

Project Title

Evaluating Furbearer Monitoring Methods in New Hampshire

Project Researchers

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Study Purpose and Research Objectives

The Northeastern U.S. hosts a diverse community of terrestrial furbearer species. These species are an integral part of a functioning ecosystem and provide substantial social, cultural, and economic value to multiple stakeholders. Ecologically, furbearers contribute directly to processes such as prey population regulation and seed dispersal, which in turn influence floral and faunal biodiversity, ecosystem stability, and community-level dynamics such as disease transmission. Beyond these ecological roles, furbearers are valued by stakeholders for a variety of reasons, including those related to wildlife viewing and harvest. Given this ecological and social importance, effective management of these species is paramount. Such management requires accurate information on species' distribution and abundance across space and over time. However, acquiring such information for furbearers is challenging because they are secretive, cryptic, highly mobile, and often persist at low densities.

This research project is cooperatively funded through a partnership between the University of New Hampshire and the New Hampshire Fish and Game Department. The project will develop and evaluate monitoring methods for furbearer species in New Hampshire. In turn, these monitoring protocols will potentially inform wildlife management and conservation. In addition, this study will evaluate the habitat relationships of wildlife to advance ecological understanding and improve predictive accuracy of species distribution models and abundance estimates.

Specific objectives include:

Objective 1. To determine the efficacy of an emerging non-invasive technique to estimate furbearer abundance and wildlife-habitat relationships using camera trap data.

Objective 2. To compare population estimates from camera traps with those from track station surveys.

Objective 3. To determine the effect of lure on wildlife detection rate.

Type and Extent of Field Work

This project is intended to run from June 1, 2021 – May 30, 2022 with possible extension dependent upon continued funding. The proposed field work will entail approximately five field visits to each site. Three of these visits will be focused on camera trapping and entail setting up non-invasive wildlife cameras and downloading their data (i.e., replacing an SD card). One visit will entail setting up track stations and one for checking track stations.

The number of proposed site locations on Town of Raymond lands is three. The approximate locations of these sites are provided below. A final GPS location can be provided once sites are established.

At each camera site a wildlife camera will be attached to a tree at knee height. The wildlife camera will detect wildlife via passive infrared sensor technology that is invisible to humans and wildlife and minimally invasive to the environment. Cameras will be attached to trees using a single, small screw, a small metal security box (approximately 10cm x 10cm x 8cm), and a python cable lock to deter theft. Target sites will include those where the camera viewshed will be clear of vegetation. In exceptional circumstances, vegetation (forbes and brush < 2.5cm in diameter) immediately falling in front of the camera's viewshed (within 2 m) might be trimmed to enable efficient wildlife detection. No sensitive vegetation (e.g., rare plants) will be trimmed. For the majority of the camera deployment, no bait or lure will be used. For a brief (i.e., ~ 4-6 week) period in fall, a scent lure will be placed in front of the camera to evaluate Objective 3. Cameras will be removed at the end of the study period (Spring 2022).

Within the general proximity of each the camera trap (i.e., within 1km), a track station transect will be deployed in early fall. The establishment of scent station transect will follow methods employed by long-term monitoring efforts in North America. Each transect will consist of 1-10 track stations, which will be 36-inch diameter circles of sifted soil that will be brought to the site. Stations will be spaced ~250 m apart. A scent lure (e.g., skunk essence) will be placed at each station. Stations will be established for one night and checked the following day. The presence of wildlife will be determined via track identification. This information evaluate Objective 2.

Project Timeline

- **April and May:** Coordinate site access with landowners.
- **July and August:** Set up trail cameras.
- **September and October:** Add scent lure to subset of cameras. Set up track stations and check track stations.
- **April-May:** Remove trail cameras.

Approximate Site Locations

- Dearborn Forest (1 camera)
- Flint Hill (1 camera)
- Riverside Park (1 camera)