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Townsend's big-eared bat *(Corynorhinus townsendii)*

Photo by Bob Davies

A Townsend's big-eared bat in a cave.

Category: Mammals

Ecosystems: Shrubsteppe (/species-habitats/ecosystems/shrubsteppe), Riparian areas (/species-habitats/ecosystems/riparian)

State status: Candidate (/species-habitats/at-risk/listed?state_status=25402)

Vulnerability to climate change (More details)

Low	Low-Moderate	Moderate	Moderate-High	High

Wild Washington (/get-involved/environmental-education-curriculum) lesson plans

- Bat, What Can We Do? (/get-involved/environmental-education-curriculum/lesson-plans/bat-what-can-we-do)

If you see this species, please share your observation using the WDFW wildlife reporting form (/get-involved/report-observations). Providing detailed information such as a photo and exact coordinates will improve the confidence and value of this observation to WDFW species conservation and management.

The Townsend's big-eared bat occurs in small to moderately-sized aggregations at sites throughout the state, where it may be vulnerable due to loss, modification and disturbance of roosting and foraging habitat. Actions to reduce human disturbance and destruction of important habitat and roosts are considered the most important conservation measures for Townsend's big-eared bats.

White-nose syndrome is a deadly fungal disease that has been confirmed in some Washington bat species (https://wdfw.wa.gov/species-habitats/diseases/bat-white-nose#wns-where), but to date, no diagnostic evidence of the disease has been detected in Townsend's big-eared bats. It is unclear which species of bats may be vulnerable to this disease in Washington. This disease does not affect humans, livestock, or other wildlife.

Marine toxic contaminants (/species-habitats/science/marine-toxics)

Wildlife viewing (/species-habitats/wildlife-viewing)

Climate change and sustainability (/species-habitats/climate-change-sustainability)

If you find sick or dead bats or notice bats acting strangely, such as flying outside in the day or in freezing weather, please report your sighting online (/species-habitats/diseases/bat-white-nose) or call WDFW at 360-902-2515. **Do not handle bats that appear sick or injured.**

Description and Range

Physical description

Townsend's big-eared bat is a medium-sized insectivorous bat with very large ears, which measure about half its body length and are connected at the base. There are two prominent lumps on either side of the nostrils which may function as sexual scent glands. Their wingspan ranges from 12 to 13 inches and they weigh one-third to one-half ounce, about the weight of one to two large marshmallows. Their wings are large and wide relative to their body size, which provide them with the ability to fly at low speeds, to hover and to maneuver more readily in cluttered environments. Five subspecies are recognized, with only *C. t. townsendii* present in Washington.

Relative to other bats, Townsend's big-eared bats' echolocation calls are at a low sound intensity; essentially, the bats are whispering, making them difficult to detect and monitor by researchers conducting acoustic surveys. Listen to a recording of the species' echolocation calls made audible to the human ear as a series of high-pitched chirps.

Ecology and life history

In Washington, Townsend's big-eared bats are found in westside lowland conifer-hardwood forest, ponderosa pine forest and woodlands, mixed highland conifer forest, eastside mixed conifer forest, shrubsteppe, and both eastside and westside riparian forest/wetlands and open fields.

The Townsend's big-eared bat is considered a subterranean-obligate species across much of its range, depending on caves, abandoned mines and other subterranean features for reproduction and hibernation. This species prefers to roost in open areas, unlike other bat species who roost in crevices or cracks.

In Washington, many day and maternity roosts are in caves, abandoned mines, buildings, concrete bunkers, tunnels, and bridges. Old-growth trees with large basal hollows may have formerly been important roost type in the state. During the winter, caves, abandoned mines, tunnels, and concrete bunkers are commonly occupied by hibernating bats. These bats will also use caves, abandoned mines, tunnels, bridges, and buildings as night roosts, when they rest between foraging bouts.

Townsend's big-eared bats use echolocation calls when foraging for insects and flying to avoid objects. The low intensity sounds they produce allow them to locate and glean insects from vegetation or other surfaces and catch flying insects in air near and among foliage. More than 90 percent of the diet is usually comprised of moths. Smaller amounts of other prey such as beetles, flies, and lacewings are also eaten. Tissue moths (*Triphosa haesitata*), a hibernating

moth that develops fat pads in fall, and other moths, such as *Scoliopteryx libatrix*, occur in some of the caves used by Townsend's big-eared bats in fall and winter in Washington and may be an important autumn food source for these bats prior to hibernation.

