

For office use only	
Date Received	Permit No.

CANADIAN WILDLIFE SERVICE PERMIT APPLICATION

NOTE TO RESEARCHERS

Without exception, all research within the NWT and Nunavut must be licensed. This includes work in indigenous knowledge as well as in physical, social, and biological sciences. For information on licensing for your project within the NWT, please refer to the Aurora Research Institute's Web site at <http://www.nwtresearch.com>. For Nunavut, visit the Nunavut Research Institute Web site at <http://www.nri.nu.ca>.

For Scientific Permits: Prior to issuing a Scientific Permit to Take, Salvage or Disturb Migratory Birds, CWS requires a copy of either an NWT or Nunavut Wildlife Research Permit; or an Aurora Research Permit/Nunavut Research Permit. Include a copy of either permit with this application or forward a copy to CWS upon receipt of it, or your CWS permit will not be issued.

Nunavut: In Nunavut your project will have to undergo screening by the Nunavut Impact Review Board. One of their requirements is that you obtain a conformity report from the Nunavut Planning Commission. Please ensure that you have done so.

To be completed by all applicants:

<input type="checkbox"/> New application
<input checked="" type="checkbox"/> Amendment/extension of existing permit
Existing permit no. NUN SCI 09 01 NUN MBS 09 01

Type of permit applied for:
<input checked="" type="checkbox"/> Bird Sanctuary permit
<input type="checkbox"/> National Wildlife Area entry permit
<input checked="" type="checkbox"/> Scientific permit to take salvage or disturb migratory birds

Territory:
<input type="checkbox"/> NWT
<input checked="" type="checkbox"/> Nunavut

Period of permit requested:
<input type="checkbox"/> 1 year
<input type="checkbox"/> 2 year
<input checked="" type="checkbox"/> 3 year

Anticipated project start date: Jun 2012
Anticipated project end date: Aug 2014

Please indicate by checkbox if your project is receiving federal government funding:
<input type="checkbox"/> No
<input checked="" type="checkbox"/> Polar Continental Shelf Project
<input checked="" type="checkbox"/> Yes/Other (please list) Environment Canada

Please indicate by checkbox if your project requires approvals/permits by any of the following regulators:	
<input type="checkbox"/> DFO	<input type="checkbox"/> NRCAN
<input checked="" type="checkbox"/> INAC	<input type="checkbox"/> Parks Canada
<input checked="" type="checkbox"/> NWT or Nunavut Water Board	
<input type="checkbox"/> NEB	

1. CONTACT INFORMATION

Applicant name and mailing address Mark Mallory Acadia University 33 Westwood Dr, Wolfville, NS B4P 2R6		Fax 902 585 1059
		Phone 902 585 1798
Field supervisor	E-mail address Mark.mallory@acadiau.ca	Phone

Total number of personnel covered by application:

2. SUMMARY PROJECT INFORMATION

Project title:

Breeding ecology of high Arctic marine birds

Project objective: (concise statement of purpose and goals)

Each summer we plan to continue to study the ecology of marine birds in the Arctic as well as test for contaminants in birds and eggs.

Project description: (non-technical summary; 300 words or less; describe purpose, nature and occasion of all activities; include the anticipated intensity of vehicle use)

Prince Leopold Island (PLI) and islands in Penny Strait are key terrestrial and marine habitats for marine birds in the eastern Arctic, particularly Northern Fulmars, Thick-billed Murres, Black-legged Kittiwakes, and Arctic Terns. We still know little about the biology of most of these species, for which Canada supports a significant part of the global population and thus has significant international responsibilities. In 2012 we plan to continue to study aspects of reproduction of marine birds in the High Arctic (behavioural observations, banding), and to test bird eggs for contaminants. We also wish to attaché small recording locators (about the size of a thumbnail) to the legs of some birds to track their movements and use of various habitats in the eastern Arctic. At PLI, egg collections will be made for contaminant analyses as part of the long-term (> 30 year) monitoring program. We will enter the sixth year of work at a field site established in 2007 at a small, unnamed island in Penny Strait, where we plan to study small gulls and terns, to test for diseases and gather information on basic breeding biology.

NOTE: A full project description should accompany this application.

