



New Distributional Records of Freshwater Turtles from West-central Veracruz, Mexico

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The Región de las Altas Montañas (RAM) in west-central Veracruz supports a considerable diversity of flora and fauna (Almaraz-Vidal and Cerón de la Luz 2016). The RAM encompasses 57 municipalities in an area of 6,053 km² that includes the highest mountain in Mexico (Volcán Citlaltépetl or Pico de Orizaba) and exhibits the greatest elevational gradient of any region in Mexico (70–5,636 m

asl) (Rivera-Hernández et al. 2019). This region is considered a biologically important area or “hot spot,” particularly of amphibians and reptiles (Ochoa-Ochoa and Flores-Villela 2006). Turtles, however, are the least studied reptiles in the region. Cázares (2015) published a guide to freshwater turtles of Veracruz, in which he listed known locations for freshwater turtles in the west-central portion of the state, mainly where

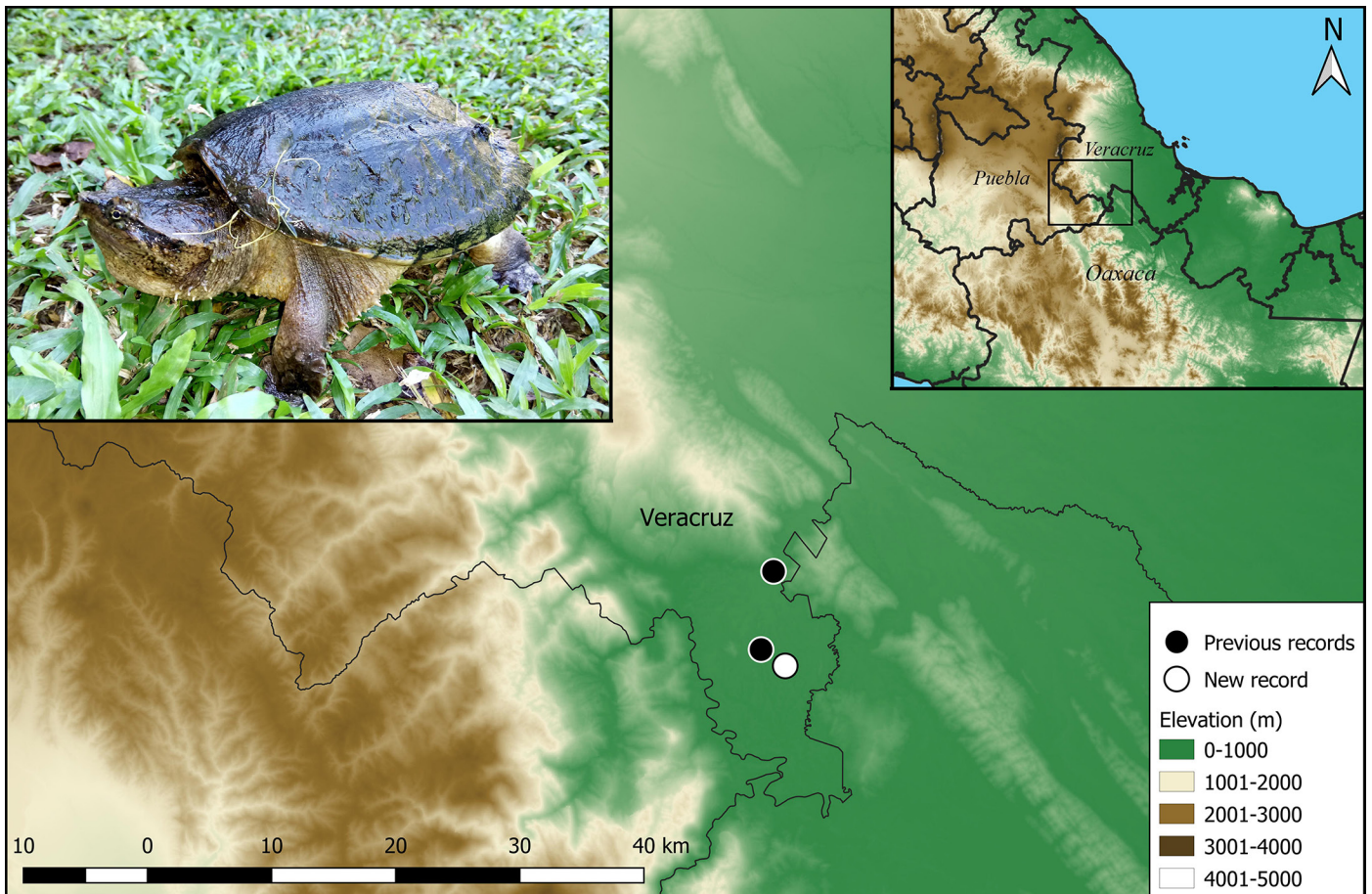


Fig. 1. Map of west-central Veracruz, México, showing documented localities for the Central American Snapping Turtle (*Chelydra rossignoni*). Photograph by Erasmo Cazares-Hernández.

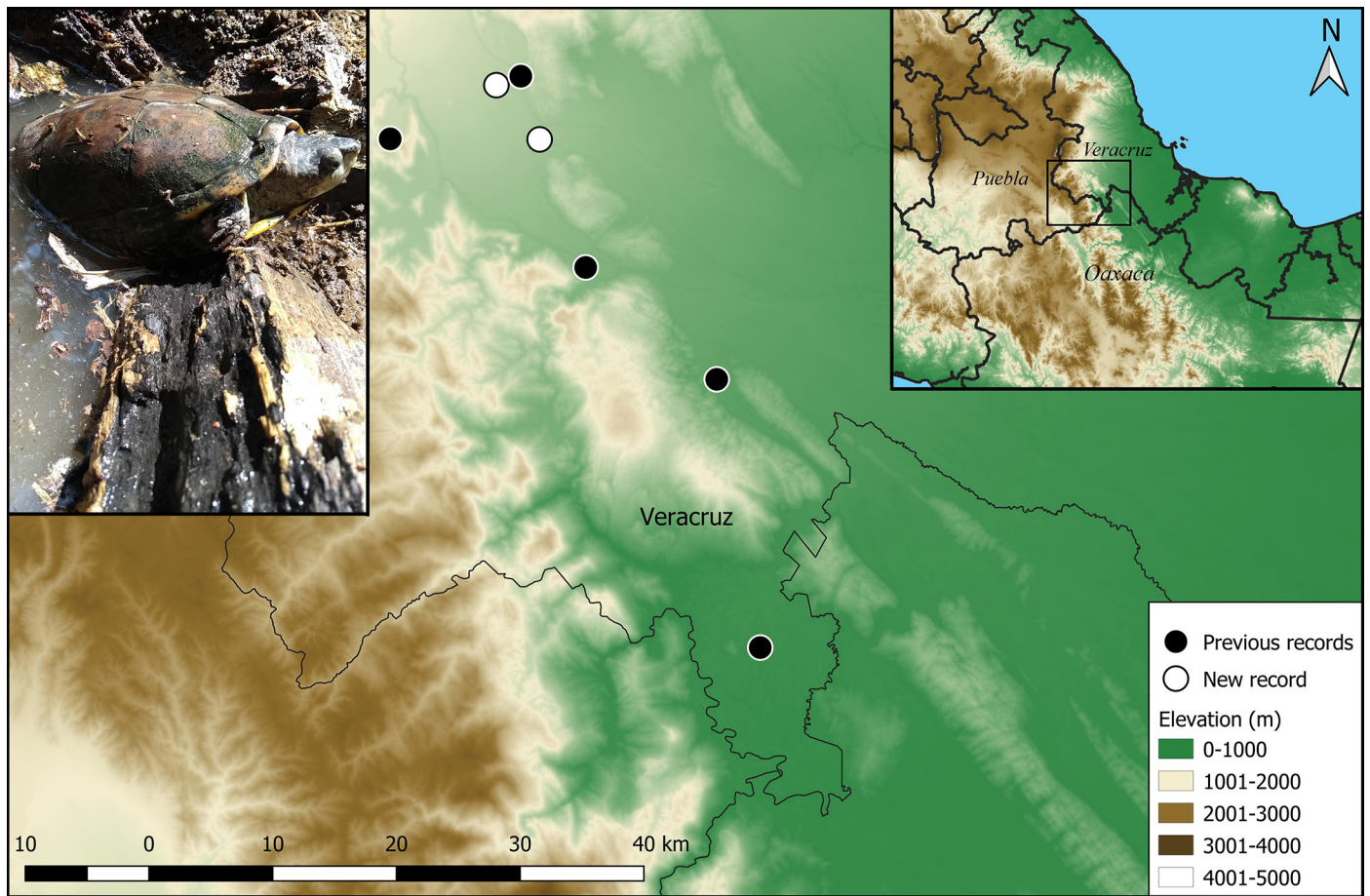


Fig. 2. Map of west-central Veracruz, México, showing documented localities for the White-lipped Mud Turtle (*Kinosternon leucostomum*). Photograph by Víctor Vásquez-Cruz.

