

EXECUTIVE SUMMARY OF WATER LICENCE APPLICATION

Applicant: Dr. Jeffery M. Saarela

Research Project Title: Flora of the Canadian Arctic

Location of the Undertaking:

Three locations on southern Baffin Island, Nunavut:

- (1) Katannilik Territorial Park: Mount Joy (63°15'08"N 69°35'34" W) to Kimmirut (62°50'48"N 069°52'07"W), travelling along the Soper Heritage River by canoe. 28 June – 18 July 2012.
- (2) Head of Barrier Inlet: 60 km SE of Kimmirut (62°36'23"N 68°50'29"W). 18–25 July 2012
- (3) Kimmirut and vicinity, including Taqaiqsirvik Territorial Park (Campground) where our research team will camp. 25–30 July 2012.

Description of the Undertaking:

Flora of the Canadian Arctic

The composition and distribution of plants in the Canadian Arctic is likely to experience a major shift in the coming century in response to climate change, but detailed information on plant diversity, necessary to track future change, is lacking for many Arctic regions. The plants of some Arctic regions have never been explored, and many regions are poorly and incompletely studied. Kimmirut and vicinity on southern Baffin Island is one area where plant diversity has not been studied in detail. Most plant collections from the area were made in the 1920s, over 100 years ago. Being on the southern coast and close to the mainland, southern Baffin Island may be one of the first areas in the Arctic Islands to experience predicted changes associated with climate warming. In July 2012 we propose to study plant diversity in the Kimmirut area, to document all the species that grow in the region. We propose to work at three major sites: in Katannilik Territorial Park, travelling from Mt. Joy to Kimmirut by canoe along the Soper Heritage River; at a remote site 60 km southeast of Kimmirut at the head of Barrier Inlet, which will be accessed by helicopter; and in and around the community of Kimmirut, based out of the campground at Taqaiqsirvik Territorial Park. We will also explore some remote sites accessed by helicopter, including the southern coast of Baffin Island, where the plants are different than those inland. We will document plant biodiversity at all sites by exploring (on foot) different habitats, and making collections of all the species we find. Collections will be dried in a plant press, and the specimens will be stored in the plant collection at the Canadian Museum of Nature, Ottawa, where they will contribute to on-going efforts to document all the plants in the Canadian Arctic. Our research team includes six people, and we will set up several small, temporary camps with six or seven small tents.

Water use: Water will be used only for domestic purposes (drinking, cooking, washing).

Quantity of water involved: $6 \text{ people} \times 5 \text{ L/person/day} = 30 \text{ L/day} = 0.03 \text{ m}^3/\text{day}$

Waste: Grey water (from cooking and washing). Sewage (human excrement; six people)

Other persons or properties affected by the undertaking: n/a

Predicted environmental impacts of the undertaking and proposed mitigation measures: None expected, as we will be using a very small volume of water, only for domestic purposes.