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GEOLOGICAL SURVEY OF CANADA
OPEN FILE 8859

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Table of Contents

LIST OF FIGURES

LIST OF TABLES

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EXECUTIVE SUMMARY

The rapid Arctic sea-ice decline impacts coastal ecosystems and the services they support (e.g., land-fast sea ice platform for hunting, fishing and travelling, provisioning services), with direct consequences for local communities. The potential implications of climate warming for sea-ice ecosystems, including their biological wealth, are not straightforward and strongly depend on local geographic settings, as well as pressures posed by human activities. Therefore, to generate more locally-relevant projections of their future evolution in relation to global climate changes, a detailed understanding of their present and historical (long-term) sensitivity and response to environmental drivers is required.

In September 2021, a sampling campaign onboard the research vessel William-Kennedy took place in the Nain area as part of the Marine Work Package of the Nunatsiavut Coastal Interactions Project (NCIP) and the Marine Geoscience for Marine Spatial program of NRCan. During the 7-day cruise in the area, a total of 205 successful operations were conducted by the 12 scientists on board: 17 ocean drifters were released, water-column profiling was conducted at 43 locations, multibeam mapping data was collected, and a suite of environmental samples (14 water samples, 29 phytoplankton nets, 14 zooplankton nets, and 72 surface sediment and core samples) was collected. This material will be used to investigate present-day and past changes in oceanographic conditions and primary production (i.e., the basis of the marine food web), the presence of nano-pollutants (inorganic nanoparticles and nanoplastics), develop nautical charts and monitor geological hazards in the Nain region. This project will provide insights for facing the challenges and opportunities related to contemporary and future climate changes and their impacts on the resilience and management of the coastal ecosystem, and access to traditional subsistence resources.

Co-led by the University of New Brunswick (UNB) and Natural Resources Canada (NRCan), this cruise was a collaboration between the Government of Nunatsiavut, Fisheries and Oceans Canada - Maritime region (Canadian Hydrographic Service), Dalhousie University, Université Laval, Université du Québec à Montréal, and Memorial University, and was funded by the Natural Sciences and Engineering Research Council of Canada (NSERC) and NRCan.

AULATSIJILLAGET NAILLLITITAUSIMANNINGA

Tânna sukkajumik Ukiuttattumi sikunga nunguvallianinga attuijuk satjugiap avatinganik ammalu kiggatotigiKattajanginnik ikajutsinikkut (sollu.,sikuk atuttauKattajuk pinasuagiamut, iKalunniak ammalu iniggavigigianganut, sakKititsitluni kiggatotinnik), attuisiammagitluni nunalimmmiut nunagijanginnik. Tamakkua attuisongummijut silak nigumitsivalliagajanninganik sikuit avatinganit, ilautillugit omajungita pitaluvininginnik, kajusiutigijautsiatut ammalu najuttiKatsiavut nunalet iningata piusinganik, ammalugiallak nenittauvalliajut inuit piniannigiKattajangit. Taimaimmat, sakKititsigiamut nunalimmmi-ilinganiKatsiatunut nigiunajunut sivunitsaginiattanginnik asiangulâttunut ilinganiKajunut silatsuami silak asianguvallininga, allatausimatsiatuk tukisigiamut sakKijânninginnik ammalu piusigijauKattasimajunut (akuni) attutausagaisongunninginnik ammalu kamagiasigiamut avatimmut attuijunut Kaujimajaugialet.

Jâringani Septembera 2021, ottugattaugajattut suliagijaulaukKuk ikimatlutik Kaujisattet pujulingatigut William-Kennedy suliagijaulauttuk Nainiup Kanitangani ilangagijautluni Imappet Suliagijaujunut taikkunangat Nunatsiavut Satjugiami AttuiKattajunut Suliangujuk (NSAS) ammalu Imappiligijet Nunanut Kaujisattiligijinginnut ilingajumut Imappet Nanituinak suliangujumut Piviannatuligijiujunut Canadami. Sepanik ullunik umiattugalaniammata iluani iningani, ilonnatik kitillugit 205 kajusiutigijautsialauttut suliagijautluni taikkununga suvailpvanut Kaujisattilagijiujunut ikimajunut: 17-nait imappimiutait sâttausot sakkutaulauttut, Kanuittoninga imanga kamagijaulauttut 43 iniujunut, sutaijajunut nunangualiuttautluni Kaujigatsait katitsutaulauttut, ammalu sutaijajunut avatimmit tigujautlutillu (14 imammit ottugattausot, 29 kingukulunut nuluat, ammalu 72 imaup Kânganit ammalu ikkamit ottugattausot) katitsutaulauttut. Tamakkua piKutet atuttaulangavut Kimiggugiamut ullumiulittuk ammalu sivunganit asiangusimajunut imappiup piusinginnik ammalu sivillupâmmagimmik suliagijaugasuajunut (sollu., ilinganiKajunut imappet niKituKangit), tamânejut ilimanattut (omangitut piKutigalait ammalu palastikkisajait), pivalliatitsilutik aulautet inigisongit ammalu kamagillugit iningata ulugianattogajakKotunut Nainiup nunakKatigengitumi. Tânna suliangujuk sakKititsilangajut tukisinitsaugiamut apomautigijaugajakKotunut ammalu pivitsanik ilinganiKajunut ullumiulittuk ammalu sivunittini silak asianguvallianinganik ammalu Kanuk attuigajammangâmmik sangijojunut ammalu aulatsigunnagiamut satjugiami avatinganik, ammalu atugunnagiamut piusituKannik niKitsanut piviannatunginnik.

Ikajuttigesimajut Ilinniavitsuak New Brunswick ammalu Piviannatuligijet Canadami, tainna pujulik ikajuttigetlutik akungani kavamakkunut Nunatsiavummi, Oganniatuligijet ammalu Imappiligijet Canadami - Maritime nunakKatigengitut (Canadami Hydrographic kiggatotingit), Dalhousie Ilinniavitsuanga, Université Laval, Université du Québec à Montréal, ammalu Memorial Ilinniavitsuanga, ammalu kenaujattâsimajut taikkunangat Kaujisattiligijiujunut ammalu Sanajet Kaujisattilagijet kaunsalliKutingit Canadami.

1. INTRODUCTION

The current rapid reduction in the extent and thickness of Arctic sea-ice cover is one of the most striking manifestations of a rapidly warming climate. The resulting changes in the seasonal sea-ice cycle (e.g., onset of melting) and properties of the water masses (salinity, temperature, transparency, nutrient budget) have the potential to further alter the services that sea-ice ecosystems maintain, notably, a platform for seasonal travel and the procurement of harvestable food. In the Nain region, Inuit subsistence has traditionally revolved around fish and seals harvested in the vicinity of settlements (Woollett 2010). Access to these animals is structured by the presence of stable land-fast ice platforms extending into the marine environment and by the manner in which land-fast and pack ice define seal habitats at short-term and seasonal time scales. Sea-ice is also a key variable shaping the physical environment and productivity of coastal marine ecosystems. Yet, the potential ramifications of climate changes for ecosystem structure and biological productivity are not straightforward and heavily depend on local environmental settings and connections to adjacent ecosystems, as well as pressures posed by human activities. The capacity to anticipate the future evolution of an ecosystem in relation to large-scale environmental changes therefore requires an in-depth, historical (long-term) understanding of its natural sensitivity and response to environmental drivers.

To address this complex topic, we undertook the Nunatsiavut Coastal Interactions Project (NCIP), funded by Institut Nordique du Québec-Sentinel North (INQ-SN) and embedded in a newly funded NSERC Belmont Forum (CRA Arctic II) on the Resilience in Rapidly Changing Arctic. The NCIP project is an innovative effort to link past changes in the coastal marine and terrestrial ecosystems — derived from collective knowledge, geoscientific and historical archives — to archaeological evidence for variations in abundance, demographics and harvesting of certain marine mammal species. This transdisciplinary approach will permit the extrapolation, through projections based on high resolution climate model simulations, of potential outcomes of current environmental changes on coastal ecosystem services and resource harvesting, informing management decisions. While paleoceanographic data support reconstructions of sea-ice climatology and marine productivity at regional scales elsewhere in the Arctic, their potential convergence with archaeological data has rarely been investigated in the Canadian Arctic and never at local scales.

Nain is a region of particular environmental significance in Labrador, as its territory features very extensive and persistent land-fast ice, small and episodic polynyas, one of the most important ringed seal breeding areas in Labrador, as well as the largest Inuit community in Nunatsiavut. Furthermore, a substantial body of archaeological data documents cultural and subsistence activities by Dorset and Thule-Inuit cultures in the Nain region since more than two millennia (e.g., Hood 2008).

The main objectives of the sampling campaign were to use the RV William-Kennedy (Fig. 1) to:

1) Investigate the evolution and response of sea ice, oceanography and primary production to recent and long-term climate fluctuations in the coastal region of Nain. This retrospective information on the natural variability of the system will be used to develop a regional climate model.
2) Investigate the presence of nano-pollutants and more specifically, inorganic nanoparticles and nanoplastics. The occurrence of contaminants will be assessed at different strategic

points to compare contaminant levels between areas exposed and non-exposed to direct anthropogenic pollution.

3) Map the seabed using a high-resolution multibeam echosounder in order to identify geological hazards on the seafloor, char habitats and navigational hazards.

Figure 1: The RV William-Kennedy. Photograph courtesy of Audrey Limoges.

2. PARTICIPANTS

Participants on the 2021William-Kennedy cruise came from 8 different affiliations: 6 universities and 2 federal departments (Table 1). Many additional collaborators to the project (Table 2) provided input on the research objectives of this cruise.

Table 1: List of scientific participants onboard

Surname	Name	Affiliation	Role
Limoges	Audrey	University of New Brunswick	Chief scientist, rosette and CTD operations, phytoplankton net deployment, sediment coring
Normandeau	Alexandre	Geological Survey of Canada	Co-chief scientist, rosette operation, sediment coring, mapping
Van Nieuwenhove	Nicolas	University of New Brunswick	Operation rosette and CTD, phytoplankton net deployment, sediment coring
Philibert	Genevieve	Geological Survey of Canada	Logging operations, sediment coring
Hannah	Sharpe	University of New Brunswick	Phytoplankton net and sediment coring
Marigliano	Lucile	Université Laval	Sediment coring
To	Anna	Université du Québec à Montréal	Phytoplankton net and sediment coring
MacMillan-Kenny	Zachary	Marine Institute (Memorial University)	Hydrography
Anthony	Katrina	Dalhousie University	Water collection, phytoplankton and zooplankton nets, ocean drifters
Pijogge	Liz	Nunatsiavut Government	Water collection, phytoplankton and zooplankton nets, ocean drifters
Winters	John	Dalhousie University	Water collection, phytoplankton and zooplankton nets, ocean drifters
Gillies	Colin	Canadian Hydrographic Service	Hydrography

Table 2: List of other collaborators to the project

Surname	Name	Affiliation
Bhiry	Najat	Université Laval
de Vernal	Anne	Université du Québec à Montréal
Gigault	Julien	Université Laval
Oliver	Eric	Dalhousie
Pienitz	Reinhard	Université Laval
Robert	Katleen	Memorial University
Sipler	Rachel	Memorial University
Woollett	James	Université Laval

3. SUMMARY OF ACTIVITIES

The 2021William-Kennedy cruise began in St. Anthony, Newfoundland on September 15, 2021, with departure around 8:50. It took 3 days to sail up north to Nain, where the research took place (Fig. 2; Table 3). Sampling ended on September 24 and it took 3 days to sail south to St. Anthony, where the ship arrived on September 27 around 19:00.

The 2021William-Kennedy cruise allowed the collection of:

1) 39 gravity cores

2) 46 box cores

3) 17 Van Veen grabs

4) 43 CTD profiles

5) 14 Water samples

6) 29 Phytoplankton Nets

7) 14 Zooplankton Nets

8) 17 ocean drifters released

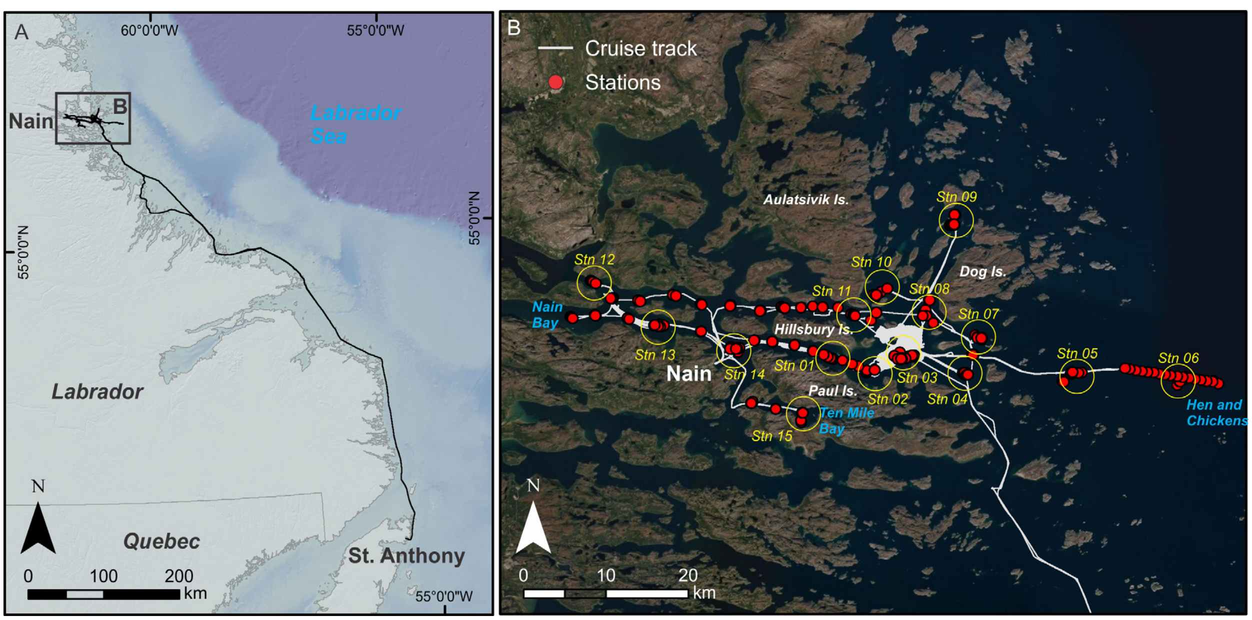

Figure 2: Navigation lines of the 2021William-Kennedy cruise.

Table 3: Summary of stations completed. MM: Multibeam mapping. Drift: Ocean drifters. CTD: Conductivity-Temperature-Depth. CTD-R: CTD-Rosette. PN: Phytoplankton Net. ZN: Zooplankton Net. BC: Box core. GC-L: Large gravity corer. GC-S: Small gravity corer. VV: Van Veen grab

Date	MM	Drift	CTD	CTD-R	PN	ZN	VV	BC	GC-S	GC-L	Unsuccessful coring operations	Notes
Sept 15												Mobilization and transit
Sept 16												Transit
Sept 17	X											Transit
Sept 18	X		2	2	4	2	5	5				
Sept 19	X		3	3	6	3	3	3	2	1	14	
Sept 20	X	17	2	2	4	2		4	9		5	
Sept 21	X		3	3	7	3		7	10		12	
Sept 22	X		1	1	2	1	8	4	2		18	
Sept 23			7	3	6	3	1	9	6	1	5	
Sept 24			12					14	7		1	Transit
Sept 25												Transit
Sept 26												Transit
Sept 27												Demobilization
Total Attempted		17	30	14	29	14	17	46	36	2	55	260
Total successful		17	20	14	29	14	17	46	36	2		205

4. EQUIPMENT AND PROCEDURES

4.1 R2Sonic 2022 multibeam echosounder

The bathymetric survey was conducted using an R2Sonic 2022 multibeam echosounder, pole mounted over the side of the vessel (Fig. 3). Data was collected in multi-frequency mode at 200 kHz, 300 kHz and 400kHz. The average swath width used during the survey was 100 degrees, measured from the head of the echosounder. In ideal conditions and depths, the R2Sonic 2022 could survey with a swath width of 160 degrees. Given limiting factors such a depth, bottom type and vessel speed, a swath angle of 90 – 100 degrees was optimal with 256 beams used at all times.

Positioning and Orientation was provided by an Applanix POS MV system. The system provided us with accurate navigation and attitude data, to correct for the effects of vessel motion during survey operations. The system was aided by two GNSS antennas and receivers, and an Inertial Measurement Unit (IMU). The IMU was also mounted over the side and sat directly above the R2Sonic multibeam echosounder.

Prior to the start of survey, the navigation computer on board the R/V William Kennedy crashed. A new computer had to be flown in and configured while alongside in St. Anthony. There were some configuration issues with regards to sonar placement that persisted into the first couple days of the survey. Fortunately, the data could mostly be post processed to meet the survey specifications.

With two days to go before survey completion we lost all communication with the head of the echosounder. After troubleshooting with the tech support from R2Sonic, it was determined that there was nothing we could do onboard to remedy the issue. The multibeam would have to be sent to their facility to find the problem. This unfortunately meant an end to the multibeam survey operation.

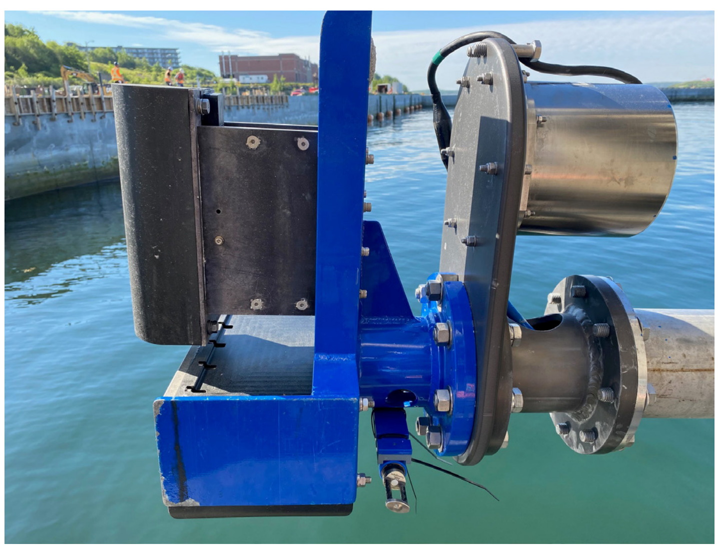

Figure 3: The R2Sonic 2022 multibeam echosounder on the R/V William-Kennedy pole. Photograph courtesy of Colin Gillies.

4.2 CTD and CTD-Rosette

A stand-alone seabird 19plusV2 SeaCAT profiler CTD (Fig. 4) was used to collect hydrographic profiles during the cruise. Deployment steps were as follow: 1) start archiving, 2) immerse the CTD just below the surface for 10 seconds, 3) descent at 1 m/second to stop at about 5 meters above the bottom, 4) wait 30 seconds, 5) ascend to the surface, 6) turn off the instrument, 7) rinse with freshwater. The data was then immediately downloaded in order to avoid confusion with other station numbers.

Figure 4: The stand-alone CTD. Photograph courtesy of Hannah Sharpe.

The CTD-Rosette (Fig. 5) is equipped with 12 Niskin-type bottles of 5 L with an automatic closing system that allows the sampling of seawater at specific depths. A CTD probe (SBE 19plus V2), which continuously measures the conductivity, temperature and density, as well as a fluorescence sensor, a seabird dissolved oxygen sensor and a PAR sensor were attached to the rosette. Deployment steps were as follows: 1) Turn on CTD and start archiving (recording); 2) Immerse the rosette to about 10 meters below the surface; 3) Wait 3 minutes for the plumbing system to flush (checking that the probes stabilize); 4) Bring back up to just below the surface; 5) Descend at 1 m/second, starting to slow down around 20 meters from the bottom by checking the altimeter to stop at 5 meters from the bottom; 6) Wait 30 seconds; 7) Ascend to the desired depths and close the bottles (waiting for wave stabilization); 8) Once at the surface and water sampling has been completed, turn the CTD off; 9) Stop archiving and close deck unit.

Figure 5: The CTD-Rosette. Photograph courtesy of Hannah Sharpe.

Water samples were collected at the depth of the chlorophyll-a maximum. Three bottles were fired from this depth at each full station. A subsample was then sieved through a 150µm filter, and through a syringe filter in order to fill sample bottles. Once the sample bottles were filled, the filter was folded and placed in between tinfoil with forceps. The water samples and filters were stored for later analysis at MUN.

4.3 Phytoplankton Net

The phytoplankton net is conical with a 30cm diameter, 75cm length, and 20µm mesh net, with a 10 kg weight fixed at the base of the cod-end (Fig. 6). The phytoplankton nets were deployed horizontally or vertically in the water column, depending on the current strength at the station. When conducting a vertical tow, the net was lowered to ~5 m above the seafloor if water depth was less than 100 m or lowered to 100 m below the surface if water depth was greater than 100 m, and ascended at a speed of 10 m/minute. When conducting a horizontal tow, the net was lowered to ~5 m below the surface and towed behind the boat at a speed of approximately 2-4 knots for 15 minutes. Start/end times and positions were recorded. Once the net was back onboard, its sides were rinsed from top to bottom with a seawater hose. The excess water was then drained by gently rubbing the cup mesh.

The samples collected for UNB were transferred into 500 mL Nalgene jars, preserved with 10 mL of formalin (37%) and stored in a refrigerator (4°C).

The samples for MUN were filtered through a 150 µm mesh. A 40 mL subsample was fixed in formalin (0.5 mL of buffered formalin was used for every 10mL of sample). Three subsamples were also filtered, and the filters were stored at -20°C for later analysis.

Figure 6: Cleaning the sides of the phytoplankton net upon recovery. Photograph courtesy of Nicolas Van Nieuwenhove.

4.4 Zooplankton Net

The zooplankton net is conical with a 200 µm mesh net (Fig. 7). The net was lowered slowly to allow the cod end to fill with seawater. The net was always towed vertically. It was lowered to about 5 m above the seafloor and lifted up at a speed of 10 m/minute. Start/end times and depth were recorded. Once the net was back onboard, its sides were rinsed from top to bottom with a seawater hose.

A subsample of ~40 mL was fixed with formalin (1 mL of buffered formalin was added to every 10 mL of sample) and stored in the refrigerator. The remaining sample was poured in a picking tray and organisms (krill, large copepods, pteropods, amphipods, small jellies) were collected in separate falcon tubes. The remaining sample was filtered through 500 and 200 µm mesh sizes and each fraction was kept in separate tubes. The samples and filters were stored at -20°C for later analysis at MUN.

Figure 7: The zooplankton net. Photograph courtesy of Hannah Sharpe.

4.5. Ocean Drifters

Biodegradable surface ocean drifters (Fig. 8) were assembled and turned on using a magnet. They were deployed using a rope from the side of the ship, along a transect of pre-defined sites located approximately 720 m apart from each other, starting near the Hen and Chickens Islands (offshore station 6) and sailing towards station 5. The ocean drifters relay their position via satellite and will be used to document ocean currents.

Figure 8: Deployment of an ocean drifter. Photograph courtesy of Audrey Limoges.

4.6 Sediment coring

During the 2021William-Kennedy cruise, four types of sediment corers were used: 1) a GSC-A large gravity corer (10 cm diameter – GC-L); 2) a small gravity corer (7cm diameter – GC-S); 3) a box core (BC); and 4) a Van Veen grab (VV) manufactured by Ocean Scientific International Ltd..

The Van Veen grab (Fig. 9A) was used to sample the surface sediment. It was deployed when the seabed was composed of coarser sediment (i.e. gravel and pebbles) or was deployed as reconnaissance, before deploying the Box Corer or the Gravity Corer, when the composition of the surface sediments was unknown. The Van Veen grab was used at 17 sites where 1 or 2 samples were collected each time. Photos of the sediment collected are shown in Appendix D.

The box core (Fig. 9B) was also used to collect surface samples (0-1cm). It was deployed in places where the sediment was rather muddy and where it was important to preserve the surface of the sample collected. The box corer was deployed at 46 stations and at least 2 surface sediment samples were bagged each time for a series of microfossil, sedimentological, geochemical and biomarker analyses. The samples for microfossil, geochemical and biomarker were stored at -80°C, whereas the samples for sedimentological analyses were stored outside the ship (>0°C).

When possible, surface sediment, deep sediment and supernatant were also collected for nano-pollutant analyses. However, supernatant was not always present, and the distinction between surface and deep sediments was not always evident. Samples were collected as follows: 1) approximatively 20 mL of supernatant was collected using a plastic syringe connected to a plastic tube and stored in a 50 mL polypropylene conical tube (Sarstedt Inc Screw cap); 2) surface sediments and deep sediments were collected separately using a plastic spoon without touching the sides of the box corer and placed in plastic bags; 3) deep sediment was collected, after removal of the surface sediment. The three different samples were stored at 4°C. Although precautions for trace analysis were taken, it should be noted that results can be hampered by equipment and sampling contamination.

In addition, when enough sediment was retrieved from the box corer, push cores were taken by gently pushing a liner into the sediment. A total of 7 push cores was collected at 4 different sites. Photos of the sediment collected are shown in Appendix D.

The small gravity corer (Figure 9C) was deployed when previous surface sampling had revealed the presence of fine-grained sediment on the seabed. It penetrated more easily in the sediments than the larger one (GC-L); therefore, it was often prioritized to collect longer cores. The small gravity corer has a 90 cm long barrel and a core head with adjustable weight. We started by using 4 x 20 kg weights. Halfway during the cruise, two more weights were added to the core head (2 x 20 kg for a total of 120 kg) to facilitate penetration in the seabed and see if it was possible to retrieve longer cores. The small gravity corer was successfully deployed 37 times. A total of 31 cores were collected and 6 upper sediment samples that were too small to be kept in the liner were bagged to be preserved.

The larger gravity corer (Figure 9D) was used with a 90 cm and a 160 cm long barrel. It was deployed twice during the cruise and allowed 2 large gravity cores to be collected. The generally unsuccessful deployment of the GC-L compared to the GC-S forced us to favor the deployment of the GC-S.

Deployment speed for all the various samplers was as fast as possible, which was approximately 100 m/min.

