Revista Mexicana de Biodiversidad 83: 872-874, 2012
DOI:10.7550/rmb.28296

**Research note**

# New records of tepezcuincle (*Cuniculus paca*) in Puebla, Central Mexico

## Nuevos registros de tepezcuincle (*Cuniculus paca*) en Puebla, centro de México

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**Abstract.** The state of Puebla has little information about mammal presence and distribution. In a study to determine jaguar presence using camera traps and interviews, we obtained 16 new records of tepezcuincle (*Cuniculus paca*) in different vegetation types such as tropical rainforest and cloud forest, as well as in coffee plantations. The records prove that the species is widely spread along the Sierra Norte of Puebla, but the distribution of populations in the Sierra Negra is uncertain.

Key words: *Cuniculus paca*, Puebla, Rio Necaxa drainage basin, Sierra Negra, Sierra Norte, tepezcuincle, lowland paca.

**Resumen.** El estado de Puebla tiene poca información sobre presencia y distribución de mamíferos. En un estudio para determinar la presencia del jaguar, mediante cámaras y encuestas, logramos obtener 16 nuevos registros de tepezcuincle (*Cuniculus paca*) en diferentes tipos de vegetación como selvas medianas y bosque mesófilo de montaña,además de cafetales. Estos registros prueban que la especie se distribuye ampliamente a lo largo de la sierra Norte de Puebla; sin embargo, se desconoce la distribución de las poblaciones en la sierra Negra.

Palabras clave: *Cuniculus paca*, Puebla, cuenca hidrológica Río Necaxa, sierra Negra, sierra Norte, tepezcuincle, tuza real.

The tepezcuincle (*Cuniculus paca*) is a nocturnal and solitary rodent (Aquino et al., 2009) found along tropical woodlands (Ramírez-Pulido et al., 2001) at elevations between sea level and 2 329 msnm (Botello et al., 2005). It has a wide range of distribution, from Mexico to northern Argentina (Aquino et al., 2009), and it represents the largest rodent in Mexico, where it has been previously recorded in several states (López-Wilchis and López-Jardines, 1998; Ramírez-Pulido et al., 2001; Alcantara-Salinas and Rivera Hernández, 2008; Contreras-Díaz et al., 2009; Mejenes-López and Hernández-Bautista, 2009; Tlapaya and Gallina, 2010). In Puebla, previous accounts correspond to 2 localities in the Sierra Norte (Zapotitlán de Méndez and Olintla), which were collected in tropical woodland habitat (Ramírez-Pulido et al., 2001). Here, we present 16 new records of tepezcuincle, which contribute to delimit its distribution in Puebla.

Recibido: 06 noviembre 2011; aceptado: 30 marzo 2012

The reports were obtained opportunistically from January 2009 to October 2010, while conducting a field survey for the project "The jaguar in Puebla: presence and human relations" (Fig. 1). The study area is located in the Sierra Norte and Sierra Negra regions of northern Puebla, encompassing an area of 5 709.82 km$^2$ that includes 55 municipalities. Our records were obtained mainly through interviews with hunters, ranchers, and tanneries in the area. Field corroboration was done using 23 camera-traps (Wildview Xtreme 4, Bushnell, and Cuddeback), set in forested areas of the Sierra Norte. Following Silver (2004) we placed the cameras 40 to 50 cm off the ground along roads, trails, water holes, and other places with recent animal tracks or evidence of activity. We set the traps for a month before moving them to a new location to cover as much area as possible; depending on the patch size, we placed them within the same or moved them to another patch.

We obtained a total of 16 new records that resulted from camera-traps (4 photographs), signs (a set of tracks, a nest, and bite marks), mounted specimens

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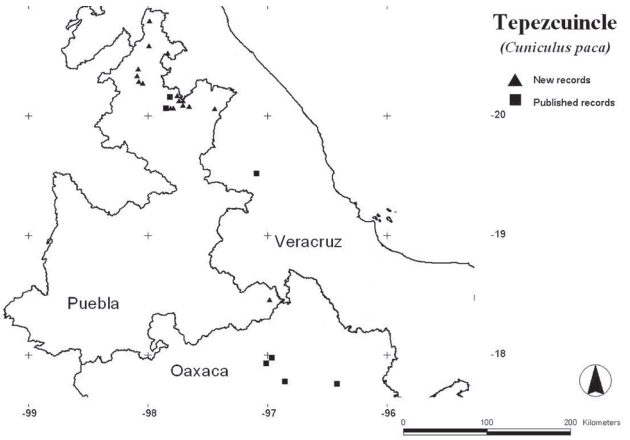


