A NEW RECORD AND ALTITUDINAL EXTENSIONS FOR EL CIELO BIOSPHERE RESERVE MAMMALS, TAMAULIPAS, MEXICO

IVAN CASTRO-ARELLANO[1,2] AND THOMAS LACHER, JR.[1,3]

[1]Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX 77843-2258, USA. ivan.castro@uconn.edu
[2] Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, CT, 06268, USA
[3] Center for Applied Biodiversity Science, Conservation International, Washington, DC, 20036, USA. t.lacher@conservation.org

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El Cielo Biosphere Reserve (ECBR) is an extremely important area for the conservation of biodiversity of northeastern Mexico; this being especially true for mammals. Tamaulipas is the most diverse state from northern Mexico for mammals (Ramirez-Pulido and Castro-Campillo, 1993) with most of this diversity being concentrated in the southwest region of the state. Although ECBR represents only 1.8% of the total area of Tamaulipas it harbors about 20% of all mammal species from Mexico (Hernandez-Huerta, 1989). The combination of a highly heterogeneous landscape and the subtropical latitude makes this a unique zone that harbors species with neartic and neotropical affinities. Within the reserve, four major vegetation zones exist along a sharp altitudinal gradient (Sosa, 1987): Tropical Subdeciduous Forest (TSDF, 200-800 m), Cloud Forest (CF, 800-1400 m), Pine-Oak Forest (POF, > 1400 m) and Xerophitic Scrub (XS, 1300-1600 m). Vargas-Contreras and Hernandez-Huerta (2001) analyzed the distribution of mammal species among these four major vegetation types, and their checklist is the most up to date summary of mammal occurrences at ECBR. In this note we report a new record of a shrew not previously known to occur at ECBR, as well as altitudinal extensions of several species that complement the list of Vargas-Contreras and Hernandez-Huerta (2001). Given the unique nature and complexity of this gradient we believe it is highly relevant to report these extensions so that new biogeographical analyses, such as the one from Monteagudo and León (2002), can benefit from the most complete information in their examination and interpretation of mammalian distribution patterns. Our observations were gathered during fieldwork for a project to study small mammal community ecology patterns at ECBR. This work involved approximately 290 days in the field from 2000 to 2003, mostly during the wet summer seasons but also including visits during the dry winter periods.

***Sorex saussurei* Merriam, 1892**

On July 1st 2002 we captured a female individual (118-48-14-9=7 g; TCWC58795) in a Sherman live trap transect set in a CF site less than 1 km N of San Jose (23° 02' 46'' N, 99° 13' 47'' W, 1316 m). This individual represents the first record of this species for ECBR, raising the total for the reserve to 97 species, and the second known locality for the state of Tamaulipas. The closest record is in Miquihuana, Tamaulipas (Alvarez, 1963) thus extending its known distribution roughly 75 Km southeast from that site. The trap site was located in a moss-covered rocky outcrop with a dense layer of leaf litter, both typical conditions of CF sites at ECBR. These conditions are much like the microhabitat of other localities where this species has been collected (Davis and Lukens, 1958). We estimated tree density at 380 trees/ha with an average 90% canopy cover for this transect (Castro-Arellano, unpublished PhD dissertation). Dominant tree species at this forest are *Liquidambar styraciflua, Quercus sartorii, Clethra pringlei, Magnolia shciedeana, Podocarpus reichei, Acer skutchii, Carya ovata and Cercis canadensis* (Puig et al., 1987). *S. saussurei* had been captured in other humid forests dominated by coniferous trees (i.e. *Pinus, Abies, Juniperus*) but had not been collected in cloud forests before (Baker, 1956; Baker y Greer, 1962; Davis y Russell, 1954; Ramirez-Pulido, 1969). This record therefore also expands the known range of macrohabitats inhabited by this species. Other small mammal species we captured at this site were a shrew, *Cryptotis mexicana*, and three species of rodents: *Peromyscus levipes, P. ochraventer* and *Oryzomys chapmani*.

