

PROGRESS REPORT
for
COOPERATIVE BOBCAT RESEARCH PROJECT

Period Covered:
1 January – 31 May 2010

Prepared by

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SUMMARY BY PROJECT OBJECTIVES

I. Develop protocol to estimate current abundance of bobcats and track populations statewide

Approach #1: Use transmitter-equipped bobcats to model suitable habitats and generate density estimate based on area requirements

At the end of the first field season (15 March 2010), cooperating trappers had captured 19 bobcats (Appendix 1). Of these, 12 individuals (10 males and 2 females) were considered mature and equipped with collar-mounted transmitters. All collars include conventional VHF transmitters and GPS units. Eight collars manufactured by Sir Track are designed to fall off on 1 September 2010 and be retrieved by homing on the VHF signal. The four Lotek collars include cell phone capabilities that result in locations being sent to a base station at UNH on a daily basis (as long as the bobcat is within cell phone coverage). As of 18 May 2010, the number of unique fixes per bobcat equipped with a Lotek collar ranged from 347 to 557 (Fig. 1). Locations of bobcats with Sir Track collars were obtained during aerial searches on 18 March and 17 May 2010 (Fig. 1). All bobcats are alive.

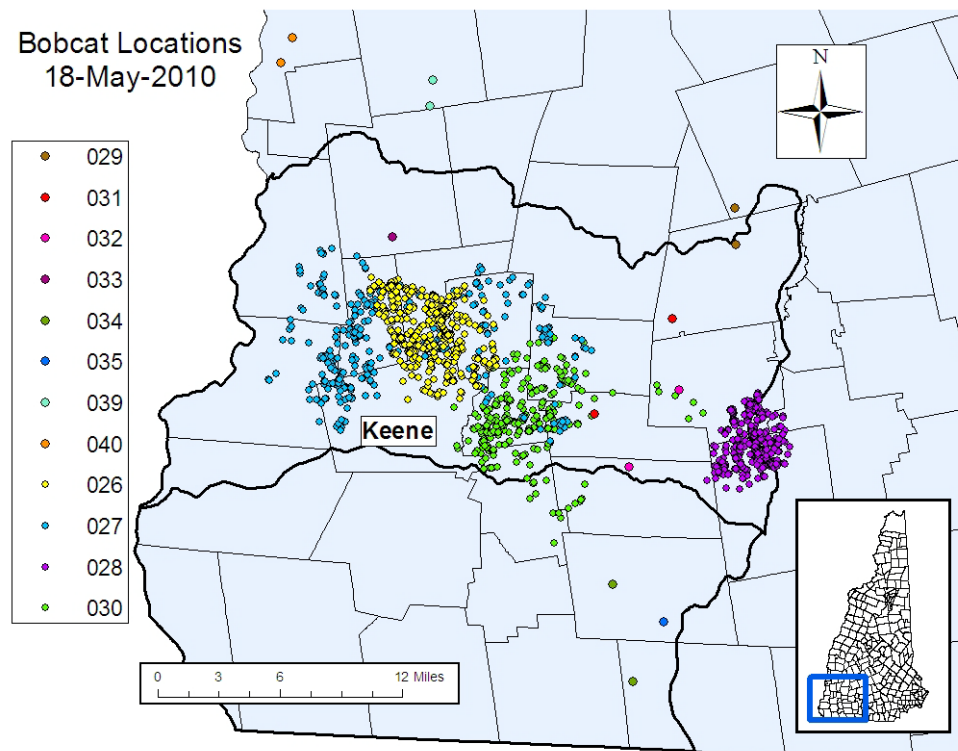


Figure 1. Locations of 12 transmitter-equipped bobcats in southwestern New Hampshire study area (bold outline) as of 18 May 2010.

On 24 May, John Litvaitis provided Calah Beckwith (Antioch University graduate student) with the equipment needed to locate marked bobcats via VHF signals. Calah will be using this experience to

satisfy a practicum requirement for her degree. She will focus on obtaining additional ground-based locations on bobcats equipped with Sir Track collars. Additional flights are also planned for the summer and fall with the volunteer group Light Hawk.

