

U.S. Fish & Wildlife Service

San Luis

National Wildlife Refuge Complex

*San Luis / Merced /
San Joaquin River / Grasslands*



“Wild beasts and birds are by right not the property merely of the people who are alive today, but the property of unknown generations, whose belongings we have no right to squander.”

—Theodore Roosevelt, American President, outdoorsman, naturalist, and leader of the early conservation movement

Welcome

The San Luis National Wildlife Refuge Complex (Complex)—composed of the San Luis, Merced, and San Joaquin River National

Wildlife Refuges (NWR) and the Grasslands Wildlife Management Area (WMA)—consists of nearly 45,000 acres of wetlands, grasslands, and riparian habitats, as well as over 90,000 acres of conservation easements for the protection and benefit of wildlife. The refuge units are located in the northern San Joaquin Valley of California in Merced, Stanislaus, and San Joaquin Counties.



The San Luis NWR Complex is located between Interstate 5 and CA Hwy 99, the two primary north-south travel routes in California. The Complex is within an hour and a half drive of several major metropolitan areas in central California.

The Complex is located within the Pacific Flyway, a major route for migrating birds. The extensive wetlands of the Complex and surrounding lands provide habitat for up to a million waterfowl each winter. Of the 30 species of waterfowl using the Complex, the most common include Ross' geese, Aleutian cackling geese, snow geese, green-winged teal, mallard, northern pintail, northern shoveler, gadwall, American wigeon, and white-fronted geese. Large numbers of shorebirds and other waterbirds, songbirds, and raptors use the Complex.



Sandhill Cranes
© Rick Lewis



Cinnamon Teal
© Jerry Baldwin

Looking Back

The San Luis NWR Complex provides a glimpse back to a time when rivers and sloughs ran wild across the San Joaquin Valley.

In the past, the banks of the San Joaquin River and its tributaries overflowed with winter rainwater and spring snowmelt from the Sierra Nevada mountains. As summer progressed the sun-baked basins dried. Fall and winter rains recharged the river and seasonal wetlands, starting the cycle all over again.

Vast expanses of freshwater marshes made the San Joaquin Valley a haven for wildlife. For thousands of years the Valley has been a major wintering ground for waterfowl and shorebirds migrating along the Pacific Flyway—an ancient super-highway for birds stretching from northern Alaska south into Central and South America. Historical accounts depict flocks of ducks and geese large enough to darken the sky.

In addition, hundreds of thousands of tule elk roamed the grasslands, along with mule deer and pronghorn antelope. The now-extinct California grizzly bear was a conspicuous resident of the Valley floor, and the rivers teemed with salmon.

The Spanish colonization of California in the late 1700s and subsequent American colonization in the 1800s changed the face of the San Joaquin Valley. In the late 1800s livestock ranchers began draining the lush wetlands and altering natural waterways to create a landscape more favorable to grazing. Farming also proved prosperous on the rich alluvial soils.

In the 1940s, a succession of large water projects, designed to secure and store a water supply for agriculture, further altered the

natural hydrology of the Valley. Today, a network of canals and ditches—water highways—transport water from holding reservoirs to farms.

The loss of wetland habitat on the San Joaquin Valley floor means that the remaining habitat must be intensively managed for the wildlife that depend on it.

In response to the loss of critical wildlife habitat, the first National Wildlife Refuge in the northern San Joaquin Valley—Merced NWR—was established for waterfowl in the 1950s. Additional land was acquired to enlarge Merced NWR and to establish other national wildlife refuges (San Luis NWR and San Joaquin River NWR) and the Grasslands WMA.

Today, the loss of wetland habitat on the San Joaquin Valley floor means that the remaining habitat must be intensively managed for the wildlife that depend on it. The lands of the San Luis NWR Complex are managed with the primary purpose of benefiting wildlife. Flooding and draining of wetlands are carefully timed to the needs of migratory birds and the growth of vegetation beneficial to wildlife. Crops such as corn and winter wheat are cultivated for use by geese and cranes. This intensive management gives nature a helping hand.

Old Windmill on the Kesterson Unit / San Luis NWR
© Lee Eastman





Tule Elk
© Lee Eastman

San Luis National Wildlife Refuge

The San Luis National Wildlife Refuge encompasses over 26,800 acres of wetlands, riparian forests, native grasslands, and vernal pools. A thriving population of the endemic tule elk is showcased by one of three auto tour routes. The Refuge is host to significant assemblages of birds, mammals, reptiles, amphibians, fish, insects, and plants. Some of these—the California tiger salamander, long-horned fairy shrimp, and San Joaquin kit fox—are endangered species.

Blue-winged Teal Drake and Hen

© Rick Lewis



In 1966, the first parcel of the Refuge was purchased with Federal Duck Stamp funds to provide



*Mallard Drake
and Hen*
© Richard Albers

a sanctuary for migratory waterfowl. Over the years the Refuge has steadily grown in size and today it comprises six contiguous units:

San Luis, East Bear Creek, West Bear Creek, Freitas, Blue Goose, and Kesterson. The San Joaquin River bisects the eastern portion of the Refuge.

