

NIRB File No. 08YN069

July 3, 2008

Dr. Marie-Claude Williamson Canadian Space Agency 6767 Route de l

Via email: Marie-Claude.Williamson@space.gc.ca

Re: Notice of Part 4 Screening for Dr. Marie-Claude Williamson's "Planetary Analogue Research" Project Proposal

Dear Dr. Williamson:

On June 6, 2008 the Nunavut Impact Review Board (NIRB or Board) received your *Planetary Analogue Research* project proposal from the Nunavut Research Institute. On June 18, 2008 the NIRB received a positive conformity determination (North Baffin Regional Land Use Plan) from the Nunavut Planning Commission in respect of this project proposal. NIRB has assigned this project proposal file number **08YN069**.

The proposed research project is located on Axel Heiberg Island, Northern Baffin Region of Nunavut. The nearest community to the proposed project areas is Grise Fiord, more than 400 km southeast to the closest research camp. The purpose of the project is to carry geoscientific surveys, and test field methods and geophysical instruments that could be used in future planetary exploration. The proposed research activities would be conducted from July 21 to August 25, 2008.

The proposed project activities would include:

- Establishment of temporary camps (totally 3 camps);
- Temporary fuel storage;
- Aircraft use for field personnel transport;
- Geoscientific surveys at Activities at McGill Arctic Research Station;
- Research activities at Lightfoot River site; including:
 - o to produce a more detailed map of the area
 - o to better understand the volcanic and structural history of the region
 - o to test the field methods and geophysical instruments could be used for future exploration missions to the Moon.
- Research activities at Agate Fiord site; including:
 - o to produce a detailed map of sulphide chimneys located in salt domes discovered in 2004
 - o to better understand the volcanic and structural history of the region
 - o to test the field methods and geophysical instruments could be used for future exploration missions to Mars
- Incineration of combustible wastes and removal of non-combustible waste.

All documents received and pertaining to this project proposal can be obtained from NIRB's ftp site at http://ftp.nirb.ca/SCREENINGS/ACTIVE%20SCREENINGS/08YN069-Marie-Claude%20Williamson/ including:

- NRI License Application
- Maps
- Non technical Project Proposal summary (in English and Inuktitut)
- NPC Conformity Determination

Pursuant to Part 4, Article 12 of the Nunavut Land Claims Agreement (NLCA), NIRB shall proceed to screen the subject Project Proposal. NIRB may request additional information at any time during the process. NIRB will copy you on screening process related correspondence and upload related documents to the above ftp site for public access.

NIRB is copying interested Parties and municipalities most affected by the project proposal with this letter, and we invite interested persons to comment directly to the NIRB by **July 14, 2008**. Please note that proposed project-specific terms and conditions, should the project proceed, have been included (**Appendix A**) for consideration and comment.

NIRB would like Parties to provide comments regarding:

- Whether the project proposal is likely to arouse significant public concern; and if so, why;
- Whether the project proposal is likely to cause significant adverse eco-systemic and socioeconomic effects; and if so, why;
- Whether the project is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (please provide any recommended mitigation measures); and
- Any matter of importance to the Party related to the project proposal.

Please send your comments to the attention of NIRB's Manager of Environmental Administration Leslie Payette by email at lpayette@nirb.ca or via fax at (867) 983-2594.

If you have any questions or concerns, feel free to contact the NIRB's Technical Advisor Li Wan at (867) 983-4606 or lwan@nirb.ca.

Sincerely,

Li Wan - Technical Advisor Nunavut Impact Review Board

Cc: Distribution List

Andrew Dunford, Nunavut Research Institute (adunford@nac.nu.ca)

Attachments:

Comment Form

Appendix A: Proposed Terms and Conditions Appendix B: The Species at Risk Act

Appendix C: Archaeological and Palaeontological Resources Terms and Conditions for Land Use Permit Holders

APPENDIX A

Recommended Terms and Conditions, pursuant to Section 12.4.4(a) of the NLCA

The Board is proposing the following or similar project-specific terms and conditions be imposed upon the Proponent through all relevant legislation:

General

- 1. Dr. Williamson (the Proponent) shall maintain a copy of the Project Terms and Conditions at the site of operation at all times.
- 2. The Proponent shall forward copies of all permits to the NIRB obtained and required for this project prior to the commencement of the project.
- 3. The NIRB shall be notified of any changes in operating plans or conditions associated with this project prior to any such change.
- 4. The Proponent shall operate in accordance with all commitments stated in the application provided to Nunavut Research Institute and the Nunavut Planning Commission.
- 5. The Proponent shall operate the project activities in accordance with all applicable Acts, Regulations and Guidelines.

