SURVEY FOR SMALL MAMMALS IN CAMDEN STATE PARK, LYON COUNTY, MINNESOTA A FINAL REPORT

Elizabeth A. Desy, Ph.D.
Associate Professor
Department of Biology
Southwest State University
Marshall, MN 56258
(507) 537-7315 or 537-6178

ABSTRACT. Accurate and up-to-date wildlife inventories are critical for the effective management of State parks. The wildlife of Camden State Park, Lyon County, Minnesota, has never been formally surveyed. Although species lists of flora and fauna exist for the park (Anonymous 1979), they are incomplete and in need of revision. The purpose of this study was to survey for small mammals in Camden State Park from May 1992 through September 1992. The survey resulted in adding seven new species of small mammals to the species list of fauna for Camden State Park. None of the small mammals captured or sighted in the park during the research period is listed as threatened, endangered, or of special concern as defined by Coffin and Pfannmuller (1988).

INTRODUCTION

Detailed, accurate, and up-to-date inventories of State Park wildlife are requisite for the development, maintenance, and implementation of State park management policies and practices (Anonymous 1979). Although species lists exist for all Minnesota State parks, several parks possess lists that are incomplete or in need of revision. Camden State Park, Lyon County, Minnesota has a wildlife inventory list based on checklists and reports by various individuals (Anonymous 1979), but the list appears incomplete. Red, gray and fox squirrels, for example, are not included on the fauna species list yet are common throughout the park (P. Otto, Park manager, personal communication). The purpose of this study was to document the presence of previously unrecorded small mammal species in Camden State Park through a regime of trapping and field observation during summer 1992.

STUDY AREA

Camden State Park is located on the northeast slope of the Coteau des Prairie, a high plateau that cuts diagonally from northwest to southeast across the southwestern part of Minnesota (Stassen 1977). The Redwood River carved a valley 100-150 feet deep into the Coteau resulting in considerable geologic and vegetative diversity within the park's boundaries. Some of the communities that can be found throughout the 1712 acres comprising Camden State Park include maple-basswood lowland forest, oak-basswood upland forest, prairie, old field, and wetlands (Anonymous 1979; Stassen 1977).

METHODS AND MATERIALS

This study was conducted from 22 May through 2 September 1992 in Camden State Park, Lyon County, Minnesota. A total of 11 sites representing six different communities were trapped within park boundaries (see Figure 1). The six communities included: 1) lowland maple (Acer spp.)/basswood (Tilia americana) forest (two sites). Sugar maple (A. saccharum) was the most dominant species present (Stassen 1977) although silver maple (A. saccharinum) and black maple (A. nigrum) were found occasionally along with slippery elm (Ulmus rubra), American elm (Ulmus americana) and ironwood (Ostrya virginiana). The second community represented was upland bur oak (Quercus macrocarna) /basswood forest (2 sites). Emerging prairie (one site) was the third community that included big bluestem (Androvogon gerardii), little bluestem (A. scoparius), and side-oats grama (Bouteloua curtipendula). Old field represented the fourth community (one site) and was comprised primarily of brome grass (Bromus spp.) with some Kentucky bluegrass (Poa pratensis) also present. The marsh/wetland community (three sites) included Kentucky bluegrass (P. pratensis), smooth brome (Bromus inermis), goldenrod (Solidago spp.), willow (Salix amygdaloides) and cottonwood (Populus deltoides). Finally, the sixth community surveyed was brush (two sites) which were comprised of smooth sumac (Rhus glabra) and wolfberry (Symphoricarpos occidentalis).

At each of the 11 trapping locations, I established 6-8 traplines, each trapline consisting of 11-15 trap stations set at 4-10 m intervals. The smaller intervals (4-m) were in the marsh and brush communities whereas the larger intervals (10-m) were in the other communities. At each trap station I placed one Sherman livetrap and one museum special snap trap. Each of the 11 locations was trapped for 6 consecutive nights. In the oak/basswood forest, marsh/wetland and brush communities, I trapped 2-3 extra days because of heavy rains during one or two nights of the regular trapping session. At the end of each trapping session, I picked up the traps and moved them to the next designated trapping location.