Initial efforts to estimate home ranges and develop habitat suitability models will occur during summer 2010.

Approach #2: *Evaluate the utility of a mark-recapture estimate of bobcat abundance based on fecal DNA.*

The study area was partitioned into 10 x 10-km grid cells to facilitate searching for scats. During January 2010, Derek Broman and four undergraduate technicians conducted systematic searches that yielded only two scats (Fig. 2).

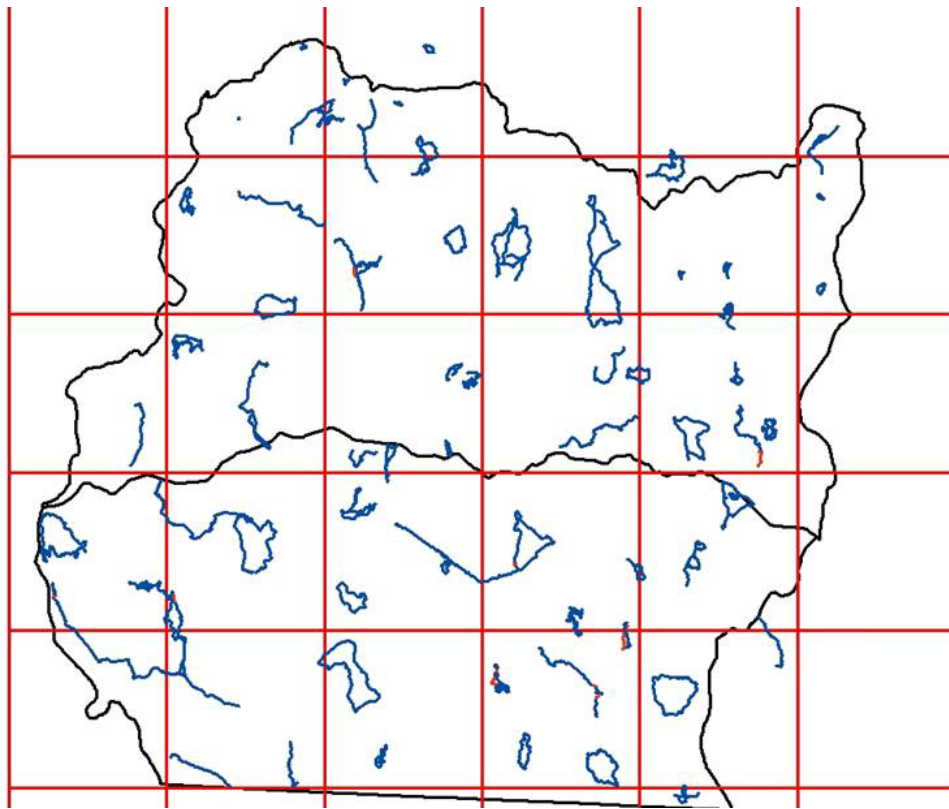


Figure 2. *Location of routes searched for bobcat scats during January 2010.*

On 10 April 2010, 10 undergraduate volunteers assisted Derek Broman and John Litvaitis in a more focused search for scats. At this time, effort was directed toward grid cells that were known to be occupied by transmitter-equipped bobcats (Fig. 3) with the notion that such a search should yield more samples than the January effort because scats that accumulated during the winter (frozen in snow) would be available for collection. This search yielded 10 scats that were considered possible

