



New

## Scientific Research

Lucianne May Marshall  
Ocean Networks Canada  
2472 Arbutus rd  
Victoria BC V8N 1V8  
Canada  
Phone: 7789224043, Email:

**ᐱᕐᓂᕈᖅ:** Iqaluit “Community Fishers” Baseline Ocean Data Collection Program. The project aims to collect a baseline of oceanographic data such that a greater understanding of the seasonal dynamic of water exchange in Frobisher Bay can be established. This project hopes to expand to longer term monitoring such that it can begin to help understand the longer-term fluctuations and changes in the region. Baseline data is meant to be applicable to a wide range of research activities and this project is designed to support answering a number of current and future research questions that the community of Iqaluit may be interested in addressing. A multi-parameter oceanographic instrument (“sonde”) is equipped with sensors that are considered the foundational data to study oceanography. The sonde measures temperature, conductivity (salinity), and pressure (depth), and is also known as a conductivity-temperature-depth instrument or “CTD”. Water profiles are collected through “casts” where the sonde is lowered through the water column and records digital measurements of the water properties. Additionally, this sonde is equipped with sensors that measure oxygen, chlorophyll fluorescence, turbidity, and either Coloured Dissolved Organic Matter (CDOM) or crude oil fluorescence; crude oil fluorescence is a new parameter being measured as of 2022. These additional parameters can offer insight into the biological activity (e.g. phytoplankton using oxygen and chlorophyll fluorescence) or riverine runoff (Turbidity/CDOM) and can increase understanding of the seasonal oceanographic fluctuations. With more samples over time, the data can be used to assess changes in the system in reference to a baseline of data. Alongside the use of the sonde, sea-ice thickness will be measured too. No physical samples are collected as part of this project and no hardware or infrastructure is left in place. Community members travel to the established locations, take measurements, and bring all equipment and digital/hand-written data home at the end of the day. Community members are key to this project in that they identified the initial questions and concerns that the data is meant to address, they provide ongoing leadership and guidance on how to work within the community and where and how to collect data, and are directly responsible for all data collection activities. The Community members are directly involved in the station and location planning and continue to be consulted on sampling plans. Ocean Networks Canada provides a University accredited, two-day course to all community members before they take part as part of the field team (see <https://www.oceannetworks.ca/get-involved/training/> for more details); this builds capacity within the community by helping to enable community members to conduct high-quality training in a safe and consistent way. Training also provides an initial insight into interpreting oceanographic data and Ocean Networks Canada aims to continue to foster this capability by holding workshops that will further improve the community’s ability to access and use the data. Data from this project along with previously collected baseline data will be incorporated into an oceanographic overview of Frobisher Bay in the sampling region. Results will be presented in data fact sheets in English and Inuktitut along with a concluding community co-produced workshop to disseminate results from the Community Fishers project to the community, and to discuss how findings may be integrated with local Indigenous knowledge and other projects being conducted in the area. This will also be a chance to discuss ways to improve information dissemination and what might be possible for future research. A final report of data and workshop input will be created and shared in both Inuktitut and English (See attached doc for more info).

▷ΔΔΠΔ◁: Le projet vise à recueillir une base de données océanographiques permettant d'établir une meilleure compréhension de la dynamique saisonnière des échanges d'eau dans la baie Frobisher. Ce projet espère s'étendre à une surveillance à plus long terme afin de commencer à aider à comprendre les fluctuations et les changements à plus long terme dans la région. Les données de base sont censées être applicables à une large gamme d'activités de recherche et ce projet est conçu pour aider à répondre à un certain nombre de questions de recherche actuelles et futures auxquelles la communauté d'Iqaluit pourrait être intéressée à répondre. Un instrument océanographique multiparamètre («sonde») est équipé de capteurs qui sont considérés comme des données fondamentales pour étudier

[illegible]

Closure Phase: from 2023-02-26 to 2023-03-28

$$\Delta \varepsilon_{\text{r}} \approx \Delta \varepsilon_{\text{r}}^{\text{b}} + \Delta \varepsilon_{\text{r}}^{\text{c}}$$

