

## Mammals of Central Mexico

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Beautiful scenery at Barrancas de Aguacatitla; Mexican Volcano Mouse; Mexican Ground Squirrel

### **Introduction**

While searching for mammals in Oaxaca this March, Juan told me that a mammalogist friend of his in Tabasco, Dr. Rafael Avila Flores, had found some amazing bats in an area of karst near the state's border with Chiapas. These included a number of impressive and distinctive species I've long wanted to see, like the Sword-nosed Bat and White-winged Vampire Bat.

I had to visit, and with few breaks this summer thanks to academic commitments, this was the perfect choice for a long weekend's trip. Juan suggested we spend a few days in Mexico City with another biologist friend, Melany Aguilar Lopez, to find several endemics of the Mexican Plateau, and then connect to Tabasco. And so a plan was formed!

### **Itinerary**

8/5/19: Mexico City—RB Barrancas de Metztitlan (O/N UMA Santana)

8/6/19: RB Barrancas de Metztitlan—PN el Chico (O/N Mineral de Chico)

8/7/19: PN el Chico—Tlaxco—Area Comunitaria Milpa Alta (O/N San Pablo Oztotepec)

8/8/19: Milpa Alta—Villahermosa (flight)—Ejido Poana (O/N Tacotalpa)

8/9/19: Full day exploring Ejido Poana (O/N Tacotalpa)

8/10/19: Early departure from Villahermosa

### **Key sites**

#### **RB Barrancas de Metztitlan**

This scenic area of deep canyons spans a diverse range of habitats from dry pine-oak forest on the rim, into high desert, and eventually tropical deciduous forest on the canyon floor. World-famous for its exceptional diversity of cacti, this must also be one of the very best places to see the mammals of the Mexican Plateau, or Meseta Central.



Bats from Cueva del Guano: Lesser Long-nosed Bat, Lesser Mustached Bat, Mexican Funnel-eared Bat

We based ourselves at UMA Santana, a local ecotourism operation and cactus nursery at Venados, right where MX-105 drops to the floor of the canyon. A friendly place with great food and the owner Guillermo, though not a mammal expert, was happy to drive long hours in our quest to find them! The main habitats here are high desert, best visited on Guillermo's ranch "Pilas y Granadas" and tropical deciduous forest (TDF), the best areas of which are 1.5 hour's scenic drive north.

We spent the first evening in the TDF around the tiny village of San Pablo Tetlapayac. Melany does bat population monitoring at the nearby Cueva del Guano, an important roost for Lesser Long-nosed Bats. 2 mistnets near the cave between torrential rainstorms got many **Lesser Long-nosed Bats**, **Lesser Mustached Bats**, **Mexican Funnel-eared Bats**, and one **Ghost-faced Bat**, the four most common species here (Greater Long-nosed Bats roost in the winter too).

We also got close views of a **White-ankled Mouse** scurrying around the nets, now a Mexican endemic as US populations have been split as *Peromyscus laceianus*. Although you'd have to accompany a researcher to net here, anyone can watch the bats emerge with permission (contact Ecoturismo "Sol y Luna" to visit the site).

The night drive back up the scary road through the canyon was fun, with great views of a **Ringtail** that played hide and seek in the headlights and a **Gray Fox**. Closer to Metztitlan, I found 2 **Hooded Skunks** in some agricultural fields.

The next morning, we checked the 60 Sherman traps we had placed in the high desert: surprisingly, we only caught 2 **Osgood's Mice** and a **Plateau Mouse**.

Melany has caught many more species, like Mexican Woodrat (we saw many nests near the trap line), White-toothed Woodrat, Southern Rock Mouse, Hispid Pocket Mouse, and in different habitat, White-footed Mouse, Hispid Cotton Rat (future split ssp. *berlandieri*), and Mexican Spiny Pocket Mouse. Mexican Gray Squirrels are common in the riverine forest.

On our way out of the area, we stopped at Barrancas de Aguacatitla, a small ecotourism setup in pine-oak forest on the canyon rim near the pretty town of Huasca de Ocampo.



Plateau Mouse; Tunnels at Barrancas de Aguacatitla; record shot of Greater Long-nosed Bats

A few species of bats roost in small hydroelectric tunnels here, and we saw many clusters of **Aztec Fruit-eating Bats** and my main target, a group of 50 or so lovely **Greater Long-nosed Bats**. This endangered, rather rare, and nomadic species is quite difficult to locate, even in the heart of its range in Mexico; a maternity colony of 15000+ individuals forms here in May-June, when disturbance should be avoided. Ringtail scat was exceptionally abundant here and you should be able to find one if you can arrange to spotlight the trail down the canyon wall.

### Pachuca

We passed through this city, the capital of Hidalgo state on the way in and out, visiting a few sites in and around the city. A 15-minute detour in some agricultural land on the Hidalgo-Estado de Mexico border (around 19.790, -98.948) our first morning didn't produce any Mexican Ground Squirrels, but did yield a rather rare **White-eared Cotton Rat** and 2 **Rock Squirrels**.

