



Bat Hibernacula Surveys

Craters of the Moon National Monument and Preserve



Long-eared Myotis and Long-legged Myotis bats in one of the caves at Craters of the Moon National Monument and Preserve. Photo by Michael Durham

Why are bats important?

Bats play an important role in our ecosystems, they consume large amounts of insects, pollinate and disperse seeds. Bats control damaging pest populations and are in charge of pollination of a wide variety of plant species. These valuable ecological services benefit the environment and local economies. Bats are active most of the year and hibernate in the winter. During this critical time they rely on built up fat reserves to survive the seasonal insect shortage. Survival is a delicate balancing act, as natural arousals to drink, urinate, mate and relocate consume about 90% of a hibernating bat's winter fat. Additional arousals due to white-nose syndrome or human disturbance can quickly tip the energy balance toward starvation and deprive female bats the energy they need to raise pups during summer. An additional stress, accelerated climate change, is also expected to affect bats across the western US as thermal profiles of caves change and as drought conditions reduce the availability of water to lactating bats.

Why do we monitor bats?

- To estimate status, distribution and trend of bat population at Craters of the Moon National Monument and Preserve (CRMO)
- To learn more about suitable cave habitat and winter bat use in CRMO

How do we use the monitoring data?

- To enable CRMO staff to better manage cave resources
- To contribute to the regional understanding of bat population trends over time

What have we found?

In the winter of 2014 surveys were conducted in 34 of more than 400 known caves for hibernating bats at CRMO. There were 25 revisits and 9 caves were checked for the first time. The new caves were initially accessed during the summer and data on cave length (to provide a dark zone for hibernating bats), entrance size, number of skylights and entrances, was recorded to determine if caves were suitable for hibernating bats. Hibernacula surveys (conducted in the winter) included recording data on temperature and humidity, and identifying bat species present. To date, there are 8 verified hibernacula at CRMO and about 25% of caves deemed suitable for hibernation have been occupied. Four new hibernacula were documented, and one hibernaculum that has been verified and surveyed on a regular basis (Arco Tunnel) had a high count of 38 bats. Bat populations in the western United States have not yet been affected by the emergent disease of White-nose syndrome (WNS), which has spread from the northeastern to the central US. To protect bat hibernacula at CRMO, park staff followed National WNS decontamination procedures prior to entering and upon exiting caves.



A western small-footed myotis (*Myotis ciliolabrum*) in one of the caves at CRMO

Photo by Allie Knokowski



CRMO Wildlife Biologist climbing up a wall in a cave to check it for hibernating bats



Surveyors suit up in safety and white-nose syndrome decontamination gear before entering a cave to survey for bats