ᐃᓯ	ᑭᓂᐱᕐᑐᓯᕐ ᐱᕋᓚᐳᑭᕐᐴᕐᐸ	ᑭᓂᐳᕐ ᐃᕐᐸᕐᐸ	ᑐᓵᐬᓯᓂᑭᕐ ᐃᕐᐸᕐ ᐳᓯᓂᐳᕐᐸᕐᐸᕐᐸᕐᐸᕐ	ᐳᕐᓯᕐᐸᕐᐸᕐᐸᕐᐸᕐᐸᕐ ᐳᕐᐸᕐ ᐳᕐᐸᕐᐸᕐᐸᕐᐸᕐᐸᕐ ᐳᕐᐸᕐᐸᕐᐸᕐᐸᕐᐸᕐ	ᑭᓂᕐᐸᕐᐸᕐᐸᕐ ᐳᕐᐸᕐᐸᕐᐸᕐᐸᕐ ᐳᕐᐸᕐᐸᕐᐸᕐᐸᕐ ᐳᕐᐸᕐᐸᕐᐸᕐᐸᕐ ᐳᕐᐸᕐᐸᕐᐸᕐᐸᕐ
Designated stations within Frobisher Bay and Ward Inlet will be visited for sampling. The primary focus is in the head of Frobisher Inlet near Iqaluit town, See project description/map. We can provide specific coordinates too if desired	Marine Based Activities	Marine	Some sites overlap with historical and present DFO and Nunavut government sampling sites, others are areas of interest identified by community members	NA - data collection only occurs in the water column and does not disturb sea floor or extract physical samples	Between 3.5 - 80 km from Iqaluit Township
Station IQA1	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	2.5 km
Station IQA2	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	2.6
Station IQA3	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	4
Station IQA4	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	5 km
Station IQA5	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	5.5 km
Station IQB1	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	5 km
Station IQB2	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	5 km
Station IQB3	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	5 km
Station IQB4	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	5 km

Station IQB5	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	5 km
Station IQC1	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	5 km
Station IQWFB01	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	6 km
Station IQWFB02	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	6 km
Station IQC2	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	4 km
Station IQC3	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	4 km
Station IQWFB03	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	4 km
Station IQWFB04	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	6 km
Station IQWFB05	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	6 km
Station IQWFB06	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	6.5 km
Station IQWFB07	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	7.5 km
Station IQWFB08	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	8 km
Station IQWFB09	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	9.5 km
Station IQD1	Marine Based Activities	Marine	No known site history	No known archeological / paleontological value	19 km
Station IQ2A	Marine Based Activities	Marine	No known history	No known archeological / paleontological value	30 km
Station IQ2B	Marine Based Activities	Marine	No known history	No known archeological / paleontological value	30 km
Station IQ2C	Marine Based Activities	Marine	No known history	No known archeological /	30 km

				paleontological value	
Station IQD3	Marine Based Activities	Marine	No known history	No known archeological / paleontological value	35 km
Station IQD4	Marine Based Activities	Marine	No known history	No known archeological / paleontological value	40 km
Station IQD5	Marine Based Activities	Marine	No known history	No known archeological / paleontological value	45 km
Station IQW11 - station of opportunity	Marine Based Activities	Marine	No known History and only sampling here when an opportunity occurs	No known archeological / paleontological value	31 km
Station IQW12 - station of opportunity	Marine Based Activities	Marine	No known History and only sampling here when an opportunity occurs	No known archeological / paleontological value	40 km
Station IQW14 - station of opportunity	Marine Based Activities	Marine	No known History and only sampling here when an opportunity occurs	No known archeological / paleontological value	45 km
Station IQW15 - station of opportunity	Marine Based Activities	Marine	No known History and only sampling here when an opportunity occurs	No known archeological / paleontological value	50 km
Station IQW16 - station of opportunity	Marine Based Activities	Marine	No known History and only sampling here when an opportunity occurs	No known archeological / paleontological value	55 km
Station IQW17 - station of opportunity	Marine Based Activities	Marine	No known History and only sampling here when an opportunity occurs	No known archeological / paleontological value	60 km
Station IQW18 - station of opportunity	Marine Based Activities	Marine	No known History and only sampling here when an opportunity occurs	No known archeological / paleontological value	60 km
Station IQW19 - station of opportunity	Marine Based Activities	Marine	No known History and only sampling here when an opportunity occurs	No known archeological / paleontological value	70 km
Station IQW110 - station of opportunity	Marine Based Activities	Marine	No known History and only sampling here when an opportunity occurs	No known archeological / paleontological value	60 km
Station IQW112 - station of opportunity	Marine Based Activities	Marine	No known History and only sampling here when an opportunity occurs	No known archeological / paleontological value	78m km
Station FB001	Marine Based	Marine	DFO sampling station	No known	11 km

