

New

Scientific Research

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$\text{b}^{\flat}\Delta^{\flat}\dot{\text{c}}\text{n}_{\sigma^{\flat}} \quad \Lambda_{\tau}\text{n}\nabla^{\flat}\text{b}^{\flat}\sigma\nabla\text{n}\nabla^{\flat}\text{l}^{\flat}\sigma^{\flat}$

Project title Carboniferous Basins in Svalbard, Canada and the Barents Sea Researchers names and affiliations Leader: Jean-Baptiste Koehl, University of Calgary, Calgary, Canada; University of Oslo, Oslo, Norway One field assistant to be named. Project location The study area is located on the Grinnell Peninsula, in Northwest Devon Island, along the Lyall River. Timeframe Three to four weeks between June 15th and August 15th 2019. Project description Purpose The project aims at studying 360-325 million years old sedimentary rocks in NW Devon Island. The project will investigate the context of deposition of these rocks and compare them to analogous rocks in Svalbard and the Barents Sea (Norway). Goals and objectives The project will test three main hypotheses: 1. Testing that the studied rocks were deposited within a large depression bounded by large cracks. 2. Testing that these rocks deposited while the tectonic plates were diverging. 3. Testing the influence of adjacent basement rocks on the deposition and deformation in the studied rocks. Methods of transportation Twin Otter from Resolute Bay to the Grinnell Peninsula or strip designated by the PCSP. If needed, helicopter transportation from Twin Otter landing site to study area. Daily walks from the campsite to the outcrops. Structures to be erected Two personal tents will be erected at the campsite. Restoration/abandonment plans The camp site will be restored to its original conditions and photos will be taken by the field participants prior and after abandonment following the legislation in place. All unburnt waste will be bagged and transported back to Resolute Bay. Methodology Collection protocol and mechanism About 70 small rock samples (less than 0.5 kg each) will be collected for geochemical, structural, microscopic, and geochronological analyses. The samples will be collected using a geological hammer and a chisel and will be catalogued and stored at the University of Calgary. No fossil will be collected. Use of data The data will be published in Gold Open Access peer-reviewed scientific journals and be freely accessible to anyone who wishes to use them. The data will also be accessible on repositories at the University of Calgary. Reporting Six to eight peer-reviewed articles and two to three popular science articles will result from this project. The results will be disseminated through international and specialized scientific conferences and popular science events. Report to the communities and the media will be provided upon request.

Titre du projet Basins Carbonifères au Svalbard, Canada et en Mer de Barents
 Noms des chercheurs et affiliations Leader : Jean-Baptiste Koehl, Université de Calgary, Calgary, Canada ; Université d'Oslo, Oslo, Norvège
 Un assistant de camp de terrain à être nommé.
 Localisation du projet La zone d'étude est située sur la Péninsule de Grinnell, au nord-ouest de l'île Devon, proche de la Rivière Lyall.
 Agenda Trois à quatre semaines entre le 15 juin et 15 août 2019.
 Description du projet
 Objet de recherche Le projet est une étude de roches sédimentaires vieilles de 360-325 million d'années sur l'île Devon, au nord-ouest. Le projet étudiera le contexte de déposition de ces roches et les comparera à des roches similaires au Svalbard et en Mer de Barents (Norvège).
 Buts et objectifs Le projet testera trois hypothèses principales :
 1. Tester que les roches étudiées ont été déposées dans une large dépression limitées par de larges fractures.
 2. Tester que ces roches ont été déposées pendant que les plaques tectoniques étaient en divergence.
 3. Tester l'influence d'adjacentes roches de socle sur la déposition et déformation des roches étudiées.
 Méthodes de transport Twin Otter depuis la baie Resolute à la Péninsule de Grinnell ou zone désignée par le PCSP. Si besoin, transport en hélicoptère depuis la zone d'atterrissage du Twin Otter à la zone d'étude. Marches journalières depuis le camp jusqu'aux affleurements.
 Structures à être érigées Deux tentes personnelles vont être dressées sur la zone du camp.
 Plans de restauration et d'abandonnement Le camp sera restauré dans ces conditions originales et des photos seront prises par les participants avant et après abandonnement suivant la législation en place. Tout déchet non-brulé sera placé dans un sac et transporté à la baie Resolute.
 Méthode Protocole d'échantillonnage Près de 70 échantillons de roches (de moins de 0.5 kg chacun) seront prélevés pour analyses géochimiques, structurales, microscopiques,

[illegible]

Operations Phase: from 2019-07-01 to 2019-07-26

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Grinnell Peninsula, study of rock outcrops of the Emma Fiord Formation.	Camp	Crown	None.	None.	250 km from Resolute Bay.
Grinnell Peninsula, study of rock outcrops of the Emma Fiord Formation.	Researching	Crown	None.	None.	250 km from Resolute Bay.
Grinnell Peninsula, study of rock outcrops of the Emma Fiord Formation.	Sampling sites	Crown	None.	None.	250 km from Resolute Bay.

