

Western Bat Working Group

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Species Accounts

Developed For the 1998 Reno Biennial Meeting

Updated at the 2005 Portland Biennial Meeting

Lasiurus xanthinus

WESTERN YELLOW BAT

2005 Update by: Jason A. Williams

Original account by: Betsy C. Bolster

I. **DISTRIBUTION:** Formerly considered conspecific with the southern yellow bat, but currently considered a distinct species, *Lasiurus xanthinus* occurs in northern Mexico, western Arizona, southern California, southern Nevada, and southwestern New Mexico. Western yellow bats are associated with dry, thorny vegetation on the Mexican Plateau, and are found in desert regions of the southwestern United States, where they show a particular association with palms and other desert riparian habitats. They are known to occur in a number of palm oases, but are also believed to be expanding their range with the increased usage of ornamental palms in landscaping. *L. xanthinus* occurs up to ca. 2,000 m. in the mountains in Arizona.

II. **STATUS:** Global Rank - G5. National Rank – N2. State Ranks: AZ - S1; CA - SNR; NV - S1; NM - S1; TX - S1. *L. xanthinus* is included in Arizona Game and Fish Department's Wildlife of Special Concern.

III. **IDENTIFYING CHARACTERISTICS AND LIFE HISTORY:** Western yellow bats can be distinguished from other bat species by the combination of yellow coloration, size (forearm = 42-50 mm), and short ears. Yellow bats are suspected to be non-colonial. Individuals usually roost in trees, hanging from the underside of a leaf. They are commonly found in the southwestern U.S. roosting in the skirt of dead fronds in both native and non-native palm trees, and have also been documented roosting in cottonwood trees. At least some individuals or populations may be migratory, although some individuals appear to be present year-round, even in the northernmost portion of their range. Yellow bats probably do not hibernate; activity has been observed year-round in both the southern and northern portions of their range. Sexual dimorphism in size exists, with females averaging 2mm longer in forearm length than males. Yellow bats are insectivorous. Analysis of fecal samples of western yellow bats indicate their diet includes Coleoptera, Diptera, Hemiptera, Homoptera, Lepidoptera, and Orthoptera. Capture sites are often associated with natural and non-natural water features in open grassy areas and scrub, as well as canyon and riparian situations. Captures are also reported over swimming pools, lawns in residential areas, and orchards. In northern areas, seasonal segregation between sexes during parturition may occur, as males are scarce from April through June. In the U.S., pregnant females are known from late April through June, with lactation occurring during June and July. The number of embryos carried by pregnant females varies from one to four, with no known geographic trend. Reported predators include barn owls, domestic dogs and domestic cats.

IV. **THREATS:** Few threats to the survival of yellow bats have been reported. Probably one of the primary threats in the U.S., however, is the cosmetic trimming of palm fronds. The use of pesticides in date-palm and other orchards may also constitute a threat to both roosting bats and the insects upon which they forage. Domestic cats, whether pets or feral, may be a substantial source of predation, as they are for many lizards, songbirds, and rodents.

In general, the long term persistence of North American bat species is threatened by the loss of clean, open water; modification or destruction of roosting and foraging habitat; and, for hibernating species,

disturbance or destruction of hibernacula. Chemicals in the environment that affect bats or their prey are also a threat. Because of low fecundity, high juvenile mortality, and long generational turnover, many bat populations may be vulnerable to human-induced pressures.

V. SURVEY METHODS: Morphologically distinct. It is difficult to locate tree roosts, but can sometimes *Lasiurus xanthinus* can be located by monitoring palm trees at emergence time. This species is difficult to observe in the roost, but is easy to identify during emergence from roost. In some habitats, it is readily captured using nets, but apparently difficult to capture in others. Not enough known about appropriate habitats. Easy to detect acoustically; most sequences diagnostic, but some acoustic overlap with *L. borealis* and *E. fuscus*. *Lasiurus xanthinus* is reasonably distinctive in flight.

VI. GAPS IN KNOWLEDGE: The following areas need more investigation to accurately determine the status of and to conserve the yellow bat in the U.S.: distribution, migration, habitat requirements, activity patterns (both daily and seasonally), and threats including palm frond trimming and pesticide use in orchards.

VII. SELECTED LITERATURE:

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