

# MORRO BAY

## NATIONAL AND STATE ESTUARY

## The Morro Bay National Estuary Program

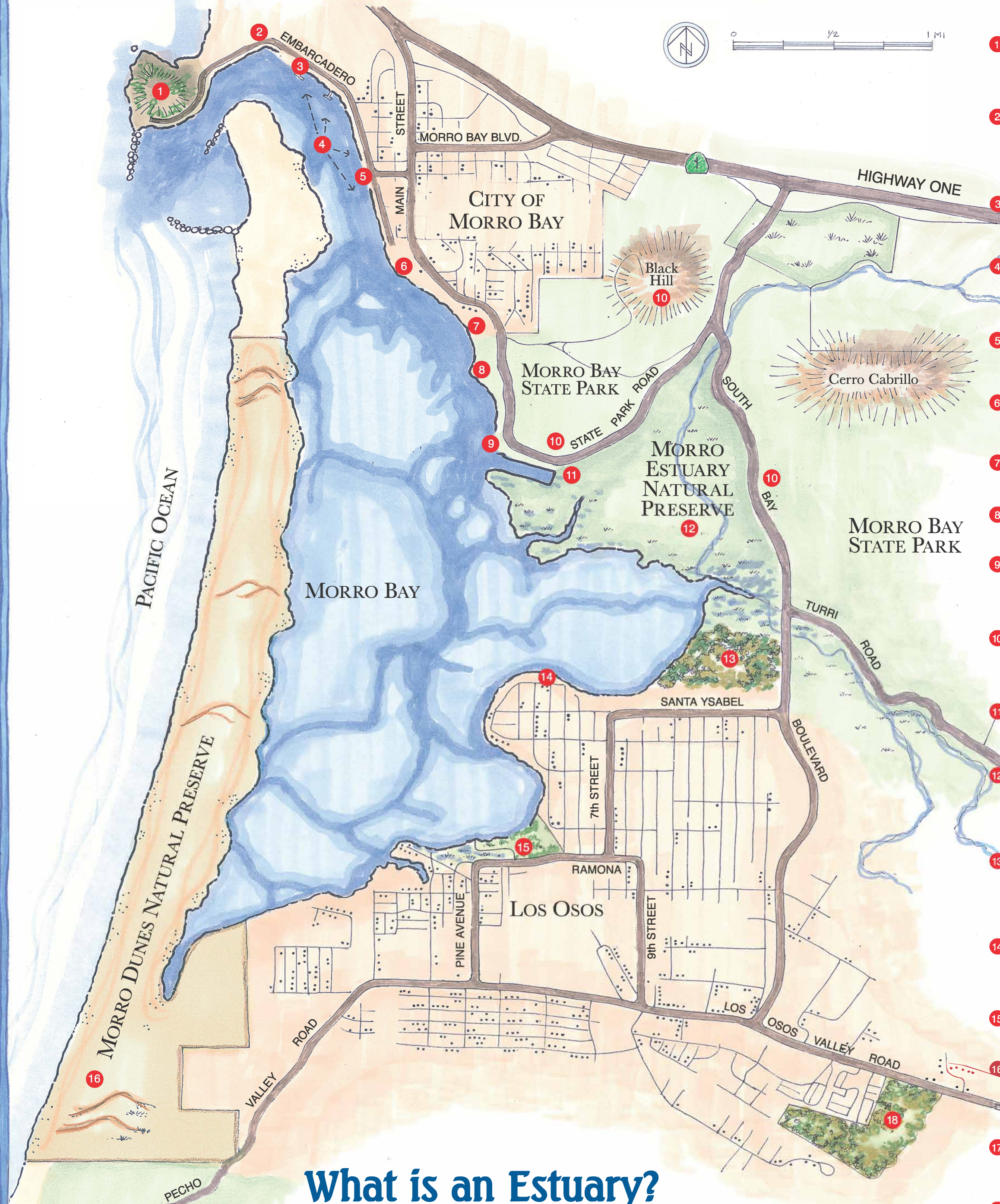
Formed in 1995, the Morro Bay National Estuary Program works to protect and restore the Morro Bay estuary for people and wildlife.

The Estuary Program is a collaborative, nonregulatory, nonprofit organization that brings together citizens, local government, nonprofit organizations, state and local agencies, businesses, and landowners to support a healthy environment and vibrant local communities. The Estuary Program completes restoration and conservation projects to reduce pollution and protect natural areas and supports research and monitoring to assess changes in the estuary. The Estuary Program also actively educates residents and visitors about how to keep Morro Bay clean and healthy.