Trapping effort totalled 550 trap nights in the maple/basswood forest, 1136 trap nights in the oak/basswood forest, 900 trapnights in the prairie, 784 trap nights in the old field, 1492 trap nights in the marsh/wetland, and 530 trap nights in the brush.

Upon capture, animals were identified to species, weighed, sexed, and reproductive condition noted (e.g., males--testes scrotal; females--lactating or pregnant). The location of each capture was also recorded. The first of every species captured was saved as a voucher specimen. Thereafter, every 10th animal live-trapped and all snap-trapped animals were also saved. Most live-trapped animals were ear-tagged and released. Recaptures were few, less than 10 animals over all locations during the study.

RESULTS

Table 1 lists the small mammal species captured in Camden State park from May through September 1992. None of the animals captured is listed as endangered, threatened, or of special concern as described by Coffin and Pfannmuller (1988).

TABLE 1. Small mammal species, location, and proportion of males captured in Camden State Park, Summer 1992. Sample size is in parentheses.

SPECIES	LOCATION	PROPORTION MALE	
Microtus pennsylvanicus	Marsh/wetland (site 1)	0.25	(8)
(meadow vole)	Marsh/wetland (site 2)	0.75	(24)
	Prairie	0.50	(16)
	Maple/basswood forest	0	(1)
	Brush	0	(1)
	Old field	0.50	(2)
Zapus hudsonius	Marsh/wetland (site 1)	0.30	(10)
(meadow jumping mouse)	Marsh/wetland (site 2)	0.49	(43)
	Marsh/wetland (site 3)	0.48	(29)
	Oak/basswood forest--combined sites	0	(1)
Peromyscus maniculatus bairdii	Prairie	1.0	(1)
(prairie deer mouse)	Marsh/wetland (site 2)	0	(3)
	Old field	1.0	(1)
Peromyscus leucopus	Oak/basswood forest	0.40	(10)
(white-footed mouse)	Maple/basswood forest	0.92	(12)
	Marsh/wetland (site 2)	0.48	(21)
Spermophilus tridecemlineatus	Marsh/wetland (site 3)	0	(1)
(thirteen-lined ground squirrel)	Old field	0	(1)
Sorex cinereus	Old field	0.33	(3)
(masked shrew)			
Blarina brevicauda	Marsh/wetland (site 2)	0	(1)
(short-tailed shrew)			

The animal species captured most frequently over all trapping sites was Z. hudsonius (0.43, n=191). The second most frequently captured species was M. pennsylvanicus (0.28), followed by P. leucopus (0.23), P. maniculatus bairdii (0.03), S. cinereus (0.02), S. tridecemlineatus (0.01), and finally B. brevicauda (0.005).

Camden State Park manager, P. Otto, also reported having seen gray squirrels (Sciurus carolinensis), red squirrels (Tamiasciurus hudsonicus) and fox squirrels (S. niger) frequently throughout the park. Although I never captured any tree squirrel in my traps, I did observe a fox squirrel in the upland oak/basswood forest on 2 occasions, and a red squirrel in the lowland maple/basswood forest on one occasion (July) during this study.

In summary, of the seven species captured only one, the 13-lined ground squirrel (S. tridecemlineatus), is included on the fauna species list for Camden State Park (Anonymous 1979). Although not captured during this study, three tree squirrel species, red, gray, and fox are also known to occur within park boundaries (P. Otto, Park Manager, personal communication).

LITERATURE CITED

Anonymous. 1979. A Management Plan for Camden State Park. Minnesota Department of Natural Resources.

Anonymous. 1990. Camden State Park Summer Trails. Minnesota Department of Natural Resources.

