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Journal of Arid Environments 60 (2005) 397–404

Journal of Arid Environments

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Winter–spring food habits of an island population of Coyote *Canis Latrans* in Baja California, México

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Received 11 July 2003; received in revised form 28 June 2004; accepted 26 July 2004
Available online 18 September 2004

Abstract

Food habits of the coyote (*Canis latrans*) on San Luis Gonzaga Island of Baja California, Mexico were investigated. We collected 239 scat samples for analysis on 14 May 1997. Samples ranged from fresh to approximately 2 months old. Frequency of diet components was 48.9% birds, 21.9% fish, 14.8% plants, 3.6% mammals, 4.0% insects, 0.7% reptiles, 0.5% arachnids, and 5% crustaceans. The last group had not previously been recorded in this region. Great blue herons (*Ardea herodias*) composed 11% of the diet. Other members of the Ardeidae family accounted for an additional 23.4%. From March through May, the large coyote population on the island depends mainly on scavenging bird carcasses, and has minimal impact on endemic rodent species on the island, some of them listed as threatened by the Mexican government.

Keywords: *Canis latrans*; Food habits; Baja California; México

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doi:10.1016/j.jaridenv.2004.07.007

1. Introduction

The coyote (*Canis latrans*) is one of the more widely distributed carnivores in North America (Bekoff, 1977; Hall, 1981), including the Baja California Peninsula and some islands in the Gulf of California, such as Tiburon Island and San Luis Gonzaga Island (or Willard Island, López-Forment et al., 1996; Álvarez-Castañeda, 2000; Lawlor et al., 2002), and Margarita Island in the Pacific Ocean (Álvarez-Castañeda, 2000). Studies are not available on the ecology or biology of coyotes in these island areas.

The coyote is considered an omnivorous opportunist (Ortega, 1987; Elliot and Gueting, 1990; Windberg and Mitchell, 1990; Reichel, 1991; Servín and Huxley, 1993). Cattle and game species also have been recorded in the diet (Andelt et al., 1987; Hernández et al., 1994; Cypher et al., 1996; Samson and Crete, 1997; Pierce et al., 2000).

We analysed coyote scat of San Luis Gonzaga Island to evaluate the importance of the bird carcasses to the feeding habits of coyotes on the island, to evaluate if a large population of coyotes can depend on scavenging, and to determine whether part of the diet in winter–spring season is composed of rodents endemic to the island, some of them are "threatened" species (Norma Oficial Mexicana, 2002).

Study Site. San Luis Gonzaga Island, about 2 km^2 in size, (Gastil et al., 1983) is in the northern Gulf of California at 29°48′N, 114°20′W (INEGI, 1996). The island is roughly conical-shaped (150 m elevation) with an overall 30° slope. There are two canyons, one on the western face, and the other on the northern face (Álvarez-Castañeda, 2000, Fig. 1). The island is within San Luis Gonzaga Bay, 1 km from the mainland coast (Gastil et al., 1983). The climate is a hot, dry desert (García, 1981), with annual mean high temperature of 26 °C, and an annual minimum of 18 °C. It supports a microphyllous desert shrub community dominated by *Larrea tridentata* with *Fouquieria splendens*, *Cercidium microphyllum*, *Olneya tesota*, and *Bursera microphilla* (Wiggins, 1980).

2. Methods

On 14 May 1997, we collected 239 samples of coyote scat on San Luis Gonzaga Island, placing each sample in separate paper bags. The samples were determined as fresh to 2 months old (Rodríguez-Estrella et al., 2000). Analysis of scat samples in our laboratory followed the technique described by Reynolds and Aebischer (1991). Each sample was weighed, and separated into principal components: hair, feathers, scales, bone, vegetable matter, invertebrates, stones, and unidentifiable materials. These components were placed in labeled bags. Components were compared with specimens from the zoological collections at the Centro de Investigaciones Biológicas del Noroeste (CIB) and the Instituto de Ecología y Alimentos of the Universidad Autónoma de Tamaulipas (IEA-UAT).

Mammals were identified by osteological characteristics and aspects of fur; birds by color and size of feathers, as well as by presence of raquis and other feather structures; reptiles and fish by scales and bones; invertebrates by head, thorax, and appendages and plants by leaf, seed, and stem structures.