



**PARKS CANADA AGENCY
RESEARCH AND COLLECTION PERMIT
(NOT TRANSFERABLE)**

PERMIT No.: 2021-38180

START DATE: 2021-03-26

EXPIRY DATE: 2023-06-30

Project Title: Re-estimating the abundance of the Lancaster Sound polar bear subpopulation via genetic mark-recapture sampling

Principal Investigator Name: Markus Dyck

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Affiliation: Government of Nunavut, Department of Environment

Is hereby authorized to conduct the research project entitled "Re-estimating the abundance of the Lancaster Sound polar bear subpopulation via genetic mark-recapture sampling", Research and Collection Permit Application Number 43026, In Qausuittuq National Park of Canada, subject to the terms and conditions set out below and/or attached to and forming part of this Research and Collection Permit.

Members of Research Team:

1. Jasmine Ware, Polar Bear Bio Department of Environment Government of Nunavut Box 209 Igloolik, NU X0A 0L0 Phone: (867) 934-2181
2. Assistants from communities whose names will be communicated to the Research Coordinator as they become available.
3. Parks Canada staff if logistically feasible.

Issuing Authorities and Terms and Conditions:

Conditions identified in the NIRB Screening Decision Report No. 20YN008 apply with the exceptions identified below concerning aircraft access and fuel caches.



National General Conditions:

Failure to comply with applicable Heritage Area regulations or the conditions of the permit may constitute grounds to cancel or suspend the permit, refuse to issue future permits, and may be considered as grounds for prosecution under the applicable Act(s) or Regulation(s).

All permit holders must be in possession of a valid permit before the fieldwork commences and at other periods as stated on the permit.

Permits are not transferable and each member of the field work team must have a copy of the valid permit in their possession.

The permit is valid only for the geographic location, the time period, the activities, and under the terms and conditions described on the permit, unless amended and revalidated by the Superintendent.

Restrictions:

The Superintendent may suspend, cancel, or restrict the scope of the permit.

The permit shall cease to be valid if the fieldwork is not started within six months of the date of issue.

Other Acts and Regulations:

The Principal Investigator must abide by applicable regulations and all other federal, provincial, territorial or municipal regulations applying to the Heritage Area.

If requested by the Superintendent, an authorized Heritage Area staff member, or police constable, the Principal Investigator or any team member will identify themselves and show the permit.

Principal Investigator Responsibilities :

A site, or site component(s) that has been excavated or disturbed shall be restored or conserved by the Principal Investigator to the satisfaction of the Superintendent.

The Principal Investigator must advise the Research Coordinator of any adjustments in work location, research plan and methodology, implementation schedule, or main personnel, etc., during the course of the research.

Unless otherwise negotiated, Researchers working in a Heritage Area are required, as a condition of their permit, to submit:

a) A report of progress sixty (60) days following the completion of the field season, unless otherwise agreed with the Research Coordinator;



b) A final report, one (1) electronic copy and three (3) hard copies, no later than eight (8) months following the completion of the field season, unless otherwise agreed with the Research Coordinator;

c) Submission of an online Investigator's Annual Report (IAR) within one year of signing the permit. In the case of a multi-year permits, the principal investigator will submit an IAR for each year of the research.

The reporting requirements above do not replace any reporting requirements set out in any contract between Parks Canada and the Principal Investigator.

The Principal Investigator will be responsible for all members of their party. All field assistants must observe any general or specific conditions of the permit.

The Principal Investigator shall at all times indemnify and save harmless the Crown from and against all claims, demands, loss, costs, damages, actions, suits, or other proceedings, by whosoever made, sustained, brought or prosecuted, in any manner based upon, occasioned by, or attributable to, anything done or omitted by the Principal Investigator or the project personnel in the fulfillment or purported fulfillment of any of the conditions of the Permit.

General Conditions Governing Natural Science Research:

Any natural objects collected under authority of this permit remain the property of the Crown (Canada) and are considered on loan to the permit holder. Final disposition of natural objects must be as shown in the project proposal unless amended by the Superintendent. Export of objects or specimens require approval by the Superintendent and is subject to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Cultural Property Export and Import Act and the Export and Import Permits Act. Intention to export specimens must be indicated in the project proposal.

Only the natural objects or categories of natural objects indicated on the permit may be collected.

A detailed inventory of material collected will be provided to the Heritage Area prior to its removal by the researcher.

When fossils or evidence of previous human occupation are found, they should be reported to the Superintendent and must be left undisturbed until inspected by a Parks Canada palaeontologist or archaeologist.

Special Conditions:

The following conditions apply to Research & Collection Permits issued for Sirmilik and Qausuittuq National Parks and are in addition to those outlined above.

X The Permit holder(s) are required to check in at the park office and participate in an orientation in Resolute (867 252 3000) and Pond Inlet (867 899 8092) prior to the commencement of their field activities. Exceptions to this must be discussed with the Park Manager prior to the start of the field season. A phone check in and orientation may be possible.



The use of UAVs or drones is not permitted.