Activities related to project proposal: (check as many as apply)

- | | | |
|---|--|---|
| <input checked="" type="checkbox"/> Scientific research | <input type="checkbox"/> Ground surveys | <input type="checkbox"/> Storage of fuel |
| <input type="checkbox"/> Tourism, non-commercial | <input type="checkbox"/> Aerial surveys | <input type="checkbox"/> Camp construction |
| <input type="checkbox"/> Tourism, commercial | <input type="checkbox"/> Winter road | <input checked="" type="checkbox"/> Use of firearms |
| <input type="checkbox"/> Use of boats | <input type="checkbox"/> Commercial harvest | <input type="checkbox"/> Use of explosives |
| <input checked="" type="checkbox"/> Use of aircraft | <input type="checkbox"/> Cruise ship | <input type="checkbox"/> Seismic exploration |
| <input type="checkbox"/> Use of off-road vehicles | <input type="checkbox"/> Drilling activities | <input type="checkbox"/> Mining activities |
| <input type="checkbox"/> Other (please specify): | | |

Are you applying to kill, salvage or otherwise interfere with migratory birds (e.g. take blood, transmitter implant, etc.)?

Yes No

If yes, provide details, including specie(s) of bird, number and method. Indicate whether the approval of an animal care committee has been received and include the name of the committee.

15 eggs each year of thick-billed murres and northern fulmars for contaminants
 Small blood samples taken by ***clipping toenail*** (provides 1 drop of blood)
 Attach small geolocators or GPS trackers (2-10g) on up to ***30 kittiwakes, 30 murres, 15 terns, 10 long-tailed ducks*** annually to determine migration and overwintering grounds ... removed in 5 days (GPS) or following year (geocator)
 Band up to 200 Arctic terns, 100 Sabine's gulls, 100 Thick-billed Murres, 50 Northern Fulmars, 50 Black-legged Kittiwakes; incidental banding of other species (<50 individuals)
 Salvage of up to 10 eggs and 10 carcasses each year of murres, fulmars, kittiwakes, terns, glaucous gulls, Sabine's gulls, black guillemots, common eiders, long-tailed ducks, Ross's gulls, Ivory gulls

All aspects reviewed and approved annually by CWS-PNR ACC

Do you plan to carry firearms?

Yes No

If yes, please describe number, type and purpose of firearms.

12 gauge shotgun with slugs and shot to deter bears

3. PROJECT LOCATION

Geographic place names and coordinates: (be as specific as possible; enter multiple coordinates for activities occurring over large area(s))

Location	Geographic Coordinates
Prince Leopold Island	74 N, 90 W
Unnamed (Tern) Island	75 48N, 96 20 W

NOTE: A map document delineating activity centres and travel corridors, etc. is required and should accompany this application. Please submit shapefiles if available.

Status of land upon which project will occur:

- Federal crown
- Inuit-owned or other private
- Territorial (commissioner's land)

4. OPERATIONAL AND ENVIRONMENTAL CONSIDERATIONS

Provide a summary of potential environmental impacts and proposed restoration plans and activities: (describe the effects of the proposed activities on land, water, flora, fauna; attach separate pages as necessary)

Both sites are long-term monitoring locations with established field camps, approved AANDC land reserves, and Nunavut Water Board licences. These aspects are all dealt with under those licences.

AANDC Land Reserves 068H16001, 058E02001
 NWB Water Licences 3BC-TER0811, 3BC-PLI0811
 Banding Permit 10694
 Animal Care Applications under review

List of equipment and fuel to be used: (include aircraft, vehicles, boats, generators, large tent structures, various types of fuel, etc; indicate proposed containment strategies for all fuels; attach separate pages as necessary)

Equipment / Fuel	Size / Amount	Proposed use / Containment
Twin Otter	At each camp	Travel to/from sites
Small generator	2000 W	Generate power for computer, sat phone
gasoline	1 drum (200 L)	Supply for generator
kerosene	1 drum (200 L)	Fuel for space heaters
propane	1 cyl (100 lb)	Fuel for small stoves

NOTE: Please submit a copy of a spill contingency plan, if available, with this application.

