P.O. Box 509
Kuujjuaq
Quebec
J0M 1C0

Tel: (819) 964 – 0888
Fax: (819) 964 – 0241
Email: info@nmrirb.ca
Website: www.nmrirb.ca

NMRIRB File No.: **00013**

Friday, June 20th 2014

Michael Janssen
Arctic Wildlife Technician
Environment Canada
National Wildlife Research Center
1125 Colonel By Drive,
Environment Canada
Ottawa, Ontario
K1S 586

Via email: michael.janssen@ec.gc.ca

Re: Screening Decision for Digges Island Seabird Project, NMRIRB File No.: 00013

Dear Mr. Janssen,

The Nunavik Marine Region Impact Review Board (**NMRIRB** or the **Board**), established pursuant to Article 7 of the Nunavik Inuit Land Claims Agreement (**NILCA**) has a mandate, under Section 7.4 of the NILCA, to screen project proposals and, further to such screening, to indicate to the relevant authorizing agencies whether a research permit may be granted to the proponent within the Nunavik Marine Region **(NMR)**. The purpose of this letter is to communicate to you the Board's screening decision as required pursuant to Section 7.4.4 of the NILCA.

The Hudson Strait-Foxe Basin region is an ecologically rich corridor, concentrating marine mammals and birds; especially common eiders, thick-billed murres, black guillemots, red-throated loons, and ivory gulls (the latter during migration only). It is also the marine gateway from the Atlantic Ocean to Hudson Bay, western Baffin Island, and the Melville Peninsula; all of which are experiencing increased resource development activities. Many of the recent development activities will result in an increase in shipping traffic through the Foxe Basin and Hudson straight. There is insufficient data to assess the ecological impacts of increased shipping traffic in Foxe Basin and Hudson Strait, because baseline data are sparse and out of date. Further research and studies are necessary to help to address these problems and will contribute to the development of future mitigation measures, emergency preparedness procedures, and long-term environmental monitoring plans in the region.

The project examines the conservation biology of common Eiders and thick-billed Murres in Hudson Strait. Both of these species are of considerable economic and cultural. Importance to subsistence harvesters and both nest in high densities along the coast of Nunavik during summer. Eiders and Murres are particularly vulnerable to disturbance during the breeding season and there are concerns that they are experiencing rapid ecological changes that could result in population declines. Increased shipping activity, outbreaks of new avian disease and cascading impacts of climate change all represent possible threats to these species and the goal of the project is to investigate these issues in order to predict the severity and extent of potential population impacts. The project's work in the region has been ongoing since the 1980's with the intent to be able to continue into 2014.

The following letter provides the results of the NMRIRB's screening of the project and its reasons for the decision.

LEGAL FRAMEWORK

As you are probably aware, section 2.11 of the NILCA provides that:

> *Where there is any inconsistency or conflict between any federal, territorial and local government laws, and this Agreement, this Agreement shall prevail to the extent of the inconsistency or conflict.*

The primary objectives of the NMRIRB are set out in Section 7.2.5 of the NILCA as follows:

> *In carrying out its functions, the primary objectives of NMRIRB shall be at all times to protect and promote the existing and future well-being of the persons and communities resident in or using the NMR, and to protect the ecosystemic integrity of the NMR. NMRIRB shall take into account the well-being of residents of Canada outside the NMR.*

In screening a project proposal, the NMRIRB under section 7.4.2(a) of the NILCA is required to determine that a review is required, when in its judgement:

> *(i) The project may have significant adverse effects on the ecosystem, wildlife habitat or Nunavik Inuit harvesting activities,*
> *(ii) The project may have significant adverse socio-economic effects on northerners,*
> *(iii) The project will cause significant public concern, or*
> *(iv) The project involves technological innovations for which the effects are unknown;*

Section 7.4.4 of the NILCA states:

> *Upon receipt of a project proposal, NMRIRB shall screen the proposal and indicate to the Minister in writing that:*
> a) *the proposal may be processed without a review under Part 5 or 6; NMRIRB may recommend specific terms and conditions to be attached to any approval, reflecting the primary objectives set out in Section 7.2.5;*

b) *the proposal requires review under Part 5 or 6; NMRIRB shall identify particular issues or concerns which should be considered in such a review;*
c) *the proposal is insufficiently developed to permit proper screening, and should be returned to the proponent for clarification; or*
d) *the potential adverse impacts of the proposal are so unacceptable that it should be modified or abandoned.*

Pursuant to Subsection 7.4.2 (b) of the NILCA, a review is generally not required when, in NMRIRB's judgement, the project is unlikely to arouse significant public concern and;

(i) *The adverse ecosystemic and socio-economic effects are not likely to be significant, or*
(ii) *The project is of a type where the potential adverse effects are highly predictable and mitigable with known technology*

Subsection 7.4.2 (c) instructs the NMRIRB to give greater weight to the provisions of 7.4.2 (a) in determining whether a review is required or not.