The Refuge is a major wintering ground and migratory stopover for large concentrations of waterfowl, shorebirds, and other waterbirds. Large flocks of green-winged teal, northern shoveler, mallard, gadwall,



*Long-billed
Dowitchers*
© Lee Eastman

wigeon, cinnamon teal, northern pintail, ring-necked duck, canvasback, ruddy duck, and snow, Ross', and white-fronted geese swarm over the mosaic of seasonal and permanent wetlands that cover a quarter of the Refuge. Waterfowl generally remain until late March before beginning their journey north to breeding areas. However, some mallard, gadwall, and cinnamon teal stay, breed, and raise young on the Refuge.

Shorebirds, including sandpipers and plovers, can be found in the tens of thousands from autumn through spring. Large flocks of dunlin, long-billed dowitchers, least sandpipers, and western sandpipers feed in shallow seasonal wetlands, whereas flocks of long-billed curlews use both wetlands and grasslands. More than 25 species of shorebirds have been documented at the San Luis NWR.

The San Luis NWR played a key role in the recovery of the tule elk, a non-migratory elk subspecies found only in California. Prior to the mid-1800s an estimated 500,000 tule elk lived in California. Due to over-hunting and loss of natural habitat, they were driven nearly to extinction by the turn of the twentieth century—by some accounts, the population was reduced to as few as 20–30 individuals. In 1974 a herd of 18 animals was established at the San Luis NWR and has since thrived.



Great Egret
© Mike Peters

Elk from this herd are periodically relocated to join other tule elk herds, or establish new ones, throughout California. A true wildlife recovery success story, the statewide tule elk population has recovered to more than 4,000 animals.

Less well-known are the extensive upland habitats found on the Refuge. Many of these are characterized by saline and alkaline conditions as well as low rainfall and arid climate that characterize the San Joaquin Valley. These habitats support a rich botanical community of native bunchgrasses, native and exotic annual grasses, forbs, and native shrubs. Trees, such as the valley oak, cottonwood, and willow grow along riparian corridors. In these areas visitors might encounter coyotes, desert cottontail rabbits, ground squirrels, western meadowlarks, yellow-billed magpies, and loggerhead shrikes, as well as northern harriers, white-tailed kites, and other raptors coursing over the vegetation. Stately great blue herons, great egrets, and white-faced ibis are frequently sighted throughout the Refuge.

The Refuge contains the Complex's Visitor Center and Headquarters, which features an exhibit hall and a classroom. The Visitor Center is open daily.

The Refuge has three auto tour routes with nature trails and observation platforms. The Refuge also allows fishing at designated sites and has a large waterfowl hunting program.



Coyote
© Rick Lewis



*Ross' and Snow
Geese*
© Rick Lewis

Merced National Wildlife Refuge

The Merced National Wildlife Refuge encompasses 10,258 acres of wetlands, native grasslands, vernal pools, and riparian areas. It was established in 1951 under the Lea Act to attract wintering waterfowl from adjacent farmland where their foraging activities were causing crop damage. In the last few decades changes in local agricultural practices and refuge management activities have reduced crop damage caused by wildlife.



*Lesser Sandhill
Crane*
© Rick Lewis

The Refuge plays host to the largest wintering populations of lesser Sandhill cranes and Ross' geese along the Pacific Flyway. Each autumn more than 20,000 cranes and 60,000 arctic-nesting geese terminate their annual migrations from Alaska and Canada to make the Refuge home for



Burrowing Owl
© Richard Albers

six months. Here they mingle with thousands of other visiting waterfowl, waterbirds, and shorebirds—a true winter phenomenon.

The Refuge also provides important breeding habitat for Swainson's hawks, tri-colored blackbirds, marsh wrens, mallards, gadwall, cinnamon teal, and burrowing owls. Tri-colored blackbirds, a colonial-nesting songbird, breed in colonies of more than 25,000 pairs in robust herbaceous vegetation. Coyotes, ground squirrels, desert cottontail rabbits, beaver, and long-tailed weasels can also be seen year-round.

Vernal pools are unique wetlands found on the Merced NWR. These special pools form from natural shallow depressions underlaid with clay soils. The pools come to life as they fill with winter rainwater. Fairy and tadpole shrimp emerge from



*Cattle grazing
with Lesser
Sandhill Cranes*
© Paul Prado

cysts embedded in the soils. "The endangered tiger salamander and other amphibians lay eggs, which develop into tadpoles. The vast numbers of aquatic invertebrates found in these pools provide a food source for wintering and migrating birds as they prepare for the long flight north to their breeding grounds.

As spring arrives and the vernal pools evaporate, wildflowers such as goldfields, purple owl's clover, and butter-and-eggs germinate in colorful patterns of thick rings, or halos, around the pool basins. Once the vernal pools have dried out, *Downingia* and *Colusa* grass, a rare California species, appear in the parched basins. This annual floral display of color led the naturalist John Muir to describe the valley floor as the "floweriest part of the world."

