
Nunavummi Qaujisaqtulirijikkut / Nunavut Research Institute

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SCIENTIFIC RESEARCH LICENSE

LICENSE # 02 031 21R-M

ISSUED TO: Jochen Halfar
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TEAM MEMBERS:

AFFILIATION: University of Toronto at Mississauga

TITLE: Past climate reconstruction using annually-layered carbonate buildups on the Nunavut shallow seafloor

OBJECTIVES OF RESEARCH:

During our cruise we will collect small carbonate (limestone) mounds on the shallow seafloor of Arctic Bay, Nunavut. These mounds contain annual bands and can form on the seafloor for hundreds of years, hence, allowing a reconstruction of Arctic climate several centuries back. Using the small vessel Vagabond we will collect mounds using SCUBA at water depths of 15-20m along SE Ellesmere Island. Mounds are generally 3-8 centimeters in diameter, up to 3 centimeters high, and can be removed from rocky seafloor using a small hammer and chisel. At each site we plan to remove 20 mounds, which are structures made up entirely of inorganic calcium carbonate that were originally formed by an underwater alga. The mounds will be analyzed for their amount of yearly growth and element composition in the laboratory, which will provide data for long time series of sea surface temperature and past sea ice reconstructions.

TERMS & CONDITIONS:

The holder of the licence will be bound by the terms and conditions of the Nunavut Impact Review Board Screening Decision Report and the Department of Culture & Heritage archaeological sites terms and conditions. The license holder will abide by all special public health protection measures imposed by Nunavut's Chief Medical Officer of Health in response to the Covid-19 Pandemic, including restrictions on non-essential travel to Nunavut. These terms and conditions will form part of this licence.

DATA COLLECTION IN NU:

DATES: August 06, 2021-August 22, 2021

LOCATION: North Baffin Island, South Ellesmere Island

Scientific Research License 02 031 21R-M expires on December 31, 2021

Issued at Iqaluit, NU on May 25, 2021


Mary Ellen Thomas
Science Advisor

