

## **Mammal watching in Northern Mexico**

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Seldom visited by mammal watchers, Northern Mexico is a fascinating part of the world with a diverse mammal fauna. In addition to its many endemics, many North American species are easier to see here than in USA, while some tropical ones can be seen in unusual habitats. I travelled there a lot (having lived just across the border for a few years), but only managed to visit a small fraction of the number of places worth exploring. Many generations of mammalogists from USA and Mexico have worked there, but the knowledge of local mammals is still a bit sketchy, and new discoveries will certainly be made. **All information below is from my trips in 2003-2005.**

The main roads are better and less traffic-choked than in other parts of the country, but the distances are greater, so any traveler should be mindful of fuel (expensive) and highway tolls (sometimes ridiculously high). In theory, toll roads (*carretera cuota*) should be paralleled by free roads (*carretera libre*), but this isn't always the case. Free roads are often narrow, winding, and full of traffic, but sometimes they are good for night drives (toll roads never are).

All guidebooks to Mexico I've ever seen insist that driving at night is so dangerous, you might as well just kill yourself in advance to avoid the horror. In my experience, driving at night is usually safer, because there is less traffic, you see the headlights of upcoming cars before making the turn, and other drivers blink their lights to warn you of livestock on the road ahead.

Note that turn signals are often used to warn you that it isn't safe to pass the car in front of you (left side) or that it is safe (right side). 4wd is seldom needed (at least during the dry season), but high clearance is absolutely essential. ALWAYS watch for unmarked speed bumps, even in the middle of the desert and on beaches (where people make them of thick ropes). Enjoy the freedom: speed enforcement is almost non-existent and street lights are routinely ignored if it's safe. Judging by car insurance costs, driving in Mexico is generally safer than in the US, probably because for most people any damage to their car would mean serious financial trouble.

Safety situation on the mainland (but not so much in Baja California) has deteriorated in recent years, but foreign tourists are virtually never targeted. I would recommend passing through border towns (particularly large ones) without unnecessary stops. Remote border crossings are not just safer, they also allow you to escape long traffic jams when you go north.

The overall geography of N Mexico is fairly simple: the arid inland plateau is bordered by forested mountain ranges (Sierra Madre Occidental on the W side and the much lower S. M. Oriental on the E side). The plateau often has freezes on winter nights, but the coasts are always warm, and some tropical species make it all the way to the US border. Spring and early summer can be very hot, but in July the monsoon (and occasionally a hurricane) bring warm rains, more frequent in S and E but rare and precious in the NW. Winter storms from the US seldom make it far into Mexico. The W coast has lots of marine mammals, but on the E side they mostly occur far offshore, except for **bottlenose dolphins** and an occasional **Caribbean manatee**.

**Baja California** (states of Baja California and Baja California Sur) is a long, rocky peninsula with relatively sparse population (except in the far NW and the far S) and relatively well-preserved environment. Just a few years ago driving the entire length of Baja was a major adventure, but now the main roads have much improved (although secondary ones are still very rough). The peninsula has diverse climate and a few isolated mountain ranges; there are some endemics, and virtually all widespread species are represented by 2-5 different subspecies.

The W coast between Tijuana and Vizcaino Peninsula is the only true fog desert in North America. Dirt roads towards the coast from El Rosario pass through shrubby desert where **California ground squirrel**, **Botta's pocket gopher**, **Dulzura** and **Merriam's kangaroo rats**, **San Diego** and **Baja pocket mice**, **California** and **Northern Baja Mice**, and **brush rabbit** occur. **San Quintin kangaroo rat** once occurred here, too, but is now believed to be extinct for unknown reasons (it hasn't been seen since 1985).

The small Parque Nacional Constitucion de 1857 in Sierra Juarez, where I've never been, has **broad-footed mole**, **California chipmunk**, **California pocket mouse**, **bighorn sheep**, and many widespread species such as **mule deer**, **puma** and **bobcat**.

