

California State University, Bakersfield
Biology Department
<http://www.csub.edu/biology>



Audubon Kern River Environmental Studies Area

Kern Audubon Society
www.kernaudubonsociety.org/



Chevron
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LOWER KERN RIVER HABITAT

In desert environments rainfall is infrequent, unreliable, and total rainfall is low. Reliable water sources such as rivers or springs are crucial for many of the animals and trees that inhabit these areas. Some of the hardiest species have adaptations that allow them to thrive in upland habitats with little water. The southern San Joaquin Valley is a desert and the Kern River provides a water source to this otherwise water limited habitat.

The bordering strips of land along the river form a distinct biological community called a riparian zone. This zone is dominated by moisture-loving plants such as cottonwood trees and willows (see photos). These trees and shrubs do not survive long-term without ample water. These plants are important because they provide habitat for many wild animals, slow erosion of the banks of the river, help filter our drinking water as it percolates through the soil, and beautify our city.

Just beyond the riparian zone is region of low-lying flood plain that may be inundated with water during high flow years. This is a disturbed sandy area where animals such as ground squirrels, cottontails, and foxes make their dens. Many plant species flourish in the flood plain when the soil is moist during the winter and spring months.

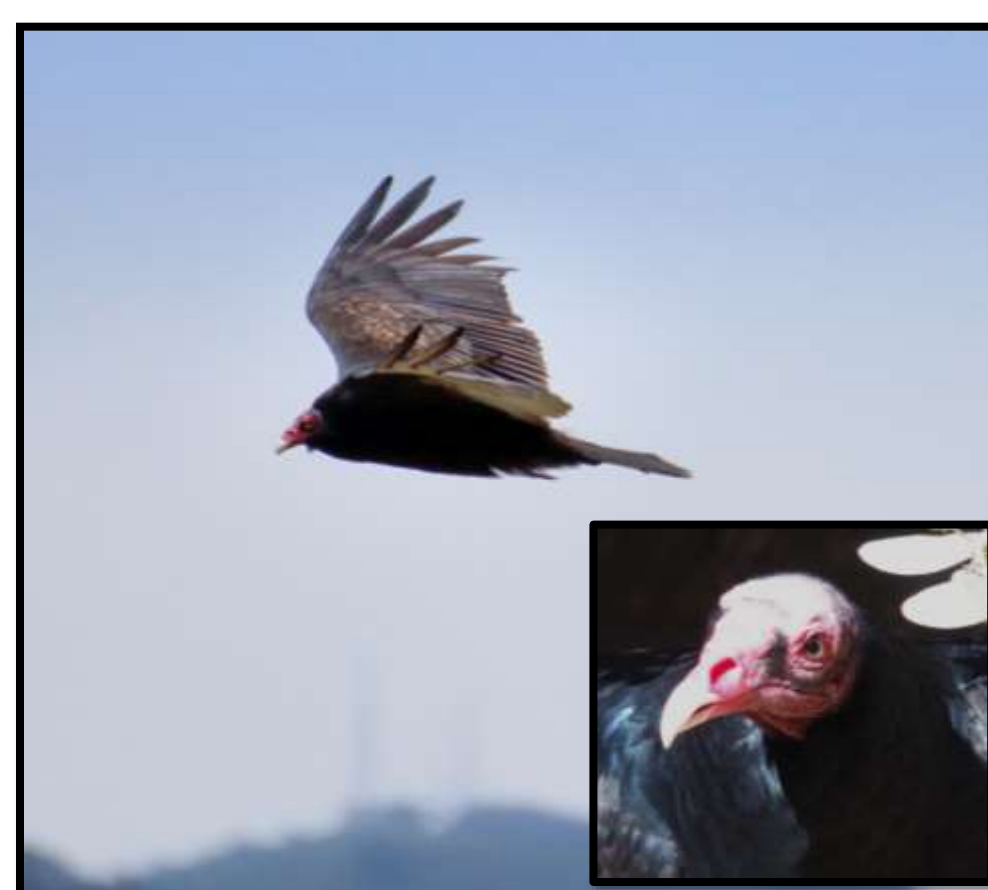
The Kern River originates in the Sierra Nevada and receives runoff and snow melt from some of the tallest peaks in California, including Mt. Whitney. Formerly, the Kern River emptied into lakes and wetlands on the San Joaquin Valley floor. During years of heavy snowmelt, flows could reach the now dry Tulare Lake, or even travel all the way north to the San Joaquin River. Seasonal flooding cycles once created marshes, shallow lakes, and supported productive woodlands that were home to Tule Elk and a thriving population of Native Americans. Most of this habitat has been lost due to the construction of the Lake Isabella Dam in 1953 and the subsequent diversion of water for agricultural and municipal use.