NMRIRB ASSESSMENT AND DECISION

After a thorough assessment of all material provided to the Board (please see *Procedural History and Project Description* in **Appendix A**), in accordance with the principles identified within Section 7.4.2 of the NILCA, the decision of the Board as per Section 7.4.4 of the NILCA is that:

> ***(A)**: "the proposal may be processed without a review under Part 5 or 6; NMRIRB may recommend specific terms and conditions to be attached to any approval, reflecting the primary objectives set out in Section 7.2.5;"*

CONCLUSION

The present decision of the Board is based on the fact that the project's scope does not trigger the NILCA EA process, due to its negligible potential for impact in the NMR through access to Digges Island.

RECOMMENDATIONS TO THE LAND ADMINISTRATOR

The NMRIRB has carefully considered factors set out in sections 7.4.2 (a) and 7.4.2 (b) of the NILCA. The Board regards the project to have minimal impact on Digges Island at this time. However, the Board would like to ensure that any and all permitting conditions placed on this project by the Nunavik Marine Region Wildlife Board must be adhered to.

Additionally, any protective measures to be undertaken while at the cabin on Digges Island must include accessibility deterrents for any marine mammals in close proximity of the encampment. With the assurance that during the capture and banding of murres that no stress is exhibited, that all activities are monitored with attention to ensuring that implication. With regard to the Common Eider survey, the research team must ensure that nests are not disturbed and that any dead collected are recorded and reported before. Any activities to be undertaken by the research team must be ensured are not in conflict with the hunting season and any related harvesting and shipping activities within the area. Any and all communication regarding the project between the local community of Ivujivik and the research team must be clear and transparent. It is preferable that the project utilize wherever appropriate local expertise and services.

The NMRIRB will also request that the research team provides a report of their activities after completion of the field-work and apprise the Board of the results of their analysis in a report format.

Therefore, pursuant to Section 7.4.4 (a) of the NILCA, the Board concludes that the Project may proceed without a review under Part 5 or 6 of the NILCA.

The NMRIRB looks forward to your communication on this matter with the Project Coordinator in question as well as any relevant parties to this decision.

Yours Truly,

Putulik Papigatuk
Chairperson
Nunavik Marine Region Impact Review Board
Email: info@nmrirb.ca
Dated: Friday June 20th 2014, at Kuujjuaq, QC.

Attachments:
Appendix A - Procedural History and Project Description

Procedural History

The Hudson Strait-Foxe Basin region is an ecologically rich corridor, concentrating marine mammals and birds; especially common eiders, thick-billed murres, black guillemots, red-throated loons, and ivory gulls (the latter during migration only). It is also the marine gateway from the Atlantic Ocean to Hudson Bay, western Baffin Island, and the Melville Peninsula; all of which are experiencing increased resource development activities. Many of the recent development activities will result in an increase in shipping traffic through the Foxe Basin and Hudson Strait. There is insufficient data to assess the ecological impacts of increased shipping traffic in Foxe Basin and Hudson Strait, because baseline data are sparse and out of date. Further research and studies are necessary to help to address these problems and will contribute to the development of future mitigation measures, emergency preparedness procedures, and long-term environmental monitoring plans in the region.

The project examines the conservation biology of common Eiders and thick-billed Murres in Hudson Strait. Both of these species are of considerable economic and cultural. Importance to subsistence harvesters and both nest in high densities along the coast of Nunavik during summer. Eiders and Murres are particularly vulnerable to disturbance during the breeding season and there are concerns that they are experiencing rapid ecological changes that could result in population declines. Increased shipping activity, outbreaks of new avian disease and cascading impacts of climate change all represent possible threats to these species and the goal of the project is to investigate these issues in order to predict the severity and extent of potential population impacts. The project's work in the region has been ongoing since the 1980's with the intent to be able to continue into 2014.

The file was received by the NMRIRB through Makivik Corporation's Renewable Resources Department in June. Makivik will be deciding on the Entry and Access permit shortly. The NMRWB has also reviewed and approved the research project. This file is an annually recurring project and has been previously approved by the NMRIRB via a Screening Decision Report dated May 17th 2013 (**NMRIRB File No.: 00006**).

Project Description

As worded in the Project Application:

Thick billed Murres

The purpose of our work with Thick billed Murres is to estimate the distribution and abundance of marine birds in the Hudson Strait-Foxe Basin region throughout the year, and to assess the interactions of bird populations with proposed development activities; particularly year-round shipping. Our research goals are broad and require work in both Nunavut and the Nunavik Marine Region.

