

Report of Preliminary Results

2018 Trail Camera Survey

to support the project:

*Applied Ecology and Conservation Genetics in
Support of the Management of Bobcat (*Lynx rufus*) in
Rhode Island*

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Introduction:

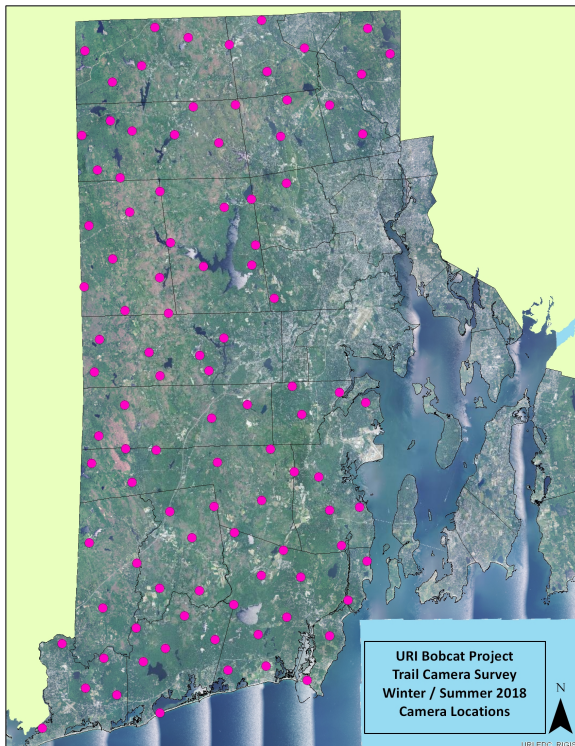
The Wildlife Genetics and Ecology Laboratory at the University of Rhode Island Department of Natural Resources Science initiated a trail camera survey in 2018 to supplement a research project on the ecology and conservation genetics of bobcats (*Lynx rufus*) in Rhode Island. The bobcat population appears to be on the increase in Rhode Island - according to RI Department of Environmental Management biologists - based on increased sighting reports and road-killed animals. There have been no prior surveys of bobcats in Rhode Island, so little is known about their statewide distribution. This lack of baseline knowledge, along with the addition of the species to the 2015 State Wildlife Action Plan as a species of greatest conservation need, lead to the initiation of the current study in the state. The main objectives of the study overall include:

1. Examine the distribution patterns, relative abundance, and home-range size of bobcat in Rhode Island;
2. Investigate movement patterns of bobcat and how they are affected by landscape patterns, particularly urban development; and
3. Quantify medium- and small-scale habitat components used by bobcats by employing GIS data layers at locations as documented by GPS collar technology.

This report will focus on the results of a trail camera survey conducted in the winter and summer of 2018.

Trail Camera Survey Methods:

A network of trail cameras were deployed statewide to better document the distribution and relative abundance of bobcats. Using trail cameras to document species allow



researchers to cover a much larger area than with other survey methods, and also provide a record of species other than the target animal.

Random points were generated in ArcGIS 10.2 to fall within conserved land and were spaced at least 4km apart. In the field, cameras were placed within 1 km of the original generated point at a site with suitable conditions. A location was considered favorable if it was on a game trail and/or wetland edge, and had limited low understory that would negatively affect photo quality.

Bushnell Trophy Cam Aggressor Low Glow trail cameras were attached to a tree facing north, and secured to the tree approximately 0.5 meters from the

ground. A scent lure was rubbed on a tree opposite the camera approximately 1-2 meters above the ground, and a stick with scent lure was stuck into the ground in front of the camera. Cameras were set to take 3-photo bursts with 10 seconds in between photo bursts. Cameras were checked bi-weekly to exchange SD cards, refresh lures, and ensure cameras were functioning properly.

Photo Processing Methods:

All trail camera photos were uploaded to a photo database, Camelot, and organized by camera, site, and date. Each photo was reviewed in Camelot’s photo library to mark the photo as “empty” (false or human caused trigger) or identify the wildlife species present in the photo. Detections are tallied within the database and summarized in a survey report. Detection temporal independence is set at a minimum of 20 minutes. For example, if a deer is foraging in front of the camera for 10 minutes and 30 photos are taken, this will be counted as a single detection. A deer that is in the camera frame and returns again 30 minutes later will be counted as 2 detections.