Fuel Storage

- 6. The Proponent shall locate all fuel on the land with a minimum of thirty (30) metres away from the high water mark of any water body and in such a manner as to prevent their release into the environment.
- 7. The proponent is required to ensure drip trays or equivalent be used at refueling sites during project operaton.

Wildlife

- 8. The Proponent shall not harass wildlife. This includes persistently worrying or chasing animals, or disturbing large groups of animals. Deliberate feeding of any wildlife is absolutely prohibited. The Proponent shall not hunt or fish, unless the proper authorizations have been acquired.
- 9. The Proponent shall restrict aircraft/helicopter activity related to the project to a minimum altitude of 610 metres above ground level unless there is a specific requirement for low-level flying, which does not disturb wildlife.
- 10. The Proponent shall ensure that aircraft maintain a vertical distance of 1500 metres and a horizontal distance of 1500 metres from any observed groups (e.g. Ivory Gulls) of migratory birds.
- 11. The Proponent shall ensure that aircraft/helicopter do not, unless for emergency, touch-down in areas where wildlife are present.

Restoration

- 12. The Proponent shall remove all garbage, fuel barrels and debris upon abandonment.
- 13. The Proponent shall complete all clean-up and restoration of the lands/ice used prior to the expiry date of the permit.

Regulatory Requirements

In addition, the Proponent will be advised, should the project proceed, that the following legislation may apply to the project:

- 1. The *Fisheries Act* (http://laws.justice.gc.ca/en/showtdm/cs/F-14///en).
- The Nunavut Waters and Nunavut Surface Rights Tribunal Act (http://www.canlii.org/ca/sta/n-28.8/whole.html).
- 3. The **Migratory** BirdsConvention Act and Migratory BirdsRegulations (http://laws.justice.gc.ca/en/showtdm/cs/M-7.01).
- 4. The Species at Risk Act (http://laws.justice.gc.ca/en/showtdm/cs/S-15.3). Attached in Appendix B is a list of Species at Risk in Nunavut.
- 5. The Nunavut Wildlife Act which contains provisions to protect and conserve wildlife and wildlife habitat, including specific protection measures for wildlife habitat and species at risk.
- 6. The Nunavut Act (http://laws.justice.gc.ca/en/showtdm/cs/N-28.6). The Proponent must comply with the proposed terms and conditions listed in the attached Appendix C.
- 7. The Aeronautics Act (http://laws.justice.gc.ca/en/A-2/).

APPENDIX B

SPECIES AT RISK IN NUNAVUT

This list includes species listed on one of the Schedules of SARA (*Species at Risk Act*) and under consideration for listing on Schedule 1 of SARA. These species have been designated as at risk by COSEWIC (Committee on the Status of Endangered Wildlife in Canada). This list may not include all species identified as at risk by the Territorial Government.

- Schedule 1 is the official legal list of Species at Risk for SARA. SARA applies to all species on Schedule 1. The term "listed" species refers to species on Schedule 1.
- Schedule 2 and 3 of SARA identify species that were designated at risk by the COSEWIC prior to October 1999 and must be reassessed using revised criteria before they can be considered for addition to Schedule 1.
- Some species identified at risk by COSEWIC are "pending" addition to Schedule 1 of SARA. These species are under consideration for addition to Schedule 1, subject to further consultation or assessment.

Schedules of SARA are amended on a regular basis so it is important to periodically check the SARA registry (www.sararegistry.gc.ca) to get the current status of a species.

