

First photographic record of *Leopardus pardalis* (Mammalia: Felidae) in Nichupté Lagoon, Quintana Roo, Mexico

Primer registro fotográfico de *Leopardus pardalis* (Mammalia: Felidae) en la Laguna Nichupté, Quintana Roo, México

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The ocelot (*Leopardus pardalis*) is one of six species of felines found in Mexico. According to NOM-059-SEMARNAT-2010, it is currently endangered in the country. The objective of this study was to document the presence of ocelots in the Nichupté mangrove protected natural area in Quintana Roo, Mexico. From March to November 2024, 16 camera traps were used for faunal sampling in this ecosystem for 275 days and 6,600 hours. From May to July 2025, daytime surveys were conducted for 65 days and 455 hours. Independent photographs and videos of several species of fauna were obtained. However, the ocelot was observed in only one photograph and in a single footprint on one day. This is the first documented instance of ocelots in the Nichupté mangrove ecosystem, which is of high biological and ecological importance. Furthermore, the presence of this species suggests that the ecosystem is healthy, as the ocelot is mainly associated with its food sources, such as rodents and birds.

Keywords: Camera trap; conservation area; endangered species; feline; new record; ocelot.

Leopardus pardalis comúnmente conocido como ocelote, es una de las seis especies de felinos que se distribuyen en México y actualmente en el país se encuentra en peligro de extinción de acuerdo con la NOM-059-SEMARNAT-2010. Por lo que el objetivo del presente trabajo fue reportar la presencia del ocelote en el área natural protegida, manglares de Nichupté, en Quintana Roo, México. Mediante un muestreo faunístico con 16 cámaras trampa de marzo a noviembre 2024 (275 días y 6,600 horas) y recorridos diurnos durante mayo a julio 2025 (65 días/455 horas) en este ecosistema. Se obtuvieron fotografías y videos independientes con el registro de varias especies de fauna; sin embargo, el ocelote se observó solo en una fotografía y la huella en un solo día, este hallazgo es el primer registro de ocelote para el manglar de Nichupté, un área de gran importancia biológica y ecológicamente, además, la presencia de esta especie sugiere un buen estado de salud del ecosistema, ya que este felino se encuentra asociado principalmente a su alimentación (presas) como roedores y aves.

Palabras clave: Área de conservación; cámara trampa; especies en peligro; felino, nuevo registro, ocelote.

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The ocelot (*Leopardus pardalis*) is one of six species of the Felidae family found in Mexico (Ramírez-Pulido *et al.* 2005; Ramírez-Bravo *et al.* 2010; Aranda 2012). It is the third largest spotted cat in Mexico and the largest in the genus *Leopardus*. It can be found in a variety of habitats associated with dense vegetation, such as tropical forests, mangroves, thorny scrub, grasslands, and swamps (Aranda 2005; Martínez-Calderas *et al.* 2011; Duarte-Muñoz *et al.* 2025). Ocelots are mainly nocturnal but also active during the day. They are solitary, territorial, and carnivorous, feeding mainly on small vertebrates (< 2.0 kg), such as rodents and birds (Murray and Gardner 1997).

Its distribution ranges from southern Texas to northern Argentina (Oliveira 1994; Aranda 2005). In Mexico, it is found along the Pacific and Gulf coasts, as well as in the states of Aguascalientes, Chiapas, Durango, Guanajuato, Hidalgo, Quintana Roo, Morelos, Nuevo León, Oaxaca, Puebla, San Luis Potosí, Sinaloa, Sonora, Tabasco, Tamaulipas, Veracruz, and Zacatecas (Iglesias *et al.* 2008; Bárcenas and Medellín 2010; Martínez-Calderas *et al.* 2011; Hernández-Flores *et al.* 2013; Valdez-Jiménez *et al.* 2013; Aranda *et al.* 2014; Gordillo-Chávez *et al.* 2015; Galindo-Aguilar *et al.* 2016; García-Bastida *et al.* 2016; Servín *et al.* 2017; Torres-Romero *et al.* 2017; Duarte-Muñoz *et al.* 2025).