A dirt road leads from San Telmo to the crest of Sierra de San Pedro Martyr (in a national park of the same name), the coldest place in Baja. The coniferous forests here are similar to those in the mountains around Los Angeles and in the southern Sierra Nevada, but unlike those in the US they've never been subjected to fire suppression, so they are more open and animals are often easier to see. Look for distinctive races of **mule deer** (everywhere), **California chipmunk** (in pine-oak forests), **pine squirrel** (previously considered a full species **Mearns's squirrel**; in fir forests), the woolly subspecies of **brush rabbit** (in high-elevation brush patches), and other northern mammals such as **coyote**. **California myotis** roost in observatory buildings. You can also enjoy great views of the mainland, sometimes with a California condor soaring below the cliffs or a few **bighorn sheep** in the rocks. I heard flight calls of **spotted bats** here.

NE coast of Baja is one of the hottest, driest places on the continent. Colorado River Delta used to be a great place to see all kinds of mammals, but now it is almost dry and all you can see is common desert species such as **desert pocket mouse** and particularly big-eared **black-tailed jackrabbits**. Recently a new US-Mexico agreement provided a bit more water, so you can try looking for **hispid cotton rat** along permanent channels. In 2003 it was still possible to see the endemic **vaquita** off the beach in San Felipe, but now your only chance is hiring a fishing boat from El Golfo de Santa Clara (where people are not particularly vaquita- or gringo-friendly).

The entire S part of Baja California State is a protected area (Area Natural Protegida Valle de los Cirios), famous for its forests of giant cacti and weird boojum trees (giant ocotillos), locally known as *cirios*. The best place to see them is around Catavina, where **spiny pocket mouse** and the woodrat currently classified as **intermediate woodrat** are very common among granite boulders. Another good place is Laguna Chapala, where I've seen **kit fox** and **long-tailed pocket mice**. **Bighorn sheep** occur in more remote mountains.

Once you cross into Baja California Sur (and Reserva de la Biosfera El Vizcaíno, which occupies the N part of the state), look for **Dulzura kangaroo rat**, **Northern Baja Mouse** and **Baja pocket mouse** around Guerrero Negro, and for the rare southernmost race of **California chipmunk** in the mountains a few miles E from El Marasal.

Vizcaino Peninsula, an arid land of bad roads and stunted sagebrush, is the last place to see the vanishing Baja subspecies of **pronghorn**. **Little desert pocket mouse** is very common here, but the main reason to come is the opportunity to pet a friendly **gray whale** in Laguna San Ignacio on the S side of the peninsula, where they are present in February-early March. It might take more than one boat trip to have a really good interaction.

Isla Cedros near the tip of the peninsula has endemic subspecies of **mule deer** and **San Diego pocket mouse**, and an interesting woodrat, formerly considered a full species **Bryant's woodrat**, but recently shown to be conspecific with **intermediate woodrat** on the mainland. A bit farther out, Islas San Benitos have large rookeries of **Guadalupe fur seal**. Another rookery of this still-rare species is at the very remote Isla Guadalupe, which is regularly visited by

expensive fishing and white shark diving tours from San Diego. Landing on the island is prohibited, but the seals are well visible from the sea, and there's a good chance of seeing **Steineger's beaked whale** around the island, as well as numerous other cetaceans (particularly **short-beaked** and **long-beaked common dolphins**) during the crossing. All these islands also have **California sea lion**, **Northern elephant seal** and **harbor seal**.

The village of San Ignacio is the base for long trips to see famous paintings in surrounding caves. Most of the caves are just overhangs and don't have bats, but I've heard that **pumas** are occasionally sighted during these trips. In the village, **Western yellow bats** roost in palm trees.

Farther S the main N-S road follows the E coast, crossing an area of spectacular forests of giant cacti. **Fishing myotis** is supposed to roost in crevices in seaside rocks here, but I've never been able to find it. The old mission in Mulege is the only easy accessible place to look for the endemic **Baja rock squirrel**.

Next you cross a large flat known as Magdalena Plain. It looks very boring, but it is a good place to look for **little desert pocket mouse** and the Baja subspecies of **desert cottontail**. **Canyon bats** often roost between concrete slabs in road culverts, while **Yuma myotis** roost in abandoned buildings. The kangaroo rats living on the near-shore island of Santa Margarita were once considered an endemic species, **Margarita kangaroo rat**, but have recently been found to be **Merriam's kangaroo rats**.

As you approach the S tip of the peninsula along the W coast, look for Rio Candelaria bridge. It is used by **Californian leaf-nosed bats** as a night roost, and by the very rare Baja race of **cave myotis** (previously considered a full species **peninsular myotis**) as day roost. **White-tailed antelope squirrel**, **Eva's desert mouse**, and **Dalquest's pocket mouse** occur in the riverbed below (although all three are reportedly much more common in Parque Nacional Cabo Pulmo on the E side, which also has a **California sea lion** colony).

