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NWB file: 3BC-PRH----

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*Via email:licensingadmin@nunavutwaterboard.org*

**RE: 3BC-PRH---- New Application Gordon Osinski University of Western Ontario**

Environment Canada (EC) has reviewed the information submitted with the above-mentioned application. The following specialist advice has been provided pursuant to the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Gordon Osinski, of the University of Western Ontario, has applied for a Type "B" water license from the Nunavut Water Board (NWB) to support a research field camp on Devon Island. Project activities will investigate the processes that have occurred after the formation of the Haughton impact structure (HIS), caused by meteorite impact which occurred 39 million years ago. Rock and mineral samples will be collected by hand. Travel to the sites will be by Twin Otter aircraft and helicopter. A crew of a maximum of twelve researchers will be based out of a temporary tent camp located at 75°23'59" N 89°31'11"W and will operate between 1 July and 31 August 2010.

EC provides the following comments and recommendations for the NWB's consideration:

**Camp**

- The proponent shall not deposit, nor permit the deposit of chemicals, sediment, wastes, or fuels associated with the project into any water body. According to the *Fisheries Act*, Section 36 (3), the deposition of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.
- The proponent states that solid waste will be incinerated or flown out for disposal. If solid waste is to be incinerated, EC recommends the use of an approved incinerator for the disposal of combustible camp wastes. EC has developed a Technical Document for Batch Waste Incineration, and is available at the following web link:
  http://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=F53EDE13-1
  The technical document provides information on appropriate incineration technologies, best management and operational practices, monitoring and reporting. If the waste is to be

flown out for disposal, EC suggests that confirmation and authorization be obtained from the intended community landfill site prior to shipment.

- EC recommends that camp sewage be treated as outlined in the Polar Continental Shelf Project Operation Manual protocols, which calls for the use of a "latrine" area for handling sewage waste.
- All sumps used for the disposal of grey water shall be located above the high water mark of any water body and in such a manner as to prevent the contents from entering any water body frequented by fish.

**Spill Contingency Plan**

- Refuelling shall not take place below the high water mark of any water body and shall be done in such a manner as to prevent any hydrocarbons from entering any water body frequented by fish.
- Drip pans, or other similar preventative measures, should be used when refuelling equipment on site.
- A spill kit, including shovels, barrels, absorbents, etc. should be readily available at all locations where fuel is being stored or transferred in order to provide immediate response in the event of a spill
- EC recommends the use of secondary containment, such as self-supporting insta-berms, for storage of all barrelled fuel rather than relying on natural depressions to contain spills.
- Spills are to be documented and report to the NWT/NU 24 hour Spill Line at (867) 920-8130. EC recommends that all releases of harmful substances, regardless of quantity, are immediately reportable where the release:
    - is near or into a water body;
    - is near or into a designated sensitive environment or sensitive wildlife habitat;
    - poses an imminent threat to human health or safety; or,
    - poses an imminent threat to a listed species at risk or its critical habitat.
- Used absorbent materials, oily or greasy rags, and equipment servicing wastes (such as used engine oil**,** antifreeze, hydraulic oil, lead acid batteries, brake fluid and other lubricants) should be safely stored and transported in sealed containers (odour free to prevent animal attraction) and safely transported to a facility that is authorized for the treatment and disposal of industrial hazardous wastes.

**Wildlife and Species at Risk**

- Section 6 (a) of the *Migratory Birds Regulations* states that no one shall disturb or destroy the nests or eggs of migratory birds. If active nests are encountered during project activities, the nesting area should be avoided until nesting is complete (i.e., the young have left the vicinity of the nest).
- EC recommends that food, domestic wastes, and petroleum-based chemicals (e.g., greases, gasoline, glycol-based antifreeze) be made inaccessible to wildlife at all times. Such items can attract predators of migratory birds such as foxes, ravens, gulls, and bears. Although these animals may initially be attracted to the novel food sources, they often will also eat eggs and young birds in the area. These predators can have significant negative effects on the local bird populations.
- Section 5.1 of the *Migratory Birds Convention Act* prohibits persons from depositing substances harmful to migratory birds in waters or areas frequented by migratory birds or in a place from which the substance may enter such waters or such an area.
- EC acknowledges that low level altitude flights will be required to access sites. However, in order to reduce the cumulative impacts of aircraft disturbance to migratory birds, EC

- Plan flight paths that minimize flights over habitat likely to have birds and maintain a minimum flight altitude of 650 m (2100 feet).
- Minimize flights during periods when birds are particularly sensitive to disturbance such as migration, nesting, and moulting
- Plan flight paths to avoid known concentrations of birds (e.g., bird colonies, moulting areas) by a lateral distance of at least 1.5 km. If avoidance is not possible, maintain a minimum flight altitude of 1100 m (3500 feet) over areas where birds are known to concentrate.
- Avoid the seaward side of seabird colonies and areas used by flocks of migrating waterfowl by 3 km.
- Avoid excessive hovering or circling over areas likely to have birds.
- Inform pilots of these recommendations and areas known to have birds.