the southern plain of the Sierra de Zongolica begins, confirming the presence of seven species of freshwater turtles in the RAM: Central American Snapping Turtle (*Chelydra rossignoni*), Mexican Mud Turtle (*Kinosternon integrum*), White-lipped Mud Turtle (*Kinosternon leucostomum*), Scorpion Mud Turtle (*Kinosternon scorpioides*), Mexican Giant Musk Turtle (*Staurotypus triporcatus*), Narrow-bridged Musk Turtle (*Claudius angustatus*), and Meso-American Slider (*Trachemys venusta*). Additionally, Almaraz-Vidal and Cerón (2016) mentioned Herrera's Mud Turtle (*Kinosternon herrerai*) in the municipality of Huatusco but no photographs or specimens in any collection confirm its presence, and Cerón de la Luz et al. (2016) documented the collection of a single Painted Wood Turtle (*Rhinoclemmys pulcherrima*), an introduced species, in the locality of Cuautlapan, Municipality of Ixtaczoquitlán.

Herein, we present complementary information on the distribution of five species of freshwater turtles in the RAM, as well as some localities in the literature that are absent in Cázares (2015). These records are the result of adventitious encounters and specific studies in the region between 2013 and 2019. Individuals were photographed and released where initially observed. Photographs of each species were deposited

in the digital collection of the Natural History Museum of Los Angeles (LACM PC). All coordinates were determined using map datum WGS 84.

Central American Snapping Turtle, *Chelydra rossignoni* (Bocourt 1868). *Chelydridae*. México: Veracruz: Municipality of Tezonapa, Las Limas (18.476264°N, 96.724267°W); elev. 113 m; 23 January 2018. During a herpetological study we captured two individuals, one adult male (LACM PC 2674) and a juvenile (LACM PC 2675) one at 1030 h (Fig. 1) in a permanent stream surrounded by seasonal floodplains (wetlands) with hydrophilic vegetation (mainly *Typha domingensis* and *Lemna* sp.) ca. 6.02 km E of the Río Tonto. The turtles were marked, photographed, and released. These are the first verified records from west-central Veracruz. Cázares (2015) reported this species from the region but did not list a specific locality.

White-lipped Mud Turtle, *Kinosternon leucostomum* (Duméril, Bibron, and Duméril 1851). *Kinosternidae*. México: Veracruz: Municipality of Amatlán de Los Reyes, Peñuela (18.8615°N, 96.90719°W); elev. 767 m; 12 January 2014. We found an adult (LACM PC 2586) in a permanent

pond at 1030 h. The site is a small permanent wetland with hydrophilic vegetation (*Typha domingensis* and *Lemna* sp.) and surrounded by grass. Subsequently, on 11 December 2017, we found another adult at the same location moving toward the water through vegetation at 0930 h. This site is located ca. 3.5 km S of the previously known locality (Agustín Millán) in Municipality of Córdoba (Vázquez-Cisneros 2006).

México: Veracruz: Municipality of Córdoba, Río San Antonio (Paseo Turístico), (18.9014°N; 96.9399°W); elev. 881 m; 25 October 2015. We found an adult (LACM PC 2589) in shallow water in the river at 1457 h in the urban area. The vegetation is secondary. This site is located ca. 2.1 km W of the previously known locality (Agustín Millán) in Municipality of Córdoba (Vázquez-Cisneros 2006).

With these records, this species has been documented in a total of seven localities in six municipalities in the RAM (Fig. 2): Amatlán de los Reyes (this work), Córdoba (Vázquez-Cisneros 2006; Cázares 2015; this work), Cuichapa, Tezonapa (Cázares 2015), and Ixtaczoquitlán (Cerón et al. 2016).

Red-cheeked Mud Turtle, *Kinosternon scorpioides cruentatum* (Duméril, Bibron, and Duméril 1851).

Kinosternidae. México: Veracruz: Municipality of Carrillo Puerto, La Lagunilla (18.788292°N; 96.604983°W); elev. 200 m; 8 October 2019. We found an adult (LACM PC 2676) 10 m from a temporal stream at 1320 h. The original vegetation had been replaced by a lemon plantation. This site is located ca. 27.5 km SE of the previously known locality (Potrero Viejo) in Municipality of Amatlán de los Reyes (Flores-Villela 1998).

With this record, this species has been documented from two localities in two municipalities in the RAM (Fig. 3): Carrillo Puerto (this work) and Amatlán de los Reyes (Flores-Villela 1998).

Mexican Giant Musk Turtle, *Staurotypus triporcatus* (Wiegmann 1828). Staurotypidae. México: Veracruz: Municipality of Tezonapa, Almilinga (Río Tonto), (18.531214°N, 96.799128°W); elev. 87 m; 15 August 2015. We captured an adult male during a herpetological study in a flooded area near the river. Vegetation is tropical forest with seasonal floodplains on the river bank. The specimen was deposited in the Colección Científica del Instituto Tecnológico Superior de Zongolica, Veracruz (ITSZ-R-T-002;