A stop on our way out of the city 2 days later at "Unidad Deportiva" produced 10+ **Mexican Ground Squirrels** (a great site for this patchy species!), and many Southern Pocket Gopher burrows.

### Parque Nacional el Chico

On Melany's recommendation, we left Metztitlan a night early to visit this small park, which encompasses an outlying range of the Sierra Madre Oriental. The park protects an area of lovely cool-humid pine-oak-fir forests, a habitat of which precious little remains on the Mexican Plateau due to widespread deforestation and development. Although somewhat disturbed and pretty poor for larger species, this site is exceptional for endemic small mammals.

An hour in the marshy meadows at Llano Grande produced good views of 2 **Mexican Voles**, a species which is generally tricky to observe well. The meadows were full of vole runs and burrows and you should be able to find one as long as it isn't too cold, dry, or wet. After an excellent early dinner in town, we set out to visit a bat cave where Townsend's and Mexican Big-eared Bats roost, but we couldn't cross the river on the way, swelled by the recent rains. According to Melany, both species are easily found in a few roosting caves but mainly in winter.





Mexican Vole; Peters' Squirrel (both from PN El Chico)

Spotlighting that night was pretty slow with many *Peromyscus* (probably *P. levipes*, though a distinctly orangish, terrestrial individual may have been something else) and a single **Eastern Cottontail** (*orizabae*).

Trapping the next morning, however, was excellent. 30 traps along a path leading N from (20.1899, -98.7425) yielded a pretty **Black-eared Mouse** and several **Nimble-footed Mice**, by far the most common rodent in the park (careful, we had 5 traps get stolen here!). Another 30 traps lower down off the road at Los Corrales (20.1984, -98.7243) yielded many more **Nimble-footed Mice** and 2 larger, more ochre *Peromyscus* that we eventually identified as **Transvolcanic Mice**. While driving out of the park to Pachuca, I finally found a **Peters' Squirrel**, a species I've only seen once before and poorly, near (20.2000, -98.7303) which gave excellent views for a few minutes as it collected nesting material. This is the most difficult of Mexico's endemic *Sciurus* species to observe, as it usually occurs at low densities and can be unusually shy; I wouldn't have seen it without the thermal scope.



Black-eared Mouse, Nimble-footed Mouse, and scenic waterfalls of PN El Chico

### Milpa Alta

After Pachuca, we began a drive that was planned to take 6 hours but eventually ended up lasting 10 hours thanks to a thunderstorm and resulting horrendous Mexico City traffic... Our first stop was the Sierra de Tlaxco, where a well-researched colony of Mexican Big-eared Bats

supposedly roosts. A 45 minute drive from Tlaxco's central square got us to the mountains above the village of Tecomalucan, where a somewhat rough dirt road (don't try to get up it in a 2WD sedan, like we did) leads to an abandoned (gated) railway tunnel. We saw several clusters of **Aztec Fruit-eating Bats** along the length of the tunnel. Juan ID'd a few flighty bats at the end as **Mexican Big-eared Bats** with his detector, but they disappeared past some boulders blocking the end of the tunnel, leaving us without proper views...

We had a quick lunch of tortas and finished the miserable drive to Milpa Alta, arriving past 10PM. Thankfully, the previously torrential rain let up to a drizzle, so we quickly dropped 40 Sherman traps in the buffer of the protected area and slept.

It was a big relief the next morning when the traps contained 4 **Mexican Volcano Mice**, my key target for the area and a microendemic species from a monotypic genus. We began the rough drive into the reserve annoyingly late, and had to walk the last mile as the road was impassable after a washout. I had wanted to photograph a **Volcano Rabbit**, which I saw well in 2016 but failed to get photos so went with a guide for just 45 minutes; we saw an animal briefly, but no photos... Returning to the valley, Juan told me I had missed a **Merriam's Pocket Gopher** by a few minutes! We staked out the site, but had no further action. Walking back, we flipped many rocks and logs and saw a bright yellow and black **Volcano Harvest Mouse** and another **Eastern Cottontail**. So not the best morning, but I can't complain having seen 2 more endemics!

### Ejido Poana



Common bats of Ejido Poana: Gray Sac-winged Bat; Least Sac-winged Bat

The final stop of my trip, accessed by a quick 1-hour flight from Mexico City to Villahermosa and a 2-hour drive to the town of Tacotalpa, was the village of Poana. Located in the Sierra zone of Tabasco near the border with Chiapas, this area comprises mostly cleared pastures with dense remnant lowland tropical rainforest clinging to very steep karst hills. As expected in limestone country, there are abundant caves hosting many species of bats. The area was painfully hot and humid (think 90°F with 90% humidity) throughout my stay, with torrential downpours the

second evening. A friend of Juan's and student of Dr. Avila Flores, Lucio Perez, came along to help us access the sites.