The Estuary Program office and the Estuary Nature Center are located at the corner of Marina and Embarcadero, upstairs in Marina Square. For more information, visit our website at MBNEP.org. Keep in touch with us on our blog, Facebook, Instagram, and Twitter.

# Welcome to Morro Bay National Estuary



### 1 Morro Rock Natural Preserve

The Portola expedition noted this monolith during its explorations of California in the 1580s. It is both a historical landmark and an ecological preserve. The endangered peregrine falcon nests here. Just north of the Rock at Morro Strand State Beach is a popular surfing spot.

### 2 Harbor Walk, Coleman Park, and Coleman Beach

The City of Morro Bay's Harbor Walk, a pedestrian and bicycle path along the Morro Bay harbor, is a scenic and safe route connecting the popular Embarcadero area with Morro Rock and Morro Strand State Beach. Nearby Coleman Park affords fine views of the bay as it curves toward the open ocean. Coleman Beach is an easy-to-access kayak launch site and is a great protected beach for young children.

### 3 Morro Bay Harbor Office & Coast Guard Station

The City Harbor Patrol and US Coast Guard enforce vessel safety and environmental regulations. Visitors can get information about tides and ocean conditions, fishing, and boating safety at their offices. The Harbor Department also provides free oil recycling.

### 4 City Piers

Public piers, found at several places along the waterfront, provide excellent opportunities for viewing estuarine wildlife and the activities of the working fishing port. The Coastal Conservancy and the Department of Boating and Waterways helped fund the piers, which are managed by the City of Morro Bay.

### 5 Morro Bay Estuary Nature Center

The Estuary Nature Center is a fun and free stop on the Embarcadero. Come by and discover what's essential about eelgrass, learn about local wildlife, and pick up literature about issues affecting the bay. Upstairs on the waterfront by Marina Street.

### 6 Tidelands Park

The stylishly landscaped park provides views of the bay, a public launch ramp, and fishing. Popular with picnickers, the park contains an imaginative play area for children. The California Department of Boating and Waterways helped fund this park.

### 7 Bayshore Bluffs Park

This secluded park overlooks Grassy Island, an important roosting area for waterfowl. There are picnic tables, grills, and a stairway to the bay shore.

### 8 Heron Rookery Natural Preserve and Windy Cove

Eucalyptus and cypress trees provide roosting and nesting sites for cormorants, egrets, and herons. Visitors can view lively brooding behavior in the spring.

### 9 Morro Bay State Park Museum of Natural History

The museum maintains interpretive exhibits about the geology, archaeology, and ecology of Morro Bay and the surrounding area. Knowledgeable docents lead walks, extending the interactive experience to the outdoors. In the rocks near the museum, visitors can spot bedrock mortar holes made by the native Chumash people.

### 10 Morro Bay State Park

Encompassing over 2,700 acres, the park offers camping and other recreational opportunities. A short, steep trail leads to the top of Black Hill, affording unparalleled views of the estuary and watershed. Several trailheads start on turnouts off South Bay Boulevard, allowing access to Cerro Cabrillo and stellar views of the estuary.

### 11 Morro Bay State Park Marina and Marina Peninsula Trail

The Marina Peninsula boardwalk trail starts at the south end of the Morro Bay State Park Marina parking lot. It is open to hikers and favored for birding, but closed to bikes. The marina also provides a fine spot to launch a kayak.

### 12 Morro Estuary Natural Preserve

This 800-acre salt marsh area, located within the bounds of Morro Bay State Park, is protected as a natural habitat preserve. Tidal sloughs and pickleweed expanses teem with waterfowl and shorebirds. It is important to keep a respectful distance from any wildlife you encounter. If wildlife moves away, responds to your presence by raising a head to watch you, or increases the frequency and volume of their call, you are too close.

### 13 Elfin Forest Natural Preserve

This preserve, split between Morro Bay State Park and the County of San Luis Obispo, was created largely through the efforts of Small Wilderness Area Preservation. The preserve protects extremely rare coastal dune scrub habitat and a forest of diminutive oak trees. A popular boardwalk trail overlooking the bay is favored by bird watchers and plant enthusiasts.

### 14 Audubon Overlook

Maintained by Morro Coast Audubon Society, this sheltered overlook provides a quiet location to enjoy the birds of the back bay. Be sure to bring your binoculars. To reach the overlook, take 3rd Street north off Santa Ysabel in Los Osos, and turn right at the end of 3rd onto the dirt road. Continue on the short block to the overlook.

### 15 Sweet Springs Nature Preserve

The Morro Coast Audubon Society owns and manages this Preserve. It includes a unique freshwater pond, home to turtles and red-legged frogs.

### 16 Morro Dunes Natural Preserve

An extension of Montaña de Oro State Park, the four-mile long sandspit shields Morro Bay from the open ocean. Endangered snowy plovers nest on this beach from March to September. Seasonal fencing protects these tiny shorebirds and their young. Please respect seasonal closures and posted pet limitations.

### 17 Montaña de Oro State Park

This magnificent park ranges over 8,000 acres of dunes, chaparral, creeks, wetlands, rocky outcroppings, and sandy beaches. A popular bluff-top trail offers spectacular views of the sea. There is a campground and interpretive center.

### 18 Los Osos Oaks State Reserve

Trails wind through a centuries-old live oak forest thriving on sand dunes. The Oaks Preserve is a relic habitat that was once much more extensive.

## What is an Estuary?

An estuary is a place where fresh water from creeks and rivers mixes with salty ocean water. Estuaries are among the richest habitats known. The confluence of creeks, wetlands, sand dunes, mudflats, salt marshes, and open water attracts a tremendous variety of wildlife. Morro Bay is small at only 2,300 acres. It is fed by Chorro and Los Osos Creeks and is protected from the Pacific Ocean by a lengthy sandspit.

### Fish Nursery

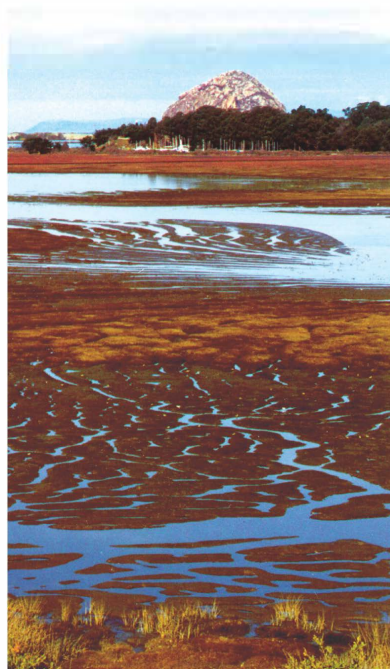
The estuary is a nursery for many species of fish that live as adults in the ocean. The shallow water, eelgrass beds, and wetlands provide protected habitat and rich food sources for larvae and young fish. Chorro and Los Osos Creeks also host steelhead trout, a threatened species that spawns in creeks and migrates to the sea.

### Spectacular Bird Habitat

Morro Bay is an important stop-over on the Pacific Flyway and a critical winter home to numerous bird species. The bay and its 48,000-acre watershed rank among the top sites in the nation during the Audubon Christmas Bird Count every year.

### Morro Bay - A Living Fossil

Lagoons and wetlands were once common along the southern California coast, but most were filled and developed before their ecological importance was understood. Morro Bay has largely survived—a rare example of a bygone environment. However, the estuary is struggling today with the impacts of human activities. We all need to work together to protect and restore this special place.



Photos © R. and K. Muschenetz

## Respect Wildlife

As you enjoy Morro Bay and the surrounding areas, please keep a respectful distance from birds, marine mammals, and other wildlife. Repeated disturbances by people and pets add up. Use binoculars to get a closer look.



# The Morro Bay Watershed

Morro Bay connects freshwater creeks and the open ocean. The area of land that drains into the bay through creeks and runoff is the watershed. The quality of the water that enters the bay greatly impacts its health.

The Estuary Program and our partners work hard to reduce erosion in the watershed, trap sediment before it enters the bay, ensure that adequate fresh water flows in the creeks, and reduce sources of water pollution.



National Forest Lands

Urban Boundaries

Prime Farmland

Morro Bay is a California State Marine Protected Area. These areas protect fish and wildlife in coastal waters. They are monitored and evaluated by state and local marine biologists for their effectiveness. To learn more about MPAs visit the California Department of Fish and Wildlife's website.

# Challenges Facing the Bay

## Pollution

The watershed and estuary are subject to pollution from many sources. Examples include urban and agricultural runoff, animal waste, and input from boats with inadequate waste disposal facilities.

## Reduced Freshwater Flow

The estuary's ecosystem depends on the balance of salt and fresh water. Human water use for businesses, homes, and agriculture can reduce creek flows by tapping shallow water basins beneath or near the creeks. In turn, lower creek flows harm many species of plants and animals, including steelhead trout, which need cool water and deep pools.