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ᖃᐅᓯᐱᓪᐸᓲᐅ ᓴᓵᐅᓪᐸ	Jodi MacGregor	Polar Continental Shelf Program	2018-10-24

ᄃᆞᆯ ᄇᆡᆫ ᄂᆡᆫ ᄅᆡᆫ ᄈᆡᆫ ᄉᆡᆫ ᄊᆡᆫ

$a^{\dagger}r d^{ab} r^a \sigma^b \wedge c_n d n^e \Delta D \sigma d^{fb} D^c$ $\cap \cap \nabla^f \omega^c:$

North Baffin

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ᐱᕋᑦ ᓂᔭᒃᑐᑦ ᖁᕈᑦ ᓄᕇᑎᓪᓴᑦ	ᓅᓵᑦ ᓆᕏᓲᓯᓪᓰᓪᓴᑦ ᐳᓶᑦ ᓀᑦᓸᓮᓾᓯᓪᓰᓪᓴᑦ	ᓂᔨᑦ ᓅᓵᑦ ᓆᕏᓲᓯᓪᓰᓪᓴᑦ	ᓂᔩᓯᓪᓰᓪᓴᑦ / ᓂᔩᓯᓪᓰᓪᓴᑦ ᓂᔩᓯᓪᓰᓪᓴᑦ	ᓂᔩᓯᓪᓰᓪᓴᑦ
ᓂᔩᓯᓪᓰᓪᓴᑦ ᓂᔩᓯᓪᓰᓪᓴᑦ ᓂᔩᓯᓪᓰᓪᓴᑦ ᓂᔩᓯᓪᓰᓪᓴᑦ	Scientific Research License	Applied, Decision Pending		
ᓂᔩᓯᓪᓰᓪᓴᑦ ᓂᔩᓯᓪᓰᓪᓴᑦ ᓂᔩᓯᓪᓰᓪᓴᑦ	Application for use without a Water License	Applied, Decision Pending		
ᓂᔩᓯᓪᓰᓪᓴᑦ	Nunavut Planning Commission Conformity	Active	2018-12-07	
ᓂᔩᓯᓪᓰᓪᓴᑦ	Nunavut Impact Review Board Screening	Applied, Decision Pending		

Project transportation types

Transportation Type	How Long It Took to Get to the Site	Length of Use
Air	Twin Otter and/or Helicopter	

Project accomodation types

Temporary Camp

◀▷↳◀⁹⁶▷⁹⁶

Λ⁹δ^c Δ⁹β^cΓ⁹Δ⁹σ^cΔ⁹γ^c Δ^cε^cΓ^cΔ^cΠ^cΔ^cΔ^c, Γ^cΔ^cΠ^cΔ^c, β^cε^cΓ^cΔ^c, Δ^cε^cΔ^cΔ^c

ᐃᓕᓴᑦ ᐱᓄᑦ ᐃᓚᓚᓂᐃᓕᓴᑦ ᓖᓗᐃᑦᓂᓴᓚ	ᓖᓗᓴᑦ	ᐃᓕᓴᓂᓴᓴᑦ - ᓇᓚᓂᓴᓴᑦ	ᓴᓚᑦ ᐃᓚᓚᓂᐃᓕᓴᑦ
Aircraft	1	20*16*6	Transportation of two field participants between Resolute Bay and the study area in Devon Island in Twin Otter.
Aircraft	1	11*11*4	If needed, transportation of he two participants by helicopter (Astar) from the Twin Otter landing site to the camp site.

[illegible][illegible]

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

$\Delta^c \rightarrow C\bar{L}^{qb} \rightarrow D^{qb}CD_{\sigma}\Delta^{qb}{}^{qb}$	${}^{qb}\omega^{qb} \Delta\Gamma^{qb}C^{qb}{}^cC^q\sigma\Delta^{qb}{}^c$	$aP^c \Delta\Gamma^{qb}C^{qb}{}^cC^q\sigma\Delta^{qb}{}^c$
0	Plastic containers.	Nearby snow patches and Lyall River.

$\triangleleft^b C d^c$
$$\Delta^b C d_C \sim \sigma \Delta^q \sigma^q$$
[illegible]

$\triangleleft \triangleleft \cap \Gamma \triangleright C \div^C \supset^C$ $\triangleleft^b \supset^{fb} C \triangleright \neg L \neg^C$

The project participants will establish a temporary camp of three tents if possible away from any fauna and flora. The site will be restored to its original condition prior to departure. Small rock samples will be taken in the field. To mitigate the negative impact on surface and bedrock geology, only small (hand-sized) specimen and loose blocks will be taken.