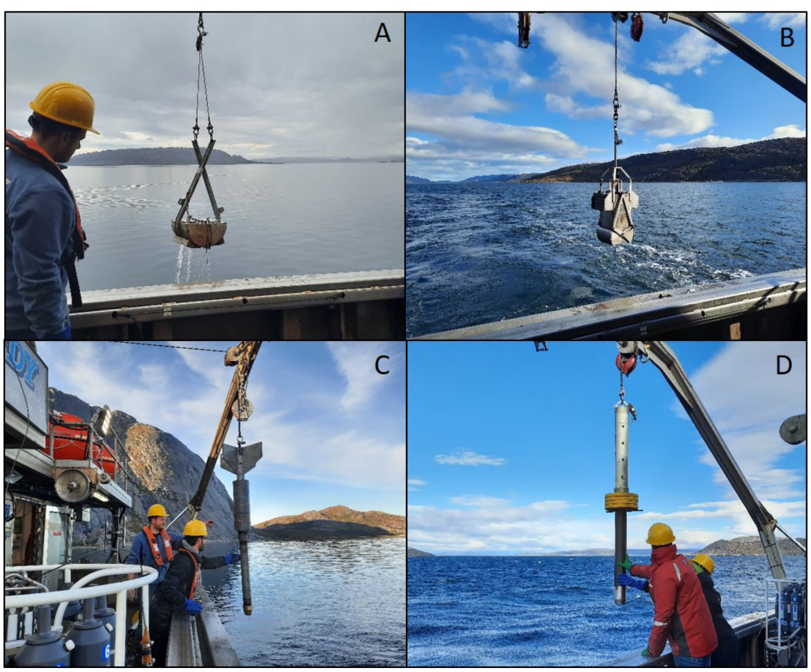

Figure 9: A) The Van Veen grab ; B) the box corer ; C) the small gravity corer set up with 6 x 20 kg weights at its head ; D) the larger gravity corer. Photograph courtesy of Audrey Limoges.

A total of 40 sediment cores (7 push cores, 31 GC-S, 2 GC-L) was collected during the cruise for a total of 19.6 m of sediment. All cores were processed according to standard GSC Atlantic core procedures (Mudie et al., 1984).

As the cores were extracted from the core barrel, they were held vertical throughout the whole process. Any exceeding surface water was drained by drilling holes in the liner. The liner was then cut to the length of the sediment, using a modified liner cutter. When the core was long enough to be divided in 2 sections, the sediment in the liner was cut using a wire saw. The section ends were carefully capped to minimize disturbance to the sediment surface. The top end cap of each section was labelled with the cruise number, station number, section label, and as being the top. The base of the core was designated as “A Base” and the top of the base section was designated as “B Top”. The base of the following section was designated as “B Base” and the top of the section was designated as “C Top”. This labelling system continued until all sediment was sectioned. All sections were then taken into the wet laboratory and labelled with an arrow indicating the upwards direction, as well as the cruise number, station number, and their respective sections labels (AB, BC, etc.). The section length was then measured and recorded. When sediment was present in the core cutters and catchers, it was bagged and labelled with the proper station number. The sealed core sections were stored upright in plastic buckets outside on the starboard deck along with all bagged sediment samples. The weather was cautiously watched every day and night to make sure the temperature would not drop below 0 degrees. All station location information, core section lengths, extruded pieces and cutter/catcher lengths, sediment description, core performance information and all relevant field information were documented on deck sheets. A summary of core sections is available in Appendix A. The geographical locations of core sites are found in Appendix B.

5. DAILY ACTIVITIES

**All times in Atlantic Standard Time.*

5.1 JD 257 – Sept. 14, 2021

Scientific crew members arrived in St. Anthony, Newfoundland. From 14:30 to 22:30, rapid covid-19 tests were administered to all scientific members. Everyone tested negative.

5.2 JD 258 – Sept. 15, 2021

Covid tests were performed at the hotel on all science staff at 05:40. Once everyone was tested (all results were negative), science staff was transported to the vessel. Everyone boarded the ship around 07:00. Familiarization and security procedures were explained by the chief mate at 08:00. By 08:50, the vessel had departed St. Anthony en route for Nain. While sailing out of the Bay of St. Anthony, a multibeam line was done to assess data quality. When processed, large roll error was observed, much larger than the swell. Colin (CHS) spent the day trying to figure out the problem with the help of HQ and QPS. They think they found a fix to the problem during the day. Seas were rough offshore, with 2-3m waves. Most science personnel went to bed and felt mildly seasick. By the evening, the seas were calmer.

5.3 JD259 – Sept. 16, 2021

From 01:00 to 04:00, the MBES was lowered in the water to assess data quality with the fix to the POS/MV. Data quality was processed, and the data looked good. We continued our route towards Nain. A storm was looming in the area, coming from the north. Fortunately, we were able to sail past Cartwright into sheltered islands. Therefore, the vessel continued its way towards Nain, albeit taking a longer path through the islands.

5.4 JD260 – Sept. 17, 2021

Transit continued throughout the day by the islands. 2-3m waves were present offshore. In the evening, some lab preparations were done for the following day. At 22:00, the MBES was lowered in the water and began surveying in the Nain area, while transiting towards the first survey site.

5.5 JD261 – Sept. 18, 2021

At 02:00, a patch test was done to calibrate the MBES data. Following the patch test, a survey of the channel northeast of Paul Island began overnight. The data could not be corrected during the night. At 7:00, we began transiting towards Nain to pick up John, Liz and Katrina. Rapid covid-19 tests were administered around 8:30 before familiarization and security procedures. At 10:30, we were sailing back out towards station 1 in the first polynya. The first station was very shallow, less than 30 m. A CTD, CTD-R, 2 vertical phytoplankton nets, a vertical zooplankton net and a Van Veen were completed at this site. Following the Van Veen, which contained gravel and pebbles, it was decided not to pursue box or gravity coring operations. We transited towards station 2 where the order of operations was changed to allow more time for sample processing. 2 vertical phytoplankton nets, 1 vertical zooplankton net, CTD and CTD-R were done, followed by a Van Veen. The Van Veen showed the presence of mud with pebbles. Based on this information, a box core was deployed and recovered a few centimetres of mud and pebbles. A transect of box core and Van Veen grabs going towards the polynya was then completed (sites 14-20). At 19:00, the operations for the day were completed and multibeam surveys of sector 3 began and continued overnight.

5.6 JD262 – Sept. 19, 2021

Survey was completed at 06:45. There were still issues with the MBES, but it is believed these can be corrected in post-processing. Seas were rougher, but still at less than 1m. However, the winds and tidal currents made for a difficult time staying on station. Station operations nonetheless began at 07:00, at station 3, where a CTD, CTD-R, 2 horizontal PN, 1 vertical ZN, and 2 VV grabs were completed. The coarse nature of the seabed did not allow further coring to be completed. We modified our position and 2 BC, 2 GC-L and 2 GC-S operations were unsuccessful, possibly due to the drifting of the boat. At 12:00, we transited towards station 4 and completed the full suite of sampling, i.e., a CTD, a CTD-R, 2 horizontal PN, 1 vertical ZN, 1 BC, and 3 gravity cores. One of the gravity cores came back with 60 cm of sediment. 5 box cores were deployed but only one came in with some sediment in it. We believe the strong winds and currents prevented the box core from hitting the seabed upright, which in turn prevented the box core from triggering. When on station, the vessel would drift at a speed ranging between 1.8 and 2.5 knots. At 16:00, we began station 7 with 1 CTD, 1 CTD-R, 2 horizontal PN, 1 vertical ZN, 1 VV and 2 BC. Attempts at gravity coring failed on multiple occasions, probably because there is a thin sand layer at the surface. The Van Veen however, showed mud at the surface. We tried finding a better location for gravity coring, by looking at the WASSP system for low-reflectivity bottom but did not find one: 4 GC-S operations were unsuccessful due to the sandy substrate. In the meantime, the MBES was being troubleshooted to find issues with the angle alignment. At 20:00, we began transiting back towards station 3 to continue the survey from the previous night.

5.7 JD263 – Sept. 20, 2021

Multibeam surveys of station 3 continued overnight. A patch test was done before surveying, removing all the lever arms from the POS, in order to recalibrate the POS. This seemed to have worked and data came in correctly afterwards. At 05:00, we began transiting towards station 5 and began CTD operations at 07:00. A few icebergs were present in the study area. A CTD, CTD-R, 2 horizontal PN, 1 vertical ZN, 2 BC and 2 GC-S were completed. Two attempts at GC-S failed. We changed position to attempt another time, and this was successful, with the recovery of 63 cm and 62 cm long cores. At 10:10, we began transit towards station 6. At 11:32, we began station 6 with the standard full suite of sampling. 2 GC-S were completed with a 62 and 70cm recovery. Following the sampling operations, 17 drifters were released in the water every 1 km beginning near the Hen and Chickens Islands and sailing inshore. Once released by 17:00, we began sailing towards station 7 to collect gravity cores which had failed the previous day. After 5 attempts, 2 cores were successfully recovered with 25 and 62 cm sediment recovery. We then began sailing towards station 3 to collect gravity cores which had failed 2 days before. 5 attempts were made, with 2 coming back with less than 5 cm (bagged) and one with 11 cm. At 21:45, we began MBES surveys between stations 3 and 9.

5.8 JD264 – Sept. 21, 2021

Multibeam surveys of station 3 continued overnight, connecting the area with existing MBES surveys to the north. At 6:50, we began coring operations at station 3. Unfortunately, very little recovery was achieved, with only one 15 cm core. After 4 underwhelming attempts, we transited towards station 8 for the first full station of the day. We began station 8 at 08:17. The full suite of operations was performed, including 2 box cores. However, no successful attempts at gravity coring were done and only a bagged sample was kept. We sailed between stations 8 and 7 to look for fine-grained sediment, and attempted coring in a small depression, but were unsuccessful. At 11:10, we began transit towards station 10. We began operations at station 10 at 12:30 with the full suite of operations. During the operations, we managed to add 40 kg to the gravity corer. After 5 attempts, two of the cores recovered more than 50 cm of sand and gravel. At 16:00, we began transit towards station 9 and arrived on station at around 17:30 to begin the full suite of operations. A 77 cm gravity core was collected using the GC-S with120 kg weights on top. During the second GC attempts, starting at 19:35, the rope came off the winch and entangled itself around the axis, which required about 30 min to fix safely. Once freed, the GC came back up empty and a third GC was attempted. On the 5th attempt, another 70 cm core was collected. At 20:05, we began transiting towards station 3 to continue mapping in the area.

5.9 JD265 – Sept. 22, 2021

Surveys were done between islands Ulgomigak, Noazunakuluk, and Noazunaluk. At 06:50, we went to station 2 to attempt a gravity core with the 120 kg weight. We tried, unsuccessfully. We went towards box core 017 but came back on our track when we realized it consisted of sand and gravel. We transited towards station 8. Although the bottom looked very muddy on the WASSP system, only 25 cm cores were recovered, which was nonetheless an improvement of previous attempts. After 5 attempts, we began transiting towards station 8 at 08:45. At station 8, a CTD was done over the polynya, in shallow waters (12m). After the CTD, horizontal PN and vertical ZN were done in the same area. A CTD-R was then done in deeper waters to the east of the polynya, followed by a VV. The ship was drifting at 4 knots during the operations. Coarse bottom sediments prevented further coring in the area. We sailed eastward to collect 2 other VV samples, which were also very coarse and prevented further coring operations. A transect in the narrow was then done, using only the VV which collected lots of pebbles, abundant organisms and some sand. Four box cores for surface samples could be collected at the western end of the narrow north of Rhodes Island. A landslide deposit was also visited but the coarse nature of the seabed prevented coring. At 18:00, a group photo was taken on the foredeck, followed by one last box core for the day. At 19:00, we transited towards Nain to get Liz to shore and arrived around 20:30. Rodd Laing from the Nunatsiavut government was there to greet us. At 22:00, the MBES would not power on and troubleshooting at the wharf began until 01:30.

5.10 JD266 – Sept. 23, 2021

No solution was found to the power issue on the MBES; we nonetheless decided to conduct the survey of the inland fjords with the hull-mounted WASSP system. Although it is unclear if we can record and process the WASSP data at the time of writing, it does feed directly into the ship navigation software, which allows us to survey depth and backscatter in real-time. Zach was set up in front of the WASSP screen to take positions and print-screens of any locations where the presence of fine-grained seafloor surface sediment was inferred. This real-time backscatter and depth survey were used to determine precise location for stations 12 and 13 and was a suitable alternative to the R2Sonic. At 07:15, we deployed the full suite of operations at station 13. 2 GC-S were completed with very successful recoveries of 70-80cm. At 10:00, we started transiting towards station 12 for the full station. CTDs, horizontal PN and vertical ZN were done in the polynya, in the shallow-waters. A VV was also deployed in the shallow water. After the VV, we moved 1.5 NM offshore to deploy 2 BC and 2 GC-S, which were successful. A failed GC-L was also done. 2 CTD and 2 box cores were then completed along a transect between stations 12 and 14. At 17:08, we arrived at station 14, in front of Nain, for the full station. Katrina was dropped off in Nain using the zodiac. At 19:45, we began a transit to complete an inshore transect, which continued overnight.

5.11 JD267 – Sept. 24, 2021

Stations continued overnight as the MBES was not working. The transect of surface samples and CTD continued. At site 187, the muddy bottom and the position inside the fjord allowed us to deploy the gravity corer. Since time was a bit more limited, only one successful GC (92.5 cm recovery) was done at the site. We then moved outward, to another site about 2NM away. CTD, BC and GC were deployed. The GC recovered the longest core yet, at 104 cm. At 03:30, we started our transit towards station 15 in Ten Miles Bay and arrived at 06:30. Two GC were collected in and outside of a large submarine landslide. Both coring attempts were successful. A basin GC, BC and CTD was then collected for background conditions. Another, smaller, landslide was then visited with gravity core deployment above and outside the landslide. Finally, BC and CTD were collected in front of the abandoned Labradorite mine to evaluate the seabed contamination due to past mining activity. At 09:30, we departed towards Nain and arrived in the community at 10:40. John disembarked the ship and all the material collected for MUN was demobilized in Nain. A short visit of the community was done, and we departed Nain at 13:00 sailing towards the last station of the cruise, 1.5 NM north of Nain where a CTD and a box core were completed. Shortly after, our transit back to St. Anthony began. The wet laboratory was cleaned, and the instruments were washed with freshwater before final storage.

5.12 JD268 – Sept. 25, 2021

Transit to St. Anthony.

5.13 JD269 – Sept. 26, 2021

Transit to St. Anthony.

5.14 JD269 – Sept. 27, 2021

Transit to St. Anthony completed at 19:00. All remaining samples and material were demobilized; only the instruments were left on board.

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APPENDIX A: STATION SUMMARY

Table A4: Simplified summary of all stations. For more details on each station, refer to the following tables.

Station No.	Old station	Sample Type	J Day	UTC	Latitude	Longitude	Water Depth (m)	Archived at	Comments
0001	1	CTD	261	1442	56.545373	-61.45233	20.6	--	CTD sent to 15 m depth (approx. 5m above seafloor)
0002	1	CTD-R	261	1508	56.545297	-61.453788	20	MUN	Rosette sent to 15 m depth (approx. 5m above seafloor), 3 samples at 3 m depth, 56.545132 ; 61.453393 , UTC 1509, only 1 sample was kept
0003	1	PN	261	1613	56.546482	-61.45662	20.1	UNB	Phytoplankton Net sent to 15 m depth (approx. 5 m above seafloor)
0004	1	PN	261	1626	56.546403	-61.457028	23.8	MUN	Phytoplankton Net sent to 15 m depth
0005	1	ZN	261	1649	56.546392	-61.458392	22.1	MUN	Zooplankton net sent to 17 m depth
0006	1	VV	261	1704	56.546338	-61.456373	20.7	GSC	--
0007	1	VV	261	1712	56.54772	-61.463412	40.8	A = UNB B = GSC	--
0008	1	VV	261	1721	56.549908	-61.470625	42.6	A = UNB B = GSC	--
0009	2	PN	261	1814	56.530077	-61.38792	59.2	UNB	Phytoplankton Net sent to 55 m depth
0010	2	PN	261	1830	56.529457	-61.388203	58.8	MUN	Phytoplankton Net sent to 55 m depth
0011	2	ZN	261	1838	56.529325	-61.387707	58.8	MUN	Zooplankton net sent to 55 m depth
0012	2	CTD	261	1851	56.529435	-61.386982	59.2	--	CTD sent to 55 m depth
0013	2	CTD-R	261	1910	56.52972	-61.387127	59.5	MUN	Rosette sent to 50 m depth, 3 samples at 10 m depth, 56.529962 ; 61.387510 , UTC 1915, only 1 sample was kept
0014	2	VV	261	1930	56.530683	-61.387272	59.9	A = UNB B = GSC	--
0015	2	BC	261	1945	56.53093	-61.386672	60.2	ULaval	1 bag 0-2 cm ; 2 surface water samples for nanoplstic analyses at ULaval
0016	2	BC	261	1959	56.531652	-61.385612	60.2	UNB	1 bag 0-1 cm
0017	--	BC	261	2027	56.536353	-61.402798	54.3	ULaval UNB GSC	3 bags at surface ; 2 surface water samples for nanoplstic analyses at ULaval
0018	--	BC	261	2049	56.538688	-61.41552	47.1	GSC	1 bag at surface
0019	--	VV	261	2107	56.54323	-61.433137	26	GSC	1 bag at surface
0020	--	BC	261	2150	56.532053	-61.370743	63	GSC UNB	2 bags at surface
0021	3	CTD	262	1006	56.545815	-61.29243	102	--	CTD sent to 95 m depth ; There is an angle in the rope bcause of the drift

0022	3	CTD-R	262	1031	56.5467	-61.2919	101	MUN	Rosette sent to 95 m depth, 3 samples at 11 m depth, 56.5466 ; 61.2881 , UTC 1036, only 1 sample was kept
0023	3	PN	262	--	56.5462	-61.3023	103	MUN	Phytoplankton Net sent to 90 m depth ; wire came out of winch ; angle in rope because of drift ; info at bottom weren't noted
0024	3	PN	262	1124	56.5458	-61.3001	102	UNB	Phytoplankton Net sent to 70 m depth ; boat drift 1.9 kn
0025	3	ZN	262	1147	56.5463	-61.2965	102	MUN	Zooplankton Net sent to 90 m depth ; boat drift 1.2 kn
0026	3	VV	262	1209	56.5468	-61.2968	101	A = UNB B = GSC	2 bags at surface
0027	3	VV	262	1235	56.5505	-61.3202	82.4	A = UNB B = GSC	2 bags at surface
0028	4	CTD	262	1444	56.5243	-61.1942	87.9	--	CTD sent to 82 m depth
0029	4	CTD-R	262	1503	56.5251	-61.1919	87.3	MUN	Rosette sent to 80 m depth, 3 samples at 15 m depth, 56.5245 ; -61.1890 , UTC 1507, only 1 sample was kept ; boat drift 1.9 kn
0030	4	PN	262	--	56.5264	-61.1949	--	MUN	Horizontal ; Start : 56.5264, -61.1499, UTC 1523 ; Finish : 56.5271, -61. 2030, UTC 1535 ; speed 2 to 4 kn ; azimut 266 ; towed 5 m deep for 15 minutes
0031	4	ZN	262	1549	56.5262	-61.195	87.6	MUN	Zooplankton Net sent to 80 m depth ; boat drift 1.7 kn
0032	4	PN	262	--	56.5264	-61.1896	--	UNB	Horizontal ; Start : 56.5264, -61.1896, UTC 1603 ; Finish : 56.5275, -61. 20379, UTC 1619 ; speed 2 to 4 kn ; azimut 280 ; towed 5 m deep for 15 minutes
0033	4	BC	262	1632	56.5264	-61.1973	87.8	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0034	4	GC-S	262	1721	56.5264	-61.1937	87.3	GSC	1 bag core cutter and 1 bag core catcher
0035	4	GC-S	262	1747	56.5237	-61.1909	88	GSC	--
0036	4	GC-L	262	1810	56.5244	-61.1875	86.5	GSC	1 bag core catcher
0037	7	CTD	262	1904	56.5671	-61.1703	69.3	--	CTD sent to 60 m depth ; boat drift 1.2 kn
0038	7	CTD-R	262	1926	56.5653	-61.166	73.5	MUN	Rosette sent to 67 m depth, 3 samples at 6 m depth, 56.5641 ; -61.1625 , UTC 1932, only 1 sample was kept ; boat drift 1.2 kn
0039	7	PN	262	--	56.5623	-61.1586		MUN	Horizontal ; Start : 56.5623, -61.1586, UTC 1946 ; Finish : 56.5663, -61. 1771, UTC 2002 ; speed 2 to 4 kn ; azimut 300 ; towed 5 m deep for 15 minutes
0040	7	ZN	262	2014	56.5642	-61.1658	75.1	MUN	Zooplankton Net sent to 55 m depth ; boat drift 0.6 kn
0041	7	PN	262	--	56.5629	-61.1583		UNB	Horizontal ; Start : 56.5629, -61.1583, UTC 2027 ; Finish : 56.5656, -61. 1779, UTC 2044 ; speed 2 to 4 kn ; azimut 280 ; towed 5 m deep for 15 minutes
0042	7	VV	262	2101	56.5643	-61.1569	77.6	A = UNB B = GSC	2 bags at surface
0043	7	BC	262	2108	56.5639	-61.1575	77.8	UNB	1 bag at surface
0044	7	BC	262	2118	56.5638	-61.1587	77.9	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0045	5	CTD	263	1009	56.5219	-60.9806	128	--	CTD sent to 121 m depth ; boat drift 0.8 kn
0046	5	CTD-R	263	1026	56.522	-60.9802	127	MUN	Rosette sent to 123 m depth, 3 samples at 10 m depth, 56.5216 ; -60.9799 , UTC 1029, only 1 sample was kept ; boat drift 0.6 kn
0047	5	PN	263	--	56.5221	-60.9841	126	MUN	Horizontal ; Start : 56.5221, -60.9841, UTC 1041 ; Finish : 56.5234, -60. 9652, UTC 1055 ; speed 2 to 4 kn ; azimut 80 ; towed 5 m deep for 15 minutes
0048	5	ZN	263	1109	56.5233	-60.9625	122	MUN	Zooplankton Net sent to 119 m depth ; boat drift 0.2 kn

0049	5	PN	263	--	56.5229	-60.9689	122	UNB	Horizontal ; Start : 56.5229, -60.9689, UTC 1126 ; Finish : 56.5229, -60. 9867, UTC 1141 ; speed 2 to 4 kn ; azimut 270 ; towed 5 m deep for 15 minutes
0050	5	BC	263	1149	56.5241	-60.9832	129	UNB GSC	2 bags at surface
0051	5	BC	263	1202	56.523	-60.9814	127	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0052	5	GC-S	263	1222	56.5237	-60.9809	127	GSC	1 bag core catcher
0053	5	GC-S	263	1244	56.5151	-61.0008	123	GSC	--
0054	5	GC-S	263	1259	56.5137	-60.9984	122	GSC	--
0055	6	CTD	263	1437	56.5138	-60.7536	145	--	CTD sent to 140 m depth ; boat drift 0.6 kn
0056	6	CTD-R	263	1455	56.5144	-60.7568	143	MUN	Rosette sent to 140 m depth, 3 samples at 19 m depth, 56.5137 ; -60.7562 , UTC 1458, only 1 sample was kept ; boat drift 0.8 kn
0057	6	PN	263	--	56.5131	-60.7537	125	MUN	Horizontal ; Start : 56.5131, -60.7537, UTC 1507 ; Finish : 56.5093, -60. 7737, UTC 1534 ; speed 2 to 4 kn ; azimut 255 ; towed 5 m deep for 15 minutes
0058	6	ZN	263	1535	56.5093	-60.7021	131	MUN	Zooplankton Net sent to 121 m depth ; boat drift 0.6 kn
0059	6	PN	263	--	56.5067	-60.7743	120	UNB	Horizontal ; Start : 56.5067, -60.7743, UTC 1555 ; Finish : 56.5117, -60. 7557, UTC 1611 ; speed 2 to 4 kn ; azimut 340 ; towed 5 m deep for 15 minutes
0060	6	BC	263	1631	56.5156	-60.7549	146	UNB GSC	--
0061	6	BC	263	1647	56.5137	-60.7555	145	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0062	6	GC-S	263	1738	56.51	-60.7698	134	GSC	--
0063	6	GC-S	263	1753	56.5102	-60.7693	134	GSC	--
0064	D17	Drift	263	1843	56.5066	-60.6935	--	Dalhousie	serial no. 0-4408656
0065	D16	Drift	263	1852	56.5089	-60.7051	--	Dalhousie	serial no. 0-3195958
0066	D15	Drift	263	1858	56.5097	-60.7171	--	Dalhousie	serial no. 0-4407179
0067	D14	Drift	263	1902	56.511	-60.7274	--	Dalhousie	serial no. 0-3196060
0068	D13	Drift	263	1907	56.5121	-60.7394	--	Dalhousie	serial no. 0-3196469
0069	D12	Drift	263	1911	56.5133	-60.7508	--	Dalhousie	serial no. 0-3194153
0070	D11	Drift	263	1916	56.5146	-60.7633	--	Dalhousie	serial no. 0-4407181
0071	D10	Drift	263	1921	56.5156	-60.7742	--	Dalhousie	serial no. 0-4408659
0072	D09	Drift	263	1927	56.5167	-60.7874	--	Dalhousie	serial no. 0-4407090
0073	D08	Drift	263	1931	56.5181	-60.7977	--	Dalhousie	serial no. 0-3194054
0074	D07	Drift	263	1936	56.519	-60.8096	--	Dalhousie	serial no. 0-3194004
0075	D06	Drift	263	1939	56.5205	-60.8199	--	Dalhousie	serial no. 0-4408877