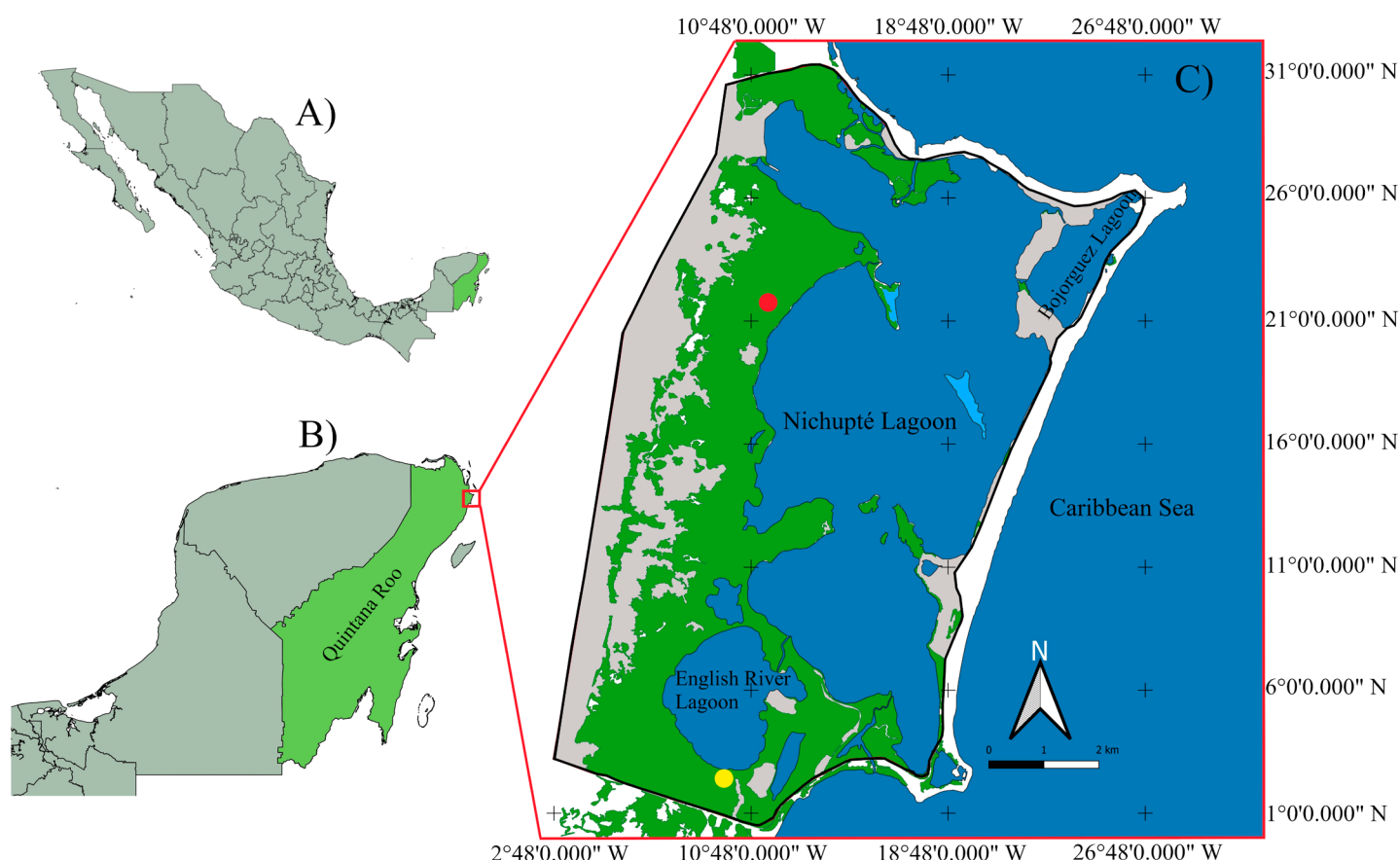


Figure 1. Geographic location of the sampling site. A) Mexico, B) Yucatan Peninsula and Quintana Roo state, C) Protected Natural Area, Nichupté Mangroves. Yellow circle: photographic record of *L. pardalis*, red circle: photographic record of the footprint.

