sample
156	STN11	BOX2	64°59.789'/86°32.411'	97,9	14:42:00	19-08-12	14:44:00	64°59.788'/86°32.397'	14:45:00	surface sample
157	STN11	BOX3	64°59.777'/86°32.300'	91	14:55:00	19-08-12	14:56:00	64°59.776'/86°32.289'	14:57:00	rocks
158	STN11	BOX4	64°59.786'/86°32.223'	90	15:00:00	19-08-12	15:01:00	64°59.766'/86°32.204'	15:02:00	surface sample
177	STN12	PON	65°54.731'/85°46.557'	88,3	11:54:00	19-08-13	11:56:00	65°54.673'/85°46.671'	11:58:00	no sample
178	STN12	PON	65°54.540'/85°46.924'	85,6	12:01:00	19-08-13	12:02:00	65°54.270'/85°47.556'	12:09:00	no sample
179	STN12	BOX	65°54.011'/85°48.079'	89,6	12:17:00	19-08-13	12:18:00	65°53.966'/85°48.179'	12:19:00	no sample
198	STN13	BOX1	66°18.155'/86°05.794'	194	9:14:00	19-08-14	09:16:00	66°18.140'/86°05.805'	9:19:00	
199	STN13	BOX2	66°18.038'/86°05.885'	195	9:32:00	19-08-14	09:33:00	66°18.023'/86°05.894'	9:43:00	
200	STN13	BOX3	66°17.863'/86°06.036'	195	10:00:00	19-08-14	10:00:00	66°17.832'/86°06.047'	10:09:00	surface sample
201	STN13	BOX4	66°14.511'/86°06.366'	197	10:50:00	19-08-14	10:51:00	66°17.497'/86°06.378'	10:59:00	surface sample
202	STN13	BOX5	66°17.198'/86°06.743'	201	11:29:00	19-08-14	11:30:00	66°17.187/86°06.757'	11:38:00	surface sample
203	STN13	GAC1	66°16.907'/86°07.192'	205	12:21:00	19-08-14	12:23:00	66°16.891'/86°07.213'	12:26:00	core/ missing top 24 cm + core catcher
204	STN13	GAC2	66°16.562'/86°07.948'	208	13:35:00	19-08-14	13:36:00	66°16.561'/86°07.963'	not time entered	core
225	STN14	PON	65°56.336'/84°39.862'	312	12:57:00	19-08-17				cancelled
226	STN14	PON	65°56.349'/84°33.808'	314	13:12:00	19-08-17	13:13:00	65°56.512'/84°40.055'	13:26:00	did not close
227	STN14	BOX	65°56.289'/84°39.566'	315	13:50:00	19-08-17	13:54:00	65°56.367'/84°39.678'	14:00:00	did not close
228	STN14	BOX	65°56.261'/84°39.659'	308	14:10:00	19-08-17	14:14:00	65°56.352'/84°39.854'	14:21:00	rock
229	STN14	BOX	65°56.624'/84°40.182'	256	14:25:00	19-08-17	14:30:00	65°56.790'/84°40.398'	14:33:00	rock
239	STN14B	BOX	65°46.118'/84°85.348'	430	20:34:00	19-08-17	20:38:00	65°45.337'/84°25.213'	20:45:00	rocks with sediment
240	STN14B	BOX	65°45.832'/84°25.146'	415	20:51:00	19-08-17	20:55:00	65°45.770'/84°25.116'	20:59:00	rocks with sediment
250	STN15	BOX1	65°30.028'/84°26.690'	207	9:37:00	19-08-18	09:39:00	65°30.033'/84°26.742'	9:44:00	surface sample
251	STN15	BOX2	65°30.098'/84°26.864'	206	9:49:00	19-08-18	09:50:00	65°30.116'/84°26.891'	9:54:00	surface sample
252	STN15	BOX3	65°30.202'/84°27.017'	200	9:59:00	19-08-18	10:01:00	65°30.225'/84°27.050'	10:04:00	
254	STN15	GAC1	65°29.963'/84°26.804'	201	11:06:00	19-08-18	11:07:00	65°29.976'/84°26.819'	11:15:00	21 cm + core catcher
255	STN15	GAC2	65°30.061'/84°27.215'	195	11:38:00	19-08-18	11:40:00	65°30.081'/84°27.262'	11:42:00	22 cm + core catcher
267	STN15B	BOX	65°36.302/84°11.016'	316	21:22:00	19-08-18	21:24:00	65°36.317'/84°11.895'	21:28:00	empty
268	STN15B	BOX	65°36.309'/84°10.569'	311	21:34:00	19-08-18	21:37:00	65°36.320'/84°10.460'	21:43:00	no sample