0076	D05	Drift	263	1944	56.5214	-60.832	--	Dalhousie	serial no. 0-4407170
0077	D04	Drift	263	1949	56.5227	-60.8429	--	Dalhousie	serial no. 0-3194009
0078	D03	Drift	263	1953	56.5238	-60.8551	--	Dalhousie	serial no. 0-3194130
0079	D02	Drift	263	1958	56.5251	-60.8667	--	Dalhousie	serial no. 0-3194001
0080	D01	Drift	263	2002	56.5261	-60.8772	--	Dalhousie	serial no. 0-3194010
0081	7	GC-S	263	2153	56.546	-61.1757	76.2	GSC	--
0082	7	GC-S	263	2211	56.546	-61.1776	74.6	GSC	--
0083	7	GC-S	263	2224	56.5459	-61.1755	77.1	GSC	1 bag of surface sediment caught at bottom of liner, no core
0084	7	GC-S	263	2242	56.5457	-61.176	76.9	GSC	1 bag of surface sediment caught at bottom of liner, no core
0085	3	GC-S	263	2357	56.5437	-61.3102	99.4	GSC	1 bag of surface sediment caught at bottom of liner, no core
0086	3	GC-S	263	0021	56.544	-61.3192	92.9	GSC	1 bag of surface sediment caught at bottom of liner, no core
0087	3	GC-S	263	0029	56.5428	-61.3187	92.4	GSC	--
0088	3	BC	263	0039	56.5446	-61.3185	93.8	UNB	1 bag at surface
0089	3	GC-S	264	1019	56.5468	-61.3312	83.8	GSC	1 bag of surface sediment caught at bottom of liner, no core
0090	3	GC-S	264	1031	56.5435	-61.3246	87.6	GSC	--
0091	8	CTD	264	1118	56.5924	-61.2697	57.1	--	CTD sent to 52 m depth ; boat drift 1 kn
0092	8	CTD-R	264	1137	56.594	-61.2714	55.7	MUN	Rosette sent to 50 m depth, 3 samples at 12 m depth, 56.5943 ; -61.2708 , UTC 1139, only 1 sample was kept ; boat drift 1.6 kn
0093	8	PN	264	--	56.596	-61.2677	61	MUN	Horizontal ; Start : 56.5960, -61.2677, UTC 1146 ; Finish : 56.6072, -61.2617, UTC 1201 ; speed 2 to 4 kn ; azimut 17 ; towed 5 m deep for 15 minutes
0094	8	ZN	264	1209	56.6069	-61.2607	61.8	MUN	Zooplankton Net sent to 57 m depth ; boat drift 0.8 kn
0095	8	PN	264	--	56.607	-61.2585	67.5	UNB	Horizontal ; Start : 56.6070, -61.2585, UTC 1219 ; Finish : 56.5994, -61.2655, UTC 1234 ; speed 2 to 4 kn ; azimut 208 ; towed 5 m deep for 15 minutes
0096	8	BC	264	1252	56.5894	-61.2666	56.8	ULaval GSC	2 bags for ULaval (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at Ulaval ; 1 bag surface sediment fo GSC
0097	8	BC	264	1305	56.5896	-61.2732	56.1	UNB	1 bag at surface
0098	8	GC-S	264	1341	56.5816	-61.2522	69.2	GSC	1 bag of surface sediment caught at bottom of liner, no core
0099	10	CTD	264	1537	56.6128	-61.3648	65.4	--	CTD sent to 60 m depth ; boat drift 1.2 kn
0100	10	CTD-R	264	1554	56.6159	-61.3568	58.5	MUN	Rosette sent to 54 m depth, 3 samples at 21 m depth, 56.6166 ; -61.3547 , UTC 1558, only 1 sample was kept ; boat drift 1.0 kn
0101	10	PN	264	--	56.6171	-61.3545	46.7	MUN	Horizontal ; Start : 56.6171, -61.3545, UTC 1606 ; Finish : 56.6124, -61.3677, UTC 1620 ; speed 2 to 4 kn ; azimut 240 ; towed 5 m deep for 15 minutes Part of the sample was lost while transfering in jar, we'll do another one.
0102	10	ZN	264	1627	56.6139	-61.3703	59.3	MUN	Zooplankton Net sent to 53 m depth ; boat drift 0.8 kn

0103	10	PN	264	--	56.6117	-61.3668	61.1	UNB	Horizontal ; Start : 56.6117, -61.3668, UTC 1645 ; Finish : 56.6187, -61.3479, UTC 1700 ; speed 2 to 4 kn ; azimut 45 ; towed 5 m deep for 15 minutes
0104	10	PN	264	--	56.6205	-61.3425	47	MUN	Horizontal ; Start : 56.6205, -61.3425, UTC 1713 ; Finish : 56.6161, -61.3615, UTC 1730 ; speed 2 to 4 kn ; azimut 267 ; towed 5 m deep for 15 minutes
0105	10	BC	264	1743	56.6132	-61.3654	67.8	A = UNB B = GSC	2 bags at surface
0106	10	BC	264	1753	56.6139	-61.3633	66	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0107	10	GC-S	264	1815	56.6137	-61.3641	67.5	GSC	1 bag core catcher and 1 bag core cutter ; we added 40 kg to the corer's weight (2 x 20 kg)
0108	10	GC-S	264	1844	56.614	-61.364	66.1	GSC	--
0109	9	CTD	264	2043	56.6891	-61.2079	88	--	CTD sent to 83 m depth ; boat drift 0.6 kn
0110	9	CTD-R	264	2104	56.6879	-61.2153	79.6	MUN	Rosette sent to 75 m depth, 3 samples at 10 m depth, 56.6878 ; -61.2148 , UTC 2107, only 1 sample was kept ; boat drift 0.2 kn
0111	9	PN	264	--	56.6878	-61.212	87	MUN	Horizontal ; Start : 56.6878, -61.2120, UTC 2115 ; Finish : 56.6978, -61.2000, UTC 2132 ; speed 2 to 4 kn ; azimut 57 ; towed 5 m deep for 15 minutes
0112	9	ZN	264	2138	56.6992	-61.2036	52	MUN	Zooplankton Net sent to 46 m depth ; boat drift 0.6 kn
0113	9	PN	264	--	56.699	-61.2051	53	8	Horizontal ; Start : 56.6990, -61.2051, UTC 2150 ; Finish : 56.6866, -61.2103, UTC 2207 ; speed 2 to 4 kn ; azimut 188 ; towed 5 m deep for 15 minutes
0114	9	BC	264	22:16	56.68841	-61.210238	88	A = UNB B = GSC	2 bags at surface
0115	9	BC	264	22:26	56.68841	-61.210238	89	Ulaval	1 bag at surface and 1 surface water sample ; for nanoplastic analyses at ULaval
0116	9	GC-S	264	22:35	56.688423	-61.206032	88.6	GSC	--
0117	9	GC-S	264	23:40	56.6888	-61.2067	89	GSC	--
0118	3	GC-S	265	1112	56.5436	-61.3167	94.5	GSC	--
0119	3	GC-S	265	1121	56.5434	-61.3186	93.5	GSC	--
0120	11	CTD	265	13:58	56.5935	-61.4147	12.7	--	CTD sent to 10 m depth ; boat drift 4.3 kn
0121	11	PN	265	--	56.5927	-61.4111	17.3	MUN	Horizontal ; Start : 56.5927, -61.4111, UTC 14:03; Finish : 56.5919, -61.4110, UTC 14:18 ; speed 2 to 4 kn ; azimut 190 ; towed 5 m deep for 15 minutes
0122	11	ZN	265	14:23	56.5921	-61.4099	19	MUN	Zooplankton Net sent to 15 m depth ; boat drift 3.1 kn
0123	11	PN	265	--	56.5915	-61.4077	27.3	UNB	Horizontal ; Start : 56.5915, -61.4077, UTC 14:30; Finish : 56.5926, -61.4113, UTC 14:47 ; speed 2 to 4 kn ; azimut 305 ; towed 5 m deep for 15 minutes ; SOG 0.2 kn
0124	11	VV	265	1501	56.5917	-61.4069	29.7	GSC	1 bag
0125	11	CTD-R	265	1521	56.5861	-61.3759	65	MUN	Rosette sent to 60 m depth, 3 samples at 13 m depth, 56.5861 ; -61.3759 , UTC 1537, only 1 sample was kept ; boat drift not noted
0126	--	VV	265	1600	56.5947	-61.3652	92.4	A = UNB B = GSC	2 bags
0127	--	VV	265	1802	56.6012	-61.4406	65.8	A = UNB B = GSC	2 bags
0128	--	VV	265	1842	56.6031	-61.4897	56.7	A = UNB B = GSC	2 bags
0129	--	VV	265	1901	56.6018	-61.4714	61.9	A = UNB B = GSC	2 bags

0130	--	VV	265	1925	56.602	-61.5135	94.8	A = UNB B = GSC	2 bags
0131	--	VV	265	1955	56.6032	-61.5528	83.8	A = UNB B = GSC	2 bags
0132	--	BC	265	2006	56.6025	-61.5494	85.5	UNB	1 bag at surface
0133	--	BC	265	2016	56.6019	-61.5462	85.5	ULaval	2 bags (1 at surface and 1 bottom of the box) for nanoplastic analyses at ULaval
0134	--	VV	265	2106	56.5995	-61.5951	68.5	A = UNB B = GSC	2 bags
0135	--	BC	265	2124	56.5996	-61.5932	72.3	ULaval	1 bag at surface and 1 surface water sample ; for nanoplastic analyses at ULaval
0136	--	BC	265	2159	56.5992	-61.5949	71	UNB	1 bag at surface
0137	13	CTD	266	1018	56.5865	-61.7937	108	--	CTD sent to 100 m depth ; boat drift 1.0 kn
0138	13	CTD-R	266	1031	56.5848	-61.7877	71.9	MUN	Rosette sent to 65 m depth, 3 samples at 2.5 m depth, 56.5844 ; -61.7856 , UTC 1030, only 1 sample was kept ; boat drift 0.8 kn
0139	13	PN	266	--	56.5852	-61.7855	96.6	MUN	Horizontal ; Start : 56.5852, -61.7855, UTC 1041 ; Finish : 56.5865, -61.8045, UTC 1057 ; speed 2 to 4 kn ; azimut 280 ; towed 5 m deep for 15 minutes ; SOG 2.5 kn
0140	13	ZN	266	1105	56.5857	-61.8007	105	MUN	Zooplankton Net sent to 95 m depth ; boat drift 1.0 kn
0141	13	PN	266	--	56.5838	-61.792	87.3	UNB	Horizontal ; Start : 56.5838, -61.7920, UTC 1125 ; Finish : 56.5874, -61.8093, UTC 1140 ; speed 2 to 4 kn ; azimut 290 ; towed 5 m deep for 15 minutes ; SOG 2.5 kn
0142	13	BC	266	1154	56.5855	-61.8048	66	UNB GSC	2 bags of surface sediments
0143	13	BC	266	1204	56.5849	-61.7992	79	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0144	13	GC-S	266	1223	56.5855	-61.803	76.2	GSC	A/B = 74 cm B/C = 7 cm
0145	13	GC-L	266	1235	56.5845	-61.7972	88	GSC	--
0146	13	GC-S	266	1254	56.5859	-61.8034	80	GSC	--
0147	12	CTD	266	1436	56.6355	-61.929	18	--	CTD sent to 18 m depth ; boat drift 1.0 kn
0148	12	CTD-R	266	1445	56.6351	-61.9271	20	MUN	Rosette sent to 15 m depth, 2 samples at 10 m depth, 56.6351 ; -61.9270 , UTC 1446, only 1 sample was kept ; boat drift 0.4 kn
0149	12	PN	266	--	56.6348	-61.926	18	MUN	Horizontal ; Start : 56.6383, -61.9260, UTC 1451 ; Finish : 56.6343, -61.9248, UTC 1507 ; speed 2 to 4 kn ; azimut 84 ; towed 5 m deep for 15 minutes ; SOG 0.6 kn
0150	12	ZN	266	1512	56.6343	-61.9245	18.7	MUN	Zooplankton Net sent to 15 m depth ; boat drift 0.4 kn
0151	12	PN	266	--	56.6342	-61.924	20.7	UNB	Horizontal ; Start : 56.6342, -61.9240, UTC 1528 ; Finish : 56.6334, -61.9220, UTC 1544 ; speed 2 to 4 kn ; azimut 122 ; towed 5 m deep for 15 minutes ; SOG 0.4 kn
0152	12	VV	266	1552	56.6322	-61.9187	23.5	GSC	1 bag of surface sediment
0153	12	CTD	266	1617	56.6166	-61.8861	60.2	--	CTD sent to 55 m depth ; boat drift 1.9 kn
0154	12	BC	266	1627	56.6165	-61.8856	60.2	UNB GSC	1 push core 15 cm lenght ; 2 bags surface sediment
0155	12	BC	266	1648	56.6162	-61.888	60.4	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0156	12	GC-S	266	1700	56.6159	-61.8863	60.2	GSC	--

0157	12	GC-S	266	1729	56.6159	-61.8894	58.8	GSC	--
0158	--	CTD	266	1806	56.594	-61.8568	76.9	--	CTD sent to 70 m depth ; boat drift 1.4 kn
0159	--	BC	266	1814	56.5926	-61.8536	64.4	GSC UNB	1 surface sample for UNB, 1 for GSC
0160	--	CTD	266	1921	56.5776	-61.7126	68.5	--	CTD sent to 62 m depth ; boat drift 1.4 kn
0161	--	BC	266	1930	56.5783	-61.7122	69.2	GSC UNB	1 surface sample for UNB, 1 for GSC
0162	14	CTD	266	2008	56.5548	-61.6395	97.6	--	CTD sent to 92 m depth ; boat drift 1.7 kn
0163	14	CTD-R	266	2034	56.5573	-61.6442	99	MUN	Rosette sent to 95 m depth, 3 samples at 10 m depth, 56.5558; -61.6417 , UTC 2041, only 1 sample was kept ; boat drift 1.2 kn
0164	14	PN	266	--	56.5555	-61.6401	99	MUN	Horizontal ; Start : 56.5555, -61.6401, UTC 2048 ; Finish : 56.5603, -61.6527, UTC 2103 ; speed 2 to 4 kn ; azimut 300 ; towed 5 m deep for 15 minutes ; SOG 1.6 kn
0165	14	ZN	266	2108	56.5607	-61.6542	99.7	MUN	Zooplankton Net sent to 95 m depth ; boat drift 0.4 kn
0166	14	PN	266	--	56.5587	-61.6556	99.7	UNB	Horizontal ; Start : 56.5587, -61.6556, UTC 2123 ; Finish : 56.5582, -61.6342, UTC 2140 ; speed 2 to 4 kn ; azimut 95 ; towed 5 m deep for 15 minutes ; SOG 2.5 kn
0167	14	BC	266	2147	56.5592	-61.6401	107	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0168	14	GC-S	266	2355	56.5593	-61.636	106	GSC	1 bag core catcher
0169	14	GC-S	266	2214	56.5586	-61.641	103	GSC	1 bag core catcher
0170	14	BC	266	2224	56.5584	-61.6437	101	GSC UNB	1 surface sample for UNB, 1 for GSC
0171	--	CTD	266	2328	56.5672	-61.6073	125	--	CTD sent to 120 m depth ; boat drift 0.4 kn
0172	--	BC	266	2350	56.5675	-61.608	125	GSC UNB	1 surface sample for UNB, 1 for GSC
0173	--	CTD	266	0010	56.565	-61.5715	87.2	--	CTD sent to 80 m depth ; boat drift 1.4 kn
0174	--	BC	266	0016	56.5654	-61.5718	88.6	GSC UNB	1 surface sample for UNB, 1 for GSC
0175	--	CTD	266	0038	56.5611	-61.528	111	--	CTD sent to 105 m depth ; boat drift 1.4 kn
0176	--	BC	266	0044	56.5614	-61.5271	102	GSC	1 surface sample for GSC
0177	--	CTD	266	0102	56.5545	-61.4916	32	--	CTD sent to 32 m depth ; boat drift 1.4 kn
0178	--	BC	266	0107	56.554	-61.4912	31.8	GSC	1 surface sample for GSC
0179	--	CTD	266	0249	56.6081	-61.7119	63	--	CTD sent to 58 m depth ; boat drift 1.2 kn
0180	--	BC	266	0254	56.6072	-61.7093	61.6	GSC UNB	1 surface sample for UNB, 1 for GSC
0181	--	CTD	267	0328	56.6184	-61.7661	74	--	CTD sent to 70 m depth ; boat drift 1.7 kn
0182	--	BC	267	0335	56.6173	-61.7609	75.4	GSC UNB	1 surface sample for UNB, 1 for GSC
0183	--	CTD	267	0420	56.6131	-61.8356	47.1	--	CTD sent to 39 m depth ; boat drift 1.6 kn

0184	--	BC	267	0425	56.6122	-61.8317	36.7	GSC UNB	1 surface sample for UNB, 1 for GSC
0185	--	CTD	267	0529	56.5966	-61.97	69.2	--	CTD sent to 65 m depth ; boat drift 0.8 kn
0186	--	BC	267	0538	56.5955	-61.9675	68.5	UNB GSC	1 surface sample for UNB, 1 for GSC
0187	--	GC-S	267	0545	56.5948	-61.9655	68.5	GSC	AB:82.5cm, BC:10cm
0188	--	CTD	267	0609	56.5981	-61.9215	101	--	CTD sent to 90 m depth ; boat drift 1.2 kn
0189	--	BC	267	0616	56.5973	-61.9199	98.3	GSC UNB	2 push cores archived at GSC. A:23.5cm, B:21.5cm. 1 bag surface sediment for UNB
0190	--	GC-S	267	0624	56.5976	-61.9204	101	GSC	--
0191	15	GC-S	267	0933	56.4763	-61.5174	26.3	GSC	1 bag core cutter / catcher
0192	15	GC-S	267	0945	56.4789	-61.5173	34.6	GSC	1 bag core cutter / catcher
0193	15	BC	267	1010	56.4786	-61.5182	34.6	GSC UNB	2 push cores archived at GSC. A: 16 cm, B: 16.5 cm. 1 bag surface sediment for UNB
0194	15	CTD	267	1023	56.487	-61.5159	40.8	--	CTD sent to 35 m depth ; boat drift 1.0 kn
0195	15	GC-S	267	1036	56.4874	-61.5152	40.8	GSC	1 bag core catcher ; intact shell in core catcher sample
0196	15	BC	267	1050	56.487	-61.5146	41.5	GSC UNB ULaval	2 push cores : A: 16.5 cm archived at Ulaval ; B: 16.5 cm archived at GSC ; 1 bag surface sediment for UNB
0197	15	GC-S	267	1122	56.4923	-61.5673	28.4	GSC	1 bag core catcher
0198	15	GC-S	267	1133	56.4916	-61.5677	26.3	GSC	1 bag core catcher
0199	15	CTD	267	1159	56.4986	-61.6163	44.3	--	CTD sent to 39 m depth ; boat drift 0.4 kn
0200	15	BC	267	1207	56.4993	-61.6148	45.7	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0201	15	BC	267	1218	56.5004	-61.6125	41.5	GSC UNB	1 surface sample for UNB, 1 for GSC
0202	15	GC-S	267	1230	56.4986	-61.615	45.7	GSC	1 bag core catcher
0203	--	CTD	267	1726	56.6061	-61.6529	36.7	--	CTD sent to 30 m depth ; boat drift 0.4 kn
0204	--	BC	267	1732	56.6056	-61.6533	35.3	GSC	1 surface sample for GSC
0205	--	BC	267	1737	56.6053	-61.6536	34.6	UNB	1 surface sample for UNB

Table A5. List of sediment sampling stations

Station No.	Old station	Sample Type	J Day	UTC	Latitude	Longitude	Water Depth (m)	Corer length (cm)	App. Penetration (cm)	Core length (cm)	No. of Sections	Bagged	Samples	Archived at	Comments
0006	1	VV	261	1704	56.546338	-61.456373	20.7	--	--	--	--	1	--	GSC	--
0007	1	VV	261	1712	56.54772	-61.463412	40.8	--	--	--	--	2	--	A = UNB B = GSC	--
0008	1	VV	261	1721	56.549908	-61.470625	42.6	--	--	--	--	2	--	A = UNB B = GSC	--
0014	2	VV	261	1930	56.530683	-61.387272	59.9	--	--	--	--	2	--	A = UNB B = GSC	--
0015	2	BC	261	1945	56.53093	-61.386672	60.2	--	--	--	--	1	2 surf water	ULaval	1 bag 0-2 cm ; 2 surface water samples for nanoplstic analyses at ULaval
0016	2	BC	261	1959	56.531652	-61.385612	60.2	--	--	--	--	1	--	UNB	1 bag 0-1 cm
0017	--	BC	261	2027	56.536353	-61.402798	54.3	--	--	--	--	3	2 surf water	ULaval UNB GSC	3 bags at surface ; 2 surface water samples for nanoplstic analyses at ULaval
0018	--	BC	261	2049	56.538688	-61.41552	47.1	--	--	--	--	1	--	GSC	1 bag at surface
0019	--	VV	261	2107	56.54323	-61.433137	26	--	--	--	--	1	--	GSC	1 bag at surface
0020	--	BC	261	2150	56.532053	-61.370743	63	--	--	--	--	2	--	GSC UNB	2 bags at surface
0026	3	VV	262	1209	56.5468	-61.2968	101	--	--	--	--	2	--	A = UNB B = GSC	2 bags at surface
0027	3	VV	262	1235	56.5505	-61.3202	82.4	--	--	--	--	2	--	A = UNB B = GSC	2 bags at surface
0033	4	BC	262	1632	56.5264	-61.1973	87.8	--	--	--	--	2	1 surf water	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0034	4	GC-S	262	1721	56.5264	-61.1937	87.3	90	90	25	1	2	--	GSC	1 bag core cutter and 1 bag core catcher
0035	4	GC-S	262	1747	56.5237	-61.1909	88	90	95	65	1	--	--	GSC	--
0036	4	GC-L	262	1810	56.5244	-61.1875	86.5	90	--	15	1	1	--	GSC	1 bag core catcher
0042	7	VV	262	2101	56.5643	-61.1569	77.6	--	--	--	--	2	--	A = UNB B = GSC	2 bags at surface
0043	7	BC	262	2108	56.5639	-61.1575	77.8	--	--	--	--	1	--	UNB	1 bag at surface
0044	7	BC	262	2118	56.5638	-61.1587	77.9	--	--	--	--	2	1 surf water	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0050	5	BC	263	1149	56.5241	-60.9832	129	--	--	--	--	2	--	UNB GSC	2 bags at surface
0051	5	BC	263	1202	56.523	-60.9814	127	--	--	--	--	2	1 surf water	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval

0052	5	GC-S	263	1222	56.5237	-60.9809	127	90	--	0	0	1	--	GSC	1 bag core catcher
0053	5	GC-S	263	1244	56.5151	-61.0008	123	90	90	63	1	0	--	GSC	--
0054	5	GC-S	263	1259	56.5137	-60.9984	122	90	--	62	1	0	--	GSC	--
0060	6	BC	263	1631	56.5156	-60.7549	146	--	--	--	--	2	--	UNB GSC	--
0061	6	BC	263	1647	56.5137	-60.7555	145	--	--	--	--	2	1 surf water	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0062	6	GC-S	263	1738	56.51	-60.7698	134	90	15	61	1	0	--	GSC	--
0063	6	GC-S	263	1753	56.5102	-60.7693	134	90	90	70	1	0	--	GSC	--
0081	7	GC-S	263	2153	56.546	-61.1757	76.2	90	--	26	1	0	--	GSC	--
0082	7	GC-S	263	2211	56.546	-61.1776	74.6	90	90	62	1	0	--	GSC	--
0083	7	GC-S	263	2224	56.5459	-61.1755	77.1	90	--	--	--	1	--	GSC	1 bag of surface sediment caught at bottom of liner, no core
0084	7	GC-S	263	2242	56.5457	-61.176	76.9	90	--	--	--	1	--	GSC	1 bag of surface sediment caught at bottom of liner, no core
0085	3	GC-S	263	2357	56.5437	-61.3102	99.4	90	--	--	--	1	--	GSC	1 bag of surface sediment caught at bottom of liner, no core
0086	3	GC-S	263	0021	56.544	-61.3192	92.9	90	--	--	--	1	--	GSC	1 bag of surface sediment caught at bottom of liner, no core
0087	3	GC-S	263	0029	56.5428	-61.3187	92.4	90	--	11.5	1	0	--	GSC	--
0088	3	BC	263	0039	56.5446	-61.3185	93.8	--	--	--	--	1	--	UNB	1 bag at surface
0089	3	GC-S	264	1019	56.5468	-61.3312	83.8	90	--	--	--	1	--	GSC	1 bag of surface sediment caught at bottom of liner, no core
0090	3	GC-S	264	1031	56.5435	-61.3246	87.6	90	46	15	1	0	--	GSC	--
0096	8	BC	264	1252	56.5894	-61.2666	56.8	--	--	--	--	3	1 surf water	ULaval GSC	2 bags for ULaval (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at Ulaval ; 1 bag surface sediment fo GSC
0097	8	BC	264	1305	56.5896	-61.2732	56.1	--	--	--	--	1	--	UNB	1 bag at surface
0098	8	GC-S	264	1341	56.5816	-61.2522	69.2	--	--	--	--	1	--	GSC	1 bag of surface sediment caught at bottom of liner, no core
0105	10	BC	264	1743	56.6132	-61.3654	67.8	--	--	--	--	2	--	A = UNB B = GSC	2 bags at surface
0106	10	BC	264	1753	56.6139	-61.3633	66	--	--	--	--	2	1 surf water	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0107	10	GC-S	264	1815	56.6137	-61.3641	67.5	90	75	54	1	2	--	GSC	1 bag core catcher and 1 bag core cutter ; we added 40 kg to the corer's weight (2 x 20 kg)
0108	10	GC-S	264	1844	56.614	-61.364	66.1	90		54.5	1	0	--	GSC	--
0114	9	BC	264	22:16	56.68841	-61.210238	88	--	--	--	--	2	--	A = UNB B = GSC	2 bags at surface
0115	9	BC	264	22:26	56.68841	-61.210238	89	--	--	--	--	1	1 surf water	Ulaval	1 bag at surface and 1 surface water sample ; for nanoplastic analyses at ULaval

