

FOOD HABITS OF GREAT HORNED OWLS (*BUBO VIRGINIANUS*) IN THE BREEDING SEASON IN LAMI BIOLOGICAL RESERVE, SOUTHERN BRAZIL

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Hábitos alimentares do jacurutu (*Bubo virginianus*) durante a estação reprodutiva na Reserva Biológica do Lami, sul do Brasil.

Key words: Great Horned Owls, *Bubo virginianus*, food habits, sandy coastal plain, southern Brazil.

The Great Horned Owl (*Bubo virginianus*) is widely distributed, occurring from northern Canada to southern South America (except Argentine Patagonia and Chile) (del Hoyo *et al.* 1999). Its feeding ecology has been intensively documented in North America, including studies carried out at several sites from Mexico to Alaska (e.g., Marti 1974, McInville & Keith 1974, Rudolph 1978, Weir & Hanson 1989, Llinas-Gutiérrez *et al.* 1991, Bosakowski & Smith 1992, Marti & Kochert 1996, Zimmermann *et al.* 1996, Murphy 1997). However, it remains unknown in a broad area of its geographical distribution, including Central and South America.

We report the food habits of a pair of Great Horned Owls and their two young in the Lami Biological Reserve, Rio Grande do Sul, Brasil. In October 2001, we found a Great Horned Owl nest on branches of a fig tree (*Ficus organensis*) in a dry forest patch surrounded by wetlands. This owl species has been classified as rare in Rio Grande do Sul

(Belton 2000), probably because of a lack of information, and this is the first record for the Great Horned Owl in the Lami Biological Reserve. The reserve (30°15'S, 51°05'W – 179.78 ha) encompasses a mosaic of wetlands (grasslands and swamps, 64% of the study area), sandy coastal plain vegetation (“restinga”, 36%), and water bodies, including a stream and a large lake that surrounds 60% of the reserve’s perimeter.

We collected regurgitated pellets and prey remains discarded before prey ingestion and derived from degradation of old pellets at seven field expeditions (one-two days each) from October 2001 to February 2002, within a 10-m radius under the nest and roosts used by the owls. We attempted to identify prey items to species, with reference collections (Museu de Ciências Naturais/Fundação Zoológica do Rio Grande do Sul – MCN/FZBRS and Museu de Ciência e Tecnologia/Pontifícia Universidade Católica do Rio Grande do Sul – MCT/PUCRS) and special-

TABLE 1. Prey items (n = 183) found in 85 pellets of the Great Horned Owl (*Bubo virginianus*) in Lami Biological Reserve, southern Brazil, from October 2001 to February 2002. N = number of individual prey items; % = relative frequency of each prey type.

Prey	N	%
Mammals	62	34
<i>Myocastor coypus</i> (juvenile)	8	4
<i>Holochilus brasiliensis</i>	12	7
<i>Oligoryzomys flavescens</i>	1	< 1
<i>Rattus rattus</i>	1	< 1
<i>Didelphis albiventris</i> (juvenile)	8	4
Unidentified mammals	32	18
Birds	69	38
<i>Vanellus chilensis</i>	1	< 1
<i>Plegadis chibi</i>	2	1
Passeriformes	10	6
Strigiformes	4	2
Unidentified birds	52	28
Amphibians		
<i>Leptodactylus</i> sp.	15	8
Reptiles		
Colubridae	3	2
Fishes		
Callichthyidae	1	< 1
Insects	33	18
Coleoptera		
Cerambicydae	1	< 1
Scarabaeidae	28	15
Hemiptera		
Belostomatidae	1	< 1
Hymenoptera		
Formicidae	3	2

ists. Mammals were identified using teeth, whereas other vertebrates were identified

using bones, scales and feathers. Mammals, birds, amphibians and fishes were enumerated by counting the number of skulls and paired skeletal components (e.g., femurs). We assumed the minimum number of individuals for reptiles (i.e., presence of scales indicated one individual). Insects were quantified according to the number of cephalic capsules; if those were not present, pronotum and elytra were used. Pellets were pooled for the analysis, and the relative frequency of prey items found in pellets was calculated by dividing the number of individuals of each category by the total number of recorded prey items (expressed as percentages). We analyzed prey remains only qualitatively. Comments on prey biomass were based on average weights reported in literature (Emmons 1997, Sick 1997, Eisenberg & Redford 1999, Belton 2000) and on unpublished information.