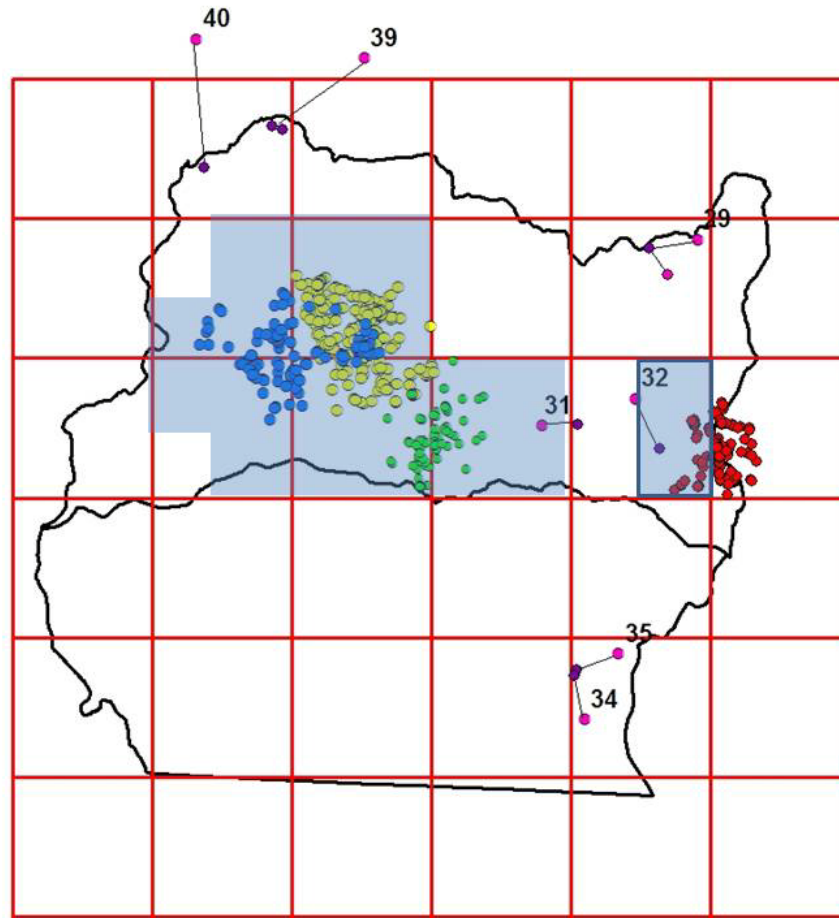


Figure 3. *Areas searched (marked in blue) for bobcat scats in southwestern New Hampshire study area on 10 April 2010. Numbers reference locations of transmitter-equipped bobcats (see Appendix 1 for details).*

bobcat samples based on size and shape. DNA was successfully extracted from all of these samples; however, 9 of 10 were identified as deposited by coyotes. These results suggest that although the DNA approach seems to be technically achievable, the inability to collect a sufficient sample of bobcat scats makes this approach impractical. Modifications will be explored, as well as an approach to estimate bobcat density using remotely-triggered cameras.

II. Compare abundance of bobcats in New Hampshire to populations in adjacent states

One approach to address the status of New Hampshire's bobcat population is to determine the proportion of the State that is occupied and patterns of relative abundance. To obtain statewide information, our initial effort will be to catalog sightings made by the public. Using our web site to solicit observations, we have received approximately 180 reports of bobcats. Most of these observations come with sufficient detail to place them accurately on a map. In comparison to

similar information obtained in the past decade, it seems bobcats are expanding into the southeastern portion of the State (Fig. 4).

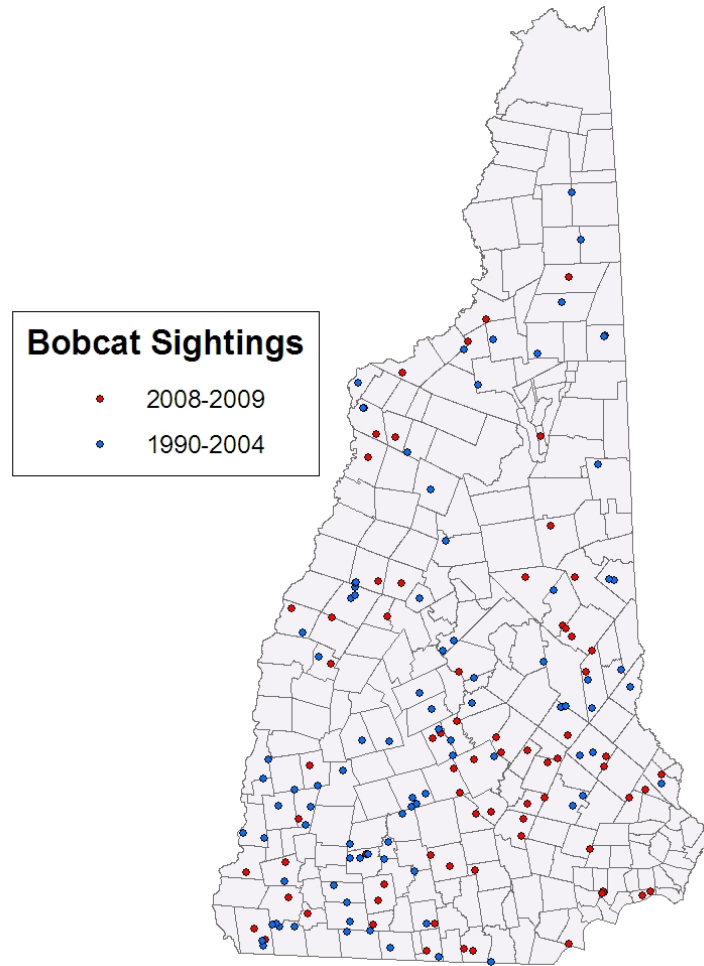


Figure 4. Comparison of bobcat observations collected during 1990-2004 to those collected 2008-2009.

III. Use information on bobcat movements for developing an approach for identifying wildlife corridors

No activity has occurred on this objective.

Appendix 1. Bobcat captures by cooperating trappers in southwestern New Hampshire during 2009-2010 field season. Capture locations (town, description, and coordinates), ear tag number, sex, approximate age (J = juvenile or kitten, Y = suspected yearling, and A = adult) are indicated. Collar type and VHF frequencies are also noted. Animals considered to be actively growing were not equipped with a collar.

Date	Town	Description	EASTING	NORTHING	ID	Sex	Age class	Collar type	VHF	Trapper
11/22/09	Gilsum	Bears Den	723201	4767454	26	M	A	Lotek	151.510	ART WHIPPLE
01/03/10	Winchester	Old Westport Rd	714583	4745293	.	U	J	.	.	ART WHIPPLE
01/13/10	Westmoreland	London Rd	714579	4763559	27	M	A	Lotek	151.550	JASON ARROW
01/16/10	Hancock	Middle Rd Rt. 9, Hutchinson	256685	4760304	28	F	A	Lotek	151.530	MIKE MORRISON
01/19/10	Antrim	Residence	743205	4773625	29	M	A	Sirtrack	151.010	MIKE MORRISON
01/19/10	Gilsum	Rt. 10, Dickie's Land	723604	4765133	.	U	J	.	.	ART WHIPPLE
01/22/10	Richmond	Fish Hatchery Rd	724704	4739498	1	U	Y	.	.	JOHN CAVENEY
02/01/10	Gilsum	Rt. 10, Bingham Hill	722974	4767213	.	U	J	.	.	ART WHIPPLE
02/03/10	Nelson	Apple Hill Rd	731213	4761568	30	M	A	Lotek	151.570	JASON ARROW
02/03/10	Richmond	Fish Hatchery Rd	724704	4739498	.	U	Y	.	.	JOHN CAVENEY
02/13/10	Harrisville	Prospect St	737321	4759196	31	M	A	Sirtrack	151.030	MIKE MORRISON
02/13/10	Harrisville	Hancock Rd Rt. 123, Fuller Horse	742465	4757868	32	M	A	Sirtrack	151.050	MIKE MORRISON
02/22/10	Alstead	Farm	718104	4778590	33	M	A	Sirtrack	151.070	MIKE KAZAK
02/23/10	Winchester	Old Westport Rd	714583	4745293	.	U	J	.	.	ART WHIPPLE
03/01/10	Jaffrey	Gilmore Pond Rt. 9, Hutchinson	739172	4742717	34	M	A	Sirtrack	151.090	ART WHIPPLE
03/02/10	Antrim	Residence	743205	4773625	2	U	Y	.	.	MIKE MORRISON
03/06/10	Jaffrey	Gilmore Pond Rt. 123, Fuller Horse	739182	4742715	35	F	A	Sirtrack	151.110	ART WHIPPLE
03/08/10	Alstead	Farm	718102	4778592	39	M	A	Sirtrack	151.130	MIKE KAZAK
03/12/10	Walpole	River Rd	709767	4778670	40	M	A	Sirtrack	151.150	ART WHIPPLE