Leopardus pardalis presents conservation challenges due to habitat loss and fragmentation, illegal hunting, and the illicit fur trade. These factors have caused population declines and local extinctions in many areas of the country (Sunquist and Sunquist 2002; Aranda 2005; Di Bitetti et al. 2008). In Mexico, it is currently classified as an endangered species, and hunting it is prohibited by Secretaría de Medio Ambiente y Recursos Naturales (NOM-059-SEMARNAT 2010). The International Union for Conservation of Nature and Natural Resources (IUCN 2025) classifies it as a species of least concern. Its commercialization is regulated by Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES 2024), which places it in Appendix I. The objective of this study is to document the presence of *L. pardalis* in the Nichupté Lagoon mangrove reserve in Quintana Roo, Mexico. An ecosystem with scarce research and ecological importance. Essential for biodiversity conservation, it functions as a refuge and reproduction area for flora and fauna. Furthermore, it protects the coast from erosion and mitigates the effects of storms and hurricanes. Additionally, this system filters sediments and contaminants, maintains water quality, and functions as a valuable carbon reservoir. Simultaneously, they represent cultural heritage linked to traditional management practices and environmental education.

Socially, they support fishing, tourism, and recreational activities. They contribute to the well-being and safety of the local population by reducing risks and maintaining the ecological productivity that sustains the regional economy.

The records were obtained from the Nichupté Mangrove Protected Natural Area, which is located in the northeastern part of Quintana Roo, Mexico (Figure 1). This area has a surface area of 4,257 ha, dedicated to the protection and preservation of biodiversity with dominant mangrove vegetation of the species *Avicennia germinans* (black mangrove), *Conocarpus erectus* (buttonwood mangrove), *Laguncularia racemosa* (white mangrove), and *Rhizophora mangle* (red mangrove), and an elevation range of 0 to 4 meters above sea level (SEMARNAT 2014).

From March to November 2024, 16 sampling stations equipped with Browning Dark Ops HD Pro X camera traps were installed. The camera traps were configured in hybrid mode with 1080p HD video recording at 30 frames per second for 20 seconds, as well as three 20-megapixel photographs every 30 seconds. These stations were set up in areas where various bird species were concentrated, at the edges of and across natural channels that serve as corridors for different animal species. In total, the stations accumulated 275 days and 6,600 hours of sampling effort. Additionally, from May 2025 daytime surveys were



Figure 2. Record of *L. pardalis* in the Nichupté mangrove protected natural area. A) Photographic record using a camera trap. B) Record using tracks.

conducted from 7 to 13 h. to detect traces of prey and tracks (paw prints) of this species in the ecosystem. Two people carried out these surveys, which covered a total of 65 days and 455 hours.

A clear photograph showing the size and pattern of the spots on the ocelot's body was obtained, but the animal's position did not allow its sex to be determined (Figure 2a). During daytime surveys, tracks of this species were identified (Figure 2b), indicating that the ocelot inhabits a large area in this region.

These records are the first to document the presence of *L. pardalis* in this natural area because it is not included among the 19 mammal species reported in the Nichupté mangroves (SEMARNAT 2014). The closest official records prior to these had been in the El Edén Ecological Reserve, located approximately 40 kilometers west of the mangroves (Torres-Romero et al. 2017).

The presence of *L. pardalis* in this protected natural area indicates the health of the local ecosystem because it regulates the population size of its prey (Pérez-Irineo and Santos-Moreno 2015). Similarly, the presence of ocelots suggests that the mangroves harbor a high diversity of prey, including small and medium-sized mammals, birds, and reptiles (Murray and Gardner 1997; Lima-Massara et al. 2015). Ocelots primarily consume prey weighing less than 2.0 kg. However, in the absence of larger carnivores, they are known to prey on larger mammals, such as coatis, raccoons, tepezcuinte, and opossums, which weigh up to 10 kg (Murray and Gardner 1997; De Cassia-Bianchi and Lucena-Mendes 2007). These mammals are very common in the Nichupté mangroves.

Like many ecosystems in the country, these mangroves are under anthropogenic pressure due to increased human construction. This restricts the distribution of the species, which is surrounded to the east, south, and north by human infrastructure and to the east by the Caribbean Sea. Consequently, the habitat of this feline and other species could be reduced, leaving them isolated and susceptible to disappearing over time (Pérez-Irineo and Santos-Moreno 2015).

These first records of the ocelot therefore indicate the urgent need to implement conservation measures, which would help maintain the habitat of this feline and its prey. Similarly, continued research in this area is recommended to provide more biological and ecological information on ocelots and other large mammals in this important area.

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