Transactions of the Illinois Academy of Science
(1984), Volume 77, 1 and 2, pp. 23-28

THE MAMMALS OF IROQUOIS COUNTY CONSERVATION AREA*

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ABSTRACT

A survey of the mammals of Iroquois County Conservation Area was conducted on September 13-17, 1982. A checklist of mammals known to occur and those which may occur was developed. Results from small mammal trapping in ten different plant communities indicated that the sedge meadow was a highly productive community having the greatest diversity and among the highest trap success. No endangered or threatened species were found. The red squirrel, *Tamiasciurus hudsonicus*, is an exceptional species which occurs at the site.

INTRODUCTION

Iroquois County Conservation Area is a 1,920 acre tract located 2 miles north and 3 miles west of Beaverville in Sections 22, 23 and 24, T29N, R11W in extreme northeastern Iroquois County. It is a large, diverse area with high quality natural communities which are limited in occurrence in Illinois. These include sedge meadow, marsh, shrub prairie, dry sand savanna, wet-mesic prairie, dry-mesic sand prairie, dry-mesic sand savanna and flatwoods (INAI files).

Little is known of the presence and/or abundance of the mammals which inhabit this outstanding example of the Kankakee Sand Area. The objectives of the project were to 1) inventory the mammals associated with each community type/habitat, 2) establish a checklist of mammals known to occur on the site, 3) determine if any endangered or threatened mammals occur on the site and 4) determine the uniqueness, in terms of mammaliam fauna, of this site.

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METHODS

Trapping stations for small mammals were placed 8 meters apart along transects with three Museum Special snap traps, baited with rolled oats, peanut butter and bacon grease, per station. Traps were checked for four consecutive nights on 13-17 September 1982. Small mammals captured were placed in plastic bags, labelled (date, location, habitat type) and placed on ice for later identification and preparation as study specimens.

Presence of other mammals was evaluated by direct observation of the animal and/or its sign and interviews with persons who are knowledgeable of the site.

An effort was made to establish transects in each representative natural community, however, because the dry sand savanna and dry-mesic sand savanna could not be differentiated on the ground, the latter community was not sampled. In addition, the following man-made or disturbed habitats were sampled: old field, pine plantation, and creek bank. The number of stations in each natural community/habitat varied due to size of natural community/habitat, level of disturbance and anticipated future developments/disturbances to the community.

RESULTS AND DISCUSSION

Trapping effort included 990 trap-nights. Trap success, reported as captures per 100 trap-nights, was determined for each natural community/habitat (Table 1) and averaged 4.24 overall. Trap success was greatest in the old field, wet-mesic prairie, marsh and sedge meadow. The dry sand savanna yielded no specimens throughout the duration of the study. Each station in the dry sand savanna was stripped of the bait each day, probably due to insect activity. The trap success in the pine plantation also suffered from loss of bait. But, unlike the sand savanna, most of the traps were tripped every night. A larger animal, possibly a domestic dog or squirrel, may have been responsible for tripping the traps and consuming the bait. This problem was not noted in any of the other natural community/habitats.

The sampling yielded 42 specimens representing five species: masked shrew, *Sorex cinereus* (11); short-tailed shrew, *Blarina brevicauda* (11); white-footed mouse, *Peromyscus leucopus* (3); meadow vole, *Microtus pennsylvanicus* (15); and meadow jumping mouse, *Zapus hudsonius* (2). The number of individuals and species captured in each natural community/habitat is depicted in Table 1. The greatest number of individuals and species was captured in the sedge meadow community. The number of shrew captures was noteworthy as pitfalls are reportedly more effective in capturing insectivores than snap traps (Rose and McKean, 1980; Williams and Braun, in press). The meadow vole was captured in five habitat types and was the most abundant species at the site representing 36% of the animals captured (Table 1). The masked shrew and short-tailed shrew were also numerous being captured in six habitat types collectively and together comprised 52 percent of the animals captured. Two meadow jumping mice were captured in grassy habitats during the study. Low capture rates of this species are not unusual because, although statewide in occurrence, it is not abundant (Hoffmeister and Mohr, 1957). The white-footed mouse was captured only in the pine plantation. This species absence from the samples in other natural communities/habitats is due to the near absence of its preferred cover; fallen trees, decaying logs, and brush piles (Darrow and Hallett, 1980).

In addition to the species which were trapped, six others were noted by direct observation of the animal or its sign. These species include the raccoon, *Procyon lotor* (creek); woodchuck, *Marmota monax* (edge of flatwoods); eastern fox squirrel, *Sciurus niger* (flatwoods); red squirrel, *Tamiasciurus hudsonicus* (flatwoods); muskrat, *Ondatra zibethicus* (man-made potholes); and white-tailed deer, *Odocoileus virginianus* (old field, flatwoods). Most noteworthy among these is the red squirrel observation. This animal was shot by a hunter who mistook it for a small fox squirrel. The unlawful harvest of red squirrels occasionally occurs during the public hunting season (personal communication, 1982, Frank Snow, Illinois Department of Conservation, Beaverville, Illinois).