0116	9	GC-S	264	22:35	56.688423	-61.206032	88.6	90	90	77	1	0	--	GSC	--
0117	9	GC-S	264	23:40	56.6888	-61.2067	89	90	90	70	1	0	--	GSC	--
0118	3	GC-S	265	1112	56.5436	-61.3167	94.5	90	45	18	1	0	--	GSC	--
0119	3	GC-S	265	1121	56.5434	-61.3186	93.5	90	--	18	1	0	--	GSC	--
0124	11	VV	265	1501	56.5917	-61.4069	29.7	--	--	--	--	1	--	GSC	1 bag
0126	--	VV	265	1600	56.5947	-61.3652	92.4	--	--	--	--	2	--	A = UNB B = GSC	2 bags
0127	--	VV	265	1802	56.6012	-61.4406	65.8	--	--	--	--	2	--	A = UNB B = GSC	2 bags
0128	--	VV	265	1842	56.6031	-61.4897	56.7	--	--	--	--	2	--	A = UNB B = GSC	2 bags
0129	--	VV	265	1901	56.6018	-61.4714	61.9	--	--	--	--	2	--	A = UNB B = GSC	2 bags
0130	--	VV	265	1925	56.602	-61.5135	94.8	--	--	--	--	2	--	A = UNB B = GSC	2 bags
0131	--	VV	265	1955	56.6032	-61.5528	83.8	--	--	--	--	2	--	A = UNB B = GSC	2 bags
0132	--	BC	265	2006	56.6025	-61.5494	85.5	--	--	--	--	1	--	UNB	1 bag at surface
0133	--	BC	265	2016	56.6019	-61.5462	85.5	--	--	--	--	2	--	ULaval	2 bags (1 at surface and 1 bottom of the box) for nanoplastic analyses at ULaval
0134	--	VV	265	2106	56.5995	-61.5951	68.5	--	--	--	--	2	--	A = UNB B = GSC	2 bags
0135	--	BC	265	2124	56.5996	-61.5932	72.3	--	--	--	--	1	1 surf water	ULaval	1 bag at surface and 1 surface water sample ; for nanoplastic analyses at ULaval
0136	--	BC	265	2159	56.5992	-61.5949	71	--	--	--	--	1	--	UNB	1 bag at surface
0142	13	BC	266	1154	56.5855	-61.8048	66	--	--	--	--	2	--	UNB GSC	2 bags of surface sediments
0143	13	BC	266	1204	56.5849	-61.7992	79	--	--	--	--	2	1 surf water	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0144	13	GC-S	266	1223	56.5855	-61.803	76.2	90	122	81	2	0	--	GSC	A/B = 74 cm B/C = 7 cm
0145	13	GC-L	266	1235	56.5845	-61.7972	88	158	108	73	1	0	--	GSC	--
0146	13	GC-S	266	1254	56.5859	-61.8034	80	90	108	74.5	1	0	--	GSC	--
0152	12	VV	266	1552	56.6322	-61.9187	23.5	--	--	--	--	1	--	GSC	1 bag of surface sediment
0154	12	BC	266	1627	56.6165	-61.8856	60.2	--	--	15	1 push core	2	0	UNB GSC	1 push core 15 cm lenght ; 2 bags surface sediment
0155	12	BC	266	1648	56.6162	-61.888	60.4	--	--	--	--	2	1 surf water	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0156	12	GC-S	266	1700	56.6159	-61.8863	60.2	90	112	74	1	0	--	GSC	--
0157	12	GC-S	266	1729	56.6159	-61.8894	58.8	90	100	62	1	0	--	GSC	--

0159	--	BC	266	1814	56.5926	-61.8536	64.4	--	--	--	--	2	--	GSC UNB	1 surface sample for UNB, 1 for GSC
0161	--	BC	266	1930	56.5783	-61.7122	69.2	--	--	--	--	2	--	GSC UNB	1 surface sample for UNB, 1 for GSC
0167	14	BC	266	2147	56.5592	-61.6401	107	--	--	--	--	2	1 surf water	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0168	14	GC-S	266	2355	56.5593	-61.636	106	90	90	65.5	1	1	--	GSC	1 bag core catcher
0169	14	GC-S	266	2214	56.5586	-61.641	103	90	93	60	1	1	--	GSC	1 bag core catcher
0170	14	BC	266	2224	56.5584	-61.6437	101	--	--	--	--	2	--	GSC UNB	1 surface sample for UNB, 1 for GSC
0172	--	BC	266	2350	56.5675	-61.608	125	--	--	--	--	2	--	GSC UNB	1 surface sample for UNB, 1 for GSC
0174	--	BC	266	0016	56.5654	-61.5718	88.6	--	--	--	--	2	--	GSC UNB	1 surface sample for UNB, 1 for GSC
0176	--	BC	266	0044	56.5614	-61.5271	102	--	--	--	--	1	--	GSC	1 surface sample for GSC
0178	--	BC	266	0107	56.554	-61.4912	31.8	--	--	--	--	1	--	GSC	1 surface sample for GSC
0180	--	BC	266	0254	56.6072	-61.7093	61.6	--	--	--	--	2	--	GSC UNB	1 surface sample for UNB, 1 for GSC
0182	--	BC	267	0335	56.6173	-61.7609	75.4	--	--	--	--	2	--	GSC UNB	1 surface sample for UNB, 1 for GSC
0184	--	BC	267	0425	56.6122	-61.8317	36.7	--	--	--	--	2	--	GSC UNB	1 surface sample for UNB, 1 for GSC
0186	--	BC	267	0538	56.5955	-61.9675	68.5	--	--	--	--	2	--	UNB GSC	1 surface sample for UNB, 1 for GSC
0187	--	GC-S	267	0545	56.5948	-61.9655	68.5	90	112	92.5	2	--	--	GSC	AB:82.5cm, BC:10cm
0189	--	BC	267	0616	56.5973	-61.9199	98.3	--	--	--	2 push cores	1	--	GSC UNB	2 push cores archived at GSC. A:23.5cm, B:21.5cm. 1 bag surface sediment for UNB
0190	--	GC-S	267	0624	56.5976	-61.9204	101	90	144	104	1	--	--	GSC	--
0191	15	GC-S	267	0933	56.4763	-61.5174	26.3	90	126	69	1	1	--	GSC	1 bag core cutter / catcher
0192	15	GC-S	267	0945	56.4789	-61.5173	34.6	90	118	74	1	1	--	GSC	1 bag core cutter / catcher
0193	15	BC	267	1010	56.4786	-61.5182	34.6	--	--	--	2 push cores	1	--	GSC UNB	2 push cores archived at GSC. A: 16 cm, B: 16.5 cm. 1 bag surface sediment for UNB
0195	15	GC-S	267	1036	56.4874	-61.5152	40.8	90	143	86	1	1		GSC	1 bag core catcher ; intact shell in core catcher sample
0196	15	BC	267	1050	56.487	-61.5146	41.5	--	--	--	2 push cores	1	--	GSC UNB ULaval	2 push cores : A: 16.5 cm archived at Ulaval ; B: 16.5 cm archived at GSC ; 1 bag surface sediment for UNB
0197	15	GC-S	267	1122	56.4923	-61.5673	28.4	90	135	65	1	1	--	GSC	1 bag core catcher
0198	15	GC-S	267	1133	56.4916	-61.5677	26.3	90	98	66	1	1	--	GSC	1 bag core catcher

0200	15	BC	267	1207	56.4993	-61.6148	45.7	--	--	--	--	2	1	ULaval	2 bags (1 at surface and 1 bottom of the box) ; 1 surface water sample ; for nanoplastic analyses at ULaval
0201	15	BC	267	1218	56.5004	-61.6125	41.5	--	--	--	--	2	--	GSC UNB	1 surface sample for UNB, 1 for GSC
0202	15	GC-S	267	1230	56.4986	-61.615	45.7	90	93	63	1	1	--	GSC	1 bag core catcher
0204	--	BC	267	1732	56.6056	-61.6533	35.3	--	--	--	--	1	--	GSC	1 surface sample for GSC
0205	--	BC	267	1737	56.6053	-61.6536	34.6	--	--	--	--	1	--	UNB	1 surface sample for UNB

Table A6: List of CTD and CTD-Rosette stations

Station No.	Old station	Sample Type	J Day	UTC at Surface (down)	Lat Surface (down)	Long Surface (down)	UTC at Bottom	Lat Bottom	Long Bottom	UTC at Surface (up)	Lat Surface (up)	Long Surface (up)	Water Depth (m)	Samples	Archived at	Comments
0001	1	CTD	261	1440	56.54546	-61.453088	1442	56.545373	-61.45233	1442	56.54534	-61.451857	20.6	--	--	CTD sent to 15 m depth (approx. 5m above seafloor)
0002	1	CTD-R	261	--	--	--	1508	56.545297	-61.453788	--	--	--	20	1	MUN	Rosette sent to 15 m depth (approx. 5m above seafloor), 3 samples at 3 m depth, 56.545132 ; 61.453393 , UTC 1509, only 1 sample was kept
0012	2	CTD	261	1849	56.529433	-61.3871	1851	56.529435	-61.386982	1855	56.529423	-61.386837	59.2	--	--	CTD sent to 55 m depth
0013	2	CTD-R	261	--	--	--	1910	56.52972	-61.387127	1919	56.530128	-61.387632	59.5	1	MUN	Rosette sent to 50 m depth, 3 samples at 10 m depth, 56.529962 ; 61.387510 , UTC 1915, only 1 sample was kept
0021	3	CTD	262	1004	56.546005	-61.29411	1006	56.545815	-61.29243	1008	56.545707	-61.291162	102	--	--	CTD sent to 95 m depth ; There is an angle in the rope bcause of the drift
0022	3	CTD-R	262	1026	56.5468	-61.2949	1031	56.5467	-61.2919	1039	56.5464	-61.2862	101	1	MUN	Rosette sent to 95 m depth, 3 samples at 11 m depth, 56.5466 ; 61.2881 , UTC 1036, only 1 sample was kept
0028	4	CTD	262	1441	56.5246	-61.197	1444	56.5243	-61.1942	1446	56.5242	-61.1931	87.9	--	--	CTD sent to 82 m depth
0029	4	CTD-R	262	1500	56.5257	-61.1949	1503	56.5251	-61.1919	1510	56.5238	-61.1865	87.3	1	MUN	Rosette sent to 80 m depth, 3 samples at 15 m depth, 56.5245 ; -61.1890 , UTC 1507, only 1 sample was kept ; boat drift 1.9 kn
0037	7	CTD	262	1900	56.568	-61.1722	1904	56.5671	-61.1703	1906	56.5666	-61.169	69.3	--	--	CTD sent to 60 m depth ; boat drift 1.2 kn
0038	7	CTD-R	262	1922	56.5661	-61.1681	1926	56.5653	-61.166	1935	56.5636	-61.161	73.5	1	MUN	Rosette sent to 67 m depth, 3 samples at 6 m depth, 56.5641 ; -61.1625 , UTC 1932, only 1 sample was kept ; boat drift 1.2 kn
0045	5	CTD	263	1005	56.5224	-60.981	1009	56.5219	-60.9806	1012	56.5216	-60.9806	128	--	--	CTD sent to 121 m depth ; boat drift 0.8 kn
0046	5	CTD-R	263	1022	56.5224	-60.9807	1026	56.522	-60.9802	1031	56.5213	-60.9799	127	1	MUN	Rosette sent to 123 m depth, 3 samples at 10 m depth, 56.5216 ; -60.9799 , UTC 1029, only 1 sample was kept ; boat drift 0.6 kn
0055	6	CTD	263	1432	56.5144	-60.7547	1437	56.5138	-60.7536	1439	56.5134	-60.7533	145	--	--	CTD sent to 140 m depth ; boat drift 0.6 kn
0056	6	CTD-R	263	1450	56.5153	-60.7575	1455	56.5144	-60.7568	1500	56.5133	-60.7559	143	1	MUN	Rosette sent to 140 m depth, 3 samples at 19 m depth, 56.5137 ; -60.7562 , UTC 1458, only 1 sample was kept ; boat drift 0.8 kn
0091	8	CTD	264	1117	56.5921	-61.2702	1118	56.5924	-61.2697	1119	56.5925	-61.2692	57.1	--	--	CTD sent to 52 m depth ; boat drift 1 kn
0092	8	CTD-R	264	1135	56.593	-61.2727	1137	56.594	-61.2714	1141	56.5948	-61.2701	55.7	1	MUN	Rosette sent to 50 m depth, 3 samples at 12 m depth, 56.5943 ; -61.2708 , UTC 1139, only 1 sample was kept ; boat drift 1.6 kn
0099	10	CTD	264	1534	56.6125	-61.3663	1537	56.6128	-61.3648	1540	56.6133	-61.3636	65.4	--	--	CTD sent to 60 m depth ; boat drift 1.2 kn
0100	10	CTD-R	264	1550	56.6153	-61.3586	1554	56.6159	-61.3568	1600	56.6169	-61.3536	58.5	1	MUN	Rosette sent to 54 m depth, 3 samples at 21 m depth, 56.6166 ; -61.3547 , UTC 1558, only 1 sample was kept ; boat drift 1.0 kn
0109	9	CTD	264	2039	56.6888	-61.2091	2043	56.6891	-61.2079	2048	56.6893	-61.2065	88	--	--	CTD sent to 83 m depth ; boat drift 0.6 kn
0110	9	CTD-R	264	2101	56.6879	-61.2155	2104	56.6879	-61.2153	2108	56.6878	-61.2146	79.6	1	MUN	Rosette sent to 75 m depth, 3 samples at 10 m depth, 56.6878 ; -61.2148 , UTC 2107, only 1 sample was kept ; boat drift 0.2 kn

0120	11	CTD	265	13:57	56.5941	-61.417	13:58	56.5935	-61.4147	13:59	56.5931	-61.4136	12.7	--	--	CTD sent to 10 m depth ; boat drift 4.3 kn
0125	11	CTD-R	265	1516	56.587	-61.384	1521	56.5861	-61.3759	1528	56.5861	-61.374	65	1	MUN	Rosette sent to 60 m depth, 3 samples at 13 m depth, 56.5861 ; -61.3759 , UTC 1537, only 1 sample was kept ; boat drift not noted
0137	13	CTD	266	1014	56.5868	-61.7955	1018	56.5865	-61.7937	1020	56.5862	-61.7925	108	--	--	CTD sent to 100 m depth ; boat drift 1.0 kn
0138	13	CTD-R	266	1028	56.5852	-61.7888	1031	56.5848	-61.7877	1038	56.5843	-61.785	71.9	1	MUN	Rosette sent to 65 m depth, 3 samples at 2.5 m depth, 56.5844 ; -61.7856 , UTC 1030, only 1 sample was kept ; boat drift 0.8 kn
0147	12	CTD	266	1435	56.6357	-61.9297	1436	56.6355	-61.929	1437	56.6356	-61.9291	18	--	--	CTD sent to 18 m depth ; boat drift 1.0 kn
0148	12	CTD-R	266	1444	56.6352	-61.9271	1445	56.6351	-61.9271	1447	56.635	-61.9268	20	1	MUN	Rosette sent to 15 m depth, 2 samples at 10 m depth, 56.6351 ; -61.9270 , UTC 1446, only 1 sample was kept ; boat drift 0.4 kn
0153	12	CTD	266	1615	56.6174	-61.8878	1617	56.6166	-61.8861	1619	56.6161	-61.8845	60.2	--	--	CTD sent to 55 m depth ; boat drift 1.9 kn
0158	--	CTD	266	1804	56.5944	-61.8586	1806	56.594	-61.8568	1809	56.5938	-61.8561	76.9	--	--	CTD sent to 70 m depth ; boat drift 1.4 kn
0160	--	CTD	266	1917	56.5784	-61.7141	1921	56.5776	-61.7126	1922	56.577	-61.7122	68.5	--	--	CTD sent to 62 m depth ; boat drift 1.4 kn
0162	14	CTD	266	2004	56.5562	-61.6421	2008	56.5548	-61.6395	2009	56.5542	-61.6389	97.6	--	--	CTD sent to 92 m depth ; boat drift 1.7 kn
0163	14	CTD-R	266	2028	56.5587	-61.647	2034	56.5573	-61.6442	2043	56.5553	-61.6412	99	1	MUN	Rosette sent to 95 m depth, 3 samples at 10 m depth, 56.5558; -61.6417 , UTC 2041, only 1 sample was kept ; boat drift 1.2 kn
0171	--	CTD	266	2325	56.5669	-61.6069	2328	56.5672	-61.6073	2331	56.5673	-61.6078	125	--	--	CTD sent to 120 m depth ; boat drift 0.4 kn
0173	--	CTD	266	0007	56.5644	-61.5721	0010	56.565	-61.5715	0012	56.5653	-61.5716	87.2	--	--	CTD sent to 80 m depth ; boat drift 1.4 kn
0175	--	CTD	266	0036	56.5608	-61.5294	0038	56.5611	-61.528	0041	56.5612	-61.5273	111	--	--	CTD sent to 105 m depth ; boat drift 1.4 kn
0177	--	CTD	266	0100	56.5551	-61.4924	0102	56.5545	-61.4916	0103	56.5545	-61.4914	32	--	--	CTD sent to 32 m depth ; boat drift 1.4 kn
0179	--	CTD	266	0246	56.6086	-61.7125	0249	56.6081	-61.7119	0251	56.6076	-61.7108	63	--	--	CTD sent to 58 m depth ; boat drift 1.2 kn
0181	--	CTD	267	0325	56.619	-61.7688	0328	56.6184	-61.7661	0331	56.618	-61.7639	74	--	--	CTD sent to 70 m depth ; boat drift 1.7 kn
0183	--	CTD	267	0417	56.6134	-61.837	0420	56.6131	-61.8356	0422	56.6127	-61.834	47.1	--	--	CTD sent to 39 m depth ; boat drift 1.6 kn
0185	--	CTD	267	0526	56.5972	-61.9701	0529	56.5966	-61.97	0530	56.5964	-61.9696	69.2	--	--	CTD sent to 65 m depth ; boat drift 0.8 kn
0188	--	CTD	267	0606	56.5982	-61.923	0609	56.5981	-61.9215	0610	56.5979	-61.9209	101	--	--	CTD sent to 90 m depth ; boat drift 1.2 kn
0194	15	CTD	267	1021	56.4866	-61.5163	1023	56.487	-61.5159	1025	56.4872	-61.5156	40.8	--	--	CTD sent to 35 m depth ; boat drift 1.0 kn
0199	15	CTD	267	1157	56.4985	-61.6162	1159	56.4986	-61.6163	1200	56.4987	-61.6162	44.3	--	--	CTD sent to 39 m depth ; boat drift 0.4 kn
0203	--	CTD	267	1723	56.6061	-61.653	1726	56.6061	-61.6529	1727	56.606	-61.653	36.7	--	--	CTD sent to 30 m depth ; boat drift 0.4 kn

Table A7: List of net stations

Station No.	Old station	Sample Type	J Day	UTC at Surface (down)	Lat Surface (down)	Long Surface (down)	UTC at Bottom	Lat Bottom	Long Bottom	UTC at Surface (up)	Lat Surface (up)	Long Surface (up)	Speed up	Water Depth (m)	Net Depth (m)	Samples	Archived at	Comments
0003	1	PN	261	1612	56.5462	-61.4563	1613	56.5464	-61.456	1615	56.5469	-61.4577	10 m / min	20.1	15	1	UNB	Phytoplankton Net sent to 15 m depth (approx. 5 m above seafloor)
0004	1	PN	261	1625	56.5464	-61.4567	1626	56.5464	-61.4570	1628	56.5463	-61.4579	10 m / min	23.8	15	1	MUN	Phytoplankton Net sent to 15 m depth
0005	1	ZN	261	1647	56.5462	-61.45	1649	56.5463	-61.4583	1650	56.5468	-61.4599	10 m / min	22.1	17	1	MUN	Zooplankton net sent to 17 m depth
0009	2	PN	261	1813	56.5301	-61.388	1814	56.5300	-61.387	1821	56.529	-61.3879	10 m / min	59.2	55	1	UNB	Phytoplankton Net sent to 55 m depth
0010	2	PN	261	1824	56.5296	-61.3881	1830	56.5294	-61.3882	1832	56.5294	-61.3881	10 m / min	58.8	55	1	MUN	Phytoplankton Net sent to 55 m depth
0011	2	ZN	261	1836	56.5293	-61.3878	1838	56.5293	-61.3877	1845	56.5293	-61.3872	10 m / min	58.8	55	1	MUN	Zooplankton net sent to 55 m depth
0023	3	PN	262	1053	56.5462	-61.3023	--	56.5462	-61.3023	1109	56.5469	-61.287	10 m / min	103	90	1	MUN	Phytoplankton Net sent to 90 m depth ; wire came out of winch ; angle in rope because of drift ; info at bottom weren't noted
0024	3	PN	262	1122	56.5459	-61.301905	1124	56.5458	-61.3001	1132	56.5444	-61.2925	10 m / min	102	70	1	UNB	Phytoplankton Net sent to 70 m depth ; boat drift 1.9 kn
0025	3	ZN	262	1144	56.5461	-61.2981	1147	56.5463	-61.2965	1156	56.5464	-61.2891	10 m / min	102	90	1	MUN	Zooplankton Net sent to 90 m depth ; boat drift 1.2 kn
0030	4	PN	262	--	--	--	--	56.5264	-61.1949	--	--	--	--	--	5	1	MUN	Horizontal ; Start : 56.5264, -61.1499, UTC 1523 ; Finish : 56.5271, -61. 2030, UTC 1535 ; speed 2 to 4 kn ; azimut 266 ; towed 5 m deep for 15 minutes
0031	4	ZN	262	1541	56.5276	-61.2012	1549	56.5262	-61.195	1554	56.5251	-61.1902	10 m / min	87.6	80	1	MUN	Zooplankton Net sent to 80 m depth ; boat drift 1.7 kn
0032	4	PN	262	--	--	--	--	56.5264	-61.1896	--	--	--	--	--	5	1	UNB	Horizontal ; Start : 56.5264, -61.1896, UTC 1603 ; Finish : 56.5275, -61. 20379, UTC 1619 ; speed 2 to 4 kn ; azimut 280 ; towed 5 m deep for 15 minutes
0039	7	PN	262	--	--	--	--	56.5623	-61.1586	--	--	--	--		5	1	MUN	Horizontal ; Start : 56.5623, -61.1586, UTC 1946 ; Finish : 56.5663, -61. 1771, UTC 2002 ; speed 2 to 4 kn ; azimut 300 ; towed 5 m deep for 15 minutes
0040	7	ZN	262	2009	56.5644	-61.166	2014	56.5642	-61.1658	2017	56.5641	-61.1642	10 m / min	75.1	55	1	MUN	Zooplankton Net sent to 55 m depth ; boat drift 0.6 kn
0041	7	PN	262	--	--	--	--	56.5629	-61.1583	--	--	--	--		5	1	UNB	Horizontal ; Start : 56.5629, -61.1583, UTC 2027 ; Finish : 56.5656, -61. 1779, UTC 2044 ; speed 2 to 4 kn ; azimut 280 ; towed 5 m deep for 15 minutes
0047	5	PN	263	--	--	--	--	56.5221	-60.9841	--	--	--	--	126	5	1	MUN	Horizontal ; Start : 56.5221, -60.9841, UTC 1041 ; Finish : 56.5234, -60. 9652, UTC 1055 ; speed 2 to 4 kn ; azimut 80 ; towed 5 m deep for 15 minutes
0048	5	ZN	263	1105	56.5223	-60.9628	1109	56.5233	-60.9625	1115	56.5233	-60.9618	10 m / min	122	119	1	MUN	Zooplankton Net sent to 119 m depth ; boat drift 0.2 kn
0049	5	PN	263	--	--	--	--	56.5229	-60.9689	--	--	--	--	122	5	1	UNB	Horizontal ; Start : 56.5229, -60.9689, UTC 1126 ; Finish : 56.5229, -60. 9867, UTC 1141 ; speed 2 to 4 kn

																		; azimut 270 ; towed 5 m deep for 15 minutes
0057	6	PN	263	--	--	--	--	56.5131	-60.7537	--	--	--	--	125	5	1	MUN	Horizontal ; Start : 56.5131, -60.7537, UTC 1507 ; Finish : 56.5093, -60. 7737, UTC 1534 ; speed 2 to 4 kn ; azimut 255 ; towed 5 m deep for 15 minutes
0058	6	ZN	263	1530	56.5097	-60.7731	1535	56.5093	-60.7021	1548	56.507	-60.7725	12-16 m / min	131	121	1	MUN	Zooplankton Net sent to 121 m depth ; boat drift 0.6 kn
0059	6	PN	263	--	--	--	--	56.5067	-60.7743	--	--	--	--	120	5	1	UNB	Horizontal ; Start : 56.5067, -60.7743, UTC 1555 ; Finish : 56.5117, -60. 7557, UTC 1611 ; speed 2 to 4 kn ; azimut 340 ; towed 5 m deep for 15 minutes
0093	8	PN	264	--	--	--	--	56.596	-61.2677	--	--	--	--	61	5	1	MUN	Horizontal ; Start : 56.5960, -61.2677, UTC 1146 ; Finish : 56.6072, -61.2617, UTC 1201 ; speed 2 to 4 kn ; azimut 17 ; towed 5 m deep for 15 minutes
0094	8	ZN	264	1207	56.6072	-61.2611	1209	56.6069	-61.2607	1215	56.6073	-61.2587	10 m / min	61.8	57	1	MUN	Zooplankton Net sent to 57 m depth ; boat drift 0.8 kn
0095	8	PN	264	--	--	--	--	56.607	-61.2585	--	--	--	--	67.5	5	1	UNB	Horizontal ; Start : 56.6070, -61.2585, UTC 1219 ; Finish : 56.5994, -61.2655, UTC 1234 ; speed 2 to 4 kn ; azimut 208 ; towed 5 m deep for 15 minutes
0101	10	PN	264	--	--	--	--	56.6171	-61.3545	--	--	--	--	46.7	5	1	MUN	Horizontal ; Start : 56.6171, -61.3545, UTC 1606 ; Finish : 56.6124, -61.3677, UTC 1620 ; speed 2 to 4 kn ; azimut 240 ; towed 5 m deep for 15 minutes Part of the sample was lost while transfering in jar, we'll do another one.
0102	10	ZN	264	1625	56.6135	-61.3701	1627	56.6139	-61.3703	1634	56.6146	-61.3701	10 m / min	59.3	53	1	MUN	Zooplankton Net sent to 53 m depth ; boat drift 0.8 kn
0103	10	PN	264	--	--	--	--	56.6117	-61.3668	--	--	--	--	61.1	5	1	UNB	Horizontal ; Start : 56.6117, -61.3668, UTC 1645 ; Finish : 56.6187, -61.3479, UTC 1700 ; speed 2 to 4 kn ; azimut 45 ; towed 5 m deep for 15 minutes
0104	10	PN	264	--	--	--	--	56.6205	-61.3425	--	--	--	--	47	5	1	MUN	Horizontal ; Start : 56.6205, -61.3425, UTC 1713 ; Finish : 56.6161, -61.3615, UTC 1730 ; speed 2 to 4 kn ; azimut 267 ; towed 5 m deep for 15 minutes
0111	9	PN	264	--	--	--	--	56.6878	-61.212	--	--	--	--	87	5	1	MUN	Horizontal ; Start : 56.6878, -61.2120, UTC 2115 ; Finish : 56.6978, -61.2000, UTC 2132 ; speed 2 to 4 kn ; azimut 57 ; towed 5 m deep for 15 minutes
0112	9	ZN	264	2136	56.6991	-61.2031	2138	56.6992	-61.2036	2144	56.6996	-61.2035	10 m / min	52	46	1	MUN	Zooplankton Net sent to 46 m depth ; boat drift 0.6 kn
0113	9	PN	264	--	--	--	--	56.699	-61.2051	--	--	--	--	53	5	1	8	Horizontal ; Start : 56.6990, -61.2051, UTC 2150 ; Finish : 56.6866, -61.2103, UTC 2207 ; speed 2 to 4 kn ; azimut 188 ; towed 5 m deep for 15 minutes

