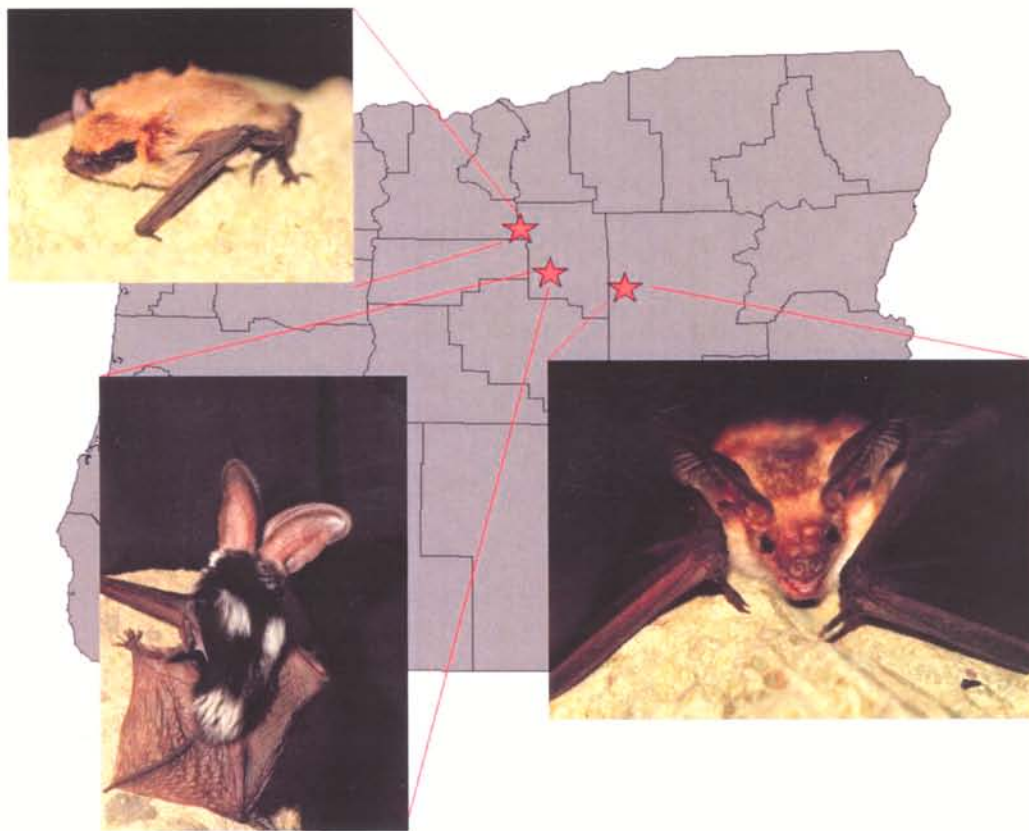


2003 Study of Bat Roosts
John Day Fossil Beds National Monument

Report for Cooperative Agreement No. CA9088A00008

University of Idaho
and
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Upper Columbia Basin Network

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Executive Summary

The 2003 study of bat roosts in the John Day Fossil Beds National Monument supplemented ongoing vertebrate inventory information and developed significant new information on the roosting and foraging ecology of the pallid bat, western small-footed myotis, and the spotted bat in the lower John Day River valley. The University of Idaho Department of Fish and Wildlife Resources conducted the study under a cooperative agreement with the Pacific Northwest Cooperative Ecosystem Studies Unit. The primary goal of the study was to determine the location, size, and physical characteristics of maternity colonies for four bat species of concern in and adjacent to the monument. The four target species were the pallid bat, Townsend's big-eared bat, western small-footed myotis, and the silver-haired bat. Each of these species are listed by state and federal agencies as species of concern. Additional goals included the collection of information on the foraging behavior of the western small-footed myotis and the spotted bat.

Radio transmitters were attached to 10 female pallid bats, 9 female small-footed myotis, 7 silver-haired bats, and 2 spotted bats. Townsend's big-eared bats were difficult to capture and no transmitters were attached to individuals of that species. Forty-five pallid bat day roosts and 52 small-footed myotis day roosts were located during the study. Silver-haired bats and spotted bats were difficult to track and likely were transient through the area. Only one male silver-haired bat remained in the area for 1 week and roosted in the top of a tall cliff complex. Pallid bats roosted in the largest south-facing cliff complexes available. Small-footed myotis roosted in cliffs and rock outcrops, but were less selective about roost structures. Pallid bat roosts were significantly taller than myotis roosts and were closer to capture locations. Small-footed myotis traveled up to 12 km between roosts and foraging areas. Both species exhibited strong fidelity to roost areas but switched roosts within areas frequently. Small-footed myotis showed strong fidelity to foraging areas located along agricultural fields and riparian areas. Pallid bats roosted in large maternity colonies of 22-120 bats and emerged from roosts after dark. Small-footed myotis roosted alone or in small clusters and emerged quickly after sunset.

The combination of telemetry results and capture results from 2 years of intensive mist-netting suggest some important patterns of bat use in the John Day valley. The high proportion of captures represented by pallid bats, small-footed myotis, and western pipistrelles, and the large number of spotted bat observations made from the species' audible echolocation calls present a picture of the bat community that is particularly representative of the dry, rocky habitat found in the John Day valley. The low proportion of forest-dwelling bats captured during the study, and the fact that most of those individuals were males or juveniles, suggests that the low elevation regions of the John Day valley are used primarily by these species as migratory corridors for transient bats moving between summer and winter locations and for dispersal of juvenile bats. Long-term monitoring of roosts and foraging areas are recommended and discussed. Optimal roosting structures for pallid bats in the monument are probably limited to the large, frequently visited features such as the Palisades.