Coexistence between bats and humans in Campeche, Mexico: Urban roost use and local perceptions

Updates

1) Executive summary (July–December 2025)

During July–December 2025, the project made progress in generating ecological and social evidence to assess coexistence between bats and humans in the urban environment of San Francisco de Campeche, Mexico. During this period, 9 urban diurnal roosts were characterized and monitored, 84 interviews with residents were completed, 5 outreach activities were delivered (three in Campeche and two outside the state), and 3 outreach videos were produced and disseminated through social media. Additional academic and community engagement was developed outside the state, and an outreach note was published in UNAM's popular-science magazine ¿Cómo ves? (October 2025 issue).

2) Progress and activities implemented

In the ecological component, 9 urban diurnal roosts with bat presence were located, verified, characterized, and monitored (Fig.1). Characterization followed a standardized protocol including microclimatic variables (temperature, relative humidity, noise, and illumination) and structural variables (number and height of entrances/exits, construction material, and perch height, among others; Figs. 2–6). Four synanthropic bat species have been recorded in the city: *Molossus nigricans*, *Artibeus jamaicensis* (Fig. 7), *Glossophaga mutica* (Fig. 8), and *Mimon cozumelae* (Fig. 9). Preliminary differences are being observed among roosts used by frugivorous, insectivorous, and nectarivorous guilds, which will be evaluated in greater detail during the analytical phase.

Map removed for online version

Fig. 1 *Map of roosts found or reported by the population, registration points of rescued and/or rehabilitated bats in Campeche, 2025.*

In the social component, 84 survey responses were collected from urban residents to document the knowledge, emotions, perceptions, and attitudes toward bats, particularly in relation to bats' presence in houses or other structures. The survey process also identified recurrent concerns relevant to shaping communication actions and coexistence recommendations, especially regarding public health topics and human–wildlife coexistence in urban settings.

Regarding outreach, the project "Murciélagos de Campeche" delivered five activities for the general public: three in Campeche (hospitals, public squares, and other community spaces) focused on bats' ecological importance, dispelling common myths, and providing recommendations for safe coexistence (Fig. 10), and two outside the state, including activities with communities around the El Triunfo Biosphere Reserve (Chiapas), strengthening information exchange and the regional reach of the conservation message. In addition, the project participated in the International Amazonian and Latin American Wildlife Management Conference (CIMFAUNA), held in San Cristóbal de Las Casas, Chiapas, Mexico, where the project progress was shared (Fig. 11) and an outreach information table was installed in the "Wildlife of Chiapas" exhibition (Fig. 12). Finally, three outreach videos were produced for "Murci Semana 2025" on the form and function of bats' noses, ears, and eyes, highlighting their ecological relevance. These videos were disseminated via Facebook, Instagram, and TikTok:

Noses [https://www.facebook.com/reel/2591058321262598],
Ears [https://www.facebook.com/reel/1495755004849121],
Eyes [https://www.facebook.com/reel/2326575501120292].

As an additional outreach product, an article co-authored with Dr. Nathalia Castillo Huitrón "Una historia de miedo y de murciélagos" was published in ¿Cómo ves? (UNAM), Issue 323 (October 2025; https://www.comoves.unam.mx/numeros/deentrada/323).

3) Limitations and requests

Due to internal administrative changes within the host institution El Colegio de la Frontera Sur (ECOSUR), the formal project start, registration, and the effective availability of funds were delayed until October 2025, reducing the operational time for the semester and requiring logistical rescheduling. Therefore, I respectfully request The Rufford Foundation an extension until June 30, 2026 (3-month project extension), without any change in project

scope, to complete the activities affected by the delay and to ensure an appropriate close-out with the final integration of results and outputs.

In addition, considering operational fieldwork needs, I kindly request authorization to reallocate the funds originally assigned to the Echo Meter Touch 2 Pro microphone (£500) toward per diems for meals during prolonged team field visits. The microphone will be covered through my SECIHTI living stipend (scholarship), ensuring the planned methodological capacity is maintained, with only the funding source changing. This modification would be implemented only with the explicit approval of The Rufford Foundation and would not affect the project deliverables.

4) Next steps (January–June 2026)

During the next period, roost monitoring and data collection will continue to strengthen the final analysis, including database cleaning/coding and integration of ecological and social analyses. Survey efforts will continue (online and in person), and in-depth interviews will be conducted with key stakeholders. In parallel, outreach and communication products will be consolidated based on lessons learned from community engagement with the aim of closing the period with integrated results and actionable coexistence recommendations.

Fig. 2 A bat captured in a mist net.

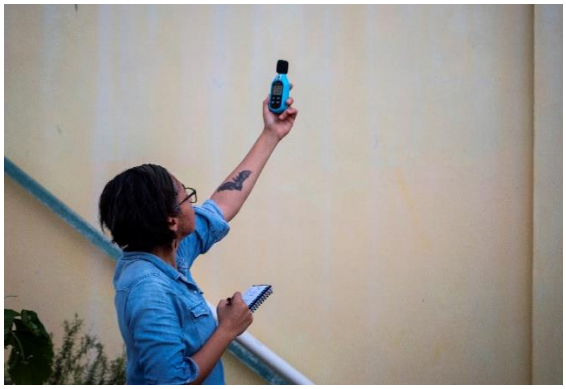

Fig. 3 Measurement of ecological variables in urban roosts considered in this project.

Fig. 4 Handling captured bats to record species identity, sex, age class, and reproductive status.

Fig. 5 Setting up the mist net with support from project team members.

Fig. 6 Aerial photograph of part of the project team during fieldwork.

Fig. 7 Collecting body measurement data from a bat (*Artibeus jamaicensis*) captured in an anthropogenic structure.

Fig. 8 Long-tongued bat (*Glossophaga mutica*).

Fig. 9 The Cozumelan Golden Bat (*Mimon cozumelae*).

Fig. 10 Bat outreach activities in public spaces: information booth and talks.

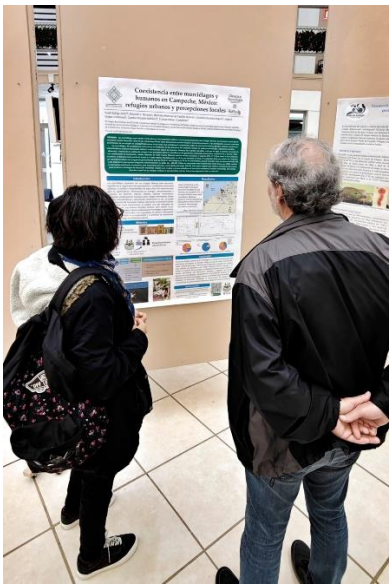

Fig. 11 Participation in CIMFAUNA (International Conference on Amazonian and Latin American Wildlife Management), San Cristóbal de Las Casas, Chiapas, Mexico.

Fig. 12 Bat outreach information table at the “Wildlife of Chiapas” exhibit.