Government of Northwest Territories
Gouvernement des Territoires du Nord-Ouest

WILDLIFE RESEARCH PERMIT SUMMARY REPORT FORM

As a term of condition attached to your permit, a summary report is required within 3 months of the expiry of the permit to the issuing office. Please use this form to report your activities and findings.

Additional research permits will not be granted until ENR has received a report on work done under a previous permit.

Send your report to:
Wildlife Division
Environment and Natural Resources
Government of the Northwest Territories
P.O. Box 1320
Yellowknife, NT X1A 2L9

You can also submit by fax 1-867-873-9293
or email WildlifeResearch_Permit@gov.nt.ca.

Please include:
- Contact information
- A high quality digital image (JPEG at least 300 dpi)
- Additional reports, maps, short result summaries and/or a list of conclusions

You should also send copies of your summary and additional reports to the Regional Office that issued your permit and any contacts that request it.

For further instructions and how to submit your application, go to: www.enr.gov.nt.ca.

PERMIS POUR LA RECHERCHE SUR LA FAUNE FORMULAIRE DE RAPPORT SOMMAIRE

L'une des conditions de votre permis est d'envoyer un rapport sommaire au bureau émetteur dans les trois mois suivant l'expiration du permis. Veuillez utiliser le présent formulaire pour consigner vos activités et vos observations.

Aucun autre permis de recherche ne sera octroyé tant que le MERN n'aura pas reçu un rapport sur le travail réalisé en vertu d'un permis précédent.

Veuillez faire parvenir votre rapport à :
Division de la faune
Ministère de l'Environnement et des Ressources naturelles
Gouvernement des Territoires du Nord-Ouest
C. P. 1320
Yellowknife NT X1A 2L9

Vous pouvez également l'envoyer par télécopieur au 1 867 873-9293 ou par courriel à WildlifeResearch_Permit@gov.nt.ca.

Veuillez inclure :
- Vos coordonnées;
- Une image numérique de grande qualité (JPEG d'au moins 300 ppp);
- Rapports supplémentaires, cartes, résumés ou liste des résultats.

Vous devriez également envoyer des exemplaires de votre rapport sommaire et des rapports supplémentaires au Bureau régional qui a délivré votre permis et à toute personne qui en fait la demande.

Pour obtenir de plus amples renseignements sur la façon de présenter votre demande, accédez au site Web suivant : www.enr.gov.nt.ca/en/français

Wildlife Research Permit Number: Numéro du permis de recherche sur la faune : WL500947	
Title: Titre : NWT Small Mammal and Hare surveys - 2022	
Permit Start Date: Date d'entrée en vigueur du permis : 06/01/2022	Permit End Date: Date d'échéance du permis : 12/31/2022
Main Investigator: (*including full name, address and e-mail address*) Chercheur principal : (*nom complet, adresse postale et adresse de courriel*) Suzanne Carrière, Wildlife Biologist (Biodiversity), Wildlife Division, Environment and Natural Resources, Government of the Northwest Territories, PO Box 1320, Yellowknife NT X1A 2L9. suzanne_carriere@gov.nt.ca. Participants in 2022: (South Slave) Liam Case, Ashley McLaren (North Slave) S Carriere, Brad Woodworth, Abby Wilson, Sheraz Daher, K Sanderson, J L'Heureux, J Moore Tselta,Jan Adamczewski, (Sahtu) Kevin Chan, (Beaufort Delta) Not Conducted (Daring Lake) Colin Modeste-Burgin, Karin Clark, (Deh Cho) Michael Gast, Jim Deneron (GahchoKue) Lee-Ann Knee.	

Location / Emplacement

Describe where the study was conducted and region.

Décrire le lieu et la région où l'étude s'est déroulée.

Sahtu: Norman Wells: 65° 18' N; 127 ° 20' W (H,SL)
North Slave: Yellowknife: 62 ° 24' N; 114 ° 26' W (H,SL); Daring Lake: 65 ° 00' N; 111 ° 30' W (HA, SL);
Gahcho Kué Mine: 63 ° 29'N; 110 ° 49'W (SS, P)
Dehcho: Fort Liard: 60 ° 39' N; 117 ° 29' W (SS); Fort Simpson: 62 ° 00' N; 122 ° 00' W (H,SS);
South Slave: Fort Smith: 60 ° 01' N; 111 ° 54' W (H, SS), Fort Resolution: 61 ° 10' N ; 113° 40' W (H,SS); Aurora College Tsu Lake: 60 ° 35' N; 111 ° 53' W (H, SS, P *)
Wood Buffalo NP (actually in AB) : 59 ° 57' N; 111 ° 40' W (H*,P)
Inuvialuit-Gwich'in RRB: Inuvik: 68 ° 18' N; 133 ° 29' W (H*,SS*, with P)
Survey type: (H) = Snowshoe hare, (HA) = Arctic hare, (SL) = small mammal live traps, (SS) = small mammal snap traps.
Personnel: All survey conducted by ENR personnels, except those marked as conducted by partners (P), or with parters (wP).
Timing: Hare surveys are typically conducted in June. Small Mammal Surveys in August. Exceptions occur due to planning, travel and other contingencies. * Not conducted or data not yet received for reporting year - 2022.