Photo by WDFW

A Townsend's big-eared bat hibernating in a cave in Skamania County.

Flight activity usually begins well into the night, later relative to other bats, and extends to before sunrise. After an initial feeding period, these bats rest at night roosts, presumably before a later feeding bout. During the breeding season, nursing females will leave their young (pups) in the maternity colony while they forage and return periodically to feed their pup. Travel distances of 0.5 mile to 11 miles between day roosts and foraging sites are probably typical in the western United States, although longer nightly foraging movements have been noted. Individuals are often loyal to foraging sites and travel routes over successive nights.

Nearly all adult females breed every year. Mating occurs in the autumn and early winter during arousals from hibernation. Females store sperm through winter and delay ovulation and fertilization until spring. In late spring, pregnant females will form maternity colonies that can consist of over 100 adults: males roost separately, apparently solitarily, during this time. Length of pregnancy is quite variable, lasting 56 to 100 days depending on the frequency of torpor by females. Timing of births can therefore show considerable variation within and among colonies and years. Each female will birth one pup who is born flightless and completely dependent on the females. Pups grow fast and are capable of flight usually 3 weeks after birth.
Maternity colonies typically are in caves, abandoned mines, concrete bunkers, and buildings such as in attics and barns.

Males and females will hibernate together in caves, abandoned mines, tunnels, and concrete bunkers. Hibernating individuals will roost singly or in small to large groups of multiple individuals. Group sizes can range from 2 to over 100 individuals. Hibernating bats seek open areas with cool stable temperatures ranging from 32 to 53 degrees Fahrenheit. Bats frequently arouse and shift locations within hibernacula or move to a different nearby roost to seek suitable temperatures or to avoid disturbance.

Bats are relatively long-lived mammals for their sizes. Their lifespan ranges from 4 to 10 years, with the oldest report of 16 years. It is assumed as with other bat species that predators include snakes, owls, cats, racoons, falcons, and hawks.

Geographic range

This species occurs from southern British Columbia southward through most of the western United States to central Mexico. Isolated populations also exist in the Ozarks and Appalachians. Documented records exist for most counties in Washington, but are lacking for the southern Columbia Basin and Blue Mountains. Within the species' range, distribution is often linked to the presence of suitable sites for maternity roosts and hibernacula located near foraging habitat.

Townsend's big-eared bats generally occur at low densities across their range. Long-term population trends are difficult to assess for most western populations because of the scarcity of adequate count data, the species' dynamic roosting behavior, low detectability in acoustic surveys, and the use of multiple roosts under some conditions. In Washington, Townsend's big-eared bats occur at scattered locations throughout the state. Long-term count data are available for only a small number of roosts. Their population size is probably relatively small, but their population trend may be stable.

For maps of range-wide distribution and conservation status of this species, check out NatureServe Explorer and the International Union for Conservation of Nature Redlist.

Climate vulnerability +

Conservation −

This species is identified as a **Species of Greatest Conservation Need** (SGCN) under the State Wildlife Action Plan (/species-habitats/at-risk/swap) (SWAP). SGCN-classified species include both those with and without legal protection status under the Federal or State Endangered Species programs, as well as game species with low populations. The WDFW SWAP is part of a nationwide effort by all 50 states and five U.S. territories to develop conservation action plans for fish, wildlife and their natural habitats—identifying opportunities for species' recovery before they are imperiled and more limited.

This species is identified as a **Priority Species** under WDFW's Priority Habitat and Species Program (/species-habitats/at-risk/phs). Priority species require protective measures for their survival due to their population status, sensitivity to habitat alteration, and/or recreational, commercial, or tribal importance. The PHS program is the agency's main means of sharing fish and wildlife information with local governments, landowners, and others who use it to protect priority habitats for land use planning.

Conservation Threats and Actions Needed

- Agriculture and aquaculture side effects
  - **Threat:** Pesticide spraying in forests and agricultural areas near roosting and foraging sites may affect survivorship and reproduction ability of bats. Pesticides can also kill or reduce prey availability, such as moths, a major prey of this species.
  - **Action Needed:** Limit pesticide spraying to control outbreaks of moth pests.