

# AN ACCIDENTAL MAMMAL “BIG YEAR” IN CALIFORNIA

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Over 2024, I (with Nicole Haseley) did a mammal big year in California. I tallied an impressive (in my opinion) 150 species - 143 native + 7 introduced, with Nicole shy only by 7 species largely due to a few missed trips. We spent about 40 nights in the field (across 41 CA counties), I saw 13 “lifer” mammals (remarkable given my CA list was already in the high 140s), and learned A TON about the status and distribution of California’s mammals. Although combining these trips to the field with work as a grad student often felt seriously exhausting, it was a lot of fun and I’m thrilled we did it. I’ve documented (by photos) 106 of the year’s mammal species in iNaturalist: [LINK](#).

While big years are common in the birding world, such efforts seem few and far between among “mammalwatchers”, and to my knowledge nothing of this nature has ever been previously attempted in the state. California is a genuinely world-class place to spot mammals, with the most mammal species of any US state and high endemism (18 endemics, to be precise, plus ~20 near-endemics). For a temperate area, the mammals are especially abundant and easy to see: I can think of many sites in the state where you can readily see 20 species in 24 hours, with the right knowledge and effort (so it’s no surprise to me that the US’s mammal big day record was set in CA in 2015!). Yet, the mammal enthusiast community here is incredibly small compared to the number of birders and herpers. I really want that to change. So, I wrote this account and am trying to spread it far and wide in the hopes of encouraging more California naturalists to observe, report, and discuss the mammals of their home state.

It goes without saying that a mammal big year is a totally different endeavor to a birding big year. Unlike often conspicuous and vocal birds, mammals are largely elusive and/or nocturnal. You can’t just go out and find a Fisher, White-footed Vole, Cuvier’s Beaked Whale, or Inyo Shrew. Worse still, compared to birds, mammal ID has a long way to go: many ID characters are frustratingly subjective or only visible in-hand or on a specimen (someone please study chipmunk vocalizations and pelage variation in pocket mice!). Information on changes across seasons and life stages is near-zero. I’ve created an [ID Guide](#) with justification for tricky species I’ve reported; I’ve tried to be careful with my reporting but given the knowledge gap (reasonably) can’t always guarantee 100% certainty!

On the flip side, however, mammal big years do fit much better with work & an otherwise “normal” life. Most field time is restricted to warm parts of the year to favor high nocturnal activity (basically the 6 months from mid April-mid Oct when nights are not cold), and the lack of mammalian vagrancy means you only have to visit Humboldt or Imperial once a year, rather than many times to chase after major avian rarities - that is, assuming you pick up most of the key targets. So I was able to accomplish my objectives largely through a series of carefully-planned summer long weekends rather than the grueling year-long slog that good birding big years turn into.

Perhaps the biggest difference though, is that our mammal big year was much more of an individual endeavor. Big year birders benefit from the huge birding community and an unparalleled array of online resources like eBird, listservs, and social media groups that enable rapid reporting, facilitate contact with local experts, and provide detailed statistics on what can be seen where and when. As for me, I was largely relying on my own 8 years’ prior experience actively exploring the length and breadth of CA for mammals. But I’d still only seen <70% of its species. So, I often found myself searching for mammals that I’d never seen in CA and personally knew no one who had.

Thus, I think of a mammal big year as “learning first, numbers second.” Honestly, the focus was on learning what’s where and in many cases the search was as important as the sighting; many of our most memorable sightings involved poorly-known species we tracked down based on advice from academic researchers or by just exploring sites that were previously unknown to me.