## Loss of Habitat

Development of natural open spaces causes the loss of habitat for wildlife. In the case of California wetlands, over 90% have been lost. Degradation of habitats is also a serious problem. Habitat quality can be compromised by the introduction and spread of nonnative species, erosion, trampling of native plants, and pollution. Morro Bay and its watershed contain several increasingly rare habitats such as coastal dunes, bay eelgrass beds, fresh and salt water wetlands, and maritime chaparral.



Extent of Salt Marsh, 1890  
Extent of Salt Marsh, 1990

Accelerated sedimentation has filled the bay at an increasingly rapid rate at the mouth of Chorro Creek. Sand and silt from the upper watershed have built up quickly, doubling the size of the salt marsh in just 100 years.

## Sedimentation

When land erodes in the watershed, especially during storms, creeks carry sand and silt downstream to the bay. Unless trapped, the sediments settle in the bay. Although this is a natural process, it is accelerated by disturbances in the watershed, such as grading and construction, agriculture, mining, and wildfires. Morro Bay is filling in at an unnatural rate.

# Working for Solutions

Many people love the estuary and want to protect it. Working together, locals, visitors, agencies, volunteer organizations, and others can make a positive difference for this special place.

## Reducing Pollution

Together, we have made a lot of progress. Community members, agencies, and organizations in the watershed are working to ensure that sewage is properly treated; many farmers and ranchers are careful to protect the creeks and groundwater while using the land; and educational programs are teaching people to be more careful with fertilizers, pesticides, oil, and other household waste.

## Stemming Erosion

The Estuary Program and our partners have completed many projects in the watershed to reduce erosion and repair places susceptible to soil loss. However, many sites remain vulnerable and need improvements.

## Habitat Protection

Careful stewardship of the land is critical to the protection of natural habitats. Many property owners use best management practices, helping to nurture natural resources. However, mismanagement and development are still a threat. Land acquisition and conservation easements are effective protection measures, but they are costly. Because of this, property owners, agencies, and other organizations must work together to protect threatened habitats in the watershed and along the bay. Over 4,000 acres have been protected by the Estuary Program and our partners.

## Trapping Sediment

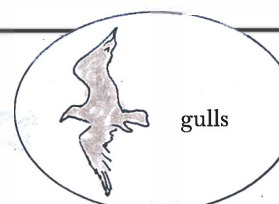
One of the most effective ways to reduce the amount of sediment deposited in the estuary is to restore the natural floodplains upstream of the estuary. As high flows spread across the floodplain, the mud, sand, and silt in the storm waters is deposited across these wetlands instead of carried to the bay. Floodplains have been restored at Chorro Flats on Chorro Creek and on lower Los Osos Creek. In addition to trapping sediment, both projects restored important wetland habitat benefiting fish and wildlife.

## Fresh Water Conservation

Residents and visitors are working to conserve water. That leaves more fresh water for creeks and the estuary.

## Habitat Restoration

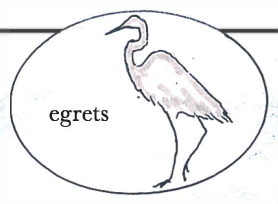
Working with our partners, we are restoring environmentally valuable habitat along the creeks, in the dunes, along the bay shore, and elsewhere in the watershed. Restoration projects include work to replace exotic plants with native species, restore creeks to their natural shapes, recreate floodplains and wetlands, improve water quality by limiting cattle access to creeks, and remove barriers that prevent fish from accessing creeks. Over 400 acres of land in the watershed have been restored through the work of the Estuary Program and many partners.