Table 1: Summary of survey periods and survey effort at each site. A camera trap night is the number of days each camera was active during the survey period.

Property	Dates Surveyed	Camera Trap Nights
Cucumber Hill/Tikkanen	6/14/18 – 8/1/18	48
Moosup Valley Road	6/14/18 – 8/1/18	48
Schneider/NS Trail	6/22/18 – 8/2/18	41
S. Killingly Road/Borders Farm	6/22/18 – 8/23/18	51

Locations of FLT properties used during 2018 trail camera survey:

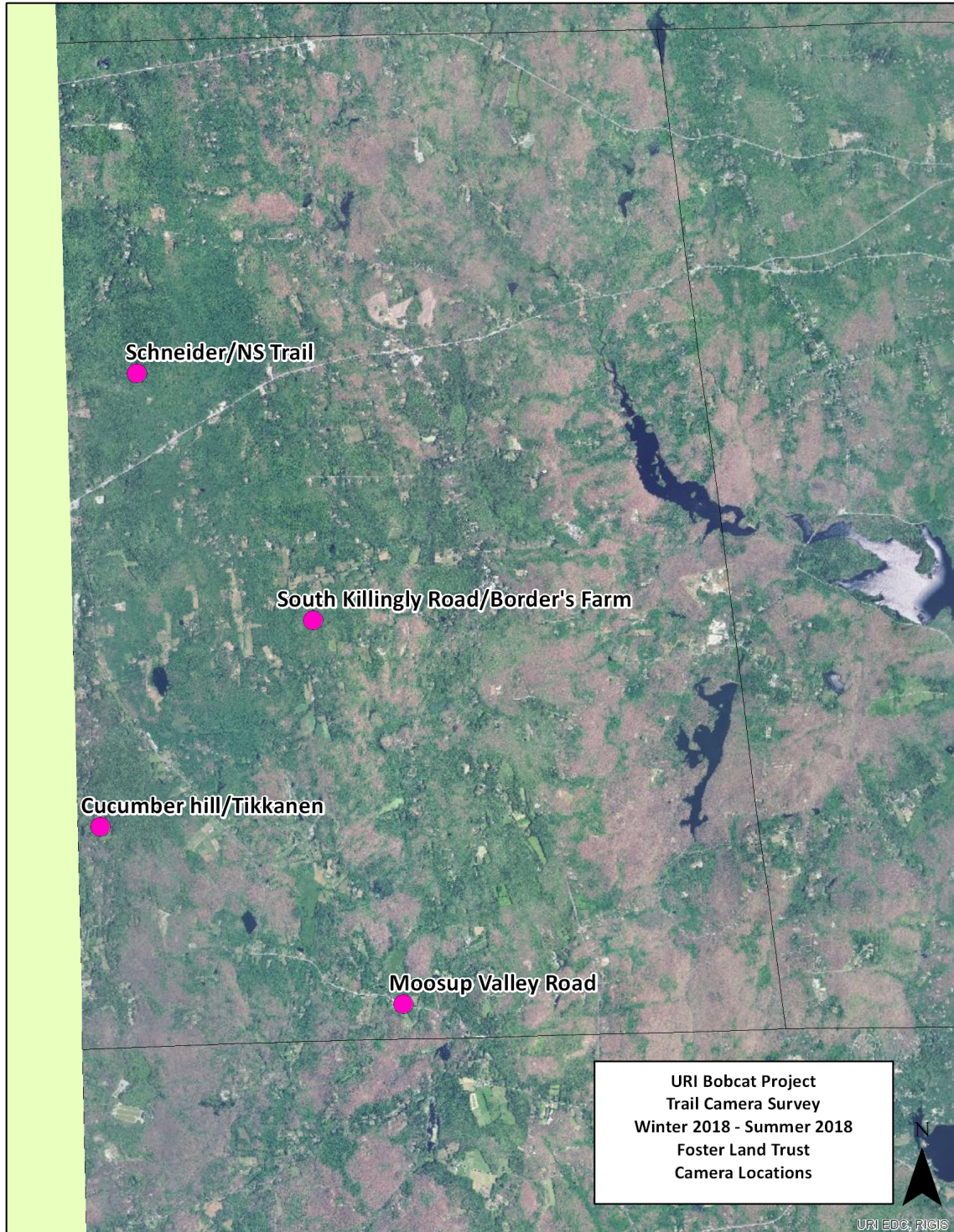


Table 2: Number of temporally independent detections by season, site, and species. Detections are independent if the time between photos of the same species are >20 minutes.