All garbage is to be removed from the park in accordance with the National Park Regulations.

Solid Human waste: in field camp situations (if any camp is planned in 2022 or 2023), human waste is to be collected in sealable metal or plastic containers. The project leader is responsible for ensuring that all containers of human waste must be removed for disposal at an appropriate facility. In mobile camp situations, solid human waste may stay on land but toilet paper, feminine napkins and tampons must be removed. The cost of this disposal is the project leader's responsibility.

The project leader will ensure that all party members understand and comply with the Canada National Parks Act and Regulations.

Nunavut Agreement Inuit employed by the research project are not permitted to use research or Parks Canada chartered aircraft and vessels to transport any materials gathered, fished or hunted during their leisure hours while in the park.

The project leader is responsible to ensure that all party members read available polar bear safety information.

All polar bear observations and encounters must be reported to the Park Manager.

The permittee shall not remove, disturb or displace any archaeological artifact or site.

Should an archaeological site or specimen be encountered or disturbed by any land use activity, the permittee shall immediately contact the Parks Canada (Nunavut Field Unit) Cultural Resources Management Advisor at (867) 975-4673.

The permittee shall immediately cease any activity that disturbs an archaeological site encountered during the course of a land use operation, until permitted to proceed with the authorization of Parks Canada. The permittee shall avoid the known archaeological sites listed in Attachment A (more specific conditions on that are listed below).

A field season summary report must be submitted to Parks Canada by 30th October each year that the permit is valid (email: pc.rechercheparcsnunavut-nunavutparksresearch.pc@canada.ca) and to the following community groups: Hamlet Councils of Pond Inlet and Arctic Bay, Mittimatalik HTO, & Ikajurtit HTO and Hamlet Council of Resolute Bay and Resolute Bay HTO.

The project leader or designate must present the research project and results to Parks Canada staff in Iqaluit at a mutually agreed upon time.

The project leader or designate must present the research project and results to the community of Resolute Bay, Pond Inlet and Arctic Bay at a time mutually agreed upon between the project leader and the communities.



Copies of all reports, scientific papers, and posters must be provided to the Parks Canada office in Iqaluit.

Data files will be provided to Parks Canada upon request.

The Park Management Committees for Sirmilik and Qausuittuq National Parks will review annually the terms and conditions of this permit. The permit may be revoked if terms and conditions are not adhered to.

The following are the approved collections & procedures that can be made in Sirmilik and Qausuittuq National Park during each field season. (For details on methodology, refer to application #43026. Exceptions or amendments to the methodology are identified here):

Field Dates: Late March – June 2021, 2022, 2023

Field Work Location: Sirmilik National Park (Borden Peninsula only) and Qausuittuq National Park

No overnight camps will be established in Qausuittuq or Sirmilik National Parks.

Research Purpose: Reassess the size and status of the Lancaster Sound polar bear subpopulation

Objectives:

1. Work with community HTOs to design and implement a comprehensive survey using genetic biopsy sampling or genetic biopsy sampling in combination with selective collaring, to reliably estimate the abundance of polar bears in LS during the spring on-ice season (e.g., May – June) or semi-ice free season (during August to October) of 2021, 2022, and 2023.
2. Estimate the current population size and composition of the LS polar bear subpopulation.
3. Compare a new estimate of abundance with the one derived during a past study in-order to gain insight into population trend and status in LS, to the extent possible.
4. Estimate survival and reproductive parameters (to the extent possible) in-order to facilitate population viability analyses.
5. Evaluate on-ice or on-shore polar bear distribution (to the extent possible).
6. Enhance public participation and provide HTO-designated personnel with training in survey methods and to ensure reliable surveying by including local ecological knowledge.

To meet this objective the following field work is permitted:

1. Land aircraft in Sirmilik and Qausuittuq National Parks to retrieve darts and set up fuel caches as described below.
2. Store up to 5 drums of aviation gas at each cache in Sirmilik National Park (1 cache, Cape Charles York, 73° 31' 1.2" N, 82° 42' 43.2" W) and Qausuittuq National Parks (3 caches, Dome Camp 75° 48' 3" N, 101° 18' 8.46" W, Sherard Osborn Island 76° 43' 10.8" N, 99° 47' 11.4" W, west of Young Inlet 76°21'60.00"N 99°16'18.00"W).