Naranjas Road crosses the southernmost mountain range, providing access to a large area of dry tropical forest where **deer mouse**, **Eva's desert mouse**, and S Baja subspecies of **Botta's pocket gopher**, **intermediate woodrat**, **mule deer**, **coyote**, **Northern raccoon**, and **brush rabbit** are relatively common. An endemic subspecies of **bighorn sheep** once occurred here, but is most likely extinct.

As string of islands along the E coast of Baja (protected as Archipiélago Espíritu Santo, Marino Archipiélago de San Lorenzo, and Bahía de Loreto National Parks) has lots of endemic mammals; the list once included as many as ten *Peromyscus* taxa (never more than one on the same island). Some have gone extinct following the introduction of *Rattus* rats, and some are no longer considered full species. The most interesting ones are: **black jackrabbit** and a distinctive race of **white-tailed antelope squirrel** on Isla Espíritu Santo (which also has a huge **California sea lion** rookery, as does Isla San Pedro Martyr), a distinctive race of **brush rabbit** and the very rare **insular kangaroo rat** on Isla San Jose, **Montserrat mouse** on Isla Monserrate, **San Lorenzo mouse** on Isla San Lorenzo, and **Slevin's mouse** on Isla Catalina. Thousands of **fishing myotis** roost in the storm-petrel colony on Isla Partida. The surrounding waters are reportedly excellent for whalewatching, with possible underwater views of **blue** and **fin whales** and occasional encounters with **Bryde's whale**, **Cuvier's beaked whale**, all three **sperm whales**, **short-fined pilot whale**, and so on. **Bottlenose**, **Risso's**, **spinner** and **rough-toothed dolphins** are said to be common. **Humpback whale**-watching tours are run from Cabo San Lucas in winter. Sadly, I've never been to any of these islands, or on any boat trips in the area.

If you don't want to drive back along the entire length of Baja California, you can take a ferry from La Paz to Mazatlan or Topolobampo in Sinaloa.

**Sonora** is a huge, sparsely populated state; it's mostly desert, but this desert ranges from lifeless clay flats near the coast to forests of giant cacti and weird succulents in the interior. Up in the mountains are pine-oak forests of the kind familiar to visitors to the "sky islands" of SE Arizona, but much more diverse.

Sitting just S of the border, Reserva de la Biosfera El Pinacate and Gran Desierto de Altar is mostly a barren expanse of lava desert, but in sandy patches **desert kanagaroo rat** is common, and in shrubby spots **white-throated woodrat** is relatively easy to find. The Sonoran subspecies of **pronghorn** is said to occur somewhere within this huge reserve. In the nearby border town of Sonoita, **Underwood's mastiff bats** roost in palms near Centro de Salud Rural (the hospital).

Bahía Kino, a coastal town populated mostly by wintering campers from US and Canada (for those from outside N America: "camping" here means living in a huge comfortable motor home, rather than roughing it in a tent), is surrounded by bleak desert where **Harris' antelope squirrel**, **round-tailed ground squirrel**, **Arizona pocket mouse** and **desert pocket mouse** occur. A few miles N is Puerta Chueca, where you can get a boat to Isla Tiburon. Visitation was easy in 2004, but now, according to Wikipedia, "two permits are required for day hiking and overnight stays on the island: one from the Seri Governor's office in Punta Chueca and another from the ISLAS office in Bahía de Kino". The island has introduced **bighorn sheep**, endemic subspecies of **coyote**, **mule deer** and **cactus mouse** (all very common), and lots of **antelope jackrabbits**. With some effort, **fishing myotis** can be found in crevasses in coastal rocks on the S side of the island.

Hermosillo, the capital of the state, has a nice botanical garden/zoo (Centro Ecológico de Hermosillo) with a collection of local cacti and succulents. I had a chance to set a few traps there and got **Southern grasshopper mouse**, **cactus mouse**, **mesquite mouse**, and **Sonoran harvest mouse**. **Mexican long-tongued bats** visit flowering cacti and agaves at night. **White-nosed coatis** are said to visit occasionally. **Antelope jackrabbit** is common in the vicinity.