**Figure 1.** New records of Tepezcuincle (*Cuniculus paca*) in Puebla.

(3 individuals), and oral reports (7 accounts). The first photograph was taken at 3:04 a.m. on August 9, 2009, in a canyon with tropical rainforest immediately beside the Necaxa River, near the community of Telolotla in the municipality of Zihuateutla (20°12'47" N, 97°54'38" W). The second photograph was taken at 2:34 a.m. on July 7, 2010, in a patch of rainforest close to an orange orchard and induced grassland, near the community of Metlaltloyuca in the municipality of Francisco Z. Mena (20°43'56" N, 97°50'59" W). The third photograph was obtained at 5:28 a.m. on August 8, 2010, close to a coffee and a bean plantation, near the community of Huehuetla in the municipality of Huehuetla (20°6'17" N, 97°37'30" W). The final photograph was taken at 2:14 a.m. on August 9, 2010, in a coffee plantation, near the locality of Xicotepec de Juárez in the municipality of Xicotepec (20°16'51" N, 97°57'41" W).

Moreover, we have 2 accounts of sign-evidence. We found tracks on nests and bites on trees in a preserved tropical rainforest that runs along the canyon of the Zempoala River, located near the community of Tuxtla in the municipality of Zapotitlán de Méndez (20°00'5" N, 97°39'16" W). The second sign-record was obtained near a coffee plantation in the upper part of the Necaxa River Canyon, near the community of Lagunillas in the municipality of Zihuateutla (20º13'21" N, 97º56'16" W). This means that we found evidence of tepezcuincle in several vegetation types; which agrees with previous findings that mention the great habitat-adaptation capability of tepezcuincle (Zucaratto et al., 2010). The presence of tepezcuincle in coffee plantations has been previously recorded in the state of Veracruz (Tlapaya and Gallina, 2010), which might be explained by its capacity to consume several agricultural plants such as pepper (*Pimienta* spp.) and bananas (*Musa paradisiaca*) (Zucaratto et al., 2009).

Furthermore, we found mounted specimens in the communities of Jonotla (20°01'58" N, 97°34'14" W) and Tuzampan de Galeana (20°03'52" N, 97°34'28" W) in the municipalities of the same name that are located along the tropical rainforest of Tecolutla River Canyon. The specimen found in Jonotla was hunted 10 years ago, while the other, from Tuzamapan was hunted in January 2010. The third individual was hunted 4 years ago in tropical cloud forest in the community of Nanacatlán in the municipality of Zapotitlán de Méndez (20°00'13" N, 97°40'32" W).

Finally, when we conducted our interviews, we asked locals to identify different species from an array of pictures. Through these, we obtained oral reports from local hunters in the Sierra Norte and one from the Sierra Negra who mentioned that there is active taking of tepezcuincle, with varied intensity. In the Sierra Norte, some interviewees mentioned they actively hunt it in the following communities: Mecapalapa in the municipality of Pantepec (20º31'37" N, 97º51'20" W), Villa Lázaro Cárdenas (La Uno) in the municipality of Venustiano Carranza (20°27'41" N, 97°42'01" W), Xicotepec de Juárez in the municipality of Xicotepec (20°16'51" N, 97°57'41" W), Caxhuacan in the municipality of Caxhuacan (20°03'51" N, 97°36'24" W), Cuetzalan del Progreso in the municipality of Cuetzalan (20°01'02" N, 97°31'21" W), and Las Margaritas in the municipality of Hueytamalco (19°59'48" N, 97°18'29" W). Moreover, we attained an oral record of one hunter in the Sierra Negra who admitted taking tepezcuincle in several places near the community of Tlacotepec de Díaz in the municipality of San Sebastián Tlacotepec (18°24'15" N, 96°50'56" W).