Species / Espèces

List of species studied.

Liste des espèces étudiées.

Hare Survey: Snowshoe Hare (Lepus americanus); Arctic Hare (Lepus arcticus) for Daring Lake only
Small Mammal survey: North American Deer Mouse (Peromyscus maniculatus), Southern Red-backed Vole (Myodes gapperi), Northern Red-backed Vole (Myodes rutilus), Nearctic Collared Lemming (Dicrostonyx groenlandicus), Meadow Vole (Microtus pennsylvanicus), Eastern Heather Vole (Phenacomys ungava), Meadow Jumping Mouse (Zapus hudsonius), and other cricetid mammals, and shrews, mostly Cinereus Shrew (Sorex cinereus), American Pigmy Shrew (Sorex hoyi), Arctic Shrew (Sorex arcticus), and possibly Dusky Shrew (Sorex monticolus), Tundra Shrew (Sorex tundrensis), Barren Ground Shrew (Sorex ugyunak). All specimens are sent to accredited museums for final identification.

Objectives / Objectifs

Description of the main objectives of the project (*200 words maximum*).

Description des principaux objectifs du projet (*200 mots maximum*).

The NWT Small Mammal Survey monitors changes in density of important prey species such as voles, mice, lemmings, and shrews across five ecozones in the NWT.
The Hare Transect Survey monitors densities of another important prey species, snowshoe hare, across all forested ecozones, and an abundance index for arctic hare at the tundra site at Daring Lake.

Synopsis / Sommaire

Description of the results of the project, which will be included in the annual compendium report published by the Aurora Research Institute (*200 words maximum*).

Description des résultats du projet, qui paraîtra dans le recueil annuel publié par l'Institut de recherche Aurora (*200 mots maximum*).

Small mammals and hare play a keystone role in both arctic and boreal ecosystems. These species are a major prey species for foxes, marten, raptors, and other carnivores. Cyclic fluctuation in the abundance is reflected in similar fluctuations in the abundance of their predators. Hare, like other small mammals, play a keystone role in the boreal ecosystems. Hares are a major prey species for lynx, raptors, and other carnivores. Small mammal/hare density and trend information are used in predicting population trends of economically important furbearers and in monitoring natural changes in predator/prey relationship in northern ecosystems.
The Small Mammal Survey is designed to monitor changes in small mammals abundance across five ecozones in the Northwest Territories. The Hare survey is designed to monitor changes in hare across three forest ecozones iand one tundra ecozone n the Northwest Territories.
These surveys are unique in Canada. It is a coordinated effort to record natural fluctuations in abundance for many species of small mammals and hare at a large scale. This monitoring provides background information for impact assessments, wildlife disease detection, and predictive information on predator (furbearers) abundance to trappers.
The Survey is linked to the furbearer program and hence to the traditional economy. The survey also serves as an early warning system for hantavirus detection and provides background data for site-specific studies of contaminants and disease occurrence. The survey provides information necessary to distinguish between natural and human-caused disturbances and variations, necessary for cumulative effect monitoring. The Survey is a good candidate program to be enlarged to other communities, especially through community-based monitoring initiatives.
Survey results are provided to communities annually using a poster. Data are available to communities or researchers upon request at WMIS@gov.nt.ca.

Disease testing: Two papers were published in 2022-23: Key findings are Bartonella is present our small mammals, and mosquitoborne California serogroup viruses was not found in small mammals but may still be present as it was found in larger mammals in the NWT.

Buhler et al. 2022. Combining deep sequencing and conventional molecular approaches reveals broad diversity and distribution of fleas and Bartonella in rodents and shrews from Arctic and Subarctic ecosystems. Parasites & Vectors 15(366):1-14.
Buhler et al. 2023. Widespread exposure to mosquitoborne California serogroup viruses in caribou, Arctic fox, red fox, and polar bears, Canada. Emerging Infectious Diseases. 29(1):54-63.