



**NIGHT VISION** Left: While helping with a tour on the Missouri River near Helena, bat expert Matt Bell shines a flashlight into the sky to locate a bat he picked up on his detector. Right: Tim Crawford, recently retired longtime manager of Gates of the Mountains, captains the *Canyon Voyager* on a 2019 tour on upper Holter Reservoir.

# On a Bat Safari

Tours at state parks and other sites across Montana introduce participants to a nighttime wildlife spectacle. **By Tom Kuglin. Photos by Thom Bridge.**

**T**he low-flying ones come first, skimming over the water in the waning summer light.

Then, as darkness builds, the bat barrage begins. Thousands upon thousands of the winged mammals pour from crevices in the skyscraper-high limestone cliffs of the upper Missouri River's Gates of the Mountains area. It's their nightly commute to the mayflies, caddis flies, and other insects hovering nearby on upper Holter Reservoir. Spectators aboard a tour boat crowd around electronic devices that detect the bat's "biological sonar," making it possible to hear frequencies far beyond what the human ear can detect. Spotlights capture glimpses of the winged mammals darting wildly through the beams in spastic flight. It's a dizzying spectacle.

"I've done bat research all over the state, and you just don't get to see something like this," says Bryce Maxell, program coordinator for the Montana Natural Heritage Program, who leads the evening's tour along with fellow bat enthusiast Matt Bell.



Bats evolved to hunt in darkness, so they can't rely on sight to navigate the night sky and find their insect prey. Instead, they use echolocation by emitting sound waves from their mouth or nose. When the waves hit objects, the echoes bounce back to the bats' ears and indicate the object's distance, location, shape, and size—from a canyon wall to a mosquito.

Montana's 15 bat species each echolocate at a different frequency pattern. The bat-detecting devices and an app interpret the unique patterns to indicate which bat species are darting past. Of the 11 species confirmed in the Gates of the Mountains area, the most common are the big brown bat, little brown bat, and western small-footed myotis. Passengers surround Maxell and Bell as the guides' frequency-detecting devices interpret the echolocation waves and send data to an app on Bell's tablet that flashes the identity of each species on the screen.



**BAT MAN** Bryce Maxell, program coordinator for the Montana Natural Heritage Program, talks about the biology of Montana bats during a Gates of the Mountains tour along the Missouri River near Helena. Tours in the canyon and at several state parks have become increasingly popular as more people seek to learn about Montana's nighttime wildlife. Top right: A tablet bat detector app. Lower right: A digital frequency-pattern detector.

**SPOTTING THE UNSEEN** Above left: Bat tour participants using spotlights watch bats migrate out of the Gates of Mountains canyon. Above right: Doug Holly of Helena uses a microphone and bat detector smartphone app to identify the bats species flying overhead. Experts say that the most common species in the canyon are the big brown bat, little brown bat, and western small-footed myotis.

The nearer a bat gets to a mosquito, the closer the clicks come. As one of the tiny fliers locks in on its prey, the clicks blend into a dull scream. Then silence: a successful hunt. “Bats are super loud. It’s a good thing we can’t hear the frequency range,” says Maxell. “Tonight, it’d be like being out on the tarmac at an airport with a jet engine taking off.”

In addition to the tours run by Gates of the Mountains, a marina and boat tour company 15 miles north of Helena, Lewis & Clark Caverns, Lone Pine, and Spring Meadow Lake State Parks also offer bat watching outings each summer.

“People have been signing up like crazy. There’s always a waiting list,” says Ryan Schmaltz, a Montana Fish, Wildlife & Parks educator who coordinates nighttime bat tours at Spring Meadow Lake in Helena.

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**A** large part of the tours’ appeal, Schmaltz says, is to “see” wildlife that ordinarily remains hidden. “Bats are the most abundant animals flying around at night, but without detection gear, you wouldn’t know that,” he says.

Boat tour passengers say they come to witness a nocturnal spectacle of nature and learn from experts about bats’ mysterious lives. “Last year we did this for the first time, and we came out here again because it was such an amazing night,” says Doug Holly of Helena, here with his wife, Jane. “It’s kind of like bird watching, but you’re doing it in complete darkness. You have no idea there are this many bats out there buzzing by your head.”

