Bat Research: How many bats and other common questions

When Counting is More than One, Two, Three...

Many people ask how many bats live in Carlsbad Cavern. It’s an age-old question, posed long before it was ever written. For centuries, people living in and visiting these mountains have watched a cloud of bats swirl out of the cave opening every evening. The bats leave their safe sleeping quarters in search of food—Insects, like moths, beetles, and mosquitoes. The exit flight may last anywhere from 20 minutes to 2 hours. The cloud of bats may be so thick that it can be seen from miles away as a black streak across the sky or so thin that observers see mere specks across the rising moon. One can’t help but wonder, “how many bats are there?” The challenge is in how to figure out an accurate number, or even a good guess. Trying to count the bats emerging from the cave is like trying to count the number of grains of salt coming out of a shaker—too many at once. Besides, this is only one of the questions that bats provoke in curious people. Here are the park’s most recent methods for tallying bats and answering other common questions about them.

How Counting Bats Has Changed

For thousands of years, Carlsbad Cavern has provided a Mexican free-tail bat colony with shelter from the weather and predators. The bats leave the safety of the cave to satisfy their hunger for their meals of flying insects. The bats swarm out in a whirling funnel, gaining lift in order to fly out of the deep, bowl-shaped mouth of the cave. They fly out fast and in large numbers, and they continue flying after sunset, long after our unaided eyes can follow them. So, how can we count them? Over the years, several methods were tried. Some approaches were little more than educated guesses that were easily discredited under close scrutiny. Starting in 1996, population trends have been recorded using infrared photographs taken of the bats roosting in the cave by day. The photo on the left shows sleeping bats as dark patches. Researchers figured the population by estimating the amount of ceiling covered and multiplying it with the likely number of bats per square foot (about 250 to 300). This method gives researchers a sense of how the population fluctuates from month to month and year to year; however, it does not accurately calculate the actual number of bats, only an estimate. Also, photographing the bats in their roost disrupts the bats. As much as possible, researchers try not to disturb their animal subjects as it may cause them to change their behavior. The preferred study method at present uses more advanced technology—infrared thermal imaging and hi-tech computer software!

Current Bat Population Research

Dr. Kunz’s and Dr. Hristov’s team counted approximately 400,000 bats emerging from Carlsbad Cavern in June 2005, which is typical of recent years. With this method, researchers are no longer concerned about the amount of light or the weather conditions. Most importantly, the bats don’t even notice that they are being recorded, meaning they shouldn’t change their behavior or experience any fear or discomfort.
The Allure of Bats

Do you find bats frightening or disgusting? Fascinating or thrilling? Or maybe cute? Perhaps your reaction to bats is a mix of all these? Whatever your feelings about them, bats are of enormous benefit to humans worldwide and are prompting continuous scientific study.

Bats are a group apart from other mammals in one significant way—they are the only mammals with the ability to fly. A close look at a bat’s wing shows that it is merely a thinly-webbed hand with very long fingers. Flight allows bats to take advantage of food sources that other animals can’t reach, such as high-hanging fruit and flying insects. Every night M exican free-tailed bats emerge from Carlsbad Cavern to eat about three tons of insects. Their voracious appetites help control insect populations and reduce crop pests.

The Results of Curiosity

Bats continue to draw our attention and fascination. Innovative scientists studying bats have developed medicines, sonar, and computer software and technology that have uses beyond animal research. At a national park, generations may learn about, study, enjoy, and be awed by bats and caves. Even if you don’t see the world-famous bats, be assured they are protected.

The Results of Curiosity

More Questions

What species of bats live in the cave?

If this is a maternity colony, where are the males?

What do they eat?

Questions Unanswered

How do they know when it’s time to come out?

Where do the bats live in the winter?

Wanted: Someone who speaks Bat fluently! Must be willing to work nights.

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