



EDUCATION

Much of our education focuses on the stewards of tomorrow—children. Hands-on opportunities to learn about the ecological role of wetlands and the many species within this ecosystem make learning fun. To prepare students for their visit to the Reserve, we prepare teachers first. Workshops teach teachers how to bring the estuary into their classrooms before and after fieldtrips.

The proximity of the Tijuana Estuary to the international border also allows for unique educational opportunities. Tours are offered to students of higher learning or interested groups who desire a better understanding of estuarine ecology and restoration or environmental border issues. Just as the watershed spans the border, the Reserve also collaborates with Mexican partners to extend our programs south into Mexico.

Education at the Tijuana Estuary does not stop with children and young adults. Through the Coastal Training Program, information is delivered to coastal decision-makers, such as elected officials, land use planners, regulatory personnel, coastal managers, coastal homeowners and others with professional and technical training. The objective of this training is to fill gaps in regional training opportunities, through partnerships if possible, and thus assist these decision-makers in making more informed and confident resource management decisions.



RESEARCH

The Tijuana Estuary has been an important research site for over three decades, and the work accomplished here has contributed greatly to the understanding, protection, and restoration of local wetlands. As part of the National Estuarine Research Reserve System, scientific activities conducted at the Tijuana Estuary also increase our knowledge of the coastal environment at the national level. In addition, the Reserve is associated with the Field Stations Program of San Diego State University, which supports the collecting, sharing, and understanding of environmental data in southern California.

The ecosystems and research facilities at the Tijuana Estuary are used by faculty and students from many colleges and universities. In order to better understand how estuaries function, there is regular research and monitoring of vegetation, fish, marine invertebrates, birds, reptiles, and exotic species. In addition, water conditions such as salinity and temperature are sampled every thirty minutes at multiple sites throughout the estuary. The Reserve's Educational Water Quality Monitoring Laboratory uses volunteers to study bacterial contamination of estuarine waters, demonstrating one way in which the education and research missions of the Reserve can be linked.

A primary goal of research conducted at the Tijuana Estuary is to provide sound science for effective management of coastal resources, including wetland restoration. The Reserve has embarked on an ambitious restoration program, aimed at recovering hundreds of acres of lost wetlands. Continued research at the Tijuana Estuary will help guide this effort to recover some of California's most threatened habitats.

Contact SWIA (Southwest Wetlands Interpretive Association), our cooperating association, for information on the protection and preservation of wetlands.



Utilizing sediment core sampling for research



NATIONAL
ESTUARINE
RESEARCH
RESERVE
SYSTEM



TIJUANA ESTUARY

Imperial Beach, CA

WELCOME TO THE TIJUANA ESTUARY—

Where the River Meets the Sea!

This unique coastal wetland is among the most biologically productive systems on earth. Shallow basins within estuaries are warmed by the sun, and organic and mineral sediments in the waters are constantly mixed by ocean tides and currents. The results are fertile, protected extensions of the sea that provide food and shelter for an immense number of plants and animals.

Southern California has lost over 90% of its coastal wetland habitat to development. The Tijuana Estuary retains natural, daily tidal flushing and is one of the few intact estuaries in Southern California.

Encompassing 2,500 acres, the Estuary is the endpoint of the 1,735 square-mile Tijuana River watershed. One-third of the watershed lies in the U.S. and two-thirds in Mexico including most of Tijuana and all of Tecate.

Tijuana Estuary consists of the Tijuana Slough National Wildlife Refuge and Border Field State Park, Navy lands, San Diego County property and San Diego City property. Designated as the Tijuana River National Estuarine Research Reserve (TRNERR) by the National Oceanic and Atmospheric Administration (NOAA), it is one of 26 estuarine reserves in the country devoted to education and research. The Reserve is managed cooperatively by the U.S. Fish and Wildlife Service and the California Department of Parks and Recreation.



THE VISITOR CENTER

The Tijuana Estuary Visitor Center provides FREE scheduled interpretive programs for children and adults, videos, art classes, and guided field trips.

A variety of permanent exhibits and an award winning native plant garden entertain and educate. Visitor Center displays highlight estuary flora and fauna, estuarine ecology, and natural processes.

The Reserve offers four miles of trails, taking visitors into prime bird-watching areas and to the mouth of the Tijuana River. Equestrian trails are available on the south end of the Reserve, and horses can be rented from neighboring stables.