In addition to managing natural habitats, the Merced NWR contains approximately 300 acres of cultivated corn and winter wheat crops and more than 500 acres of irrigated pasture for wildlife. Not only do these managed agricultural areas provide important sources of carbohydrates for the tens of thousands of arctic-nesting geese and Sandhill cranes that make Merced County their winter home, they also help ensure that the birds



Downingia
© Paul Prado

will have adequate nutrient stores to make their long migration. Local farmers, under agreements with the Refuge, grow these crops. The Refuge works in partnership with local ranchers and farmers on a livestock grazing program. Cattle grazing is a management tool that provides and maintains short stature grasslands and helps control invasive weeds. Grazing also encourages native grasslands and the species that depend on them to thrive.

*Goldfields and
Owl's Clover*
© Paul Prado



San Joaquin NWR

San Joaquin National Wildlife Refuge



Bald Eagle
© Rick Lewis

The San Joaquin River National Wildlife Refuge, located in Stanislaus County, encompasses more than 7,000 acres of riparian woodlands, wetlands, and grasslands that host a diversity of wildlife native to California's Central Valley. The Refuge is situated where three major Valley rivers—San Joaquin, Tuolumne, and Stanislaus—join to provide a key travel corridor for wildlife. The Refuge was established in 1987 under the Endangered Species Act and the Migratory Bird Conservation Act.

The Refuge played a major role in the recovery of Aleutian cackling geese by serving as a significant wintering area and continues to be of major importance to this species. By the mid-1970s, the total population of Aleutian cackling geese was under 1,000. The effort to remove nest predators from the breeding grounds in Alaska's Aleutian Islands and improve wintering habitat in the Central Valley resulted in the goose being delisted as an endangered species with a population well over 100,000 and growing. Restored wetlands along with grasslands and croplands at this refuge provides ideal wintering habitat for the geese.



Aleutian Cackling Geese
© Lee Eastman

It is estimated that 95 percent of the San Joaquin Valley's riparian woodlands were lost during the last century due to changing land uses. This critical habitat is being restored at the Refuge. Within the borders of the San Joaquin NWR is one of California's largest riparian forest restoration projects. Over half a million native trees and shrubs such as willows, cottonwoods, oaks, blackberry, and rose have been planted across 2,200 acres of river floodplain to create the largest block of contiguous riparian woodland in the San Joaquin Valley. This important riparian woodland habitat is host to many rare animals.

Riparian Brush Rabbit Kit
© Laurissa Hamilton



Swainson's hawks nest in the canopy of tall cottonwood trees. Herons and cormorants form communal nesting colonies within the tops of the large valley oaks. Endangered riparian brush rabbits have been re-introduced to this restored habitat from captive-reared populations. These woodlands also support a diversity of breeding songbirds including grosbeaks, orioles, flycatchers, and warblers, as well as the least Bell's vireo, an endangered species that last nested in the San Joaquin Valley more than five decades ago.

The Refuge features the 4-mile Pelican Nature Trail that meanders through seasonal wetlands, restored riparian woodlands, and stands of old-growth valley oak trees. The trailhead includes an educational seven-acre native vegetation free-roam exploration area.

A wildlife viewing platform along Beckwith Road is a favorite location for viewing Aleutian cackling geese and other waterbirds from October through March.

Grasslands WMA

Grasslands Wildlife Management Area

The Grasslands Wildlife Management Area was established by the U.S. Fish and Wildlife Service in 1979. This WMA is composed of privately owned lands with perpetual conservation easements designed to preserve wetland and grassland habitats, and prevent conversion to croplands, urban development, or other uses not compatible with migratory bird and other wildlife values. The purchase of many of these conservation easements was made possible by the Migratory Bird Conservation Fund (Duck Stamp Fund).



*Green-winged
Teal*

© Mike Peters

The majority of easement properties are wetlands managed for waterfowl hunting. Daily management operations remain under the landowner's control. To date, more than 90,000 acres have been protected under conservation easements.

These wetlands support diverse habitats, including seasonally-flooded marshlands, semi-permanent marsh, riparian habitat, wet meadows, vernal pools, native uplands, pastures, and native grasslands.



*Northern
Pintails*

© Mike Peters



Cinnamon Teal

© Paul Prado

The Service provides technical assistance to Grasslands WMA landowners. Many are trying to manage their wetland's water supplies more efficiently; others are searching for ways to grow larger, more diverse stands of moist soil food plants to attract waterfowl; and some are looking for ways to improve their waterfowl hunting opportunities.



*Great Horned
Owl*

© Paul Prado

In 1990 the Service initiated the Partners for Fish and Wildlife cost-share program, which pays landowners to accomplish approved wetland restoration and enhancement projects on their property. Due to tremendous landowner interest, the program has grown each year. The Partners Program offers landowners within the WMA the opportunity to perform wildlife habitat improvements they might not be able to afford without assistance.

These private landowner/Service partnerships have resulted in keeping waterfowl and other wildlife common.

Sora Rail

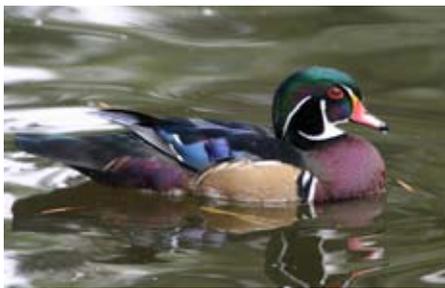
© Paul Prado



Degraded habitats have been restored for the benefit of wildlife, including threatened and endangered species, and for promoting recreational activities such as waterfowl hunting and wildlife observation.

