
BAT ACTIVITY PATTERNS AND ROOST SELECTION IN MANAGED FORESTS

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The recent introduction and subsequent westward spread of white-nose syndrome (WNS) has decimated hibernating bat populations in eastern North America and created an urgent need for scientists to understand basic information about bat ecology, especially during the winter season. White-nose syndrome has killed between 5 and 7 million bats and continues to spread westward from the eastern U.S. and southern Canada, primarily affecting bats during hibernation. Acoustic monitoring has been suggested as a potential surveillance tool for detecting WNS; however, baseline information must first be collected to test this technique. Recent interests in habitat for resident bats has focused on managed forests, particularly in western Montana, where caves used as communal winter hibernacula are not abundant. We initiated a pilot project in June 2014 deploying 2 remote acoustic monitoring stations on Plum Creek property in Flathead County and adding an additional 2 stations in forests owned by Stoltze Land and Lumber and Stimson Lumber Company in May 2015 to collect baseline acoustic information. We also conducted radio telemetry to determine characteristics of roosts used by bats during the fall season in 2014 and 2015. Thus far we have acoustically detected 11 of Montana's 15 bat species, observed extremely high activity levels during the summer, and detected bat activity during every month of the year. We radio-tagged 14 bats of 4 different species; California myotis (*Myotis californicus*), Western small-footed myotis (*Myotis ciliolabrum*), Silver-haired bat (*Lasionycteris noctivagans*), Little brown bat (*Myotis lucifugus*) and tracked them in late October and early November. Identifying the characteristics of roost sites used during the pre-hibernation period, and the annual activity patterns determined from acoustic monitoring, begin to form the foundation for understanding basic aspects of bat ecology during the season when Montana bats will be most susceptible to WNS.