Updated: January 3, 2007

| | | | Government Organization |
|--|-------------------------|------------------|-----------------------------|
| | COSEWIC | | with Lead Management |
| Species at Risk | Designation | Schedule of SARA | Responsibility ¹ |
| Eskimo Curlew | Endangered | Schedule 1 | EC |
| Ivory Gull | Endangered ² | Schedule 1 | EC |
| Peregrine Falcon (subspecies anatum) | Threatened | Schedule 1 | Government of Nunavut |
| Ross's Gull | Threatened | Schedule 1 | EC |
| Harlequin Duck (Eastern population) | Special Concern | Schedule 1 | EC |
| Felt-leaf Willow | Special Concern | Schedule 1 | Government of Nunavut |
| | | | |
| Peregrine Falcon (subspecies tundrius) | Special Concern | Schedule 3 | Government of Nunavut |
| Short-eared Owl | Special Concern | Schedule 3 | Government of Nunavut |
| Fourhorn Sculpin | Special Concern | Schedule 3 | DFO |
| | | | |
| Peary Caribou | Endangered ³ | Pending | Government of Nunavut |
| Beluga Whale (Eastern Hudson Bay population) | Endangered | Pending | DFO |
| Beluga Whale (Cumberland Sound population) | Threatened | Pending | DFO |
| Beluga Whale (Western Hudson Bay population) | Special Concern | Pending | DFO |

| Beluga Whale | Special Concern | Pending | DFO |
|--------------------------|-------------------|---------|-----------------------|
| (Eastern High Arctic – | | | |
| Baffin Bay population) | | | |
| Bowhead Whale | Threatened 4 | Pending | DFO |
| (Hudson Bay-Foxe Basin | | | |
| population) | | | |
| Bowhead Whale | Threatened 4 | Pending | DFO |
| (Davis Strait-Baffin Bay | | | |
| population) | | | |
| Porsild's Bryum | Threatened | Pending | Government of Nunavut |
| Atlantic Walrus | Special Concern | Pending | DFO |
| Narwhal | Special Concern | Pending | DFO |
| Rusty Blackbird | Special Concern | Pending | Government of Nunavut |
| Barren-ground Caribou | Special Concern 3 | Pending | Government of Nunavut |
| (Dolphin and Union | | | |
| population) | | | |
| Grizzly Bear | Special Concern | Pending | Government of Nunavut |
| Polar Bear | Special Concern | Pending | Government of Nunavut |
| Wolverine (Western | Special Concern | Pending | Government of Nunavut |
| Population) | | | |

Environment Canada has a national role to play in the conservation and recovery of Species at Risk in Canada, as well as responsibility for management of birds described in the Migratory Birds Convention Act (MBCA). Day-to-day management of terrestrial species not covered in the MBCA is the responsibility of the Territorial Government. Populations that exist in National Parks are also managed under the authority of the Parks Canada Agency. EC = Environment Canada, DFO = Department of Fisheries and Oceans

² Designated as Endangered by COSEWIC in April 2006 and it is expected that the category of concern in SARA will also be changed from Special Concern to Endangered.

³ Peary Caribou was split into three separate populations in 1991: Banks Island (Endangered), High Arctic (Endangered) and Low Arctic (Threatened) populations. The Low Arctic population also included the Barren-ground Caribou - Dolphin and Union population. In May 2004 all three population designations were de-activated, and the Peary Caribou, Rangifer tarandus pearyi, was assessed separately from the Barren-ground Caribou (Dolphin and Union population), Rangifer tarandus groenlandicus. The subspecies pearyi is composed of a portion of the former "Low Arctic population" and all of the former "High Arctic" and "Banks Island" populations, and it was designated Endangered in May 2004. Although SARA lists Peary Caribou on Schedule 2 as three separate populations, the most current designation is the COSEWIC designation of the subspecies pearyi as Endangered.

⁴ The "Eastern and Western Arctic populations" of Bowhead Whale were given a single designation of Endangered in April 1980 by COSEWIC. These were split into two populations to allow separate designations in April 1986. The Eastern population was not re-evaluated in April 1986, but retained the Endangered status of the original "Eastern and Western Arctic populations". The Eastern Arctic population was further split into two populations (Hudson Bay-Foxe Basin population and Davis Strait-Baffin Bay population) in May 2005, and both these populations were designated as Threatened. Both these populations are under consideration for addition to Schedule 1. Although SARA lists the Eastern Arctic population as Endangered (Schedule 2), the most current designation is the COSEWIC designations of the Hudson Bay-Foxe Basin and Davis Strait-Baffin Bay populations as Threatened.