The mountains along the E border of the state are a huge labyrinth, stretching into Chihuahua and Sinaloa. A good base for exploring it is Nacori Chico, a village equally difficult to access from Sonora and Chihuahua. It is surrounded by pine-oak forests said to have **jaguar**, **ocelot**, **puma**, and **black bear**. I've seen plenty of **mule deer** and **collared peccary** tracks, but surprisingly few mammals (birds and herps were great): a few **cliff chipmunks** and a **Cockrum's desert shrew** in a pile of dry agave leaves. Spotlighting and trapping were unsuccessful, probably because of rainy weather (which is a rare event).

Another nice area with (reportedly) similar fauna is Sierra de Alamos near the small town of Alamos. The weather was equally bad when I was there, but I saw a few **Collie's squirrels**.

**Sinaloa** is a small coastal state ravaged by the ongoing drug wars. The vegetation changes from mangroves and dry tropical forests along the coast to pine forests at higher elevations. **Sinaloan pocket mouse** is common throughout the coastal plain in sandy areas with cacti, even around the state capital of Mazatlan.

The canyon of Rio Fuerte provides rare road access deep into the mountains near the border with Chihuahua. If you have a 4wd with high clearance, you can get into narrow side canyons where all wildlife is moving along the bottom and is relatively easy to see. In September 2004 I got stuck there because of unusually heavy rains and an acute case of flu, and decided to wait it all out in a large hollow tree (with a few **cinnamon myotis** inside) facing a very worn game trail. A few days of waiting produced three **white-tailed deer**, a few **collared peccaries**, a pack of **white-nosed coatis**, a **striped skunk**, **Mexican fox squirrels**, a **Mexican woodrat**, an **Eastern cottontail**, and finally a black **jaguar** (at the time it was thought to be the first record of a black jaguar N of Belize, but later some old records from Sonora and New Mexico have surfaced).

Small mammals I found elsewhere in these canyons included **Virginia opossum**, **nine-banded armadillo**, **large-eared desert shrew**, **Sonoran** and **white-throated woodrats**, and **Northern pygmy mouse**, while in more open areas there were **rock squirrel**, **Goldman's pocket mouse**, **Arizona cotton rat**, and **desert cottontail**. **Ocelot** and **margay** are said to be relatively common; I saw ocelot tracks once. There is a large dam (Huites Dam) on Rio Fuerte where a few bats roost in nearby tunnels: I got **California leaf-nosed bat**, and **lesser long-nosed bat**. Small abandoned mines in the area often have **Mexican big-eared bat** and **Southwestern myotis**.

The easily accessible Meseta de Cacaxtla Nature Reserve on the coast near Mazatlan is a good place to look for bats in hollow palm trunks, abandoned buildings and small caves. I got **Waterhouse's leaf-nosed bat**, **gray sac-winged bat**, **Aztec fruit-eating bat**, and **Peale's freetail** (the latter is generally rare in Mexico). Spotlighting produced **pygmy spotted skunk**, **Sonoran woodrat**, **gleaning mouse** and **Sonoran harvest mouse**.

Probably the most interesting road in Mexico is the Durango Highway, connecting Mazatlan on the coast with Durango on the interior plateau. Recently a very expensive toll highway was built there; it destroyed some habitat, but took some traffic off the old road. "The old Highway 40 can take up to 8 hours to travel, while Highway 40D should only take 3 hours" (Wikipedia). The best stretches for mammals are mostly on Durango side of the border, but I saw one **narrow-skulled pocket mouse** on the Sinaloa side.

Durango is the least densely populated of northern states, but its desert part is thoroughly thrashed, and the majestic old-growth forests of its mountains, once inhabited by the world's largest woodpecker, are all gone, except for a few small pockets in deep canyons where **diminutive woodrat** can be found with some effort. The best remaining forests are in the southern corner, and include three natural parks along the Durango Highway. Common diurnal species include **Abert's squirrel** and **Durango chipmunk**, while at night you can see **coyote**, **hog-nosed skunk**, and the mouse currently classified as **Schmidly's mouse**. In winter, when there's a lot of dry leaves, you can find **Mexican vole** (near dry logs in grassy clearings) and **Zacatecas shrew** (along streams) at dusk.

Another good place accessible on a day trip from Ciudad Durango is Reserva de la Biosfera La Michilía. It is pretty much the only place where **Buller's chipmunk** occurs; other common rodents include **Mexican fox squirrel**, **plateau mouse**, and **yellow-nosed cotton rat**.