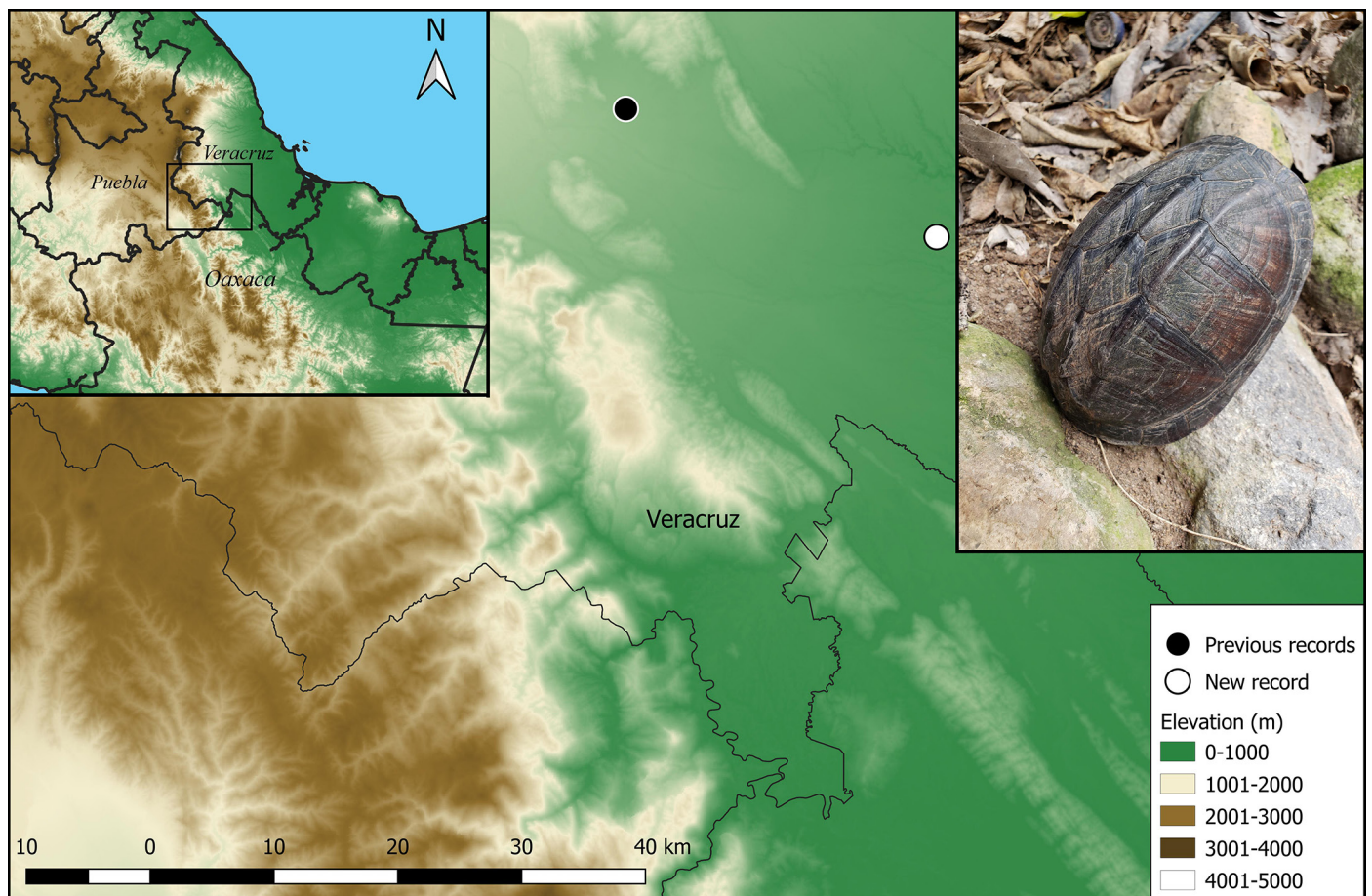


Fig. 3. Map of west-central Veracruz, México, showing documented localities for the Red-cheeked Mud Turtle (*Kinosternon scorpioides cruentatum*). Photograph by Alfonso Kelly-Hernández.

collecting permit SEMARNAT-08-049, Oficio Núm. SGPA/DGVS/02924/15 issued to Erasmo Cázares-Hernández and collaborators). This site is located ca. 7.5 km N of the locality previously reported by Cázares (2015) in Ixtacapa el Chico, Municipality of Tezonapa.

México: Veracruz: Municipality of Cuichapa, La Providencia (18.74847°N, 96.77027°W); elev. 380 m; 21 August 2019. We found a subadult (LACM PC 2588) on the bank of the Río Blanco at 1030 h in an area almost completely transformed for sugarcane cultivation with only fragments of wetlands near the river. This site is located ca. 29 km N of the locality previously reported by Cázares (2015) in Ixtacapa el Chico, Municipality of Tezonapa.

With these records, this species has been documented from three localities in two municipalities in the RAM (Fig. 4): Cuichapa (this work) and Tezonapa (this work; Cázares 2015).

Meso-American Slider, *Trachemys venusta* (Gray 1855). Emydidae. México: Veracruz: Municipality of Amatlán de los Reyes, Peñuela (18.8615°N, 96.90719°W); elev. 767 m; 12 January 2014. At 1100 h, we found a subadult (LACM PC 2677) in a permanent stream surrounded by ponds with

grasses and tules (*Typha domingensis*) and abundant, floating hydrophilic duckweed (*Lemna* sp.) This site is located ca. 3.5 km S of the previously known locality reported by Vázquez-Cisneros (2006) in Agustín Millán, Municipality of Córdoba.

México: Veracruz: Municipality of Córdoba, Paseo Turístico, Río San Antonio (18.9014°N; 96.9399°W); elev. 881 m; 23 May 2017. We found a subadult (LACM PC 2678) basking on a rock in a tributary of the Río San Antonio at 1300 h. This locality is characterized by secondary vegetation and has been affected by urban expansion. This site is located ca. 2.1 km W of the previously known locality reported by Vázquez-Cisneros (2006) in Agustín Millán, Municipality of Córdoba.

With these records, this species has been documented from a total of five localities in four municipalities in the RAM (Fig. 5): Amatlán de los Reyes (this work), Atoyac (Pérez-Gámez 2015), Córdoba (Vázquez-Cisneros 2006; Cázares 2015; this work), and Yanga (Vásquez-Cruz and Reynoso-Martínez 2020).

All of these records are in sites affected by urbanization and are already impacted directly by human activities that include agriculture, livestock, and pollution associated with the sugar

