

# Tule Elk

## State Natural Reserve



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*“At times we saw bands of elk, deer, and antelope in such numbers that they actually darkened the plains for miles, and looked in the distance like great herds of cattle.”*

Description of the Central Valley in 1850, from the *Memoirs of Edward Bosqui*



**A**t the south end of the San Joaquin Valley, Tule Elk State Natural Reserve protects a small herd of tule (toó-lee) elk, an endemic California subspecies once hunted nearly to extinction.

After the moose, elk are the second largest members of the deer family (*Cervidae*) in North America.

Three subspecies of elk (*Cervus elaphus* also known as *Cervus canadensis*) still survive in the United States—Roosevelt elk, Rocky Mountain elk and tule elk. Roosevelt elk, the largest, can weigh up to 1,000 pounds. Rocky Mountain elk are about 85% of that size; they have grown to become the largest grazing population in the country.

California's tule elk are about half the size of the Roosevelt elk and lighter in color, with shorter coats and larger teeth. Average mature males stand five feet tall at the shoulder and weigh 500 pounds. Females are about 2/3 of male size.

### ELK POPULATION DECLINE

Tule elk once dominated the deer and pronghorn population that also grazed in the San Joaquin Valley. Estimated at more than half a million animals before 1849, tule elk originally ranged from Shasta County



Yokuts family in front of tule summer hut, June 1903

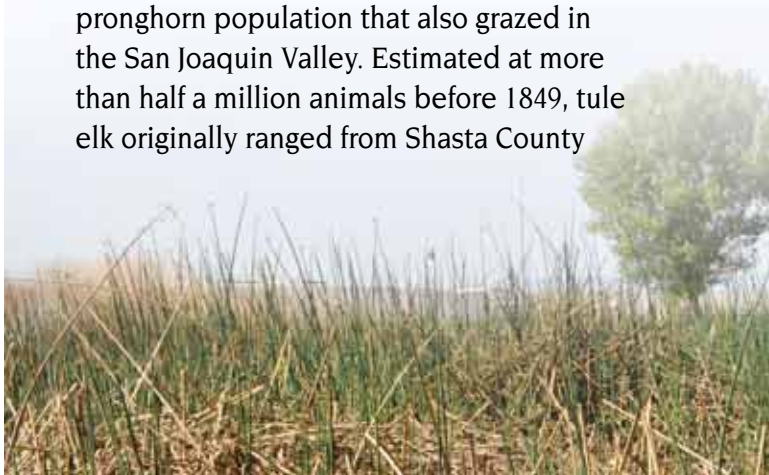
C. Hart Merriam photo courtesy of The Bancroft Library

### FIRST PEOPLE

For at least 8,000 years, indigenous people (later called the Southern Valley Yokuts) used the abundant resources of the area's waterways, created by snowmelt runoff from the surrounding mountains. Today these watercourses are known as the lower Kings, Kaweah, Kern and Tule rivers; Tulare, Buena Vista and Kern lakes; and their connecting marshy sloughs.

