Range Extension of the Western Yellow Bat (Dasypterus xanthinus) in New Mexico

James E. Zabriskie¹, Patricia L. Cutler², and James N. Stuart³,4

¹Parks and Recreation Department, City of Las Cruces, P.O. Box 20000, Las Cruces, New Mexico 88004, USA
²White Sands Missile Range, Conservation Branch, Building 163, Springfield Avenue, White Sands Missile Range, New Mexico 88002, USA
³New Mexico Department of Game and Fish, Wildlife Management Division, 1 Wildlife Way, Santa Fe, New Mexico 87507, USA
⁴Corresponding author; e-mail: james.stuart@state.nm.us

Abstract.—The Western Yellow Bat (Dasypterus [= Lasiurus] xanthinus), a state-listed threatened species in New Mexico, occurs in the southwestern U.S. and has been previously reported in New Mexico only from the southwestern corner of the state. We document its occurrence based on photographs of a specimen from Las Cruces, Doña Ana County, New Mexico, which represents a northeastward range extension from previous localities in the state. Our record also documents the use of fan palms (Washingtonia spp.) in New Mexico as day roost habitat. We discuss distribution and habitat use of D. xanthinus in the Southwest.

Key Words.—bats; Chihuahuan Desert; geographic distribution; fan palm; Lasiurus xanthinus; roost habitat; Washingtonia.
Figure 2. A Western Yellow Bat (*Dasypterus xanthinus*) found roosting among dead fronds of a fan palm tree at Las Cruces, New Mexico, 2 January 2019. (Photographed by Kailin Miller).

Figure 3. A Western Yellow Bat (*Dasypterus xanthinus*) following removal from dead fronds of a fan palm tree at Las Cruces, New Mexico, 2 January 2019. (Photographed by Kailin Miller).
on the anterior part of the uropatagium, the blackish color of the wing membranes, the lack of a dark face mask, and an estimated total body length of 105 mm. This combination of characteristics (after Ammerman et al. 2012) are consistent with only this species in New Mexico. The other three bats found in the same tree were not photographed but had similar characteristics and were presumably also D. xanthinus.

Prior to its discovery in Las Cruces, D. xanthinus was known in New Mexico only from southern Hidalgo County, in the southwestern corner of the state, where it was first detected in 1962 in Guadalupe Canyon in association with a riparian woodland of Eastern Cottonwood (Populus deltoides), Arizona Sycamore (Platanus wrightii), and Netleaf Hackberry (Celtis reticulata; Mumford and Zimmerman 1963). Additional specimens were mist-netted in the early 1980s at stream pools and livestock ponds near the Animas Mountains (Cook 1986). All specimens from New Mexico have been collected during late spring or summer (Cook 1986). Due to its very restricted range and presumed reliance on limited riparian woodlands in New Mexico, D. xanthinus has been listed by the state as threatened under the New Mexico Wildlife Conservation Act since 1975 (Jones and Schmitt 1997).

The Las Cruces record provides a northeastward range extension in New Mexico of about 210 km and is the first New Mexico record from the Chihuahuan Desert ecoregion. The species, however, has been verified to occur in adjacent El Paso County, Texas (about 60 km to the southeast; Tipps et al. 2011), as well as elsewhere in the Chihuahuan Desert ecoregion of Trans-Pecos Texas. Its occurrence, therefore, in south-central New Mexico is not unexpected. Other researchers have suggested that D. xanthinus is expanding its range in the U.S., perhaps in response to the planting of ornamental trees such as fan palms that are suitable as day roost sites and possibly as winter refugia (e.g., Barbour and Davis 1969; Constantine 1998). Although the Las Cruces record might represent a recent range expansion, we cannot exclude the possibility that the species has simply evaded detection in this area until recently.

Our record also provides the first evidence of D. xanthinus using a fan palm tree (Washingtonia filifera × robusta; Fig. 1) as a day roost site in New Mexico and is the first winter record of this species in the state. The species is known to use the dead fronds of fan palms as both summer and winter roost sites in Arizona, southern Nevada, and southern California (Hoffmeister 1986; Constantine 1998; O’Farrell et al. 2004), where native and non-native palms are more common, particularly as ornamentals. In New Mexico, suitable climate for non-native ornamental palms is limited to a few southern locations such as Las Cruces, Truth or Consequences, Carlsbad, and Deming. In western Texas, D. xanthinus has been found roosting in the dead fronds of Giant Dagger (Yucca carnerosana; syn. Y. faxoniana), a plant with structural similarities to fan palms that apparently make it a suitable shelter (Higginbotham et al. 2000). Yucca plants (Yucca spp.) are common in much of the Chihuahuan Desert ecoregion of southern New Mexico, including in the Las Cruces area, which suggests that suitable roosting habitat for D. xanthinus might be more widespread and available in the state than previously believed.

Acknowledgments.—We thank Kailin Miller and Jesus Rodriguez who co-discovered the bats and kindly permitted us to use their photographs herein. Ernest Valdez reviewed the manuscript and photographs; Michael Bogan, Jennifer Frey, and Keith Geluso also examined the photographs and confirmed our species identification. Marcy Scott provided editorial assistance.

Literature Cited


Zabriskie et al. • Range Extension of the Western Yellow Bat in New Mexico.