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Tommie J. Majors

University of Arkansas at Little Rock

Daphne C. Brock

University of Arkansas at Little Rock

Gary A. Heidt

University of Arkansas at Little Rock

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A Mail Survey to Determine the Status of the Black-tailed Jackrabbit, Ringtail Cat, Long-tailed Weasel, Badger and Eastern Spotted Skunk in Arkansas

Tommie J. Majors, Daphne C. Brock and Gary A. Heidt

University of Arkansas Little Rock, Dept. of Biology
2801 S. University, Little Rock, Arkansas 72204

Surveys have long been used as a tool in wildlife management studies (e.g., Filion, 1980). In Arkansas, Bailey and Heidt (1978) used mail surveys to determine the status and distribution of the nutria (*Myocastor coypus*). More recently, Blumberg (1993) used surveys to examine present mammal distributions in South Dakota.

Heidt et al. (1996) discussed a number of mammals in Arkansas for which little information is known. To supplement these data we employed a mail survey to document five of the more well known of those conspicuous species: the black-tailed jackrabbit (*Lepus californicus*), ringtail (*Bassariscus astutus*), long-tailed weasel (*Mustela frenata*), badger (*Taxidea taxus*), and eastern spotted skunk (*Spilogale putorius*).

The basic questionnaire format used in this survey included a brief introduction and statement of purpose. A table format was used for responses; counties within the state were listed individually, as were species of interest to the survey. A list of possible responses was provided; A- abundant, C-common, E-extirpated, H-suitable habitat present, N-not historically present and P-present. A separate section for responses dealing with wildlife management areas was provided as was a section for comments. The survey sent to trappers differed slightly in that we asked if they would be willing to save specimens that they trapped during the year. Because of subjective opinions, we feel that in the future, respondents should not be asked to supply data on the abundance or history of a species. If possible, it might also be useful to include descriptions or pictures of the species in question.

A total of 274 surveys with self addressed stamped envelopes were mailed statewide in the spring and summer 1995 to selected state biologists (Arkansas Game and Fish, U.S. Forest Service, and timber company biologists) and members of the Arkansas Trapper's Association. Of these, 116 were returned for a total return rate of 42.3% (142 and 61 for biologists, and 132 and 55 for trappers). Response rates for mail surveys are largely determined by the group surveyed, length of survey and whether or not a stamped return envelope is provided (Linsky, 1975). The individual response rate of 42.9% for biologists was somewhat lower than those reported by Blumberg (1993); however, the 41.6% response rate by the Arkansas trappers was higher. The combined response rate for this survey was higher than that of Blumberg's survey and higher

than most surveys of this type audience conducted without follow-up (Kanuck and Berenson, 1975).

The range of the black-tailed jackrabbit (*Lepus californicus*) is restricted to 8 northwest counties in Arkansas with specimens only recorded from Benton and Washington counties (Sealander and Heidt, 1990). Most responses were within the expected range (Table 1). Some respondents indicated that they had seen the black-tailed jackrabbit in the past, but not in recent years. We are skeptical of responses for 2 counties, Calhoun and Pike because of their distance from the known range of

Table 1. Survey response for black-tailed jackrabbit (*Lepus californicus*)

County	Trappers Association	State Biologists	Reported Specimens
BENTON	R,P	R	X
CALHOUN		C	
CRAWFORD	R	R	
FRANKLIN	P,R		
HOWARD	P		
JOHNSON	P		
LOGAN	P		
MADISON	R	R	
MARION	P		
MONTGOMERY		C	
PIKE	P		
SEBASTIAN	R		
WASHINGTON	R,P		X

A=Abundant C=Common R=Rare
P=Present, species status unknown
x=Actual Specimens

jackrabbits and the possibility that swamp rabbits (*Sylvilagus aquaticus*) may have been mistaken for jackrabbits. Multiple responses were consistent with reported specimen counties.

The ringtail (*Bassariscus astutus*) appears to be a rare and elusive mammal in Arkansas. However, based on one record and other sightings Sealander and Heidt (1990) proposed the range to include the eastern two-thirds of the Gulf Coastal Plain. The survey response for Polk and Howard counties was provided by a trapper who gave detailed accounts of his sightings as well as a description of a ringtail having been killed by a hunting dog. Other numerous sightings were reported in and around Sebastian County (Table 2). Suitable habitat exists in the

Table 2. Survey response for ringtail cat (*Bassariscus astutus*)

County	Trappers Association	State Biologists	Reported Specimens
BENTON		R	
BRADLEY			X
CRAWFORD	P	P,R	
FRANKLIN	P	R	
FULTON	R		
HOWARD	P		
IZARD	R	R	
LOGAN	P		
MADISON		R	
PIKE	P		
POLK	P		
POPE		P	
SEBASTIAN	P	R	
STONE		R	
WASHINGTON		R	

A=Abundant C=Common R=Rare
 P=Present, species status unknown
 x=Actual Specimens

area where both trappers and biologists report their presence, but at present the species is unconfirmed. Thus, there is a possibility ringtails are more widespread in Arkansas than previously thought.

