

A Survey of the Presence or Non-detection of Long-Tailed Weasels in the Lee Creek and Frog Bayou Watersheds

Project Summary

Although long-tailed weasel (*Mustela frenata*) populations are ubiquitous in North America (King 1989), little is known of its range in Arkansas. The City of Fort Smith Water Utility has an interest in identifying species within its two watersheds; therefore it is important to perform a presence/ non-detection study of the long-tailed weasel. It would benefit both the scientific community and the Utility to further map the range of the long-tailed weasel. The City of Fort Smith Utility would like to implement a trapping project in order determine the possible presence and range of long-tailed weasels in the Lee Creek and Frog Bayou watersheds, an area covering more than 500 mi².

Project Leader

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Project Partners

- **Don Clover**
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- **Assistant Biologist, Fort Smith Utility**
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Project Budget

35/65 Match	50/50 Match
\$22,690 SWG requested	\$22,690 SWG requested
\$17,600 Match amount provided	\$17,600 Match amount provided
\$40,290 Total amount of Project	\$40,290 Total amount of Project

Need

M. frenata is considered a species of least concern according to the SGCN scale (rated at 19 on the 100 point scale). However, evidence suggests that the weasel population in Arkansas is declining (Wildlife Action Plan, 833). According to Arkansas state trapping records, only four pelts were purchased between 1990-2006 (Arkansas Game and Fish Commission 2005-06 Furbearing Report). The Boston Mountain ecoregion provides suitable weasel habitat, however little is known of their range in this area. Very little literature and information is available regarding the weasel's presence in Arkansas (as per email correspondence with Blake Sasse, Arkansas Game and Fish Commission). There is a need to gather presence/non-detection data in order to assess conservation status and further increase the knowledge of this species. In addition, as a provider of water to more than 200,000 people, it is of interest to the city of Fort Smith to determine which species exist in its Boston Mountain watersheds.

Purpose and Objectives

The purpose of this project is to obtain information on the distribution of *M. frenata* in the Boston Mountain ecoregion and to contribute to the available data of the long-tailed weasel's range in Arkansas.

Objective 1: Conduct live trapping to determine the presence of *M. frenata* in the City of Fort Smith's two watersheds in the Boston Mountain ecoregion.

Objective2: Gather data to contribute to the delineation of *M. frenata* distribution in Arkansas.

Objective 3: Provide data to scientific community and educate the public.

Location

Trapping will take place within the City of Fort Smith's watersheds in the Boston Mountain ecoregion (Appendix I). Combined, Lee Creek and Frog Bayou watersheds cover an area over 500 mi². Trap sites will be chosen based on potential long-tailed weasel habitat within each basin.

Approach

For a non-invasive approach, this presence/non-detection study will be performed using Duke Single Door Wildlife Cage Traps to capture live individuals. There will be 25 traps placed in both basins for a total of 50 traps, and sites will be picked based on the suitability of the habitat for long-tailed weasels. Traps will be baited with chicken livers and set one week per quarter providing 4 trap nights. With 50 traps, this will produce 200 trap nights per quarter and 800 per year for two years. Traps will be placed (unset) at trap site one week before to pre-bait. Due to the large area and number of traps, an ATV will be used navigate the terrain which is often rough. All data including non-target species will be recorded and provided in the annual project report.

Expected Results and Benefits

The expected result of this study is to obtain information about the long-tailed weasel's distribution in the Boston Mountain eco-region, leading to a clearer understanding of its overall range in Arkansas. In addition, the results will increase the awareness of known species inhabiting the Fort Smith Utility's drinking watersheds. The detection of long-tailed weasels will legitimize future population studies (tagging) and lead to education of the public through demonstrations at Lake Fort Smith State Park.

Detailed Budget

	*35%/65% Match Scenario		*50%/50% Match Scenario	
	Fort Smith Utility In-Kind Match	State Wildlife Grant Funds	Fort Smith Utility In-Kind Match	State Wildlife Grant Funds
Salaries				
Assistant Biologist	\$ 16,262	0	\$ 16,262	0
Biologist	\$ 4,879	0	\$ 4,879	0
Environmental Manager	\$ 1,549	0	\$ 1,549	0
Equipment/Supplies	0	\$ 15,100	0	\$ 15,100
Indirect Costs	0	\$ 2,500	0	\$ 2,500
Total's	\$ 22,690	\$ 17,600	\$ 22,690	\$ 17,600
Total Project Cost	\$ 40,290		\$ 40,290	

* Fort Smith Utility has the personnel required to complete the project in either the 35/65 or 50/50 percent match scenario's. For this reason, the in-kind salary match is the same for both scenario's.

Qualifications

Chris Cooper

Assistant Biologist, Fort Smith Utility

B.S. - Biology, University of Arkansas-Fort Smith 2012

Research and experience:

Investigation of the presence/absence of *Batrachochytrium dendrobatidis* in amphibian populations in Arkansas

Gene characterization of TBC1D20 gene in *Dictyostelium discoideum*.

Water quality and fisheries monitoring in the City of Fort Smith Watersheds

Don Clover

Aquatic Biologist, Fort Smith Utility

B.S. – Biology, Arkansas Tech University 1985

M.S. - Biology, Tennessee Tech University 1993

Research and experience:

30 years experience in water quality and watershed management

30 years experience in recreational mammal trapping

Tim Smith

Aquatic Biologist, Fort Smith Utility

B.S. Biology, Arkansas Tech University

Research and Experience:

25 years experience in water quality and watershed management

Colby Marshall

Assistant Biologist, Fort Smith Utility

B.S. Biology, University of Arkansas Fort Smith 2010

Research and Experience:

Literature Cited

King, C. The natural history of weasels and stoats: 12. Comstock Publishing Associates, Ithaca, New York: 1998.

Sasse, Blake. Arkansas Game and Fish Commission Wildlife Management: 2005-2006 Furbearing Animal Report: 2006.

Appendix I. Lee Creek Watershed is represented in gray and Frog Bayou Watershed is represented in green.