0121	11	PN	265	--	--	--	--	56.5927	-61.4111	--	--	--	--	17.3	5	1	MUN	Horizontal ; Start : 56.5927, -61.4111, UTC 14:03; Finish : 56.5919, -61.4110, UTC 14:18 ; speed 2 to 4 kn ; azimut 190 ; towed 5 m deep for 15 minutes
0122	11	ZN	265	14:22	56.5922	-61.411	14:23	56.5921	-61.4099	14:24	56.5917	-61.4079	10 m / min	19	15	1	MUN	Zooplankton Net sent to 15 m depth ; boat drift 3.1 kn
0123	11	PN	265	--	--	--	--	56.5915	-61.4077	--	--	--	--	27.3	5	1	UNB	Horizontal ; Start : 56.5915, -61.4077, UTC 14:30; Finish : 56.5926, -61.4113, UTC 14:47 ; speed 2 to 4 kn ; azimut 305 ; towed 5 m deep for 15 minutes ; SOG 0.2 kn
0139	13	PN	266	--	--	--	--	56.5852	-61.7855	--	--	--	--	96.6	5	1	MUN	Horizontal ; Start : 56.5852, -61.7855, UTC 1041 ; Finish : 56.5865, -61.8045, UTC 1057 ; speed 2 to 4 kn ; azimut 280 ; towed 5 m deep for 15 minutes ; SOG 2.5 kn
0140	13	ZN	266	1101	56.5863	-61.8025	1105	56.5857	-61.8007	1119	56.5846	-61.7938	10 m / min	105	95	1	MUN	Zooplankton Net sent to 95 m depth ; boat drift 1.0 kn
0141	13	PN	266	--	--	--	--	56.5838	-61.792	--	--	--	--	87.3	5	1	UNB	Horizontal ; Start : 56.5838, -61.7920, UTC 1125 ; Finish : 56.5874, -61.8093, UTC 1140 ; speed 2 to 4 kn ; azimut 290 ; towed 5 m deep for 15 minutes ; SOG 2.5 kn
0149	12	PN	266	--	--	--	--	56.6348	-61.926	--	--	--	--	18	5	1	MUN	Horizontal ; Start : 56.6383, -61.9260, UTC 1451 ; Finish : 56.6343, -61.9248, UTC 1507 ; speed 2 to 4 kn ; azimut 84 ; towed 5 m deep for 15 minutes ; SOG 0.6 kn
0150	12	ZN	266	1509	56.6343	-61.9247	1512	56.6343	-61.9245	--	--	--	10 m / min	18.7	15	1	MUN	Zooplankton Net sent to 15 m depth ; boat drift 0.4 kn
0151	12	PN	266	--	--	--	--	56.6342	-61.924	--	--	--	--	20.7	5	1	UNB	Horizontal ; Start : 56.6342, -61.9240, UTC 1528 ; Finish : 56.6334, -61.9220, UTC 1544 ; speed 2 to 4 kn ; azimut 122 ; towed 5 m deep for 15 minutes ; SOG 0.4 kn
0164	14	PN	266	--	--	--	--	56.5555	-61.6401	--	--	--	--	99	5	1	MUN	Horizontal ; Start : 56.5555, -61.6401, UTC 2048 ; Finish : 56.5603, -61.6527, UTC 2103 ; speed 2 to 4 kn ; azimut 300 ; towed 5 m deep for 15 minutes ; SOG 1.6 kn
0165	14	ZN	266	2105	56.5607	-61.654	2108	56.5607	-61.6542	2118	56.5592	-61.6556	10 m / min	99.7	95	1	MUN	Zooplankton Net sent to 95 m depth ; boat drift 0.4 kn
0166	14	PN	266	--	--	--	--	56.5587	-61.6556	--	--	--	--	99.7	5	1	UNB	Horizontal ; Start : 56.5587, -61.6556, UTC 2123 ; Finish : 56.5582, -61.6342, UTC 2140 ; speed 2 to 4 kn ; azimut 95 ; towed 5 m deep for 15 minutes ; SOG 2.5 kn

Table A8: List of ocean drifter deployments

Station No.	Old station	Sample Type	J Day	UTC	Lat	Long	Archived at	Comments
0064	D17	Drift	263	1843	56.5066	-60.6935	Dalhousie	serial no. 0-4408656
0065	D16	Drift	263	1852	56.5089	-60.7051	Dalhousie	serial no. 0-3195958
0066	D15	Drift	263	1858	56.5097	-60.7171	Dalhousie	serial no. 0-4407179
0067	D14	Drift	263	1902	56.511	-60.7274	Dalhousie	serial no. 0-3196060
0068	D13	Drift	263	1907	56.5121	-60.7394	Dalhousie	serial no. 0-3196469
0069	D12	Drift	263	1911	56.5133	-60.7508	Dalhousie	serial no. 0-3194153
0070	D11	Drift	263	1916	56.5146	-60.7633	Dalhousie	serial no. 0-4407181
0071	D10	Drift	263	1921	56.5156	-60.7742	Dalhousie	serial no. 0-4408659
0072	D09	Drift	263	1927	56.5167	-60.7874	Dalhousie	serial no. 0-4407090
0073	D08	Drift	263	1931	56.5181	-60.7977	Dalhousie	serial no. 0-3194054
0074	D07	Drift	263	1936	56.519	-60.8096	Dalhousie	serial no. 0-3194004
0075	D06	Drift	263	1939	56.5205	-60.8199	Dalhousie	serial no. 0-4408877
0076	D05	Drift	263	1944	56.5214	-60.832	Dalhousie	serial no. 0-4407170
0077	D04	Drift	263	1949	56.5227	-60.8429	Dalhousie	serial no. 0-3194009
0078	D03	Drift	263	1953	56.5238	-60.8551	Dalhousie	serial no. 0-3194130
0079	D02	Drift	263	1958	56.5251	-60.8667	Dalhousie	serial no. 0-3194001
0080	D01	Drift	263	2002	56.5261	-60.8772	Dalhousie	serial no. 0-3194010

APPENDIX B: GEOGRAPHIC LOCATIONS OF STATIONS

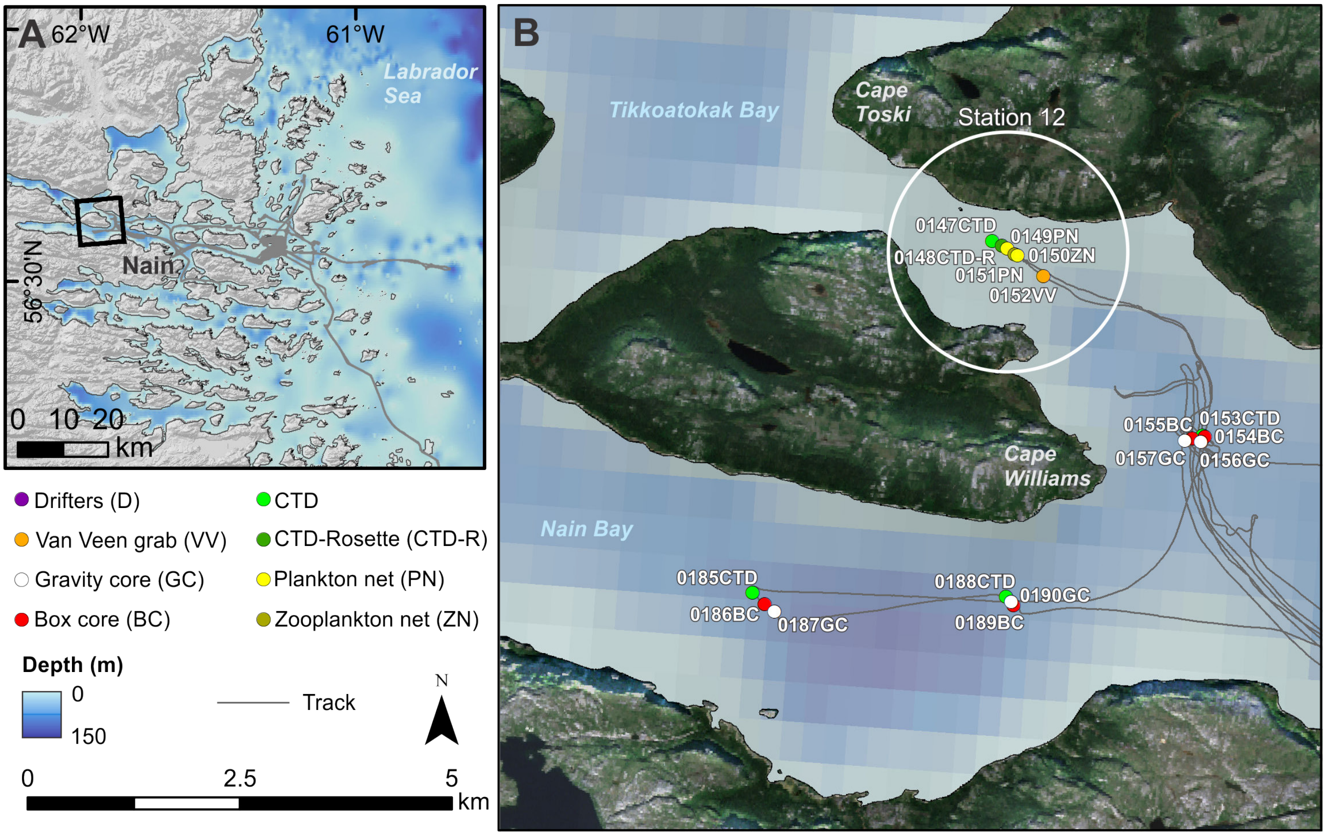

Figure B10: Location of sites in Nain Bay and Tikkoatokak Bay

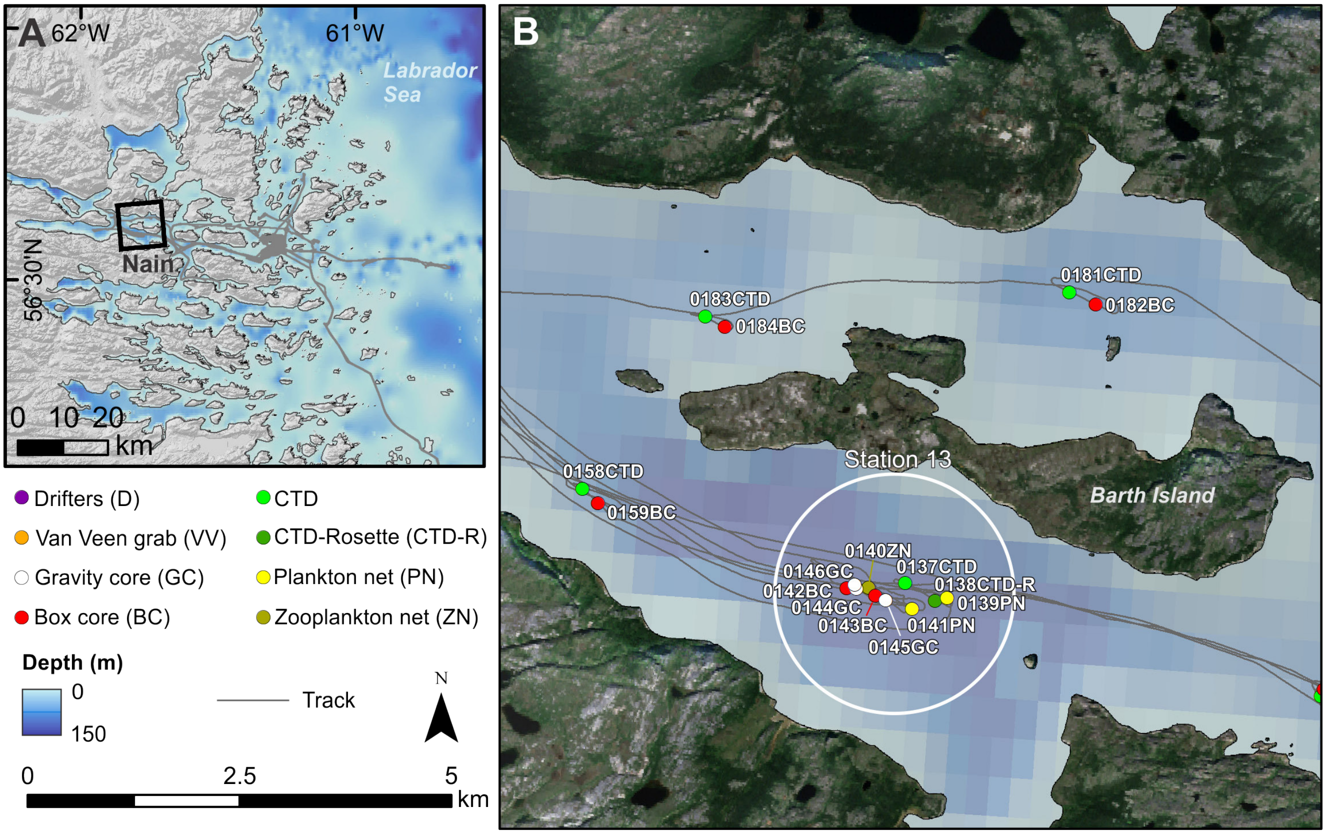

Figure B11: Location of sites near Barth Island

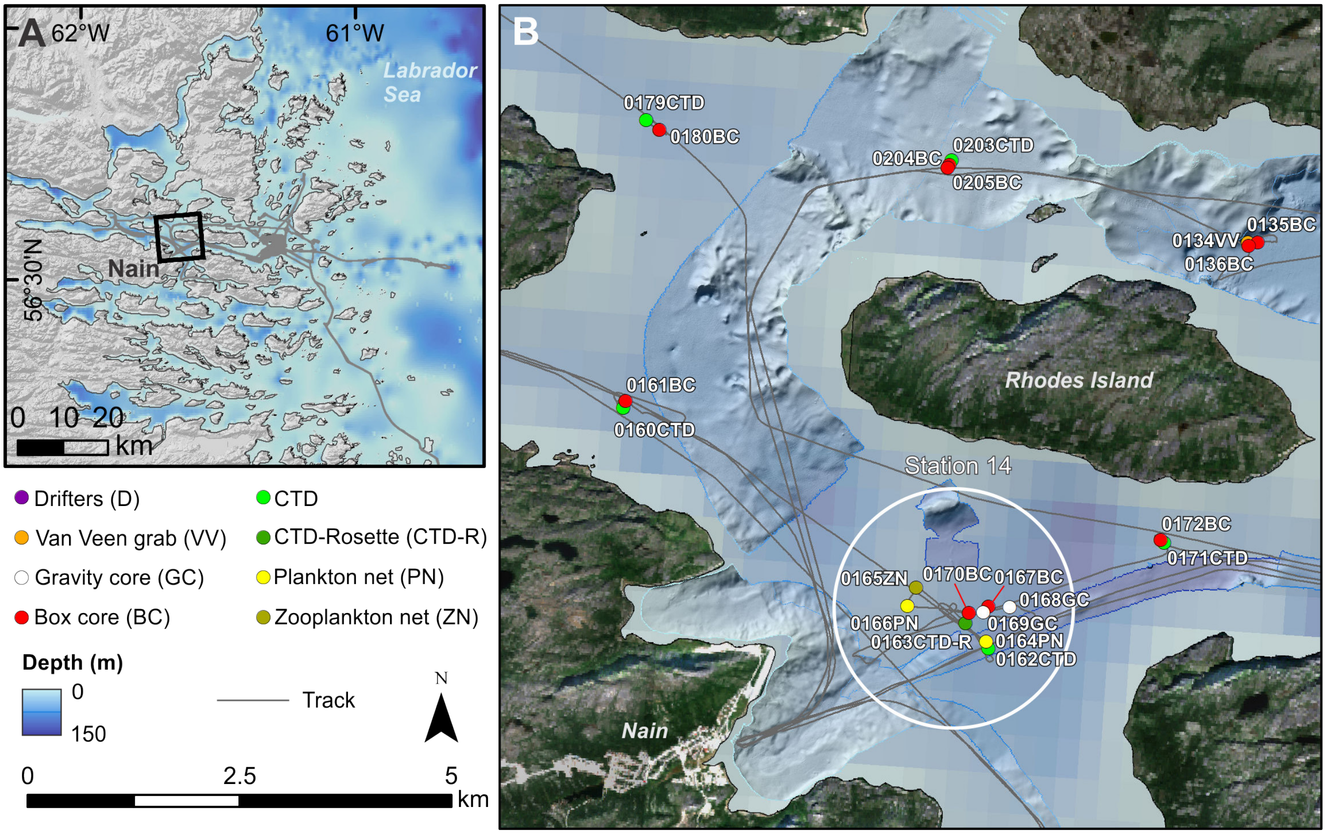

Figure B12: Location of sites near Rhodes Island

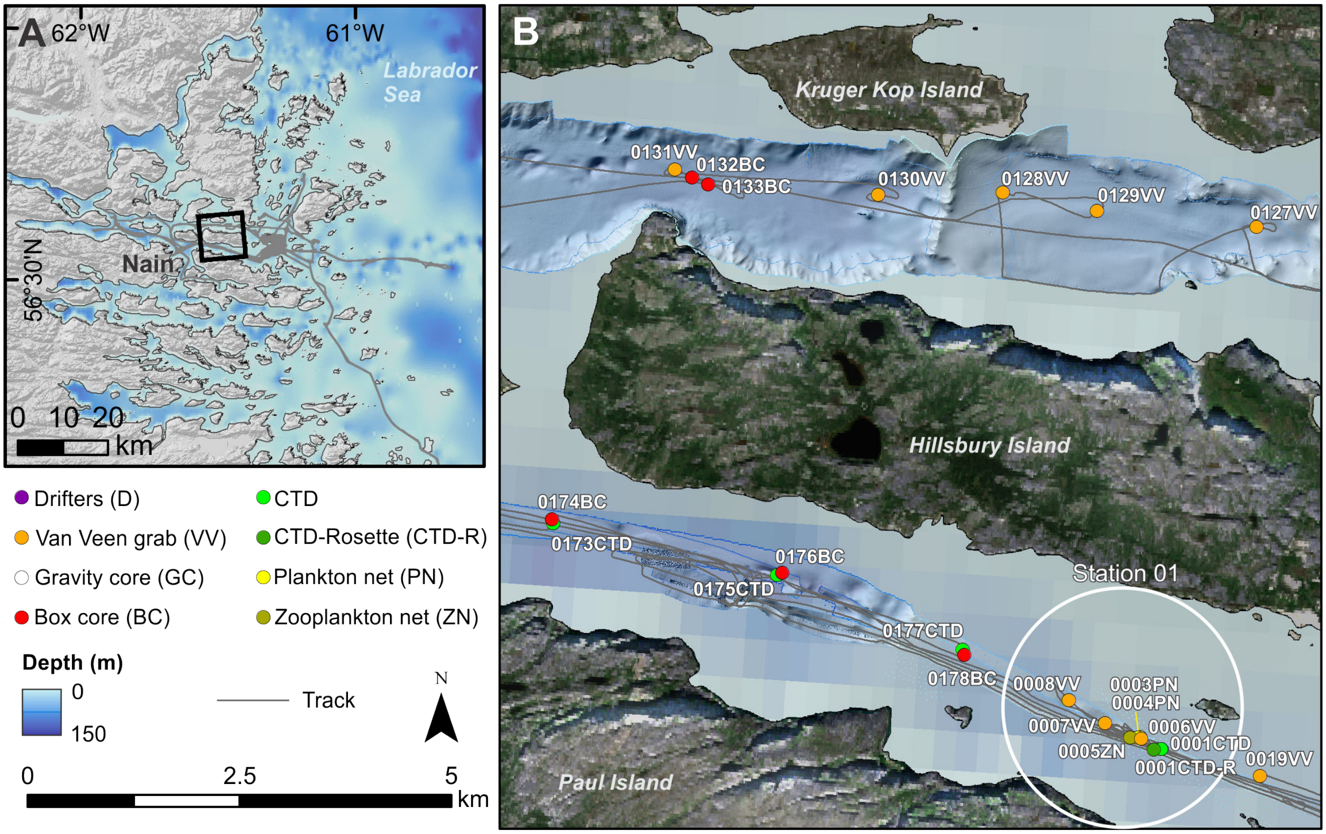

Figure B13: Location of sites near Hillsbury Island

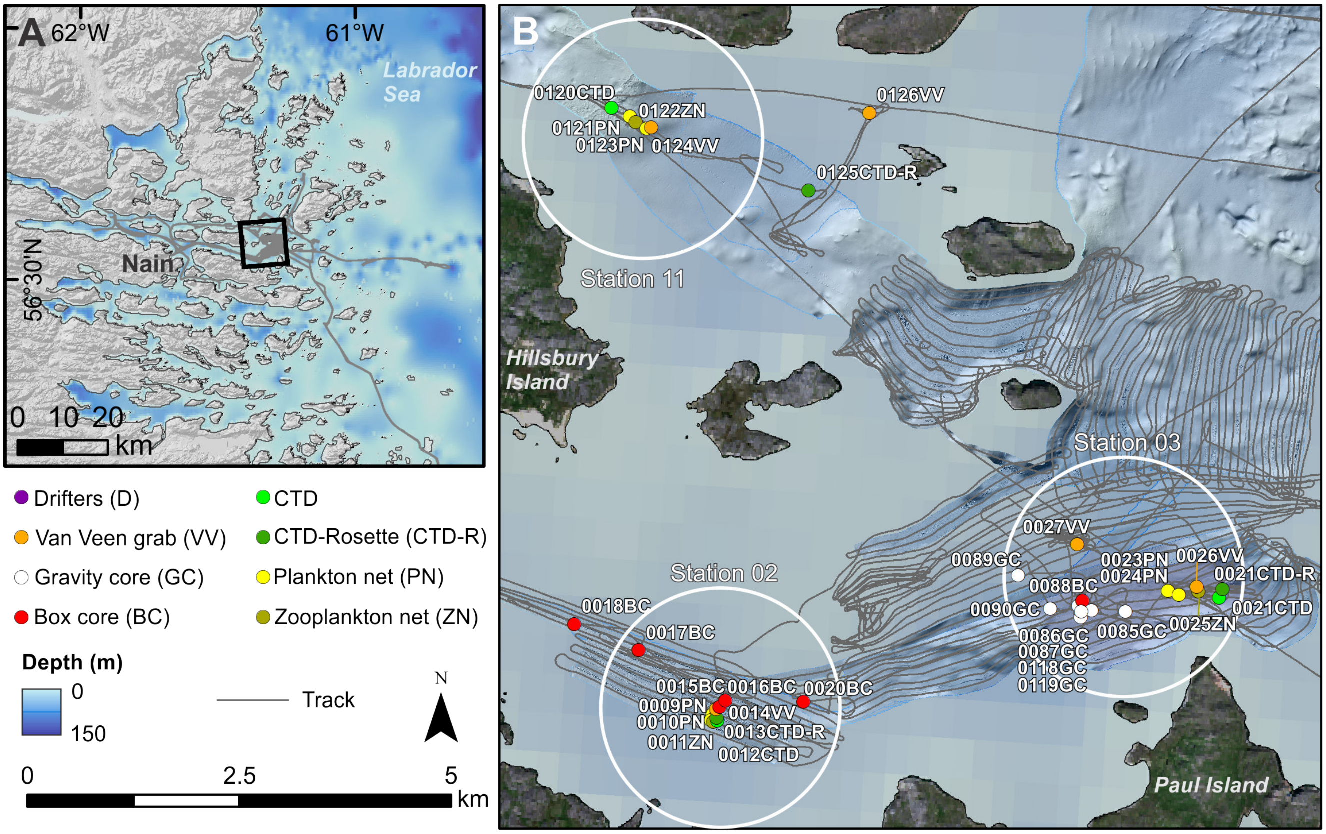

Figure B14: Location of sites east of Hillsbury Island

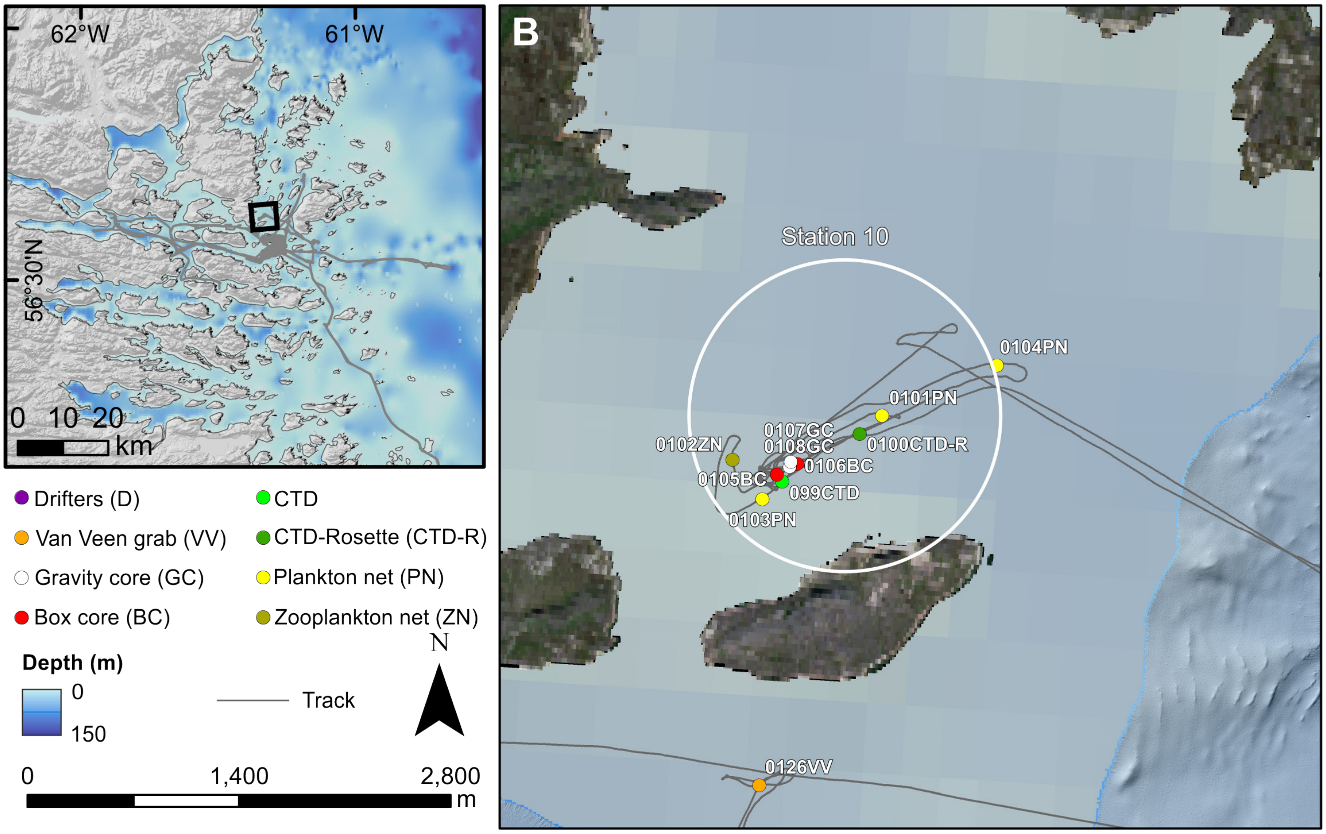

Figure B15: Location of sites east of South Aulatsivik Island, at station 10.