In general, we kept the rules pretty similar to birding big years – counting wild mammals (native & introduced) observed within the boundaries of CA and its offshore waters within the calendar year of 2024. 2 key deviations were: I counted only mammals that were SEEN in life; and I gave leeway for probable identifications, given how little field ID material we currently have for small mammals in particular. I made no efforts to seek out introduced species, but do include those that we saw incidentally in the final total. I did not search for mammals via trapping - although I could've joined friends with permits for trapping & added a few more species, I didn't for the sake of keeping the playing field reasonably level. We spent A LOT of time driving & walking at night. Standard field equipment included camera (Olympus OM-D EM-1 mark ii with 100-400mm lens & FL900R flash), thermal scope (Pulsar Quantum Lite XQ23V), binoculars, lights (Fenix HT18R & HM70R), bat detector (Echo Meter Touch 2 Pro), and Garmin InReach.

See [HERE](#) for a full species list, and the following tab for detailed [Individual Site Reports](#). But first, I'll provide a brief account of the year. Note that I've included "accidental" in the title of this document as we didn't set out to do a big year (if we'd planned from the start, we might have seen another ~5 species!). We just had a lot of in-state field time planned over the summer, primarily to revisit many of my favorite places and explore them in depth (most of which I hadn't visited in a few years). Thanks to 2 winters of good rain, conditions for mammal watching throughout the state proved excellent (e.g. explosions of California & Montane Voles were occurring all over CA), and by the end of June I was astounded by our list. At the time, it felt like a unique opportunity so we decided to take the extra effort to go for the big year, initially aiming for 130 species – a threshold I'd never reached before and felt would represent a respectable total.

January-April are slow months in CA for mammalwatching, and I only saw ~25 (mostly common) species. These sightings were mostly incidental while birding or hiking, and I kept poor records since I wasn't tracking my year list yet. A **Salt-marsh Harvest Mouse** at Palo Alto Baylands during a February "king tide" was the major highlight, and a long-awaited "lifer" mammal for me.

May is a great month in much of C & S CA, and thus began our intensive 6-month mammal "field season" for the year. A trip to Pinnacles NP produced great views of **Western Bonneted** and **Townsend's Big-eared Bats** among nearly 20 species in 24 hours. We failed to find the rare, elusive Mohave Ground Squirrel on a trip to Kern & Inyo counties but did see [Desert](#), **Chisel-toothed**, and **Panamint Kangaroo Rats**, [Little Pocket Mouse](#), and **Southern Grasshopper Mouse**.

June is the best month for mammals in most of CA, and we spent every weekend in the field. A trip to wonderful NW CA was incredible, with **Mountain Lion**, 2 **Western Spotted Skunks**, **Siskiyou Chipmunk**, **Humboldt's Flying Squirrel**, **Little Brown Myotis**, **Aplodontia** (heard & seen by thermal scope), **Creeping** and **Western Red-backed Voles**, **Central Pacific Jumping Mouse**, **Steller's Sea Lion**, and **Gray Whale**! Another highlight was a visit to far southern CA, where **California Chipmunk**, **Stephens'** and **Dulzura Kangaroo Rats**, **Baja**, **Spiny**, and **San Diego Pocket Mice**, **Arizona Myotis**, **Western Yellow Bat**, **Pocketed Free-tailed Bat**, and 'Desert' **Bighorn Sheep** were highlights. Additionally, we enjoyed **Southern Montane Shrew** and **Silver-haired Bat** in western Yosemite; a revisit to Pinnacles and Panoche (**Long-eared Myotis** & **Giant Kangaroo Rat**); and best of all, a successful return to the Mojave with **Mohave Ground Squirrel** (!), **White-eared Pocket Mouse**, and **Western Small-footed Myotis**! Just 6 months in, we'd already crossed the magic 100 for 2024. But beyond the count, the number of rare & high-quality species was exceptional.

