

FOOD HABITS OF THE AMERICAN BADGER (*Taxidea taxus*) IN SOUTHERN TEXAS: AN OBSERVATION

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ABSTRACT

Limited information exists on American badgers (*Taxidea taxus*) within their southern distribution. Our goal was to gather information on diet of badgers in southern Texas. We collected 6 badgers from private ranches and road sides in 2 counties (Dimmitt and Duval). Percent content of food items was calculated for each sample. Prickly pear (*Opuntia* spp.), mesquite (*Prosopis glandulosa*) bean pods, and rodent remains were found in 4 of the 6 samples collected. Although sample size was small we feel this information provides a good foundation for future research done on this cryptic mammal.

KEY WORDS: American badger, *Taxidea taxus*, southern Texas, food habits

INTRODUCTION

American badgers (*Taxidea taxus*) are solitary carnivores that occur throughout the Great Plains of North America from central Mexico to northwestern Canada (Long 1973). The diet of American badgers has been described from northern states of the U.S. including Michigan (Dearborn 1932), Iowa (Errington 1937), South Dakota (Jense 1968), Utah (Lindzey 1982), Minnesota (Lampe 1982), Idaho (Snead & Hendrickson 1942, Messick & Hornocker 1981), and Colorado (Armitage 2004). In general, diets in the northern U.S. consist of small fossorial rodents (*Rodentia*) supplemented with rabbits

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(*Sylvilagus* spp.), reptiles, and invertebrates. However, no studies have reported badger food habits in their southern range specifically southern Texas. Our objectives were to collect basic information on diet of American badgers in southern Texas.

Study Area

The study area fell within Dimmit, and Duval counties located in the western South Texas Plains and the northern portion of the Tamaulipan Biotic Province (Blair 1950) around the Chaparral Wildlife Management Area (CWMA) (28° 20' N, 99° 25' W) (Correl & Johnston 1979; Hatch et al. 1990). Hot summers and mild winters characterize the climate. The average daily maximum summer (July) temperature and average daily minimum winter (January) temperature are 37°C and 5°C respectively. Average annual precipitation (1951-1978) of 55 cm (Stevens & Arriaga 1985) allows for a growing season of 249-365 days. The pattern of precipitation is bimodal with peaks occurring in late spring (May to June) and early fall (September to October). Elevation ranges between 177 and 186 m with the topography nearly level to gently sloping. A two-phase pattern of shrub clusters scattered throughout a grassland/savanna characterizes the vegetation (Whittaker et al. 1979, Archer et al. 1988). Mesquite (*Prosopis glandulosa*) – Granjeno (*Celtis pallida*) association characterizes the plant communities with subdominant woody species including twisted acacia (*Acacia shafferi*), brasil (*Condalia hookeri*), and hog-plum (*Columbium texana*).

MATERIAL AND METHODS

Badger gastrointestinal tracts were obtained through donated badger carcasses snared on private ranches located in Duval County and salvageable road-killed badgers in Dimmit County from March - November 2002. All donated badgers were expired upon retrieval by authorized personnel. Gastrointestinal tracts were removed and placed in bags, marked with location, sex, and date, and frozen to insure the integrity of the sample. Tracts were thawed, opened, and contents were separated into 4 categories: vegetation, invertebrate, mammal, and reptile. We measured dry mass (g) and percent content of each item for individual gastrointestinal tracts.

RESULTS AND DISCUSSION

Six gastrointestinal tracts (4 males and 2 females) were collected. Specimens were obtained during the summer months (May – August) from private ranches (4 snare caught) in Duval County and along FM 133 in Dimmit County (2 salvageable road kill). Vegetative material, bones, and hair were found in 4 tracts while 2 tracts were empty. Of the 4 tracts containing food, 2 contained prickly pear (*Opuntia engelmannii*) fruit remains and a trace of mesquite bean pods while the remaining 2 contained rodent remains, identified by the presence of rodent incisors and hair. A private ranch sample contained 19.4g of prickly pear, while another private ranch sample contained 19.8g of prickly pear and 1.7 of mesquite bean pod. The remaining two samples, one from a private ranch and a road side collection, contained 10.6g and 8.4g of rodent remains respectively (Table 1).

Table 1. Intestinal tract food items found in American badgers collected through snares and salvageable road kill from Duval and Dimmitt Counties, Texas 2002.

Badger	County	Collection	Sex	Total Mass (g)	Prickly Pear		Mesquite		Rodent	
					Mass (g)	%	Mass (g)	%	Mass (g)	%
1	Duval	Snare	Male	19.4	19.4	100	0	0	0	0
2	Duval	Snare	Female	0	0	0	0	0	0	0
3	Duval	Snare	Male	8.4	0	0	0	0	8.4	100
4	Duval	Snare	Male	21.5	19.8	92.1	1.7	0.79	0	0
5	Dimmitt	Road kill	Male	0	0	0	0	0	0	0
6	Dimmitt	Road kill	Female	10.6	0	0	0	0	10.6	100

Previous studies on badgers have demonstrated their ability to forage on a variety of food items (Messick and Hornocker 1981). Aside from a few studies adjacent to agricultural lands (Jense 1968), no studies have documented the use of plant materials as a staple in the diet of badgers. In fact, most studies consider badgers strict carnivores (e.g., Lindzey 1982, Warner and Ver Steeg 1995) and consider vegetative material ingested by badgers as incidental.

A variety of food items are available to badgers in southern Texas. Ground squirrels (*Spermophilus* spp.), pocket mice (*Perognathus* spp. and *Chaetodipus* spp), Ord's kangaroo rat (*Dipodomys ordii*), Southern Plains wood rat (*Neotoma micropus*), hispid cotton rat (*Sigmodon hispidus*), other rodents, and rabbits (*Lepus californicus* and *Sylvilagus floridana*) are abundant throughout much of South Texas (Davis and Schmidly 1994) and were observed on the study area. Additionally, a variety of reptiles also occur regionally including the Texas horned lizard (*Phrynosoma cornutum*), Western diamondback (*Crotalus atrox*), and Texas indigo snake (*Drymarchon corais*) (Kazmier and Ruthven 1999). A larger sample number of gastrointestinal tracts possibly would have resulted in a wider variety of food items. South Texas was in a minor drought for 8 months (December 2001 to July 2002) prior to specimen collection, which could have resulted in a decline in rodent populations. Both honey mesquite and prickly pear are drought resistant and thrive in dry climates and may have been the most available foods for badgers. In fact, Andelt et al. (1987) noted coyotes (*Canis latrans*) changed their diet to fruit consumption such as Texas persimmon (*Diospyros texana*) and agarito berry (*Mahonia trifoliata*) in response to changing seasons, and relative in availability and vulnerability of prey. Additionally, prickly pear fruits and mesquite bean pods are high in crude protein during spring and summer months (Taylor et al. 1997) and provide some nutritional benefits.

This study suggests that badgers in these particular areas may be opportunistic foragers, and are omnivorous, foraging on small mammals, cacti fruit, and legume mast. However, sample sizes in this study were small and further investigation into seasonal diet and relationships between diet and food resource abundance are needed to fully assess badger diets on a regional scale throughout South Texas. Also, further investigation could show that badgers in southern Texas are more omnivorous than northern populations with possible explanations being a decline in small mammal

abundance or an abundance of suitable and palatable vegetation such as prickly pear tunas and mesquite mast.

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