Based on interviews with persons knowledgeable of the area, other species are known to occur at the site (Table 2). The abundance of small mammals undoubtedly provides a staple food source for the larger carnivorous mammals which have been observed. Other mammals may also occur but remain undetected or were not adequately sampled (Table 3). Among these is the Indiana bat, *Myotis sodalis*, a federal and state endangered species which may forage and roost in the area during the summer months. A total of 40 or more of the 60 mammal species native and naturalized of Illinois may occur at Iroquois County Conservation Area.

SUMMARY

Each natural community/habitat was sampled and a checklist of mammals known to occur at the site developed. Additional sampling is needed to document all species which may occur there. The only mammal listed as threatened or endangered by the Endangered Species Protection Board which may be found at the site is the Indiana bat. Most other species, except for the red squirrel, are not exceptional in their occurrence or habitat utilization. Little is known of the population status, taxonomy, or life history of the red squirrel in Illinois. Unlawful harvest illustrates the need for greater public/hunter education. Further study and public education are needed to ensure a continued and healthy population of this exceptional species at the site.

ACKNOWLEDGEMENTS

We wish to thank the site personnel for access to trapping areas and assistance while on the site. Thanks to Carl Becker and Vic Diersing who critically reviewed the manuscript.

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Table 1. Number of individuals and species of small mammals captured within each natural community/habitat at Iroquois County Conservation Area, Iroquois County, Illinois, 13-17 September 1982.

	NATURAL COMMUNITY/HABITAT											
SPECIES	Sedge Meadow	Marsh	Shrub Prairie	Dry Sand Savanna	Wet-Mesic Prairie	Dry-Mesic Sand Prairie	Flat-woods	Tree Planta-tion	Old Field	Creek	Total	Per Cent
Masked shrew	4		3			1	3				11	26
Short-tailed shrew	4				3		1		3		11	26
White-footed mouse								3			3	7
Meadow vole	5	3	1		4	2					15	36
Meadow jumping mouse	1				1						2	5
TOTAL INDIVIDUALS	14	3	4	0	8	3	4	3	3	0	42	
TOTAL SPECIES	4	1	2	0	3	2	2	1	1	0	5	
NO. OF TRAP NIGHTS	210	36	120	120	90	120	120	120	27	27	990	
TRAP SUCCESS IN PERCENT	6.67	8.33	3.33	0	8.89	2.5	3.33	2.5	11.11	0.0	4.24	

Table 2. Checklist of Native Mammals Known to Occur at Iroquois County Conservation Area

SCIENTIFIC NAME	COMMON NAME	DOCUMENTATION*
Didelphis virginiana	Opossum	RO
Scalopus aquaticus	Eastern mole	RO
Sorex cinereus	Masked shrew	MS
Blarina brevicauda	Short-tailed shrew	MS
Procyon lotor	Raccoon	VS, RO
Mustela vison	Mink	RO
Mephitis mephitis	Striped skunk	RO
Taxidea taxus	Badger (adjacent areas)	RO
Vulpes vulpes	Red fox	RO
Urocyon cinereoargenteus	Gray fox	RO
Canis latrans	Coyote	RO
Marmota monax	Woodchuck	DO, RO
Spermophilus tridecemlineatus	Thirteen-lined ground squirrel	RO
Sciurus niger	Eastern fox squirrel	DO, RO
Tamiasciurus hudsonicus	Red squirrel	DO, RO
Glaucomys volans	Southern flying squirrel	RO
Geomys bursarius	Plains pocket gopher	RO
Castor canadensis	Beaver	RO
Peromyscus leucopus	White-footed mouse	MS
Microtus pennsylvanicus	Meadow vole	MS
Ondatra zibethicus	Muskrat	VS, RO
Zapus hudsonius	Meadow jumping mouse	MS
Sylvilagus floridanus	Eastern cottontail	RO
Odocoileus virginianus	White-tailed deer	VS, DO, RO

*
MS = trapped in museum special during study
VS = visual observation of sign during study
DO = direct observation of animal during study
RO = reliable observer reported occurrence

Nomenclature follows Jones et al., 1982.

Table 3. Mammals Which May Occur at Iroquois County Conservation Area

SCIENTIFIC NAME	COMMON NAME
Cryptotis parva	Least shrew
Myotis lucifugus	Little brown bat
Myotis keenii	Keen's bat
Myotis sodalis	Indiana bat
Lasionycteris noctivagans	Silver-haired bat
Pipistrellus subflavus	Eastern pipistrel
Eptesicus fuscus	Big brown bat
Lasiurus cinereus	Hoary bat
Lasiurus borealis	Red bat
Mustela nivalis	Least weasel
Mustela frenata	Long-tailed weasel
Spermophilus franklinii	Franklin's ground squirrel
Reithrodontomys megalotis	Western harvest mouse
Peromyscus maniculatus	Deer mouse
Microtus pinetorum	Pine vole