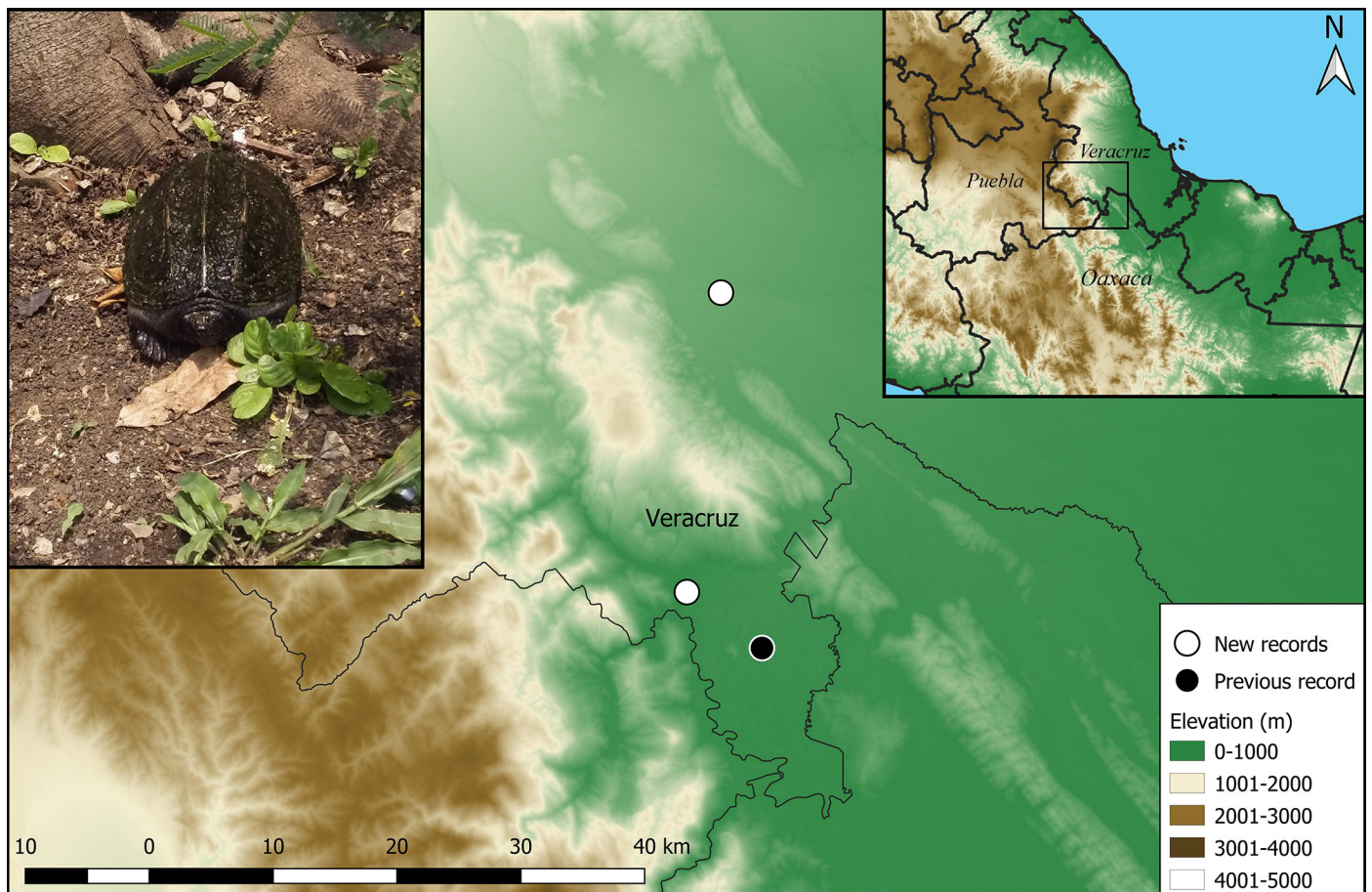


Fig. 4. Map of west-central Veracruz, México, showing documented localities for the Mexican Giant Musk Turtle (*Staurotypos triporcatus*). Photograph by Landet González.