Reserva de la Biosfera Bolson de Mapimi is a huge area of desert woodland on the borders of Durango, Chihuahua and Coahuila, best accessed from Hwy 49 in Durango. It is supposed to have the southernmost population of **pronghorn**, but I didn't see any diurnal mammals there, except for **Texas antelope squirrels**. At night the desert was crawling with stuff despite freezing temperatures; rodents I identified included **banner-tailed** and **Nelson's kangaroo rats**, **Nelson's** and **rock pocket mice**, **Goldman's woodrat** (the latter two in a rocky arroyo), **Southern white-ankled mouse**, and **Mearns' grasshopper mouse**.

Zacatecas is another sparsely populated, but poorly preserved state. I haven't explored it, and saw only some **spotted ground squirrels** while driving through. The small Sierra de Órganos National Park on the border with Durango is said to have **Northern raccoon**, **gray fox**, **coyote**, **Virginia opossum**, **badger**, **bobcat**, **ringtail**, and **white-tailed deer**. **Philips' kangaroo rat** is said to be common throughout the S of the state, but I've only seen it in Central Mexico.

Aguascalientes is a tiny state, badly deforested and densely populated; I've never been there and don't know of any places worth visiting.

Stuck between Zacatecas and Nayarit is a small, almost isolated part of **Jalisco**: the branching system of canyons of Rio Bolaños and its tributaries. This is the only place where **Bolaños woodrat** occurs; **Neotropical river otter** is said to be common there. The place is easily accessible from Ciudad Zacatecas or Guadalajara, but I haven't been there yet.

Nayarit, a beautiful, still largely forested state, has very high biodiversity. I've only briefly explored its coastal part.

San Blas, a small city surrounded by mangroves and dry tropical forests, is popular among birdwatchers. **Ring-tailed ground squirrel** and **Sinaloan mouse** are common just a little bit inland, and **Coues's rice rat** is abundant. **Brown long-tongued bats** roost under the bridge at the entrance to the town. **Greater fishing bats** are often visible at dusk over water. Nearby, Cerro San Juan on the W outskirts of Tepic has **Collie's squirrel**, **fulvous harvest mouse** and **Mexican cottontail**. Other people have seen **Mexican giant shrew**, **Northern ghost bat** and **long-tailed weasel** there.

**Hairy harvest mouse** occurs in the far S of the state, but is much easier to find in Jalisco.

The most interesting place in Nayarit is Islas Marias (or Tres Marias), and archipelago full of endemic flora and fauna. Although it's barely inhabited, some local species are already extinct and others rare. The most interesting island, Maria Madre, is a penal colony, and all islands are closed for visitors (as of 2003). I rented a small plane and landed on a remote beach on the W side of Maria Madre for 24 hours; that was enough to see the distinctive island race of **Northern raccoon** (most likely a full species), **grayish mouse opossum**, **Tres Marias cottontail**, and **Tres Marias mouse** (said to be much more common on Isla Maria Cleofas). All mammals are difficult to find in dense vegetation, but once found can be rather tame; the raccoon and the cottontail were at the coast while the mouse and the opossum were way uphill. There were two species of bats roosting in an abandoned military installation; I could see them only briefly as they emerged, but I think the large ones were **greater fruit-eating bats** and the tiny ones were **Findley's myotis**. At dusk, **little yellow bats** were flying along a forest trail. I also saw a bat flying around a flowering cactus; the only nectarivorous bat known from the islands is **common long-tongued bat**. **Van Gelder's bat** was described from the islands, but never seen there since. The endemic **Nelson's rice rat** is considered extinct.

Chihuahua is the largest Mexican state, a land of endless deserts with numerous mountain ranges and a maze of narrow, densely forested canyons in the W part. The settlement of El Barreal SW of Ciudad Juarez is a good place to look for **desert pocket gopher** and **antelope jackrabbit**; driving through it also allows you to circumvent the toll gate if you don't want to pay the temporal car importation tax, or whatever it's called nowadays.