278	STN16	BOX	65°06.520'/83°07.438'	322	11:22:00	19-08-19	11:24:00	65°06.522'/83°07.594'	11:28:00	surface sediment and push core
279	STN16	BOX	65°06.611'/83°09.249'	318	12:03:00	19-08-19	12:05:00	65°06.618'/83°09.429'	12:09:00	surface sediment and push core
280	STN16	BOX	65°06.692'/83°09.811'	320	12:15:00	19-08-19	12:17:00	65°06.719'/83°09.852'	12:25:00	surface sediment and push core
287	STN16	GAC1	65°06.484'/83°07.937'	321	20:04:00	19-08-19	20:06:00	65°06.495'/83°08.054'	20:24:00	core/winch malfunction
288	STN16	GAC2	65°06.477'/83°08.007'	310	21:00:00	19-08-19	21:02:00	65°06.491'/83°08.094'	21:04:00	core
296	STN17	BOX	64°55.961'/82°59.035'	167	9:52:00	19-08-20	09:53:00	64°54.944'/82°58.973'	9:55:00	surface sample
307	STN18	BOX	64°30.868'/81°13.859'	299	23:06:00	19-08-20	23:09:00	64°30.828'/81°13.808'	23:12:00	surface sample
308	STN18	BOX	64°30.670'/81°13.607'	299	23:23:00	19-08-20	23:27:00	64°30.634'/81°13.564'	23:31:00	
309	STN18	BOX	64°30.574'/81°13.445'	299	23:35:00	19-08-20	23:38:00	64°30.514'/81°13.373'	23:42:00	
319	STNEB	BOX1	64°01.297'/81°00.124'	30	7:08:00	19-08-21	07:09:00	64°01.295'/81°00.119'	7:10:00	surface sample
320	STNEB	BOX2	64°03.360'/81°04.778'	76,8	8:58:00	19-08-21	08:59:00	64°03.368'/81°04.778'	9:01:00	surface sample
321	STNEB	BOX3	64°03.332'/81°04.685'	76,8	9:09:00	19-08-21	09:10:00	64°03.328'/81°04.676'	9:12:00	push core 1
322	STNEB	BOX4	64°03.365'/81°04.713'	76,7	9:59:00	19-08-21	10:01:00	64°03.364'/81°04.784'	10:02:00	push core 2
323	STNEB	GAC1	64°03.364'/81°04.710'	77,2	10:43:00	19-08-21	10:44:00	64°03.348'/81°04.699'	10:46:00	core/1 full tube
324	STNEB	GAC2	64°03.368'/81°04.820'	77,2	11:12:00	19-08-21	11:14:00	64°03.374'/81°04.835'	11:18:00	core/3/4 full tube
335	STN19	BOX	63°56.880'/79°41.995'	324	23:25:00	19-08-21	23:27:00	63°56.861'/79°42.040'	23:32:00	
336	STN19	BOX	63°56.712'/79°42.040'	327	23:40:00	19-08-21	23:43:00	63°56.683'/79°42.024'	23:47:00	
337	STN19	BOX	63°57.016'/79°42.070'	326	23:59:00	19-08-21	00:02:00	63°57.014'/79°42.121'	0:05:00	
349	STN20	BOX1	63°47.523'/80°05.257'	162	18:09:00	19-08-22	18:10:00	63°47.533'/80°05.236'	18:13:00	surface sample
350	STN20	BOX2	63°47.586'/80°05.067'	161	18:22:00	19-08-22	18:24:00	63°47.595'/80°05.033'	18:26:00	surface sample

358	STNNS	BOX1	63°26.240'/79°17.961'	217	4:03:00	19-08-23	04:06:00	63°26.254'/79°17.948'	4:09:00	surface sample
359	STNNS	BOX2	63°26.685'/79°17.706'	220	4:21:00	19-08-23	04:24:00	63°26.689'/79°17.751'	4:27:00	2 surface samples
361	STNNS2	BOX3	63°27.218'/79°26.530'	204	5:21:00	19-08-23	05:23:00	63°27.225'/79°26.511'	5:28:00	surface sample
362	STNNS2	GAC1	63°27.315'/79°26.328'	205	5:35:00	19-08-23	05:37:00	63°27.329'/79°26.308'	5:40:00	core ~65 cm
363	STNNS2	GAC2	63°27.335'/79°26.396'	200	5:52:00	19-08-23	05:56:00	63°27.352'/79°26.370'	5:58:00	core ~58cm
368	STNLP	BOX	63°27.281'/80°46.775'	67	11:59:00	19-08-23	12:00:00	63°27.296'/80°46.731'	12:01:00	surface sample
373	STN21	PON	63°28.811'/80°52.002'	29	14:48:00	19-08-23	14:49:00	63°28.819'/80°52.001'	14:50:00	water