Despite the altered hydrology of the lower Kern River, the region in and around Bakersfield continues to provide valuable habitat for plants and animals. Water is critical to sustain the lower Kern River riparian ecosystem. Continued flows of water are necessary to maintain the riparian habitat that is essential for many of the plant and animal species that reside in this region.

ENVIRONMENTAL STUDY AREA (ESA)

This area of the lower Kern River between Calloway and Coffee roads is a preserve managed by the Audubon Society. It is a resource for students and faculty of California State University, Bakersfield for scientific study. The preserve also offers recreational opportunities to the public, and is open to running, walking, cycling, and birding.

BIRDS



Turkey Vulture (*Cathartes aura*): This large majestic scavenger can be seen soaring in search of carrion.



Greater Roadrunner (*Geococcyx californianus*): This large omnivorous bird typically runs on the ground in search of prey that includes rattlesnakes.



Quail (*Callipepla californica*): These ground dwelling birds scurry about as a group known as a covey. This is the California state bird.



Cliff Swallow (*Petrochelidon pyrrhonota*): The swallows can be seen nest building under bridges like the ones over the bike path.

PLANTS



Willow (*Salix* spp.): There are two willow species here: red willow (*Salix laevigata*) is a medium sized tree with long pointy leaves (shown in photo with yellow flowers). Goodding's black willow (*Salix goodingii*) is a shrubby tree that often grows in thickets.



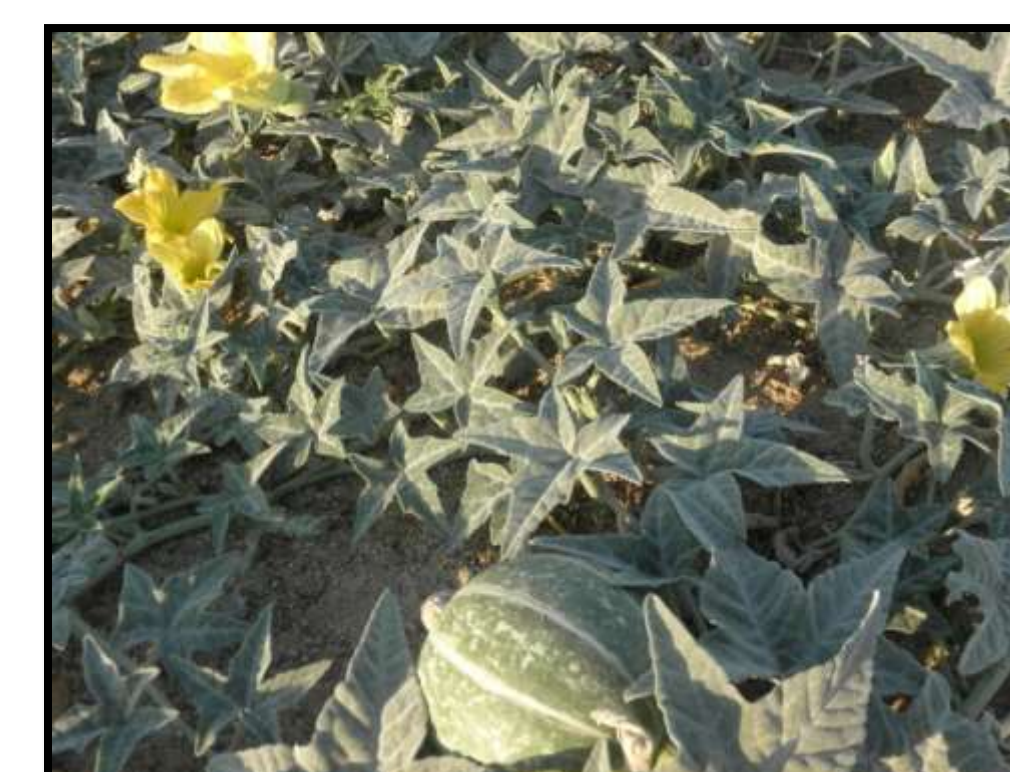
Fremont Cottonwood (*Populus fremontii*): Large deciduous trees with reddish yellow flowers and heart-shaped leaves.



Mule Fat (*Baccharis salicifolia*): Evergreen shrub (4-15 ft tall) with distinct male and female flowers and sticky leaves.



Jimson Weed (*Datura wrightii*): Herbaceous perennial with large funnel-shaped flowers and prickly fruits.



Coyote Melon (*Cucurbita palmatum*): Herbaceous plant with trailing growth form and fruit that resemble small watermelon.



