

TRICOLORED BAT (*Perimyotis subflavus*)



BACKGROUND

The tricolored bat (*Perimyotis subflavus*) was previously classified as the eastern pipistrelle (*Pipistrellus subflavus*) [1] and inhabits parts of six countries, including the eastern half of the United States (Fig. 1). However, there are records of westward expansion into New Mexico, South Dakota, Texas [2], and, more recently, Colorado [3]. The populations were secure until the introduction of white-nose syndrome (WNS) caused by a cold-loving fungus (*Pseudogymnoascus destructans*) accidentally introduced from Europe [4]. Populations are now in decline due to high mortality from the disease.

CONSERVATION STATUS

The tricolored bat is listed as vulnerable on the International Union for Conservation of Nature (IUCN) Red List [5], is being considered by the United States Fish and Wildlife Service (USFWS) for listing as threatened or endangered [6], and is being reviewed by Region 5 in Hadley, MA. Within the United States, tricolored bats range from state endangered to having no conservation status.

KEY FACTS

- Relatively long-lived (~11–15 years), nocturnal, small bat with tan/orange fur and pink forearms, weighs less than a nickel (<8 grams/0.3 ounces), and eats insects off vegetation (gleaning behavior).
- Males and females roost singly in hibernation sites in winter and emerge in late spring to roost in trees during the summer.
 - Males often roost alone in the summer, but females roost in small colonies (10–30).
- Timing
 - Hibernation season: October–April
 - Summer season: April–September
 - Maternity season: April–July



Figure 1 – Range of the tricolored bat (*Perimyotis subflavus*).

				← Active Season →							
January	February	March	April	May	June	July	August	September	October	November	December
Hibernation			Spring Emergence	Young Rearing			Fall Swarming		Hibernation		

GENERAL HABITAT USE FOR ROOSTING AND FORAGING

- Winter (Hibernacula): caves and mines throughout the range, a hydroelectric dam in Michigan, and in the southern United States, road culverts, bridges, basements, tunnels, and storm sewers.
 - Roost singly, use deep torpor (decreased physiological activity), often found covered in condensation
- May enter hibernacula earlier and emerge later than other bat species [7]. Summer: dead leaf bundles and Spanish moss hanging in live or dead trees, buildings, basal cavities of swamp trees (for example, tupelo, sweetgum), caves, rock crevices, road culverts, and bridges.
 - Variable in roost selection [8–10]
 - When roosting in forest, typically roost in hanging, dead vegetation or Spanish moss
 - Location of these roosts also variable, from riparian areas to upland xeric (dry environment) sites
 - Heavy use of waterways and ponds or lakes for foraging, but not exclusive
 - Forage primarily in open areas, although bat morphology/body structure allows for slow flight adapted to clutter [11, 12]
 - Forage ~4 km from roosts [8]

THREATS TO THE SPECIES

- Population declines due to white-nose syndrome is the primary cause for potential federal listing [6].
- Disturbance by humans, habitat destruction (particularly hibernacula), and environmental pollution [8].
- Other threats include impacts from wind facilities [13–15] and climate change [14].

CONSIDERATIONS FOR CONSERVATION

- Although the species range is extensive, this bat is not found in high numbers in the northern portion of the United States. For example, there are low captures in northern Indiana [16] and Iowa [17], and no reproductive tricolored bats have ever been documented in Michigan (pers. comm., A. Kurta, Eastern Michigan University), but hibernacula have been discovered within the last decade [18–21].
- Although the primary cause for decline of this species is due to disease contracted in winter (that is, WNS), conservation of summer habitat can help support populations that survive the winter months [14].
- Conserving forested areas and riparian travel and foraging corridors and maintaining clean aquatic resources for feeding and drinking opportunities will support tricolored bat populations in their summer habitat.

INFORMATION FOR UTILITY OPERATORS

- Tricolored bats are not federally listed; therefore, no federal species-wide regulations exist for disturbance of winter or summer habitat.
- If tricolored bats become listed, potential activities (for example, tree removal and/or actions near hibernacula) from utility operations, maintenance, or development projects may become subject to regulation.
- Where tricolored bats are state listed, potential impacts will be evaluated on a project-specific basis.
 - Operations can occur under the state's guidelines **or**
 - Surveys for bats may be proposed to evaluate the level of disturbance to local bat communities.

RESOURCES

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