Wildlife at the Complex

Drake Wood Duck
© Paul Prado



Common Yellowthroat
© Rick Lewis



Flame Skimmer Dragonfly
© Paul Prado



Common Snipe
© Rick Lewis



Western Fence Lizard
© Paul Prado



Kestrel
© Rick Lewis



Muskrat
© Rick Lewis



White Pelicans
© Rick Lewis



Habitats at the Complex

The Complex contains all of the representative habitats found in the northern San Joaquin Valley. All refuge units are located adjacent to the San Joaquin River and its tributaries, with highly variable habitats ranging from hydric (wet) to xeric (dry) conditions. The Complex and neighboring lands feature the largest network of freshwater wetlands remaining in the San Joaquin Valley.

Riparian Woodlands

Riparian habitats, along rivers and sloughs, largely consist of woodlands dominated by willows, cottonwoods, and oaks. With their multi-layered structure, these woodlands provide nesting habitat for colonial-nesting waterbirds such as egrets, herons, and cormorants, as well as many species of raptors. The largest density of breeding songbirds are found here. These habitats also serve as movement corridors for many wildlife in the Central Valley.

Wetlands

A quarter of all Complex lands are wetlands. These include permanent marshes, which contain water year-round and are dominated by robust



California Quail
© Paul Prado

Grasslands



Western Meadowlark
© Paul Prado

water-loving vegetation such as cattail and bulrush, and provide ideal nesting habitat for coots, grebes, blackbirds, bitterns, ibis, and marsh wrens. Seasonal marshes are the prevalent wetland type throughout the Complex. They contain water from early-autumn through spring. Dominant vegetation include swamp timothy, smartweed, millet, dock, and sedges—all of which provide a valuable food source for wildlife. Seasonal wetlands attract large numbers of ducks, geese, shorebirds, and other waterbirds.

Uplands at the Complex comprise three-quarters of the land base and include grasslands and croplands. Many of the dominant grasses in the San Joaquin Valley are exotics that are difficult to eliminate. The Complex encourages three common native perennial grasses, creeping wild rye, salt grass, and alkali sacaton. The uplands provide habitat for a host of herbivorous wildlife including elk, black-tailed deer, desert cottontail rabbits, black-tailed jackrabbits, and voles. Common songbirds include western meadowlarks, savannah sparrows, and horned larks.

Vernal Pools

Vernal pools are home to specialized plants and animals adapted to the alternating wet/dry regime. The aquatic insects and crustaceans that live in the pools are a rich food source for waterbirds. As they dry during late spring, concentric rings of colorful flowers grow in halos around the pool edges. Many of the invertebrates then retreat deep into the mud to wait for the next rainy season. In late fall and early winter, as the pools fill, the invertebrates emerge again. Most vernal pools on the Complex are found at the Kesterson and West Bear Creek Units of the San Luis NWR and the Arena Plains and Snobird Units of the Merced NWR.

Staff at the San Luis NWR Complex must actively manage each refuge unit to enhance habitat conditions and promote wildlife. Proactive management is necessary due to past changes to the northern San Joaquin Valley, such as loss of habitats and species, alterations to natural hydrology, and the introduction of exotic plants and animals.

The Complex monitors plant and animal distributions and abundances, and the success of management programs. Waterbird and songbird surveys are routinely conducted. Less well-known techniques employed to study certain wildlife species include remote camera stations, spotlight surveys, bird banding stations, and search dog scenting surveys.

The San Luis NWR Complex works with partners to reintroduce certain locally extirpated species to its refuge units. Black-tailed deer have been reintroduced and can be viewed along riparian corridors of the San Luis NWR. The endangered riparian brush rabbit has been re-established on the San Joaquin River NWR with captive-bred rabbits. The program has been successful; native-born rabbits are now found on the Refuge.

Artificial dens and other structures are constructed to benefit wildlife with very specific needs. These include nest boxes for songbirds, owls, and wood ducks, buried culverts for kit fox dens, raised mounds to provide high ground for small mammals during floods, and islands in wetlands for nesting or roosting waterfowl. Significant effort goes into habitat management and restoration at the Complex.

An extensive infrastructure of water conveyance canals, water control structures, pumps, and wells are required to manage the 150+ individual wetland units or ponds at

the Complex. These wetland units support a tremendous variety and abundance of waterbirds. Most of the wetlands are managed as moist soil units where important food plants, in particular smartweed, watergrass, sedge, and swamp timothy, are grown as forage for waterbirds. Seasonal wetlands are drained in spring, irrigated once or twice during the early summer, and flooded in late summer and early autumn. The careful timing of flooding and draining wetlands encourages the key wetland plants to grow, and coincides with bird migration. Most wetland units are flooded when waterbirds are using the Central Valley. In addition to seasonal wetlands, the Complex also maintains a smaller number of year-round permanent wetlands and summer wetlands for breeding waterbirds.