July and August were quieter, with more work and even a bit of travel, but we kept the momentum going. On yet another revisit to Pinnacles, I finally found the rare 'Elephant-eared' ssp. of **Narrow-faced Kangaroo Rat** after many failed attempts. We had no trips planned in the rest of July,

but in the spirit of the big year added a spontaneous visit to Honey Lake (which I'd never visited before) & the Northern Sierra in the hopes of bumping up the year list. This proved the month's highlight; **Long-eared Chipmunk, Montane Vole, Muskrat, Pronghorn, California Kangaroo Rat, Townsend's Pocket Gopher, Northern Grasshopper Mouse, Bushy-tailed Woodrat, and Vagrant Shrew** were all seen in this incredible part of CA. An August visit to Lassen NP was canceled due to fire, but I replaced it with a return to Sierra County, finding **Long-tailed Vole, 'Sierra' Snowshoe Hare, Trowbridge's Shrew, and Long-legged Myotis!** Closer to home, we enjoyed **California Mouse, Pallid and Western Red Bats,** and [San Joaquin Pocket Mouse](#).

A visit to the High Sierra & Mono County over the Labor Day long weekend was the last major trip we'd planned for the year. This proved to be another amazing field trip, vying with NW CA as the year's best. **Alpine Chipmunk, Sagebrush Vole, 5 Pygmy Rabbits,** and [Pale Kangaroo Mouse](#) (the latter seen in Nevada, so not counted here) were huge highlights. But the diversity was also excellent with over 40 species seen including **Fringed Myotis, White-tailed Jackrabbit, American Pika, Yellow-bellied Marmot, Panamint and Uinta Chipmunks, Spotted Bat** (flight views only), [Great Basin Pocket Mouse](#), and **Northern Pocket Gopher**. The sheer success of this trip meant we'd passed my 130-species target – 140 was all but a certainty and even 150 felt within reach, so this became the new magic number.

Our success now hinged on marine mammals: the major category still not represented this year. Sep-early Oct is prime time, but cetaceans can be quite variable year-to-year; so, we were fortunate that 2024 was good. Monterey and Half Moon Bay trips produced **Humpback, Blue and Fin Whales, Northern and Guadalupe Fur Seals,** and **Risso's, Pacific White-sided,** and **Northern Right Whale Dolphins**. An overnight in Pt. Reyes added a long-overdue **American Badger** plus **Hoary Bat, Northern River Otter,** and **Harbor Porpoise**. Excellent progress.

144 species and just 2 months left! I'd considered staying closer to home, but thankfully couldn't resist one final SoCal trip in early Nov. This proved to be an excellent decision, providing the final 6 species I needed in the form of **San Joaquin Antelope Squirrel, San Joaquin and Agile Kangaroo Rats, Island Fox, Long-beaked Common Dolphin,** and (likely) the rare, migratory **Big Free-tailed Bat!**

It was lucky we hit 150 when we did, as the remainder of the year was anticlimactic. With cold nights and wetter weather, we were back in the slow mammal season and attempts to increase the count further near Santa Cruz, Mendocino, and Sacramento Valley all failed (though we did see interesting species like **Yellow-cheeked Chipmunk, Virginia Opossums,** and distant 'Sacramento Valley' **Red Fox**).

Although the end of the year proved challenging as the mammals grew hard to find and exhaustion caught up with us, we really enjoyed all our time in the field. Even the slow trips taught me how to look for certain species (or how not to) and gave me ideas for places to try in summer. Overall, we greatly improved our field craft and intuition, found potential new ways to identify species, and got faster at thermal scoping & photography. Of course, we also saw (and appreciated) many wonderful birds, herps, and plants. So even though I won't repeat this effort for the foreseeable future, I'm excited to get back out there exploring places new and old across CA this year and beyond!

Before I end this report, I want to acknowledge several people who helped me along the way, whether via information, sharing time in the field, or encouragement. I'm surely missing some others, but a special thank you (in no particular order) to: my parents Hari & Meera and Nicole's mom Sue; Stanford birders Noah Eckman and Adam Burnett; Alyssa Semerdjian and Ken Burton (Humboldt); Mohave Ground Squirrel whisperer Zoe Stephens; Allen Calvert (Lower Colorado River); Ken Hickman and Miranda Crowell (Mono); and Alvaro Jaramillo (pelagics).