	Activities			archeological / paleontological value	
Station FB002	Marine Based Activities	Marine	DFO sampling station	No known archeological / paleontological value	16.5 km
Station FB003	Marine Based Activities	Marine	DFO sampling station	No known archeological / paleontological value	21 km
Station FB004	Marine Based Activities	Marine	DFO sampling station	No known archeological / paleontological value	22 km
Station FB008	Marine Based Activities	Marine	DFO sampling station	No known archeological / paleontological value	35 km
Station FB012	Marine Based Activities	Marine	DFO sampling station	No known archeological / paleontological value	45 km
Station FB013	Marine Based Activities	Marine	DFO sampling station	No known archeological / paleontological value	50 km
Station FBZP5	Marine Based Activities	Marine	DFO sampling station	No known archeological / paleontological value	14 km
Station FBZP6	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	15 km
Station FBZP7	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	11 km
Station FBZP8	Marine Based Activities	Marine	Was a DFO sampling station	No known archeological / paleontological value	10 km
Station FB021	Marine Based Activities	Marine	Government of Nunavut sample site	No known archeological / paleontological value	52 km
Station FB022	Marine Based Activities	Marine	Previous Government of Nunavut sample site	No known archeological / paleontological value	50 km
Station FB023	Marine Based Activities	Marine	Previous Government of Nunavut sampling site	No known archeological / paleontological value	55 km
Station FB024	Marine Based Activities	Marine	Previous Government of Nunavut sample site	No known archeological / paleontological value	49 km
Station FB025	Marine Based Activities	Marine	Previous Government of Nunavut sampling site	No known archeological / paleontological value	40 km
Station FB026	Marine Based Activities	Marine	Previous Government of Nunavut Sampling Site	No known archeological / paleontological value	32 km



Station FB027	Marine Based Activities	Marine	Previous DFO/ Government of Nunavut sampling site	No known archeological / paleontological value	28 km
Station FB028	Marine Based Activities	Marine	previous DFO/Government of Nunavut sampling site	No known archeological / paleontological value	25 km
Station FB029	Marine Based Activities	Marine	Previous DFO/Government of Nunavut sampling site	No known archeological / paleontological value	18 km
Station FB030	Marine Based Activities	Marine	Previous DFO/ Government of Government sample site	No known archeological / paleontological value	22 km
Station FB031	Marine Based Activities	Marine	Previous DFO/ Government of Nunavut sample site	No known archeological / paleontological value	20 km
Station FB 32	Marine Based Activities	Marine	Previous DFO/ Government of Nunavut sample site	No known archeological / paleontological value	20 km

ᓄᓇᓕᓯᓪᓐ ᓄᓇᓕᓯᓪᓐ ᓄᓇᓕᓯᓪᓐ ᓄᓇᓕᓯᓪᓐ ᓄᓇᓕᓯᓪᓐ ᓄᓇᓕᓯᓪᓐ

ᓄᓇᓕᓯᓪᓐ	ᓄᓇᓕᓯᓪᓐ	ᓄᓇᓕᓯᓪᓐ ᓄᓇᓕᓯᓪᓐ	ᓄᓇᓕᓯᓪᓐ ᓄᓇᓕᓯᓪᓐ
ᓄᓇᓕᓯᓪᓐ	Alex Flaherty	Polar Outfitting	2020-03-17
ᓄᓇᓕᓯᓪᓐ	Harley Veevee	Polar Outfitting	2020-03-16
ᓄᓇᓕᓯᓪᓐ	Noah Alookie	HTO	2020-03-16
ᓄᓇᓕᓯᓪᓐ	Imoona Karpik	Polar Outfitting	2020-03-16
ᓄᓇᓕᓯᓪᓐ	Kevin Kullualik	Polar Outfitting	2021-01-01
ᓄᓇᓕᓯᓪᓐ	Kenny Merkosak	Polar Outfitting	2021-01-01

ᓕᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ

ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ  
South Baffin

ᓕᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ

ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ	ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ	ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ	ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ	ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ
ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ	Funded project through DFO - no licence required due to nature of data collection being optical.	Active	2022-07-25	2023-03-31
Hunters and Trappers Associations/Organizations	HTA were approached with the project details and they signed approval for the data collection in the area.	Active	2022-05-26	2023-03-31
ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ	Nunavut Research Institute are awaiting the outcome of the application we made to the Nunavut Planning Commission, which was then forwarded for NIRB approval.	Applied, Decision Pending		

Project transportation types

Transportation Type	ᓂᓐᓂᓐ ᓂᓐᓂᓐ ᓂᓐᓂᓐ	Length of Use
Water	Local community members use own vessels/snow machines and are compensated for use	

Project accomodation types

ᓂᓐᓂᓐ ᓂᓐᓂᓐ  
ᓂᓐᓂᓐ,

◀▷↳◀<sup>96</sup>▷<sup>96</sup>

Λ<sup>9</sup>d<sup>c</sup> d<sup>a</sup>r<sup>z</sup><sup>9b</sup> d<sup>9b</sup>CdσD<sup>4</sup>z<sup>9b</sup> Δ<sup>c</sup>b<sup>9</sup>pDn<sup>3</sup>r<sup>c</sup> ΔjCΔ<sup>c</sup>, Γ<sup>c</sup>→dPñ<sup>c</sup>, <sup>9b</sup>b<sup>a</sup>LCr<sup>9b</sup>, μερD<sup>c</sup> d<sup>9b</sup>r<sup>c</sup>→

ᐃᓕᑦᑲᓚ ᐱᓄᓪ ᐃᑐᒐᐅᓂᐃᓖᑐᓖ ᓖᔭᓂᐃᓪᑐᓂᓴ	ᓖᔭᑦᑲᐅᓂᓪ	ᐃᓖᑦᑲᓂᓖᑦ - ᐅᓖᑐᓂᓖᑦ	ᑯᓇᑲᓪ ᐃᑐᒐᐅᓂᐃᓖᐱ
Multi-parameter Sonde	1	100 cm H, 20 cm W	A multi-parameter oceanographic instrument (“sonde”) is equipped with sensors that are considered the foundational data to study oceanography. The sonde measures temperature, conductivity (salinity), and pressure (depth), and is also known as a conductivity-temperature-depth instrument or “CTD”. Water profiles are collected through “casts” where the sonde is lowered through the water column and records digital measurements of the water properties.
Tablet computer	1	30 cm x 20 cm	Used to operate the multi-parameter sonde
Snowmobiles	3	2 m x 0.75 m	To access sites on sea-ice
Boat	1	20 ft	If we are able to get in the water before freeze up it would be by boat access
ice auger	1	10 diameter	Ice auger that drills holes 8-10 ' in diameter to sample through

$\Pi \cap \langle D^{\text{fb}} \rangle = \langle D^{\text{fb}} \rangle$

ፖሊስ ፖሊስ ሊሆን ይችላል ፖሊስ ሊሆን ይችላል	ፖሊስ ሊሆን ይችላል ፖሊስ ሊሆን ይችላል	ፖሊስ ሊሆን ይችላል ፖሊስ ሊሆን ይችላል	ፖሊስ ሊሆን ይችላል ፖሊስ ሊሆን ይችላል	ፖሊስ ሊሆን ይችላል ፖሊስ ሊሆን ይችላል	ፖሊስ ሊሆን ይችላል ፖሊስ ሊሆን ይችላል	ፖሊስ ሊሆን ይችላል ፖሊስ ሊሆን ይችላል
Diesel	fuel	1	100	100	Liters	I am not 100% sure whether the boat is gas or diesel based. But if we use the boat as it is late in the season it



$\triangleleft^b C d^c$ 
$$\Delta^b C d_c \sim \sigma \Delta^q \sigma^q$$

<p>Λ&lt;ηΔηδΔΔΔΔΔ<sup>c</sup></p> <p>Λ&lt;ηΔηδσΔ<sup>qb</sup>Δ<sup>qb</sup></p>	<p>Δ<sup>qb</sup>Δ<sup>c</sup>Δ<sup>qb</sup></p> <p>Δ<sup>b</sup>Δ<sup>c</sup>Δ<sup>qb</sup></p>	<p>Δ<sup>qb</sup>ΔΔΔ Δ<sup>b</sup>Δ<sup>c</sup>Δ<sup>c</sup></p> <p>Δ<sup>qb</sup>ΔΔσΔ<sup>qb</sup>ΔηδΔ<sup>c</sup></p>	<p>Δ<sup>qb</sup>Δ<sup>qb</sup></p> <p>Δ<sup>b</sup>Δ<sup>qb</sup>ΔΔσΔ<sup>qb</sup>&lt;</p>	<p>ΔΔΔ<sup>qb</sup>ΔΔΔ<sup>b</sup>Δ<sup>c</sup>ΔσΔ<sup>qb</sup>Δ<sup>c</sup></p>
Information is not available				

4<sup>a</sup> 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1

Documented in Additional info: - Noise from vessels and snowmobiles - mitigation is to try and be as efficient in data collection as possible to reduce the days in environment so as not to disturb wildlife frequently and or have more than needed carbon emissions - Sea-ice drilling (8 inch diameter hole) - holes are spread out as sample locations are distributed across the bay. The holes are as small as possible for the instrument to fit through into the water and reduce light penetration).

# **Additional Information**

**SECTION A1: Project Info**

**SECTION A2: Allweather Road**

**SECTION A3: Winter Road**

**SECTION B1: Project Info**

**SECTION B2: Exploration Activity**

**SECTION B3: Geosciences**

**SECTION B4: Drilling**

**SECTION B5: Stripping**

**SECTION B6: Underground Activity**

**SECTION B7: Waste Rock**

**SECTION B8: Stockpiles**

**SECTION B9: Mine Development**

**SECTION B10: Geology**

**SECTION B11: Mine**

**SECTION B12: Mill**

**SECTION C1: Pits**

**SECTION D1: Facility**

**SECTION D2: Facility Construction**

**SECTION D3: Facility Operation**

**SECTION D4: Vessel Use**

**SECTION E1: Offshore Survey**

**SECTION E2: Nearshore Survey**

**SECTION E3: Vessel Use**

$\frac{e}{\sqrt{2}} A^{\mu} \bar{\psi} \gamma_{\mu} \psi - g_b \bar{\psi} \gamma_{\mu} \tau_L^a \psi A^{a\mu} + \bar{\psi} m \psi + \frac{1}{2} (\partial_{\mu} \phi)^2 - V(\phi)$

Employment will be positively impacted in that local community members in Iqaluit are paid to collect all of the oceanographic data. This is facilitated through a local contractor and through support from the Hunters and Trappers Association. · Noise levels will be negatively impacted but in an extremely minimal way. Community members are expected to travel to data collection sites by small vessel during the open water season and by snow machines when the sea-ice is safe to travel on. The mitigation is that this project relies on these standard, local means of transportation as opposed to other projects, which commonly use larger research or fishing vessels (that generate more noise and waste). Noise generation is therefore within the normal levels expected of community members. Activities are periodic and not sustained so will only generate noise for a few hours in a single day, one to four times per month. · As this is not a construction project and does not alter the physical or biological environment, overall impact on the environment is negligible. Data collection consists of digital recordings of instrument measurements of water properties (i.e. temperature, salinity, pressure, etc.) and of observational data of community members (e.g. weather and ice conditions); no physical samples are collected.