Grasses and herbs: When rains fall the ESA sports a riot of grasses and small flowering plants called forbs. Many of these plants are native to the Mediterranean basin of southern Europe and were introduced to California centuries ago. The red grass in the photo is red brome (*Bromus madritensis* ssp. *rubens*) and the yellow flowered herb is fiddleneck (*Amsinckia menziesii*).

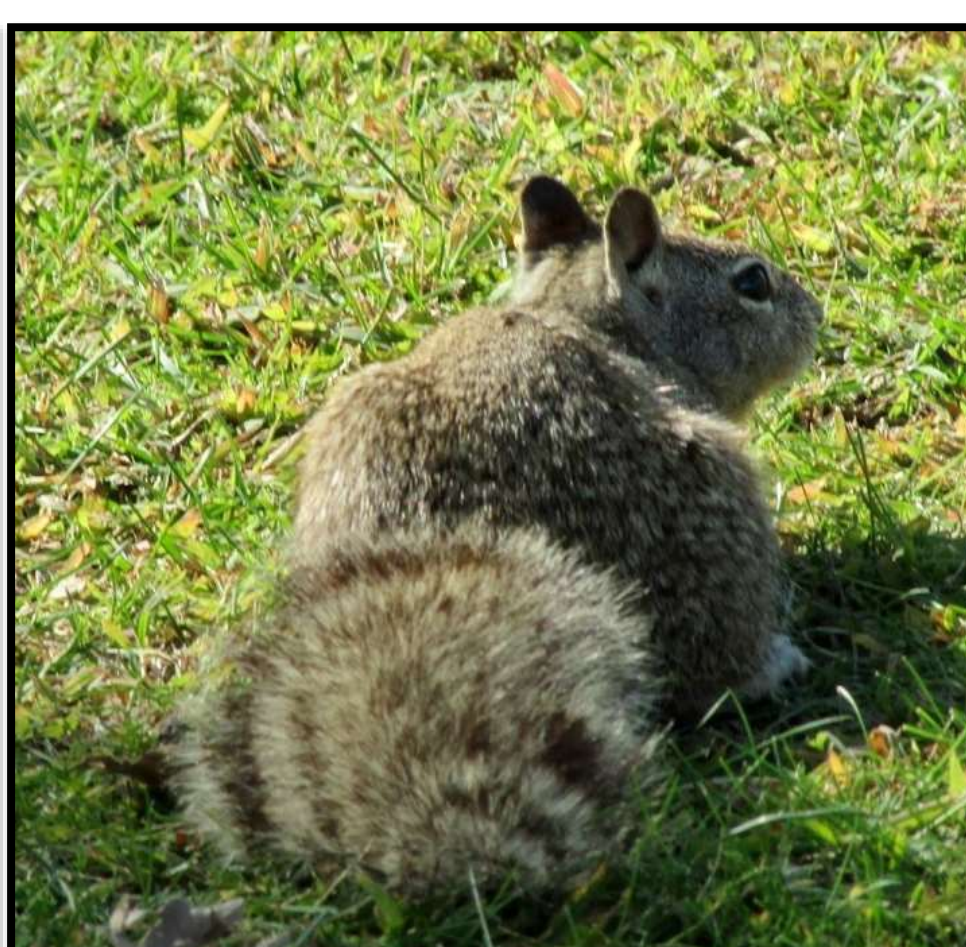
MAMMALS



Bobcat (*Lynx rufus*): This predator can sometimes be spotted hunting along the lower Kern River.



San Joaquin Kit Fox (*Vulpes macrotis mutica*): These playful predators are only found in the San Joaquin Valley and are an endangered species.



California Ground Squirrel (*Otospermophilus beecheyi*): This herbivore is usually seen near its communally occupied system of burrows.



Desert Cottontail (*Sylvilagus audubonii*): This herbivore thrives throughout the lower Kern River.



Coyote (*Canis latrans*): This omnivorous scavenger forages throughout the lower Kern River.

ACKNOWLEDGEMENTS

This sign was authored by Evan D. MacKinnon and R. Brandon Pratt with help from Anna L. Jacobsen, L. Maynard Moe, and David Germano from the Biology Department of California State University, Bakersfield. For more information about this area visit our webpage:
<http://www.csub.edu/biology/department/facilities/Audubon%20ESA/index.html>

Many thanks to Harry Love from the Bakersfield Audubon Society for proposing this project and securing funding. Funds to print the sign were donated by Chevron. All photos were taken by R. Brandon Pratt except the coyote melon, jimson weed, ground squirrel, cottontail, and bobcat were taken by Evan MacKinnon, and the insets of the bobcat and turkey vulture were taken by Anna L. Jacobsen.