

FOODS OF COYOTES (*CANIS LATRANS*) IN OKLAHOMA.—The coyote (*Canis latrans*) is one of the few North American carnivores that not only has withstood human encroachment, but has expanded its range. Its ability to adapt its diet probably has contributed significantly to this range expansion.

Ellis and Schemnitz (Proc. Oklahoma Acad. Sci., 1957:180-185, 1957) and Ellis (Oklahoma State Univ. Publ., 56:1-31, 1959) reported foods eaten by coyotes in northwestern and north-central Oklahoma, respectively. These are the only studies reporting the diet of Oklahoma coyotes. The purpose of this study was to add information on the frequency and seasonality of foods in the coyote's diet in central Oklahoma.

TABLE 1.—Seasonal frequency of occurrence of stomach contents of 136 coyotes from central Oklahoma. Sample sizes are in parentheses.

Food Items	Dec.-Feb.(70)	Mar.-May(28)	Jun.-Aug.(16)	Sep.-Nov.(24)	Total(136)
Plants					
Grasses	83.4	78.6	87.5	66.7	81.6
Persimmon (<i>Diospyros virginiana</i>)	1.4	—	—	16.7	3.7
Peach (<i>Prunus persica</i>)	—	—	6.3	—	0.7
Wild Plum (<i>Prunus americana</i>)	—	—	6.3	—	0.7
Watermelon (<i>Citrullus vulgaris</i>)	—	—	6.3	—	0.7
Unidentified Seeds	4.3	7.1	6.3	4.2	5.2
Other Plant Material	45.7	35.7	43.8	50.0	44.9
Insects					
Grasshoppers (Orthoptera)	4.3	—	43.8	25.0	11.8
Beetles (Coleoptera)	8.6	10.7	43.8	4.2	12.5
Flies (Diptera)	—	—	—	4.2	0.7
Birds					
Chicken (<i>Gallus gallus</i>)	1.4	3.6	6.3	—	2.2
Other birds	5.7	—	6.3	—	3.7
Mammals					
Armadillo (<i>Dasypus novemcinctus</i>)	—	—	6.3	—	0.7
Cottontail (<i>Sylvilagus floridanus</i>)	17.1	10.7	12.5	8.3	13.9
Pocket Gopher (<i>Geomys bursarius</i>)	5.7	3.6	6.3	8.3	5.9
Harvest Mouse (<i>Reithrodontomys</i> sp.)	1.4	—	6.3	—	1.5
Cotton Rat (<i>Sigmodon hispidus</i>)	21.4	7.1	12.5	4.2	14.7
Woodrat (<i>Neotoma floridana</i>)	4.3	—	—	—	2.2
Muskrat (<i>Ondatra zibethicus</i>)	1.4	—	—	—	0.7
Pine Vole (<i>Microtus pinetorum</i>)	2.9	3.6	—	—	2.2
Coyote (<i>Canis latrans</i>)	27.1	25.0	12.5	45.8	28.7
Cattle (<i>Bos taurus</i>)	32.9	46.4	25.0	25.0	33.8
Sheep (<i>Ovis aries</i>)	—	—	6.3	—	0.7
Miscellaneous					
Trap Canvas	15.7	3.6	12.5	16.7	13.2
Sand, Stone, Gravel	4.3	3.6	6.3	8.3	5.2

We examined 198 stomachs from coyotes captured in steel leg-hold traps at scent-post sets. This report includes an analysis of only the 136 stomachs with contents. The specimens were collected from January through December 1970 in Cleveland, Grady, and McClain counties; these lie on the ecotone between the Mixed-grass Plains Biotic District and the Osage Savannah Biotic District of Blair and Hubbell (Amer. Midl. Nat., 20:425-454, 1938). Stomachs were removed from the coyotes, labeled, and frozen. The stomachs later were thawed; the contents were removed, washed in water, and air dried. Mammalian components were identified by comparison with bone and hair samples taken from museum study specimens from the area.

Gipson (J. Wildl. Mgmt., 38:848-853, 1974) pointed out that trapped coyotes tend to chew and swallow almost anything within reach. Our observations of trapped coyotes agree with Gipson's; however, we do not feel that the high annual frequency of grasses (81.6%, Table 1) results only from behavior associated with trapped coyotes. The relatively high frequency of grass in the stomachs and scats of non-trapped (Ellis and Schemnitz, 1957; Ellis, 1959) and trapped (present study) Oklahoma coyotes indicates that it may be of nutritional importance.

Cattle occurred in 33.8% of the stomachs (Table 1). The quantity of meat and hair per stomach suggests that this is the most important source of food for coyotes in central Oklahoma. Many of the stomachs we examined contained partially decomposed flesh as evidenced by the rancid odor and green coloration of the meat. In addition, pieces of skin were dry and leathery when removed from the stomachs, indicating they had been ingested at least several weeks after the food animal died.

Rodents were present in a total of 27% of coyote stomachs (Table 1), with the most important being the cotton rat. Ellis (1959) indicated that cotton rats form a significant part of the coyote's diet where available. Pocket gophers were in 5.9% of the stomachs; Ellis (1959) found none in north-central Oklahoma.

Insects were in 25% of the stomachs (Table 1). Except for one adult fly, all insects were grasshoppers and beetles. Summer was the peak season for insect consumption, but several stomachs contained insects during the cooler months as well.

Cottontail rabbits were in 13.9% of the stomachs, and avian remains were found in eight of 136 stomachs (Table 1). Sheep occurred once; this coyote was one of three from the only sheep ranch sampled. Watermelon also was found once. One farmer in our study area attributed considerable losses of watermelons to coyotes; our specimen was from his farm. The five stomachs with persimmons were collected from September to January. Our category of "other plant material" includes sticks, twigs, and larger pieces of woody plants. Nearly one-half (61 of 136) of the stomachs contained at least some woody materials. Since trapped coyotes tend to ingest almost anything within reach, the high frequency of woody material probably can be attributed to this behavior. Likewise, the 28.7% occurrence of coyote toes and/or hair, the 13.2% with trap canvas, and the 5.2% with sand and gravel probably can be explained on this basis.

"Unidentified seeds" represented at least four different species of plants. Five species of mammals also occurred at low frequencies (Table 1). The nine-banded armadillo and muskrat were found once, the harvest mouse twice, and the eastern woodrat and pine vole were each found three times. These species occurred at lower densities in the study area than cotton rats, cottontails, and pocket gophers.

Cattle (probably carrion) were the predominant source of food throughout the year for our sample of central Oklahoma coyotes. Grasses occurred at a high frequency in the stomachs we examined. We suggest that future studies list grasses as a food item and, if possible, direct some efforts to determining the significance of grasses in the coyote's diet.

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