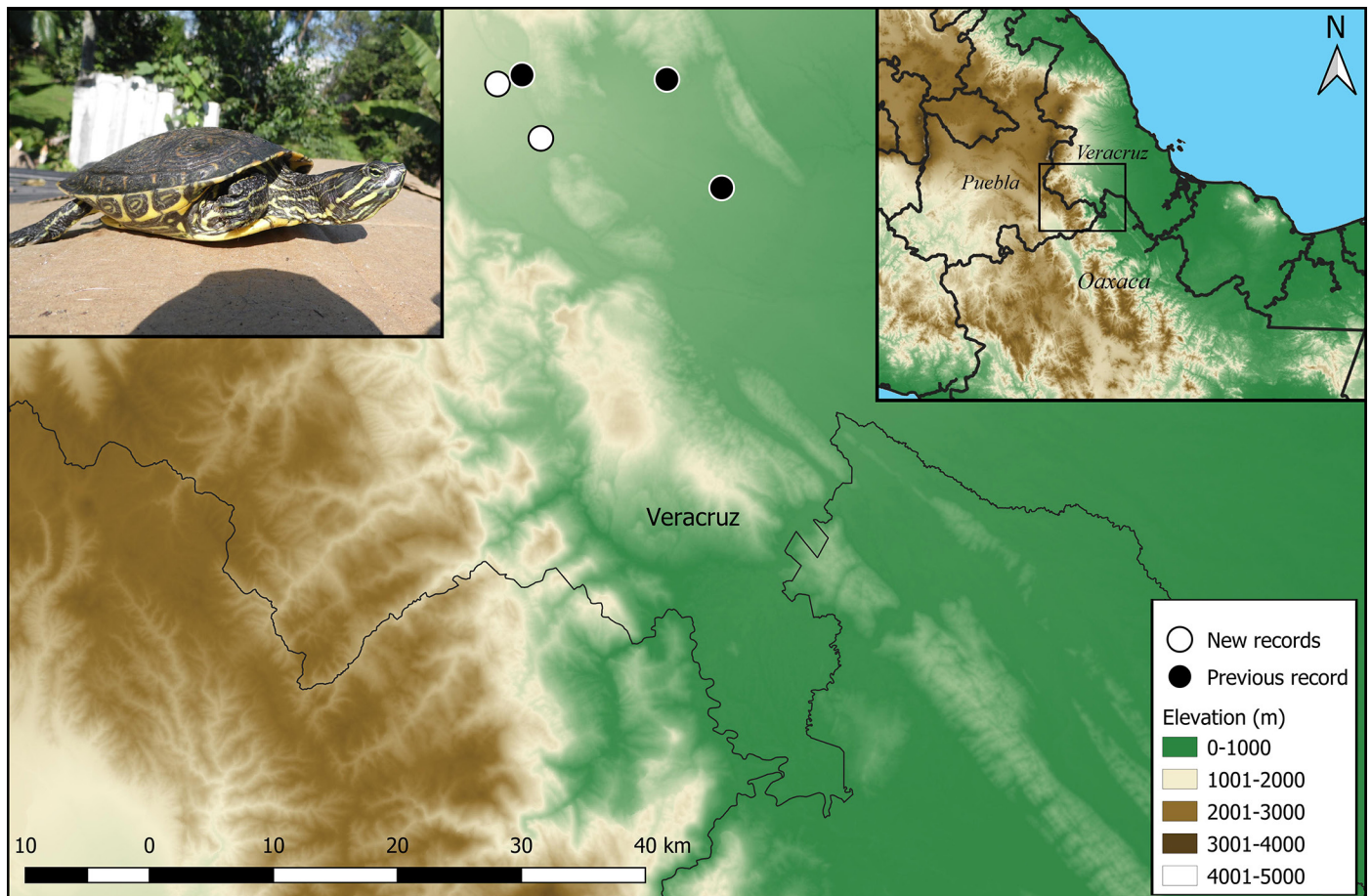


Fig. 5. Map of west-central Veracruz, México, showing documented localities for the Meso-American Slider (*Trachemys venusta*). Photograph by Victor Vásquez-Cruz.

cane industry. Most records are in fragmented environments, which emphasizes the existing dangers to already threatened turtle populations. In the Norma-Oficial-Mexicana NOM-059-SEMARNAT-2010 (SEMARNAT 2010), *Chelydra rossignonii*, *Kinosternon leucostomum*, *K. scorpionoides*, and *Trachemys venusta* are listed “Under Special Protection” (Pr) and *Staurotypus triporcatus* as “Threatened” (A). In the IUCN Red List of Threatened Species, *Staurotypus triporcatus* is listed as “Near Threatened” (NT) (Tortoise & Freshwater Turtle Specialist Group 1996) and *Chelydra rossignonii* as “Vulnerable” (VU) (van Dijk et al. 2007). These records expand the limited information regarding the status of the freshwater turtle populations in Veracruz and remind us of the need to apply conservation strategies and actions for these and other species.

Acknowledgments

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