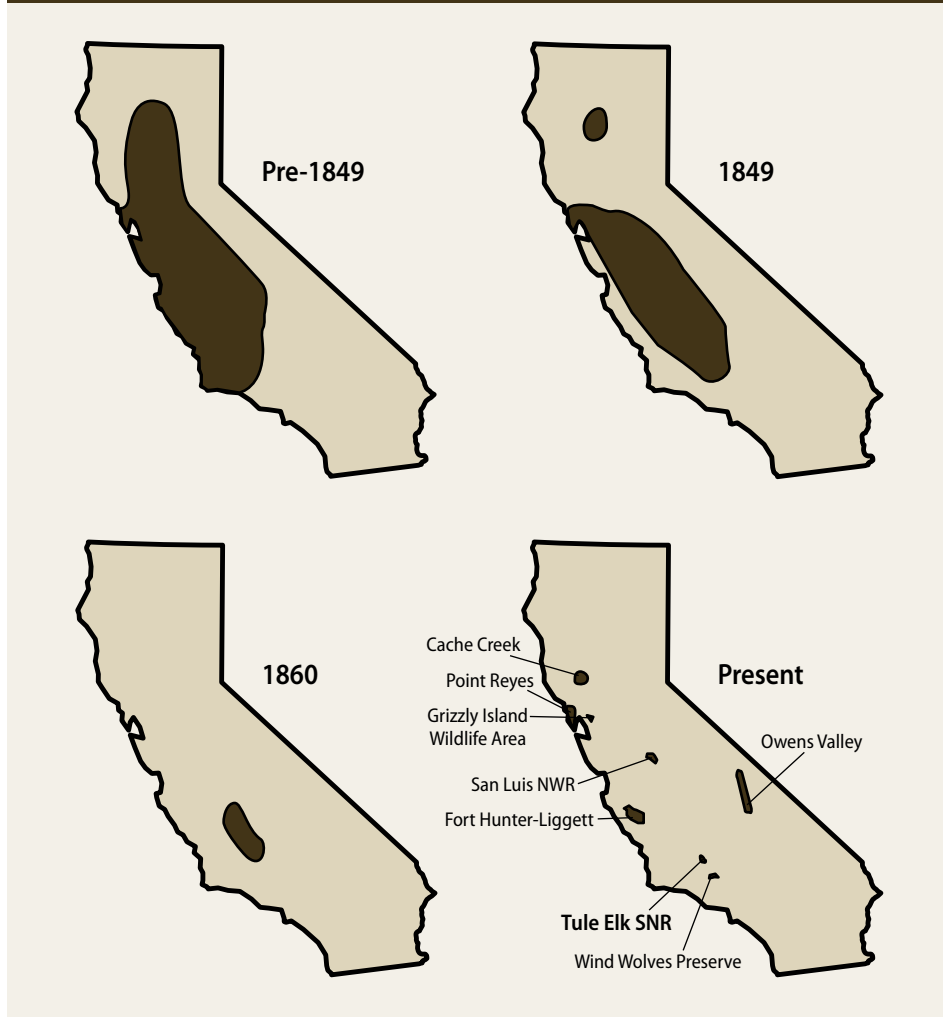
Yokuts people lived in a large village called *Tulamniu* on the northwestern shore of what was once Buena Vista Lake. Depending on seasonal rainfall and mountain runoff, the lake covered from 60 to 150 square miles. Its tule rush reeds provided the Yokuts building materials for their houses and boats, and the starchy tule roots and seeds were edible. The Yokuts also hunted a variety of game animals. After Spanish settlers and missionaries came and claimed their lands, many Yokuts died from unfamiliar European diseases. Those who survived left their homes along Buena Vista Lake.

The people who claimed the Yokuts land sold it to Henry Miller, Charles Lux and James Crocker in 1868; the lake was drained for farmland. Many Southern Valley Yokuts descendants still live in the area and observe their ancient customs and traditions.





## RANGE OF CALIFORNIA TULE ELK



Central Valley originally provided ideal grazing range for the tule elk.

This elk subspecies began its California decline in the 1700s with the arrival of European settlers. They imported grasses and grazing animals that competed with both native vegetation and native animals.

Hunters and traders further decimated the state's elk population when they began killing them for hide and tallow. During and after the Gold Rush, new

residents' demand for elk meat increased. By the time elk hunting was banned by the State Legislature in 1873, the tule elk was believed to be extinct.

### PRESERVING THE TULE ELK

Cattle rancher Henry Miller led a movement to protect any remaining tule elk by providing 600 acres of open range (near today's preserve) and rewarding his workers

who informed on anyone disturbing the elk. In 1874, Miller's tip led game warden A.C. Tibbets to one lone pair hiding in the tules near Buena Vista Lake. An 1895 count showed 28 surviving tule elk. Those elk propagated until the herd on Miller's land grew so large that they began to damage his crops and fences. In 1914 Miller asked California's Fish and Game Commission to relocate the elk from his 600-acre preserve.

The need to preserve the tule elk resulted in a legislated elk sanctuary. In 1932 the State Park Commission purchased 953 acres for a preserve near the town of Tupman. The new Tupman Zoological Reserve was completely fenced. The state agency then known as the Division of Fish and Game operated the sanctuary, rounding up free-roaming elk. About 140 elk were finally enclosed.

