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PREY SELECTION OF THE COMMON BARN-OWL IN A NORTHERN FLORIDA WETLAND

KARL E. MILLER

*Department of Wildlife and Range Sciences
118 Newins-Ziegler Hall
University of Florida
Gainesville, FL 32611*

The Common Barn-Owl (*Tyto alba*) is the most widely-distributed owl species in the world (Burton 1984). Despite numerous food-habit studies in the literature, few have been undertaken in Florida (Trost and Hutchison 1963, Horner et al. 1974, and Chicardi et al. 1990).

In 1991, I collected 36 pellets from a Common Barn-Owl nest in Alachua County, Florida. The nest was located in a nest-box inside a pole barn at Paynes Prairie State Preserve, a wetland basin of marshes, fields, and pasture. Pellets were collected at 1-2 week intervals between 16 January and 1 April, during which time four eggs were laid and incubated. Pellets were washed and the contents separated using standard methods (Marti 1987). Mammal skulls and dentaries were identified with a taxonomic key (Glass 1973) and through comparison with specimens in the Florida Museum of Natural History (FMNH) collection. Bird skeletal material was identified through comparison with FMNH specimens. Presence in the pellets of the left mandible (mammals) or the maxilla (birds) was used to quantify a single prey individual.

Biomass of rice rats (*Oryzomys palustris*) and hispid cotton rats (*Sigmodon hispidus*) in the diet was estimated by using museum specimens collected from northern Florida; log-log regressions of body weight as a function of left mandible length in the museum specimens gave predictive equations used to estimate biomass in the pellet samples (see Morris 1979, Hamilton 1980). Log-log regression for 18 museum specimens of rice rats yielded a predictive equation of: $\log \text{ weight} = -2.936 + 3.923 * \log \text{ mandible length}$ ($r^2 = 0.76$). Log-log regression for 29 museum specimens of cotton rats yielded a predictive equation of: $\log \text{ weight} = -3.180 + 4.063 * \text{mandible length}$ ($r^2 = 0.81$). Biomass of uncommon prey species was estimated by calculating "average" weights using data from museum specimens for mammals and standard references for birds (Dunning 1984).

A total of 53 individual prey items was contained in the pellets, representing a mean of 1.47 prey per pellet. The greatest number of prey individuals found in a single pellet was five. The 53 individual prey items included four mammal species and two bird species. The most common prey species was the rice rat, accounting for 62.3% of the total prey (Table 1).

Rice rats also accounted for the majority of the biomass in the study (62.3%, Table 1). Although cotton rats and southeastern short-tailed shrews (*Blarina brevicauda*) made up a comparable percentage of the total prey individuals (16.9% and 13.2%, respectively), cotton rats were far more important in terms of the biomass provided (28.9% versus 1.8%). Mean prey size, mammals and birds combined, was estimated at 57.3 g.

The Common Barn-Owl diet at Paynes Prairie was dominated by mammalian prey (94.3% of all prey items), which is typical of the species throughout most of North America (Marti 1991). Cotton rats are usually the dominant prey of Common Barn-Owls in the southern part of the conterminous United States (e.g., Baumgartner and Baumgartner 1944, Trost and Hutchison 1963, Hamilton and Neill 1981). However, most southern studies have been from upland habitats, where rice rats are uncommon or rare (Hamilton and Whitaker 1979).

Table 1. Composition of 36 Common Barn-owl pellets from Paynes Prairie State Preserve, Florida, January-April 1991.

Species	Number of individuals	Percentage of individuals	Percentage of biomass
Mammals			
<i>Oryzomys palustris</i>	33	62.3	62.3
<i>Sigmodon hispidus</i>	9	16.9	28.9
<i>Blarina brevicauda</i>	7	13.2	1.8
<i>Glaucomys volans</i>	1	1.9	2.0
Birds			
<i>Porzana carolina</i>	2	3.8	4.6
<i>Dendroica coronata</i>	1	1.9	0.4
Totals	53	100.0	100.0

In a Louisiana coastal marsh, Jemison and Chabreck (1962) found that rice rats made up 97.5% of the prey of Common Barn-Owls. Horner et al. (1974) also found that rice rats were commonly consumed (27.6% of all prey items) by Common Barn-Owls at Paynes Prairie, but their results indicated that the round-tailed muskrat (*Neofiber alleni*) was the most common prey item. In contrast, no round-tailed muskrats were found in pellets in this study.

The two bird species taken (Table 1) are either common or abundant winter visitors at Paynes Prairie. Yellow-rumped warblers (*Dendroica coronata*) frequently forage in flocks and are readily available at that time of year. Predation on birds by Common Barn-Owls may be an opportunistic response to either a seasonally abundant, easily captured food supply or a decrease in the availability of mammals (e.g., Fritzell and Thorne 1984).

These data suggest that Common Barn-Owls feed opportunistically on the rodents and birds available in this wetland habitat. More site-specific data on the seasonal abundance of small mammals and birds are needed to elucidate the criteria used by the owls in selecting prey. Additional studies of Common Barn-Owl prey selection from a variety of habitats in Florida will afford further insight into the food habits of the species in this region.

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