

The LBL Camera Trapping Project

A Survey for the Eastern Cougar



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Field Support

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Friends of LBL

OUTLINE

1. Location
2. Methods
3. Results
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LAND BETWEEN THE LAKES National Recreation Area



Land Between the Lakes

LBL is the largest inland peninsula in the United States. It is the second largest contiguous block of forested public land east of the Mississippi. Located in Western Kentucky and Tennessee, the area consists of 170,000 acres and is currently managed by the US Forest Service.

LBL has the largest publicly owned bison herd east of the Mississippi River. LBL has more than 1,300 plant species, over 240 bird species, and 53 different mammal species. LBL is an active participant in the nation's efforts to re-establish the eagle population in Western Kentucky and Tennessee. A hacking program was designed in 1980. Hacking is a traditional falconers' term meaning the gradual return of raptors to the wild without human imprinting. Between 1980-1988, 44 Bald Eagles were reintroduced to the shorelines of LBL. Currently, LBL is home to a wintering eagle population of more than 100 birds, and there are between 12-16 active nesting sites.

LBL has the largest publicly owned bison herd east of the Mississippi River.

In February 1996, after a 150-year absence in the region, LBL reintroduced elk into a 700-acre Elk & Bison Prairie. In February 2001, 25 elk from LBL's Elk & Bison Prairie were transported to the Great Smokey Mountains National Park in an experimental reintroduction program.

Since 1991, LBL has maintained a captive breeding pair of Red Wolves as part of the U.S. Fish & Wildlife Service's Red Wolf Recovery.

Methods

1. Remote Cameras
2. Hair Traps
3. Scents/Lures



Remote Cameras

Remote Camera Survey

December 27, 2006 - August 10th 2008

- Summary Statistics Calculated
 - Number of animals photographed
 - Number of trap nights
 - Trap success percentage



Results

Number of photos, trap nights, and trap success.

	No.#	
Cougar	0	
Bobcat	5	
Coyote	42	
Red Fox	0	
Raccoon	2	
Skunk	0	
Dog	6	
White-tailed deer	294	
Squirrels	2	
Eastern Cottontail	1	
Eastern Wild Turkey	29	
Fallow Deer	14	
Gray Fox	0	
Opossum	11	
Unknown animal	163	
Great Blue Heron	4	
Hunters	9	
Hikers	8	
Red shouldered Hawk	1	
Feral/ Wild Hog	0	
TOTAL ANIMALS		592
TOTAL TRAP NIGHTS		2,282
TOTAL TRAP SUCCESS		25.942%

Hair Traps/Scent Posts

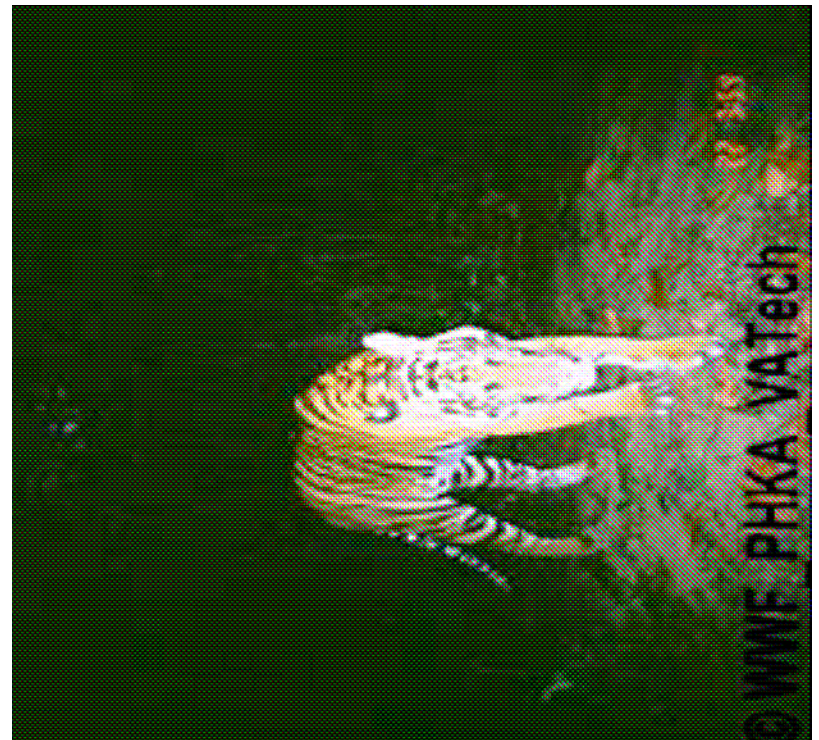
(3) Hair Traps with cougar pheromone lure were set in March 2008.

- As of January 2009 no cougar hair samples have been collected.
- Hair/Scent posts still remain in study area.



How do you know if an animal is truly absent?

- Carbone et al. (2001) used camera trapping rates and computer simulations to estimate the minimum effort required to determine if tigers (or any other species) were present in an area.
- Carbone et al. (2001) found that camera trapping programs running for 1000 trap nights had a 95% chance of obtaining at least 1 photograph at simulated low tiger densities of 0.4-0.7 individuals per 100 km².
- If trapping effort were 10,000 trap nights tigers presence could be determined when cat density was very low 0.05/100km²



Cougar Densities

Cougar densities in other areas with known intact cougar populations in North America range:

- 0.3-0.5 per 100km² in Utah (Hemker et al. 1984)
 - 0.77-1.04 per 100km² in Idaho (Laundré and Clark 2003)
 - 4.9 individuals per 100 km² (Anderson's 1983) **Highest Estimate*

 - **We had 2,282 trap nights and, therefore, should have been able to detect cougars at densities of 0.20 - 0.35 per 100km².**
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Wildlife Captured



Conclusion

While we did not confirm the presence of cougars across the study area, we did determine that cougar densities are less than known intact cougar populations in the western United States. According to Carbone et al. (2001), more camera trapping nights are needed to determine if cougar presence exists at lower densities levels of $.05/100\text{km}^2$, and if only newly dispersing animals are entering the area.