Sealander and Heidt (1990) list the long-tailed weasel (*Mustela frenata*) as occurring statewide, but there are few actual specimens. Both trappers and biologists have

Table 3. Survey response for long-tailed weasel (*Mustela frenata*)

County	Trappers Association	State Biologists	Reported Specimens
ARKANSAS		C	
ASHLEY	R		X
BAXTER		R,P	
BENTON	R,P	P	
BOONE	R	P	
GALHOUN		R	
CARROLL	R	R,P	
CLARK	R		
CONWAY		P	
CRAWFORD	P,R	P	
CRAIGHEAD			X
CROSS			X
DALLAS	R		
DREW			X
FRANKLIN	P	R,P	
FULTON	R		
GARLAND		P	
GRANT		P	
HOT SPRING		P	
HOWARD	P,R		
IZARD	R		
JACKSON			X
JOHNSON	P	P	
LAFAYETTE		P	
LITTLE RIVER	R		

LOGAN	P		
MADISON	R	P	
MARION	P		
MILLER	R		X
MONTGOMERY		P	
NEVADA	R		
NEWTON	R	P	
OUACHITA	R		
PERRY	R	R	
PIKE	P,R		
POLK	R	P	
POPE	P	P	
SALINE		P	
SCOTT		P	
SEARCY		R,P	X
SEBASTIAN	P		
SEVIER	R		
STONE		R,P	
UNION	R		
VANBUREN		P	
WASHINGTON	R,P		
WOODRUFF			X
YELL	P,R	R	

A=Abundant C=Common R=Rare
 P=Present, species status unknown x=Actual Specimens

reported the occurrence of long-tailed weasels in an additional 41 counties (Table 3). All respondents, with the exception of one, indicated that long-tailed weasels were simply present or that they were rare.

Most reports of badgers (*Taxidea taxus*) (Table 4) have been consistent with areas surrounding known localities (Benton, Franklin and Stone counties); The record for Stone County was a roadkill (Cartwright and Heidt, 1994). Badger sightings have been closely associated with

Table 4. Survey response for badger (*Taxidea taxus*)

County	Trappers Association	State Biologists	Reported Specimens
BAXTER	R		
BENTON	R		
CARROLL	R	R	
CRAWFORD	R,C	R	
FRANKLIN	C,P,A	P	X
HOT SPRING		P	
HOWARD	R,C,A		
JOHNSON		P	
LAFAYETTE		P	
LOGAN	C		
MADISON	R	R	
MARION		P	
NEWTON		R	
PIKE	R,C		
POPE		P	
SEARCY		R	
SEBASTIAN	R,A	R	
STONE		R,P	X
WASHINGTON	R,C,P	R	X
YELL	A,P,R,C		

A=Abundant C=Common R=Rare
 P=Present, species status unknown x=Actual Specimens

pocket gophers, one of their major prey items. Some badger sightings may be the result of confusion with marmots (*Marmota monax*). A few badger pelts annually have shown up at the Arkansas fur sale.

Traditionally, the range of the eastern spotted skunk (*Spilogale putorius*) has been statewide, except possibly for the eastern most portion of the state. The responses for the spotted skunk have been the hardest to explain (Table 5). The only documented records occur in the uplands where spotted skunks are associated with rocky outcrops and rugged terrain. A large number of counties, especially in the uplands, had positive responses from both trappers and biologists. However, we suspect that some respondents, particularly those in the coastal plain

PULASKI	P		X
RANDOLPH			X
SALINE			X
SCOTT	P,R	P,C	
SEARCY	P,A		
SEBASTIAN	P		X
SEVIER	R,C,A		
SHARP	R		
STONE	A,R		
UNION		P	
WASHINGTON	R,C,A	C,P	X
WHITE	R		
YELL	A,P,R,P	P	

A=Abundant C=Common R=Rare
 P=Present, species status unknown
 x=Actual Specimens

Table 5. Survey response for eastern spotted skunk (*Spilogale putorius*)

County	Trappers Association	State Biologists	Reported Specimens
ASHLEY	R		
BENTON	R,C,P	P	X
BOONE	R	P	
BRADLEY	R	P	
CALHOUN		C	
CARROLL	R,P	P,A,C	
CHICOT	R		
CLARK	R	P	
CLEVELAND		P	
CONWAY	R		
CRAIGHEAD		R	
CRAWFORD	R,C	R,P	X
DALLAS	R	P	
DREW	R	P	
FRANKLIN	C,P,A		
FULTON	R	P	
GARLAND	P	P,R	
GRANT	P		
GREENE	R		
HEMPSTEAD	R,A		
HOWARD	C,A,R	C,P,R	
INDEPENDENCE			X
IZARD	R	R	X
JEFFERSON		P	
JOHNSON	P	C,R	
LAFAYETTE		P	
LAWRENCE	R		X
LINCOLN	R		
LITTLE RIVER	R,A		
LOGAN	C		
MADISON	R	P,C	
MARION	P		
MILLER	R,A		
MONTGOMERY	C,P,R	C,P,R	
NEVADA	R	P	
NEWTON	C	C,P	
OUACHITA	R	P	
PERRY	R,C	P,R	
PIKE	R,C		
POLK	C,P,A	P,C	
POPE	R		

regions of the state may have responded only to "skunk", therefore also including the striped skunk (*Mephitis mephitis*). Thus the results for this species are confusing and in need of further study.

We feel that the data from this study provide the basis for further investigation into the status and distribution of these Arkansas mammal species. However, as with all mail surveys, results must be regarded with caution and used with other sources of data. Data gathered by a mail survey may be used to indicate good localities from which to begin subsequent investigations into species' status.

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