These records are important because they expand the distribution of tepezcuincle in Puebla along the mountain ranges of the Sierra Norte and Sierra Negra. However, it is still necessary to determine whether tepezcuincle has a continuous distribution, because there is a 185-km gap between the closest known populations to the north and those in the south. Furthermore, we believe that connectivity with other populations is feasible given the distance between our records and other known populations in neighboring states. For example, from our northernmost record to the next known population in the state of Hidalgo, there is a linear distance of 11 km (Mejenes-López and Hernández-Bautista, 2009); and, from its closest known population in Veracruz (Tlapaya and Gallina, 2010), the linear distance to the Sierra Norte is 70 km, and from the population in the Sierra Negra the distance is 31 km.

Ramírez-Pulido et al. (2001) confirmed that tepezcuincle is actively hunted for its flesh in the Sierra Norte. From our surveys we corroborated this fact and determined that meat is sold for as much as US $40 per kilogram in local

markets; moreover, its meat can sometimes be sent to the United States as flesh or even whole carcasses. This situation makes it extremely important to learn more about tepezcuincle, including its distribution and its hunting and human-consumption rates. Our results help to expand the known distribution of the species in Puebla from a couple of localities to most parts of the Sierra Norte. This information will aid in creating management practices that take into account sustainable use of tepezcuincle to prevent major declines of the species in the area.

We would like to thank to the National Geographic Society that supported us with the grant NGS YE Grant #EC0390-08 to start this project, Durrell Wildlife Conservation Trust, Panthera Foundation, Universidad de Las Américas for providing facilities, the Tourism office of Hueytamalco, the Biosphere Reserve of Tehuacán-Cuicatlán, ANP Cuenca Rio Necaxa, and the private reserve Kolijke for all their support.

**Literature cited**

Alcántara-Salinas, G. and J. Rivera-Hernández. 2008. Biodiversidad y etnobiología de San Juan Teponaxtla. Informe intermedio de actividades. Centro de Estudios Geográficos, Biológicos y Comunitarios S.C. y Rufford Small Grant Foundation.

Aquino, R., D. Gil and E. Pezo. 2009. Aspectos ecológicos y sostenibilidad de la caza de majas (*Cuniculus paca*) en la cuenca del Rio Itaya, Amazonia Peruana. Revista Peruana de Biología 16:67-72.

Botello, F., P. Illoldi, M. Linaje, G. Monroy and V. Sánchez-Cordero. 2005. Nuevos registros del "tepezcuincle" (*Agouti paca*) para el norte del estado de Oaxaca, México. Revista Mexicana de la Biodiversidad 76:103-105.

Contreras-Díaz, R.G., A. Santos-Moreno, A.M. Alfaro and M. Pérez-Lustre. 2009. Identificación individual de tepezcuincle (*Cuniculus paca*) mediante el uso de huellas. Revista Mexicana de Mastozoología 13:34-45.

López-Wilchis, R. and J. López-Jardines. 1998. Los mamíferos de México depositados en colecciones de Estados Unidos y Canadá. Universidad Autónoma Metropolitana, Unidad Iztapalapa. 323 p.

Mejenes-López, S. M. A. and M. Hernández-Bautista. 2009. Los mamíferos en el estado de Hidalgo. *In* Memories from the III Foro Internacional Biológico Agropecuario, Universidad de Veracruz, México. p. 1039-1058.

Ramírez-Pulido, J., C. Galindo-Galindo, A. Sánchez-Quiroz and A. Castro-Campillo. 2001. New records of *Agouti paca* (Linnaeus) from the Mexican state of Puebla. The Texas Journal of Science 53:285-288.

Silver, S. C. 2004. Estimando la abundancia de jaguares mediante trampas-cámara. Wildlife Conservation Society. New York, USA. 27 p.

Tlapaya, L. and S. Gallina. 2010. Cacería de mamíferos medianos en cafetales en el centro de Veracruz, México. Acta Zoológica Mexicana nueva serie 26:259-277.

Zucaratto R., R. Carrara, B. and K. Siquiera-Franco. 2010. Dieta da Paca (*Cuniculus paca*) usando métodos indirectos en un área agrícola de la Selva Atlántica Brasieña. Biotemas 23:235-239.