Riparian woodlands are key wildlife travel corridors for many species and provide unique breeding sites for many migratory birds. The Complex restores fallow agricultural lands to riparian woodlands or native grasslands and wetlands. Restoring riparian woodlands includes planting a variety of woody species—willow, ash, and cottonwoods—and irrigating the first few years.

Periodic disturbance of senescent, or aging, stands of woodland is necessary to provide conditions suitable for regeneration.

Grasslands are the most common habitat at the Complex. These habitats support geese, cranes, songbirds, elk, raptors, and a host of other wildlife. Grasslands are managed by a variety of techniques including prescribed burning, grazing, mowing, and disking. Native grasslands are restored by seeding prepared ground with native grass species and/or planting grass plugs.



Enjoy Your Visit

Wildlife viewing, fishing, hunting, photography, and environmental education are all popular activities at the Complex. Except during the waterfowl hunting season, public use areas are open one-half hour before sunrise to one-half hour after sunset.

Visitor Center

The San Luis NWR Complex Visitor Center and Headquarters, located on the San Luis NWR, includes an exhibit hall with interactive exhibits, tule elk viewing, a multi-purpose room for conservation meetings and educational programs, and is the administrative headquarters for the Complex. The Visitor Center provides a focal point for visitors, and a launching point to explore the entire Refuge Complex. The facility was designed for environmental sustainability and energy efficiency with a Platinum

*Great Blue
Heron Rookery*
© Lee Eastman



rating under the Leadership in Energy and Environmental Design (LEED) program. The Complex is striving to produce all energy used by the facility via solar panels. The Visitor Center is open daily from 8:00 a.m. to 4:30 p.m. except holidays, and may be open for extended hours seasonally.

Wildlife Observation

The San Luis NWR Complex offers a variety of ways to experience a diversity of wildlife. Auto tour routes allow you to remain in your car, using it as a “blind” to observe wildlife throughout various habitats. Auto tour routes include elevated observation decks with spotting scopes for even closer views of wildlife, and interpretive panels with information about wildlife, habitats, and refuge management. Nature trails allow you to get out of your car and experience nature and wildlife up-close.

Photography

Whether exploring on an auto tour route or a nature trail, you are encouraged to bring binoculars, field guides, and cameras to more fully enjoy the wildlife you encounter.

There are endless opportunities for wildlife photography. Your vehicle can serve as an excellent photo blind.

Environmental Education and Interpretation

The Complex acts as an important outdoor laboratory for school field trips. By exploring the refuges, classes of all ages integrate the natural world into their classroom lessons. The Visitor Center’s indoor classroom, outdoor amphitheater, and wetland are well suited to host quality curriculum-based field trips. Guided field trips are by appointment only—please phone for details.



School Group
© Richard Albers

Look for information kiosks, elevated viewing platforms, and interpretive panels along the auto tour routes and nature trails to help you understand the importance of Valley wildlife.

Waterfowl Hunting



Young Sportsman
© Gary Kramer

The San Luis NWR Complex has a longstanding waterfowl hunting program with diverse opportunities for waterfowl hunting, including free-roam, hunting from blinds, and hunting by boat. The hunting program is cooperatively administered by the California Department of Fish and Game. A daily permit is required to hunt at the Complex. Information about seasons and bag limits, license and stamp requirements can be found in annual Federal and State regulation guides.

Fishing

Designated areas of the San Luis NWR, San Luis Unit, are open to fishing during daylight hours. The most common species caught are channel catfish, bullhead catfish, striped bass, and black bass. All anglers must have a current fishing license with proper stamps.

Volunteers

Volunteers are critical to the management of our wildlife and habitats. You can enjoy a productive and rewarding experience as a volunteer with the U.S. Fish and Wildlife Service. Contact the Complex office for information.



Volunteer
USFWS

Group Programs

Special tours and speaking programs are available to schools, clubs, and groups when they can be accommodated—please contact the Complex office with any requests.

Lesser Sandhill Cranes
© Lee Eastman



© Rick Lewis

Explore San Luis NWR

The San Luis NWR provides a Waterfowl Auto Tour route (8.5 miles) and a Tule Elk Auto Tour route (5 miles). The Waterfowl route takes you through seasonal wetlands where you may see large concentrations of waterfowl, shorebirds, and other waterbirds. Interpretive panels along the Tule Elk route tell the story of this unique subspecies, endemic to California, that nearly went extinct in the late 1800s. Elk are visible throughout the year.



Tule Elk Cow with Calf
© Karl Stromayer

Two nature trails launch from the visitor center: the Upland Trail (.5 mi.) and the Wetland/Riparian Trail (1 mi.). Situated along the auto tour routes are the Chester Marsh Trail (1 mi.), the Sousa Marsh Trail (1 mi.), and the Winton Marsh Trail (.5 mi.).

The Chester Marsh Trail takes you to a historic ferry crossing on the San Joaquin River. It is open from February 15 through September 15.

The Sousa Marsh Trail includes an elevated observation platform overlooking one of the largest wetlands on the Refuge, with spectacular waterbird viewing fall through spring.

The Winton Marsh Trail meanders around a permanent wetland, and has an elevated observation platform.