The Tupman sanctuary provided the grassland and marsh habitat needed by tule elk; Buena Vista Slough along the southern edge provided water. However, when a dam was constructed up the Kern River in 1952, the once-lush riparian habitat along the slough began to disappear—along with the elk population.

In 1954 management of the sanctuary for just 41 surviving elk was turned over to California State Parks. The Department devised a feeding program to keep the elk in good health; they also built artificial ponds, so the animals could drink and cool off during summer heat by wallowing in mud and water.

in the north to the base of the Tehachapi Mountains in the south, and from west of the Sierra Nevada to the central Pacific coast. Tule elk normally form "gangs" of 40 to 60 animals, but some northern Central Valley herds were thought to number in the thousands.

Depending on the availability and quality of vegetation, each tule elk needs several acres of forage to thrive. California's lush

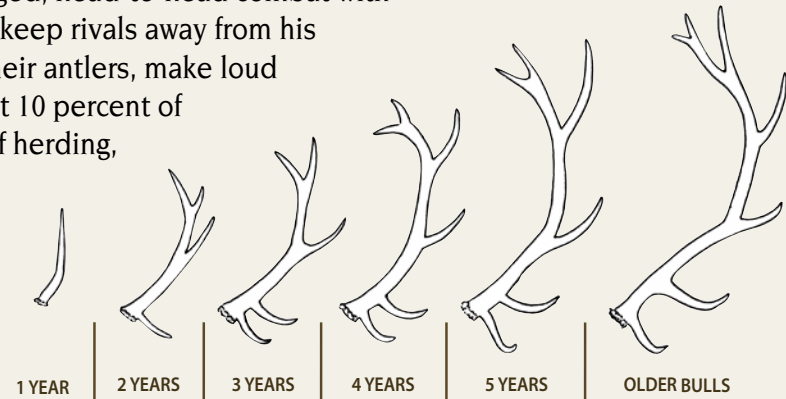
## THE TULE ELK'S ANNUAL CYCLE

**Antlers**—Male elk have antlers that are cast off each winter and then regrown. Before antler cartilage hardens into bone, the new antlers are covered with fuzzy “velvet,” which are blood vessels that nourish the bone growth. Antlers in velvet are sensitive and easily damaged. Velvet dies as the bone ossifies; dried velvet is shed before rutting season. Antler size increases each spring until the bull is about 10 years old. Tule elk may live for as long as 20 years.

**Molting**—Each spring tule elk shed their thick winter coats for short, sleek, reddish new ones. By November this new coat is fully grown and has faded to a light buff color with a reddish-brown mane around the neck.

**Rutting**—Adult bulls join the cow herds in July. Males often engage in full-fledged, head-to-head combat with their antlers. Eventually the master bull drives all other bulls from the herd to keep rivals away from his harem of up to 30 cows. To establish dominance, bulls will wrestle, spar with their antlers, make loud noises called “bugling,” and wallow in mud during the mating ritual. Only about 10 percent of bulls will mate; the unsuccessful bulls remain bachelors. When the demands of herding, defending, fighting, breeding, and placating 30 cows eventually wear out the master bull, he too will be driven off and replaced by fresher secondary bulls.

**Calving**—Calves gestate for 250 days and arrive in late spring, weighing 20 to 25 pounds. The cow leaves the herd to give birth and remains solitary until her calf becomes strong enough to run with the herd. Within a few weeks, the calf gains strength, speed and endurance. Calves shed their spotted coats at about four months. Nursing continues until the cow breeds again in the autumn, even though her calf begins to graze on reeds and grasses shortly after birth. Tule elk are ruminants (cud-chewers) with four-chambered stomachs.



Whenever the herd exceeds its ideal number of 30-35 for this 953-acre preserve, several elk are relocated to other open spaces. These include nearby Carrizo Plain National Monument, San Luis National Wildlife Refuge, and Wind Wolves Preserve—as well as the Cache Creek area of Lake County. The displaced elk in turn propagate and begin new herds.

