Bat Homes in the Big Sky– Habitat Characteristics of Northern Myotis in Northeastern Montana

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The northern myotis (*Myotis septentrionalis*) is one of 9 endangered species of bats in the United States but the only one to inhabit Montana. This species was initially documented in Montana in 1978, but not again until 2016. Identifying appropriate conservation efforts is hampered by the large gaps in our understanding about northern myotis in Montana. We sought to build our knowledge base by characterizing summer daytime roosts, which provide refuge for bats while they give birth, raise young, and prepare for hibernation or migration. Wemist-netted for bats from May-August in 2022 and 2023 and attached transmitters to 36 northern myotis. We located 76 roosts from 33 tagged individuals. We quantified characteristics of the roost trees and the surrounding patch and compared these with random locations. Bats roosted primarily in eastern cottonwood trees (Populus deltoides) (97% of roosts), which was the most available tree species on the landscape. Bats showed strong preferences for tall trees in patches with a relatively high basal area that also contained multiple trees similar to the roost tree. Bats also selected cottonwoods that were in early stages of decay with somewhat lower canopy cover. Most consecutive roosts were relatively close to previous roosts (range = 2-881 m) and each roost was used for 1.7 days on average. Our work supports the notion that northern myotis select areas that provide multiple possible roosts and facilitate social interactions. Improving our understanding of habitat preferences of northern myotis in Montana will inform strategies to conserve roosts and surrounding habitat.