Explore West Bear Creek Unit

San Luis NWR



Monarch Butterfly
© Lee Eastman

At the West Bear Creek Unit you will find an auto tour route of 2.5 mi. and two nature trails: the Raccoon Marsh Trail (1.3 mi.) and the Woody Pond Trail (1.75 mi.).

The auto tour route winds through and around a rich mosaic of riparian woodlands, seasonal wetlands, and native grasslands, where you may see scores of waterfowl and other wildlife.

The Raccoon Marsh and Woody Pond trails offer opportunities to see waterbirds in fall through spring, and native songbirds and mammals during the dry summer months.

Explore Kesterson Unit

San Luis NWR

The Kesterson Unit contains a portion of the historic San Joaquin River floodplain, and is home to a unique community of plants and animals adapted to its alkaline soils.

This Unit is unique in that it offers “free-roam” nature hiking throughout. However, there is no auto tour route at Kesterson and the Unit is only open to the general public from February 15 through September 15, when the waterfowl hunting season is closed.

Explore Merced NWR



American Bittern
© Richard Albers

The Merced NWR offers an auto tour route (5 mi.) and four nature trails: the Meadowlark Trail (1.5 mi.), the Bittern Marsh Trail (1 mi.), the Kestrel Trail (.5 mi.), and the Cottonwood Trail (1.5 mi.).

The auto tour route loops around seasonal wetlands and upland grasslands for views of thousands of Ross’ geese and lesser Sandhill cranes during the fall and winter, along with a diverse concentration of dabbling ducks and shorebirds.

The Bittern Marsh Trail is a serene tree-lined loop around a permanent wetland where you may see and hear marsh birds and the occasional great-horned owl. The Kestrel Trail is

Tips to help you enjoy your visit

- Bring binoculars, spotting scopes, and cameras
- Share the experience—visit the Refuge with a friend
- Attend a group program or tour
- Contact the Complex for recent wildlife sightings
- Respect other visitors’ viewing opportunities
- Minimize disturbance to wildlife
- Remain in your vehicle on auto tour routes
- Park vehicles only in designated parking areas
- Keep noise levels to a minimum
- Please remove all trash
- All pets must be on leash

NO

- Collecting plants, plant parts, or mushrooms
- Feeding wildlife
- Horseback riding
- Camping, campfires, or cooking grills
- Bicycles on nature trails or auto tour routes

© Rick Lewis



Ground Squirrel
© Rick Lewis

Explore San Joaquin River NWR

a short grassland loop, home to many different songbirds that are very vocal during the spring nesting season. Various raptor species are visible in the nearby native cottonwood trees. The Cottonwood Trail on the north side of the Refuge meanders through a dense stand of trees and terminates at an elevated observation platform with excellent views of geese and cranes from fall through early spring.

At the San Joaquin River NWR visitors can explore the Pelican Nature Trail (4 mi.), and the Beckwith Viewing Platform off Beckwith Road.

The Pelican Nature Trail meanders through seasonal wetlands, restored riparian woodlands, and stands of old-growth valley oak trees. The trailhead includes an educational seven-acre native vegetation free-roam exploration area.

The Beckwith observation platform is open October through March, and overlooks Refuge agricultural fields and grasslands that provide forage for thousands of Aleutian cackling geese and lesser Sandhill cranes.

Nature's Calendar

January

- Numbers peak for geese, cranes, and ducks
- Wetlands fully flooded
- Foggy weather prevails
- Bald eagles often observed hunting on refuges
- Waterfowl hunting season ends

February

- Tule elk bulls shed antlers
- Great-horned owls hatching
- Hawks exhibiting aerial courtship displays
- Large numbers of wintering waterfowl and cranes visible

March

- Waterfowl begin migrating north
- Vernal pool wildflowers begin blooming
- Hawks and herons nesting
- Tule elk bulls sprouting new antlers covered in velvet
- Shorebird numbers building

April

- Songbirds are migrating
- Wildflowers are abundant around vernal pools
- Tule elk cows begin giving birth to calves
- Seasonal wetlands are drained to allow waterbird food plants to grow
- Peak number of shorebirds

May

- Shorebirds are migrating in breeding plumage
- Songbirds are very vocal defending nesting territories
- Wildflowers still spectacular

June

- Tule elk antlers fully grown with velvet falling off
- Shorebirds migrate north
- Seasonal wetlands are dry
- Songbird and raptor fledglings are visible

July

- Tule elk breeding rut begins
- Seasonal wetlands are irrigated to encourage waterbird food plants to thrive
- Fall shorebird migration begins



Black-tailed Deer Bucks

© Karl Stromayer

August

- Swainson's hawks have fledged and will form "kettles" over grasslands
- Irrigated pastures attract ibis and long-billed curlews
- Tule elk rut and bugling peaks

September

- Tule elk rut continues
- Sandhill cranes begin returning mid-month
- Songbirds and cinnamon teal migrate south
- Valley oaks drop their acorns

October

- Aleutian cackling geese arrive at San Joaquin River NWR
- Waterfowl hunting season opens
- Tule elk still in harems and bachelor herds
- Crane Day at Merced NWR

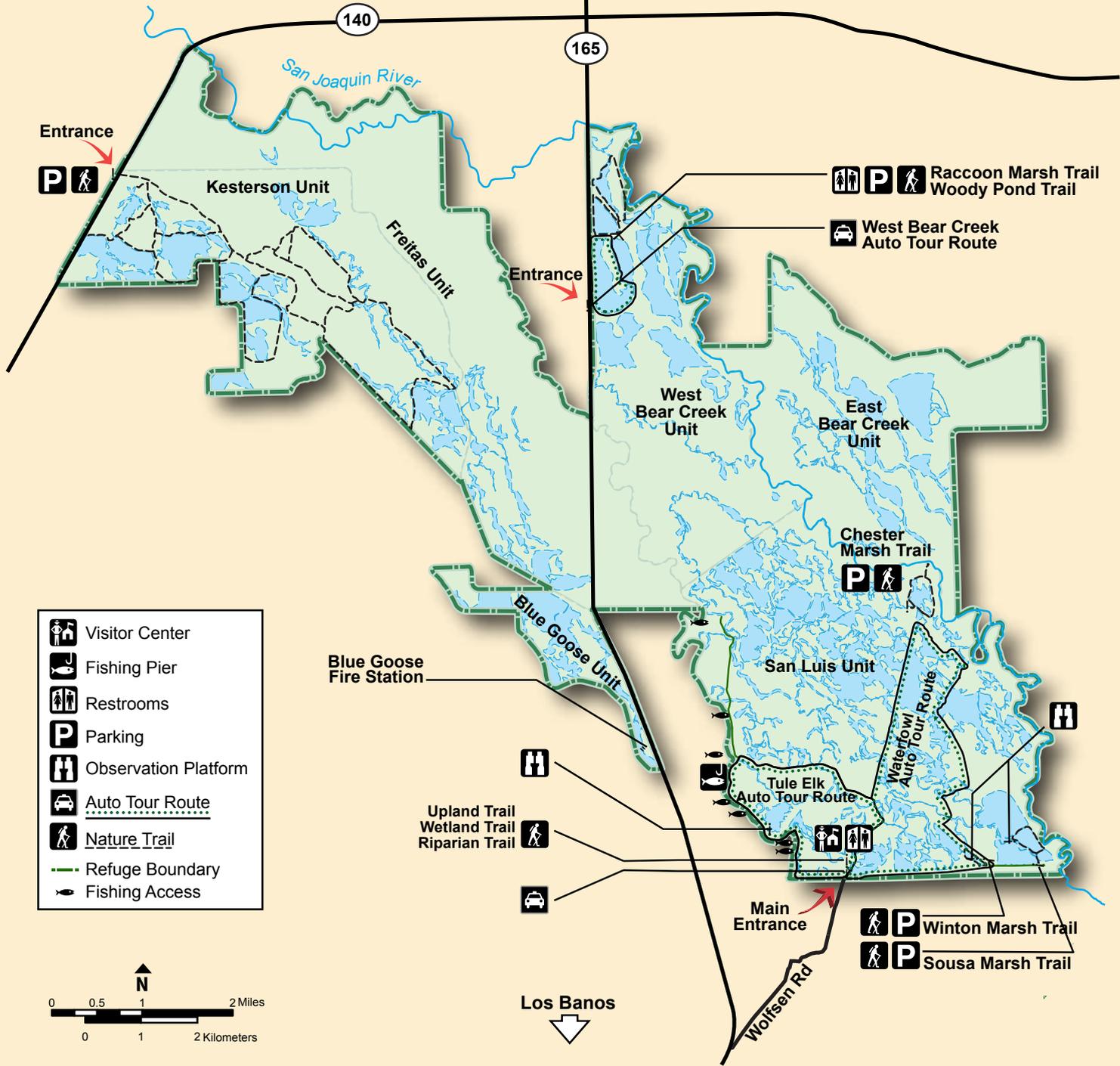
November

- Over 15,000 Sandhill cranes are in the Grasslands by Thanksgiving
- Ross' and white-fronted geese arrive

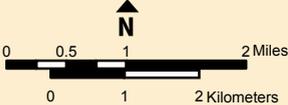
December

- Snow geese begin to arrive at Merced NWR
- Swans may arrive in small numbers by month's end
- Watch for eagles, falcons, and ferruginous hawks
- Black-tailed deer can be spotted at the San Luis NWR throughout the year, most often at the West Bear Creek Unit