- The following comments are pursuant to the *Species at Risk Act* (SARA), which came into full effect on June 1, 2004. Section 79 (2) of SARA, states that during an assessment of effects of a project, the adverse effects of the project on listed wildlife species and its critical habitat must be identified, that measures are taken to avoid or lessen those effects, and that the effects need to be monitored. This section applies to all species listed on Schedule 1 of SARA. However, as a matter of best practice, EC suggests that species on other Schedules of SARA and under consideration for listing on SARA, including those designated as at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), be considered during an environmental assessment in a similar manner.

| Terrestrial Species at Risk potentially within project area [1] | COSEWIC Designation | Schedule of SARA | Government Organization with Primary Management Responsibility [2] |
|---|---|---|---|
| Red Knot (*islandica* subspecies) | Special Concern | Pending | EC |
| Ivory Gull | Endangered | Schedule 1 | EC |
| Peary Caribou | Endangered | Pending | Government of Nunavut |
| Polar Bear | Special Concern | Pending | Government of Nunavut |

[1] The Department of Fisheries and Oceans has responsibility for aquatic species.

[2] EC 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. Thus, for species within their responsibility, the Territorial Government is best suited to provide detailed advice and information on potential adverse effects, mitigation measures, and monitoring.

EC recommends:

- Species at Risk that could be encountered or affected by the project should be identified and any potential adverse effects of the project to the species, its habitat, and/or its residence noted. All direct, indirect, and cumulative effects should be considered. Refer to species status reports and other information on the Species at Risk registry at www.sararegistry.gc.ca for information on specific species.
- If Species at Risk are encountered or affected, the primary mitigation measure should be avoidance. The proponent should avoid contact with or disturbance to each species, its habitat and/or its residence.

- Monitoring should be undertaken by the proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of Species at Risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the proponent to avoid contact or disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested
- For species primarily managed by the Territorial Government, the Territorial Government should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize effects to these species from the project.
- Mitigation and monitoring measures must be taken in a way that is consistent with applicable recovery strategies and action/management plans.
- Ivory Gulls are medium-sized gulls that can be identified by their pure white plumage and black legs. Ivory Gulls nest in colonies on windswept plateaus, ice-choked islands, or on steep cliffs of mountains protruding from glaciers. Ivory Gulls nest on Ellesmere Island, although the proposed project is not near any known Ivory Gull nesting colonies. It is possible that Ivory Gull colonies exist in the High Arctic that have not been noted. If inland groups of gulls are encountered that could be nesting Ivory Gulls, these areas should be avoided to prevent disturbance and observations reported to the Canadian Wildlife Service of Environment Canada.
- EC notes that the Red Knot (a shorebird) was designated as at risk by COSEWIC in April 2007. Red Knot may breed on Devon Island. Although the major threats to Red Knot relate to habitat degradation in the wintering areas and decreases in food resources during spring migration, the proponent should ensure that extra precautions are taken to avoid any disturbance to the Red Knot or its habitat during the breeding season. Red Knots nest on barren habitats (often less than 5% vegetation) such as windswept ridge, slopes, or plateaus. Nest sites are usually in dry, south-facing locations, and may be located near wetlands or lake edges, where the young are led after hatching. Nests are simple scrapes on the ground in small patches of vegetation. Nesting will occur in June with hatching in early July. If an active Red Knot nest is encountered during project activities, or observations of Red Knot in the area suggest that a nest could be nearby, the proponent should avoid all activities in the area until nesting is complete (i.e., likely only resume activities in the area until after mid-July).
- Observations of Red Knots, Ivory Gulls or other birds can be reported to the Canadian Wildlife Service of Environment Canada through the NWT/NU Bird Checklist program.
  NWT/NU Bird Checklist Survey
  Canadian Wildlife Service, Environment Canada
  Nova Coast Plaza, 5019-52 Street
  P.O. Box 2310
  Yellowknife, NT
  X1A 2P7
  Phone: (867) 669-4773
  Email: NWTChecklist@ec.gc.ca

- All mitigation measures identified by the proponent, and the additional measures suggested herein, should be strictly adhered to in conducting project activities. This will require awareness on the part of the proponents' representatives (including contractors) conducting operations in the field. EC recommends that all field operations staff be made aware of the proponents' commitments to these mitigation measures and provided with appropriate advice /training on how to implement these measures.

- Implementation of these measures may help to reduce or eliminate some effects of the project on migratory birds and Species at Risk, but will not necessarily ensure that the proponent remains in compliance with the *Migratory Birds Convention Act*, *Migratory Birds Regulations*, and the *Species at Risk Act*. The proponent must ensure they remain in compliance during all phases and in all undertakings related to the project.

If there are any changes in the proposed project, EC should be notified, as further review may be necessary. Please do not hesitate to contact me with any questions or comments with regards to the foregoing at (867) 975-4631 or by email at Paula.C.Smith@ec.gc.ca.

Yours truly,

Paula C. Smith
Environmental Assessment Coordinator

cc: Carey Ogilvie (Head, Environmental Assessment-North, EPO, Yellowknife, NT)
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