APPENDIX C

Archaeological and Palaeontological Resources Terms and Conditions for Land Use Permit Holders



BACKGROUND: Archaeology

As stated in Article 33 of the Nunavut Land Claims Agreement:

The archaeological record of the Inuit of Nunavut is a record of Inuit use and occupancy of lands and resources through time. The evidence associated with their use and occupancy represents a cultural, historical and ethnographic heritage of Inuit society and, as such, Government recognizes that Inuit have a special relationship with such evidence, which shall be expressed in terms of special rights and responsibilities. [33.2.1]

The archaeological record of Nunavut is of spiritual, cultural, religious and educational importance to Inuit. Accordingly, the identification, protection and conservation of archaeological sites and specimens and the interpretation of the archaeological record is of primary importance to Inuit and their involvement is both desirable and necessary. [33.2.2]

In recognition of the cultural, spiritual and religious importance of certain areas in Nunavut to Inuit, Inuit have special rights and interests in these areas as defined by Article 33 of the Nunavut Land Claims Agreement. [33.2.5]

BACKGROUND: Palaeontology

Under the Nunavut Act1, the federal Government can make regulations for the protection, care and preservation of palaeontological sites and specimens in Nunavut. Under the *Nunavut Archaeological and Palaeontological Sites Regulations*2, it is illegal to alter or disturb any palaeontological site in Nunavut unless permission is first granted through the permitting process.

| | Definitions |
|--|-------------|
| | |
| 1 s. 51(1) 2 P.C. 2001-1111 14 June, 2001 | |

As defined in the *Nunavut Archaeological and Palaeontological Sites Regulations*, the following definitions apply:

"archaeological site" means a place where an archaeological artifact is found.

"archaeological artifact" means any tangible evidence of human activity that is more than 50 years old and in respect of which an unbroken chain of possession or regular pattern of usage cannot be demonstrated, and includes a Denesuline archaeological specimen referred to in section 40.4.9 of the Nunavut Land Claims Agreement.

"palaeontological site" means a site where a fossil is found.

"fossil" includes:

- (a) natural casts
- (b) preserved tracks, coprolites and plant remains; and
- (c) the preserved shells and exoskeletons of invertebrates and the eggs, teeth and bones of vertebrates.

Terms and Conditions

- 1) The permittee shall not operate any vehicle over a known or suspected archaeological or palaeontological site.
- 2) The permittee shall not remove, disturb, or displace any archaeological artifact or site, or any fossil or palaeontological site.
- 3) The permittee shall immediately contact the Department of Culture, Language, Elders and Youth (867) 934-2046 or (867) 975-5500 or 1 (866) 934-2035 should an archaeological site or specimen, or a palaeontological site or fossil be encountered or disturbed by any land use activity.
- 4) The permittee shall immediately cease any activity that disturbs an archaeological or palaeontological site encountered during the course of a land use operation, until permitted to proceed with the authorization of the Department of Culture, Language, Elders and Youth, Government of Nunavut.
- 5) The permittee shall follow the direction of the Department of Culture, Language, Elders and Youth and DIAND in restoring disturbed archaeological or palaeontological sites to an acceptable condition.
- 6) The permittee shall provide all information requested by the Department of Culture, Language, Elders and Youth concerning all archaeological sites or artifacts and all palaeontological sites and fossils encountered in the course of any land use activity.
- 7) The permittee shall make best efforts to ensure that all persons working under authority of the permit are aware of these conditions concerning archaeological sites and artifacts, and palaeontological sites and fossils.
- 8) The permittee shall avoid the known archaeological and/or palaeontological sites listed in Attachment 1.

- 9) The permittee shall have an archaeologist or palaeontologist perform the following functions, as required by the Department of Culture, Language, Elders and Youth:
 - a. survey
 - b. inventory and documentation of the archaeological or palaeontological resources of the land use area
 - c. assessment of potential for damage to archaeological or palaeontological sites
 - d. mitigation
 - e. marking boundaries of archaeological or palaeontological sites
 - f. site restoration

The Department of Culture, Language, Elders and Youth shall authorize by way of a Nunavut Archaeologist Permit or a Nunavut Palaeontologist Permit, all procedures subsumed under the above operations.