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The Western Pipistrelle
North America's smallest bat
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Next time you are enjoying a beautiful sunset in an arid western canyon, anywhere from Canada to Mexico, take a closer look at the sky a hundred feet or so overhead. Chances are, you will see one or more western pipistrelles getting a head start on dinner. Sometimes they are seen as much as two hours before sundown.

These tiny bats, with their silky straw-gold fur, striking black face masks, and unusually large eyes, rank among the west's most attractive animals. On average, they weigh only slightly more than a penny, and even with their wings spread, they are only about the width of a human hand.

Amazingly, despite their small size, western pipistrelles rank among America's hardiest animals. Year-round, they typically live in rock crevices, mostly in cliff faces, though given their almost magical evening appearances in even the remotest desert flat-lands, it has been speculated that they probably also occupy rodent burrows in the ground. With tiny bodies and large areas of wing surface, such bats are exceptionally vulnerable to dehydration and temperature stress.

To minimize water loss and maintain appropriate body temperatures, pipistrelles wedge themselves into narrow rock crevices, relying on just the right combination of sun exposure and crevice depth to keep their bodies at required temperatures with minimal expenditure of metabolic energy. In summer, they move closer to entrances for greater warmth, doing the opposite to avoid extreme cold in winter. This approach is very energy-efficient, but to find appropriate crevices, pipistrelles must be extraordinarily selective, often finding just one in thousands of crevices suitable to meet their needs.

Most western pipistrelles mate in late September or early October, prior to entering winter hibernation. In that season, pairs have been observed alternately chasing each other and landing together, apparently courting on cliff-faces. Sperm are stored in female reproductive tracts until spring, with mothers becoming pregnant in April or May and giving birth to twins in June or July, depending on latitude. In sharp contrast to other tiny animals, such as shrews, young pipistrelles do not reach maturity until they are two years old, and banding records indicate survival to ages of at least six years.

These bats do not form large nursery or bachelor colonies like many others. However, several mothers and their young occasionally share an extra-attractive crevice while rearing young. Males are typically found roosting alone, often at higher elevations or in deep, cool valleys. Mothers normally rear young in warmer locations.

Females seldom become active in winter and are never active when temperatures are below freezing. However, males are amazingly capable of flying in sub-freezing temperatures, and have been seen traveling over snow-covered ground when air temperatures were just 181/4 F (-7.781/4C). Such bats are presumably in search of water, because feeding in such cold is unlikely. In order to survive the energy stress of low-temperature activity, they are

able to fly at body temperatures of only 71.6 1/4 F (21.91/4 C), in contrast to the 100.4 1/4 F (381/4 C) maintained during summer flight.

Pipistrelles feed on a wide variety of small insects, including caddis, stone, and house flies, mosquitoes, flying ants, and many kinds of moths, bugs, and beetles. Many insects are caught high above the ground, though aquatic kinds are often skimmed directly from the surface of ponds or rivers as they hatch. If you would like to eavesdrop on these bats while they hunt, you will need to tune your bat detector a bit higher than usual, probably to at least 60-70 kHz.

Like many other bats, despite their unusually small size, western pipistrelles appear to be highly social and intelligent. They have been known to land on researchers and run down an arm to join others that have already been captured and placed in a cage, and they quickly learn from observing other bats. While photographing bats in the Big Bend region of Southwest Texas, I once trained a pallid bat to come to my hand on call in the same enclosure where I also had released a pipistrelle. After just a few minutes of watching the pallid bat get fed as a reward for flying to my hand on call, the next time I called, the pipistrelle came instead. It had learned from simply watching me train a bat of another species!

To better observe these tiny bats, try watching a small, isolated pool of water at dusk. With luck, you may see them dipping down to drink by the dozens.

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