

 Policies & Procedures Manual	# Pages: 4	Policy Number: AN-02-02
	Approved by: UCN Animal Care Committee	
Section: STANDARD OPERATING PROCEDURE (SOP)	Effective Date: January 24, 2025	
Title: SMALL MAMMAL INVENTORY OF POPULATION DENSITY AND DIVERSITY	Replaces: August 27, 2021	

1 PURPOSE

The following standard operating procedure (SOP) describes methods used to capture, collect, and catalog small mammals within the Natural Resources Management Technology (NRMT) program at University College of the North (UCN).

2 RELATED DOCUMENTS AND REFERENCES

- Canadian Council on Animal Care Guidelines: Wildlife (CCAC, 2023)
https://ccac.ca/Documents/Standards/Guidelines/CCAC_Guidelines-Wildlife.pdf
- Teaching SOP: Small Mammal Population October 2020
- SOP AN-02-04 Euthanasia
- SOP AN-02-05 Assessing Appropriate Endpoints

3 RESPONSIBILITY

All individuals participating in capturing, collecting and cataloging of small mammals are required to handle small mammals according to the procedures outlined in this SOP. Individuals include, but are not limited to, the principle investigator, technicians, students and participants.

Further, specific responsibilities assigned to the Principle Investigator are described in section 3.1.

3.1 Principle Investigator

In accordance with UCN's Animal Care and Use Protocol and the appropriate Provincial Wildlife Scientific Permit, the Principle Investigator (while in field) is responsible for providing participants with the following:

- a step-by-step informed consent procedure; and
- Participant Informed Consent Form to be signed.
- a potential zoonosis listing with references;
- step-by-step precautions,
- an introduction to Russell & Burch's (1959) The principles of humane experimental technique.

4 PROCEDURE FOR SNAP TRAPS

4.1 Pre-collection

All individuals participating in capturing, collecting and cataloging of small mammals are **required** to attend a 'Pre-Collection and Competency Requirement' lecture.

Participants are provided a demonstration and review of the processes to be performed in the field including associated risks of activities performed, cleaning, setting and checking traps, as well as field collection and specimen handling.

4.2 Snap trap preparation

Snap trap preparation in the field includes disinfection and trap setting. Detailed information is provided for each in sections 4.2.1 and 4.2.2, respectively.

4.2.1 Disinfection of traps

Snap traps must be disinfected prior to use according to the following:

- Place one set of two buckets in an area designated for small mammal processing.
- Fill one bucket with dilute (5%) Lysol or bleach solution for disinfection
- Fill the other bucket with water for rinsing.
- Remove any visible dirt, fecal material, or bait from the trap prior to disinfection
- Immerse traps in disinfectant or at least 10 min. Note that each snap trap must have all surfaces come in contact with disinfectant.
- Remove traps from the disinfectant, rinse (by dipping) and set out to dry.
- When the disinfectant solution or rinse water baths become dirty with debris from the traps, dispose of the liquid 100 metres from the lake shore in a liquid waste pit and prepare new baths.

4.2.2 Trap setting

Prior to setting snap traps, pre-check the trap for mechanical performance. If in working order, set a snap trap accordingly:

- Anchor one Museum Special and one Victor snap trap to a quadrat-centred metal pig-tail (or lathe) using a 1-metre twine length.
- Bait each trap with a fingernail size smear of a peanut butter, oat and protein mixture.
- Snap traps are to be set prior to 12:00 noon and the area vacated until the following morning.

4.3 Checking traps

Snap traps are checked daily for the presence of small mammals according to the following:

- Check snap traps mid to late mornings. Trapping area (i.e., quadrats and grid) should remain undisturbed for periods between 12 and 20 hours daily.
- Collect/handle all specimens killed by snap traps according to section 4.3.1.
- In the event of injury (and not end-of-life) to an animal (or non-target species) during the collection or trapping process, assess the animal's physical, physiological and behavioral states according to SOP AN-02-05.
- Where deemed appropriate, perform euthanasia according to SOP AN-02-04.

4.3.1 Handling of killed/euthanized specimens

Specimens are handled as follows:

- Transfer specimens to sealable plastic bags.
- Label bags using indelible (permanent) ink with the following information: the plot, quadrat, trap type, line and trap cell location number, date (DD-MM-YYYY), genus and species, participant full name and initials.
- Place bags on wet ice for transfer to small mammal processing area.

4.4 Target Specimen Processing

Once specimens reach the designated small mammal processing area, proceed as follows:

- Using a small mammal field guide, identify specimen to a given species if possible.
- Weigh each specimen in grams (g).
- Measure each of the following in millimeters (mm):
 - specimen's body length (nose to tail origin),
 - tail length not including tip hair,
 - hind foot length not including nails, and
 - ear length.

- Place each specimen in a previously labeled sealable plastic bag, roll to remove excess air, then place in second sealable plastic bag labelled 'Day labelled'.
- Place specimen bags in a box labelled 'Plot' (note Year).
- Freeze specimens and returned to the University for skull examination and final identification.

4.5 Cleaning traps and other equipment post-collection

Following collection and processing of specimens, perform the following:

- Place all waste material from small mammal activities into plastic garbage bags, seal the bags (tie or tape shut).
- Waste materials include, but are not limited to, used paper towels, gloves, disposable coveralls, plastic Ziploc bags, table coverings, gauze, and all associated non-reusable equipment.
- Dispose of garbage bags appropriately, or return them to the laboratory for disposal. No waste material should be discarded in the sampling environment.
- Wipe all work surfaces and equipment in the small mammal processing area with a dilute 5% hospital-grade Lysol solution or a solution of 1% bleach after each procedure/use, and after all specimens have been processed.
- Place all equipment such as tweezers, rulers, and dissecting equipment into a disinfectant solution for at least 10 min., rinse and let dry.

5 PROCEDURE FOR FIELD TESTING CAMERA TRAPS

5.1 Rationale

Moving forward, UCN would like to replace lethal sampling methods with passive methods, like camera traps (CT). The literature has very little to say about the effectiveness of using camera traps to collect population diversity and density data on small mammals. Thus, field trials are needed in order to compare CT methods with well-established live trapping methods. To this end, faculty, staff and students of the NRMT program will be performing a research field study in 2025 to compare the effectiveness of the following three methods: traditional kill (snap) trap, Longworth live trap and camera trap. This research will investigate how to optimize and standardize camera trap data collection and compare the quality of this data with that obtained from traditional trapping methods in the hopes that the passive method can ultimately replace the more harmful methods. The detailed procedures are still being worked out and will be made available once finalized.