The bat concentrations at the Gates of the Mountains even impress Stewart Corn and Ellen Ferrari from Minnesota, members of Bat Conservation International and frequent travelers to bat hot spots across the United States. The pair regularly visit the nation’s bat touring mecca: Bracken Cave near San Antonio, Texas, where watchers gather to see an estimated 20 million bats

exit each night. “It’s one of the largest concentrations of mammals anywhere on Earth. Just think of a waterfall going across your head. It goes on for hours and hours,” Ferrari says. “Right now we’re on vacation in Montana, and we love bats, so when we heard about this tour, we wanted to come.”

**B**at tours also offer experts the chance to generate excitement about the roughly 1,200 bat species worldwide, raise awareness of bats’ valuable ecological role, and dispel common myths. “When I talk to people about bats, I always ask them if they like mosquitoes,” says Lauri Hanauska-Brown, FWP Nongame Wildlife Bureau chief. “Bats eat a huge number of mosquitoes and other insects, so they make a significant difference as a natural pesticide.”

Hanauska-Brown says that in Montana alone, the value of bats as pest insect consumers is hundreds of millions of dollars per year. In some parts of the world, bats are also key pollinators and seed dispersers.

One common misconception is that bats

in houses need to be exterminated. “Because a lot of people are terrified of bats, they want them eliminated from their attic,” Hanauska-Brown says. “But bats can coexist well with people, causing no problems. Many people have bats in their attics or behind their house siding and never know it.”

Other misconceptions include the belief that bats are a type of rodent (they are in fact more closely related to lemurs and monkeys) and are especially prone to carrying diseases such as rabies. “All mammals can get rabies,” Hanauska-Brown says. “But usually the only time people see a bat close up is when it’s sick or dead. And in that case, yes, that bat may have rabies. But the percentage of the population with rabies is actually small—less than half of one percent.”

**T**our participants also learn about the threats facing bats. FWP officials estimate that thousands of bats die each year by slamming into the rotors of wind energy turbines. The department works with energy companies to site turbines in areas

where collisions are less likely or to alter operations in ways that reduce collisions.

The biggest threat is white-nose syndrome (WNS), a deadly disease that has killed millions of hibernating bats in 35 states and seven Canadian provinces since being discovered in New York in 2006. The fungal infection appears as a white fuzz on bats’ faces and attacks their bare skin, sometimes eating holes in their wings while they hibernate. Infected bats become more active than normal, burning up energy reserves needed to survive the winter.

FWP, the Montana Natural Heritage Program, the U.S. Forest Service, and the Bureau of Land Management have surveyed bat wintering sites over the past eight years looking for traces of WNS in bats. In June 2020, samples taken from bridges in Daniels, Richland, and Fallon Counties tested positive for the fungus that causes CWD. “We are disappointed but not surprised,” says Hanauska-Brown, who notes that WNS had been detected in North Dakota near the Montana border. The agencies also work closely with

the Northern Rocky Mountain Grotto and Bigfork High School Caving Club. The organizations of cave explorers help public agencies find and access remote caves, and spread the message to members and other about the importance of decontaminating clothing and gear to prevent spreading the fungus.

Experts are hopeful WNS won’t be as severe in Montana because bats here tend to den in smaller groups than in other states.

Tonight, as the bat recorders click away, registering hundreds of bats swooping overhead, it’s difficult to imagine that these winged mammals could ever disappear. “I’ve been caving for 57 years, and we generally don’t see many bats in caves. We’re always fascinated when we do see some,” says Mary Alice Chester of Helena. “On a night like this, with so many bats, it’s quite a thrill.” 🦇

*To sign up for a Gates of the Mountains bat tour, visit [gatesofthemountains.com](http://gatesofthemountains.com). For information on tours at Lewis & Clark Caverns, Lone Pine, and Spring Meadow Lake State Parks, call or email park offices.*