After dropping our stuff at the hotel in Tacotalpa (a town with almost no vegetarian food!), we drove straight to Poana and arrived around 9:30PM. We set nets on private land in front of a cave where Sword-nosed Bats had been caught a few times. We immediately saw many **Gray** and **Least Sac-winged Bats**, the latter a key target of mine, and I spotlit a **Common Opossum** at the cave entrance. But it took 2 painfully sweaty hours until we caught the first of 2 beautiful **Tomes' Sword-nosed Bats**. A really impressive species and a bat I had long wanted to see...



The spectacular Tomes' Sword-nosed Bat! Sadly my camera fogged up a bit due to intense humidity.

We returned to a different cave the next morning where White-winged Vampire Bats were found in January and May of this year. Despite checking everywhere physically possible, we didn't find any of those but did see a few **Common Vampire Bats**, many **Black Myotis**, hundreds of **Gray** and **Least Sac-winged Bats**, and a large very flighty bat that may have been a Fringe-lipped Bat. We heard Yucatan Black Howlers at the cave entrance but didn't go looking.

Juan wanted to visit another cave (where *Trachops*, *Mimon crenulatum*, and a few other species were caught in the past) 2km from the road so I joined him on the sweaty walk. We saw many bats, though none were particularly impressive; the only new species were **Jamaican Fruit-eating Bat** and **Lesser Doglike Bat**. We did however startle a remarkably hefty rat that gave brief views as it scurried off, most likely a **Peters' Climbing Rat** (I'd like to get a better look at this species in the future).

Due to torrential rain, we didn't net that evening, opting instead to try spotlighting/scoping some random side roads after the thunderstorm let up. This was remarkably unproductive, with just another **Common Opossum**, a small Morelet's Crocodile in a cattle pond, and a **Coues' Rice Rat** (found with the thermal scope and identified from photos) seen in 2 hours.

We left Tacotalpa at the dawn the next morning for our respective flights home from Villahermosa.

**Species List**

1. Common Opossum (*Didelphis marsupialis*)
- Yucatan Black Howler (*Alouatta pigra*) (heard only)
2. Peters' Squirrel (*Sciurus oculatus*)
3. Mexican Ground Squirrel (*Ictidomys mexicanus*)
4. Rock Squirrel (*Otospermophilus variegatus*)
5. Merriam's Pocket Gopher (*Cratogeomys merriami*) (Juan only)
6. Mexican Vole (*Microtus mexicanus*)
7. Peters' Climbing Rat (*Tylomys nudicaudus*)
8. Mexican Volcano Mouse (*Neotomodon alstoni*)
9. Osgood's Mouse (*Peromyscus gratus*)
10. Transvolcanic Mouse (*Peromyscus hylocetes*)
11. Nimble-footed Mouse (*Peromyscus levipes*)
12. Plateau Mouse (*Peromyscus melanophrys*)
13. Black-eared Mouse (*Peromyscus melanotis*)
14. Southern White-ankled Mouse (*Peromyscus pectoralis*)
15. Volcano Harvest Mouse (*Reithrodontomys chrysopsis*)
16. Coues' Rice Rat (*Oryzomys couesi*)
17. White-eared Cotton Rat (*Sigmodon leucotis*)
18. Volcano Rabbit (*Romerolagus diazi*) (Venkat only)
19. Desert Cottontail (*Sylvilagus audubonii*)
20. Eastern Cottontail (*Sylvilagus floridanus*)
21. Black Myotis (*Myotis nigricans*)
- Mexican Big-eared Bat (*Corynorhinus mexicanus*) (better view desired)
22. Least Sac-winged Bat (*Balantiopteryx io*)
23. Gray Sac-winged Bat (*Balantiopteryx plicata*)
24. Lesser Doglike Bat (*Peropteryx macrotis*)
25. Ghost-faced Bat (*Mormoops megalophylla*)
26. Lesser Mustached Bat (*Pteronotus personatus*)
27. Tomes' Sword-nosed Bat (*Lonchorhina aurita*)
28. Greater Long-nosed Bat (*Leptonycteris nivalis*)
29. Lesser Long-nosed Bat (*Leptonycteris yerbabuena*)
30. Jamaican Fruit-eating Bat (*Artibeus jamaicensis*)
31. Aztec Fruit-eating Bat (*Dermanura azteca*)
32. Common Vampire Bat (*Desmodus rotundus*)
33. Mexican Funnel-eared Bat (*Natalus mexicanus*)
34. Gray Fox (*Urocyon cinereoargenteus*)
35. Hooded Skunk (*Mephitis macroura*)
36. Ringtail (*Bassariscus astutus*)

**What I missed:** Not much... The only target I was really hoping for but missed was White-winged Vampire Bat. In truth, this species is so rare it's always a bit of a longshot but I was cautiously optimistic as there were captures in both January and June this year in Poana. Maybe next time... It would've also been nice to have gotten better looks at Peters' Climbing Rat and Mexican Big-eared Bat and not missed the Merriam's Pocket Gopher, but I can't complain.