The main attraction of N Chihuahua is the Mennonite settlement of Janos, surrounded by the world's last surviving **black-tailed prairie-dog** megalopolis. Such immense colony clusters were once common all over the Great Plains, N to Canada, but all of them have disappeared except this one. **Badgers** are said to be very common here; I never saw one, but got plenty of **coyotes**, **kit foxes**, **round-tailed ground squirrels**, and **white-sided jackrabbits**. Patches of tall grass between individual colonies have **yellow-nosed cotton rats** and **meadow voles**. I've never trapped there, but would expect lots of *Onychomys* and *Peromyscus*. Recently, **black-footed ferret** and **bison** have been reintroduced. The nearby Pre-Columbian ruins of Casas Grandes sometimes have **Arizona myotis** in wall cracks.

Farther W, Campo Verde Nature Reserve on the border with Sonora has **black bear**, **jaguar** and other fauna of pine-oak forests, but the only interesting mammals I saw during a brief visit

were **Crawford's desert shrew** (along the access road) and **Chihuahuan mouse**. Cumbres de Majalca National Park near Ciudad Chihuahua reportedly has **black bear**, **white-tailed deer**, **bobcat**, and **Northern porcupine**. The rare **Arizona shrew** has been reported from this area.

The touristiest part of Chihuahua is Copper Canyon (Barrancas del Cobre), a large area of deep valleys accessible by just one road and one railroad. The road goes through the town of Creel, surrounded by grassy pine forests where **rock squirrel**, **Osgood's mouse** and **fulvous harvest mouse** are common. In denser forests at higher elevations, look for **Abert's squirrel**, **Sierra Madre ground squirrel**, **Southern flying squirrel**, **black-eared mouse**, **black bear** and **white-tailed deer** (I haven't seen the latter two, only tracks). A spectacular descent brings you to a village of Batopilas, from where a network of foot trails radiates into the surrounding deciduous forests. Locals claim that you can often see **pumas** and **jaguars**, but I had only one afternoon there and didn't see anything. Just before you enter the village, there is an abandoned mine on the side of the road; it had lots of **California leaf-nosed bats**, a small cluster of **hairy fruit-eating bats**, one **Mexican big-eared bat**, and one **California myotis**.

A nice short side trip in the same area is to the beautiful Cascadas de Basaseachi National Park. It has **dusky shrew**, **Western small-footed myotis** (in deep rock niches), **cliff chipmunk**, **Northern raccoon**, **tawny-bellied cotton rat**, and **Zacatecas harvest mouse**. Mammals I didn't see include **puma**, **hooded skunk**, **white-tailed deer**, **collared peccary**, **Mexican fox** and **Abert's squirrels**, and **antelope jackrabbit**.

The small town of Naica off the main road from Ciudad Chihuahua to Mexico City is famous for two stunning caves located deep inside a large lead mine; these caves (one with the world's largest natural crystals) can be visited on weekends if you don't mind extreme heat and scary jeep rides down spiraling tunnels. The desert between the town and the highway has **silky pocket mouse**, **Nelson's kangaroo rat**, and **Plains harvest mouse**. In the mountains above the town there are a few small abandoned mines; in April one of them had a colony of **Mexican funnel-eared bats**, while others had **California leaf-nosed bats**, **pallid bats** and **Western bonneted bats**. In December I visited a different bunch of mines and found **Townsend's big-eared bats**, **pallid bats**, **big brown bats**, and **cave myotis**.

Coahuila is very similar to Chihuahua, but few of its mountains are high enough to have tall forests. One nicely forested area is Sierra del Carmen in Maderas del Carmen National Park, located just across the border from Big Bend National Park in Texas. Unlike in Big Bend, there are no roads or trails to higher elevations (or at least I couldn't find any), so you have to hike for a couple days to get to the best habitat. The fauna is similar to Big Bend, but **Davis Mountains cottontail** is much more common, and **Miller's shrew** is only known from the Mexican side (I didn't see it despite some effort). **Gray fox**, **bobcat**, **ringtail**, **Zacatecas mouse**, and distinctive races of **mule** and **white-tailed deer** are very common; I also saw a **hooded skunk**, some **Northern porcupine** quills, **black bear** and **puma tracks**, and **Eastern mole** molehills.

Lost in the middle of the desert of central Coahuila is a beautiful group of springs called Quatro Ciénegas, inhabited by a bunch of endemic species (not mammals). The area is protected and pretty good for desert rodents, including **Texas antelope squirrel**, **yellow-faced pocket gopher**, **Ord's** and **Merriam's kangaroo rats**, **Chihuahuan pocket mouse**, and **white-toothed woodrat**. Yucca-covered rocky slopes of the surrounding hills have **Hooper's** and **Southern white-ankled mice**. **Desert cottontail** and **black-tailed jackrabbit** are abundant.

