

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-MBS-14-02 and NUN-SCI-14-02
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<b>Type of permit applied for:</b> <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
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<b>Territory:</b> <input type="checkbox"/> NWT <input checked="" type="checkbox"/> Nunavut
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<b>Period of permit requested:</b> <input type="checkbox"/> 1 year <input type="checkbox"/> 2 year <input checked="" type="checkbox"/> 3 year
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<b>Anticipated project start date:</b> ongoing <b>Anticipated project end date:</b> beyond 2017
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<b>Please indicate by checkbox if your project is receiving federal government funding:</b> <input type="checkbox"/> No <input checked="" type="checkbox"/> Polar Continental Shelf Project <input checked="" type="checkbox"/> Yes/Other (please list)
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<b>Please indicate by checkbox if your project requires approvals/permits by any of the following regulators:</b> <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
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**1. CONTACT INFORMATION**

<b>Applicant name and mailing address</b> Ray T. Alisaukas Science and Technology Branch, Environment Canada 115 Perimeter Road Saskatoon, SK S7N 0X4		<b>Fax</b> 306-975-4089
		<b>Phone</b> 306-975-4556
<b>Field supervisor</b> Dana Kellett Jim Leafloor Ray Alisaukas	<b>E-mail address</b> dana.kellett@ec.gc.ca jim.leafloor@ec.gc.ca ray.alisaukas@ec.gc.ca	<b>Phone</b> 306-975-5509 (Dana) 204-983-5258 (Jim) 306-975-4556 (Ray)

Total number of personnel covered by application:

20

**2. SUMMARY PROJECT INFORMATION**

**Project title:**

Arctic Ecosystem Research in Queen Maud Gulf Bird Sanctuary, Nunavut

**Project objective: (concise statement of purpose and goals)**

The proposed activities involve the collection of ecological data for scientific and management purposes (mainly nutritional and population ecology of waterfowl), and the logistical requirements/operations necessary to facilitate collection of these data.

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

An ongoing study of the population ecology of arctic nesting waterfowl, specifically Lesser Snow, Ross's, White-fronted and Cackling Geese, King Eiders and Long-tailed Ducks, has occurred annually in Queen Maud Gulf Bird Sanctuary since 1991. The primary field sites are (1) Karrak Lake, the site of one of the largest known lesser snow and Ross's goose nesting colonies in the Sanctuary, estimated at nearly 1 million birds in 2013, and (2) Perry River. Every year, the abundance of each of the above-mentioned species nesting in the Karrak Lake area is estimated, and/or metrics associated with population dynamics, such as clutch size, egg survival, nest survival, and adult survival. These metrics are invaluable for addressing management concerns of harvested species, both within Canada and internationally within North America. Further, factors thought to influence reproductive ecology, such as spring chronology, meteorological conditions, and small mammal abundance, are monitored in order to explain annual variation in productivity. Dynamics of various pathogens are investigated in arctic foxes, small mammals, and geese. Research on population ecology of arctic fox is also conducted, as well as less-intensive studies on herring and glaucous gulls, arctic terns, red-throated loons, shorebirds, and passerines. Observational data on grizzly bears, wolves, and wolverines are also recorded.

A research station, established in 1991, is located at the main field site at Karrak Lake (67° 14' 14" N and 100° 15' 33" W). It consists of six plywood buildings ranging in size from 8x12' to 20x20', and is occupied by 4-15 personnel annually during 10 May to 15 August, for approximately 550 person-days per year. In addition, a 12x16' cabin located about 15 km north-west of Karrak Lake Research Station, at location 67° 21' 09" N and 100° 20' 59" W, facilitates easier access to much of the colony, which has shifted north-westward over time. Perry River (67° 41' 41" N and 102° 11' 27" W) is occupied by 4 people for 10 days during mid July, for a total

of 40 person-days per year, for the purpose of marking White-fronted and Cackling Geese. Access to the study area is by air, either fixed-wing (twin otter) or helicopter, depending on the time of year. Helicopters are used for surveys and banding activities within the Sanctuary, and occasionally to deliver ground crews to remote areas of the colony. At Karrak Lake, snow machines are used early in the field season, prior to arrival of geese. Small boats fitted with 16 hp outboard motors and canoes are used to traverse Karrak Lake, as well as nearby Adventure Lake. The main mode of transportation, however, is on foot.

"Water is used for domestic purposes only, and is generally less than 20 gallons per day. Greywater is disposed of by soil leaching, at least 31 m from the nearest high water mark. Combustible waste is incinerated. Organic waste and sewage is buried in pits, at least 100 m from the nearest high water mark. Glass, metal, and other non-combustible waste is shipped to Cambridge Bay, Nunavut or Saskatoon, Saskatchewan for disposal or recycling. Hazardous materials (e.g., gel cell solar system batteries) are shipped to Polar Continental Shelf in Resolute for disposal."