San Luis National Wildlife Refuge

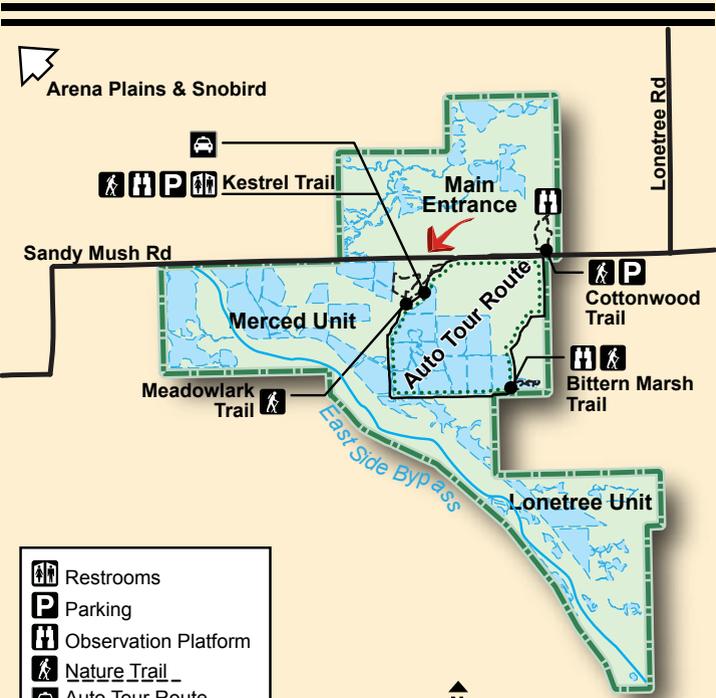


-  Visitor Center
-  Fishing Pier
-  Restrooms
-  Parking
-  Observation Platform
-  Auto Tour Route
-  Nature Trail
-  Refuge Boundary
-  Fishing Access

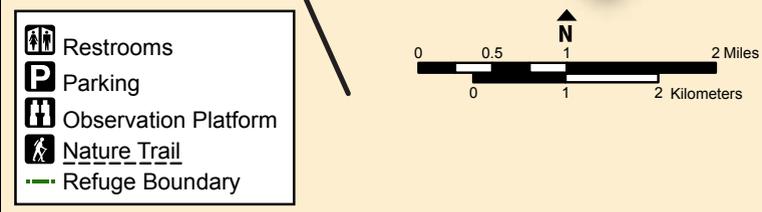
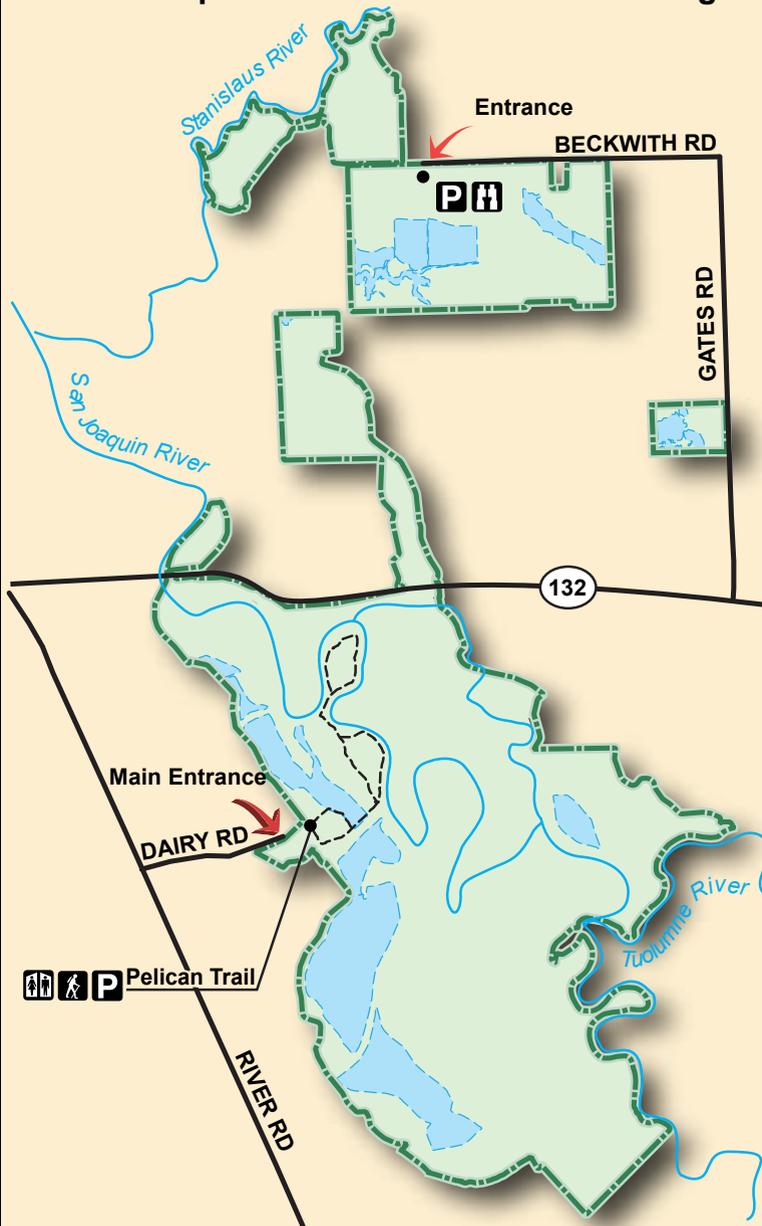


Los Banos


Merced National Wildlife Refuge



San Joaquin River National Wildlife Refuge



San Luis NWR Complex
P.O. Box 2176
Los Banos, CA 93635
209/826 3508

<http://www.fws.gov/sanluis>
Visitor Center Hours:
Daily 8:00 am–4:30 pm (closed holidays)

Federal Relay Service
for the hearing impaired
1 800/877 8339

U.S. Fish & Wildlife Service
1 800/344 WILD
<http://www.fws.gov>

May 2011