***Tayassu tajacu* (Linnaeus, 1758)**

On July 23, 2002 we saw a group of six collared peccary crossing a small creek from an *Opuntia* sp. agricultural field towards the TSDF (23° 02' 06'' N, 99° 09' 27'' W, 284 m). For several minutes these animals were unaware of our presence which allowed for positive identification and detailed observations. This agricultural field marked the border to a continuous and relatively undisturbed section of this tropical forest at ECBR. Worth noting is that this site is located <2 Km from the main plaza of Gomez Farias. This species has been reported before for ECBR (Goodwin, 1954; Hooper, 1953) but no documented occurrence at this vegetation type was known. Vargas-Contreras and Hernandez-Huerta (2001) deemed this species as present in the oak pine forest at higher elevations but did not include it in the TSDF list. Our observations coincide with those of Goodwin (1954) regarding the relative darker pelage of the individuals at the reserve. We found that they are darker compared to individuals from northern Tamaulipas.

***Dasypus novemcinctus* Linnaeus, 1758.**

We found a partially consumed nine-banded armadillo male individual in the vicinity of the Estación de Biología Los Cedros (23° 03' 01'' N, 99° 09' 05'' W, 307 m) which is located on the outskirts of the town of Gomez Farias. This armadillo had been recently killed and was partially lodged in a large stack of dead branches. Given that this mammal is known from both the CF and POF its presence in the TSDF was very likely but no previous report existed confirming its wider distribution over the gradient. A continuous distribution was confirmed with the sighting of another individual in a clearing (23° 03' 13'' N, 99° 11' 02'' W, 900 mts) at the CF-TSDF transition zone.

***Conepatus leuconotus* (Liechtenstein, 1832).**

This species was listed by Vargas-Contreras and Hernandez-Huerta (2001, as *C. mesoleucus*) to be present only in the POF and XS at the higher elevations of the reserve. On July 7 2001 we found a killed individual along the dirt road from Gomez Farias to Alta Cimas on the eastern facing slope of the Sierra de Cucharas (23° 3' 42" N, 99° 12' 23" W, 773 m) at a zone of TSDF. Later that same month we saw at least three individuals on separate occasions, mostly in the afternoon, in the vicinity of Alta Cimas (23° 3' 42" N, 99° 12' 18" W, 969 m). This area represents a transitional zone between the CF and the TSDF along the altitudinal gradient. Finally, on June 30, 2002 two separate individuals were sighted in a valley located close to San Jose (23° 2' 29" N, 99° 13' 42" W, 1246 m). Our observations confirm the presence of this carnivore at all the vegetation types of the reserve and almost all the eastern part of the gradient, including the lower elevation zones where it likely occurs but has not reported. We designated these individuals as *C. leuconotus* since it has been shown by morphometric and genetic analyses that *C. mesoleucus* and *C. leuconotus*, and their subspecies, represent a single species (Dragoo *et al*., 2003).

***Odocoileus virginianus* (Zimmermann, 1780).**

We sighted a white-tailed deer while checking a transect we had set close to the dirt road from Alta Cimas to Rancho El Cielo (23° 04' 41'' N, 99° 11' 24'' W) within a zone of CF. Another individual was sighted the night of June 24, 2003 alongside the paved road that goes from Gomez Farias to Highway 85, right around the border of the reserve (23° 00' 53'' N, 99° 07' 46'' W, 145 mts). Around this site the TSDF has been extensively modified by human activities but locals describe this species as not uncommon. This highly adaptable species had been reported for all other vegetation types from ECBR except for the CF. Our report confirms its presence along the entire gradient of this reserve, but as with other large mammal species almost nothing is

known regarding their abundance in each vegetation type. It is necessary to develop further studies to assess population densities and ascertain conservation status at the reserve.

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