But as importantly, I was positively thrilled to see the level of interest in mammals among other naturalist communities - whether birders, herpers, or field biologists. Later in the year, almost everyone I told about my quest, DMed on iNaturalist, or asked for leads on tricky species seemed genuinely thrilled to see someone out there looking for mammals in CA and amazed that you could actually see so many species here. There seems to be a real enthusiasm for California's mammals, which I think can only help us learn about and conserve them! So another goal of mine here is to show others that with the right knowledge and dedication you can both see AND identify a LOT of mammals in CA - and I hope this encourages more people to get out there and spend more time seeking out & observing them!

I'll close with the big question: how much higher can you go? I think 160 is possible, and an all-out effort IN THE RIGHT YEAR may even have a chance at 170. American Beaver, White-throated Woodrat, Common Bottlenose Dolphin, Short-beaked Common Dolphin, and Transient Killer Whale were all bad misses. We lost California Leaf-nosed Bat and Cave Myotis as poor road conditions (unknown to me) prevented driving to a known roost, and we didn't have time to hike there. With luck, effort, and/or planning, you might be able to add North American Porcupine, Rock Squirrel, Piute Ground Squirrel, Mountain Pocket Gopher, Dark Kangaroo Mouse, Southern Pacific Jumping Mouse, Arizona and Hispid Cotton Rats, Shrew-mole, Pacific Marten, Long-tailed Weasel, American Mink, Ringtail, Gray Wolf, Bryde's Whale, Dall's Porpoise, Sperm Whale, and Baird's Beaked Whale. But even with a herculean effort in a "good year" like this one, seeing all those species in addition to the many rarities that I saw would require unreasonably good fortune. I could've easily missed about 30 of the species I did see. And one more note - if you want to try this, do it soon as who knows what the future holds for many of California's mammals. I found many sites profoundly changed and several species more difficult to find compared to even just five years ago, thanks to the effects of fire, drought, and flash flooding. Like most everywhere else, our state's ecology is rapidly changing.

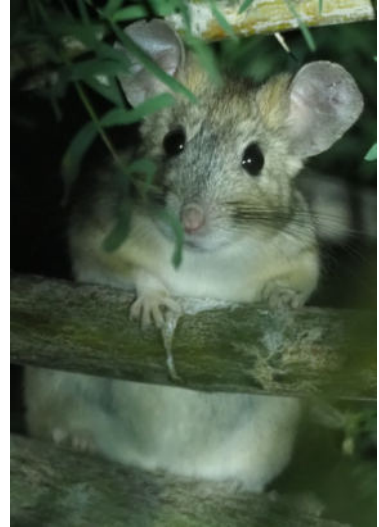
So, is 170 within reach? There's only one way to find out. I'd love to see someone try - in part for selfish reasons, as I'm sure it'll lead me to mammals I've yet to see. So, I lay down the gauntlet in the spirit of friendly competition. Records are made to be broken!

**SEE A SELECTION OF MAMMAL PHOTOS FROM THE YEAR ON THE NEXT PAGE:**





Salt-marsh Harvest Mouse (Palo Alto Baylands); Botta's Pocket Gopher (Cameron Canyon)



Panamint Kangaroo Rat (Red Rock Canyon); Long-tailed Pocket Mouse & Desert Woodrat (Furnace Creek, DVNP)

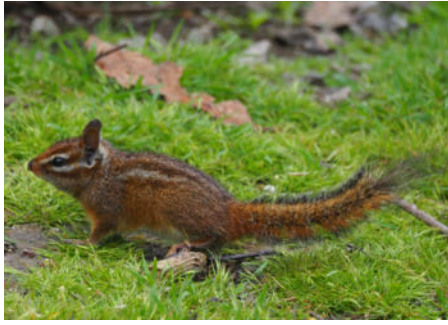


Desert Kangaroo Rat (Mesquite Flat, DVNP) & Chisel-toothed Kangaroo Rat (Harrisburg Flats, DVNP)



Little Pocket Mouse (Jawbone Canyon)