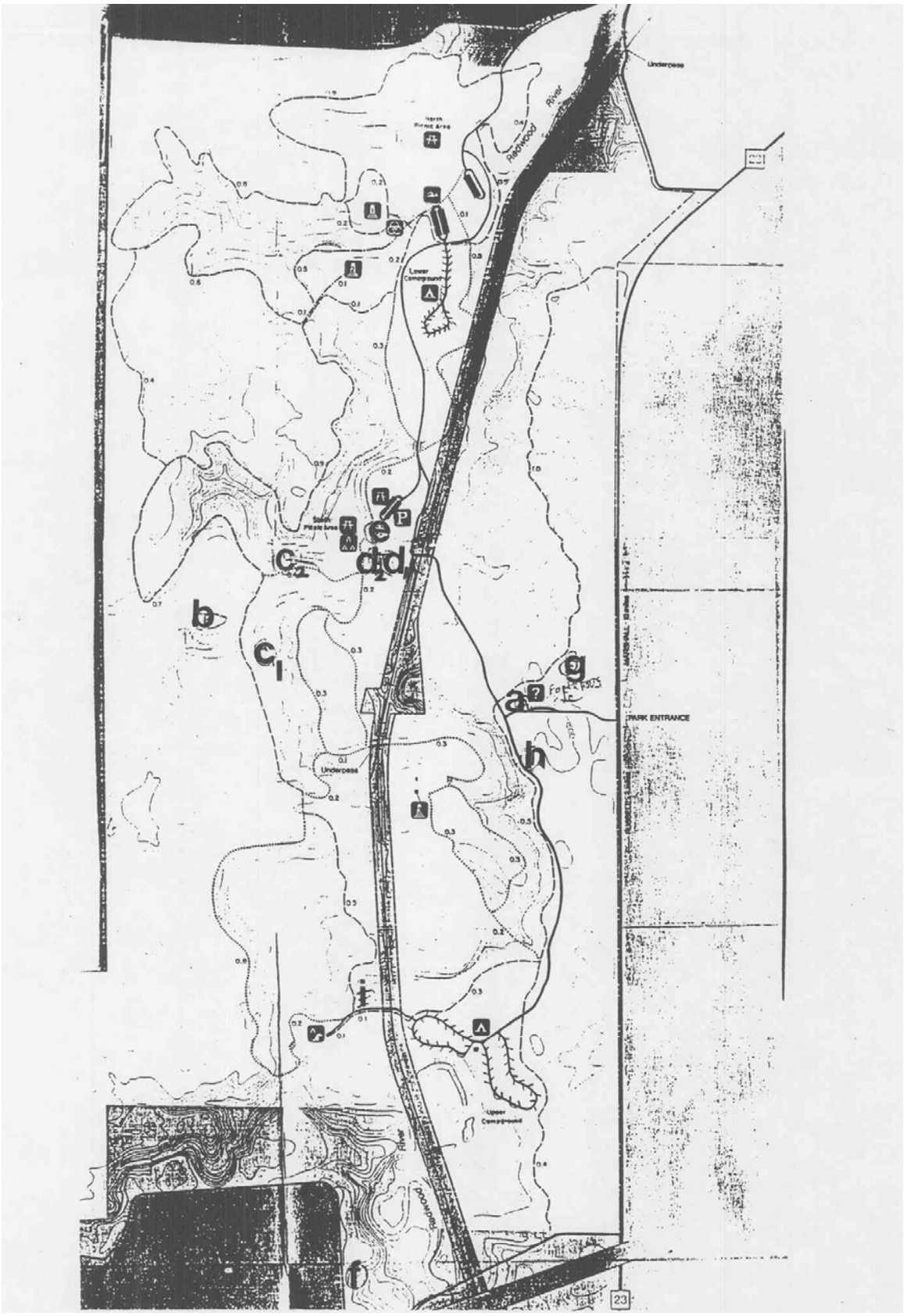
Coffin, B. and Pfannmuller, L. (eds.) 1988. Minnesota's Endangered Flora and Fauna. University of Minnesota Press, Minneapolis, MN.

Stassen, C. B. 1977. The Maple Basswood Forest Community of Camden State Park, Lyon County, Minnesota. M.S. thesis. University of Minnesota.

ACKNOWLEDGMENTS

This research was funded by the Minnesota Nongame Wildlife Tax Checkoff through the Department of Natural Resources.

FIG. 1. This map shows the location of 11 trapping sites within Camden State Park, Lyon County, Minnesota. The map of park boundaries was taken from Anonymous (1990). Sites a, e, and g represent marsh/wetland communities, site b is a prairie, sites el and c2 represent upland oak/basswood forest, site dl and d2 are lowland maple/basswood forest, site f is an old field, and sites h and i are brush communities.


Underpass
Redwood River
North Picnic Area
Lower Campground
South Picnic Area
PARK ENTRANCE
Underpass
Upper Campground
Redwood River
23