REGULARLY SCHEDULED PROGRAMS:

Weekend Nature and Bird Walks:

Learn about the natural history of this area from our expert docents and take advantage of some unique birding opportunities!

Junior Rangers:

Students 7-12 years discover the environment and its inhabitants in a natural setting, make crafts, view wildlife, and maintain their own native plant garden.

Speaker Series:

Once a month the Tijuana Estuary offers a free lecture series. Speakers usually include enthusiastic biologists, specialists or researchers who share information on estuary-related topics. A lively question and answer session usually follows the presentation.

Volunteer Stewards Program:

Get to know the "wild things" in your neighborhood by becoming a volunteer for any of our activities.

Please call for schedules and visitor information.

BIRDS, BIRDS, AND MORE BIRDS!

The Estuary is an essential breeding, feeding, and nesting area for resident birds and the thousands of migratory birds moving along the Pacific Flyway twice each year. **Over 370 species of birds have been documented in the Reserve.**

Six endangered and one threatened species of birds are sheltered within the Reserve's boundary:

California Least Tern

Light-footed Clapper Rail

California Brown Pelican

Least Bell's Vireo

Belding's Savannah Sparrow

American Peregrine Falcon

Western Snowy Plover

These species all depend on the protection of critical estuarine habitats for their survival.



Light-footed Clapper Rail

HOME SWEET HABITAT

There are a variety of habitats within the Reserve including dune, salt panne, salt marsh, mudflat, brackish pond, riparian, coastal sage scrub, and vernal pool.

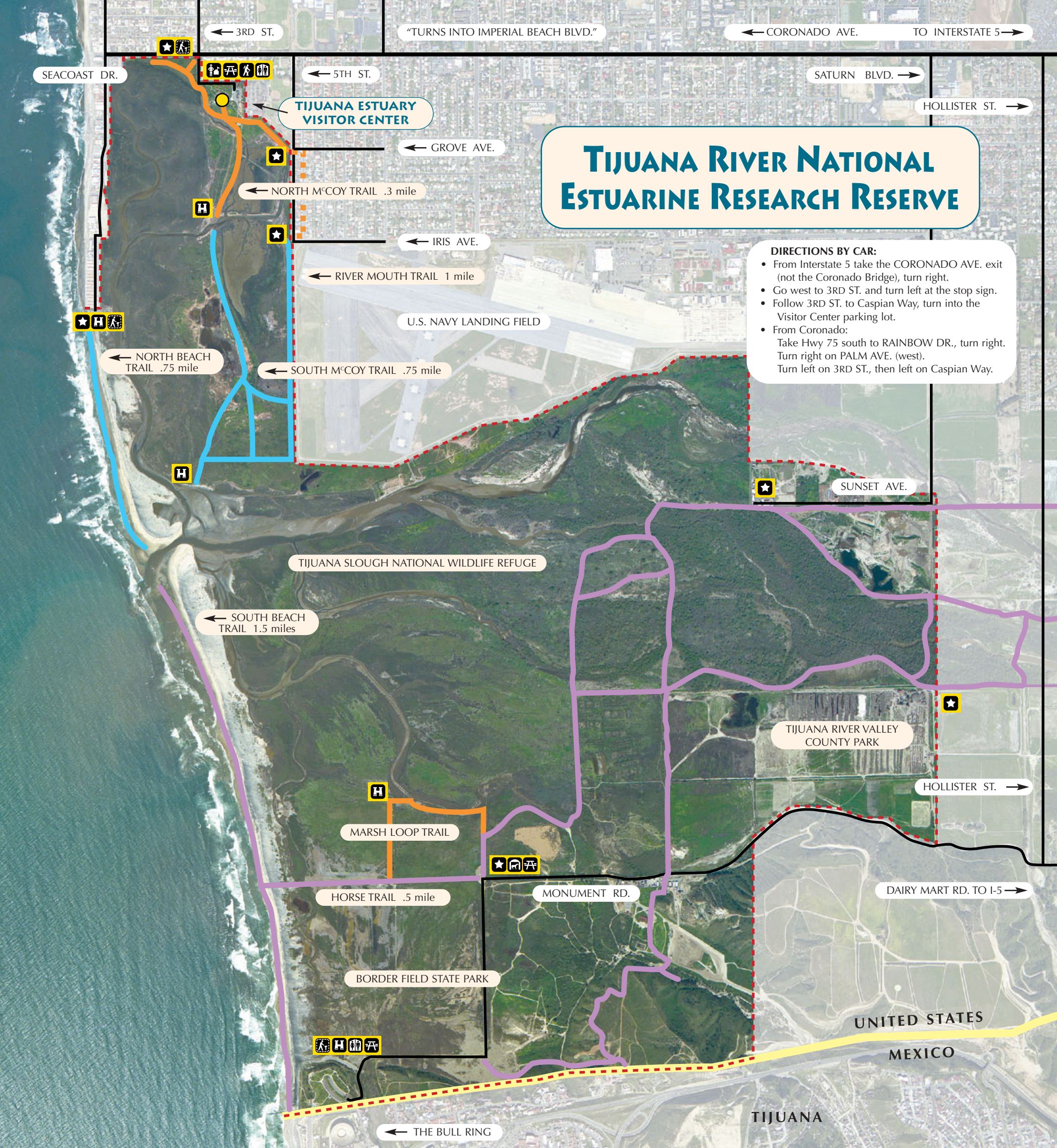
Unique characteristics distinguish one habitat from another. Changes in elevation of a few inches, the presence or absence of saltwater, or soil type are variables that determine which plants or animals can live in each distinct habitat.