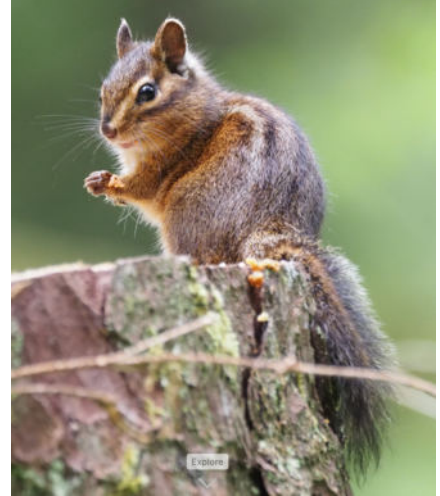
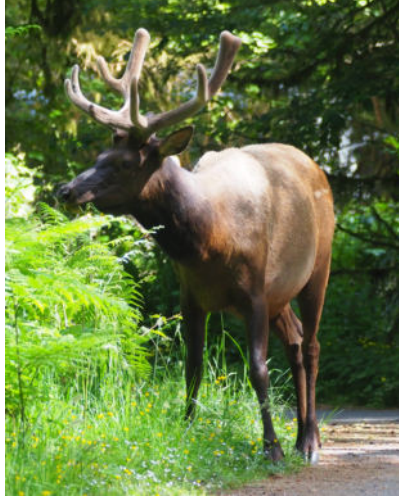




Merriam's Chipmunk (Burleigh Murray SP); American Black Bear & Long-eared Chipmunk (Yosemite NP)



Western Spotted Skunk (Willow Creek); Siskiyou Chipmunk (Fish Lake); Humboldt's Flying Squirrel (Shelton Butte)



Little Brown Myotis (Willow Creek); 'Roosevelt' Elk (Prairie Creek SP); Allen's (Shadow) Chipmunk (Sue-meg SP)



Steller's Sea Lion (Trinidad); Yellow-cheeked Chipmunk (Humboldt Redwoods SP)





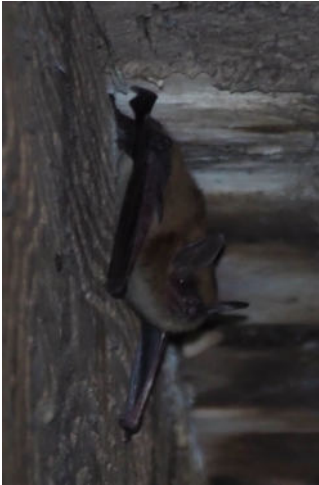
Pinyon Mouse ([watch](#)), Western Small-footed Myotis & Long-legged Myotis (Kern Plateau)



Canyon Mouse (Little Lake); Mohave Ground Squirrel (Red Mountain)



California Myotis (Pinnacles NP); California Chipmunk (Mt. San Jacinto summit region)



Arizona Myotis (Cibola Valley); Round-tailed Ground Squirrel (Salton Sea); Spiny Pocket Mouse (Anza-Borrego)





Cactus Mouse & Baja Pocket Mouse (Anza-Borrego)



Desert Pocket Mouse & 'Pallid' San Diego Pocket Mouse (Anza-Borrego)



'Desert' Bighorn Sheep (Anza-Borrego); Big Brown Bat (Cleveland NF); 'Aguanga' Merriam's Kangaroo Rat (Aguanga)



Stephens's Kangaroo Rat (Hemet); 'Elephant-eared' Kangaroo Rat (Pinnacles NP)

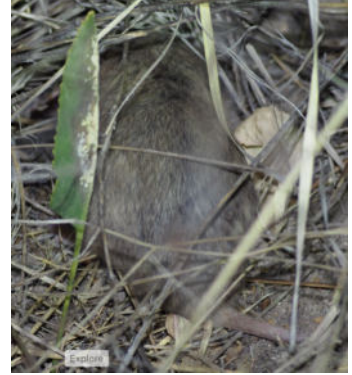


California Pocket Mouse (Pinnacles NP)





Yellow-pine Chipmunk (Sagehen Creek); Montane Vole & Pronghorn (Sierra Valley)



California Kangaroo Rat, Northern Grasshopper Mouse & Townsend's Pocket Gopher (Honey Lake)

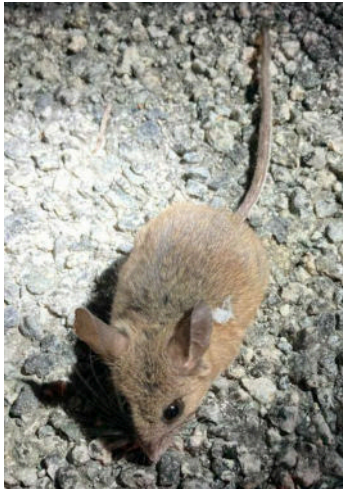


White-tailed Antelope Squirrel (Honey Lake); 'Tahoe' Snowshoe Hare (Yuba Pass)

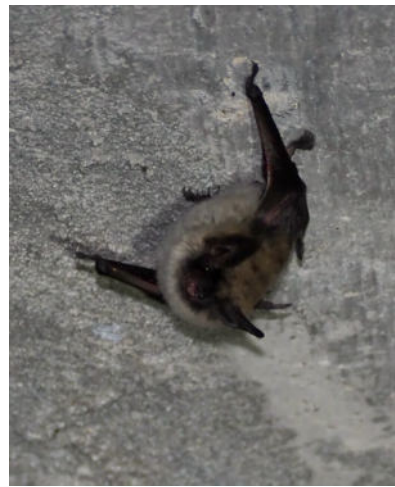


Mexican Free-tailed & Pallid Bats (Coyote Valley); San Joaquin Pocket Mouse (Del Puerto Canyon)





Western Harvest Mouse (Del Puerto Canyon); California Mouse (Henry Coe SP); Northern Raccoon (Stanford)



Yuma Myotis, Gambel's Deer Mouse & Fringed Myotis (Stanislaus NF)



Great Basin Pocket Mouse (Mono Craters); American Pika & Yellow-bellied Marmot (Saddlebag Lake)



Alpine Chipmunk (Saddlebag Lake)

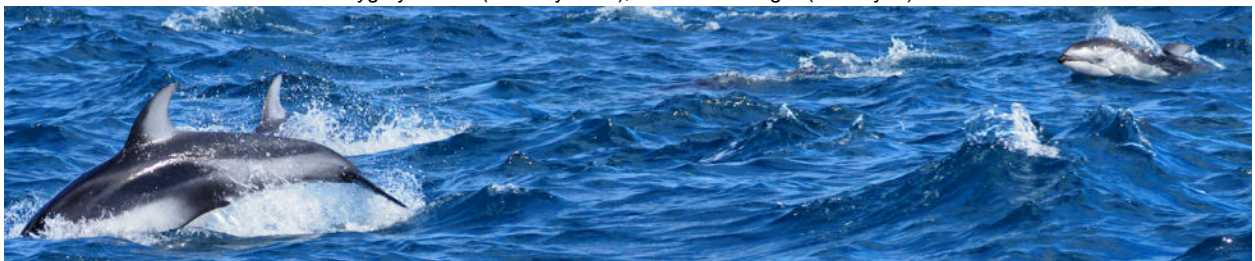




Pale Kangaroo Mouse (Tonopah, NV); Uinta Chipmunk (Schulman Grove)



Pygmy Rabbit (Crowley Lake); American Badger (Pt. Reyes)



Pacific White-sided Dolphins (Half Moon Bay)



Fin Whales (Half Moon Bay)





Giant Kangaroo Rat (Carrizo Plain NM); Island Fox & Eastern Pacific Long-beaked Common Dolphin (Santa Cruz Island)



Douglas's Ground Squirrel (Pt. Cabrillo); Northern River Otters (Gray Lodge WA)



Virginia Opossum (Butte Sink)