



Lower Colorado River
Multi-Species Conservation Program
Balancing Resource Use and Conservation

B A T S



The most diagnostic character of the **California leaf-nosed bat**, a gray-furred, medium-sized bat, is the leaf-shaped structure on its nose. The ears are large (29-38 mm) and are joined near their base. The California leaf-nosed bat has known populations all along the lower Colorado River, in all Reaches 1-6. There are 10 known maternity colonies found along the LCR with 7 of these considered major (more than 100 bats). There are also eight large winter roosts known of California leaf-nosed bats along the LCR. In addition to known colonies and roosts, California leaf-nosed bats have been detected along the LCR during acoustic and capture surveys. These bats do not migrate or hibernate; instead they maintain a year-round presence by roosting in a cave or mine that maintains a high temperature (greater than 28°C); many of these caves are geothermally heated. Subsequently, these bats also forage during the entire year, and use both echolocation and visual detection to locate prey, the latter being used more in the winter months to save energy. Leaf-nosed bats feed by capturing prey during flight and by gleaning insects from vegetation. They primarily feed on large night flying beetles, grasshoppers, moths, and insect larvae, which they carry to a night roost to eat. An individual bat may forage for nearly 2 hours in a given night.

The **western red bat** is a medium-sized bat with pelage that is usually mottled reddish and grayish, but can range from bright orange to yellow-brown. Whitish patches can be seen near the shoulder and most pelage hairs are frosted with white tips. Wings are long, narrow, and pointed. Males are usually more colorful than females. Historically, no red bats had been reported from the LCR. However, in recent years, these bats have been detected along the LCR during acoustic and capture surveys, and are known to exist within all Reaches 1-6. In the southwestern United States, Western red bats are found in desert riparian areas and primarily roost in trees, primarily in cottonwoods. They are also known to roost in shrubs in riparian habitats and if roosting in dense foliage, they can resemble dead leaves. Western red bats begin foraging 1-2 hours after dark and may continue into the following morning. They commonly forage near light sources, which attract insects, and use echolocation to find and target prey. Western red bats will forage from tree top level to a few feet above the ground and use their wing membranes to capture prey, sometimes landing on vegetation to catch an insect. Moths appear to be one of the main prey items but the bats also readily feed on flies, bugs, beetles, cicadas, and ground-dwelling crickets.



The **western yellow bat** is a medium to large-sized bat, whose pelage is yellowish-buff to light brownish, with fur tipped with gray or white. Ears are shorter than many other species, but their length is larger than their width. Yellow bats are known to be sexually dimorphic in size, with females being slightly larger. Currently, it is believed that the western yellow bat has expanded its range across the southwestern United States northward with the introduction of the Washington fan palm. Western yellow bat populations are not well known within the LCR MSCP boundary, but are known to exist within all Reaches 1-6. Western yellow bats have been detected along the LCR during acoustic and capture surveys. Western yellow bats are known to roost in the dead palm frond skirts of fan palms. Palm trees may be preferred because dead fronds closely match their fur coloration, although they will utilize any tree that gives them enough cover to be hidden while roosting. Western yellow bats feed on a variety of insects including ants, wasps, bees, flies, mosquitoes, butterflies, moths, beetles, grasshoppers, crickets, and others. They are known to leave day roosts and begin foraging at dusk. Yellow bats have been captured over water holes but it is unknown if they were foraging or drinking.

The **Townsend's big-eared bat** is a medium-sized bat with dorsal hair colors ranging from slate gray to pale with cinnamon brown to blackish brown tips that contrast slightly with the base. Ventral hairs are slate gray to brownish with brownish or buff tips. Ears are very large (30-39 mm) and are joined across the forehead. The most significant characteristics are two large glandular lumps on each side of the nose, which help distinguish it from the four other large-eared bat species that may be found along the LCR: the spotted bat, California leaf-nosed bat, Allen's big-eared bat, and the Pallid bat. Roosting sites may be identified by their guano, which is usually found in circular patches in open areas. The only current site to have a known colony (less than 50 in 2003) along the LCR is a mine located in the Riverside Mountains. Two maternity roosts have been found along the Bill Williams River, a major tributary that empties into Lake Havasu, north of Parker, Arizona. Townsend's big-eared bats are considered moth specialists because at least 90% of the diet is composed of moths. Other insects found to be preyed upon include: beetles, flies, bees, and wasps. Generally, they take their prey in the air, although evidence of foliage gleaning has been noted. It is considered a slow flier and highly agile and maneuverable.



ACOUSTIC DETECTIONS OF EACH MSCP BAT SPECIES ALONG THE LCR:

CALIFORNIA LEAF-NOSED BATS

- Beal Lake, a restoration site within Havasu National Wildlife Refuge, near Needles, CA
- Colorado River Indian Tribes (CRIT) Ahakhav Tribal Preserve, near Parker, AZ
- Palo Verde Ecological Reserve (PVER), near Blythe, CA
- Cibola Valley Conservation Area (CVCA), near Blythe, CA
- Cibola Unit #1, a restoration site within Cibola National Wildlife Refuge, near Blythe, CA
- Imperial Ponds, a restoration site within Imperial National Wildlife Refuge, north of Yuma, AZ

WESTERN RED BATS

- The Muddy River, within Moapa Valley, NV (found to be the sixth-most abundant species acoustically detected)
- Las Vegas Wash, from March through October of 2004-2005 (drains all runoff from Las Vegas, NV, into Lake Mead)
- Havasu National Wildlife Refuge, near Needles, CA
- Bill Williams River National Wildlife Refuge
- Beal Lake, CRIT, PVER, CVCA, and Cibola Unit #1
- Imperial National Wildlife Refuge, north of Yuma, AZ

WESTERN YELLOW BATS

- The Muddy River, within Moapa Valley, NV
- Las Vegas Wash, during all months, except for January
- Bill Williams River National Wildlife Refuge
- North of Parker, AZ, in a dense palm grove
- Beal Lake, CRIT Ahakhav Tribal Preserve, PVER, CVCA, and Cibola Unit #1
- Imperial Ponds, a restoration site within Imperial National Wildlife Refuge, north of Yuma, AZ

TOWNSEND'S BIG-EARED BATS

- Bill Williams River National Wildlife Refuge
- Riverside Mountains mine
- Beal Lake, CRIT Ahakhav Tribal Preserve, PVER, CVCA, and Cibola Unit #1



CAPTURE LOCATIONS OF EACH MSCP BAT SPECIES ALONG THE LCR:

CALIFORNIA LEAF-NOSED BATS

- Bill Williams River National Wildlife Refuge
- Planet Ranch, a restoration site along the Bill Williams River
- CRIT Ahakhav Tribal Preserve, near Parker, AZ
- Cibola Valley Conservation Area, near Blythe, CA
- Unit #1, a restoration site within Cibola National Wildlife Refuge, near Blythe, CA
- Imperial National Wildlife Refuge, north of Yuma, AZ
- Pratt, a demonstration restoration site just north of Laguna Dam

WESTERN RED BATS

- The Muddy River, within Moapa Valley, NV
- Bill Williams River National Wildlife Refuge (In January 2002 this male was the first western red bat captured along the LCR)
- CRIT Ahakhav Tribal Preserve
- PVER and CVCA

WESTERN YELLOW BATS

- The Muddy River, within Moapa Valley, NV
- Las Vegas Wash (drains all runoff from Las Vegas, Nevada, into Lake Mead)
- Bill Williams River National Wildlife Refuge
- Planet Ranch, a restoration site along the Bill Williams River (one was later found in Lake Havasu City with the aid of a radio transmitter)
- CRIT Ahakhav Tribal Preserve, PVER, CVCA, and the Cibola Nature Trail
- Pratt, a demonstration restoration site and other surrounding areas just north of Laguna Dam

TOWNSEND'S BIG-EARED BATS

- Bill Williams River National Wildlife Refuge
- Riverside Mountains mine
- CRIT Ahakhav Tribal Preserve