Marshes are among the richest wildlife habitats in the world. The mudflats that appear and disappear with the tides support thousands of species of plants, animals and invertebrates. Wetlands are also the biofilters of our watershed, helping to cleanse the run-off from our streets before polluted water reaches our coasts and oceans.

TIJUANA RIVER NATIONAL ESTUARINE RESEARCH RESERVE

DIRECTIONS BY CAR:

- From Interstate 5 take the CORONADO AVE. exit (not the Coronado Bridge), turn right.
- Go west to 3RD ST. and turn left at the stop sign.
- Follow 3RD ST. to Caspian Way, turn into the Visitor Center parking lot.
- From Coronado:
Take Hwy 75 south to RAINBOW DR., turn right. Turn right on PALM AVE. (west). Turn left on 3RD ST., then left on Caspian Way.



OUTDOOR ETHICS

The animals and plants of the Reserve are here for everyone to enjoy, so please help us by following these few guidelines:

- ◆ Walk dogs only on the north beach and 5th and Iris trail. Dogs **must** be kept on a leash at all times.
- ◆ All plants, animals and physical features (shells, rocks, etc.) are protected and may not be removed or damaged.
- ◆ No weapons or fireworks are permitted on the Reserve.
- ◆ Please, no littering or dumping.
- ◆ Trespassing beyond special area closure signs is prohibited.
- ◆ Fishing, clamming, and shrimping are permitted from the beach area only.
- ◆ Use officially designated trails only for hiking, biking, dog walking, and horseback riding.
- ◆ Fires and camping are not permitted on the Reserve.
- ◆ Alcohol and drugs are prohibited on the Reserve.

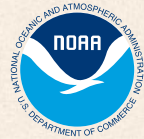
While walking through the Reserve, please respect the animals and their homes. Speak softly, walk calmly, and stay on the trails for the best view of wildlife.

- Reserve Boundary
- Foot Trails only, No Dogs, No Bikes
- Foot Trails, Bikes, Dogs with Leashes
- Horse/Hiking Trails, No Dogs, No Bikes
- ★ Visitor Center & Picnic Area
- ★ Entrance Points
- ★ Interpretive Panel
- ★ Picnic Area
- ★ Restrooms
- ★ Corral & Hitching Posts
- ★ Viewing Area

FOR INFORMATION CONTACT:

Visitor Center & Border Field State Park:
(619) 575-3613
Tijuana Slough National Wildlife Refuge:
(619) 575-2704
301 Caspian Way, Imperial Beach, CA 91932
www.tijuanaestuary.com

Reserve hours for trail use: 1/2 hour before sunrise and 1/2 hour after sunset. The Visitor Center is open 7 days a week.



"The National Estuarine Research Reserve System is a protected network of federal, state, and community partnerships which serve to promote informed management of the Nation's estuarine and coastal habitats through linked programs of stewardship, public education, and scientific understanding."



"The Mission of the California Department of Parks and Recreation is to provide for the health, inspiration, and education of the people of California by helping preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources and creating opportunities for high-quality outdoor recreation."



The Mission of the National Wildlife Refuge System under the U.S. Fish and Wildlife Service is: "To administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans."