Summary of Zooplankton and Fish Data from the 2021 and 2022 James Bay Expeditions

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In 2021 and 2022, the community composition and spatial distribution of marine zooplankton and fish were assessed at offshore stations in James Bay, Canada. This research was conducted as part of the James Bay Expedition, led by the University of Manitoba. Zooplankton were numerically dominated by the copepods *Pseudocalanus spp*. and *Oithona spp*., and the appendicularian *Fritillaria borealis*. The non-copepod contribution of zooplankton biomass varied between the study years, with a greater contribution of hydrozoa in 2021 and pelagic sea snails (*Limacina spp.*) in 2022. In both years, fish abundance and biomass was dominated by Eeplout species (*Zoarcidae spp.)* and to a lesser extent Stout eelblenny (*Anisarchus medius)*. Two anadromous species, *Osmerus mordax* and *Gasterosteus aculeatus*, were collected at low numbers near river mouths. The diversity and distribution data presented herein contribute to a growing body of Arctic biodiversity surveys aimed at assessing long-term anthropogenic impacts in the region and supports current marine conservation efforts.

RÉSUMÉ

Niemi, A., Woodard, K., Capelle, D., Allison, C., Majewski, A., and Kamula, M. 2026. Summary of Zooplankton and Fish Data from the 2021 and 2022 James Bay Expeditions. Can. Data Rep. Fish. Aquat. Sci. 1467: vii + 70 p.

En 2021 et 2022, la répartition spatiale et la composition des communautés de zooplancton et de poissons marins ont été évaluées à des stations extracôtières de la baie James, au Canada. La présente recherche a été menée dans le cadre de l'expédition de la baie James, dirigée par l'Université du Manitoba. Sur le plan du nombre d'individus, la communauté de zooplancton était dominée par les copépodes *Pseudocalanus spp.* et *Oithona spp.*, ainsi que par l'appendiculaire *Fritillaria borealis*. La contribution des organismes zooplanctoniques autres que les copépodes à la biomasse du zooplancton a varié selon les années d'étude; il y a eu une importante contribution d'hydrozoaires en 2021 et d'escargots de mer pélagiques (*Limacina spp.*) en 2022. Au cours de ces deux années, l'abondance et la biomasse des poissons étaient dominées par des espèces de lottes (*Zoarcidae spp*.) et, dans une moindre mesure, la lompénie naine (*Anisarchus medius*). Deux espèces anadromes, *Osmerus mordax* et *Gasterosteus aculeatus*, ont été capturées en faibles quantités près de l'embouchure de rivières. Les données sur la diversité et la répartition présentées sont utilisées dans un nombre accru d'études sur la biodiversité dans l'Arctique visant à évaluer les répercussions anthropiques à long terme dans la région, et appuient les efforts de conservation marine actuels.

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INTRODUCTION

In 2021 and 2022, researchers from Department of Fisheries and Oceans (DFO) Canada participated in a bay-wide oceanographic and ecosystem survey of James Bay, providing expertise in zooplankton and fish collection in the offshore marine environment. The marine ecosystem of James Bay has been largely understudied with previous bay-wide oceanographic focused research occurring nearly 50 years prior to the current study. Knowledge of offshore fish and zooplankton communities in James Bay is particularly sparce, as previous studies have primarily focused on estuarine habitats and anadromous species in response to hydroelectric development (Berkes, 1982; Morin and Dodson, 1986; Stewart and Lockhart, 2005). Since the 1970s, the marine ecosystem structure of James Bay has been influenced by hydroelectric development, in particular through multiple regional alterations that affect total and seasonal freshwater discharges of La Grande Rivière. Although there have been multiple marine zooplankton assessments in the Hudson Bay Complex (Estrada et al., 2012; Harvey et al., 2001; Schembri et al., 2023)**,** the James Bay assemblages have been largely excluded. As a result, knowledge of offshore assemblages remain a key ecosystem gap in understanding the James Bay marine environment and our ability to monitor change.

For decades, Cree First Nation communities, who rely on James Bay for subsistence fishing and hunting, have observed ecosystem changes in the marine environment as a result of hydroelectric development and climate change (McDonald et al., 1997). One prominent observation, has been the decline in eelgrass (*Zostera marina*) meadows in the Eeyou Istchee Marine Region along the eastern shores of James Bay (Davis et al., 2024; Kuzyk, 2023). Designated as an ecologically and biologically significant species by DFO, *Z. marina* provides key ecosystem services such as habitat, shelter, and nursery grounds that support juvenile marine fish populations (Joseph et al., 2006; Robinson and Yakimishyn, 2013). Although once considered the largest eelgrass meadow in North America and a global stopover for migratory birds, the ecological impacts from the decline of eelgrass in James Bay are not well understood, particularly its effect on the offshore fish and zooplankton populations. Hydroelectric development within the James Bay watershed has also significantly altered the timing and rates of freshwater discharge. The change to river flow has had wide spread impacts on the water mass properties of the region leading to changes in sea ice conditions (Gupta et al., 2022; Taha et al., 2019), and increased water column stratification (Eastwood et al., 2020; Meilleur et al., 2023), limiting nutrient cycling and renewal in the surface waters (Guzzi et al., 2024), all of which directly alter habitat for offshore zooplankton and fish. Furthermore, global warming has contributed to increased sea surface temperatures across James Bay in recent decades, resulting in greater frequency, duration and intensity of marine heat waves with unknown effects to the marine ecosystem (Bruneau et al., 2025). A current comprehensive ecosystem assessment of the whole of James Bay is required to document potential changes in response to decades of hydroelectric activity and accelerated climate change.

The main objective of the James Bay Expeditions was to update and establish baseline oceanographic data in offshore James Bay, including physical, chemical and biological ecosystem components. This report summarizes findings from zooplankton and fish net sampling during the 2021 and 2022 cruises.

METHODS

STUDY AREA

Located at the southernmost region of the Hudson Bay Complex (Figure 1), James Bay (~68 000 km^2) is a shallow (average depth ~60 m), dynamic system undergoing post-glacial isostatic rebound at a rate of 70-100 cm per century (Martini et al., 1980). Characterized as a sub-Arctic estuarine system, seasonal ice forms across James Bay beginning in November with breakup occurring in May-June (Gupta et al., 2022; Taha et al., 2019). Influenced by both river and Arctic marine waters, the waters of James Bay generally circulate in a cyclonic direction with marine waters entering from Hudson Bay in the northwest and exiting back into Hudson Bay in the northeast. As water circulates around James Bay, surface waters become diluted and increasingly more stratified by the numerous large rivers flowing into the Bay, which deliver more than 250 km^3 of freshwater per year (Déry et al., 2016). The large amount of river inflow results in a freshening of the surface salinity by about three units from when marine waters enter in the northwest to when it exits back into Hudson Bay on the northeast side (Prinsenberg, 1984; Stewart and Lockhart, 2005). The largest of the rivers is the La Grande Rivière on the eastern side of James Bay, which drains one of the largest hydroelectric developments in the world, delivering on average 80.5 km^3 of freshwater per year to James Bay (Déry et al., 2011). In winter, when hydroelectricity demands are greatest, the release of freshwater from the La Grande Rivière system forms a large under ice freshwater plume with wide spread regional impacts on sea ice conditions and water stratification both locally and in upstream marine environments (Eastwood et al., 2020; Peck et al., 2022).

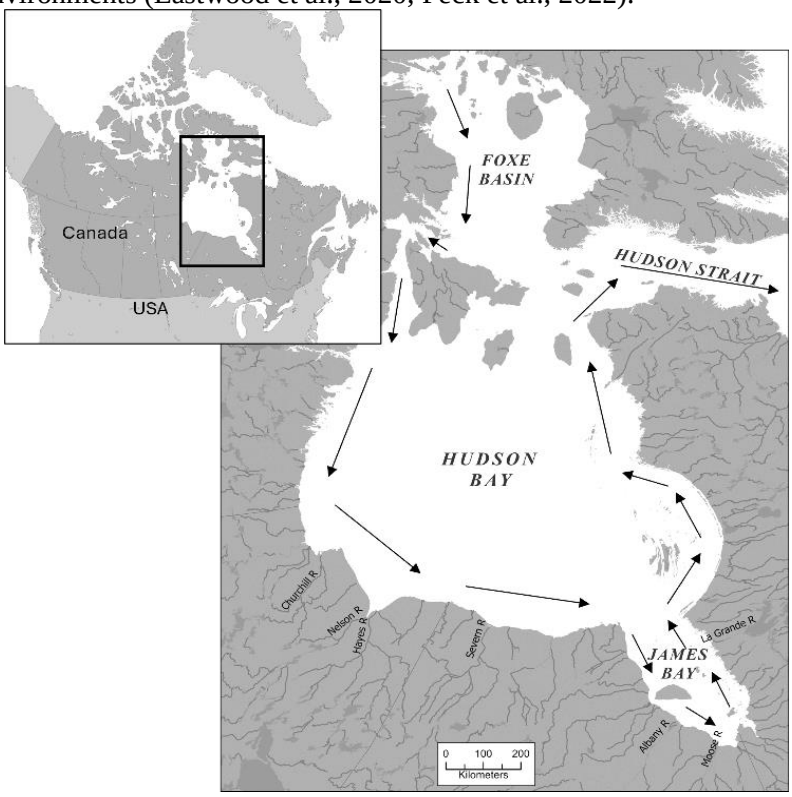

Figure 1. Map showing the Hudson Bay Complex, including Foxe Basin, Hudson Bay, James Bay and Hudson Strait. Black arrows represent the general cyclonic circulation pattern of surface waters.

SAMPLING

Sample collection of zooplankton and fish were conducted from the research vessel RV *William Kennedy* from 4-12 August 2021 and 5-22 August 2022 at four major transects across James Bay and one northeast station representing the outflow waters (Figure 2). Station depths ranged from 8 to 107 m. A summary of net deployments and associated metadata for zooplankton and fish collection is presented in Table 1 and Table 2, respectively. Whenever possible, zooplankton and fish were sampled at the same station, however, sea state and water depth or bottom composition at times resulted in the cancellation of either a zooplankton tow or fishing trawl deployment.

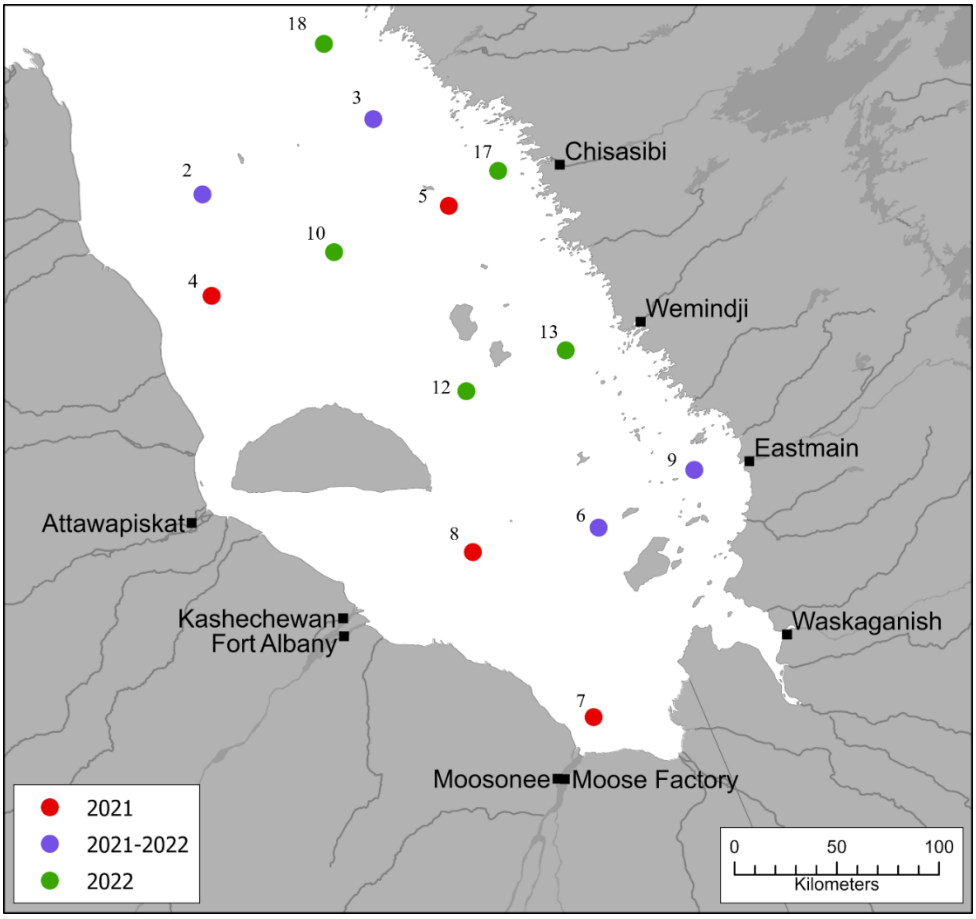

Figure 2. Map of James Bay showing the sampling locations in 2021 (red) and 2022 (green). Purple dots are locations sampled in both 2021 and 2022.

Zooplankton Sampling and Analyses:

Integrated zooplankton samples were collected at each station using a Hydro-Bios WP2 net with 150 µm mesh and a 0.57 m internal diameter. The net was lowered at 1 m s^{-1} to within 10 m of the bottom and then towed vertically to the surface at a speed of 0.5 m s^{-1}. A depth sensor (RBRsolo^3) was attached to the net to verify the maximum depth of each cast. A flow meter (General Oceanics) was attached to the net and used to estimate volume filtered. When flow meter readings were not reliable, volume filtered was calculated using the measured maximum depth of deployment and net opening area. Ichthyoplankton was removed from the net catch, and the remainder of the sample was preserved (10% (v/v) buffered formaldehyde in filtered sea water) and stored at room temperature for taxonomic analysis at the Polish Academy of Sciences, Institute of Oceanology.

Zooplankton samples were processed according to Postel et al. (2000). If zooplankton was abundant, the sample was split using a Motoda Box type splitter. Zooplankton greater and less than 5 mm total length were separated following removal from the preservative. The entire > 5 mm group was examined, and all identified individuals were classified within their taxonomic groups and life stages into size categories >5-10, >10-20 and >20 mm. Lengths were measured for the >20 mm category. The < 5 mm zooplankton was placed in a calibrated beaker and a subsample was taken using a 2 ml automated micropipette with the pipette tip cut to provide a 5 mm diameter opening. The subsample was placed in a counting chamber (5 x 5 cm dish with a 5 mm grid) and carefully examined under a stereomicroscope (OLYMPUS SZX7 8–56x, OLYMPUS BX12 40–400x). At least five subsamples were taken for each sample and a minimum of 500 individuals were identified and counted. The remaining part of the sample was examined in its entirety in small portions to identify any zooplankton not encountered during the examination of the subsamples.

Zooplankton abundance was standardized as the number of individuals per cubic meter (ind. m^{-3}) and biomass (mg dry mass m^{-2}) was calculated using zooplankton abundance and dry body mass indices for individual taxa, species, life stages and sizes, taken from available sources (Davis, 1984; Fulton, 1973; Larson, 1986; McLaren et al., 1989; Nakamura et al., 2017; Omori, 1969; Uye, 1982; Vidal and Smith, 1986). Taxonomic identification was performed based on numerous published identification keys and atlases and dedicated taxonomic publications. In the case of Calanus species, identification was based on measurement of prosoma size and morphology, using size classes specific for Calanus stages and species observed by Walkusz et al. (2010).

Fish Sampling and Analyses:

Demersal fish samples were collected using a Hi-lift 3 m benthic beam trawl and were also collected opportunistically from a benthic sled. The benthic beam trawl net body and cod-end were constructed of 3.17 cm stretched #18 nylon mesh with a 0.63 cm square nylon mesh cod-end liner. The footrope measured 4.27 m and 10.16 cm diameter rubber discs (rock hoppers) spanned its entire length. A full description and schematic diagrams of the benthic trawl are presented in Majewski et al. (2009). Tow duration was targeted at 15 minutes bottom time at a target speed of 2.0 knots speed-over-ground and a minimum scope ratio of 2:1. An RBR Duet temperature and depth logger was attached to the headrope and depth/time profiles were used to confirm bottom time and tow duration.

The benthic sled was comprised of a rigid stainless steel rectangular frame (1 m x 0.5 m) with two 1.2 m long skids attached to the bottom. A conical net was connected to the frame body 1.8 m long with a mesh size of 10 mm. The codend was 1.2 m long with a mesh size of 6 mm. Weights (30 kg) and chain attached to the bottom of the net were used to orient the frame and ensure it remained on the seafloor. Once the

sled was on the seafloor, it was towed for 15 minutes at approximately 0.6-1 knots. Although the sled was deployed to target invertebrate epifauna, some fish were caught in the net and are included here.

Once onboard, fish were sorted into taxonomic families and each family was then weighed to the nearest g and measured to the nearest mm (fork length or total length for protocercal or diphycercal families, respectively) using digital calipers or a standard fish measuring board. Individual fish were placed into Whirl-Pak bags and were assigned a unique identification number before freezing.

Post-cruise, fish were thawed and each specimen was identified to species, where possible, using published keys (Coad and Reist, 2004; Coad and Reist, 2018; Mecklenburg et al., 2002; Scott and Scott, 1988) and unpublished notes. Total or fork and standard lengths were measured to the nearest mm and round weight (0.1 g), and gonad and liver weights (0.01 g) were recorded. Sex and maturity were evaluated using criteria from McGowan (1988). Otoliths were removed from all specimens and were archived for future use.

Fish abundance and biomass are not standardized between stations due to inconsistent recording of deployment parameters including in some instances deployment latitude and longitude, depth, and speed data. Figures representing fish data are presented in proportion catch for each station, but stations are not directly comparable due to non-standardized deployments.

RESULTS

SUMMARY

Overview

Overall, zooplankton collected in James Bay in 2021 and 2022 were primarily small pan-Arctic and boreal copepods, while larger species like *Calanus hyperboreus*, were notably absent. Meroplankton, gelatinous zooplankton, and euryhaline taxa were also common, reflecting estuarine conditions of James Bay. Two anadromous fish species were found at low numbers near river mouths, while overall fish collected in both study years were dominated by fishes from the family Zoarcidae. Five fish species represent new records for James Bay. Due to challenges maintaining bottom contact during trawling, fish data in this report are presented as a summary of fish species rather than a comparative analysis between stations or years.

Summary of Zooplankton:

Total zooplankton abundance ranged from 1,533 to 24,910 ind. m^{-3} with highest abundance at station 9 in 2021 and station 10 in 2022 (Table 3). Total abundance averaged 6,429 in 2021 and 11,020 ind. m^{-3} in 2022. Copepod taxa represented ca. 95% of total zooplankton abundance in James Bay. Total zooplankton biomass (Table 4) ranged from 16.8 to 132 mg m^{-3}, averaging 39 and 59 mg m^{-3} in 2021 and 2022, respectively. The non-copepod biomass varied between years, with greater contributions from pteropods and macrozooplankton (e.g., amphipods) in 2021, and from hydrozoans and chaetognaths in 2022. Total zooplankton biomass was highest at station 6 in 2021 and was highest at station 10 in 2022 where there was a high biomass contribution from Calanoid copepod nauplii.

In total, 76 taxa were identified to genus or species level. In addition, meroplankton including, Cirripedia, Bivalvia, and Polychaeta were found as well as higher taxonomic level indeterminate taxa (Table 3). The

presence of abundant Cirripedia and Bivalvia meroplankton is consistent with other studies from southern and eastern Hudson Bay (Darnis et al., 2022). In general, small bodied, pan-Arctic and boreal copepods including Pseudocalanus spp. and *Oithona spp.* numerically dominated the assemblages. Euryhaline taxa, *Acartia longiremis* and *Acartia spp*. were also abundant in 2021 and 2022, known from coastal habitats in Hudson Bay (Schembri et al., 2023). Gelatinous zooplankton, specifically *Fritillaria borealis,* were also abundant. This pelagic tunicate is expected to increase in warming arctic waters (Choe and Deibel, 2008). The large bodied Arctic copepod *Calanus hyperboreus*, a key component of Arctic fish prey, was notably absent from the James Bay samples. The zooplankton observed in James Bay reflected both Arctic and neritic/euryhaline diversity. Further assessments targeting macrozooplankton would benefit the understanding of prey available for offshore and coastal fishes.

Summary of Fish Catch:

A total of 489 fish were collected throughout James Bay in 2021 and 2022, comprising a minimum of 32 species from 11 families (Table 5-6 and Figures 7-8). Due to difficulties identifying juveniles or marred fish, 112 fish could not be identified to species level and of this 16 fish could only be identified to the family level. Of the 32 species identified, 15 species have known Arctic zoogeographic distribution, while 14 species have Arctic-boreal distribution (Coad and Reist, 2018; Mecklenburg et al., 2018; Mecklenburg et al., 2011). *Cyclopterus lumpus, Lumpenus lampretaeformis,* and *Gasterosteus aculeatus* were the only species with a boreal zoogeographic distribution (Mecklenburg et al., 2018; Mecklenburg et al., 2011). Five species including four Lycodes *spp*. (*L. eudipleurostictus, L. marisalbi, L. polaris, L. seminudus)* and one Cottidae *spp.* (*Triglops nybelini*) are new occurrences in James Bay, while *L. polaris* and *T. nybelini* have been documented in neighbouring waters of Hudson Strait and Foxe Basin (Coad and Reist, 2018; Mecklenburg et al., 2018; Stewart and Lockhart, 2005).

The majority of fish collected in both years were dominated by marine species, eight of which are known to use brackish waters on a seasonal basis (Stewart and Lockhart, 2005). Two anadromous species (*Osmerus mordax* and *Gasterosteus aculeatus)* were collected at station 7 near the mouth of the Moose River in 2021, while *Osmerus mordax* was also collected at station 9 in 2022 (Figure 9).

The most abundant taxa collected in 2021 and 2022 was Zoarcidae, which comprised 50% of the total combined catch across both years (Figure 7). The most abundant Zoarcidae species was *Lycodes pallidus* accounting for 44% of all Zoarcidae individuals collected in 2021 and 2022. *Lycodes reticulatus* and *Lycodes polaris* represented 9% and 6% of the Zoarcidae species, respectively, while 23% of Zoarcidae species could only be identified to the genus level. *Anisarchus medius* were also abundant throughout James Bay in both study years, representing 14% of the total fish caught from both years. The proportional biomass of fish caught followed a similar trend to the relative proportion of fish catch, with Zoarcidae species comprising the majority of the biomass (Figure 8). One exception to this trend was at station 18, where a single *Hippoglossoides platessoides* dominated the biomass in 2022 (Figure 9). The full taxonomic summary for fishes is found in Table 5-8.

Further surveys of fish in James Bay are recommended to better understand the fish diversity and habitat use. The surveys of 2021 and 2022 identified issues with confirming and maintaining bottom contact during sampling. To quantify catch-per-unit-effort (CPUE) and improve fish population assessments in future James Bay surveys, accurate control and recording of trawl depth and duration is required.

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Table 1. Metadata for zooplankton sampling stations across James Bay in 2021 and 2022. WP2: Hydro-Bios WP2 net.

Station	Year	Deployment time (UTC)	Station Latitude	Station Longitude	Max Net Depth (m)
JB-02	2021	12:19:00	54.269	-81.475	54
JB-02	2022	18:53:00	54.278	-81.473	56
JB-03	2021	12:38:00	54.290	-80.059	52
JB-03	2022	02:03:00	54.294	-80.059	56
JB-04	2021	14:30:00	53.841	-81.674	28
JB-05	2021	19:13:00	53.808	-79.785	58
JB-06	2021	19:14:00	52.234	-79.694	55
JB-06	2022	19:51:00	52.239	-79.694	58
JB-08	2021	13:34:00	52.352	-80.600	14
JB-09	2021	16:19:00	52.305	-78.893	39
JB-09	2022	11:50:00	52.307	-78.893	38
JB-10	2022	04:55:00	53.813	-80.712	20
JB-12	2022	09:47:00	53.020	-80.194	43
JB-13	2022	21:12:00	53.017	-79.407	55
JB-17	2022	14:33:00	53.871	-79.343	30
JB-18	2022	12:23:00	54.686	-80.191	95

Table 2. Summary of fish sampling metadata across James Bay in 2021 and 2022. Gear used included the benthic beam trawl (BBT) and benthic sled (BS); deployment start/end time, latitude and longitude represent the amount of time and distance the net was in the water; bottom contact start/end time, latitude and longitude represent the amount of time and distance the net was sampling along the bottom; Max Net Depth (m) is the maximum depth the net reached; speed was the towing speed; Warp Out (m) is the amount of cable used to lower the net.

			Deployment						Bottom Contact						Operational Metrics		
Station	Year	Gear	Start Time (UTC)	End Time (UTC)	Start Latitude	Start Longitude	End Latitude	End Longitude	Start Time (UTC)	End Time (UTC)	Start Latitude	Start Longitude	End Latitude	End Longitude	Max Net Depth (m)	Speed (kts)	Warp Out (m)
JB-02	2021	BBT	16:16:00						16:17:51	16:35:07	54.278	-81.456	54.277	-81.441	57	1.68	240
JB-02	2022	BBT	22:26:13	22:56:00	54.277	-81.473	54.278	-81.449	22:41:00	22:44:03					58		
JB-02	2022	BS		20:52:00			54.281	-81.48	20:26:00	20:43:50	54.276	-81.476			61		
JB-03	2021	BBT		16:00:00			54.293	-80.039	15:43:54	15:44:23	54.291	-80.053			63		
JB-03	2021	BBT	14:04:00	14:25:00	53.806	-79.802	53.802	-79.823	14:08:16	14:09:26	53.804	-79.806			68	2.38	240
JB-03	2021	BS	22:30:00	22:32:00	53.803	-79.820	53.806	-79.817							47		
JB-03	2022	BBT	3:21:16		54.298	-80.058			3:24:00	3:38:21			54.290	-80.062	65		180
JB-03	2022	BS		3:08:00			54.299	-80.057	2:51:22	3:04:03	54.290	-80.057			63		
JB-04	2021	BBT	21:04:00	21:25:00	53.831	-81.785	53.840	-81.674	21:09:13	21:09:33					39	1.56	180
JB-05	2021	BBT	23:33:00	23:49:30			53.807	-79.766	23:34:13	23:35:01	53.804	-79.778			65	1.6	200
JB-06	2021	BBT	23:56:00		52.261	-79.687			23:57:34	0:15:06	52.262	-79.685	52.264	-79.673	61	1.9	200
JB-06	2021	BBT				0.000			2:26:01	22:38:39	52.268	-79.715	52.263	-79.732	62		
JB-06	2022	BBT	0:15:57	0:39:00	52.251	-79.696	52.267	-79.693	0:24:00	0:34:45					62		240
JB-06	2022	BS							21:31:08	21:44:16	52.243	-79.703	52.240	-79.692	62		
JB-07	2021	BBT	2:26:00		51.496	-80.234			2:26:23	22:41:31	51.496	-80.234	51.505	-80.231	8	3.04	28
JB-08	2021	BBT	15:05:00		52.358	-80.618			15:06:59	15:21:36	52.358	-80.616	52.358	-80.604	18	1.6	60
JB-08	2021	BS	16:39:00	16:42:00	52.350	-80.608	52.351	-80.607							18		
JB-08	2021	BS	17:19:00	17:36:00	52.352	-80.594	52.352	-80.59							19		
JB-09	2021	BBT	19:11:00	19:31:00			52.314	-78.909	19:16:00		52.309	-78.901			38	1.72	160
JB-09	2021	BS	20:04:00	20:19:00	52.315	-78.913	52.322	-78.922							52		
JB-09	2022	BBT							14:03:51	14:16:17	52.304	-78.891	52.296	-78.890	39		
JB-09	2022	BS							13:30:37	13:44:23	52.306	-78.889	52.301	-78.889	40		

			Deployment						Bottom Contact						Operational Metrics		
Station	**Year**	**Gear**	**Start Time (UTC)**	**End Time (UTC)**	**Start Latitude**	**Start Longitude**	**End Latitude**	**End Longitude**	**Start Time (UTC)**	**End Time (UTC)**	**Start Latitude**	**Start Longitude**	**End Latitude**	**End Longitude**	**Max Net Depth (m)**	**Speed (kts)**	**Warp Out (m)**
JB- 10	2022	BS		5:34:00			53.818	-80.705	5:17:00	5:29:37	53.813	-80.712			22		
JB-12	2022	BBT	15:12:31		53.021	-80.192			15:16:00	15:33:21			53.014	-80.172	53		200
JB-12	2022	BS							14:43:41	14:57:00	53.014	-80.186	53.016	-80.189	55		
JB-13	2022	BBT	4:57:00		53.019	-79.394			4:59:00	5:16:49			53.018	-79.412	61		200
JB-13	2022	BS		22:53:00			53.011	-79.404	22:36:14	22:50:44	53.015	-79.400			66		
JB-18	2022	BBT	15:12:09		54.681	-80.183			15:17:00	15:31:15			54.690	-80.191	109		
JB-18	2022	BS		14:46:00			54.678	-80.183	14:27:00	14:41:35	54.683	-80.184			95		

Table 3. Abundance (individuals m^{-3}) of zooplankton collected in James Bay in 2021 and 2022. Stations that were not sampled during the specified year were left blank. Zeros indicate taxa was not collected at that station.

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
PHYLUM: ANNELIDA CLASS: POLYCHAETA															
NA	NA	*Polychaeta indet. larva*	2021	71.9	65.2	70.6	12.3	16.1	18.7	8.4					
NA	NA	*Polychaeta indet. larva*	2022	335	35.4			14.1		9.32	47.5	0	26.4	62.9	15.4
NA	Oweniidae	*Oweniidae indet. mitraria*	2021	39.2	0	5.70	0	0	0	0					
NA	Oweniidae	*Oweniidae indet. mitraria*	2022	22.3	0			0		0	107	16.2	0	0	15.4
NA	Polygordiidae	*Polygordiidae indet. larva*	2021	2.20	0	0	0	0	0	0					
NA	Polygordiidae	*Polygordiidae indet. larva*	2022	0	0			0		0	0	0	0	0	0
Phyllodocida	Phyllodocidae	*Phyllodoce indet. larva*	2021	6.50	1.80	5.70	2.10	0	0	75.7					
Phyllodocida	Phyllodocidae	*Phyllodoce indet. larva*	2022	7.44	5.90			4.66		9.32	142	0	6.60	3.70	6.17
Phyllodocida	Nereididae	*Nereidae indet. nectochaete*	2021	0	0	0	0	0	0	0					
Phyllodocida	Nereididae	*Nereidae indet. nectochaete*	2022	0	0			28.1		0	11.9	0	0	0	0

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Phyllodocida	Polynoidae	*Polynoidae indet. larva*	2021	0	0	0.06	2.10	4.00	0	0					
Phyllodocida	Polynoidae	*Polynoidae indet. larva*	2022	7.44	11.8			4.66		0	71.2	5.41	6.60	11.1	3.09
Phyllodocida	Syllidae	Myrianida sp.	2021	0	0	0	0	0	0	0					
Phyllodocida	Syllidae	Myrianida sp.	2022	0	0			0		0	0	0.07	0.08	3.70	0
Phyllodocida	Typhloscolecidae	*Typhloscolex* sp.	2021	0	0	0	0	0	0	0					
Phyllodocida	Typhloscolecidae	*Typhloscolex* sp.	2022	0	0			0		0	0	0	0	0	0
Spionida	Spionidae	Spionidae indet.	2021	2.20	1.80	1.90	0	0	3.10	0					
Spionida	Spionidae	Spionidae indet.	2022	7.44	5.90			0		0	11.9	0	0	11.1	3.09
PHYLUM: ARTHROPODA CLASS: COPEPODA															
Calanoida	Tortanidae	*Tortanus discaudatus*	2021	0	0	0	0	4.00	0	0					
Calanoida	Tortanidae	*Tortanus discaudatus*	2022	0	0			14.1		0	11.9	0	0	0	0
Calanoida	Acartiidae	*Acartia hudsonica*	2021	0	0	0	0	0	84.1	50.5					
Calanoida	Acartiidae	*Acartia hudsonica*	2022	0	35.4			18.7		140	23.7	48.6	0	11.1	0

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Calanoida	Acartiidae	*Acartia longiremis*	2021	196	3.60	355	18.5	5.30	963	33.6					
Calanoida	Acartiidae	*Acartia longiremis*	2022	960	195			46.9		37.3	1,068	405	99	22.2	21.6
Calanoida	Acartiidae	*Acartia* spp.	2021	340	12.7	309	86.2	92.4	1,150	75.7					
Calanoida	Acartiidae	*Acartia* spp.	2022	938	142			338		867	1,460	422	633	322	43.2
Calanoida	Aetideidae	*Aetideidae indet.*	2021	0	0	0	0.05	0	0	0					
Calanoida	Aetideidae	*Aetideidae indet.*	2022	0	0			0		0	0	0	6.60	44.4	0
Calanoida	Aetideidae	*Aetideopsis rostrata*	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Aetideopsis rostrata*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Aetideidae	*Bradyidius similis*	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Bradyidius similis*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Aetideidae	*Bradyidius* spp.	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Bradyidius* spp.	2022	0	0			0		0	0	0	0	0	0
Calanoida	Aetideidae	*Chiridius obtusifrons*	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Chiridius obtusifrons*	2022	0	0			0		0	0	0	0	0	0

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Calanoida	Aetideidae	*Gaetanus tenuispinus*	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Gaetanus tenuispinus*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Aetideidae	*Jaschnovia brevis*	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Jaschnovia brevis*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Aetideidae	*Jaschnovia tolli*	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Jaschnovia tolli*	2022	0	0			9.32		37.2	0	0	6.60	7.40	0
Calanoida	Calanidae	*Calanus finmarchicus*	2021	0	0	0	0	0	0	0					
Calanoida	Calanidae	*Calanus finmarchicus*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Calanidae	*Calanus glacialis*	2021	34.9	12.6	0	10.4	5.30	0	0					
Calanoida	Calanidae	*Calanus glacialis*	2022	29.8	43.2			14.0		9.32	35.6	16.2	13.2	18.5	6.2
Calanoida	Calanidae	*Calanus hyperboreus*	2021	0	0	0	0	0	0	0					
Calanoida	Calanidae	*Calanus hyperboreus*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Centropagidae	*Centropages abdominalis*	2021	32.7	0	5.70	6.20	1.30	0	8.40					

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Calanoida	Centropagidae	*Centropages abdominalis*	2022	14.9	17.7			4.66		18.6	23.7	16.2	46.2	14.8	4.13
Calanoida	Centropagidae	*Centropages* spp.	2021	32.7	0	28.7	0	0	3.10	67.3					
Calanoida	Centropagidae	*Centropages* spp.	2022	112	35.4			23.4		74.5	59.4	0	13.2	22.2	0
Calanoida	Clausocalanidae	*Microcalanus* spp.	2021	13.1	5.40	0	0	12.0	0	0					
Calanoida	Clausocalanidae	*Microcalanus* spp.	2022	268	0			70.4		0	83.1	0	0	0	136
Calanoida	Clausocalanidae	*Pseudocalanus* spp.	2021	2,033	1,82	939	2,743	2,556	738	5,871					
Calanoida	Clausocalanidae	*Pseudocalanus* spp.	2022	4,957	1,917			4,715		5,675	2,101	6,892	5,898	4,708	753
Calanoida	Euchaetidae	*Paraeuchaeta glacialis*	2021	0	0	0	0	0	0	0					
Calanoida	Euchaetidae	*Paraeuchaeta glacialis*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Euchaetidae	*Paraeuchaeta* spp.	2021	0	0	0	0	0	0	0					
Calanoida	Euchaetidae	*Paraeuchaeta* spp.	2022	0	0			0		0	0	0	0	0	0
Calanoida	Heterorhabdidae	*Heterorhabdus norvegicus*	2021	0	0	0	0	0	0	0					
Calanoida	Heterorhabdidae	*Heterorhabdus norvegicus*	2022	0	0			0		0	0	0	0	0	0

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Calanoida	Metridinidae	*Metridia longa*	2021	0	0	0	0	0	0	0					
Calanoida	Metridinidae	*Metridia longa*	2022	14.9	0			0		18.6	0	5.41	0	0	2.08
Calanoida	NA	*Calanoida indet. nauplius*	2021	608	152	91.6	1,488	872	692	9,538					
Calanoida	NA	*Calanoida indet. nauplius*	2022	1,608	578			957		9,058	6,945	1,313	4,374	333	151
Calanoida	Phaennidae	*Xanthocalanus* sp.	2021	0	0	0	0	0	0	0					
Calanoida	Phaennidae	*Xanthocalanus* sp.	2022	0	0			0		0	0	0	0	0	0
Calanoida	Scolecitrichidae	*Scaphocalanus brevicornis*	2021	0	0	0	0	0	0	0					
Calanoida	Scolecitrichidae	*Scaphocalanus brevicornis*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Scolecitrichidae	*Scaphocalanus magnus*	2021	0	0	0	0	0	0	0					
Calanoida	Scolecitrichidae	*Scaphocalanus magnus*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Scolecitrichidae	*Sciolecithricell a minor*	2021	0	0	0	0	0	0	0					
Calanoida	Scolecitrichidae	*Sciolecithricell a minor*	2022	0	0			0		0	0	0	0	0	0

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Calanoida	Spinocalanidae	*Spinocalanus* spp.	2021	0	0	0	0	0	0	0					
Calanoida	Spinocalanidae	*Spinocalanus* spp.	2022	0	0			0		0	0	0	0	0	0
Cyclopoida	NA	*Cyclopoida indet. nauplius*	2021	575	0	0	12.3	16.1	308	151					
Cyclopoida	NA	*Cyclopoida indet. nauplius*	2022	290	11.8			56.3		168	3,419	32.4	39.6	44.4	12.3
Cyclopoida	Oithonidae	*Oithona similis*	2021	1,300	48.9	1,065	55.4	4.00	56.0	0					
Cyclopoida	Oithonidae	*Oithona similis*	2022	156	47.2			28.1		0	1,247	389	99.0	33.3	92.6
Cyclopoida	Oncaeidae	*Oncaea* spp.	2021	0	0	0	0	0	0	0					
Cyclopoida	Oncaeidae	*Oncaea* spp.	2022	0	0			0		0	0	0	0	0	0
Cyclopoida	Oncaeidae	*Oncaeidae indet.*	2021	65.4	21.7	0	6.20	4.00	28.0	8.40					
Cyclopoida	Oncaeidae	*Oncaeidae indet.*	2022	156	1.95			225		0	285	48.6	0	11.1	74.1
Cyclopoida	Oncaeidae	*Triconia borealis*	2021	32.7	12.7	1.90	18.5	1.30	0	25.2					
Cyclopoida	Oncaeidae	*Triconia borealis*	2022	111	1.95			145		9.32	71.2	0	19.8	0	43.2
Cyclopoida	Oncaeidae	*Triconia conifera*	2021	0	0	0	0	0	0	0					

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Cyclopoida	Oncaeidae	*Triconia conifera*	2022	0	0			0		0	0	0	0	0	0
Harpacticoida	Ectinosomatidae	*Microsetella norvegica*	2021	6.50	1.80	1.90	0	0	0	0					
Harpacticoida	Ectinosomatidae	*Microsetella norvegica*	2022	0	11.8			4.66		0	107	0	0	0	0
Harpacticoida	NA	*Harpacticoida indet.*	2021	0	0	0	0.05	0	0	0					
Harpacticoida	NA	*Harpacticoida indet.*	2022	0	0			0		28.0	11.9	0	19.8	3.70	0
Mormonilloida	Mormonillidae	*Mormonilla minor*	2021	0	0	0	0	0	0	0					
Mormonilloida	Mormonillidae	*Mormonilla minor*	2022	0	0			0		0	0	0	0	0	0
NA	NA	*Copepoda indet. nauplius*	2021	0	0	0	0	0	0	0					
NA	NA	*Copepoda indet. nauplius*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: ARTHROPODA CLASS: MALACOSTRACA															
Amphipoda	Calliopiidae	*Halirages* sp.	2021	0	0	0	0	0	0	0					
Amphipoda	Calliopiidae	*Halirages* sp.	2022	0	0			0		0	0	0.07	0	0	0
Amphipoda	Melphidippidae	*Melphidippa* sp.	2021	0	0	0	0	0	0	0					

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Amphipoda	Melphidippidae	*Melphidippa* sp.	2022	0	0			0		0	0	0.07	0	0	0
Amphipoda	Pontogeneiidae	*Pontogeneiidae indet.*	2021	0	0	0	0	0	0	0					
Amphipoda	Pontogeneiidae	*Pontogeneiidae indet.*	2022	0	0			0		0	0	0	0	0	0
Cumacea	Leuconidae	*Eudorellopsis* sp.	2021	0	0	0	0	0	0	0					
Cumacea	Leuconidae	*Eudorellopsis* sp.	2022	0	0			0		0	0	0	0	0	0
Mysida	Mysidae	*Mysis mixta*	2021	0	0	0	0	0.20	0	0					
Mysida	Mysidae	*Mysis mixta*	2022	0	0			0.09		0	0	0.47	0.29	0.46	0
Mysida	Mysidae	*Mysis oculata*	2021	0	0	0	0	1.10	0	0.21					
Mysida	Mysidae	*Mysis oculata*	2022	0	0			0.44		0.12	0.15	0.61	0.12	0.09	0
Mysida	Mysidae	*Erythrops abyssorum*	2021	0	0	0	0	0	0	0					
Mysida	Mysidae	*Erythrops abyssorum*	2022	0	0			0		0	0	0	0	0.09	0
Amphipoda	Oedicerotidae	Oedicerotidae indet.	2021	0	0	0	0	0	0	0					
Amphipoda	Oedicerotidae	Oedicerotidae indet.	2022	0	0			0		0	0	0	0	0	0
Amphipoda	Dulichiidae	*Dulichiidae indet.*	2021	0	0	0	0	0	0	0					

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Amphipoda	Dulichiidae	*Dulichiidae indet.*	2022	0	0			0		0	12.0	0	0	0	0
Amphipoda	Hyperiidae	*Hyperia galba*	2021	0	0	0	0	0	0	0					
Amphipoda	Hyperiidae	*Hyperia galba*	2022	0	0			0		0	0	0	0	0	0
Amphipoda	Hyperiidae	*Hyperoche medusarum*	2021	0	0	0	0	0	0	0					
Amphipoda	Hyperiidae	*Hyperoche medusarum*	2022	0	0			0		0	0	0	0	0	0
Amphipoda	Hyperiidae	*Themisto abyssorum*	2021	0	0	0	0	0	0	0					
Amphipoda	Hyperiidae	*Themisto abyssorum*	2022	0	0			0		0	0	0	0	0	0
Amphipoda	Hyperiidae	*Themisto libellula*	2021	0	0	0	0.10	0	0	0					
Amphipoda	Hyperiidae	*Themisto libellula*	2022	0	0			0		0	0	0	0	0	0
Amphipoda	Ischyroceridae	Ischyroceridae indet.	2021	0	0	0	0	0	0	0					
Amphipoda	Ischyroceridae	Ischyroceridae indet.	2022	0	0			0		0	0	0	0	0	0
Amphipoda	NA	*Amphipoda indet.*	2021	0	0	0	0	0	0	0					
Amphipoda	NA	*Amphipoda indet.*	2022	0	0.06			0		0	0	0	0	0	0
Amphipoda	Oedicerotidae	*Acanthostepheia malmgreni*	2021	0	0	0	0	0	0	0					

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Amphipoda	Oedicerotidae	*Acanthostepheia malmgreni*	2022	0	0.18			0.18		0	0	0.07	0	0	0
Amphipoda	Stenothoidae	Stenothoidae indet.	2021	0	0	0	0	0	0	0					
Amphipoda	Stenothoidae	Stenothoidae indet.	2022	0	0			0		0	0	0	0	0	0
Cumacea	Diastylidae	*Diastylis lucifera*	2021	0	0	0	0	0	0	0					
Cumacea	Diastylidae	*Diastylis lucifera*	2022	0	0.06			0		0	0	0	0	0	0
Cumacea	Leuconidae	*Leucon* sp.	2021	0	0	0	0	0	0	0					
Cumacea	Leuconidae	*Leucon* sp.	2022	0	0			0		0	0	0.07	0	0	0
Decapoda	Crangonidae	*Sabinea septemcarinata*	2021	0	0	0	0	0	0	0					
Decapoda	Crangonidae	*Sabinea septemcarinata*	2022	0	0			0		0	0	0	0	0	0
Decapoda	Hippolytidae	*Hippolytidae indet. Mysis*	2021	0.10	0	0.10	0	0	0	0					
Decapoda	Hippolytidae	*Hippolytidae indet. Mysis*	2022	8.05	2.12			0		0	0	0	0	0	0
Decapoda	Oregoniidae	*Hyas sp. zoea*	2021	0	0	0.06	0	0	0	0					
Decapoda	Oregoniidae	*Hyas sp. zoea*	2022	0	0			0		0	0	5.41	0	0	0
Decapoda	Paguridae	*Paguridae sp. zoea*	2021	0	0	0	0	0	0	0					

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Decapoda	Paguridae	*Paguridae sp. zoea*	2022	0	0			0		0	0	0	0	0	0
Decapoda	Pandalidae	*Pandalidae indet. mysis*	2021	0	0	0	0	0	0	0					
Decapoda	Pandalidae	*Pandalidae indet. mysis*	2022	0	0			0		0	0	0	0	0	0.04
Euphausiacea	Euphausiidae	*Thysanoessa inermis*	2021	0	0	0	0	0	0	0					
Euphausiacea	Euphausiidae	*Thysanoessa inermis*	2022	0	0			0		0	0	0	0	0	0
Euphausiacea	Euphausiidae	*Thysanoessa raschii*	2021	0	0	0	0	0	0	0					
Euphausiacea	Euphausiidae	*Thysanoessa raschii*	2022	0	0.18			0		0	0	0	0	0	0
Euphausiacea	NA	*Euphausiacea indet. larval stages*	2021	0	1.80	1.90	0	0	0	0					
Euphausiacea	NA	*Euphausiacea indet. larval stages*	2022	0	3.89			0		0	11.9	0	0	0	16.5
Isopoda	Bopyridae	*Bopyridae indet.*	2021	0	0	0	0	0	0	0					
Isopoda	Bopyridae	*Bopyridae indet.*	2022	0	0			4.66		9.32	11.9	5.41	0	0	0
Isopoda	NA	*Isopoda indet.*	2021	0	0	0	0	0	0	0					
Isopoda	NA	*Isopoda indet.*	2022	0	1.95			4.66		0	0	5.41	0	0	0

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Mysida	Mysidae	*Pseudomma truncatum*	2021	0	0	0	0	0	0	0					
Mysida	Mysidae	*Pseudomma truncatum*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: ARTHROPODA CLASS: OSTRACODA															
NA	NA	*Ostracoda indet.*	2021	0	0	0	0	0	0	0					
NA	NA	*Ostracoda indet.*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: ARTHROPODA CLASS: THECOSTRACA															
NA	NA	*Cirripedia indet.cyprid/ nauplius*	2021	13.1	1.80	11.4	26.7	8.00	701	0					
NA	NA	*Cirripedia indet.cyprid/ nauplius*	2022	141	29.5			28.1		83.9	23.7	64.9	13.2	0	12.3
NA	NA	*Facetotecta indet.*	2021	0	0	0	6.20	0	0	0					
NA	NA	*Facetotecta indet.*	2022	0	0			14.1		0	35.6	5.41	19.8	0	1.04
PHYLUM: BRYOZOA CLASS: NA															
NA	NA	*Bryozoa indet. cyphonautes*	2021	0	0	0	0	0	0	0					

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
NA	NA	*Bryozoa indet. cyphonautes*	2022	0	0			0		28.0	0	0	0	11.1	0
PHYLUM: CHAETOGNATHA CLASS: NA															
NA	NA	*Chaetognatha indet. juvenile*	2021	0	0	0	0	0	0	0					
NA	NA	*Chaetognatha indet. juvenile*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: CHAETOGNATHA CLASS: SAGITTOIDEA															
Aphragmophora	Sagittidae	*Parasagitta elegans*	2021	3.30	7.40	0.20	5.90	0.40	1.10	25.2					
Aphragmophora	Sagittidae	*Parasagitta elegans*	2022	1.72	21.8			5.45		0.29	12.2	19.6	19.9	5.74	2.74
Phragmophora	Eukrohniidae	*Eukrohnia hamata*	2021	0	0	0	0	0	0	0					
Phragmophora	Eukrohniidae	*Eukrohnia hamata*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: CHORDATA CLASS: APPENDICULARIA															
Copelata	Fritillariidae	*Fritillaria borealis*	2021	896	321	63.0	197	108	18.7	2,448					
Copelata	Fritillariidae	*Fritillaria borealis*	2022	1,027	366			1,520		2,600	3,419	243	376	66.6	0

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Copelata	Oikopleuridae	*Oikopleura* sp.	2021	0	0	0.06	0	0	0	0					
Copelata	Oikopleuridae	*Oikopleura* sp.	2022	23.0	0			0		0	11.9	0.07	0	0.09	29.2
PHYLUM: CHORDATA CLASS: ASCIDIACEA															
NA	NA	*Ascidiacea indet.*	2021	0	0	0	0	0	0	0					
NA	NA	*Ascidiacea indet.*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: CNIDARIA CLASS: HYDROZOA															
Anthoathecata	Tubulariidae	*Hybocodon prolifer*	2021	0	0	0	0	0	0	0					
Anthoathecata	Tubulariidae	*Hybocodon prolifer*	2022	0	0			0		0	0	0	0	0	0
Anthoathecata	Boreohydridae	*Plotocnide borealis*	2021	0	0	0	0	0	0	0					
Anthoathecata	Boreohydridae	*Plotocnide borealis*	2022	0	0			0		0	0	0	0	0	0
Anthoathecata	Bougainvilliidae	*Bougainvillia superciliaris*	2021	0	0	0	0	0	0	0					
Anthoathecata	Bougainvilliidae	*Bougainvillia superciliaris*	2022	0.05	0.06			0		0	0	0	0	0	0.04
Anthoathecata	Corymorphidae	*Euphysa flammea*	2021	0	0	0	0	0	0	0					

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Anthoathecata	Corymorphidae	*Euphysa flammea*	2022	0	0			0		0	0	5.41	0	0	0
Anthoathecata	Corynidae	*Sarsia princeps*	2021	0	0	0	0	0	0	0					
Anthoathecata	Corynidae	*Sarsia princeps*	2022	0	0			0		0	0	0	0	0	0
Anthoathecata	Pandeidae	*Halitholus cirratus*	2021	0.10	0	0	0	0	0	0					
Anthoathecata	Pandeidae	*Halitholus cirratus*	2022	0	0.06			0.09		0	0.15	0	0.12	0	0
Anthoathecata	Rathkeidae	*Rathkea octopunctata*	2021	0	0	0	0	0	0	0					
Anthoathecata	Rathkeidae	*Rathkea octopunctata*	2022	0	0			0		0	0	0	0	0	6.17
Leptothecata	Campanulariidae	*Obelia* sp.	2021	0	0	0	0	0	0	0					
Leptothecata	Campanulariidae	*Obelia* sp.	2022	7.44	0			0		0	11.9	0	0	0	0
Leptothecata	Mitrocomidae	*Mitrocomella* sp.	2021	0	0	0	0	0	0	0					
Leptothecata	Mitrocomidae	*Mitrocomella* sp.	2022	0	0			0		0	0	0	0	0	0
NA	NA	*Hydrozoa indet. actinula*	2021	0	0	0	0	0	0	0					
NA	NA	*Hydrozoa indet. actinula*	2022	0	0			0		0	0	0	0	0	0
Narcomedusae	Solmundaeginidae	*Aeginopsis laurentii*	2021	0	0	0	0	0	0	0					

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Narcomedusae	Solmundaeginidae	*Aeginopsis laurentii*	2022	0	2.01			0		0	0	0	0	0	1.04
Siphonophorae	Diphyidae	*Dimophyes arctica*	2021	0	0	0	0	0	0	0					
Siphonophorae	Diphyidae	*Dimophyes arctica*	2022	0	0			0		0	0	0	0	0	0
Trachymedusae	Rhopalonematidae	*Homoeonema platygonon*	2021	0	0	0.06	0	0	0	0					
Trachymedusae	Rhopalonematidae	*Homoeonema platygonon*	2022	0	0			0		0	0	0	0	0	0
Trachymedusae	Rhopalonematidae	*Aglantha digitale*	2021	8.30	0	13.7	0	0	0	0					
Trachymedusae	Rhopalonematidae	*Aglantha digitale*	2022	0	0			0		0	35.6	0	0	0	1.08
PHYLUM: CNIDARIA CLASS: NA															
NA	NA	*Cnidaria indet.*	2021	0	0	0	0	0	0	0					
NA	NA	*Cnidaria indet.*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: CNIDARIA CLASS: SCYPHOZOA															
Semaeostomeae	Pelagiidae	*Chrysaora* sp.	2021	0	0	0	0	0	0	0					
Semaeostomeae	Pelagiidae	*Chrysaora* sp.	2022	0	0			0		0	0	0	0	0	0

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Semaeostomeae	Ulmaridae	*Aurelia aurita*	2021	0	0	0	0	0	0	0					
Semaeostomeae	Ulmaridae	*Aurelia aurita*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: CTENOPHORA CLASS: NUDA															
Beroida	Beroidae	*Beroe cucumis*	2021	0	0	11.5	0	0	0	0					
Beroida	Beroidae	*Beroe cucumis*	2022	0	0			0.09		0	0	0	0	0	0
PHYLUM: CTENOPHORA CLASS: TENTACULATA															
Cydippida	Mertensiidae	*Mertensia ovum*	2021	0.10	0	0	0	8.00	0	0.21					
Cydippida	Mertensiidae	*Mertensia ovum*	2022	0	0.18			0.09		9.44	12.2	5.47	0.04	3.79	1.04
PHYLUM: ECHINODERMATA CLASS: ECHINOIDEA															
NA	NA	*Echinoidea indet. pluteus*	2021	0	0	0	0	0	0	0					
NA	NA	*Echinoidea indet. pluteus*	2022	0	0			0		0	0	0	0	0	1.04
PHYLUM: ECHINODERMATA CLASS: OPHIUROIDEA															

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
NA	NA	*Ophiuroidea indet.*	2021	13.1	0	0	0	0	0	0					
NA	NA	*Ophiuroidea indet.*	2022	0	0			0		0	11.9	0	0	0	0
PHYLUM: MOLLUSCA CLASS: BIVALVIA															
NA	NA	*Bivalvia indet. veliger*	2021	118	565	155	295	20.1	93.5	126					
NA	NA	*Bivalvia indet. veliger*	2022	558	159			211		363	3,704	648	554	455	71.0
PHYLUM: MOLLUSCA CLASS: GASTROPODA															
NA	NA	*Gastropoda indet. veligers*	2021	6.50	0	0	0	1.30	121	0					
NA	NA	*Gastropoda indet. veligers*	2022	0	5.90			0		139	11.9	0	6.60	0	0
Pteropoda	Clionidae	*Clione limacina*	2021	0	0	0	0	0	0	0					
Pteropoda	Clionidae	*Clione limacina*	2022	7.44	1.95			4.66		0	11.9	0	0	0	1.04
Pteropoda	Limacinidae	*Limacina helicina*	2021	65.4	23.5	17.2	12.3	0	3.10	0					
Pteropoda	Limacinidae	*Limacina helicina*	2022	22.3	5.90			28.1		55.9	71.2	32.4	19.8	3.70	3.09
PHYLUM: NEMERTEA															

				Abundance (ind m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
CLASS: NA															
NA	NA	*Nemertea indet. pilidium*	2021	0	0	0	0	0	0	0					
NA	NA	*Nemertea indet. pilidium*	2022	0	0			0		0	0	0	0	0	3.09
PHYLUM: PLATYHELMINTHES CLASS: TURBELLARIA															
NA	NA	*Turbellaria indet.*	2021	6.50	0	0	0	1.30	0	0					
NA	NA	*Turbellaria indet.*	2022	7.44	5.90			4.66		0	11.9	0	0	3.70	0
PHYLUM: ROTIFERA CLASS: NA															
NA	NA	*Rotifera indet.*	2021	0	0	0	0	0	0	0					
NA	NA	*Rotifera indet.*	2022	0	0			0		0	142	0	0	0	0

Table 4. Biomass (mg per m^3) of zooplankton caught in James Bay in 2021 and 2022. Stations that were not sampled during the specified year were left blank.

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
PHYLUM: ANNELIDA CLASS: POLYCHAETA															
NA	NA	*Polychaeta indet. larva*	2021	0.12	0.10	0.11	0.02	0.03	0.03	0.02					
NA	NA	*Polychaeta indet. larva*	2022	0.54	0.06			0.01		0.01	0.08	0	0.04	0.10	0.03
NA	Oweniidae	*Oweniidae indet. mitraria*	2021	0.20	0	0.03	0	0	0	0					
NA	Oweniidae	*Oweniidae indet. mitraria*	2022	0.12	0			0		0	0.56	0.08	0	0	0.08
NA	Polygordiidae	*Polygordiidae indet. larva*	2021	0	0	0	0	0	0	0					
NA	Polygordiidae	*Polygordiidae indet. larva*	2022	0	0			0		0	0	0	0	0	0
Phyllodocida (	Phyllodocidae	*Phyllodoce indet. larva*	2021	0.01	0	0.01	0	0	0	0.14					
Phyllodocida (	Phyllodocidae	*Phyllodoce indet. larva*	2022	0.01	0.01			0.01		0.02	0.27	0	0.01	0.01	0.01
Phyllodocida	Nereididae	*Nereidae indet. nectochaete*	2021	0	0	0	0	0	0	0					
Phyllodocida	Nereididae	*Nereidae indet. nectochaete*	2022	0	0			0.72		0	0.30	0	0	0	0

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Phyllodocida	Polynoidae	*Polynoidae indet. larva*	2021	0	0	0	0	0.01	0	0					
Phyllodocida	Polynoidae	*Polynoidae indet. larva*	2022	0.01	0.02			0.01		0	0.13	0.01	0.01	0.02	0.01
Phyllodocida	Syllidae	Myrianida sp.	2021	0	0	0	0	0	0	0					
Phyllodocida	Syllidae	Myrianida sp.	2022	0	0			0		0	0	0.20	0.24	1.55	0
Phyllodocida	Typhloscolecidae	*Typhloscolex* sp.	2021	0	0	0	0	0	0	0					
Phyllodocida	Typhloscolecidae	*Typhloscolex* sp.	2022	0	0			0		0	0	0	0	0	0
Spionida	Spionidae	Spionidae indet.	2021	0	0	0	0	0	0.01	0					
Spionida	Spionidae	Spionidae indet.	2022	0.01	0.01			0		0	0.02	0	0	0.02	0.01
PHYLUM: ARTHROPODA CLASS: COPEPODA															
Calanoida	Tortanidae	*Tortanus discaudatus*	2021	0	0	0	0	0.08	0	0					
Calanoida	Tortanidae	*Tortanus discaudatus*	2022	0	0			0.15		0	0.25	0	0	0	0
Calanoida	Acartiidae	*Acartia hudsonica*	2021	0	0	0	0	0	0.39	0.23					
Calanoida	Acartiidae	*Acartia hudsonica*	2022	0	0.16			0.08		0.64	0.11	0.22	0	0.05	0
Calanoida	Acartiidae	*Acartia longiremis*	2021	0.89	0.02	1.59	0.08	0.02	4.37	0.16					
Calanoida	Acartiidae	*Acartia longiremis*	2022	4.27	0.87			0.19		0.17	4.58	1.73	0.45	0.10	0.09
Calanoida	Acartiidae	*Acartia* spp.	2021	0.30	0.01	0.35	0.08	0.07	1.09	0.13					
Calanoida	Acartiidae	*Acartia* spp.	2022	1.15	0.18			0.26		0.75	1.49	0.42	0.60	0.35	0.04

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Calanoida	Aetideidae	*Aetideidae indet.*	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Aetideidae indet.*	2022	0	0			0		0	0	0	0.13	0.89	0
Calanoida	Aetideidae	*Aetideopsis rostrata*	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Aetideopsis rostrata*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Aetideidae	*Bradyidius similis*	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Bradyidius similis*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Aetideidae	*Bradyidius* spp.	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Bradyidius* spp.	2022	0	0			0		0	0	0	0	0	0
Calanoida	Aetideidae	*Chiridius obtusifrons*	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Chiridius obtusifrons*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Aetideidae	*Gaetanus tenuispinus*	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Gaetanus tenuispinus*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Aetideidae	*Jaschnovia brevis*	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Jaschnovia brevis*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Aetideidae	*Jaschnovia tolli*	2021	0	0	0	0	0	0	0					
Calanoida	Aetideidae	*Jaschnovia tolli*	2022	0	0			0.73		2.93	0	0	0.52	0.58	0
Calanoida	Calanidae	*Calanus finmarchicus*	2021	0	0	0	0	0	0	0					

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Calanoida	Calanidae	*Calanus finmarchicus*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Calanidae	*Calanus glacialis*	2021	6.05	4.53	0	0.84	0.50	0	0					
Calanoida	Calanidae	*Calanus glacialis*	2022	2.16	7.07			6.70		5.78	3.34	7.77	1.71	4.57	1.07
Calanoida	Calanidae	*Calanus hyperboreus*	2021	0	0	0	0	0	0	0					
Calanoida	Calanidae	*Calanus hyperboreus*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Centropagidae	*Centropages abdominalis*	2021	0.33	0	0.07	0.08	0.01	0	0.05					
Calanoida	Centropagidae	*Centropages abdominalis*	2022	0.14	0.19			0.03		0.18	0.23	0.10	0.33	0.12	0.05
Calanoida	Centropagidae	*Centropages* spp.	2021	0.11	0	0.10	0	0	0.01	0.10					
Calanoida	Centropagidae	*Centropages* spp.	2022	0.28	0.14			0.05		0.11	0.12	0	0.05	0.01	0
Calanoida	Clausocalanidae	*Microcalanus* spp.	2021	0.09	0.04	0	0	0.07	0	0					
Calanoida	Clausocalanidae	*Microcalanus* spp.	2022	0.85	0			0.36		0	0.26	0	0	0	0.75
Calanoida	Clausocalanidae	*Pseudocalanus* spp.	2021	9.88	8.96	4.50	10.2	9.16	2.41	7.04					
Calanoida	Clausocalanidae	*Pseudocalanus* spp.	2022	16.0	10.3			20.5		8.71	5.27	26.1	15.4	18.8	3.47
Calanoida	Euchaetidae	*Paraeuchaeta glacialis*	2021	0	0	0	0	0	0	0					
Calanoida	Euchaetidae	*Paraeuchaeta glacialis*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Euchaetidae	*Paraeuchaeta* spp.	2021	0	0	0	0	0	0	0					

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Calanoida	Euchaetidae	*Paraeuchaeta* spp.	2022	0	0			0		0	0	0	0	0	0
Calanoida	Heterorhabdidae	*Heterorhabdus norvegicus*	2021	0	0	0	0	0	0	0					
Calanoida	Heterorhabdidae	*Heterorhabdus norvegicus*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Metridinidae	*Metridia longa*	2021	0	0	0	0	0	0	0					
Calanoida	Metridinidae	*Metridia longa*	2022	1.91	0			0		3.95	0	1.55	0	0	0.42
Calanoida	NA	*Calanoida indet. nauplius*	2021	2.74	0.68	0.41	6.70	3.92	3.11	42.9					
Calanoida	NA	*Calanoida indet. nauplius*	2022	7.23	2.60			4.31		40.8	31.3	5.91	19.7	1.50	0.68
Calanoida	Phaennidae	*Xanthocalanus* sp.	2021	0	0	0	0	0	0	0					
Calanoida	Phaennidae	*Xanthocalanus* sp.	2022	0	0			0		0	0	0	0	0	0
Calanoida	Scolecitrichidae	*Scaphocalanus brevicornis*	2021	0	0	0	0	0	0	0					
Calanoida	Scolecitrichidae	*Scaphocalanus brevicornis*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Scolecitrichidae	*Scaphocalanus magnus*	2021	0	0	0	0	0	0	0					
Calanoida	Scolecitrichidae	*Scaphocalanus magnus*	2022	0	0			0		0	0	0	0	0	0
Calanoida	Scolecitrichidae	*Sciolecithricella minor*	2021	0	0	0	0	0	0	0					
Calanoida	Scolecitrichidae	*Sciolecithricella minor*	2022	0	0			0		0	0	0	0	0	0

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Calanoida	Spinocalanidae	*Spinocalanus* spp.	2021	0	0	0	0	0	0	0					
Calanoida	Spinocalanidae	*Spinocalanus* spp.	2022	0	0			0		0	0	0	0	0	0
Cyclopoida	NA	*Cyclopoida indet. nauplius*	2021	0.12	0	0	0	0	0.06	0.03					
Cyclopoida	NA	*Cyclopoida indet. nauplius*	2022	0.06	0			0.01		0.03	0.68	0.01	0.01	0.01	0
Cyclopoida	Oithonidae	*Oithona similis*	2021	1.67	0.05	1.10	0.12	0	0.09	0					
Cyclopoida	Oithonidae	*Oithona similis*	2022	0.17	0.07			0.05		0	1.72	0.39	0.09	0.05	0.17
Cyclopoida	Oncaeidae	*Oncaea* spp.	2021	0	0	0	0	0	0	0					
Cyclopoida	Oncaeidae	*Oncaea* spp.	2022	0	0			0		0	0	0	0	0	0
Cyclopoida	Oncaeidae	*Oncaeidae indet.*	2021	0.13	0.05	0	0.02	0.01	0.07	0.02					
Cyclopoida	Oncaeidae	*Oncaeidae indet.*	2022	0.39	0			0.47		0	0.65	0.12	0	0.03	0.18
Cyclopoida	Oncaeidae	*Triconia borealis*	2021	0.07	0.03	0	0.04	0	0	0.05					
Cyclopoida	Oncaeidae	*Triconia borealis*	2022	0.22	0			0.29		0.02	0.14	0	0.04	0	0.09
Cyclopoida	Oncaeidae	*Triconia conifera*	2021	0	0	0	0	0	0	0					
Cyclopoida	Oncaeidae	*Triconia conifera*	2022	0	0			0		0	0	0	0	0	0
Harpacticoida	Ectinosomatidae	*Microsetella norvegica*	2021	0.02	0	0	0	0	0	0					
Harpacticoida	Ectinosomatidae	*Microsetella norvegica*	2022	0	0.03			0.01		0	0.27	0	0	0	0
Harpacticoida	NA	*Harpacticoida indet.*	2021	0	0	0	0	0	0	0					
Harpacticoida	NA	*Harpacticoida indet.*	2022	0	0			0		0.20	0.08	0	0.14	0.03	0

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Mormonilloida	Mormonillidae	*Mormonilla minor*	2021	0	0	0	0	0	0	0					
Mormonilloida	Mormonillidae	*Mormonilla minor*	2022	0	0			0		0	0	0	0	0	0
NA	NA	*Copepoda indet. nauplius*	2021	0	0	0	0	0	0	0					
NA	NA	*Copepoda indet. nauplius*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: ARTHROPODA CLASS: MALACOSTRACA															
Amphipoda	Calliopiidae	*Halirages* sp.	2021	0	0	0	0	0	0	0					
Amphipoda	Calliopiidae	*Halirages* sp.	2022	0	0			0		0	0	0.64	0	0	0
Amphipoda	Melphidippidae	*Melphidippa* sp.	2021	0	0	0	0	0	0	0					
Amphipoda	Melphidippidae	*Melphidippa* sp.	2022	0	0			0		0	0	0.64	0	0	0
Amphipoda	Pontogeneiidae	*Pontogeneiidae indet.*	2021	0	0	0	0	0	0	0					
Amphipoda	Pontogeneiidae	*Pontogeneiidae indet.*	2022	0	0			0		0	0	0	0	0	0
Cumacea	Leuconidae	*Eudorellopsis* sp.	2021	0	0	0	0	0	0	0					
Cumacea	Leuconidae	*Eudorellopsis* sp.	2022	0	0			0		0	0	0	0	0	0
Mysida	Mysidae	*Mysis mixta*	2021	0	0	0	0	0.93	0	0					
Mysida	Mysidae	*Mysis mixta*	2022	0	0			0.23		0	0	1.78	0.75	1.95	0
Mysida	Mysidae	*Mysis oculata*	2021	0	0	0	0	4.89	0	0.55					
Mysida	Mysidae	*Mysis oculata*	2022	0	0			1.50		0.54	0.05	3.50	0.32	0.24	0

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Mysida	Mysidae	*Erythrops abyssorum*	2021	0	0	0	0	0	0	0					
Mysida	Mysidae	*Erythrops abyssorum*	2022	0	0			0		0	0	0	0	0.24	0
Amphipoda	Oedicerotidae	Oedicerotidae indet.	2021	0	0	0	0	0	0	0					
Amphipoda	Oedicerotidae	Oedicerotidae indet.	2022	0	0			0		0	0	0	0	0	0
Amphipoda	Dulichiidae	*Dulichiidae indet.*	2021	0	0	0	0	0	0	0					
Amphipoda	Dulichiidae	*Dulichiidae indet.*	2022	0	0			0		0	20.4	0	0	0	0
Amphipoda	Hyperiidae	*Hyperia galba*	2021	0	0	0	0	0	0	0					
Amphipoda	Hyperiidae	*Hyperia galba*	2022	0	0			0		0	0	0	0	0	0
Amphipoda	Hyperiidae	*Hyperoche medusarum*	2021	0	0	0	0	0	0	0					
Amphipoda	Hyperiidae	*Hyperoche medusarum*	2022	0	0			0		0	0	0	0	0	0
Amphipoda	Hyperiidae	*Themisto abyssorum*	2021	0	0	0	0	0	0	0					
Amphipoda	Hyperiidae	*Themisto abyssorum*	2022	0	0			0		0	0	0	0	0	0
Amphipoda	Hyperiidae	*Themisto libellula*	2021	0	0	0	7.09	0	0	0					
Amphipoda	Hyperiidae	*Themisto libellula*	2022	0	0			0		0	0	0	0	0	0
Amphipoda	Ischyroceridae	Ischyroceridae indet.	2021	0	0	0	0	0	0	0					
Amphipoda	Ischyroceridae	Ischyroceridae indet.	2022	0	0			0		0	0	0	0	0	0
Amphipoda	NA	*Amphipoda indet.*	2021	0	0	0	0	0	0	0					

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Amphipoda	NA	*Amphipoda indet.*	2022	0	0.13			0		0	0	0	0	0	0
Amphipoda	Oedicerotidae	*Acanthostepheia malmgreni*	2021	0	0	0	0	0	0	0					
Amphipoda	Oedicerotidae	*Acanthostepheia malmgreni*	2022	0	2.31			0.40		0	0	1.85	0	0	0
Amphipoda	Stenothoidae	Stenothoidae indet.	2021	0	0	0	0	0	0	0					
Amphipoda	Stenothoidae	Stenothoidae indet.	2022	0	0			0		0	0	0	0	0	0
Cumacea	Diastylidae	*Diastylis lucifera*	2021	0	0	0	0	0	0	0					
Cumacea	Diastylidae	*Diastylis lucifera*	2022	0	0.02			0		0	0	0	0	0	0
Cumacea	Leuconidae	*Leucon* sp.	2021	0	0	0	0	0	0	0					
Cumacea	Leuconidae	*Leucon* sp.	2022	0	0			0		0	0	0	0	0	0
Decapoda	Crangonidae	*Sabinea septemcarinata*	2021	0	0	0	0	0	0	0					
Decapoda	Crangonidae	*Sabinea septemcarinata*	2022	0	0			0		0	0	0	0	0	0
Decapoda	Hippolytidae	*Hippolytidae indet. Mysis*	2021	0.31	0	0.31	0	0	0	0					
Decapoda	Hippolytidae	*Hippolytidae indet. Mysis*	2022	2.41	0.66			0		0	0	0	0	0	0
Decapoda	Oregoniidae	*Hyas sp. zoea*	2021	0	0	0.01	0	0	0	0					
Decapoda	Oregoniidae	*Hyas sp. zoea*	2022	0	0			0		0	0	1.35	0	0	0
Decapoda	Paguridae	*Paguridae sp. zoea*	2021	0	0	0	0	0	0	0					
Decapoda	Paguridae	*Paguridae sp. zoea*	2022	0	0			0		0	0	0	0	0	0

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Decapoda	Pandalidae	*Pandalidae indet. mysis*	2021	0	0	0	0	0	0	0					
Decapoda	Pandalidae	*Pandalidae indet. mysis*	2022	0	0			0		0	0	0	0	0	0.01
Euphausiacea	Euphausiidae	*Thysanoessa inermis*	2021	0	0	0	0	0	0	0					
Euphausiacea	Euphausiidae	*Thysanoessa inermis*	2022	0	0			0		0	0	0	0	0	0
Euphausiacea	Euphausiidae	*Thysanoessa raschii*	2021	0	0	0	0	0	0	0					
Euphausiacea	Euphausiidae	*Thysanoessa raschii*	2022	0	3.02			0		0	0	0	0	0	0
Euphausiacea	NA	*Euphausiacea indet. larval stages*	2021	0	0.17	0.18	0	0	0	0					
Euphausiacea	NA	*Euphausiacea indet. larval stages*	2022	0	0.85			0		0	0.05	0	0	0	0.42
Isopoda	Bopyridae	*Bopyridae indet.*	2021	0	0	0	0	0	0	0					
Isopoda	Bopyridae	*Bopyridae indet.*	2022	0	0			0.09		0.18	0.23	0.10	0	0	0
Isopoda	NA	*Isopoda indet.*	2021	0	0	0	0	0	0	0					
Isopoda	NA	*Isopoda indet.*	2022	0	0.04			0.09		0	0	0.10	0	0	0
Mysida	Mysidae	*Pseudomma truncatum*	2021	0	0	0	0	0	0	0					
Mysida	Mysidae	*Pseudomma truncatum*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: ARTHROPODA CLASS: OSTRACODA															
NA	NA	*Ostracoda indet.*	2021	0	0	0	0	0	0	0					

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
NA	NA	*Ostracoda indet.*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: ARTHROPODA CLASS: THECOSTRACA															
NA	NA	*Cirripedia indet. cyprid/nauplius*	2021	0.16	0.02	0.14	0.32	0.10	8.41	0					
NA	NA	*Cirripedia indet. cyprid/nauplius*	2022	1.70	0.35			0.34		1.01	0.28	0.78	0.16	0	0.15
NA	NA	*Facetotecta indet.*	2021	0	0	0	0.07	0	0	0					
NA	NA	*Facetotecta indet.*	2022	0	0			0.17		0	0.43	0.06	0.24	0	0.01
PHYLUM: BRYOZOA CLASS: NA															
NA	NA	*Bryozoa indet. cyphonautes*	2021	0	0	0	0	0	0	0					
NA	NA	*Bryozoa indet. cyphonautes*	2022	0	0			0		0.03	0	0	0	0.01	0
PHYLUM: CHAETOGNATHA CLASS: NA															
NA	NA	*Chaetognatha indet. juvenile*	2021	0	0	0	0	0	0	0					
NA	NA	*Chaetognatha indet. juvenile*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: CHAETOGNATHA CLASS: SAGITTOIDEA															
Aphragmophora	Sagittidae	*Parasagitta elegans*	2021	0.24	0.35	0.03	0.90	0.34	0.30	0.10					

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Aphragmophora	Sagittidae	*Parasagitta elegans*	2022	1.09	2.72			0.46		0.20	0.06	2.65	0.16	0.20	1.65
Phragmophora	Eukrohniidae	*Eukrohnia hamata*	2021	0	0	0	0	0	0	0					
Phragmophora	Eukrohniidae	*Eukrohnia hamata*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: CHORDATA CLASS: APPENDICULARIA															
Copelata	Fritillariidae	*Fritillaria borealis*	2021	1.25	0.45	0.09	0.28	0.15	0.03	3.43					
Copelata	Fritillariidae	*Fritillaria borealis*	2022	1.44	0.51			2.13		3.64	4.79	0.34	0.53	0.09	0
Copelata	Oikopleuridae	*Oikopleura* sp.	2021	0	0	0	0	0	0	0					
Copelata	Oikopleuridae	*Oikopleura* sp.	2022	0.14	0			0		0	0.01	0	0	0	3.84
PHYLUM: CHORDATA CLASS: ASCIDIACEA															
NA	NA	*Ascidiacea indet.*	2021	0	0	0	0	0	0	0					
NA	NA	*Ascidiacea indet.*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: CNIDARIA CLASS: HYDROZOA															
Anthoathecata	Tubulariidae	*Hybocodon prolifer*	2021	0	0	0	0	0	0	0					
Anthoathecata	Tubulariidae	*Hybocodon prolifer*	2022	0	0			0		0	0	0	0	0	0
Anthoathecata	Boreohydridae	*Plotocnide borealis*	2021	0	0	0	0	0	0	0					
Anthoathecata	Boreohydridae	*Plotocnide borealis*	2022	0	0			0		0	0	0	0	0	0
Anthoathecata	Bougainvilliidae	*Bougainvillia superciliaris*	2021	0	0	0	0	0	0	0					

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Anthoathecata	Bougainvilliidae	*Bougainvillia superciliaris*	2022	0.07	0.09			0		0	0	0	0	0	0.06
Anthoathecata	Corymorphidae	*Euphysa flammea*	2021	0	0	0	0	0	0	0					
Anthoathecata	Corymorphidae	*Euphysa flammea*	2022	0	0			0		0	0	0.17	0	0	0
Anthoathecata	Corynidae	*Sarsia princeps*	2021	0	0	0	0	0	0	0					
Anthoathecata	Corynidae	*Sarsia princeps*	2022	0	0			0		0	0	0	0	0	0
Anthoathecata	Pandeidae	*Halitholus cirratus*	2021	0.95	0	0	0	0	0	0					
Anthoathecata	Pandeidae	*Halitholus cirratus*	2022	0	0.56			0.83		0	1.40	0	0.82	0	0
Anthoathecata	Rathkeidae	*Rathkea octopunctata*	2021	0	0	0	0	0	0	0					
Anthoathecata	Rathkeidae	*Rathkea octopunctata*	2022	0	0			0		0	0	0	0	0	0.02
Leptothecata	Campanulariidae	*Obelia* sp.	2021	0	0	0	0	0	0	0					
Leptothecata	Campanulariidae	*Obelia* sp.	2022	0.03	0			0		0	0.04	0	0	0	0
Leptothecata	Mitrocomidae	*Mitrocomella* sp.	2021	0	0	0	0	0	0	0					
Leptothecata	Mitrocomidae	*Mitrocomella* sp.	2022	0	0			0		0	0	0	0	0	0
NA	NA	*Hydrozoa indet. actinula*	2021	0	0	0	0	0	0	0					
NA	NA	*Hydrozoa indet. actinula*	2022	0	0			0		0	0	0	0	0	0
Narcomedusae	Solmundaeginidae	*Aeginopsis laurentii*	2021	0	0	0	0	0	0	0					
Narcomedusae	Solmundaeginidae	*Aeginopsis laurentii*	2022	0	0.60			0		0	0	0	0	0	0.27

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
Siphonophorae	Diphyidae	*Dimophyes arctica*	2021	0	0	0	0	0	0	0					
Siphonophorae	Diphyidae	*Dimophyes arctica*	2022	0	0			0		0	0	0	0	0	0
Trachymedusae	Rhopalonematidae	*Homoeonema platygonon*	2021	0	0	0	0	0	0	0					
Trachymedusae	Rhopalonematidae	*Homoeonema platygonon*	2022	0	0			0		0	0	0	0	0	0
Trachymedusae	Rhopalonematidae	*Aglantha digitale*	2021	3.57	0	10.4	0	0	0	0					
Trachymedusae	Rhopalonematidae	*Aglantha digitale*	2022	0	0			0		0	1.60	0	0	0	0.10
PHYLUM: CNIDARIA CLASS: SCYPHOZOA															
NA	NA	*Cnidaria indet.*	2021	0	0	0	0	0	0	0					
NA	NA	*Cnidaria indet.*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: CNIDARIA CLASS: SCYPHOZOA															
Semaeostomeae	Pelagiidae	*Chrysaora* sp.	2021	0	0	0	0	0	0	0					
Semaeostomeae	Pelagiidae	*Chrysaora* sp.	2022	0	0			0		0	0	0	0	0	0
Semaeostomeae	Ulmaridae	*Aurelia aurita*	2021	0	0	0	0	0	0	0					
Semaeostomeae	Ulmaridae	*Aurelia aurita*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: CTENOPHORA															

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
CLASS: NUDA															
Beroida	Beroidae	*Beroe cucumis*	2021	0	0	32.0	0	0	0	0					
Beroida	Beroidae	*Beroe cucumis*	2022	0	0			0.24		0	0	0	0	0	0
PHYLUM: CTENOPHORA CLASS: TENTACULATA															
Cydippida	Mertensiidae	*Mertensia ovum*	2021	0.98	0	0	0	42.0	0	2.07					
Cydippida	Mertensiidae	*Mertensia ovum*	2022	0	1.74			0.86		7.33	10.8	4.25	0.41	3.37	0.69
PHYLUM: ECHINODERMATA CLASS: ECHINOIDEA															
NA	NA	*Echinoidea indet. pluteus*	2021	0	0	0	0	0	0	0					
NA	NA	*Echinoidea indet. pluteus*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: ECHINODERMATA CLASS: OPHIUROIDEA															
NA	NA	*Ophiuroidea indet.*	2021	0.06	0	0	0	0	0	0					
NA	NA	*Ophiuroidea indet.*	2022	0	0			0		0	0.05	0	0	0	0
PHYLUM: MOLLUSCA CLASS: BIVALVIA															
NA	NA	*Bivalvia indet. veliger*	2021	0.47	2.26	0.62	1.18	0.08	0.37	0.50					
NA	NA	*Bivalvia indet. veliger*	2022	2.23	0.64			0.84		1.45	14.8	2.59	2.22	1.82	0.28

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
PHYLUM: MOLLUSCA CLASS: GASTROPODA															
NA	NA	*Gastropoda indet. veligers*	2021	0.04	0	0	0	0.01	0.73	0					
NA	NA	*Gastropoda indet. veligers*	2022	0	0.04			0		0.84	0.07	0	0.04	0	0
Pteropoda	Clionidae	*Clione limacina*	2021	0	0	0	0	0	0	0					
Pteropoda	Clionidae	*Clione limacina*	2022	15.0	3.92			9.38		0	24.0	0	0	0	2.10
Pteropoda	Limacinidae	*Limacina helicina*	2021	0.28	0.18	0.07	0.05	0	0.01	0					
Pteropoda	Limacinidae	*Limacina helicina*	2022	0.10	0.03			0.12		0.24	0.31	0.14	0.09	0.02	0.01
PHYLUM: NEMERTEA CLASS: NA															
NA	NA	*Nemertea indet. pilidium*	2021	0	0	0	0	0	0	0					
NA	NA	*Nemertea indet. pilidium*	2022	0	0			0		0	0	0	0	0	0
PHYLUM: PLATYHELMINTHES CLASS: TURBELLARIA															
NA	NA	*Turbellaria indet.*	2021	0.05	0	0	0	0.01	0	0					
NA	NA	*Turbellaria indet.*	2022	0.05	0.04			0.03		0	0.09	0	0	0.03	0
PHYLUM: ROTIFERA CLASS: NA															
NA	NA	*Rotifera indet.*	2021	0	0	0	0	0	0	0					

				Biomass (mg m^{-3})											
Order	**Family**	**Scientific Name**	**Year**	**JB2**	**JB3**	**JB4**	**JB5**	**JB6**	**JB8**	**JB9**	**JB10**	**JB12**	**JB13**	**JB17**	**JB18**
NA	NA	*Rotifera indet.*	2022	0	0			0		0	0.11	0	0	0	0

Table 5. The relative proportion of fish catch by count at each station in James Bay in 2021 and 2022 using the benthic beam trawl.

			Proportion catch by count										
Family	**Scientific Name**	**Year**	**JB-02**	**JB-03**	**JB-04**	**JB-05**	**JB-06**	**JB-07**	**JB-08**	**JB-09**	**JB-12**	**JB-13**	**JB-18**
Osmeridae	*Mallotus villosus*	2021	0	0	0	0	0	0	0	0			
Osmeridae	*Mallotus villosus*	2022		0			0.02			0	0	0	0
Osmeridae	*Osmerus mordax*	2021	0	0	0	0	0	0.09	0	0			
Osmeridae	*Osmerus mordax*	2022		0			0			0.12	0	0	0
Gadidae	*Boreogadus saida*	2021	0	0	0	0	0.06	0	0	0.33			
Gadidae	*Boreogadus saida*	2022		0.17			0			0.06	0	0	0.04
Gasterosteidae	*Gasterosteus aculeatus*	2021	0	0	0	0	0	0.18	0	0			
Gasterosteidae	*Gasterosteus aculeatus*	2022		0			0			0	0	0	0
Cottidae	Cottidae	2021	0.03	0	0	0	0	0.09	0	0			
Cottidae	Cottidae	2022		0			0			0	0	0	0
Cottidae	*Gymnocanthus tricuspis*	2021	0	0	0	0	0	0.36	0	0			
Cottidae	*Gymnocanthus tricuspis*	2022		0			0			0	0	0	0
Cottidae	*Icelus bicornis*	2021	0	0	0	0	0	0	0	0			
Cottidae	*Icelus bicornis*	2022		0			0			0	0	0	0.02
Cottidae	*Icelus spatula*	2021	0	0	0	0	0	0	0	0			
Cottidae	*Icelus spatula*	2022		0.06			0			0	0	0	0.02
Cottidae	*Triglops nybelini*	2021	0	0	0	0	0	0	0	0			

			Proportion catch by count										
Family	**Scientific Name**	**Year**	**JB-02**	**JB-03**	**JB-04**	**JB-05**	**JB-06**	**JB-07**	**JB-08**	**JB-09**	**JB-12**	**JB-13**	**JB-18**
Cottidae	*Triglops nybelini*	2022		0			0			0.03	0	0	0
Cottidae	*Triglops pingelli*	2021	0	0	0	0	0	0	0	0			
Cottidae	*Triglops pingelli*	2022		0			0.02			0.18	0	0	0
Agonidae	*Aspidophoroides olrikii*	2021	0.08	0	1.00	0	0	0	1.00	0			
Agonidae	*Aspidophoroides olrikii*	2022		0.22			0			0	0	0	0
Agonidae	*Leptagonus decagonus*	2021	0	0	0	0	0	0	0	0			
Agonidae	*Leptagonus decagonus*	2022		0			0			0	0	0	0.04
Cyclopteridae	*Cyclopterus lumpus*	2021	0	0	0	0	0	0	0	0			
Cyclopteridae	*Cyclopterus lumpus*	2022		0			0			0	0	0	0.02
Liparidae	*Liparis fabricii*	2021	0	0	0	0	0	0	0	0			
Liparidae	*Liparis fabricii*	2022		0			0			0	0	0	0.02
Liparidae	*Liparis tunicatus*	2021	0	0	0	0	0	0	0	0			
Liparidae	*Liparis tunicatus*	2022		0			0			0	0	0	0.04
Liparidae	*Liparis gibbus*	2021	0	0	0	0	0.01	0	0	0			
Liparidae	*Liparis gibbus*	2022		0			0			0	0	0	0
Zoarcidae	*Lycodes eudipleurostictus*	2021	0	0	0	0	0	0	0	0			
Zoarcidae	*Lycodes eudipleurostictus*	2022		0			0			0	0	0.11	0
Zoarcidae	*Lycodes marisalbi*	2021	0	0	0	0	0	0	0	0			
Zoarcidae	*Lycodes marisalbi*	2022		0			0.05			0.21	0	0	0
Zoarcidae	*Lycodes pallidus*	2021	0	1.00	0	0	0.45	0	0	0.33			

			Proportion catch by count										
Family	**Scientific Name**	**Year**	**JB-02**	**JB-03**	**JB-04**	**JB-05**	**JB-06**	**JB-07**	**JB-08**	**JB-09**	**JB-12**	**JB-13**	**JB-18**
Zoarcidae	*Lycodes pallidus*	2022		0			0.49			0.33	0	0.56	0
Zoarcidae	*Lycodes polaris*	2021	0	0	0	0	0.02	0	0	0			
Zoarcidae	*Lycodes polaris*	2022		0			0.10			0	0	0.11	0
Zoarcidae	*Lycodes reticulatus*	2021	0	0	0	0	0.08	0	0	0			
Zoarcidae	*Lycodes reticulatus*	2022		0.17			0.17			0	0.29	0	0
Zoarcidae	*Lycodes seminudus*	2021	0	0	0	0	0	0	0	0			
Zoarcidae	*Lycodes seminudus*	2022		0			0			0	0.14	0	0
Zoarcidae	*Lycodes* spp.	2021	0.03	0	0	1.00	0.37	0.27	0	0.33			
Zoarcidae	*Lycodes* spp.	2022		0			0.15			0	0.43	0.11	0.08
Stichaeidae	*Anisarchus medius*	2021	0.06	0	0	0	0	0	0	0			
Stichaeidae	*Anisarchus medius*	2022		0			0			0	0	0	0.16
Stichaeidae	*Leptoclinus maculatus*	2021	0.81	0	0	0	0	0	0	0			
Stichaeidae	*Leptoclinus maculatus*	2022		0.28			0			0	0	0	0.14
Stichaeidae	*Lumpenus fabricii*	2021	0	0	0	0	0	0	0	0			
Stichaeidae	*Lumpenus fabricii*	2022		0.06			0			0.06	0.14	0	0.22
Stichaeidae	*Lumpenus lampretaeformis*	2021	0	0	0	0	0.01	0	0	0			
Stichaeidae	*Lumpenus lampretaeformis*	2022		0			0			0	0	0	0
Stichaeidae	Stichaeidae	2021	0	0	0	0	0	0	0	0			
Stichaeidae	Stichaeidae	2022		0.06			0			0	0	0	0.18
Ammodytidae	*Ammodytes* spp.	2021	0	0	0	0	0	0	0	0			

			Proportion catch by count										
Family	**Scientific Name**	**Year**	**JB-02**	**JB-03**	**JB-04**	**JB-05**	**JB-06**	**JB-07**	**JB-08**	**JB-09**	**JB-12**	**JB-13**	**JB-18**
Ammodytidae	*Ammodytes* spp.	2022		0			0			0	0	0.11	0
Pleuronectidae	*Hippoglossoides platessoides*	2021	0	0	0	0	0	0	0	0			
Pleuronectidae	*Hippoglossoides platessoides*	2022		0			0			0	0	0	0.02

Table 6. The relative proportion of fish catch by count at each station in James Bay in 2021 and 2022 using the benthic sled.

			Proportion catch by count					
Family	**Scientific Name**	**Year**	**JB-03**	**JB-06**	**JB-08**	**JB-09**	**JB-10**	**JB-12**
Gadidae	*Boreogadus saida*	2021	0		0	0.05		
Gadidae	*Boreogadus saida*	2022	0	0			0	0
Cottidae	Cottidae	2021	0		0	0		
Cottidae	Cottidae	2022	0	0			0.02	0
Cottidae	*Gymnocanthus tricuspis*	2021	0		0.33	0		
Cottidae	*Gymnocanthus tricuspis*	2022	0	0			0	0
Cottidae	*Myoxocephalus scorpioides*	2021	0		0	0		
Cottidae	*Myoxocephalus scorpioides*	2022	0	0			0.05	0
Cottidae	*Triglops murrayi*	2021	0		0.33	0		
Cottidae	*Triglops murrayi*	2022	0	0			0.02	0
Agonidae	*Aspidophoroides olrikii*	2021	0		0.33	0		
Agonidae	*Aspidophoroides olrikii*	2022	0.11	0			0.02	0
Agonidae	*Leptagonus decagonus*	2021	0		0	0		
Agonidae	*Leptagonus decagonus*	2022	0.44	0			0	0
Cyclopteridae	Cyclopteridae	2021	0.02		0	0		
Cyclopteridae	Cyclopteridae	2022	0	0			0	0
Zoarcidae	*Lycodes marisalbi*	2021	0		0	0		
Zoarcidae	*Lycodes marisalbi*	2022	0	0			0.09	0

			Proportion catch by count					
Family	**Scientific Name**	**Year**	**JB-03**	**JB-06**	**JB-08**	**JB-09**	**JB-10**	**JB-12**
Zoarcidae	*Lycodes pallidus*	2021	0		0	0.45		
Zoarcidae	*Lycodes pallidus*	2022	0	0			0.05	0
Zoarcidae	*Lycodes polaris*	2021	0.08		0	0		
Zoarcidae	*Lycodes polaris*	2022	0	0			0.05	0
Zoarcidae	*Lycodes* spp.	2021	0.06		0	0.45		
Zoarcidae	*Lycodes* spp.	2022	0.11	1.00			0.02	1.00
Stichaeidae	*Anisarchus medius*	2021	0.77		0	0		
Stichaeidae	*Anisarchus medius*	2022	0	0			0.27	0
Stichaeidae	*Leptoclinus maculatus*	2021	0.05		0	0		
Stichaeidae	*Leptoclinus maculatus*	2022	0.22	0			0.05	0
Stichaeidae	*Lumpenus fabricii*	2021	0		0	0.05		
Stichaeidae	*Lumpenus fabricii*	2022	0	0			0.07	0
Stichaeidae	Stichaeidae	2021	0.02		0	0		
Stichaeidae	Stichaeidae	2022	0.11	0			0	0
Stichaeidae	*Stichaeus punctatus*	2021	0		0	0		
Stichaeidae	*Stichaeus punctatus*	2022	0	0			0.02	0
Ammodytidae	*Ammodytes dubius*	2021	0		0	0		
Ammodytidae	*Ammodytes dubius*	2022	0	0			0.05	0
Ammodytidae	*Ammodytes hexapterus*	2021	0		0	0		
Ammodytidae	*Ammodytes hexapterus*	2022	0	0			0.02	0

			Proportion catch by count					
Family	**Scientific Name**	**Year**	**JB-03**	**JB-06**	**JB-08**	**JB-09**	**JB-10**	**JB-12**
Ammodytidae	*Ammodytes* spp.	2021	0		0	0		
Ammodytidae	*Ammodytes* spp.	2022	0	0			0.20	0

Table 7. The relative proportion of total weight of fish caught in James Bay in 2021 and 2022 using the benthic beam trawl.

			Proportion of total weight										
Family	**Scientific Name**	**Year**	**JB-02**	**JB-03**	**JB-04**	**JB-05**	**JB-06**	**JB-07**	**JB-08**	**JB-09**	**JB-12**	**JB-13**	**JB-18**
Osmeridae	*Mallotus villosus*	2021	0	0	0	0	0	0	0	0			
Osmeridae	*Mallotus villosus*	2022		0			0.02			0	0	0	0
Osmeridae	*Osmerus mordax*	2021	0	0	0	0	0		0	0			
Osmeridae	*Osmerus mordax*	2022		0			0				0	0	0
Gadidae	*Boreogadus saida*	2021	0	0	0	0	0.21	0	0	0.40			
Gadidae	*Boreogadus saida*	2022					0				0	0	
Gasterosteidae	*Gasterosteus aculeatus*	2021	0	0	0	0	0		0	0			
Gasterosteidae	*Gasterosteus aculeatus*	2022		0			0			0	0	0	0
Cottidae	Cottidae	2021	0	0	0	0	0		0	0			
Cottidae	Cottidae	2022		0			0			0	0	0	0
Cottidae	*Gymnocanthus tricuspis*	2021	0	0	0	0	0		0	0			
Cottidae	*Gymnocanthus tricuspis*	2022		0			0			0	0	0	0
Cottidae	*Icelus bicornis*	2021	0	0	0	0	0	0	0	0			
Cottidae	*Icelus bicornis*	2022		0			0			0	0	0	
Cottidae	*Icelus spatula*	2021	0	0	0	0	0	0	0	0			
Cottidae	*Icelus spatula*	2022					0			0	0	0	
Cottidae	*Triglops nybelini*	2021	0	0	0	0	0	0	0	0			

			Proportion of total weight										
Family	**Scientific Name**	**Year**	**JB-02**	**JB-03**	**JB-04**	**JB-05**	**JB-06**	**JB-07**	**JB-08**	**JB-09**	**JB-12**	**JB-13**	**JB-18**
Cottidae	*Triglops nybelini*	2022		0			0				0	0	0
Cottidae	*Triglops pingelli*	2021	0	0	0	0	0	0	0	0			
Cottidae	*Triglops pingelli*	2022		0			0.01				0	0	0
Agonidae	*Aspidophoroides olrikii*	2021	0.02	0	1.00	0	0	0	1.00	0			
Agonidae	*Aspidophoroides olrikii*	2022					0			0	0	0	0
Agonidae	*Leptagonus decagonus*	2021	0	0	0	0	0	0	0	0			
Agonidae	*Leptagonus decagonus*	2022		0			0			0	0	0	
Cyclopteridae	*Cyclopterus lumpus*	2021	0	0	0	0	0	0	0	0			
Cyclopteridae	*Cyclopterus lumpus*	2022		0			0			0	0	0	
Liparidae	*Liparis fabricii*	2021	0	0	0	0	0	0	0	0			
Liparidae	*Liparis fabricii*	2022		0			0			0	0	0	
Liparidae	*Liparis tunicatus*	2021	0	0	0	0	0	0	0	0			
Liparidae	*Liparis tunicatus*	2022		0			0			0	0	0	
Liparidae	*Liparis gibbus*	2021	0	0	0	0	0.05	0	0	0			
Liparidae	*Liparis gibbus*	2022		0			0			0	0	0	0
Zoarcidae	*Lycodes eudipleurostictus*	2021	0	0	0	0	0	0	0	0			
Zoarcidae	*Lycodes eudipleurostictus*	2022		0			0			0	0	0.31	0
Zoarcidae	*Lycodes marisalbi*	2021	0	0	0	0	0	0	0	0			
Zoarcidae	*Lycodes marisalbi*	2022		0			0.01				0	0	0
Zoarcidae	*Lycodes pallidus*	2021	0	1.00	0	0	0.45	0	0	0.59			

			Proportion of total weight										
Family	**Scientific Name**	**Year**	**JB-02**	**JB-03**	**JB-04**	**JB-05**	**JB-06**	**JB-07**	**JB-08**	**JB-09**	**JB-12**	**JB-13**	**JB-18**
Zoarcidae	*Lycodes pallidus*	2022		0			0.49				0	0.45	0
Zoarcidae	*Lycodes polaris*	2021	0	0	0	0	0.06	0	0	0			
Zoarcidae	*Lycodes polaris*	2022		0			0.31			0	0	0.19	0
Zoarcidae	*Lycodes reticulatus*	2021	0	0	0	0	0.13	0	0	0			
Zoarcidae	*Lycodes reticulatus*	2022					0.17			0	0.20	0	0
Zoarcidae	*Lycodes seminudus*	2021	0	0	0	0	0	0	0	0			
Zoarcidae	*Lycodes seminudus*	2022		0			0			0	0.52	0	0
Zoarcidae	*Lycodes* spp.	2021	0.01	0	0	1.00	0.09		0	0.01			
Zoarcidae	*Lycodes* spp.	2022		0			0			0	0.01	0	
Stichaeidae	*Anisarchus medius*	2021	0.02	0	0	0	0	0	0	0			
Stichaeidae	*Anisarchus medius*	2022		0			0			0	0	0	
Stichaeidae	*Leptoclinus maculatus*	2021	0.94	0	0	0	0	0	0	0			
Stichaeidae	*Leptoclinus maculatus*	2022					0			0	0	0	
Stichaeidae	*Lumpenus fabricii*	2021	0	0	0	0	0	0	0	0			
Stichaeidae	*Lumpenus fabricii*	2022					0				0.27	0	
Stichaeidae	*Lumpenus lampretaeformis*	2021	0	0	0	0	0.01	0	0	0			
Stichaeidae	*Lumpenus lampretaeformis*	2022		0			0			0	0	0	0
Stichaeidae	Stichaeidae	2021	0	0	0	0	0	0	0	0			
Stichaeidae	Stichaeidae	2022					0			0	0	0	
Ammodytidae	*Ammodytes* spp.	2021	0	0	0	0	0	0	0	0			

			Proportion of total weight										
Family	**Scientific Name**	**Year**	**JB-02**	**JB-03**	**JB-04**	**JB-05**	**JB-06**	**JB-07**	**JB-08**	**JB-09**	**JB-12**	**JB-13**	**JB-18**
Ammodytidae	*Ammodytes* spp.	2022		0			0			0	0	0.05	0
Pleuronectidae	*Hippoglossoides platessoides*	2021	0	0	0	0	0	0	0	0			
Pleuronectidae	*Hippoglossoides platessoides*	2022		0			0			0	0	0	

Table 8. The relative proportion of total weight of fish caught in James Bay in 2021 and 2022 by the benthic sled.

			Proportion of total weight					
Family	**Scientific Name**	**Year**	**JB-03**	**JB-06**	**JB-08**	**JB-09**	**JB-10**	**JB-12**
Gadidae	*Boreogadus saida*	2021	0		0	0.24		
Gadidae	*Boreogadus saida*	2022	0	0			0	0
Cottidae	Cottidae	2021	0		0	0		
Cottidae	Cottidae	2022	0	0				0
Cottidae	*Gymnocanthus tricuspis*	2021	0		0.13	0		
Cottidae	*Gymnocanthus tricuspis*	2022	0	0			0	0
Cottidae	*Myoxocephalus scorpioides*	2021	0		0	0		
Cottidae	*Myoxocephalus scorpioides*	2022	0	0				0
Cottidae	*Triglops murrayi*	2021	0		0.63	0		
Cottidae	*Triglops murrayi*	2022	0	0				0
Agonidae	*Aspidophoroides olrikii*	2021	0		0.24	0		
Agonidae	*Aspidophoroides olrikii*	2022	0.03	0				0
Agonidae	*Leptagonus decagonus*	2021	0		0	0		
Agonidae	*Leptagonus decagonus*	2022	0.31	0			0	0
Cyclopteridae	Cyclopteridae	2021	0		0	0		
Cyclopteridae	Cyclopteridae	2022	0	0			0	0
Zoarcidae	*Lycodes marisalbi*	2021	0		0	0		
Zoarcidae	*Lycodes marisalbi*	2022	0	0				0

			Proportion of total weight					
Family	**Scientific Name**	**Year**	**JB-03**	**JB-06**	**JB-08**	**JB-09**	**JB-10**	**JB-12**
Zoarcidae	*Lycodes pallidus*	2021	0		0	0.56		
Zoarcidae	*Lycodes pallidus*	2022	0	0				0
Zoarcidae	*Lycodes polaris*	2021	0.13		0	0		
Zoarcidae	*Lycodes polaris*	2022	0	0				0
Zoarcidae	*Lycodes* spp.	2021	0.04		0	0.02		
Zoarcidae	*Lycodes* spp.	2022	0.01	1.00				1.00
Stichaeidae	*Anisarchus medius*	2021	0.71		0	0		
Stichaeidae	*Anisarchus medius*	2022	0	0				0
Stichaeidae	*Leptoclinus maculatus*	2021	0.12		0	0		
Stichaeidae	*Leptoclinus maculatus*	2022	0.63	0				0
Stichaeidae	*Lumpenus fabricii*	2021	0		0	0.18		
Stichaeidae	*Lumpenus fabricii*	2022	0	0				0
Stichaeidae	Stichaeidae	2021	0		0	0		
Stichaeidae	Stichaeidae	2022	0.01	0			0	0
Stichaeidae	*Stichaeus punctatus*	2021	0		0	0		
Stichaeidae	*Stichaeus punctatus*	2022	0	0				0
Ammodytidae	*Ammodytes dubius*	2021	0		0	0		
Ammodytidae	*Ammodytes dubius*	2022	0	0				0
Ammodytidae	*Ammodytes hexapterus*	2021	0		0	0		
Ammodytidae	*Ammodytes hexapterus*	2022	0	0				0

			Proportion of total weight					
Family	**Scientific Name**	**Year**	**JB-03**	**JB-06**	**JB-08**	**JB-09**	**JB-10**	**JB-12**
Ammodytidae	*Ammodytes* spp.	2021	0		0	0		
Ammodytidae	*Ammodytes* spp.	2022	0	0				0

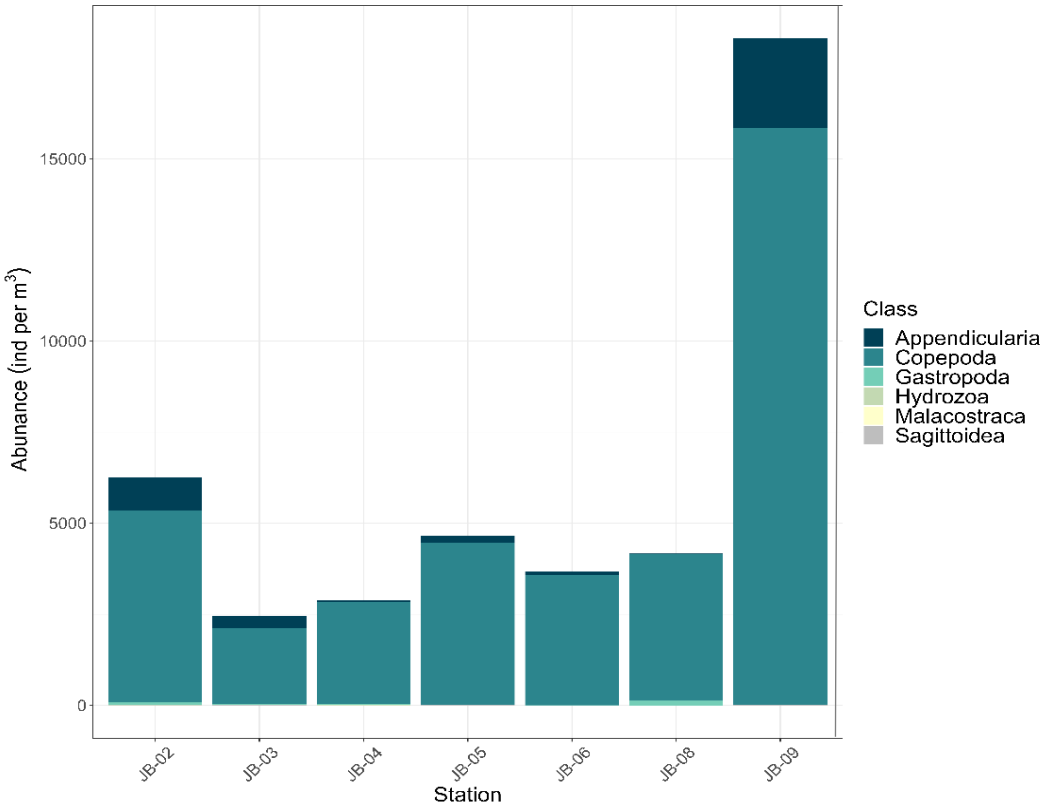

Figure 3. Abundance of zooplankton (ind per m^3) by class per station across James Bay in 2021.

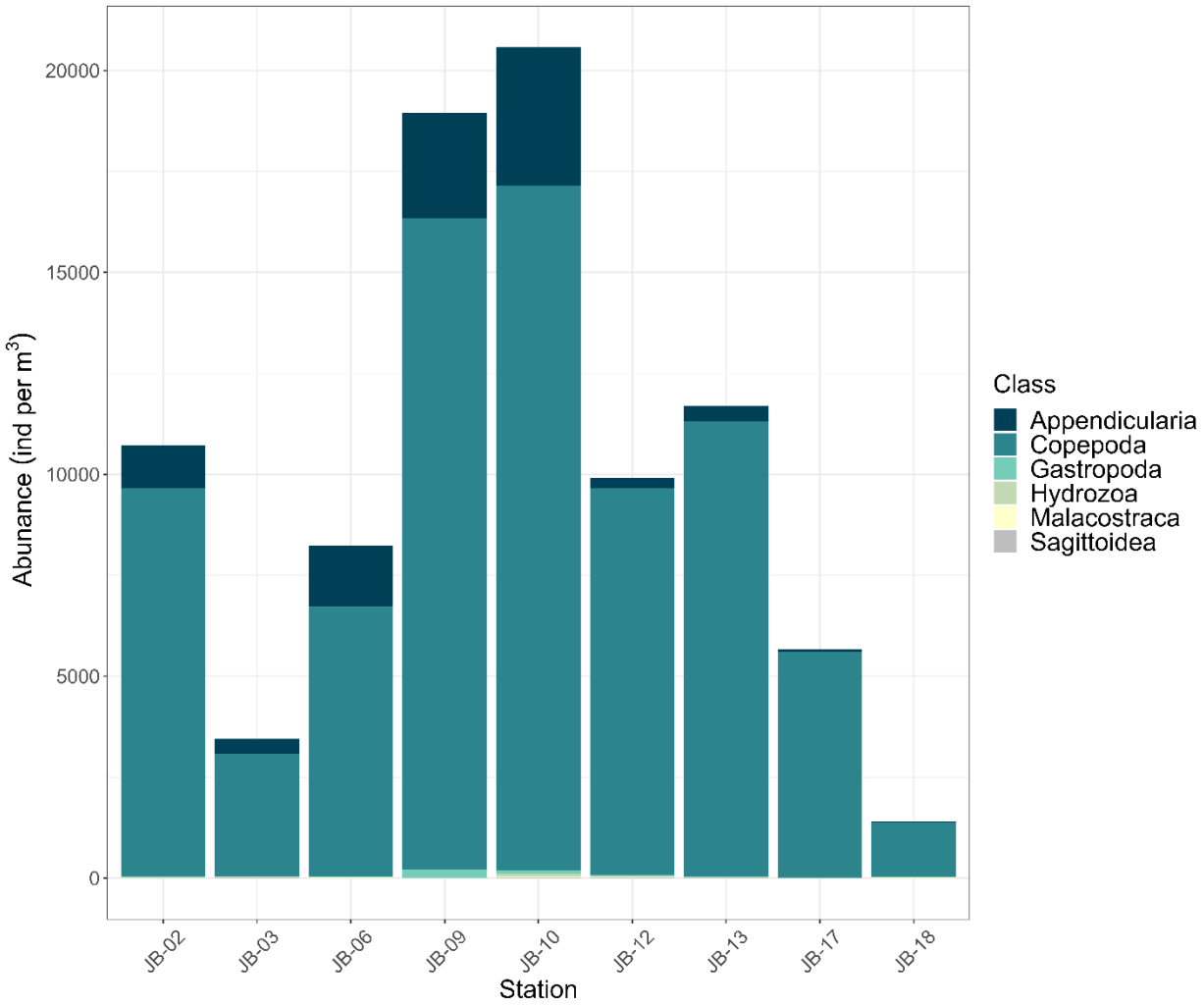

Figure 4. Abundance of zooplankton (ind per m^3) by class per station across James Bay in 2022

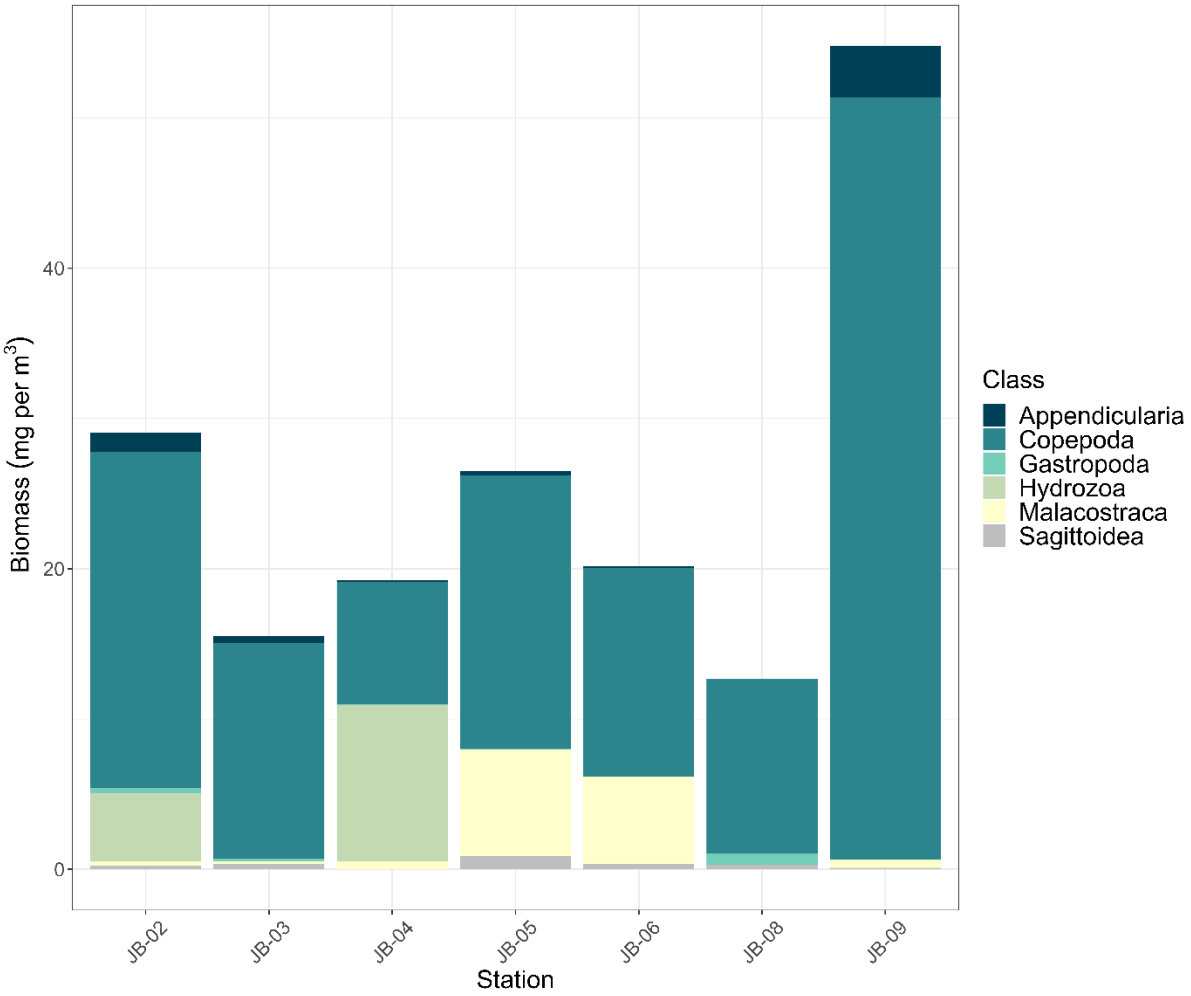

Figure 5. Zooplankton biomass (mg per m^3) by class at James Bay stations sampled in 2021.

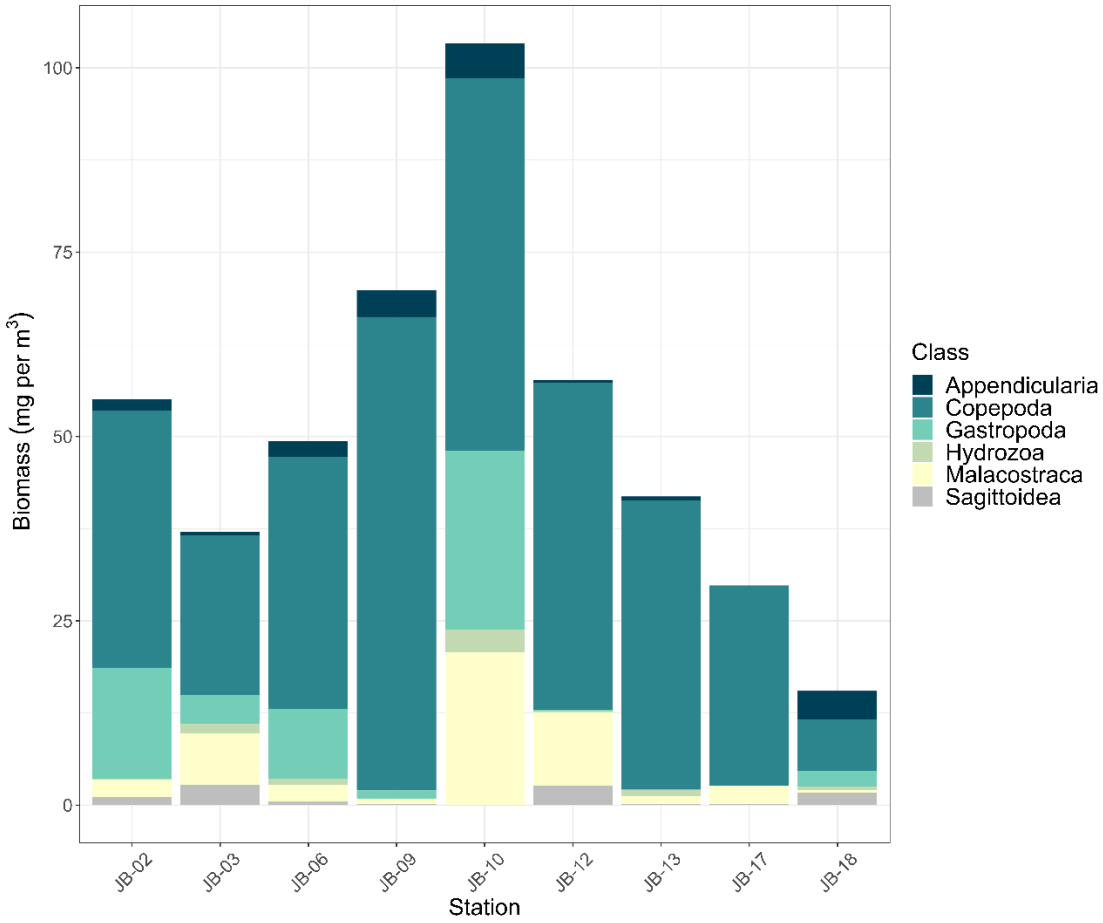

Figure 6. Zooplankton biomass (mg per m^3) by class at James Bay stations sampled in 2022.

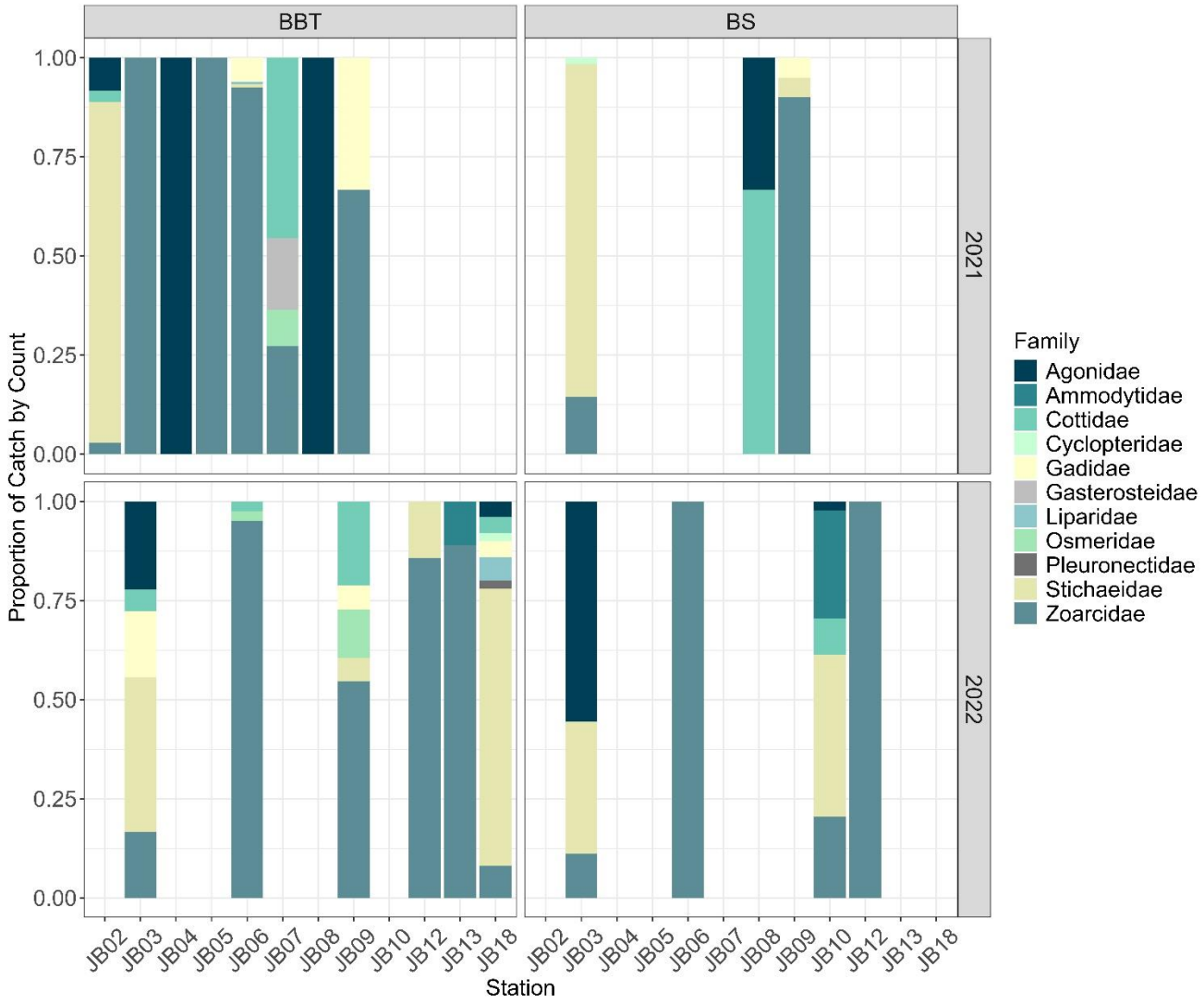

Figure 7. The relative proportion of fish catch by count at each station using the benthic beam trawl (BBT) and benthic sled (BS) in 2021 and 2022. Catch is presented by taxonomic family

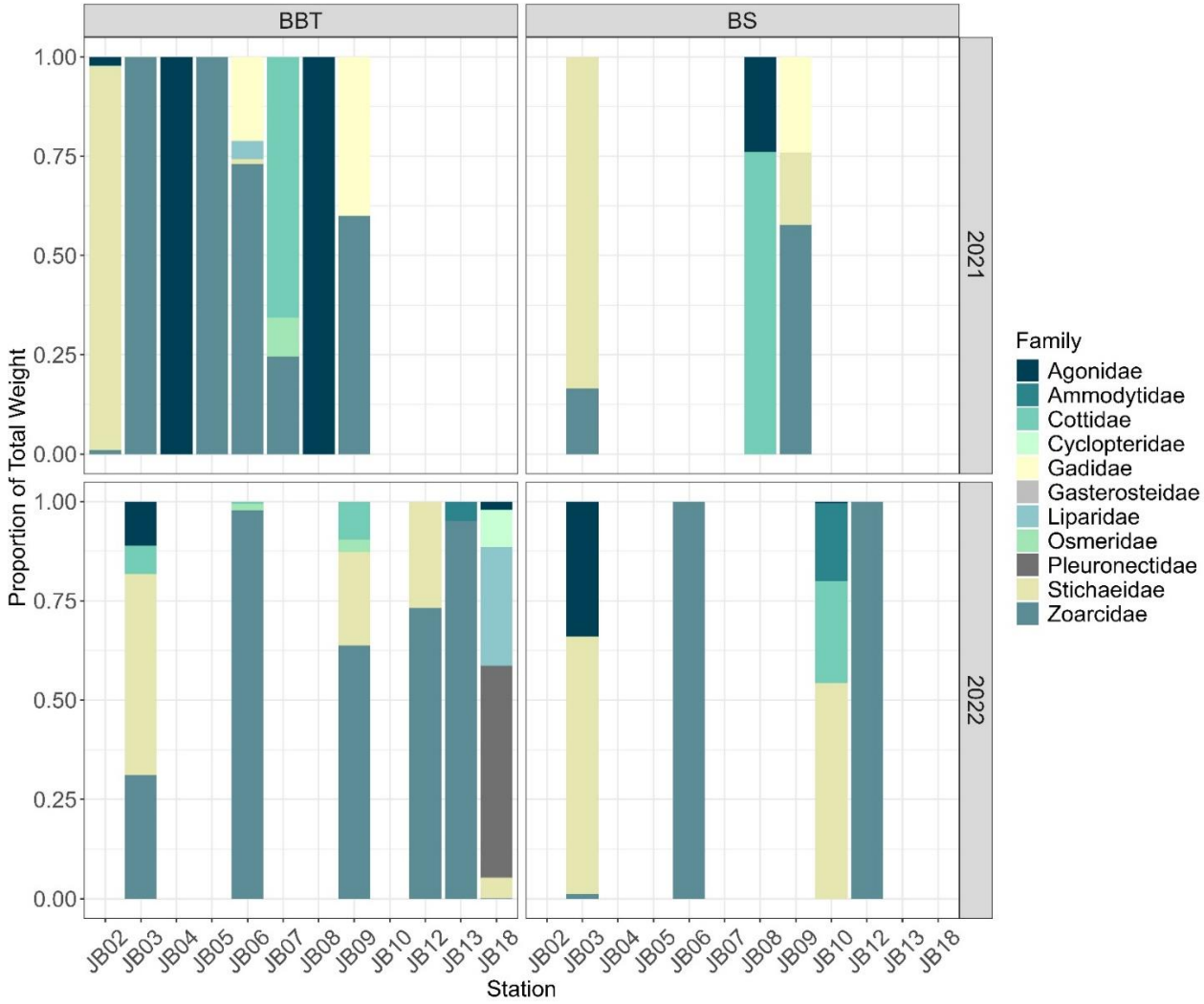

Figure 8. Proportional biomass of fish caught using a benthic beam trawl (BBT) and benthic sled (BS) in James Bay in 2021 and 2022. Catch is presented as taxonomic family.

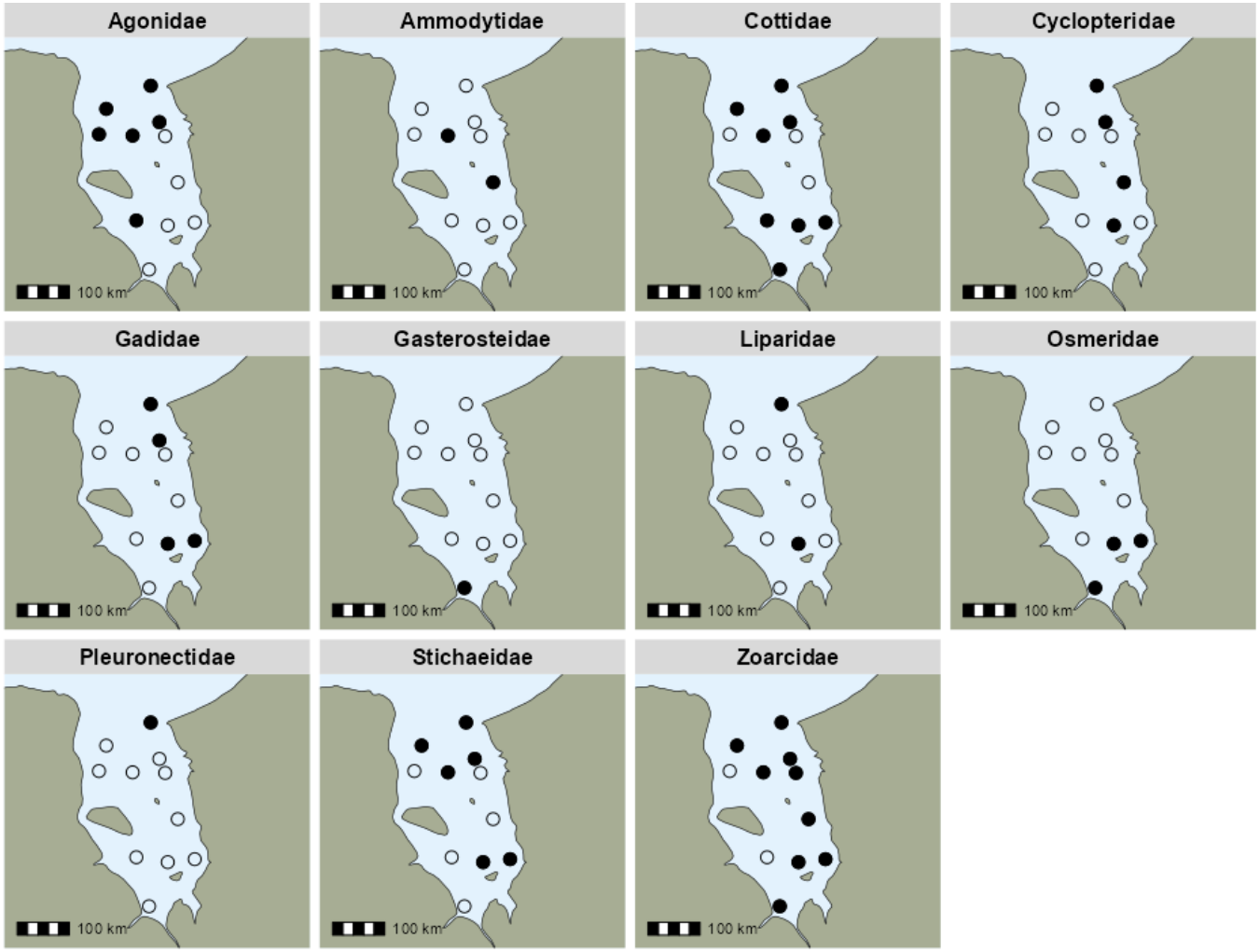

Figure 9. Maps of James Bay showing the presence (solid cirlces) or absence (open circle) of taxonomic fish families at each of the stations sampled in 2021 and 2022.