

$\gamma_b \Delta^c \dot{\gamma} \cap \sigma^b \quad \wedge c_n \nabla^{\gamma_b} \gamma_{\sigma} \nabla^{\alpha_b} L^{\alpha}_{\sigma}$

Marine Based Scientific Research: This is a low impact study using a vessel of opportunity. The research group is made up a graduate student Nicole Trenholm, an American Polar Explorer Matt Rutherford and two Canadian pleasure yacht adventurers on the Sailing Vessel Toboggan. The study will occur during the voyage from July 28 to August 26, 2018. The graduate student heads back to University Maryland Baltimore County Geographic Environmental System Program departing at Gjoa Haven, while the rest of the team continues on through the passage. The work involves a 4 day stop at Croker Bay in a 40 foot sailing boat for oceanographic surveys. Alternative fly out locations includes Pond Inlet and Resolute. Location: Qikiqtani Region [Croker Bay and Northwest Passage Transit]In Croker Bay, the graduate student will assess the ocean warming factor in glacial mass ice loss of the Devon Ice Cap. She is collaborating with Dr. Clark Richards at DFO and Dr. Andrew Hamilton of University of Ottawa on the greater contribution of their research assessing Canadian ocean circulation and Devon Ice Cap Cryospheric conditions.Nicole, intends to test additional sea and ice surface observation collection methods to improve satellite models of sea ice concentration of the National Weather Service. This will occur only with appropriate conditions. If her observations are greatly beneficial to improve National Weather Service models then she will apply for permits and contact NIRB and NPC to request local volunteer observations from Nunavut communities as well as her own additional observations on future cruises.She does not have a community outreach component associated with this earlier project phase in 2018 but is open to Nunuvut school and public collaborators in contacting her to consider educational outreach partnerships going forward. nicolet3@umbc.eduThis project is sponsored by the Ocean Research Project 501c3 and the team of the vessel of opportunity, SV Toboggan.

▷ΔΑΠΝΩ^c: n/a

[illegible]

Inuinnaqtun: n/a

Personnel

Personnel on site: 4

Days on site: 4

Total Person days: 16

Operations Phase: from 2018-07-28 to 2018-08-26

ለፍጥነት ማረጋገጫ

ደረጃ	የፍጥነት ማረጋገጫ ለፍጥነት ማረጋገጫ	የፍጥነት ማረጋገጫ	ጋራ የፍጥነት ማረጋገጫ ለፍጥነት ማረጋገጫ	ፍጥነት ማረጋገጫ ለፍጥነት ማረጋገጫ	የፍጥነት ማረጋገጫ ለፍጥነት ማረጋገጫ
NW Passage, Croker Bay	Marine Based Activities	Marine	N/A	N/A	Pond Inlet, Gjoa Have, and Resolute

ፍጥነት ማረጋገጫ ለፍጥነት ማረጋገጫ ለፍጥነት ማረጋገጫ ለፍጥነት ማረጋገጫ

ፍጥነት ማረጋገጫ	ፍጥነት ማረጋገጫ	ፍጥነት ማረጋገጫ	ፍጥነት ማረጋገጫ
Information is not available			

$\Delta^{\alpha} \Gamma^{\beta} \Lambda^{\gamma} \Sigma^{\delta}$

$a^b r^a \sigma^b \wedge c^e d^e \Delta \sigma^e \gamma^c \cap \cap \gamma^c \omega^c:$

Transboundary

Kitikmeot

North Baffin

[illegible][illegible]

Project transportation types

Transportation Type	Transportation Mode	Length of Use
Water	recreational yacht	

Project accomodation types

◁ ୨୦୧୬,

◀▷↳◀⁹⁶▷⁹⁶

Λ⁹d^c d^ab^rz⁶ d⁷₆Cdσ⁻D⁴z⁶ Δ^c₆rDn⁻r^c ΔjCΔ^c, Γ⁻₃dPñ^c, ⁶b⁶LCj⁶, με^rD^c d^r^ab^rc⁻

ᐃᓕᓴᓴᓴ ᐱᓴᑦ ᐃᐅᓴᐅᓂᐃᓴᐅᓴ ᓴᓄᐃᑦᐅᓂᓴᓴ	ᓴᓴᑦᓴᐅᑦᑦ	ᐃᓴᓴᓂᓴᓴᑦ - >ᓴᓴᐅᓂᓴᓴᑦ	ᓴᓴᑦᑦ ᐃᐅᓴᐅᓂᐃᓴᑦ
yacht	1	39 feet	cruise, research
Might have backup instrument: USB2000+	1	0.1m	Back up sea surface observations, temperature
RBR Conductivity, temperature and sound speed (CTD) probe	1	0.3	surface and water column data

[illegible]

ᐱᓄᑦ ᐅᖃᐱᔭᒻᕈᐳᖃ ᐳᐵᐤᓂᐳᖃ	ᖃᓄᐳᐣᓚᓇᐅᑉ ᐅᖃᐱᔭᒻᕈᐳᖃ	ᖃᓚᐅᑉ ᐅᖃᐱᔭᖃᐅᐰᓚ	ᐱᖃᐲᓚ ᐳᖃᖃᐱᒻᕈᓄᖃᓴᓴ	ᓇᐱᓚᐱ	ᐱᖃᐲᓚ ᐳᐱᐱᓂᖃᐱᓚ	ᐱᓄᑦ ᐳᐵᐤᓂᐳᖃ
Gasoline	fuel	3	300	900	Gallons	inboard engine when needed

$$\Delta L^{\epsilon_b} \quad \triangleleft \triangleright^{\epsilon_b} C \triangleright \triangleleft \dot{L}^{\epsilon_b} \triangleright^{\epsilon_b}$$

$\Delta^c \rightarrow C\bar{L}^{sb} \rightarrow D^{sb}CD_{\sigma}\Delta^{sb}^{sb}$	$^{sb}_{\sigma}^{sb} \Delta\Gamma^{sb}C^{sb}C^{\dagger}\sigma\Delta^{sb}<^c$	$aP^c \Delta\Gamma^{sb}C^{sb}C^{\dagger}\sigma\Delta^{sb}<^c$
1	Carry drinking and washing water needs from Greenland	Greenland

$\triangleleft^b C d^c$
$$\Delta^b C d_C \sim \sigma \Delta^a \sigma^a$$
[illegible]
$$4^a 6^b 7^c 8^d 9^e 10^f 11^g 12^h 13^i 14^j 15^k 16^l 17^m 18^n 19^o 20^p 21^q 22^r 23^s 24^t 25^u 26^v 27^w 28^x 29^y 30^z$$

More collaborative research discoveries between Canadian agency and academic researchers with US academic researchers.

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

SECTION F1: Site Cleanup

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

Survey observations regarding the ice and ocean physical and environmental conditions in the NW Passage and Crocker Bay.

SECTION H2: Disposal At Sea

SECTION 11: Municipal Development

ᐱᓪᑦ ᐃᑲᐅᕈᖅ ᖃᔭᐃᕐᑐᒃ ᑎᐅᓂᖅ: ᔭᐅᕈᖅ ᖃᔭᐃᕐᑐᓂᖅ

ᐱᓪᑦ ᐃᑦᐅᐅᑦ ᖃᓄᐃᑦᑐᑦ ᑕᐲᐅᓂᓴᓚᑦ; ᐅᐭᐳᖃᑕᖃᖃᓂᓴᓚᑦ

ᐱᓪᓇ ᐃᑦᐅᐅᑦ ᖃᓄᐃᑦ)ᑦᑕᑎᐅᓂᖅ: ᐃᓄᑦᑎᓂᖅᑐᖅᐳᑦ-ᐱᑦᑦᑕᐃᑦᑕᑎᓂᖅᑐᖅᐳᑦ

Miscellaneous Project Information

7/12/2018 Additional details request: As the Canadian vessel approaches the Northwest Passage the Canadian Captain will assess the ice conditions to determine if the 2 Americans can be checked into the country in a navigable open port. If conditions do not permit stopping in Pond Inlet then the Canadian Captain will call the proper authorities to provide arrival Passport information and details for checking in the 2 Americans. All aboard are familiar with this process. The 2 Americans are planned to depart from Gjoa Haven and fly back to the US around the 25th of August. If ice conditions do not allow the 2 Americans may depart from a different ice free harbor town such as Resolute or Pond Inlet. The two Canadians will continue on through the Northwest Passage keeping to the Canadian Coast Guard mandatory 24 hour position check in and departure from Canadian waters. The two Canadians continue through the Northwest Passage to International waters and then Alaska.

[illegible]

Cumulative Effects

Impacts

[illegible][illegible]
$$(P = \langle b \rangle \dot{a} \dot{p} \cap \dot{r}^a \dot{q}^b)^c, N = \langle b \rangle \dot{p} \dot{r}^a \dot{r}^b \dot{q}^c \langle \dot{c} \dot{d} \dot{r}^a \dot{r}^b \rangle^c \dot{q}^c \dot{r}^c \dot{q}^c, M = \langle b \rangle \dot{p} \dot{r}^a \dot{r}^b \dot{q}^c \langle \dot{c} \dot{d} \dot{r}^a \dot{r}^b \rangle^c \dot{q}^c \dot{r}^c \dot{q}^c, U = \dot{q}^b \dot{p} \dot{r}^a \dot{q}^b \dot{r}^c \dot{q}^b)$$

PROJECT MAP



LIST OF PROJECT GEOMETRIES:

1	polyline	NW Passage, Croker Bay
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