

First reproductive description of captive Coyotes (*Canidae: Canis latrans*) in Honduras



Image 1. One of the most common behaviors observed was holes made by the alpha female and her pups. Usually they hide food there, but sometimes play on or near the holes. Note that one of the pups is trying to get into the hole. © Alejandro Velásquez.

Introduction

Coyotes (*Canis latrans*) are opportunistic carnivores distributed from Alaska to Panama, including colonized urban areas (Morey et al. 2007). Hidalgo-Mihart et al. (2004) presented convincing paleontological evidence that Coyotes have been in southern Mexico and central America prior to the arrival of the Europeans in the 15th century and that the habitat suitable for Coyotes increased due to the deforestation of forests for agriculture. Yet, information about coyote activity in Mexico and central America is scarce (Hidalgo-Mihart et al. 2009). In 1936, Goldman described a new subspecies of coyotes in Honduras (previously *C. hondurensis* and formerly *C. l. hondurensis*), and after this description, there has been insufficient information

about Coyotes in Honduras, with no reproductive information of *C. latrans* in the country. Herein, we describe for the first time, the reproductive and behavioral patterns of Coyotes in captivity in Honduras.

Methods

Behavior in captivity was attained at the Rehabilitation and Conservation Rescue Center El Ocotal (authorized and registered by the wildlife department at ICF (Instituto Nacional de Conservación y Desarrollo Forestal, Áreas Protegidas y Vida Silvestre) under resolution GG-MP-066-2001). This rescue center is located in Sabanagrande, Francisco Morazán (13°47'27"N, 87°18'51"W; 970 m asl) and the two coyotes came from a locality in La Arcadia, Francisco Morazán, which were held in



Image 2. The herd of Coyotes in El Ocotal, Francisco Morazán. Notice that the adult female of the first litter is sensitive to her surroundings, while the others are searching for food as an alimentary enrichment activity. © Alejandro Velásquez.

captivity by people who captured them in the wilderness. The life zone represented in the area near the cave in which the pups were found (13°54'50"N; 87°14'48"W; 1,260m), according to Holdridge (1987), was a subtropical moist forest with abundance of pines *Pinus oocarpa* and *P. maximinoi*, and oaks *Quercus oleoides*.

In April and May 2016, a juvenile male and female, respectively, were taken to the rescue center.

Results

Direct observations were made from May 2016 to February 2018, specifically in the gestation stage of the female for documenting the birth of the litters. The Coyotes showed two peaks of activity; the first between 04.00h and 05.00h (with howls and whimpers), and the second between 17.00h and 17.45h. The time that they were inactive was between 11.00h and 13.00h. When the juveniles started to grow, every time the male was the first to interact with the new alimentary enrichments.

After 60 days of the gestation period, in June 2016, the female gave birth to one female and two males. During the first five days of giving birth, the female made low howls with the litter, and they produced whimpers in response to the mother. The female never left the shelter (1.22 m x 1.23 m x 1.16 m) in the enclosure (150m² x 2.50m of height with an open roof) where she gave birth, and after the first month and a half, the litter left the shelter.

In February 2018, the alpha female was in gestation period again, and the mating process lasted for three days. The female gave birth exactly after 60 days, and again, one female and two males were born. The mother always maintained a vigilant behavior for protecting the new litter, and sometimes was seen digging with two of her pups burying food (Image 1). The herd of eight Coyotes (Image 2) had successfully adapted and no evidence of aggression was shown in the hierarchy.

Discussion

From the two Coyotes kept in captivity, six pups were born, and a successful hierarchy was arranged in the herd. The alpha male always continued to be the leader, protecting and guiding the herd. According to Schultz & Young (2018), the most common behaviors they observed were scanning while they rested, being vigilant, maintaining a social hierarchy, and preferring complex shelters to simple ones (especially in breeding seasons). The timing of gestation recorded in this study is among the ones mentioned by Reid (2009).

We strongly recommend population studies that can determine the trends in Honduras, which might in turn help to determine other behaviors in the wild. Finally, we encourage to solve the human-coyote interactions by reaching out to the communities nearby, spread awareness and educate people about the threats and challenges faced by coyotes because of human interference, importance of coexistence with animals, and also to avoid taking their cattle to graze near the sites in which Coyotes have been recorded.

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