
STATEWIDE EFFORTS TO MONITOR YEAR-ROUND BAT ACTIVITY PATTERNS AND CHARACTERIZE CAVE AND MINE ROOST HABITATS

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Montana's bat populations face a wide array of conservation issues, including loss of roosting sites, pesticide impacts to prey species, collision and drowning hazards at sites where they forage and drink, barotrauma and collisions with wind turbines, and the potential arrival of *Geomyces destructans*, the cold-adapted soil fungus that causes White-Nose Syndrome and has decimated bat populations in eastern North America. These conservation issues, and the low reproductive output of bats, highlight the need to gather baseline information that can be used to mitigate impacts to populations. Beginning in the fall of 2011, a collaborative effort was initiated to document roost habitat characteristics and year-round spatial and temporal activity patterns of Montana's bats. To-date, collaborators have deployed over 30 temperature and relative humidity data loggers near known winter bat roosts; most known bat hibernacula in Montana are now being monitored. Collaborators have also established a nearly statewide array of 42 passive ultrasonic detector/recorder stations that are deployed year-round and powered by solar panels and deep cycle batteries. Through December 2012, these recording stations have resulted in more than 750,000 sound files containing nearly 3 terabytes of information. Highlights to-date include numerous first records of species in regions with previously limited bat survey effort, numerous first records of bat activity during the fall, winter, and spring months, documentation of temperatures at which bats are active year-round, documentation of winter bat roost temperatures, documentation of nightly activity patterns throughout the year, and the potential year-round presence of species previously considered migratory.