**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 checked="" type="checkbox"/> Ground surveys	<input checked="" type="checkbox"/> Storage of fuel
<input type="checkbox"/> Tourism, non-commercial	<input checked="" 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 checked="" 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.

1. Harvest 100 Lesser Snow Geese and 100 Ross's Geese annually (shotgun and rifle) for anatomical dissections. Tissues (brain, lung, liver, spleen, skeletal muscle, "ovaries, oviductal eggs"), cloacal and oral swabs, and blood samples will be exported to Saskatchewan for analysis.
2. Harvest 50 King Eiders and 50 Long-tailed Ducks annually (shotgun and rifle) for anatomical dissections. These carcasses will be exported to Saskatchewan for analysis.
3. Manipulate and monitor nests and contents (measure/mark eggs, add/remove eggs) of waterfowl (Lesser Snow, Ross's, Cackling Geese, King Eiders, Long-tailed Ducks, Red-breasted Mergansers) and other birds (Arctic Tern, Glaucous and Herring/Thayer's Gulls, Red-throated and Arctic Loons).
4. Collect eggs from nests (Lesser Snow, Ross's Geese, one egg from each nest) for a maximum of 200 per year. Samples will be exported to Saskatchewan for analysis.
5. Capture nesting sea duck females (up to 120 King Eiders, 30 Long-tailed Ducks, 5 Red-breasted Mergansers). Birds will be weighed, measured, fitted with standard USFWS/CWS leg bands, and a small sample of head feathers "and a blood sample (1.5 mL)" from each bird will be collected and exported to Saskatchewan for analyses.
6. Capture geese (up to 15,000, adults and juveniles; Lesser Snow, Ross's, Cackling, Greater White-fronted) during the flightless period with corral-type nets (helicopter assisted). Birds are

weighed, measured, and fitted with standard USFWS/CWS leg bands. Blood samples and cloacal swabs from 500 birds will be collected and exported to Saskatchewan. Ten each of Lesser Snow and Ross's Geese will be fitted with GPS PTT transmitters (satellite transmitters).  
7. Opportunistically collect and export for analysis birds found dead (eggs, whole or part of carcasses).

Non-avian disturbance and sampling:

1. Capture arctic fox (up to 30 adults and 30 juveniles) and mark with plastic ear tags. Animals are immobilized with Telazol, weighed, sexed, and measured. A blood sample from each animal will be extracted and exported to Saskatchewan for analysis, as will as many as 200 scat samples collected opportunistically from captured foxes or recovered from den sites.
2. Sampling of small mammals (collared and brown lemmings, red-backed voles). Eight traplines, each run for 10 consecutive nights, each consisting of 25 or 40 snap traps will be monitored. Carcasses will be exported to Saskatchewan for analysis.
3. "Live-capture of small mammals (collared and brown lemmings, red-backed voles). Each trapping session (4 trapping grids) is 48 hours in duration, and traps are checked about 6 times per session. Upon capture, unmarked animals are marked with PIT tags, and identification of animals previously marked are determined with a PIT tag reader. Weight, sex, and reproductive status (lactating: yes/no) are recorded."
4. Collection of ectoparasites (fleas, lice, ticks) isolated from dead foxes (opportunistically encountered), geese (collected), small mammals (collected from traplines), goose nests, and fox dens. Samples will be stored in ethanol and exported to Saskatchewan for analysis.

All of the above have been approved previously (or applications pending for renewal) by the Canadian Council on Animal Care, University of Saskatchewan.

We are also requesting permission to host film crews or photographers, as requests are received. Requests by film companies have not yet been anticipated, but may be forthcoming.

**Do you plan to carry firearms?**

Yes       No

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

Seven 12 gauge shotguns: Three over/under (collection of geese and sea ducks), four for bear defense (bear defenders).  
One .223 rifle for collection of geese.  
Firearms for the purpose of bear defense are generally not carried in the field.

**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
Karrak Lake Research Station and fuel cache	67°14'14"N, 100°15'33"W
McNaughton Lake area (Colonies 10, 46)	67°21'41"N, 98°04'07"W (Col 10) , 67°18'28"N, 98°57'39"W (Col 46)
Perry River Research Station and fuel cache	67°41'41"N, 102°11'27"W, and vicinity
north of Karrak Lake, to coast of Queen Maud Gulf (especially Simpson River Delta)	vicinity of 67°47'22"N, 100°43'43"W "fuel cache at 67°37'01.5"N, 100°19'28.5"W"
Atkinson Point fuel cache	67°45'11"N, 103°03'37"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)**

Land: Impact is minimal, and almost entirely restricted to 1-2 hectares at each Research Station. Restoration plans are to remove all evidence of habitation once research projects are complete. Aircraft landing strips at Karrak Lake are on ice only and therefore land is not damaged; at Perry River the airstrip (mud flat) is marred with tire tracks, but little vegetation exists in this habitat.