The objective of our work in Nunavik is to investigate the foraging range of thick-billed Murres from the Digges Island Murre colony in summer to assess whether Murres forage within the proposed Hudson Strait shipping lane during the breeding season. We are also interested in using movement data from Murres on Digges Island to develop a monitoring protocol that can be used for other Murre colonies in Hudson Strait, such as Akpatok Island. This protocol would allow us to determine whether shipping activities influence Murre colonies within the Nunavik Marine Region. To do this we plan to use small GPS devices to track individual Murres on foraging trips during the breeding season and determine the important marine habitat areas for the colony as a whole. We also hope to assess the energetic expenditure of different foraging behaviours and relate this to breeding success of individuals.

Common Eiders

We are investigating two issues of particular management importance. The first issue is outbreaks of avian cholera. Avian cholera is one of the most lethal diseases of birds in North America and it appears to be a new disease for eiders in the North. Mass mortality events have been observed at several locations in Nunavut and Nunavik since 2004. Our objective is to determine the geographic extent of the outbreaks and to collect epidemiological data for laboratory analysis in order to help us to predict the severity and spread of disease.

The second issue that we are examining is predation of common eider nests by polar bears. Reports from multiple Inuit communities in Nunavik indicate that increasing numbers of bears are being seen on bird colonies during the nest incubation period. It has been hypothesized that one consequence of climate change is that polar bears will be forced ashore sooner because of early sea ice melt. Eider eggs are a potential alternative food source that bears can eat when they cannot capture seals. Our objective is to estimate nest predation rates by polar bears, determine the energetic benefits and limitations of this resource for bears, and examine the effects of increased nest predation on eider reproductive rates and population dynamics.

Our research methodology emphasizes close collaboration with local communities. Our conm1on eider surveys are boat-based and we hire local Inuit guides as boat captains and to assist with data collection. We also hire boat captains for work with Thick billed Murres and rely extensively on local ecological knowledge for guidance on research protocols- such as where to sample and when. Ultimately, we hope to be able to work together with northern residents to quantify the effects that disease, shipping, and increased predation are having on seabirds, assess the potential for these pressures to intensify with further climatic warming, and identify management interventions to mitigate local and regional population declines.

Field Methodology

Digges Island- Thick billed Murres

We plan to conduct field work from July 8- August 15, 2014. There is already a research cabin on Digges Island, and we will use a helicopter to transfer four researchers, equipment and food from Ivujivik to the research site on Digges Island on July 8. Two additional members of the research team will get to the island with the help of an Inuit guide and their boat on July 15. We plan to charter an Inuit guide and boat from Ivujivik to help with field work on nearby Cape Wolstenhome

for several days in July and August. During the period of field work, the 5 researches will capture thick-billed Murres and affix small tracking devices to individual Murres, that will be removed before leaving the field site. We will also remove small geolocator devices that were deployed on Murres last year.

Capture and Banding

Thick billed Murres will be captured on their breeding ledges via noose-pole. This technique is commonly used for capturing cliff nesting Murres and allows quick capture of targeted individuals, minimizing stress to the captured individual and other individuals in the vicinity.

We will place a metal US Fish and Wildlife Service (USFWS) band on the right tarsus. We will

Also take standard morphological measurements of the individual at the time of capture, including weight, wing chord length, bill length and depth, and tarsus length.

Sampling

A small blood sample (0.3-0.5 ml) will be taken from the brachial vein using a needle and capillary tubes. This blood will be used for DNA sexing of individuals. We will also sample 4 covert feathers for stable isotope analysis, to determine diet composition during the previous post-breeding season.

Tracking devices

We will retrieve the small (2.5 gram; less than 0.5% of body weight) geolocators, deployed in 2012, from the 15 individual Murres that carried the units through the annual cycle. The geolocators are affixed to a plastic leg band that is applied to the left tarsus of the bird.

We will also use GPS devices (18 grams; less than 2% of body weight) to track movements of individuals during the breeding season. GPS units will be affixed to the back of the bird using TESA tape and deployed for 2-7 days. Individuals will be re-captured after this period to retrieve the GPS unit. Individual mmTes will not be simultaneously burdened with a GPS unit and geolocator.

Field Camp

There is a small research cabin on Digges Island, which we will use to sleep in and cook in. We attempt to minimize the impact our project has on the land, water, and wildlife. We will not use any motorized vehicles on the island, and will have a small amount of gasoline for use in a generator. We store food and gear appropriately to avoid contaminating the surrounding areas. We burn garbage at high temperatures and will transport non-combustible material back to the municipal landfill in Ivujivik. We dispose of grey water in sumps that are back-filled to match the contours of the landscape.