Waste disposal: (describe any wastes that may be produced, e.g. garbage, grey water, sewage, hazardous waste, and proposed disposal methods; attach separate pages as necessary)

Type of waste	Approx. amount produced	Proposed disposal method
sewage	<100 L	Buried in sump
greywater	< 200 L	Buried in sump
garbage	< 200 L	Flown out to community

5. POTENTIAL ADVERSE EFFECTS TO SPECIES AT RISK

PLEASE NOTE:

- You should consider species at risk legally listed on the Species at Risk Act (i.e. on Schedule 1) and those under consideration for legal listing, such as those designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).
- Refer to species status reports and other information on the Species at Risk Registry at www.sararegistry.gc.ca for information on specific species.

Identify Species at Risk found within your proposed project area.

Ross's Gull (threatened) at Tern Island – this work is part of the study on this species as part of the approved Recovery Strategy

List any potential adverse effects that your project may have on the species, its habitat and/or its residence. All direct, indirect and cumulative effects should be considered.

Ross's Gull – we are tracking the movements of breeding birds to their wintering areas (unknown) and assessing their behaviours and interactions with other species on arrival at the colony, as well as determining their reproductive success. Earlier work focused on their reactions to disturbance.

If potential adverse effects are identified, list mitigation to avoid or lessen those effects.

Where possible, maintain activities > 200 m from their nests.

List monitoring measures to determine the effectiveness of mitigation and/or identify where further mitigation is required.

Part of study to determine effects

6. CONSULTATION

List local community representatives who have been contacted about your proposed activities: (include community groups, local businesses, schools, etc.; state how they are participating in your activity, if at all (e.g. providing advice, supplying goods, hired to assist you, etc.))

1. Representative name: Resolute Bay HTA
 Name of group represented:
 Address / phone / fax:
 How contacted and date: Presentations in June 2009, March 2011, March 2012
 Participating? Yes No
 If yes, how?
Review proposals, TEK info (2004), sometimes hire from Resolute Bay

2. Representative name:
 Name of group represented:
 Address / phone / fax:
 How contacted and date:
 Participating? Yes No
 If yes, how?

3. Representative name:
 Name of group represented:
 Address / phone / fax:
 How contacted and date:
 Participating? Yes No
 If yes, how?

Applicant Mark Mallory
 (Print Full Name)
Signature _____ **Date** 10 March 2012

Detailed description

Observations

Because we wish to better understand the basic ecology of these seabirds, we will spend a considerable amount of time simply sitting back, watching the birds and recording what they do. This will be done from discrete, 1.5 x 1.5 x 1.5 m blinds set more than 50 m away from nesting birds. We will record activities of the birds for approximately 4 hr periods of time and undertake population/plot counts. We wish to get the natural behaviour of these birds to the fullest extent possible, so all efforts will be made to not disturb the birds – simply to observe what they do.

Captures

Seabirds will be observed through spotting scopes, and breeding pairs identified. For birds nesting on the ground at the Unnamed island, a simple mesh net trap is placed around the nest, and when the bird returns, it trips a wire which flips the net over it. The biologist watches all of this from a hidden position, and can get to the bird and remove it in approximately 10 seconds. Birds will then have a metal band attached to their leg, and a coloured plastic band attached to the other leg. (Previous experience from other Arctic seabird work has shown that these species retain the bands for more than 20 years without any ill effects.) The bird will be weighed and measured, and then released unharmed. Banding the birds allows us to track their movements should they be shot, found dead, or captured in fishing gear during the winter. We intend to band up to 200 Arctic terns, 100 Sabine's gulls, 15 Long-tailed Ducks, 10 Ross's Gulls, 30 Northern Fulmars, 100 Thick-billed Murres, and 100 Black-legged Kittiwakes.

For most birds captured, we will be taking a swab of their cloaca, and a tiny blood sample, to send for testing for various diseases that are of concern right now. The cloacal swab will be conducted with a Q-tip, while the blood sample will be taken by pulling a feather out (which creates a drop of blood – all that is needed). This procedure is commonly used on many birds (including those much smaller than gulls) with little effect. In previous years, birds have quickly returned to their nest following banding and handling.

Tracking devices

For up to 15 Long-tailed ducks, 15 Arctic Terns, and 15 Black-legged Kittiwakes we plan to attach a tiny geolocator to the leg (on the band – see Figure 2). This tracking device (2 g) weighs almost nothing to the birds (<1% body mass; far less than a fish that it eats), and will allow us to tell the direction it travels to find food, as well as where it moves during fall migration and in the winter. This is very important information in helping us determine marine locations that are important to the birds, where they may be picking up contaminants, and where they may be

disturbed by ships or other activities. These birds generally return to the same nest site in the following year, so this year we will remove the units that we put out last year, and in 2013 we will return, catch the bird and remove the transmitters that we put out this year. We have had very good success doing this in the Low Arctic and in Newfoundland in recent years. For example, in 2011 we were able to recover 19 geolocators put out on Sabine's Gulls and 4 put out on Long-tailed Ducks in the previous year. In 2012 we will capture and remove geolocators put out on Sabine's Gulls in 2011.

For up to 30 Black-legged Kittiwakes and 30 Thick-billed Murres, we will deploy short-term attachments of GPS transmitters (~10 g) which will be taped to some lower back feathers and then retrieved 5 days later. So, these units will be re-used on a total of ~ 30 birds each. They provide short term foraging movement information to allow us to determine how far the birds are feeding from the colony, highly valuable information for assessing the impact of ships coming near colonies.

For 3 Ross's Gulls we plan to attach tiny (5 g) solar charged satellite transmitters, which send data to us each day on the bird's positions. We have used larger versions of these units previously on Ivory Gulls, Northern Fulmars, Common Eiders, King Eiders and Long-tailed Ducks, all of which provided tremendous insights into the birds' annual needs.

Collecting food in the water

We are interested in determining how mercury and other metals are moving through the food chain near the island, as an example of metal uptake in smaller areas of open water in the Arctic. To do this, we plan to sample bits of the marine food chain near the island, specifically phytoplankton, zooplankton, small molluscs (clams, snails), jellyfish, and worms. We will take 10 samples of each (which will be tiny, as in a small jar), and these will be frozen and shipped to a laboratory in Nova Scotia for analysis of metals.

Egg collections

At Prince Leopold Island, we wish to collect eggs from 15 Thick-billed Murre and 15 Northern Fulmar nests. This is part of the long-term contaminants monitoring project initiated in the 1970s, and serves as one of the best examples of tracking contaminant patterns in wildlife in the Canadian Arctic. In all cases, we will only remove 1 egg from a nest, and for murres, this will be done early so that the birds will relay. For the other species, we will collect eggs from abandoned nests (where we have watched the nest, observed that the adults have left, and the eggs are cold after 3 days of initially seeing the adults gone). These eggs will be used to test for contaminants, genetics or dietary work.

For Arctic Terns and Common Eiders, we wish to collect up to 10 eggs for each species, taking only 1 egg per nest. We will quickly ship these eggs to a laboratory in Nova Scotia and analyse them for trace metal contamination, including mercury, as part of a study to figure out how mercury is moving up food chains in this area.

In all cases, these minor numbers of eggs will have minimal impact on local populations. There are >10,000 fulmar nests and >100,000 murre nests at Prince Leopold Island. There are at least 400 tern nests at the Unnamed Island, and more than 1000 nests in the local island cluster. There are over 200,000 fulmars in Nunavut, and over 1,000,000 terns and murrens.

Note: Where possible, we will also collect carcasses of birds found dead at either field study site, for disease and contaminant testing. This number varies each year, but there are often many dead birds found late in the season, which have either starved or died of unknown causes. We expect that we could find up to 10 dead birds of each species (although this is only likely for chicks of most species).

Possible collections of dead birds or eggs are as follows:

Up to 10 eggs, dead chicks or adults of: Northern fulmar, Thick-billed murre, Black-legged kittiwake, Glaucous gull, Arctic tern, Sabine's gull, Black guillemot, Common eider, Long-tailed duck, Ivory gull, Ross's gull, Parasitic jaeger.

All collections will be conducted humanely in accordance with approved Canadian Council on Animal Care Guidelines, and Animal Care permit review is currently underway.

All collections will be conducted humanely in accordance with approved Canadian Council on Animal Care Guidelines.

Relevant References

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