We identified 183 individual prey items in 85 pellets (Table 1). This family of Great Horned Owls showed generalist food habits, foraging on a wide variety of prey types, similarly to those reported in other studies (Rusch *et al.* 1972, Llinas-Gutiérrez *et al.* 1991, Zimmerman *et al.* 1996). Birds and mammals, counting for 72% of the owls' diet, occurred in similar proportions (38% and 34%, respectively). Insects were the third most frequent prey type (18%). Mammals represent from 33% to 97% of Great Horned Owls' diet in several habitats of North America, whereas birds count for approximately 5% to 65% (Marti 1974, McInville & Keith 1974, Rudolph 1978, Weir & Hanson 1989, Llinas-Gutiérrez *et al.* 1991, Bosakowski & Smith 1992, Zimmerman *et al.* 1996, Murphy 1997).

Prey remains included the following bird species: Chestnut-capped Blackbird (*Agelaius ruficapillus*), Common Moorhen (*Gallinula chloropus*), Creamy-bellied Thrush (*Turdus amaurochalinus*), Guira Cuckoo (*Guira guira*), Picazuro Pigeon (*Columba picazuro*), Purple Gallinule (*Porphyrio martinica*), Snail Kite (*Rostbramus*

sociabilis), Southern Lapwing (*Vanellus chilensis*), Speckled Chachalaca (*Ortalis guttata*), Striated Heron (*Butorides striatus*), Wattled Jacana (*Jacana jacana*), Whispering Ibis (*Phimosus infuscatus*), White-faced Ibis (*Plegadis chibi*) and an unidentified Icteridae. Mammalian prey were the following species: arboreal spiny rat (*Phyllomys dasythrix*), black rat (*Rattus rattus*), south american water rat (*Holochilus brasiliensis*) and adults and, mainly, offspring of nutria (*Myocastor coypus*) and white-eared opossum (*Didelphis albiventris*). Other prey species included one anuran (*Leptodactylus* sp.) and one colubrid snake (*Liophis miliaris*).

Birds and mammals apparently dominated prey biomass. The mass of birds ranged from 10 g in Passeriforms to approximately 550 g in the Whispering Ibis. The mass of mammalian prey ranged from 32 g in the pygmy rice rat (*Oligoryzomys flavescens*) to approximately 1000 g in juveniles of nutria and white-eared opossum, whose adults can reach 4900 g and 2000 g, respectively. Amphibians could be the third most important prey type for consumed biomass, with individual mass around 150–200 g, probably exceeding the biomass of insects.

Most of the prey types recorded in our study are species typically found in the wetlands that surround the nest and in the water bodies situated near it (around 250 m) (e.g., nutria, South American water rat, pygmy rice rat, Chestnut-capped Blackbird, Wattled Jacana, White-faced Ibis, Snail Kite, Southern Lapwing, anurans, snakes and insects). It thus appears that this habitat type is important for foraging Great Horned Owls in the region. Marti & Kochert (1996) and Rusch *et al.* (1972) reported that Great Horned Owls forage close to the nest, whereas Murphy (1997) suggested that they prefer to forage in wetlands, regardless of their distance from the nest. Birds, mainly those associated with wetlands, and some mammals such as nutria and white-eared opossum, which were very frequent items in the owls' diet, are very com-

mon in the study area. In addition, although the owls consumed prey items with a wide variety of sizes, we found both few small and few large prey items. It is probable that prey abundance and size influence the foraging patterns of Great Horned Owls in Lami, as observed in other regions (e.g., Weir & Hanson 1989, Llinas-Gutiérrez *et al.* 1991).

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