### Tule Elk Behavior

Elk behavior is most dynamic during the summer mating season, when temperatures may exceed 110 degrees. More pleasant spring and autumn weather conditions also offer good elk-spotting opportunities.

The herd shares a flexible but definite social order. Hierarchies are established by the elk's direct stares or by rearing

and boxing with their forelegs. Since cooperative herd behavior protects against predators and ensures survival, tule elk rely on one another for safety. Complex herd communication involves elk senses: they use smells, sounds and visual signs to share information. While grazing, the animals signal each other about possible threats to the herd.

## HENRY MILLER, CATTLE KING

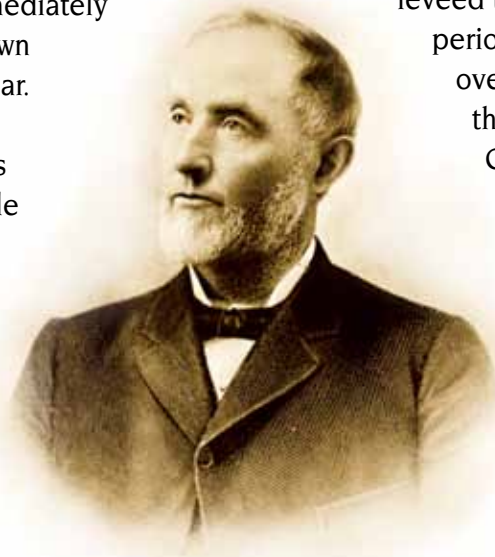
Heinrich Alfred Kreiser learned the butcher's trade on his father's farm in Germany. At age 19, Kreiser made his way to New York with a non-transferable steamship ticket he'd bought from one Henry Miller. Aboard ship, Kreiser adopted Miller's name.

When gold was discovered in California in 1848, Miller headed west via Panama. He arrived in San Francisco with six dollars in his pocket in 1850. Miller immediately found work and opened his own butcher shop the following year.

The young entrepreneur avoided wholesale meat costs by traveling south to buy cattle and herding them to San Francisco to butcher. After Miller optioned all of the available cattle north of the Tehachapis in 1857, fellow butcher Charles Lux proposed a partnership. Rather than selling meat products, Lux ran the partners' cattle business while Miller bought up large tracts of rangeland.

This successful formula led to Miller and Lux owning or controlling millions of acres among three states and branding more than a million head of cattle.

Partnering with James Crocker in 1868, Miller and Lux purchased 80,000 acres of swampland on the Kern River, including Kern and Buena Vista Lakes, to drain the tule bogs and create richer farmland. The partners built a 25-mile canal to transport



*Henry Miller, ca. 1887*

and store water to irrigate forage crops for their livestock.

A legal battle with the Kern Land Company over the river water rights ensued; by the time it was settled equitably in 1877, Lux had died. Miller then partnered with the Kern Land Company to finish the canal and reservoir system—then the country's largest.

Buena Vista Lake was dredged and leveed to create a reservoir for dry periods. During wet weather, overflow runoff traveled through Miller's Kern Valley Canal into the bed of Tulare Lake, once the largest freshwater lake in the west. Dredging, irrigation and municipal water diversion caused Tulare Lake to dry up by 1899; its lakebed may flood in heavy rains.

Miller's canal runoff system was used until the California Aqueduct and Lake Isabella replaced it.

Artificial Lakes Evans and Webb have now filled in Buena Vista's lakebed.

Entrepreneur Henry Miller was responsible for much of the San Joaquin Valley's growth in agribusiness and livestock—as well as the initial draining of its water stores.

Henry Miller died in 1916, but his family's cattle business kept operating until 1964.

## PLEASE REMEMBER

- **The reserve is open to visitors only at the park entrance. Please do not disturb the elk or trespass on private property for a closer look.**
- Bring binoculars for a better view. The elk range throughout the reserve.
- Except for service animals, pets are not recommended. Dogs must be on a leash no more than six feet long.
- All natural and cultural features are protected by law and may not be disturbed or removed.
- For hours, tours or information, call (661) 764-6881 or visit [www.parks.ca.gov](http://www.parks.ca.gov).