### **Cumulative Effects**

Positive cumulative effects include an increased capacity within the community to support future data collection activities and increased employment opportunities (both immediate and long-term) for community members. This is due to the fact that a substantial portion of the funding is set aside to pay community members and that the role of Ocean Networks Canada is to provide post-secondary education/training to community members in order to support their ability to participate in this project and others. Potential negative cumulative effects include fuel consumption and noise generation from small vehicle use. Neither of these effects are sustained nor are they serious in nature as they are within what is typical of community members traveling in their local region.



## Impacts

$\mathcal{L}(\mathcal{A}) \subseteq \mathcal{L}(\mathcal{B})$

[illegible]
$$(P = \langle b \rangle \Delta \langle p \rangle \cap \langle \bar{a} \rangle \langle \bar{b} \rangle)^C, N = \langle b \rangle \langle \bar{b} \rangle \langle \bar{r} \rangle \langle C \rangle \langle \bar{a} \rangle \langle \bar{b} \rangle^C \langle C \rangle \langle \bar{r} \rangle \langle \bar{r} \rangle \langle \bar{b} \rangle \langle C \rangle \langle \bar{a} \rangle \langle \bar{b} \rangle \langle \bar{r} \rangle^C \rangle, M = \langle b \rangle \langle \bar{b} \rangle \langle \bar{r} \rangle \langle C \rangle \langle \bar{a} \rangle \langle \bar{b} \rangle^C \langle C \rangle \langle \bar{r} \rangle \langle \bar{r} \rangle \langle \bar{b} \rangle \langle C \rangle \langle \bar{a} \rangle \langle \bar{b} \rangle \langle \bar{r} \rangle^C \rangle, U = \langle \bar{b} \rangle \langle \bar{r} \rangle \langle \bar{L} \rangle \langle \bar{a} \rangle \langle \bar{b} \rangle \langle \bar{r} \rangle \rangle)$$

1	polyline	Designated stations within Frobisher Bay and Ward Inlet will be visited for sampling. The primary focus is in the head of Frobisher Inlet near Iqaluit town, See project description/map. We can provide specific coordinates too if desired
2	point	Station IQB1
3	point	Station IQB2
4	point	Station IQB3
5	point	Station IQB4
6	point	Station IQB5
7	point	Station IQC1
8	point	Station IQC2
9	point	Station IQC3
10	point	Station IQWFB01

11 point	Station IQWFB02
12 point	Station IQWFB03
13 point	Station IQWFB04
14 point	Station IQWFB05
15 point	Station IQWFB06
16 point	Station IQWFB07
17 point	Station IQWFB08
18 point	Station IQWFB09
19 point	Station IQD1
20 point	Station IQ2A
21 point	Station IQ2B
22 point	Station IQ2C
23 point	Station IQD3
24 point	Station IQD4
25 point	Station IQD5
26 point	Station IQWI1 - station of opportunity
27 point	Station IQWI2 - station of opportunity
28 point	Station IQWI4 - station of opportunity
29 point	Station IQWI5 - station of opportunity
30 point	Station IQWI6 - station of opportunity
31 point	Station IQWI7 - station of opportunity
32 point	Station IQWI8 - station of opportunity
33 point	Station IQWI9 - station of opportunity
34 point	Station IQWI10 - station of opportunity
35 point	Station IQWI11 - station of opportunity
36 point	Station IQWI12 - station of opportunity
37 point	Station FB001
38 point	Station FB002
39 point	Station FB003
40 point	Station FB004
41 point	Station FB008
42 point	Station FB012
43 point	Station FB013
44 point	Station FBZP5
45 point	Station FBZP6
46 point	Station FBZP7
47 point	Station FBZP8
48 point	Station FB021
49 point	Station FB022
50 point	Station FB023
51 point	Station FB024
52 point	Station FB025

53 point	Station FB026
54 point	Station FB027
55 point	Station FB028
56 point	Station FB029
57 point	Station FB030
58 point	Station FB031
59 point	Station FB 32
60 point	Station IQA1
61 point	Station IQA2
62 point	Station IQA3
63 point	Station IQA4
64 point	Station IQA5