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

SECTION H2: Disposal At Sea

SECTION 11: Municipal Development

[illegible]

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Miscellaneous Project Information

The camp will be set in areas without vegetation and the camp site will be restored to its original condition. The field participants will carry at all time HF transceivers and a satellite phone and communicate their plans to basecamp in Resolute Bay twice a day. Waste will be burned, bagged, sealed, and brought back to Resolute Bay.

$a \rightarrow b^c$ \Rightarrow $b^c \rightarrow a^c$ $a \rightarrow b^c$ \wedge $c \rightarrow d^e$ \Rightarrow $a \rightarrow d^e$

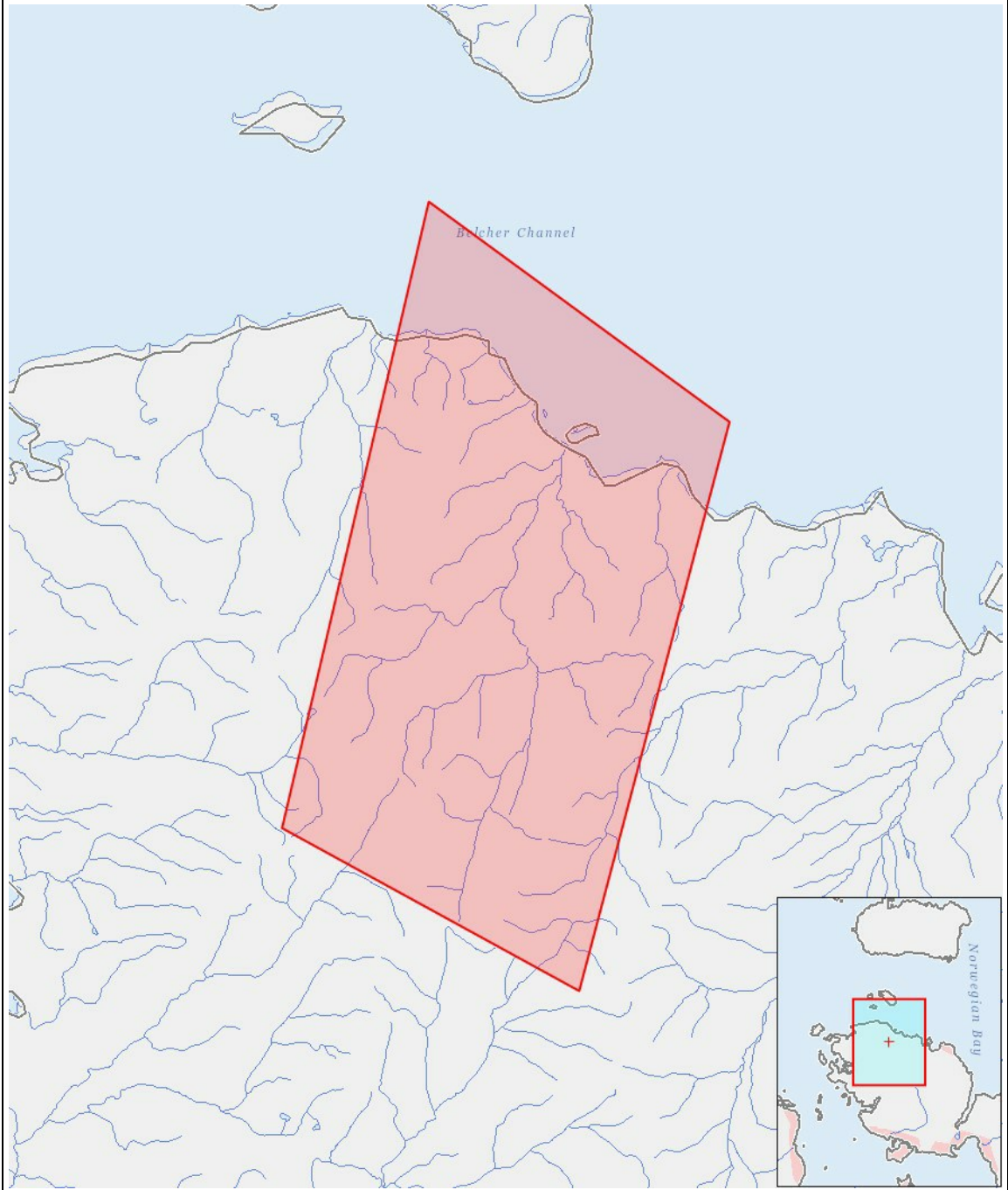
Rock samples will be taken from outcrop of the Emma Fiord Formation. To mitigate the impact on the bedrock only small (hand-sized) samples will be taken and, if possible, as loose blocks.

Cumulative Effects

Impacts

$\mathcal{L}(\mathcal{A}) \cap \mathcal{L}(\mathcal{B}) = \mathcal{L}(\mathcal{A} \cap \mathcal{B})$

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



List of Project Geometries

1 polygon Grinnell Peninsula, study of rock outcrops of the Emma Fiord Formation.