A COMPARISON OF COYOTE AND BOBCAT FOOD HABITS IN THE WICHITA MOUNTAINS, OKLAHOMA

John A. Litvaitis*

Oklahoma Cooperative Wildlife Research Unit†, Oklahoma State University, Stillwater, Oklahoma 74078

The life histories of the coyote (*Canis latrans*) and bobcat (*Felis rufus*) have been studied (1, 2, 3). However, few studies have concurrently investigated aspects of coyote and bobcat biology (4, 5). This study investigates the food habits of these carnivores in one area.

The study was conducted in the Wichita Mountains National Wildlife Refuge (WMNWR), located in Comanche Co., Oklahoma. The refuge contains about 12,505 ha of woodland and 8,547 ha of mixed grass prairie (6).

The food habits of coyotes and bobcats were determined using scat analysis. Coyote scats were collected bi-weekly from May 1976 through March 1977 along three established routes in the Wye, Geronimo Ridge and Hollis Canyon areas of the refuge. Bobcat scats were collected during the same time as coyote scats and incidentially during travel through the refuge. Coyote and bobcat scats were differentiated using criteria described by Murie (7). All food items were separated from the scats by hand and compared to reference collections of skins, skulls, and seeds located at Oklahoma State University. A comparison of the percent occurrence of major coyote and bobcat foods was made using a chi-square test to determine if coyotes and bobcats consumed the same prey with equal frequency. Major food items were considered to be those foods that occurred in at least 10% of the coyote or bobcat scats.

A total of 253 coyote scats was collected. Rodents were a staple of coyotes in the WMNWR, occurring in about 58% of the scats collected (Table 1). Cotton rats (*Sigmodon hispidus*), eastern woodrats (*Neotoma floridana*), and white-footed mice (*Peromyscus* spp.) combined occurred in 53% of the scats. Fruits and seeds, including persimmons (*Diospyros virginiana*), plums (*Prunus angustifolia*), and mesquite (*Pro-*

TABLE 1. *Food items (percent occurrence) identified in coyote and bobcat scats collected in the WMNWR during May 1976-March 1977.*

Food item	Coyote scats ($n = 253$)	Bobcat scats ($n = 40$)
Rodents	57.7	67.5
*Cotton rats	37.2	15.0
*Woodrats	13.4	30.0
*Fox squirrels	4.7	17.5
Fruits and seeds	30.8	7.5
*Persimmons	15.4	2.5
Avian prey (birds + eggs)	21.3	27.5
Deer	16.2	10.0
Insects	15.0	7.5
*Grasshoppers	10.7	0.0
Leporids	13.4	17.5
Cottontail rabbits	12.3	10.0
Armadillos	9.5	7.5
*Reptiles	3.2	10.0
Cattle	4.8	5.0

*Significant difference in the percent occurrence of food items in coyote and bobcat scats ($P<0.05$).

*Present address: Maine Cooperative Wildlife Research Unit, University of Maine, Orono, ME 04469.
†Oklahoma Department of Wildlife Conservation, Oklahoma State University, U. S. Fish and Wildlife Service, and Wildlife Management Institute cooperating.

sopis juniflora) were observed in 31% of the scats. Other foods frequently consumed by coyotes included avian prey (birds and eggs), whitetailed deer (*Odocoileus virginianus*), insects, leporids, especially cottontail rabbits (*Sylvilagus floridanus*), and armadillos (*Dasypus novemcinctus*). Bird remains could not be consistently identified to species.

Holle (8) investigated coyote food habits in the WMNWR during 1975 and 1976. Most food items observed in this study were identified in frequencies like those observed in my study, except elk (*Cervus canadensis*), cattle (*Bos taurus*), and persimmons. Holle observed remains of these foods in 9, 19, and 3% respectively of coyote scats examined. These foods were observed in 1, 5, and 15% respectively of the coyote scats collected during my study. The reasons for these differences are not known.

A total of 40 bobcat scats was collected. Rodents were the most frequently consumed prey of bobcats (Table 1). Eastern woodrats, fox squirrels (*Sciurus niger*), and cotton rats were found in 60% of the bobcat scats. Other foods included avian prey, leporids, whitetailed deer and reptiles. Species of reptiles consumed by bobcats or coyotes could not be determined.

Coyotes and bobcats did not consume major food items with the same frequencies (Table 1). Coyotes apparently consumed prey associated with prairie and savanna (cotton rats, persimmons, grasshoppers) more frequently than did bobcats ($P<0.05$) (Table 1). Bobcats, however, consumed prey common to woodlands (eastern woodrats, fox squirrels) more often than did coyotes ($P<0.05$) (Table 1).

Ellis and Schemnitz (5) examined stomach contents of coyotes and bobcats collected in Cimarron Co., Oklahoma, and observed that coyotes consumed jackrabbits (*Lepus californicus*), cattle, insects, and reptiles more often than did bobcats. Bobcats apparently consumed more birds and woodrats than coyotes. Bailey (4) also reported that coyotes in southern Idaho consumed jackrabbits, rodents and insects more often than did bobcats, while bobcats consumed birds more frequently.

The prey use patterns of coyotes and bobcats on the WMNWR may reflect habitat use differences of these predators. Litvaitis and Shaw (9) reported coyotes in the Wichita Mountains were located significantly more in savanna than expected by the availability of this cover-type within observed home ranges. Differences in prey capture techniques employed by felids (stalk) and canids (chase) (10, 11) may also influence prey utilization (4).

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