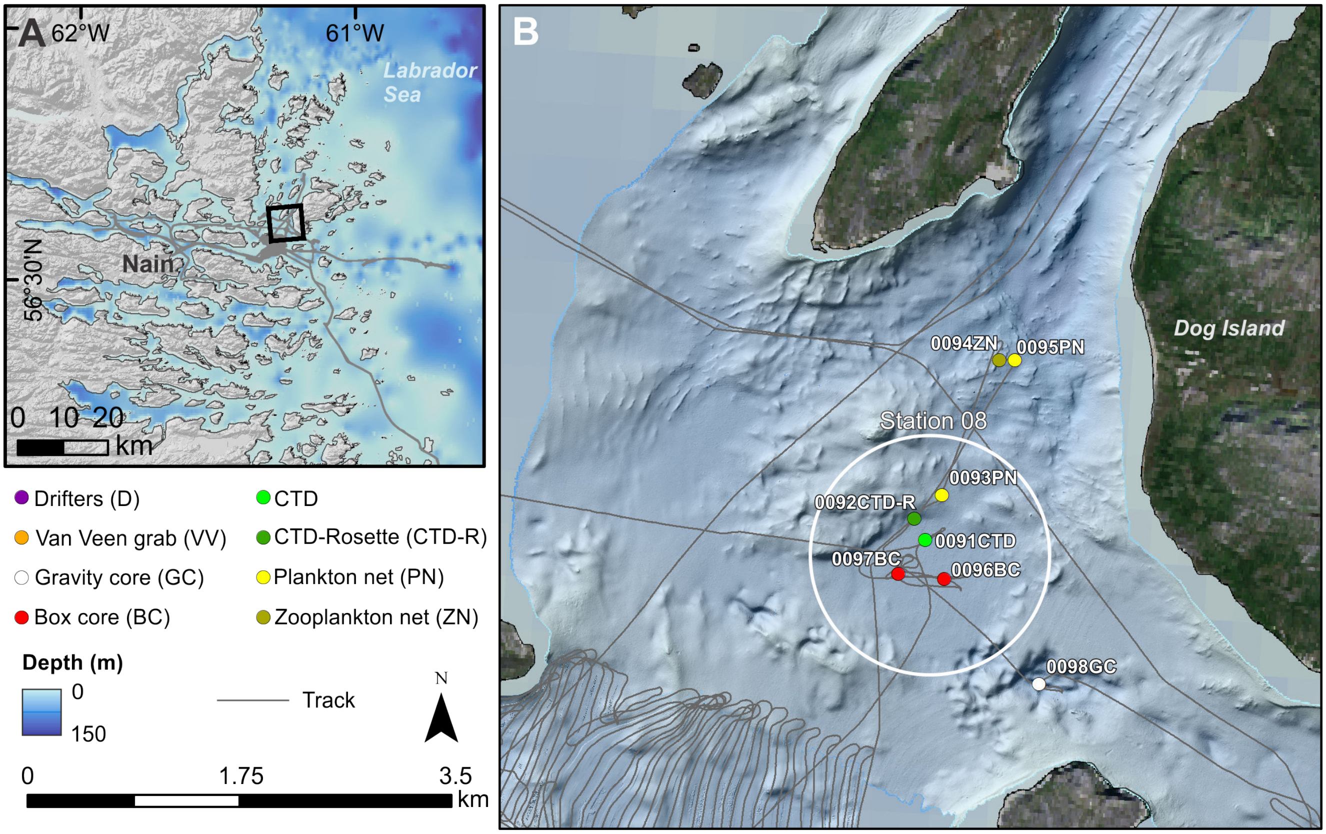

Figure B16: Location of sites west of Dog Island

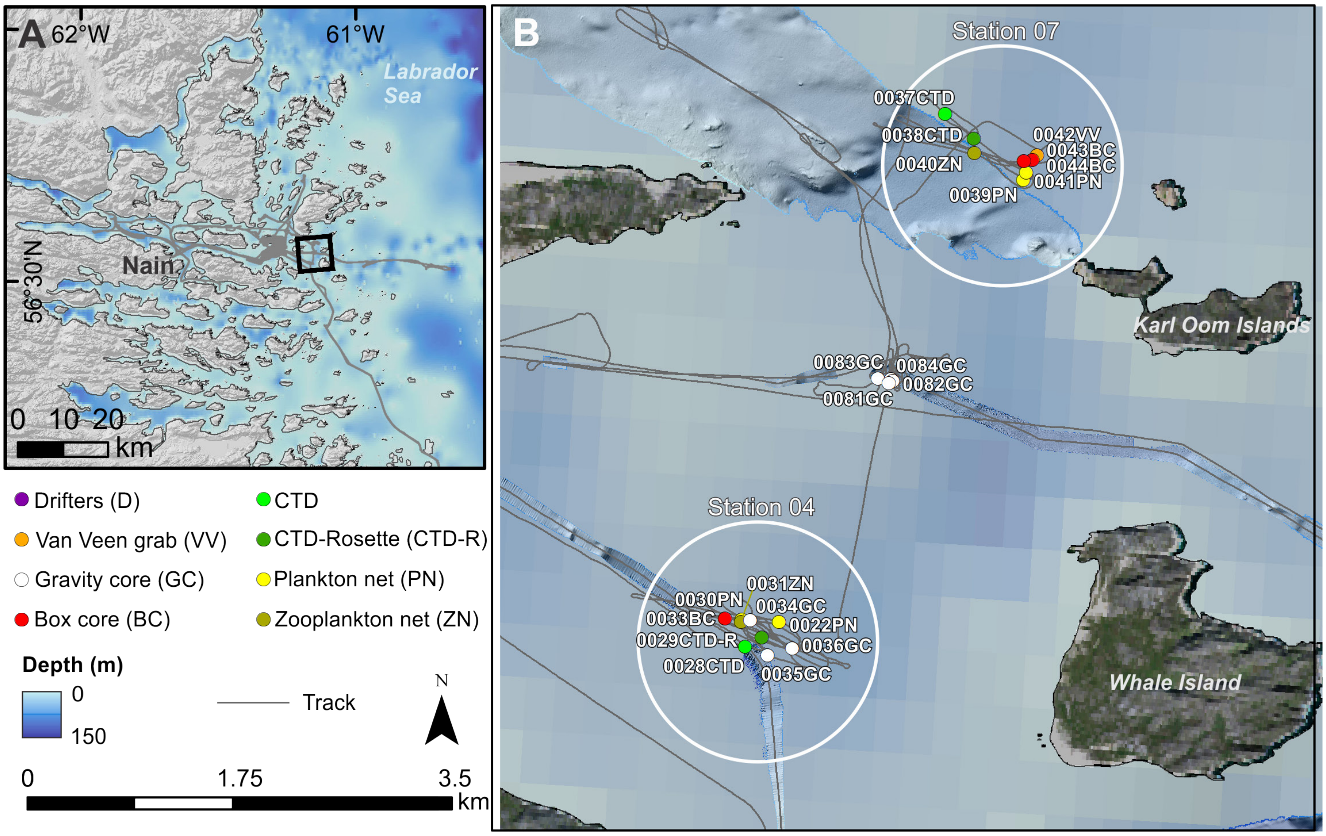

Figure B17: Location of sites near Whale Island

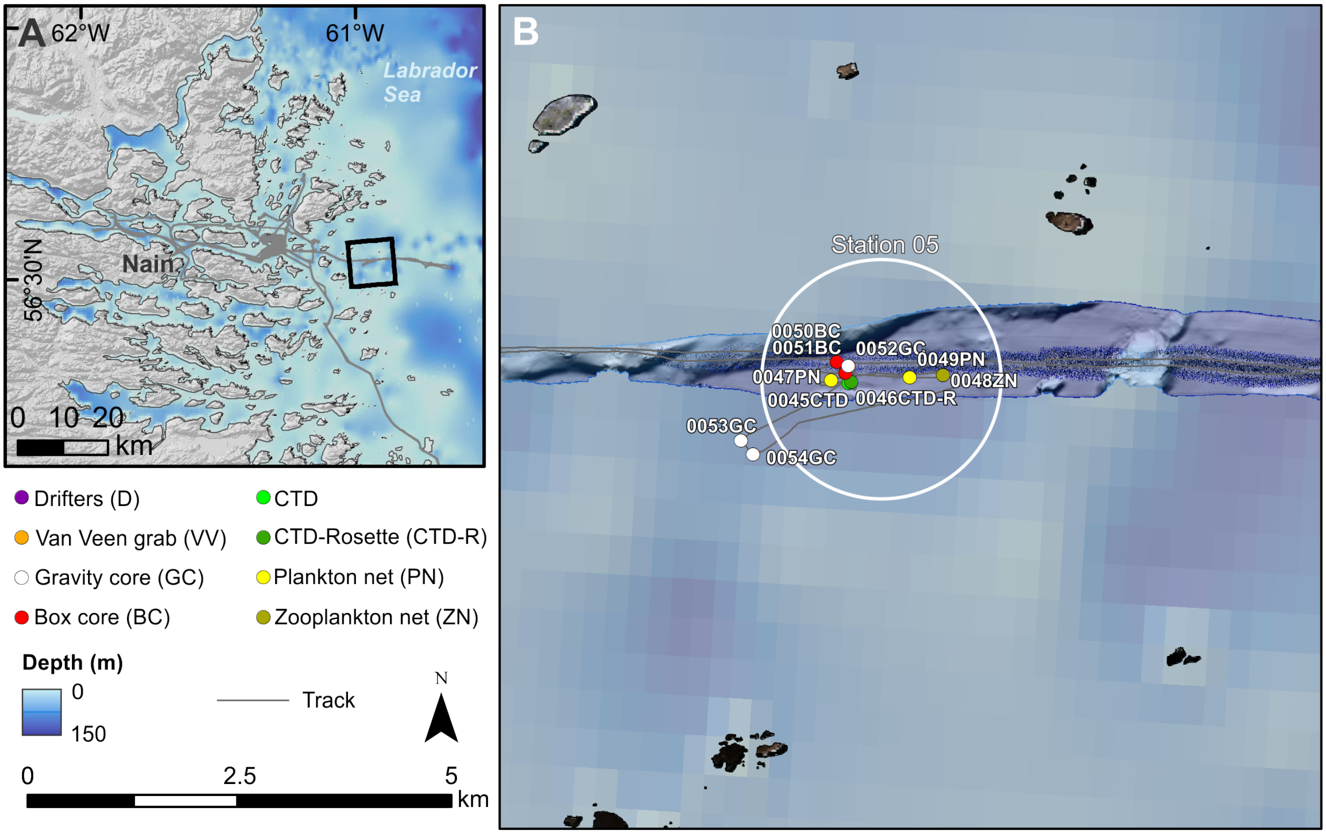

Figure B18: Location of sites at station 05

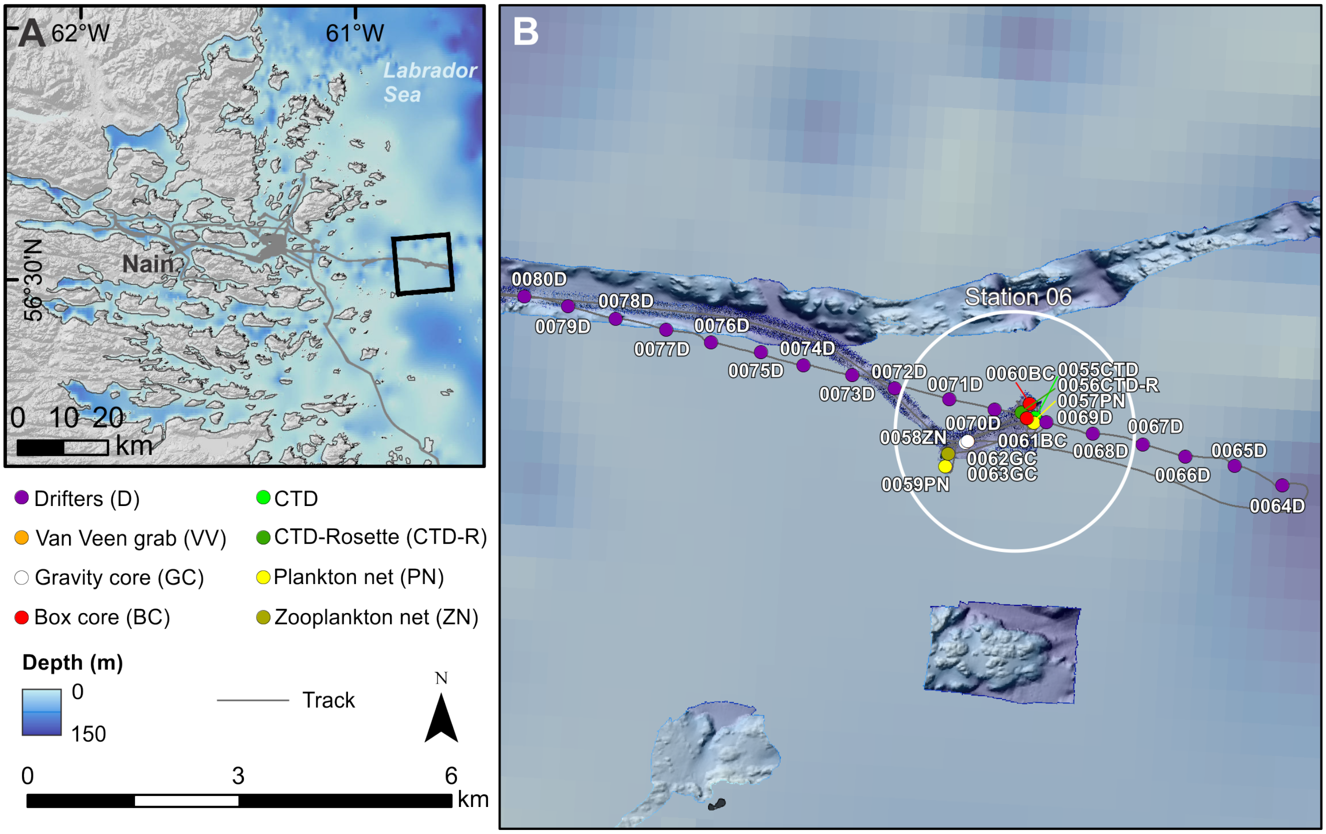

Figure B19: Location of sites near station 06

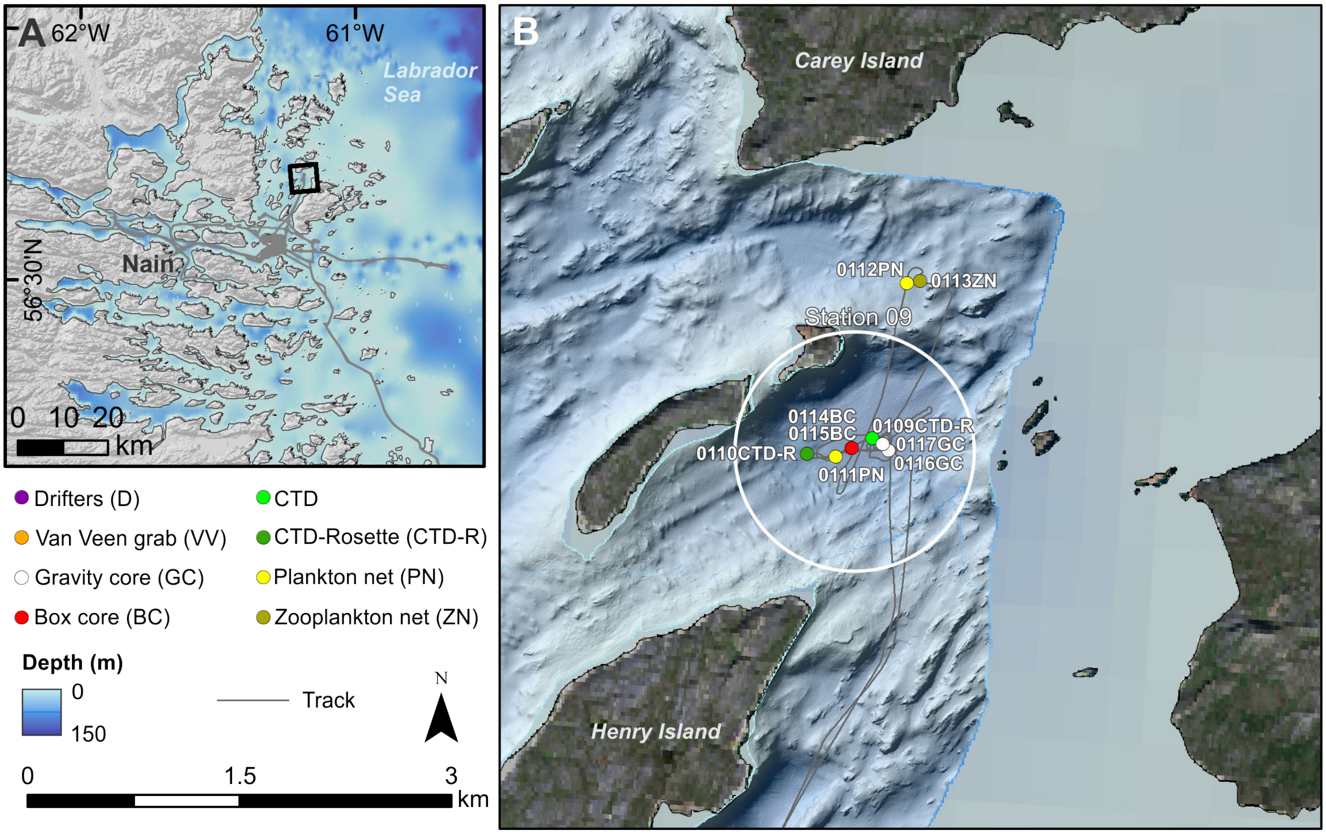

Figure B20: Location of sites north of Henry Island

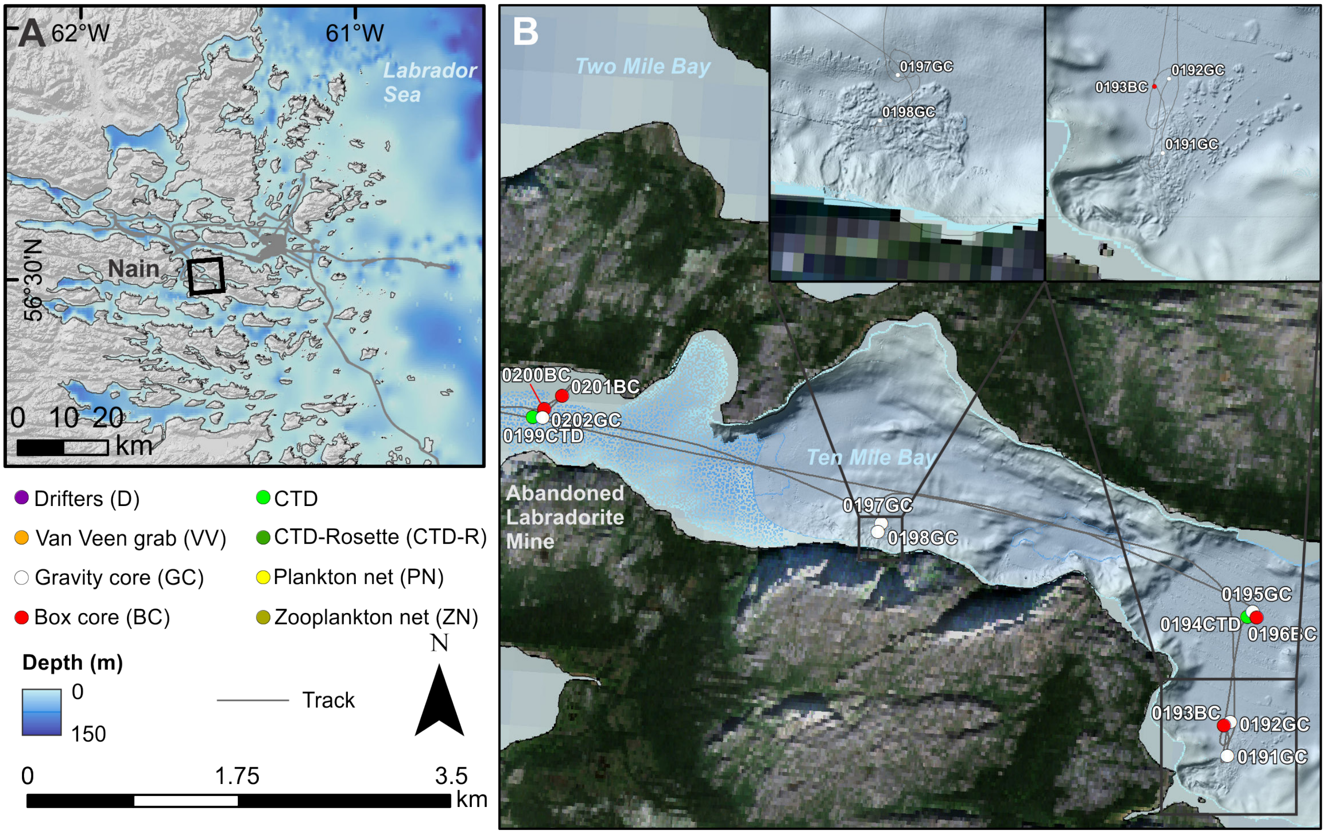

Figure B21: Location of sites in Ten Mile Bay

APPENDIX C: CTD PROFILES

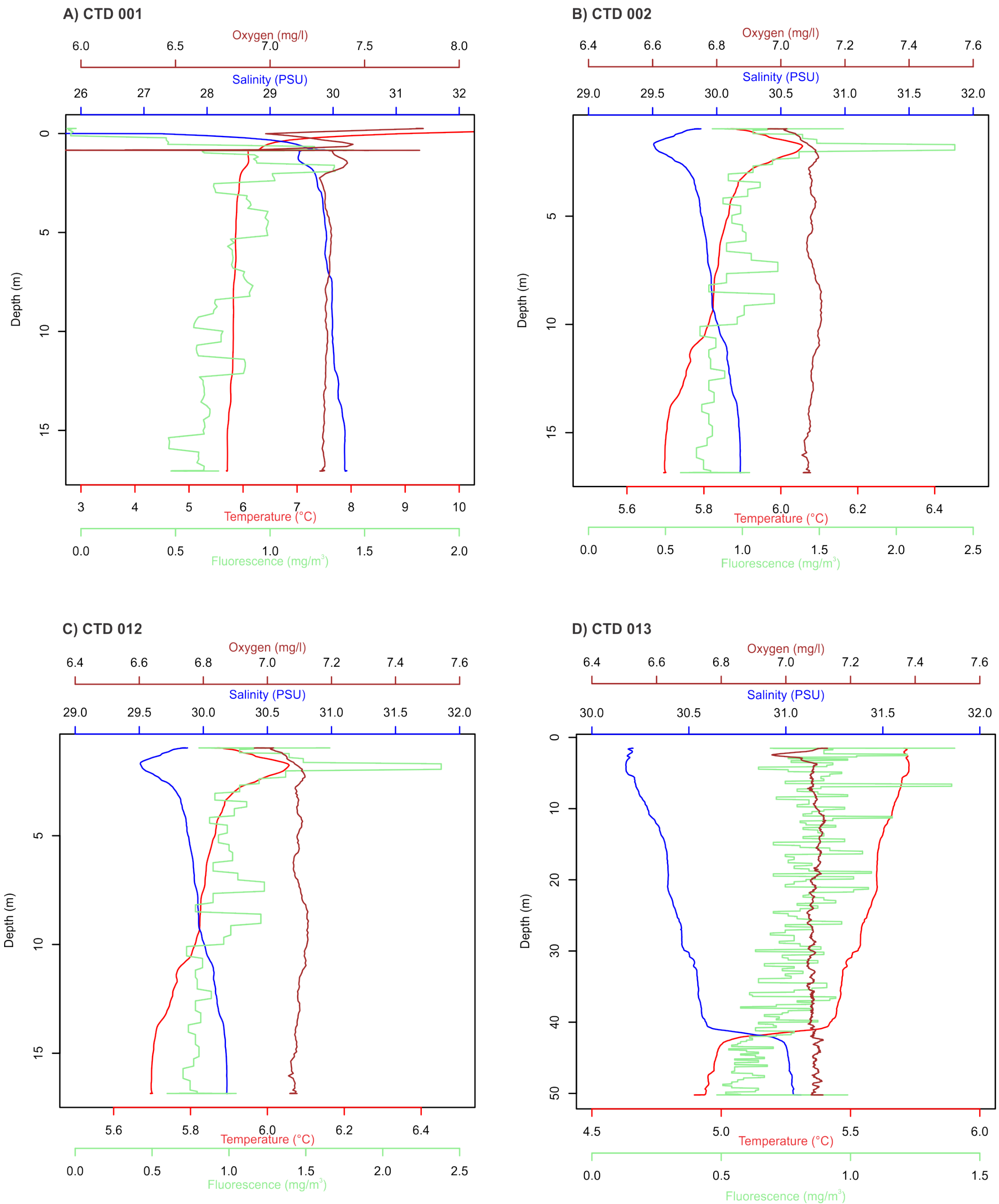

Figure C22: CTD stations 001, 002, 012 and 013

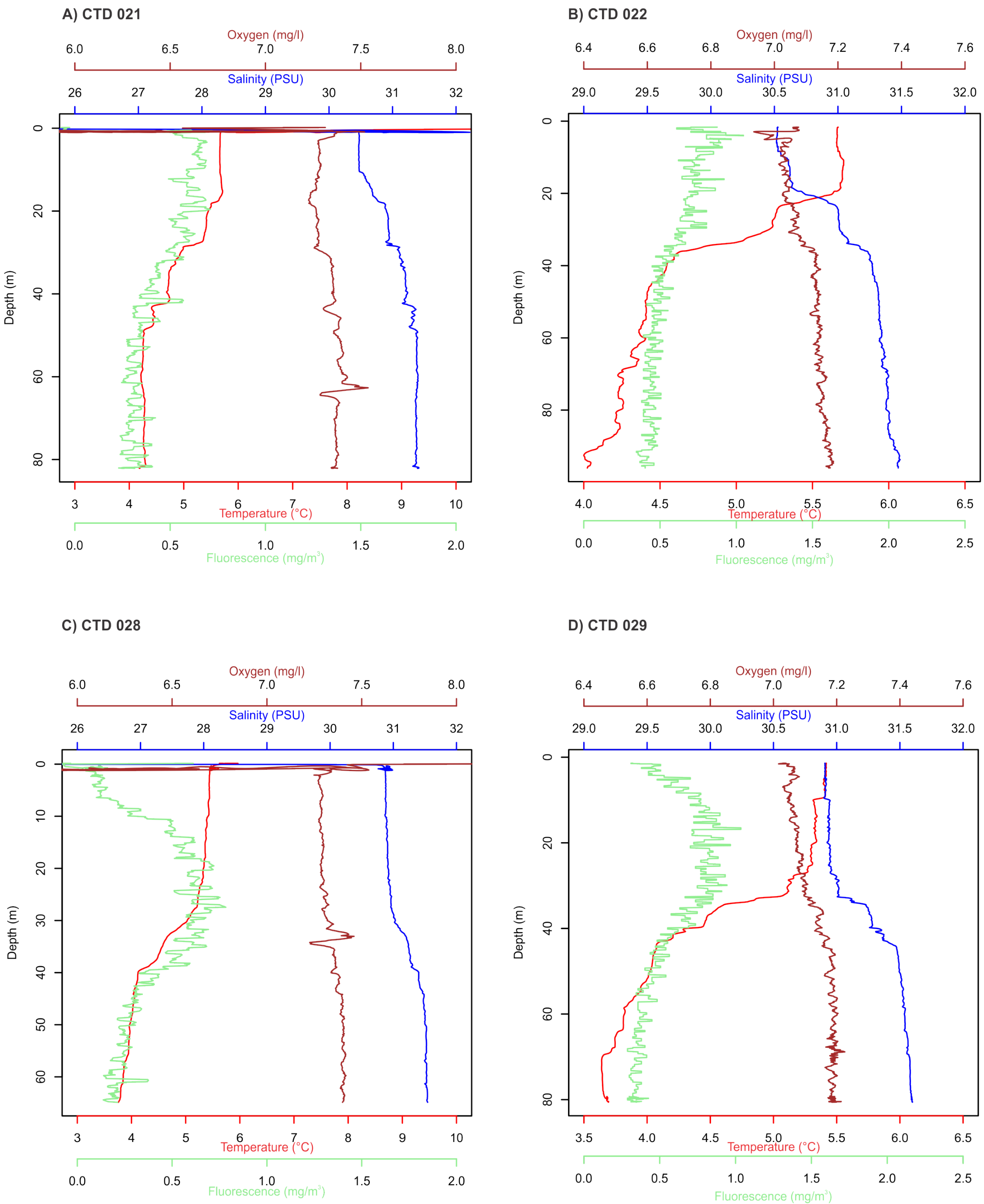

Figure C23: CTD stations 021, 022, 028 and 029

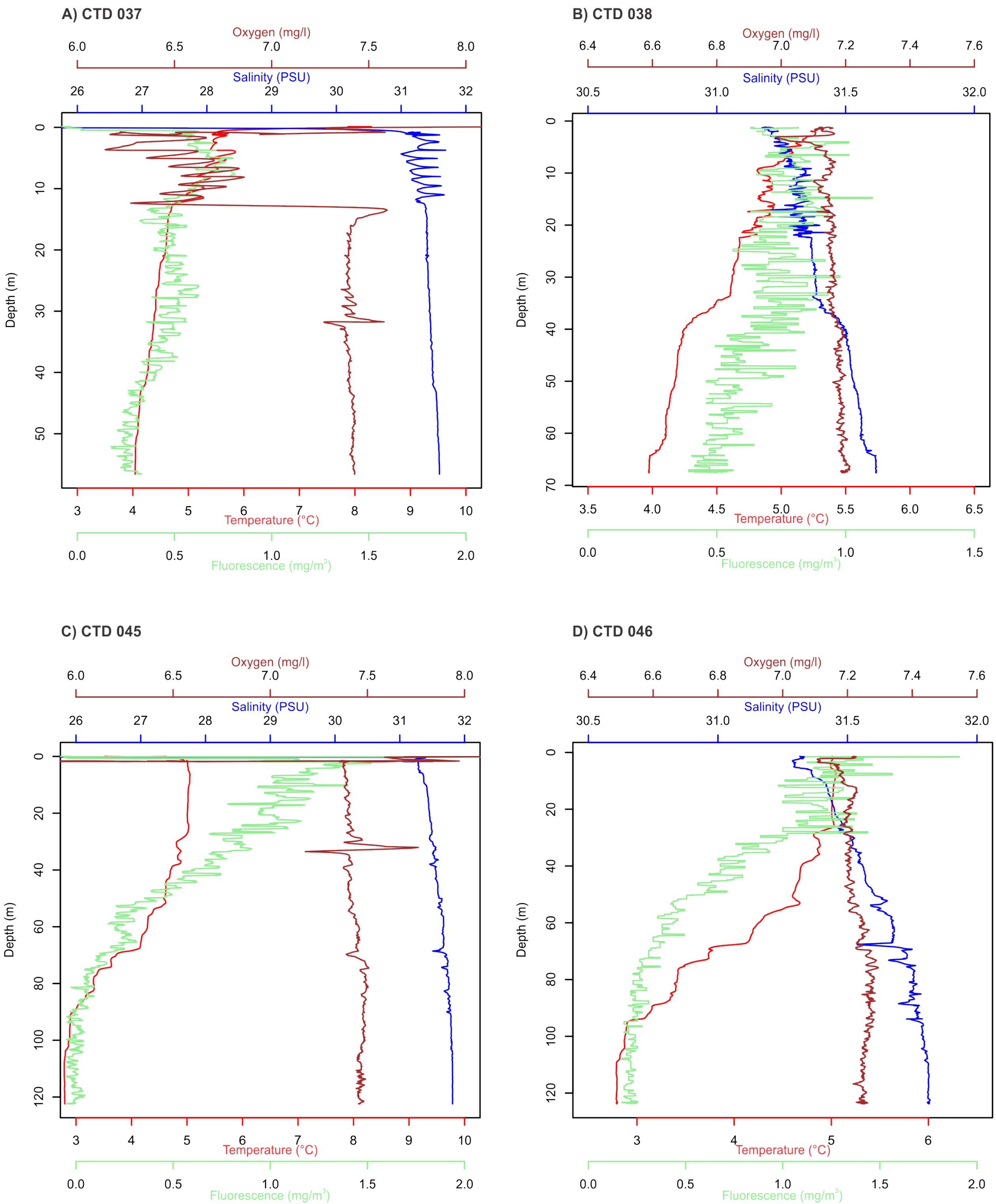

Figure C24: CTD stations 037, 038, 045 and 046

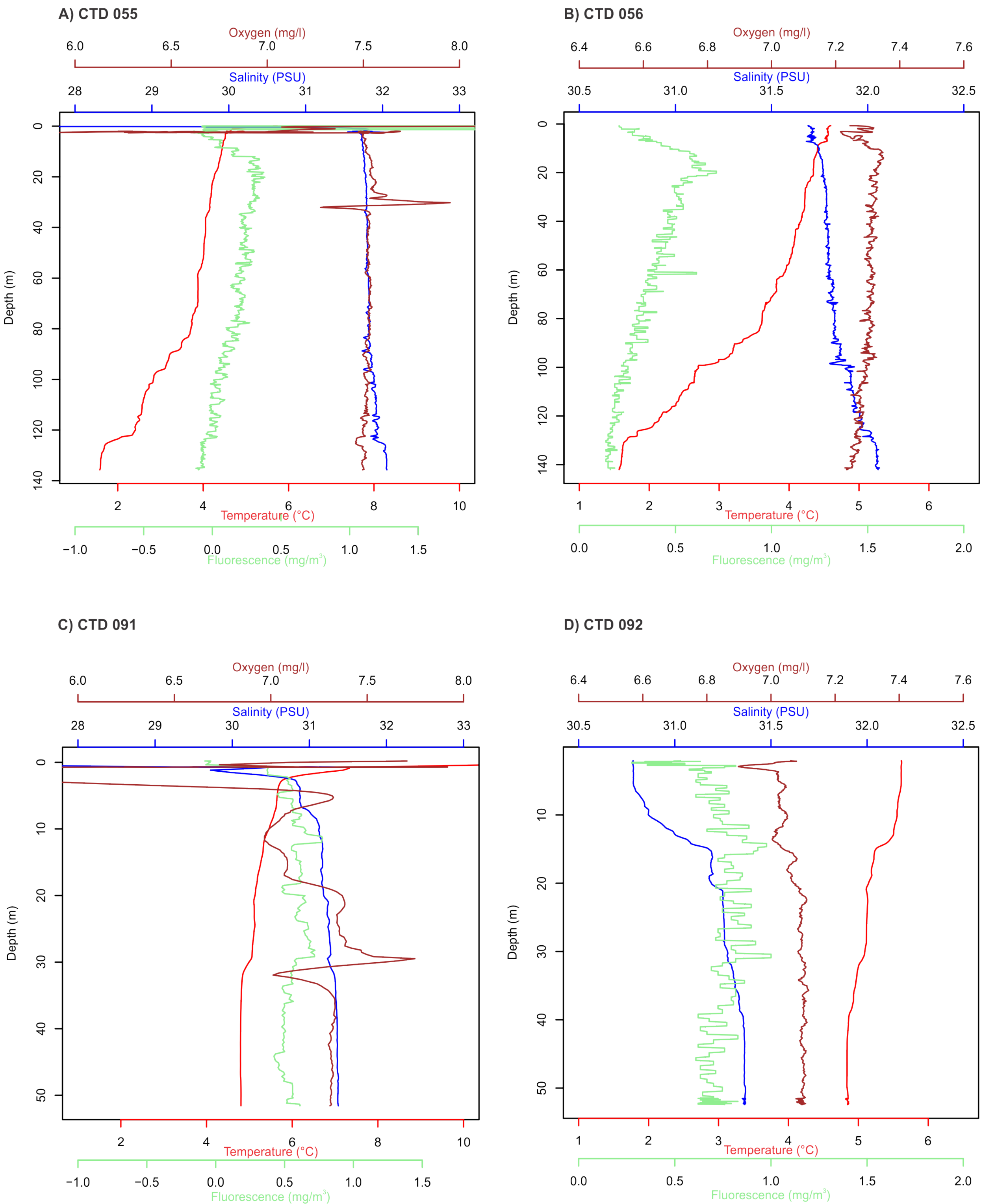

Figure C25: CTD stations 055, 056, 091 and 092

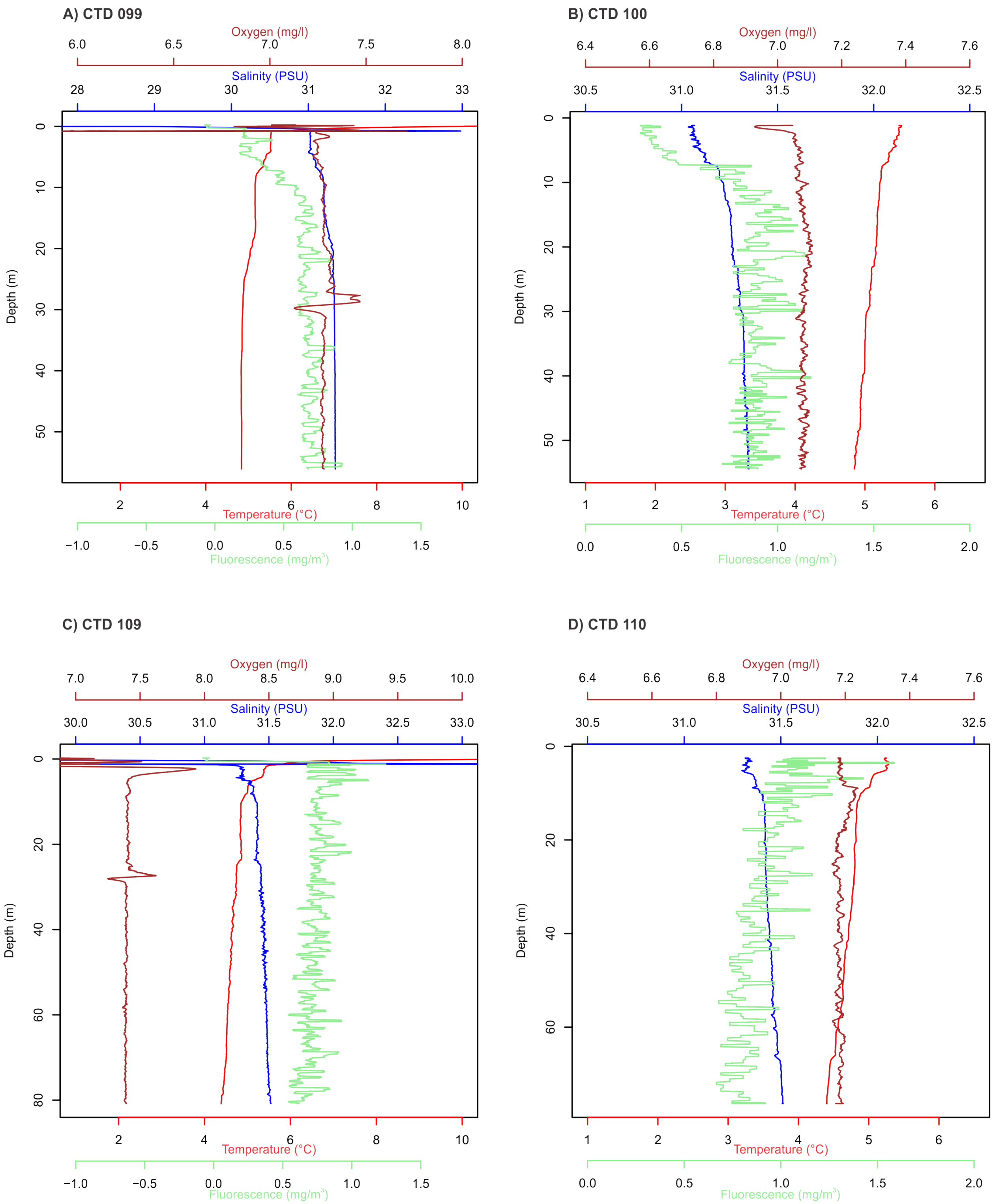

Figure C26: CTD stations 099, 100, 109 and 110

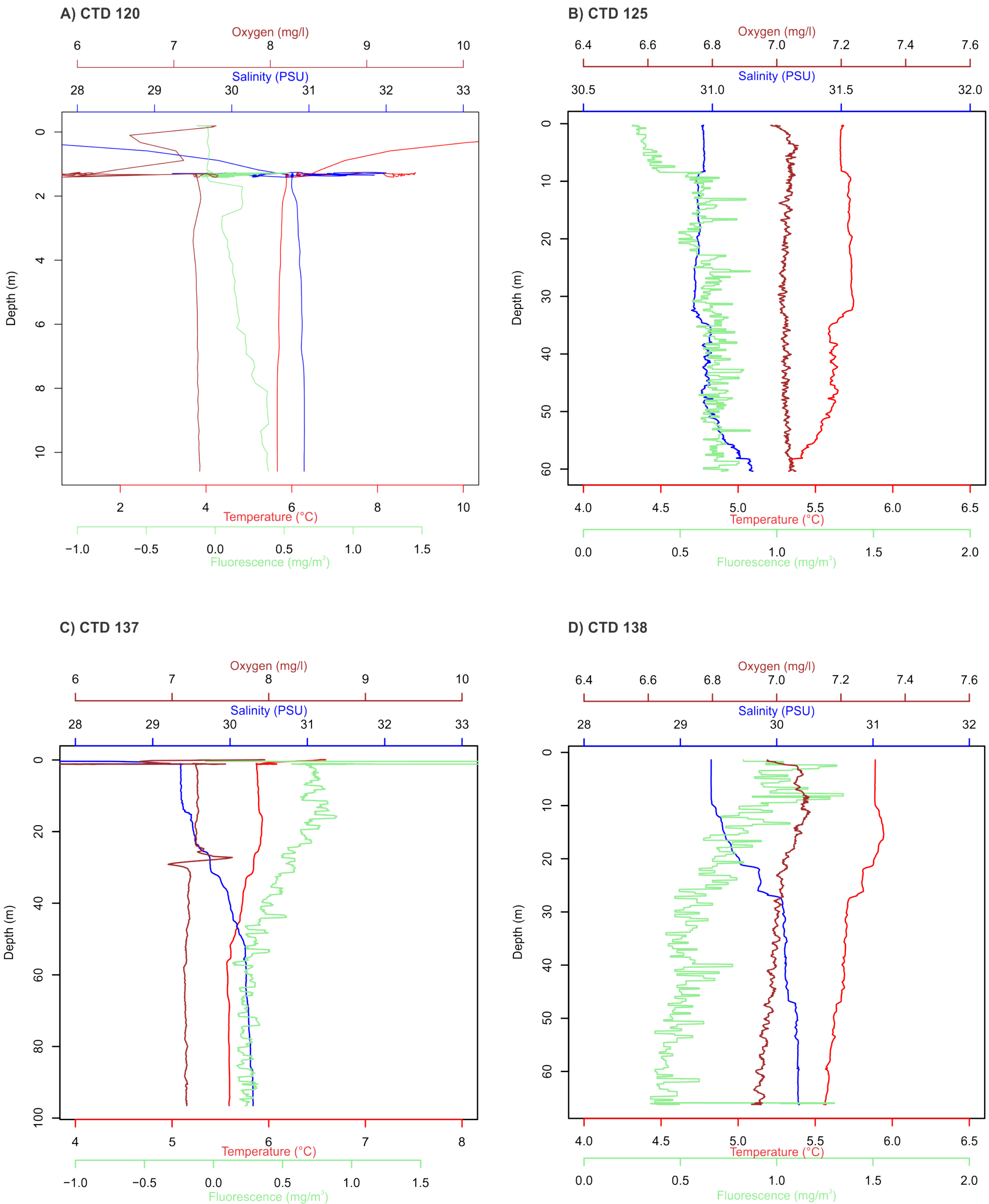

Figure C27: CTD stations 120, 125, 137 and 138

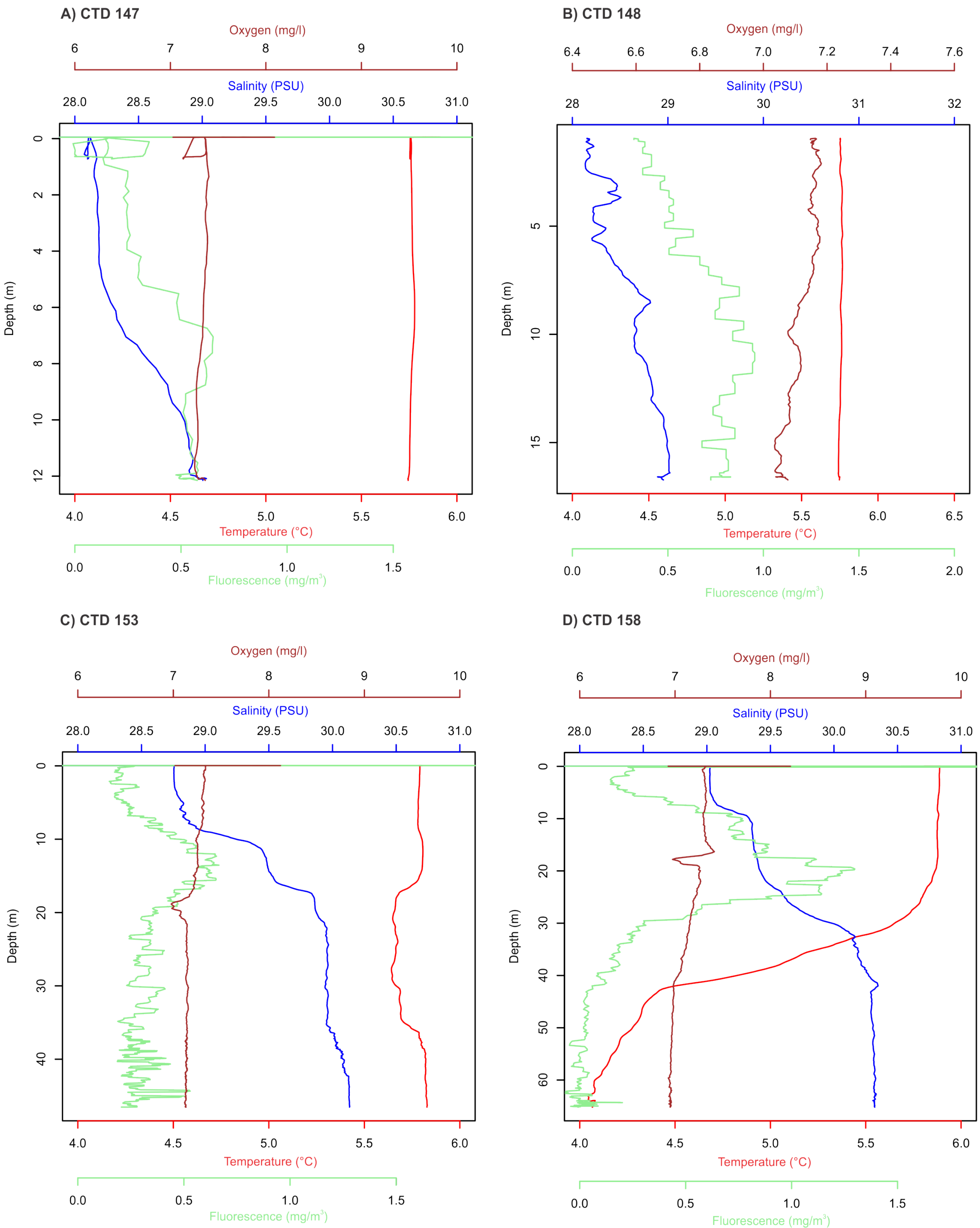

Figure C28: CTD stations 147, 148, 153 and 158

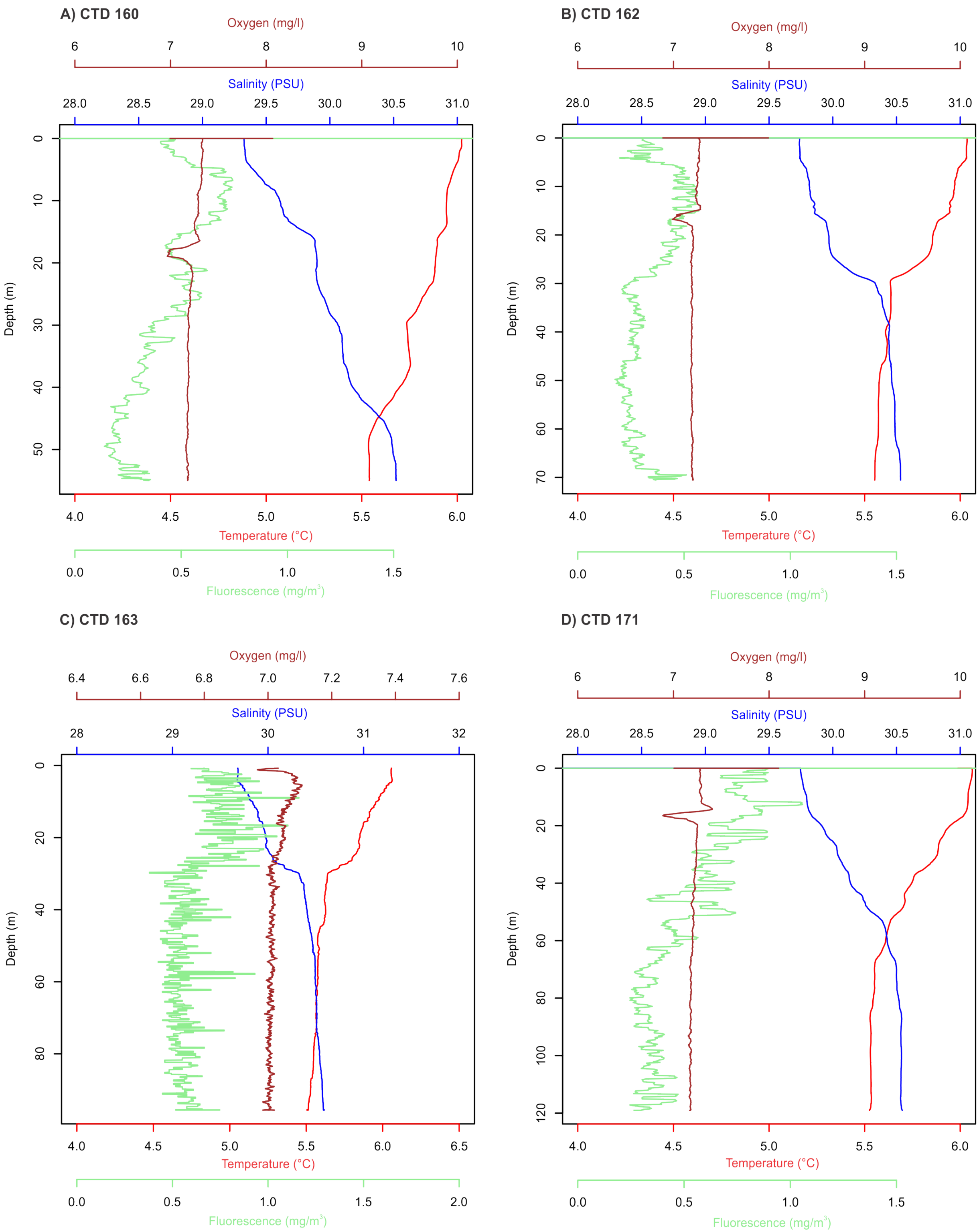

Figure C29: CTD stations 160, 162, 163 and 171

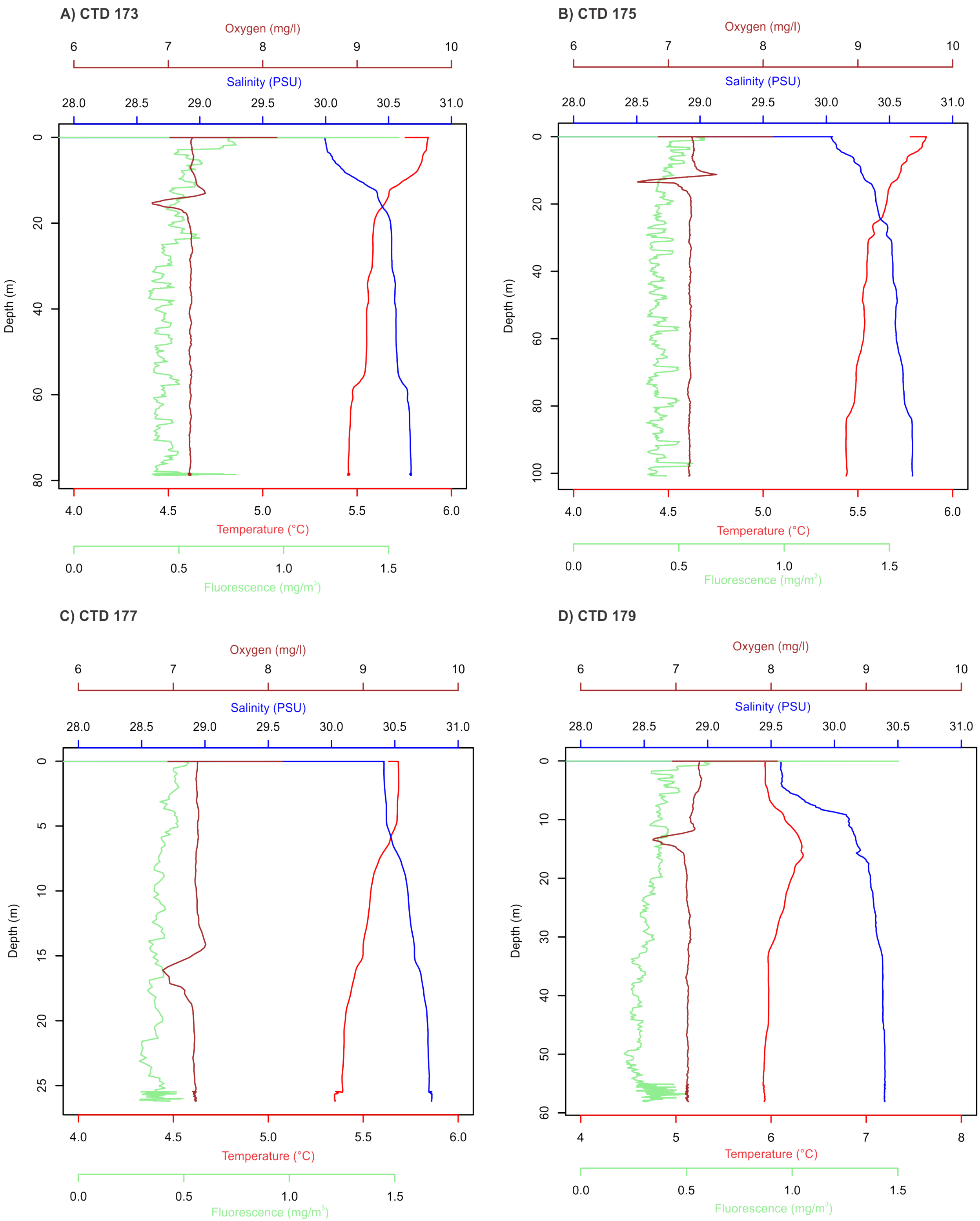

Figure C30: CTD stations173, 175, 177 and 179

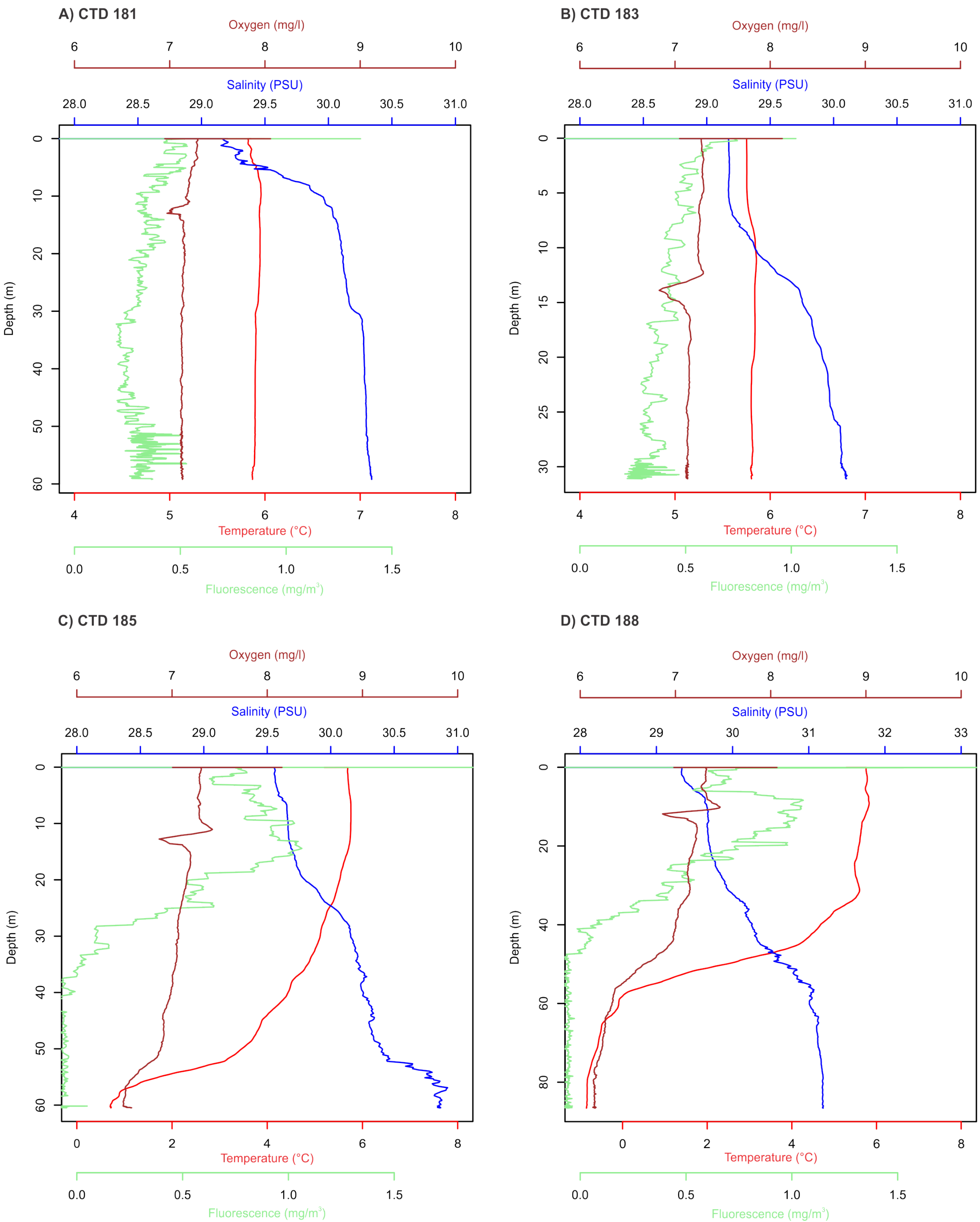

Figure C31: CTD stations 181, 183, 185 and 188

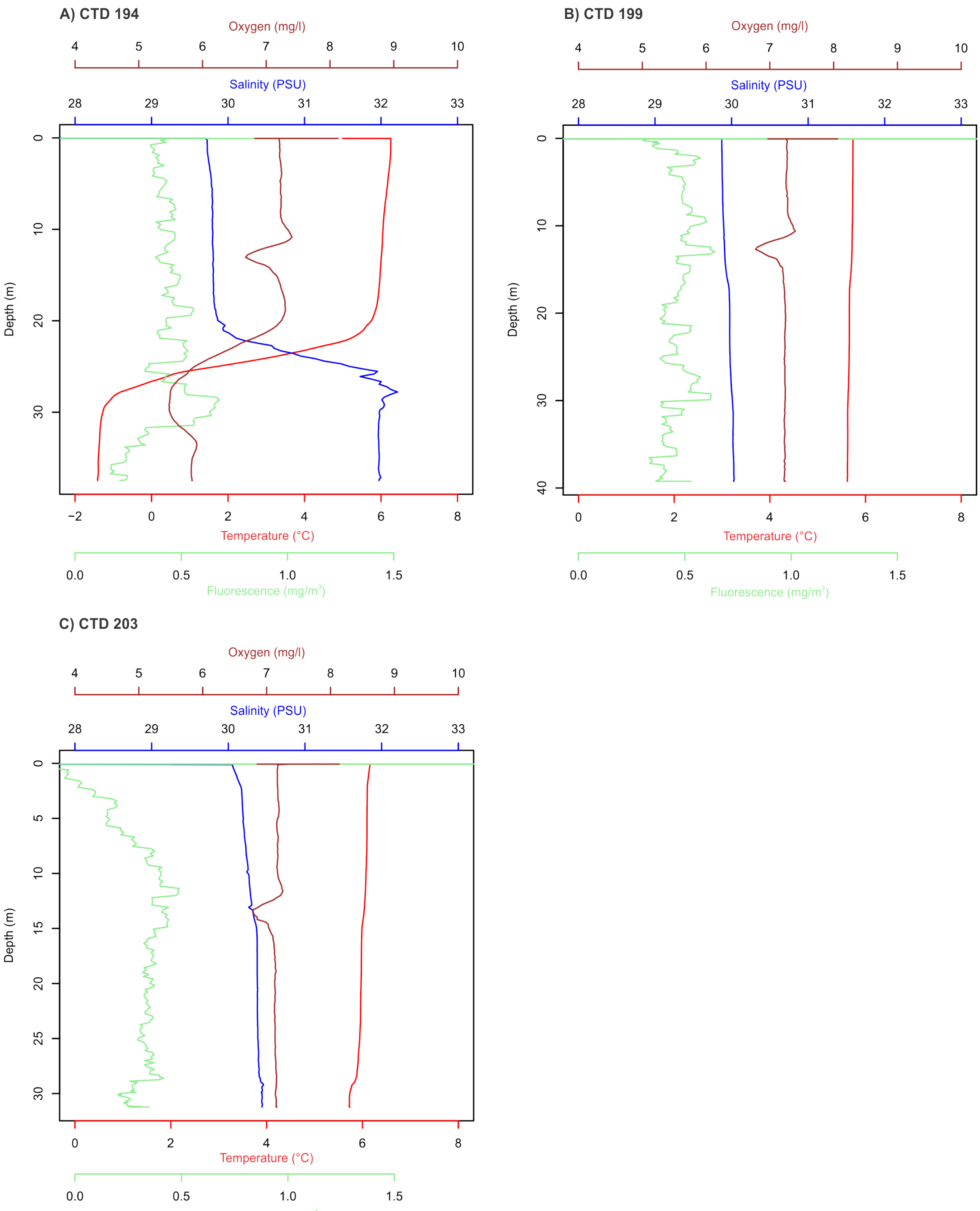

Figure C32: CTD stations 194, 199, 203

Appendix D: Grab and Box core photography

Figure D33: Sediment sample collected at station 0006 VV.

Figure D34: Sediment sample collected at station 0007 VV

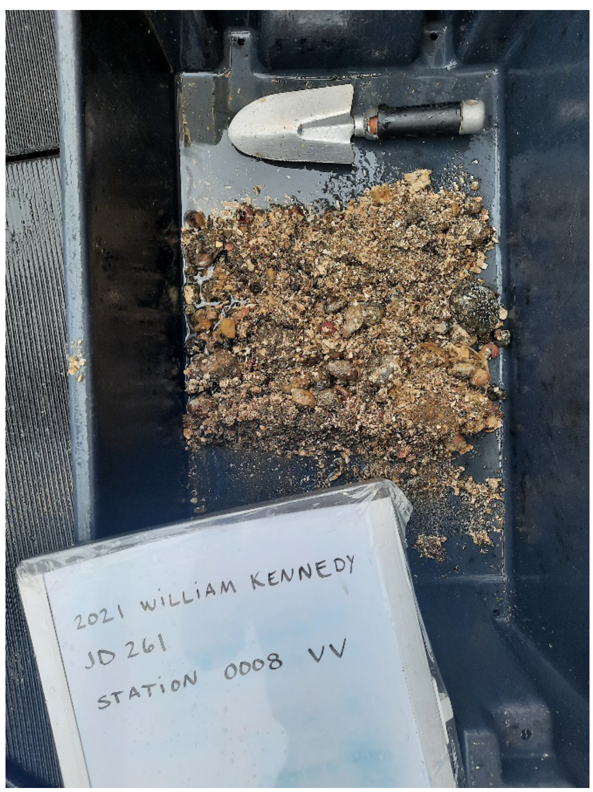

Figure D35 : Sediment sample collected at station 0008 VV.

Figure D36: Sediment sample collected at station 0014 VV


Figure D37: Sediment sample collected at station 0015 BC.

Figure D38: Sediment sample collected at station 0016 BC.

Figure D39: Sediment sample collected at station 0017 BC.

Figure D40: Sediment sample collected at station 0018 BC

Figure D41: Sediment sample collected at station 0019 VV.

Figure D42: Sediment sample collected at station 0020 BC.

Figure D43: Sediment sample collected at station 0026 VV.


Figure D44: Sediment sample collected at station 0027 VV.


Figure D45: Sediment sample collected at station 0033 BC.

Figure D46: Sediment sample collected at station 0042 VV.


Figure D47: Sediment sample collected at station 0043 BC.

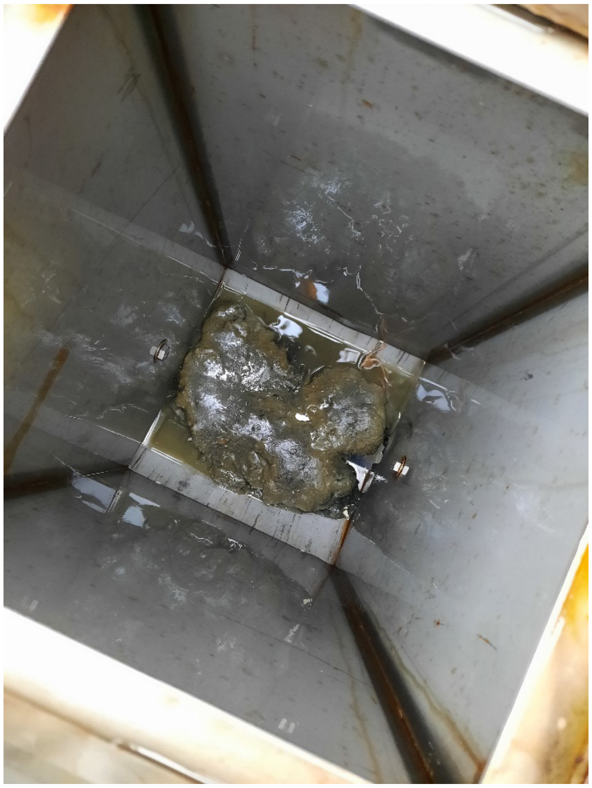

Figure D48: Sediment sample collected at station 0044 BC.

Figure D49: Sediment sample collected at station 0050 BC.


Figure D50: Sediment sample collected at station 0051 BC.

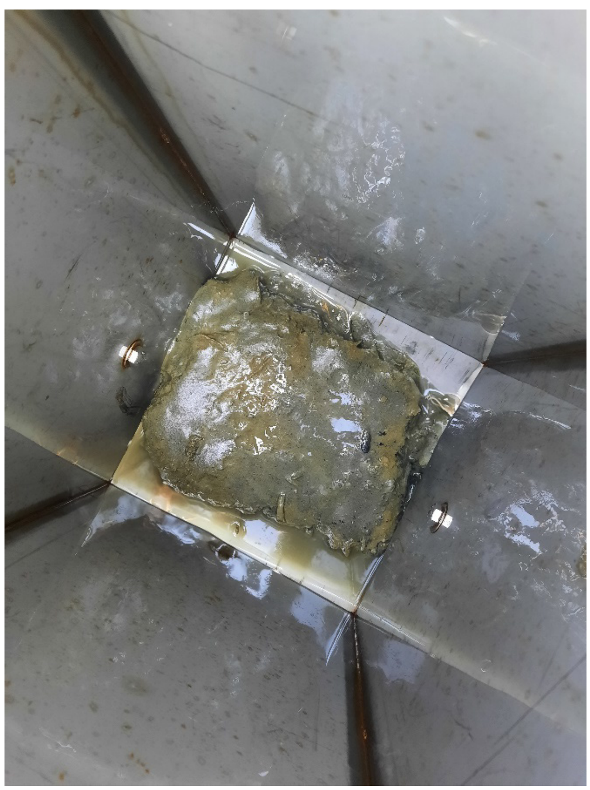
Figure D51: Sediment sample collected at station 0060 BC.


Figure D52: Sediment sample collected at station 0061 BC.


Figure D53: Sediment sample collected at station 0088 BC.

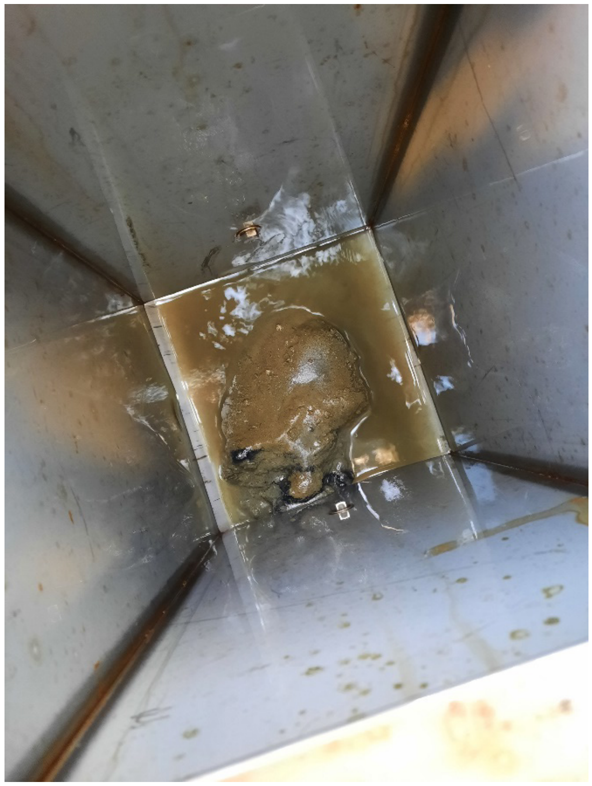

Figure D54: Sediment sample collected at station 0096 BC.

Figure D55: Sediment sample collected at station 0097 BC.

Figure D56: Sediment sample collected at station 0105 BC.

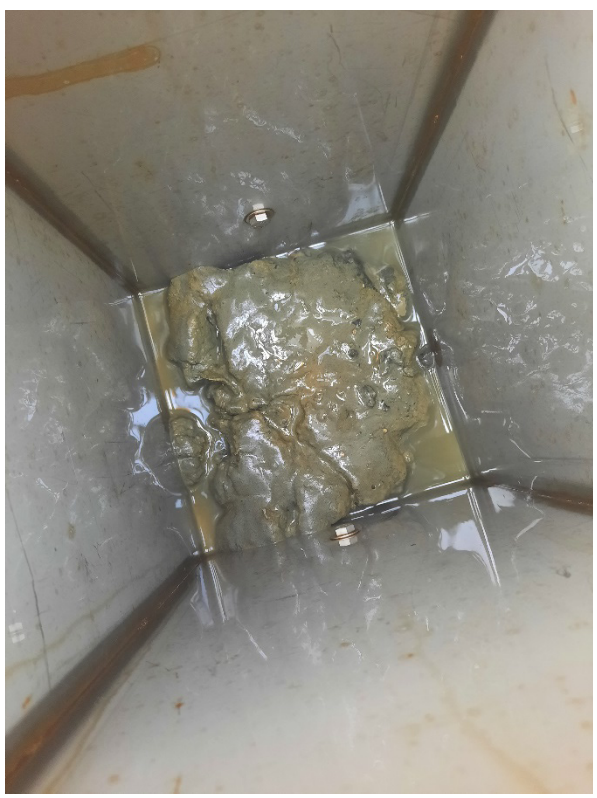

Figure D57 : Sediment sample collected at station 0106 BC.

Figure D58: Sediment sample collected at station 0114 BC.

Figure D59: Sediment sample collected at station 0115 BC.


Figure D60: Sediment sample collected at station 0124 VV.


Figure D61: Sediment sample collected at station 0126 VV.

Figure D62: Sediment sample collected at station 0127 VV.

Figure D63: Sediment sample collected at station 0128 VV.


Figure D64: Sediment sample collected at station 0129 VV.


Figure D65: Sediment sample collected at station 0130 VV.

Figure D66: Sediment sample collected at station 0131 VV.

Figure D67: Sediment sample collected at station 0132 BC.


Figure D68: Sediment sample collected at station 0133 BC.


Figure D69: Sediment sample collected at station 0134 VV.

Figure D70: Sediment sample collected at station 0135 BC.

Figure D71: Sediment sample collected at station 0136 BC.


Figure D72: Sediment sample collected at station 0142 BC.


Figure D73: Sediment sample collected at station 0143 BC.

Figure D74: Sediment sample collected at station 0152 VV.

Figure D75: Sediment sample collected at station 0154 BC.

Figure D76: Sediment sample collected at station 0155 BC.

Figure D77: Sediment sample collected at station 0159 BC.

Figure D78: Sediment sample collected at station 0161 BC.

Figure D79: Sediment sample collected at station 0167 BC.


Figure D80: Sediment sample collected at station 0169 BC.


Figure D81: Sediment sample collected at station 0172 BC.

Figure D82: Sediment sample collected at station 0174 BC.

Figure D83: Sediment sample collected at station 0176 BC.

Figure D84: Sediment sample collected at station 0178 BC.

Figure D85: Sediment sample collected at station 0180 BC.


Figure D86: Sediment sample collected at station 0182 BC.


Figure D87 : Sediment sample collected at station 0184 BC.

Figure D88: Sediment sample collected at station 0186 BC.

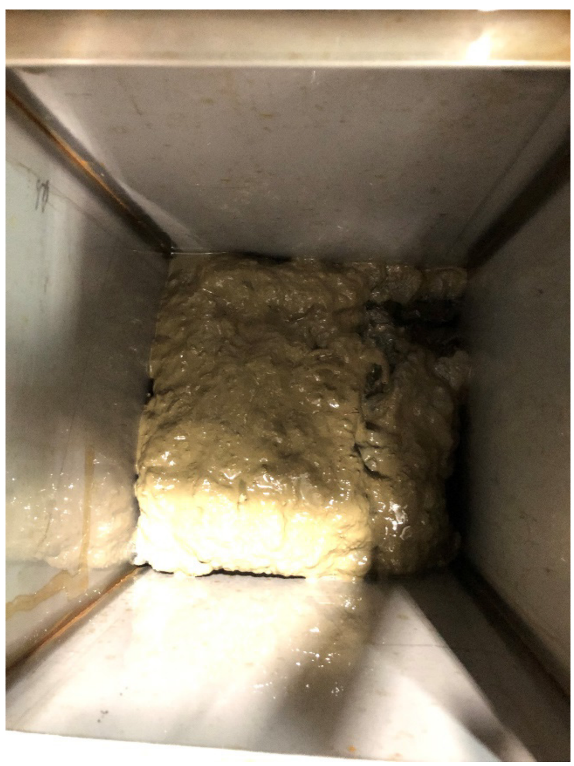

Figure D89: Sediment sample collected at station 0189 BC.

Figure D90: Sediment sample collected at station 0193 BC.

Figure D91: Sediment sample collected at station 0196 BC.


Figure D92: Sediment sample collected at station 0200 BC.


Figure D93: Sediment sample collected at station 0204 BC.


Figure D94: Sediment sample collected at station 0205 BC.