

Allen's Big-eared Bat (*Idionycteris phyllotis*)**Species Status Statement.**Distribution

Allen's big-eared bat occurs in the southwestern United States and much of inland Mexico (Czaplewski 1983). In the United States, its known distribution includes southern Nevada, southern Utah, all of Arizona, and western New Mexico (O'Shea et al. 2018). Based on acoustic detections (Hayes et al. 2009) its distribution extends into western Colorado. In Utah, Allen's big-eared bat occurs in the southeastern quarter of the state, and in a narrow band along the remainder of the southern end of the state.

Table 1. Utah counties currently occupied by this species.

<b>Allen's Big-eared Bat</b>
GARFIELD
GRAND
KANE
SAN JUAN
WASHINGTON
WAYNE

Abundance and Trends

Allen's big-eared bat is rare across its range, and detections are infrequent even in locations where the species occurs (O'Shea et al. 2018). In Utah, it is the second least encountered bat species (Oliver 2000) and this was the last species discovered in the state (Black 1970). Due to this rarity, population trends are difficult to assess. Statewide occupancy monitoring has been conducted every three years since 2009, but detections of Allen's big-eared bat are too sparse for the generation of reliable occupancy estimates. However, based on consistent, but infrequent, detections in Utah, it appears that the species is stable in the state.

**Statement of Habitat Needs and Threats to the Species.**Habitat Needs

Most authorities consider forested mountains to be the primary coarse-scale habitat of Allen's big-eared bat (Czaplewski 1983). However, due to the rarity of detections, it is likely that this may be an over-generalization based on incomplete information. More recent studies (summarized in O'Shea 2018), and work in Utah, have found that this species can be detected in most habitats present in its range (Oliver 2000). Nevertheless, ponderosa pine forests are

widely considered the preferred or optimal habitat, and most mist net captures of the species occur in or around this habitat. At the very least, coniferous forest or woodland (e.g. ponderosa pine or mixed conifer forest; and pinyon-juniper, pine-oak, or oak-juniper woodland) seems to be an important component of this species' habitat needs (Oliver 2000, O'Shea et al. 2018).

Most authorities consider Allen's big-eared bat to be non-migratory, but little is known about hibernation locations or winter activity. In New Mexico, individuals have been found hibernating in a mine (Jones 2016), and have been captured over water in winter months (Geluso 2007). In Utah, little is known regarding wintering habits (Oliver 2000). As with most bats, warm-season roosting and foraging habitats may differ in this species. Bat capture locations may not adequately describe needed roost and hibernacula locations. Warm-season roost sites have been reported as mines, rock crevices, and cracks and sloughing bark on snags (O'Shea 2018). Some authors have reported sloughing bark on ponderosa pine snags to be especially important for maternity roosts (Solvesky Chambers 2009).

### Threats to the Species

The primary threat to Allen's big-eared bat is the loss of roost and maternity colony sites. These bats are particularly sensitive to human disturbance and may abandon such sites if disturbed (e.g. Barbour and Davis 1969). Additionally, forest management practices that hinder the retention or recruitment of large trees and snags may result in the loss of current maternity colonies, or reduce the potential for future maternity colonies to develop. Given the presumed rarity of this species, and its low reproductive output, the loss of maternity colonies may result in serious declines. Similarly, the closure of abandoned mines, if not done properly, may result in the loss of important roost sites.

An emerging potential threat is the rapid advance of white-nosed syndrome (WNS) across the continent. WNS is a fungal disease that affects hibernating bats and causes massive mortality in some species. WNS is found in 36 states and 7 provinces, and as of 2019, is as close as eastern Wyoming. Although managers consider the risk of WNS to be low for Allen's big-eared bat, its presumed use of caves and mines for hibernation suggests that vigilance is warranted.

Table 2. Summary of a Utah threat assessment and prioritization completed in 2014. This assessment applies to the species' entire distribution within Utah. For species that also occur elsewhere, this assessment applies only to the portion of their distribution within Utah. The full threat assessment provides more information including lower-ranked threats, crucial data gaps, methods, and definitions (UDWR 2015; Salafsky et al. 2008).

<b>Allen's Big-eared Bat</b>
<b>High</b>
Woodcutting for Fuel / Posts
<b>Medium</b>
Cave / Mine Exploration
Disease – Alien Organisms
Mine Shaft / Adit Closures
Roads – Transportation Network

### **Rationale for Designation.**

Allen's big-eared bat is one of the rarest bats in Utah, and faces threats from the potential loss of roosts and maternity colony sites. Coupled with low reproductive potential, and the emerging threat of WNS, inclusion on the Utah Sensitive Species list is appropriate.

### **Economic Impacts of Sensitive Species Designation.**

Sensitive species designation is intended to facilitate management of this species, which is required to prevent Endangered Species Act listing and lessen related economic impacts. The listing of other bat species in eastern states has prompted requirements for extensive regulatory compliance for a wide variety of project categories including transportation, utility rights-of-way, habitat management, and forest management. As Allen's big-eared bat uses cave and mine habitats for roosting, restrictions on recreational caving and abandoned mine closures could result from an ESA listing. Additionally, restrictions could be placed on forest and fuels management activities in ponderosa pine forests where they are found.

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