Water: Water is used for domestic purposes only, and grey water is disposed by soil leaching. Minimal gas/oil from boating activities is deposited into Karrak Lake and nearby Adventure Lake, as fuel tanks are filled on shore. Minimal impact.

Flora: Some disturbance to flora is limited to 1-2 hectares at each Research Station, as pits are dug for disposal of sewage and organic waste. Pits are backfilled with soil, and vegetation colonizes these areas within 5 years. Minimal impact. Vegetation sampling for research activities is largely observational (non-destructive); some above-ground sampling of biomass may be conducted at vegetation enclosures distributed in the Karrak Lake region.

Wildlife: Geese avoid nesting within 100 m of Research Stations. Garbage is incinerated and buried regularly, to avoid attracting bears. Travel by boats and snowmobiles likely disturbs wildlife, but temporarily.

Air: "Incineration of domestic garbage at Research Stations expels pollutants, but because waste is incinerated at high temperatures, this is minimal."

**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		50 hours/year, for transport of field staff and equipment between Cambridge Bay and Karrak Lake/Perry River
helicopter		100 hours/year, for transport of field staff, conducting surveys, and banding geese
boats/outboard motors, canoes	4 at <18' and <20hp	180 hours/year, for transport of field staff between Karrak Lake camp and drop-off points on the mainland
generators	2	<50 hours/year, for electrical power (90% of power is supplied by solar panels and wind turbines)
water pump	1	20 hours/year, for pumping water to holding tank for domestic use
snowmobiles	3	100 hours/year, for transport of field staff and supplies in the local Karrak Lake area
fuel (turbo, gasoline, propane, naptha)	turbo, 2000 gal. gasoline, 500 gal. propane, 500 lbs naptha, <50 gal.	for helicopter, snowmobiles, boats, generator, water pump, and stove use, containment in 100 lb. cylinders (propane), 45 gal. steel drums, or plastic jerry cans (turbo, gasoline, naptha)

**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
garbage	500 kg	combustibles are incinerated, organic is buried, other non-combustibles (glass, metal, etc.) is shipped to Cambridge Bay, "Saskatoon, or Resolute for disposal, as appropriate"
grey water	10,000 L	soil leaching at least 31 m from nearest high water mark
sewage	150 kg	buried in pits with organic waste, at least 100 m from nearest high water mark
hazardous	discharged batteries (10 kg) used motor oil (15 L)	transported to Saskatchewan for recycling incinerated

**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](http://www.sararegistry.gc.ca) for information on specific species.

**5. POTENTIAL ADVERSE EFFECTS TO SPECIES AT RISK**

**Identify Species at Risk found within your proposed project area.**

None, to our knowledge.

**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.**

Not applicable.

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

Not applicable.

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

Not applicable.

## 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: Rene Laserich or base manager  
 Name of group represented: Adlair Aviation Ltd.  
 Address / phone / fax: Cambridge Bay, phone: 867.983.2569  
 How contacted and date: phone, in person; regular and ongoing communication  
 Participating?  Yes  No  
 If yes, how?  
 Likely air charter (twin otter) between Cambridge Bay and Perry River.

2. Representative name: Bill Killn  
 Name of group represented: Kitikmeot Supplies

Address / phone / fax: Cambridge Bay, phone: 867-983.2227  
 How contacted and date: phone, email; regular and ongoing communication  
 Participating?  Yes  No  
 If yes, how?  
 Supply of oil, grease, paint, lumber, etc.

3. Representative name:

Name of group represented: Ikaluktutiak Co-op  
 Address / phone / fax: Cambridge Bay, phone: 867-983.2201  
 How contacted and date: phone, fax, in person; regular and ongoing communication  
 Participating?  Yes  No  
 If yes, how?  
 Supply food for Research Stations.

Other agencies/persons contacted in Cambridge Bay include: Doug Stern (consultation, accommodation), Green Row Executive Suites (accommodation), Department of Renewable Resources (wildlife export permits), various individuals interested in working at Karrak Lake/Perry River.

**Applicant** Dr. Ray T. Alisaukas  
 (Print Full Name)

**Signature** \_\_\_\_\_

**Date** 13 January 2015