374	STN21	PON	63°28.848'/80°51.982'	29	14:51:00	19-08-23	14:52:00	63°28.862'/80°51.975'	14:53:00	rock
405	STN24	PON	62°54.205'/83°31.400'	33,7	12:20:00	19-08-25	12:22:00	62°54.228'/83.31.421'	12:23:00	Did not trigger
406	STN24	PON	62°54.252'/83°31.441'	34,4	12:23:00	19-08-25	12:24:00	62°54.265'/83°31.447'	12:25:00	
407	STN24	PON	62°53.687'/83°32.496'	33,2	13:21:00	19-08-25	13:22:00	62°53.706'/83°32.474'	13:22:00	
408	STN24	PON	62°53.725'/83°32.448'	33,4	13:23:00	19-08-25	13:24:00	62°53.744'/83°32.422'	13:25:00	
416	STNCN	BOX	62°57.948'/84°10.832'	127	18:01:00	19-08-25	18:02:00	6257.942'/84°10.812'	18:04:00	Cape Netcher, surface sample
424	STN25	PON	63°29.221'/84°09.115'	26,5	13:41:00	19-08-26	13:42:00	63°29.219'/84°09.130'	13:43:00	surface sample
425	STN25	PON	63°29.217'/84°09.145'	26,6	13:44:00	19-08-26	13:45:00	63°29.215'/84°09.151'	13:46:00	
426	STN25	BOX	63°29.201'/84°09.208'	26,6	13:52:00	19-08-26	13:53:00	63°29.200'/84°09.215'	13:53:00	did not trigger
427	STN25	BOX	63°29.200'/84°09.215'	26,6	13:54:00	19-08-26	13:54:00	63°29.197'/84°09.223'	13:55:00	all rocks and shells
431	STNWI	BOX	63°15.983'/83°41.305'	95,5	20:42:00	19-08-26	20:44:00	63°15.972'/83°41.374'	20:46:00	small rocks blocked grab doors
432	STNWI	BOX	63°15.940'/83°41.507'	93	20:51:00	19-08-26	20:53:00	63°15.933'/83°41.528'	20:54:00	small rocks blocked grab doors
433	STNWI	PON	63°15.909'/83°41.632'	96	20:59:00	19-08-26	21:01:00	63°15.900'/83°41.690'	21:03:00	crab!
434	STNWI	PON	63°15.882'/83°41.852'	97	21:07:00	19-08-26	21:09:00	63°15.868'/83°41.900'	21:11:00	
436	STNWI2	BOX	63°19.044'/83°32.953'	112	22:21:00	19-08-26	22:22:00	63°19.035'/83°32.971'	22:24:00	surface sample, mostly pebbles
438	STNWI3	BOX	63°22.402'/83°24.025'	110	23:27:00	19-08-26	23:28:00	63°22.365'/83°24.176'	23:29:00	Did not trigger
439	STNWI3	BOX	63°22.372'/83°24.154'	110	23:31:00	19-08-26	23:32:00	63°22.365'/83°24.176'	23:34:00	Bulk sediment sample
450	STN26	PON1	63°49.571'/83°16.700'	48,4	8:22:00	19-08-27	08:24:00	63°49.577'/83°16.712'	8:26:00	empty
451	STN26	PON2	63°49.585'/83°16.747'	48,8	8:27:00	19-08-27	08:28:00	63°49.587'/83°16.762'	8:29:00	surface sample
452	STN26	BOX	63°49.611'/83°16.860'	49,8	8:34:00	19-08-27	08:35:00	63°49/612'/83°16.867'	8:36:00	no sediment
453	STN26	PON3	63°49.638'/83°16.996'	51,2	8:48:00	19-08-27	08:49:00	63°49.640'/83°17.013'	8:50:00	did not trigger
454	STN26	PON4	63°49.644'/83°17.031'	51,2	8:51:00	19-08-27	08:52:00	63°49.648'/83°17.047'	8:53:00	did not trigger
455	STN26	PON5	63°49.652'/83°17.079'	50,5	8:54:00	19-08-27	08:55:00	63°49.655'/83°17.115'	8:58:00	did not trigger
456	STN26	PON6	63°49.662'/83°17.141'	50,6	9:00:00	19-08-27	09:01:00	63°49.666'/83°17.159'	9:02:00	no sediment
458	STN26	PON7	63°49.252'/83°15.846'	51,3	9:56:00	19-08-27	09:58:00	63°49.252'/83°15.873'	9:59:00	did not trigger
459	STN26	PON8	63°49.254'/83°15.905'	51,9	10:00:00	19-08-27	10:01:00	63°49.252'/83°15.924'	10:02:00	did not trigger