

## Western Bat Working Group

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### Species Accounts

Developed For the 1998 Reno Biennial Meeting

Updated at the 2005 Portland Biennial Meeting

### *Myotis lucifugus*

### LITTLE BROWN BAT

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I. DISTRIBUTION: *Myotis lucifugus* is among the most widespread and common bats in mesic, typically forested, areas of temperate North America. Overall distribution extends from near the treeline in Canada and Alaska to the southern tier of the United States. There is a distributional gap extending south from the largely treeless Great Plains through Texas. In the western U.S., this species is typically absent from hot, arid lowlands, but extends south (at increasing elevation) along forested mountain ranges into southern California, Nevada, Utah, and Colorado.

II. STATUS: Global Rank - G5. State Ranks: AZ - S3; CA - S4; CO - S5?; ID - S5; MT - S5; NM - S5; NV - S?; OR - S4; TX - SA; UT - S4; WA - S?; WY - S5; AL - S5; BC - S4S5.

III. IDENTIFYING CHARACTERISTICS AND LIFE HISTORY: *M. lucifugus* is a medium size *Myotis* which lacks a calcar and has moderate length pointed ears with a blunt tragus. Pelage color is highly variable, but fur is typically longer, darker, and more glossy than similar co-occurring species. In the Northwest, external morphology and skull characters are insufficient to reliably assign a small percentage of individuals to *M. lucifugus* or the similar *M. yumanensis*, but intermediate individuals in southwest British Columbia were identifiable to species on biochemical characters. A few individuals in southern Colorado and northern New Mexico are intermediate in skull characters between *M. lucifugus* and *M. occultus* (which are sometimes synonymized). Body size (and time to maturity) increases with latitude.

Among woodland/forest bats, *M. lucifugus*, is an ecological generalist exploiting a wide variety of natural and man-made roost sites and a taxonomically wide spectrum of flying insect prey, including emerging adults of aquatic species. Summer maternity colony sites (consisting largely of reproductive females and dependent young) include tree cavities, caves and human-occupied structures. Fidelity to physically stable day and night roost sites is strong and individuals return for many years. Active season roosting by males and non-reproductive females is little studied, but male aggregations are known. Daily foraging movements are likely in the 1-10 km range, seasonal aggregation at mass hibernation sites may involve larger distances. Hibernation sites (typically caves and abandoned mines) and seasonality have been studied in eastern and mid-continent populations, but are poorly known in the west.

IV. THREATS: The primary threats are common themes for forest bats -- alterations in snag density and recruitment by timber harvest, liability reduction, agricultural or residential habitat conversion or riparian forest alteration for flood control. This species often occupies structures and is vulnerable to pest control operations. Highly aggregated hibernation in abandoned mines in eastern and central North America suggests closure of cold mines without adequate survey could have major population impact. Populations in montane forest islands, especially near the southern range limit, are at greater risk because population sizes and available habitat are small and development pressures (e.g., forest recreation) can be high.

V. GAPS IN KNOWLEDGE: Lack of knowledge of hibernation sites (and the degree of population aggregation at these sites) is a key point of vulnerability for this species. Inadequate systematic resolution may affect management decisions (e.g., the status of *M. occultus*). Isolated populations in montane forest

islands may be sufficiently differentiated to deserve taxonomic recognition. The status of these should be carefully evaluated as their habitats and population sizes may be small and subject to strong development pressure.

VI. SELECTED LITERATURE:

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