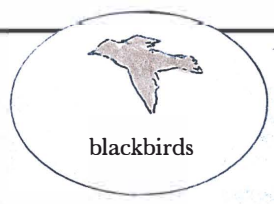
gulls



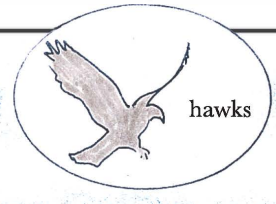
pelicans



egrets

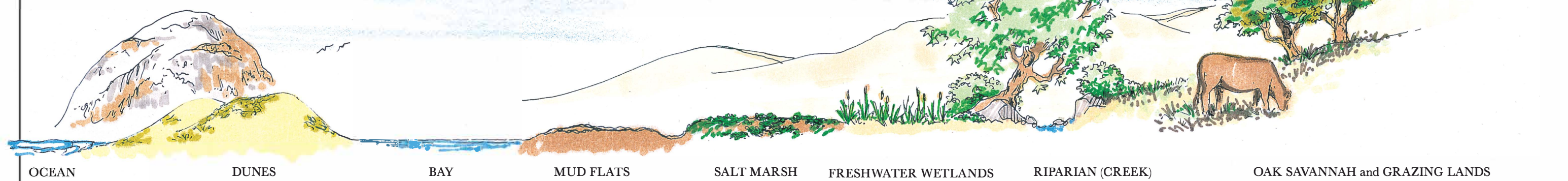


blackbirds



hawks

# The Many Habitats of the Estuary



# Ten Things You Can Do To Keep the Estuary Healthy

- 1 Conserve water. Use low-flow faucets, shower heads, and toilets, and don't let excess water go down the drain.
- 2 Use native plants and plants that don't need a lot of irrigation.
- 3 Dispose of household pollutants, like cleaners, oil, other automobile fluids, and paint, properly. Remember, all storm drains eventually empty into natural waterways.
- 4 Make your boat pollution-free. Use pump out stations. Clean boats where paint chips cannot get into the bay and use vacuum sanders when available.
- 5 Clean up after your dog. Dog waste contains harmful bacteria and can pollute our waters.



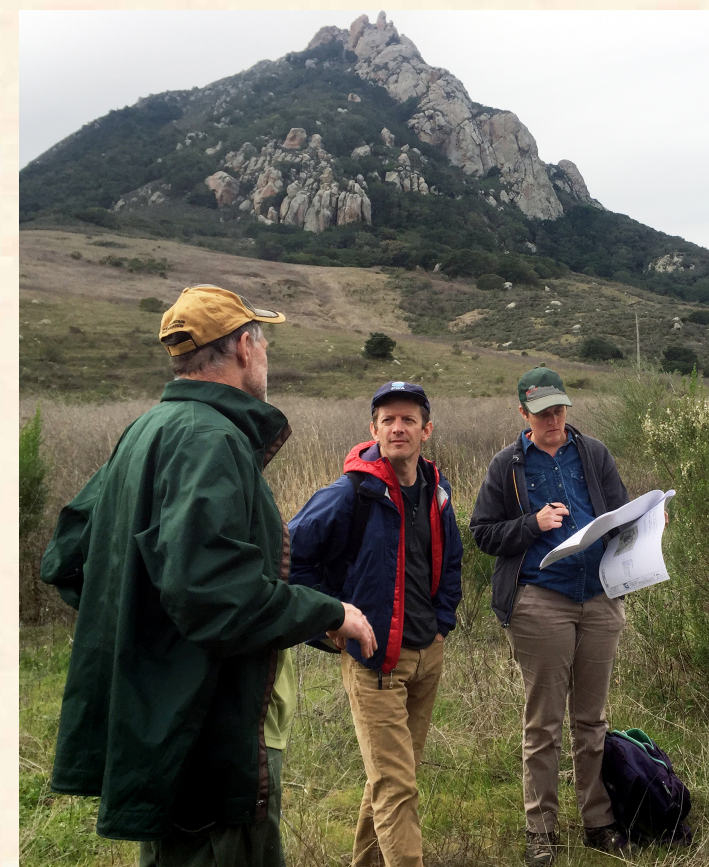
- 6 Keep a respectful distance from birds, marine mammals, and other wildlife, whether you are on land or on the water. Use binoculars to get a closer look, and please keep dogs from chasing wildlife.
- 7 Learn more about natural resources and the ecosystem. The Natural History Museum, the Estuary Nature Center, and MBNEP.org are good places to start.
- 8 Let your elected officials know that protecting the estuary and watershed is important. Call or send an e-mail to remind them that these resources are fragile and need our help.
- 9 Contribute toward conservation efforts. Many nonprofit organizations working on estuary protection gladly accept donations. The Morro Bay National Estuary Program welcomes your gift at MBNEP.org/donate or by mail.
- 10 Volunteer your time. There are many ways to contribute. Besides, getting involved can be a lot of fun! Visit MBNEP.org/volunteer to see opportunities with the Estuary Program and other organizations.



Photos © R. and K. Maschenetz

# Thank you, partners!

Many organizations and individuals are essential to the ongoing work of protecting and restoring the Morro Bay Estuary.



This map was made possible through funds from the US Environmental Protection Agency and the San Luis Obispo County Community Foundation.

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COMMUNITY FOUNDATION