		Barred Owl	Coyote	Opossum	Fisher	White-tailed Deer	Raccoon	Gray Squirrel	Cottontail Rabbit	Red Squirrel	Red Fox	Wild Turkey
Summer 18'	Cucumber Hill/Tikkanen	3	7	2	1	22	5	3	16	8	-	-
	Moosup Valley Road	-	-	12	-	5	5	1	-	2	-	-
	Schneider/NS Trail	-	4	-	3	14	1	-	-	-	1	-
	South Killingly Rd/Border's Farm	-	2	-	-	10	3	1	-	-	-	1

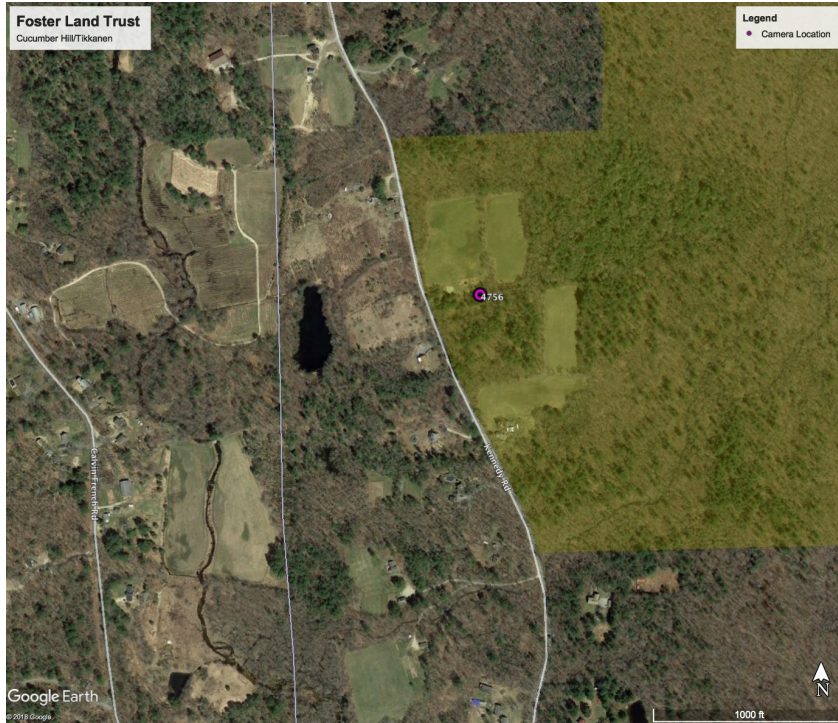
Results

Although no bobcats (*Lynx rufus*) were detected within the 188 days the trail cameras were active, a total of 11 other species were detected across the 4 Foster land Trust properties. White-tailed deer (*Odocoileus virginianus*) and raccoon (*Procyon lotor*) were detected at all 4 sites, with white-tailed deer detected most often on average. Cucumber Hill/Tikkanen had the highest species richness of all of the sites (9 species detected).

Results by Site:

The following shows the exact location of each camera, as well as a sample of photos taken at the survey site. Many photos that were captured only show partial animals, or are very blurry. The photos below represent a sample of the highest quality photos taken at the sites.

Cucumber Hill/Tikkanen:



Coyote (*Canis latrans*)



Coyote



Barred owl (*Strix varia*)



Fisher (*Pekania pennanti*)



Red squirrel (*Tamiasciurus hudsonicus*)



Moosup Valley Road:



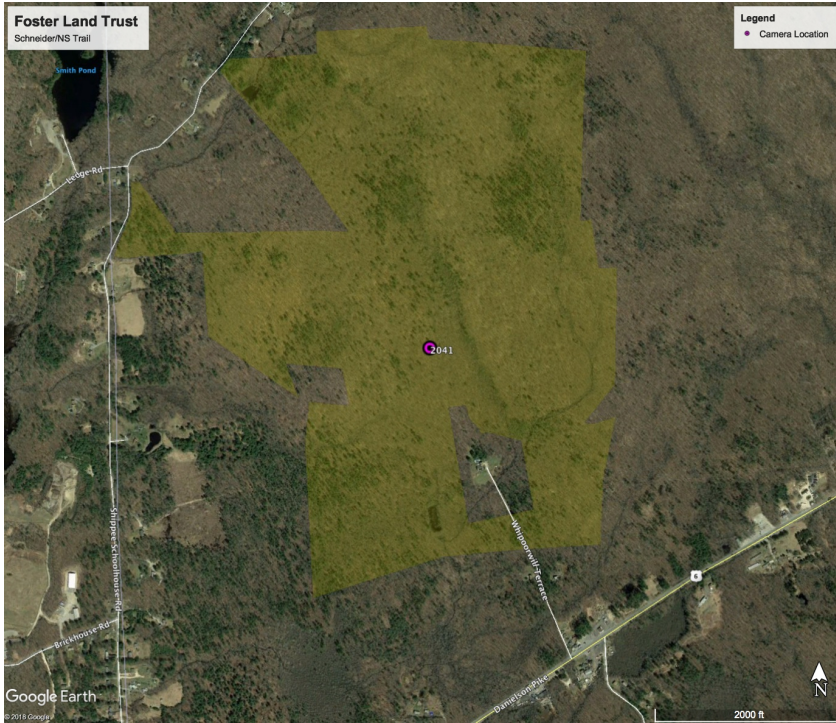
Virginia opossum (*Didelphis virginiana*)



Red squirrel



Schneider/NS Trail:



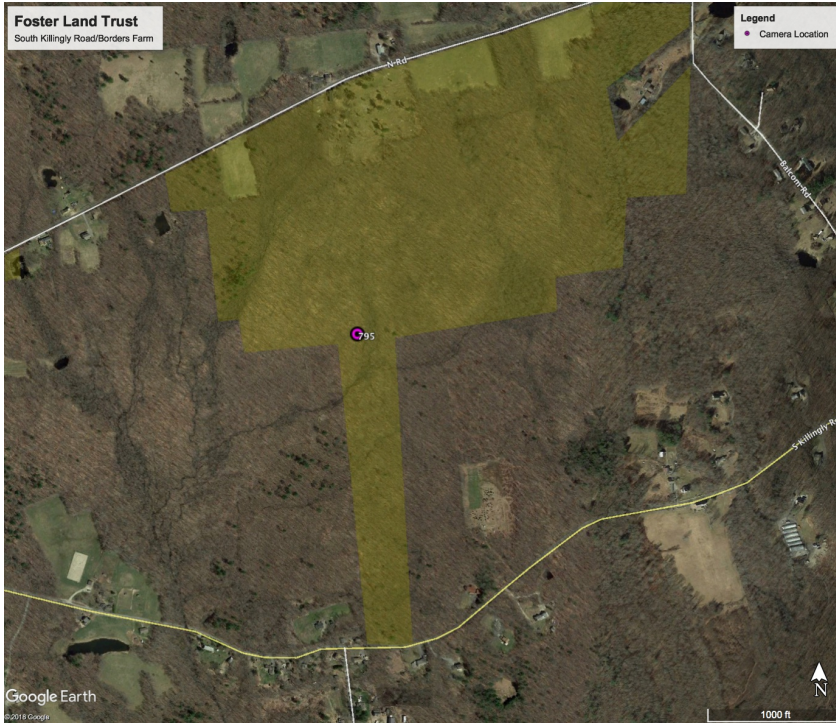
Coyote



Fisher



South Killingly Road/Border's Farm:



Coyote



Raccoon (*Procyon lotor*)



Wild turkey (*Meleagris gallopavo*)