We will have an Emergency Spill Kit for the fuels used in camp and fuel is stored in Jerry Cans in a sump to localize any potential spills.

Digges Sound- Common Eiders

The complexity and geographic scope of our project requires community-based research and monitoring. Coordinated studies are currently underway in Nunavut making it possible to examine regional conservation issues.

Our surveys are conducted in July, which is when eider females incubate nests. In advance of the field season we select islands ranging in size from 0.1 to 5.0 km2 for survey. These islands are supplemented with additional locations recommended by our guides to ensure that a range of colonies with different habitat characteristics and eider abundance are visited. The islands are accessed by boat and circled upon arrival to determine whether bears were present. After landing, a search is made on foot by 3-6 people walking 10-25 m apart in successive linear sweeps until the entire island is investigated. Nests are easily found because there is little vegetation and current

year breeding attempts can be reliably distinguished from previous years' attempts by the presence of fresh clown, which eiders pluck to line their nest bowls. When a nest is found, we recorded its status as active-a nest containing an incubating hen, eggs or newly hatched ducklings, or empty-a nest in which fresh down was present but a hen, eggs, or ducklings were not present. We also note signs of potential nest predators, including polar bears, foxes, and gulls. For polar bears, the principal signs are seeing animals, finding feces, and encountering large numbers of nests that had been destroyed in which feather down is strewn widely around the nest bowl and eggs have been broken open by large crushing bites or blows. For the disease sampling, we collect water samples from ponds on Eider colonies (N = 200), Eider and gull feces (N = 200) and we salvage any dead birds that we encounter for necropsy. Samples are shipped south the Western Veterinary College in Saskatoon in coolers and -70° C liquid nitrogen cryoshippers.

Inuit Traditional Ecological Knowledge is an important part of our study. In Nunavut, project collaborator Dominique Henri (Oxford University) conducted formal TEK interviews with Inuit elders and harvesters to assess the spatial and temporal scales of avian cholera outbreaks (2007-2009). PhD student Sam Iverson (Carleton University) is building on this work in Nunavut and Nunavik by conducting studies on the land. In advance the field season, we seek advice as to the optimal timing for the surveys considering ice conditions, locations where significant numbers of eiders are known to occur, past avian cholera, and the availability of guides. This project was originally intended to focus only on the impacts of avian cholera on eider populations. However, after consultation with our Inuit partners, the issue of increasing nest predation by polar bears was added to address local concerns.

In 2014 we hope to expand on previous successful work near Aupaluk, Kangiqsujuaq, Kangirsuk and Ivujivik, and continue this work in Digges Sound.

Project Outcomes

Increased shipping activity, outbreaks of new avian disease, and cascading impacts of climate change all represent possible threats to these species and our goal is to investigate these issues in order to predict the severity and extent of potential population impacts. Within three months of the completion of field work, we will provide the NMRWB with a report detailing the activities that took place and preliminary findings, as we have done in previous years. As the data become more formally analyzed and incorporated into peer-reviewed publications, these too will be sent to the NMRWB. Recent publications resulting from this work includes:

Iverson, S. A., H. G. Gilchrist, and P. A. Smith. In Press. Cascading ecological impacts of climate change: are Polar Bears feeding down the food chain? Proceedings of the Royal Society B.

Osborne, N.E. 2013. Haven in the Sky. Canadian Wildlife Magazine. July-August 2013, p.27-31.

Gaston, A.J., K.H. Elliot, Y. Ropert-Coudert, A. Kato, C.A. Macdonald, M.L. Mallory and H.G. Gilchrist. 2013. Modeling foraging range for breeding colonies of thick-billed Murres Uria lomvia in the Eastern Canadian Arctic and potential overlap with industrial development. Biological Conservation. 168, 134-143.

Communication Plan

In 2013 we worked closely with community members to achieve our research objectives and will do so again in 2014. Prior to work conducted on Digges Island we will be in contact with our partners in Ivujivik to discuss our research plans. We will also work with Inuit guides from Ivujivik to organize boat transportation between Ivujivik and Digges Island. During the first week of research, Mike Janssen will participate in a meeting in the municipal office to communicate the

purpose and methods of the research being conducted. We also expect to be in contact with local members of the Ivujivik Hunters Fishers and Trappers Association during our time in Ivujivik. As in 2013, after research is concluded for the 2014 season, a report of findings will be submitted to the Nunavik HFTA, to local HFTA members in Ivujivik, and to the NMRWB. We would also appreciate the opportunity to present our work to the NMRWB in person as we did in 2013.