- a) A list of all fuel caches associated with research activities must be provided to the Superintendent and Park Manager prior to commencement of field work and must include: location, amount, and the type of fuel at each cache.
 - b) Cape Charles York Area in Sirmilik National Park:
 - i. Caching fuel at Cape Charles York will only take place if there are no other available options outside of Sirmilik National Park.
 - ii. The fuel cache at Cape Charles York in Sirmilik National Park will be removed from the site as soon as is possible during each field season in which it is set up, and will preferably be removed while there is still snow cover.
 - iii. The cache will be located outside of the archaeological site buffer zone identified in Attachment A. Attachment A is provided solely for the purpose of the proponent's land use activities as described in the permit application, and must otherwise be treated confidentially.
 - c) GPS coordinates of the cache will be provided to Parks Canada.
 - d) Photos will be taken at the time of caching fuel and when the fuel cache is removed.
 - e) The dates on which the fuel cache is set up and removed will be provided to Parks Canada.
 - f) The permit holder will avoid caching over winter whenever possible.
 - g) Aircraft access to the fuel caches is permitted.
 - h) Secondary containment is required.
 - i) The fuel cache will be located at least 100 m away from the high water mark of any water body.
 - j) A spill kit is required on site at each fuel cache.
 - k) The fuel cache and empty drums will be clearly and indelibly marked with the project leader's name, year that fuel was cached, and PCSP number if applicable.
 - l) The fuel drums are to be removed from the park at the end of the project by 2024 unless otherwise agreed upon.
 - m) If project fails to acquire all the necessary permits, the Principal Investigator is responsible for removing the fuel cache within a reasonable time frame.
3. Conduct low level over flights at altitudes of 150m AGL (400 feet), to search for bears, and at lower safe altitudes during bear darting activities, subject to conditions listed below to avoid disturbing wildlife and cultural/archaeological sites.
- a. The Permit holder(s) will confirm aircraft operators have an Aircraft Access Permit authorized by the Superintendent. Landings identified for this Research and Collection Permit are authorized by the Superintendent as per Section 5 of the National Parks of Canada Aircraft Access Regulations subject to provisions listed below.
 - b. A list of all aircraft use must be provided to the Superintendent and Park Manager prior to commencement of fieldwork. This list must include: dates, location, and type of aircraft for all landings and take offs. The precise landing locations will depend on where bears are found and where biopsy darts fall; information on search areas will be provided to the park managers as discussed with them during the park orientation with them;



- c. The research team will inform the park offices (Pond Inlet and Resolute) of its flight plan at least 24 hours before entering the park.
 - d. Search efforts may take place along transects every 35 km, within 10-15 km of the coastline.
 - e. Landing within cultural resource buffer zones is not permitted (see Attachment A, CONFIDENTIAL). Please avoid the known archaeological / cultural sites identified here, if possible. Due to the nature of the research, if it is necessary to access a site please land away from the site and walk to your retrieve your biopsy dart and avoid disturbing the site. Please contact the Cultural Resource Advisor in the event any difficulties arise with archaeological/cultural sites: 975 4673.
 - f. Conflict with wildlife, wildlife habitat and park visitor use must be minimized.
 - g. Once searched during one year, these surveyed areas will not be revisited that year unless necessary to reach fuel caches.
 - h. If any caribou are observed, the vertical and horizontal distance from any caribou will be increased immediately to avoid disturbing them.
 - i. Any caribou observations and any signs of caribou disturbance from aircraft will be reported by the Principal Investigator in the field report due on October 30.
 - j. Landing where caribou are present is not permitted.
 - k. A minimum flying height of 610 meters (2000 feet) must be adhered to except during landing, takeoff or as part of the approved research methods. For areas with known concentrations of migratory birds (e.g., bird colonies, moulting areas) a lateral distance of at least 1,500 metres (4,900 feet) must be respected. If this is not possible, a minimum flight altitude of 1,100 metres (3,500 feet) must be maintained over these areas.
 - l. Avoid seaward side of colonies and areas used by flocks of birds by 3km.
 - m. Any incidents with birds (disturbance, collision, etc.) will be reported in the field report.
 - n. Incidental wildlife species observations other than polar bears will be recorded. Sightings will not be investigated.
4. Collect biopsy samples (<5 mm diameter), mostly skin, but some fat) from polar bears by firing a biopsy dart from a helicopter for genetic analysis (to determine gender and identification of the animal) and for fatty acid, contaminant, or other analyses.
 - a. Record GPS coordinates and information on location, behavior, body condition, estimated age/sex (when possible) and group/litter size.
 - b. Biopsy samples will not be taken from cubs of the year to avoid injury.
 - c. Biopsy samples will not be taken from other bears that may be injured because of their body condition.
 5. Placing collars on bears is not permitted. If applicable, a permit amendment request will be submitted in the February 28, 2022 and 2023 update letter if, following HTO consultations, selectively collaring bears is being proposed within the boundaries of Sirmilik or Qausuittuq National Park.



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6. The Principal Investigator will provide an update letter by February 28 annually (required letter for multi-year permits).
 7. All samples will be removed and stored at the Igloolik office of the Department of the Environment, Government of Nunavut and may be sent to other labs for analyses.
 8. COVID-19 public health measures defined by the Government of Nunavut's Chief of Public Health Officer will be respected.



Principal Investigator Signature

I, Markus Dyck, the Project Principal Investigator, accept all the stated Research and Collection Permit terms and conditions.

Signature

Date (yyyy/mm/dd)

Approval:

Permit issued/approved by:

Superintendent Name (Please Print)

Superintendent Signature

Date (yyyy/mm/dd)

Parks Canada Contact

Maryse Mahy

Nunavut Field Unit

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