## ACCESSIBLE FEATURES

Parking, the visitor center, the elk viewing platform and the picnic area are accessible. Assistance may be required with the ramp and telescope.

Accessibility is continually improving. For updates, visit the website at <http://access.parks.ca.gov>.

## NEARBY STATE PARKS

- Colonel Allensworth State Historic Park  
Palmer Ave. and Highway 43  
Earlimart 93219 (661) 849-3433
- Fort Tejon State Historic Park  
Fort Tejon Road exit from I-5  
Lebec 93243 (661) 248-6692







*Burrowing owl*

## OTHER WILDLIFE SPECIES

Birders will find varied species year round at this stop along the Pacific Flyway. Raptors such as Northern harriers, prairie falcons and ferruginous hawks hunt for small live prey by day; by night great horned and barn owls take to the sky. The sounds of burrowing owls, loggerhead shrikes, horned larks and greater roadrunners may be heard. Tricolored blackbirds habitually breed in the Reserve.

Grassland-loving mammals such as coyotes, bobcats, San Joaquin pocket mice and Heermann's kangaroo rats may be found in the park.

Swainson's hawks usually return to the same nest site annually, beginning in late February. They build open-platform nests of sticks and weeds, which seldom survive their winter vacancies. Some Swainson's hawks may fly more than 12,000 miles to South America during migration, but these hawks that breed in the Southern San Joaquin Valley depart in early September for their winter homes in Mexico.

During their breeding season, these raptors prefer habitats with low vegetation such as grasslands or crop fields housing rodents, rabbits and small reptiles. Following breeding, Swainson's hawks switch to an insect diet—especially crickets and grasshoppers. The Swainson's hawks do not seem to require nearby drinking water sources. California lists the Swainson's hawk as a threatened species.



*Swainson's hawk*



*Bobcat*



*Buena Vista Lake shrew*

These former wetlands comprise part of the historic habitat of a highly endangered species, the Buena Vista Lake shrew. Less than four inches long and weighing under half an ounce, these tiny mammals have beady eyes and long, pointed snouts. Oddly, the plain black and brown insectivores are a subspecies of the ornate shrew, although they are hardly ornate. In addition to their

other senses, Buena Vista Lake shrews use echolocation to detect danger and obstacles by making high clicking noises and sensing their echoes from any nearby solid presence.

Before the 1930s, Buena Vista Lake shrews lived throughout the wetlands of the Tulare basin. When the basin's sloughs, lakes and marshes were drained for farms and rangeland, this rodent's population declined greatly. Although their numbers had not been documented prior to 1932, scientists believe that the shrews have lost more than 95% of their historic habitat. Fewer than 30 of these shrews are thought to exist today, so federal measures are being taken to protect their critical habitat.

Tule Elk State Natural Reserve attracts reptiles and amphibians, including the side-blotched lizard and gopher snake. For sun protection, the nocturnal Western spadefoot toad digs an underground shelter with its shovel-shaped rear legs.