The last remaining towns of **Mexican prairie-dog** are located S of Saltillo, on both sides of Coahuila-Nuevo Leon border (ask for directions to Gomez Farias). **Mexican ground squirrel**

and **Nelson's kangaroo rat** occur within the colonies. It is a nice area where **Virginia opossum**, **least shrew**, **Durango chipmunk**, and **Eastern cottontail** are very common on wooded slopes.

**Nuevo Leon** has a bunch of interesting protected areas, but I've only been to one: the large, easily accessible Cumbres de Monterrey National Park. It is said to have **jaguar**, **puma**, **bobcat**, **black bear**, **gray fox**, **white-tailed deer**, **collared peccary**, and introduced **aoudad**, but the largest animals I saw were **hooded skunk** and **Eastern cottontail**. This is an excellent place to look for rodents, especially in winter when there's a lot of dry leaves. In 24 hours I got 7 species (**Allen's squirrel**, **Mexican spiny pocket mouse**, **Northern pygmy mouse**, **white-footed**, **Northern rock** and **Southern white-ankled mice**, and **Mexican harvest mouse**), plus a **Miller's shrew** (unfortunately, seen very briefly).

**Tamaulipas** is hot and humid year-round, except for an occasional winter cold front. The state capital of Tampico is the only place where **tropical pocket gopher** occurs (try Tecnológico de Monterrey Campus on Altamira St.). As long as you are there, look for **black mastiff bats** flying over the rooftops and **Coues' rice rats** inhabiting the marshes around the city.

By far the most interesting place in the state is Reserva de la Biosfera El Cielo, with semi-dry tropical and cloud forests. It reportedly has **Mexican mouse opossum**, **Northern tamandua**, **Central American spider monkey**, **white-nosed coati**, **kinkajou**, all six Mexican **cat** species, **red brocket deer**, and lots of other goodies. I only had a night and half a day there, and got **grizzled short-eared shrew** (said to be extremely common), **hog-nosed skunk**, **Allen's** and **Deppe's squirrels**, **Tamaulipan woodrat**, **El Carrizo mouse** (also very common), and **Chapman's rice rat**. I also saw a **Villa's desert shrew** near Antigua Morelos just S of there.rve.

**San Luis Potosi** is a nice state with lots of places worth visiting; I've only been to a few. Reserva de la Biosfera Sierra Del Abra Tanchipa (where I haven't been) is in the same mountain range as El Cielo in Tamaulipas, and should have similar fauna in its cloud forests. There are lots of caves in the state, and the list of possible bat species is very long. I explored a few small caves and didn't see any bats, but met a **nine-banded armadillo** in Cueva de Montezulel near Ciudad Valles. The largest caves are the colossal vertical sinkholes called Sotano de las Golondrinas and Sotano de las Guaguas. They are inhabited by hundreds of swifts, parakeets and bats, but you need a lot of gear (or a parachute) to get to the bottom, and the caves are so huge that emerging bats are too far from the rim to identify without a bat detector. The only species I got with some level of certainty was **Mexican freetail**. My consolation was a very tame **ocelot** seen on the road between the two caves.

The small, little-known El Potosi National Park near Rio Verde has really interesting vegetation, but few mammals. **Goldman's pocket gopher** is very common, but seeing it takes half a night. There are also **black-eared opossum**, **black-eared mouse**, and, reportedly, **Northern tamandua**. Gogorron National Park on the border with Guanajuato has **Mexican gray squirrel**, **Chihuahuan pocket mouse**, **Aztec mouse** and **Zacatecas mouse**. There were some **Jamaican** and **Toltec fruit-eating bats** and **Geoffroy's tailless bats** in the abandoned building near the main entrance.