*Western spadefoot toad*

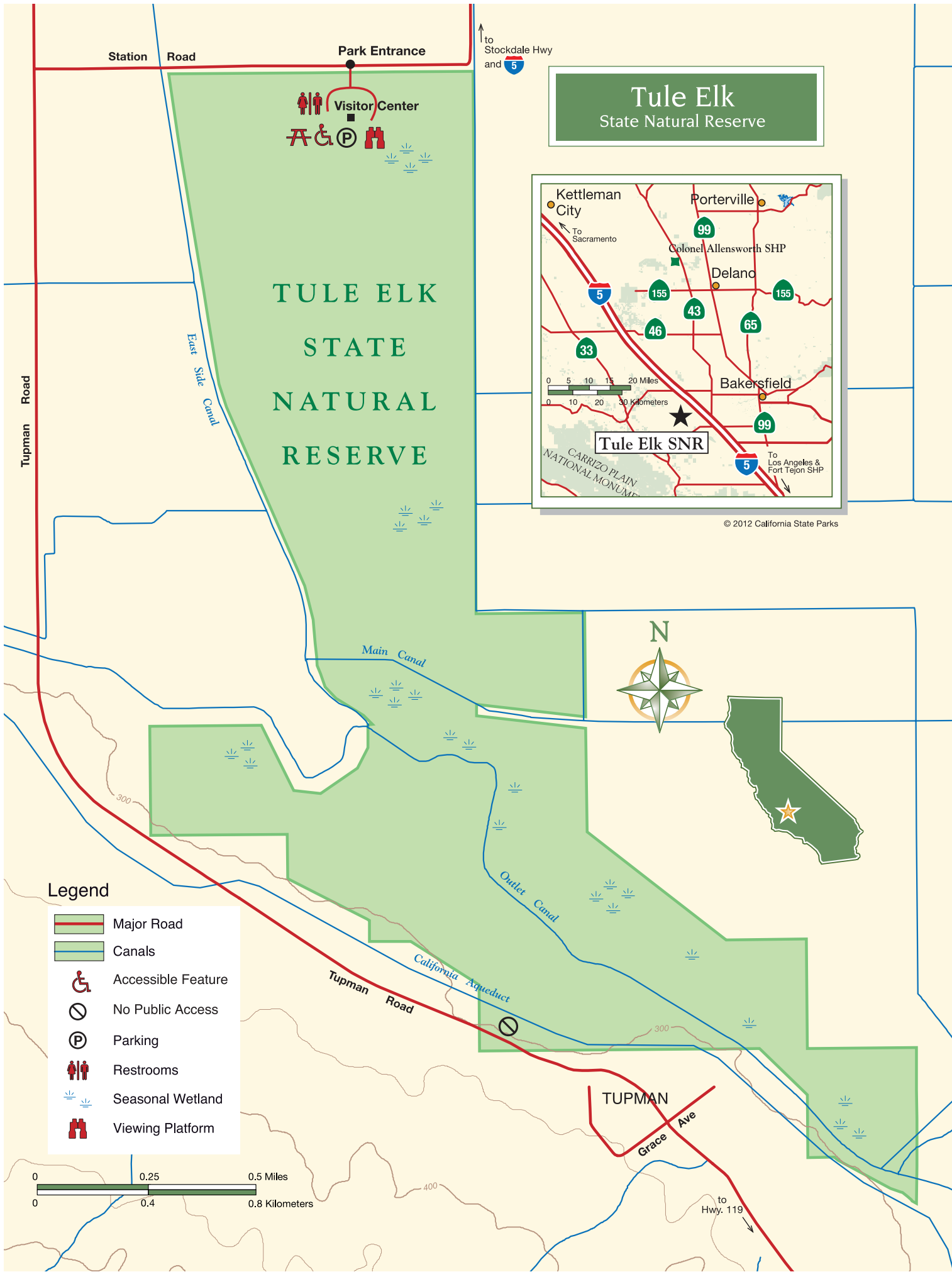
Photo courtesy of Sam Stewart



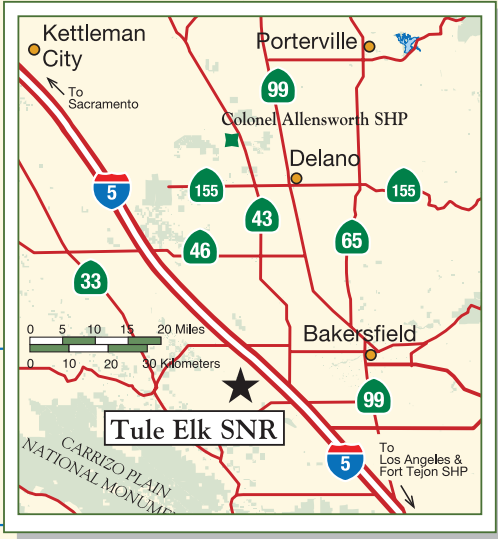
*Side-blotched lizard*



*Tricolored blackbird*











# Tule Elk State Natural Reserve



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## Legend

-  Major Road
-  Canals
-  Accessible Feature
-  No Public Access
-  Parking
-  Restrooms
-  Seasonal Wetland
-  Viewing Platform