### Extant endemic and near-endemic mammals of Northern Mexico

**Zacatecas shrew** (*Sorex emarginatus*) Durango to N Jalisco.

**Arizona shrew** (*S. arizonae*) SE Ariz. to NW Chih.

**Miller's shrew** (*S. milleri*) N Coah., W N. Leon.

**Villa's desert shrew** (*Notiosorex villai*) E N. Leon, W Tamaul.



**Big-eared desert shrew** (*N. evotis*) Sinaloa to N Michoac.  
**Fishing myotis** (*Myotis vivesi*) S Baja Calif., Baja Calif. Sur, W Sonora  
**Findley's myotis** (*M. findleyi*) Is. Marias.  
**Guadalupe fur seal** (*Arctocephalus townsendii*) I. Guadalupe, Is. San Benitos.  
**Vaquita** (*Phocoena simus*) N Sea of Cortez.  
**Buller's chipmunk** (*Tamias bulleri*) S Durango, W Zacat.  
**Durango chipmunk** (*T. durangae*) S Chih., W Durango, S Coah., SW N. Leon.  
**California chipmunk** (*T. obscurus*) S Calif. to N Baja Calif. Sur.  
**Collie's squirrel** (*Sciurus colliei*) S Sonora to Colima.  
**Allen's squirrel** (*S. alleni*) S Coah. to NE S. L. Potosi.  
**Sierra Madre ground squirrel** (*Callospermophilus madrensis*) SW Chih., NW Durango.  
**Baja rock squirrel** (*Otospermophilus atricapillus*) N Baja Calif. Sur.  
**Goldman's pocket gopher** (*Cratogeomys goldmani*) E Durango to W Tamaul.  
**Tropical pocket gopher** (*Geomys tropicalis*) SE Tamaul.  
**Little desert pocket mouse** (*Chaetodipus arenarius*) Baja Calif., Baja Calif. Sur.  
**Dalquest's pocket mouse** (*C. dalquesti*) S Baja Calif. Sur.  
**San Diego pocket mouse** (*C. fallax*) SW Calif. to NW Baja Calif. Sur.  
**Goldman's pocket mouse** (*C. goldmani*) S Sonora, N Sinaloa.  
**Narrow-skulled pocket mouse** (*C. artus*) S Sonora to N Nayarit.  
**Sinaloan pocket mouse** (*C. pernix*) S Sonora to N Nayarit  
**Baja pocket mouse** (*C. rudinorus*) SE Calif. to Baja Calif. Sur.  
**Insular kangaroo rat** (*Dipodomys insularis*) I. San Jose.  
**Nelson's kangaroo rat** (*D. nelsoni*) E Chih. to S N. Leon.  
**Goldman's woodrat** (*Neotoma goldmani*) E Coah. to N Queretaro.  
**Sonoran woodrat** (*N. angustapalata*) S Sonora, NW Coah.  
**Bolaños woodrat** (*N. palatina*) N Jalisco.  
**Tamaulipan woodrat** (*N. angustapalata*) SW Tamaul.  
**Diminutive woodrat** (*Nelsonia neotomodon*) S Durango to NW Aguascal.  
**Sinaloan mouse** (*Peromyscus simulus*) S Sinaloa, W Nayarit.  
**Baja mouse** (*P. fraterculus*) S Calif. to Baja Calif. Sur.  
**Eva's desert mouse** (*P. eva*) Baja Calif. Sur.  
**El Carrizo mouse** (*P. ochraventer*) SW Tamaul., NE S. L. Potosi.  
**Chihuahuan mouse** (*P. pollis*) W Chih.  
**Hooper's mouse** (*P. hooperi*) Coah.  
**Schmidly's mouse** (*P. schmidlyi*) SE Sonora, W Durango.  
**Tres Marias mouse** (*P. madrensis*) Is. Marias.  
**Monserrat mouse** (*P. caniceps*) I. Monserrate.  
**San Lorenzo mouse** (*P. eva*) I. San Lorenzo.  
**Slevin's mouse** (*P. slevini*) I. Catalina.  
**Sonoran harvest mouse** (*Reithrodontomys burti*) S Sonora, N Sinaloa.  
**Zacatecas harvest mouse** (*R. zacatecae*) Chih. to Michoac.  
**Hairy harvest mouse** (*R. hirsutus*) S Nayarit to NW Jalisco.  
**Black jackrabbit** (*Lepus insularis*) I. Espiritu Santo.  
**Antelope jackrabbit** (*L. alleni*) S Ariz. to N Nayarit.  
**Tres Marias cottontail** (*Sylvilagus graysoni*) Is. Marias.  
**Davis Mountains cottontail** (*S. robustus*) W Texas, NW Coah.