

The Morro Bay Watershed

Morro Bay connects freshwater creeks and the open ocean. The area of land that drains into creeks leading to the bay is called the watershed. What enters the bay through those creeks has a critical effect on the estuary's health.

Much effort is being made to control erosion in the watershed, trap sediment before it enters the bay, ensure adequate freshwater flows in the creeks, and reduce sources of water pollution.



Morro Bay is a California State Marine Protected Area. Marine protected areas protect fish and wildlife in coastal waters, and are monitored and evaluated by state and local marine biologists for their effectiveness. To learn more about MPAs go to www.dfg.ca.gov/mlpa.

Challenges Facing the Bay

Pollution

The watershed and estuary are subjected to pollution from many sources. Examples include urban and agricultural runoff, failing septic systems, animal waste and 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

It is obvious that development of natural open space causes loss of habitat for wildlife. In the case of California wetlands, over 90% have been lost. Few people realize that degradation of habitats is also a serious problem. Habitat quality can be compromised by invasion of non-native 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 bay sedimentation has increasingly filled the bay at the Chorro Creek outflow with sand and silt from the upper watershed, creating the salt marsh which has doubled in size in only 100 years.

Sedimentation

When land erodes in the watershed, especially during winter storms, creeks carry sand and silt downstream to the bay. Unless trapped, the sediments settle out 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 up at an unnaturally rapid rate.

Working for Solutions

Almost everyone wants to help protect the estuary. Success depends on the continued efforts of government agencies, volunteer organizations, property owners and the people who live in or visit this fragile area.

Reducing Pollution

Many projects have been implemented to reduce pollution entering the bay. Communities 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 they use the land; and educational programs are teaching people to be more careful with fertilizers, pesticides, oil and other household wastes.

Stemming Erosion

Work is under way in many parts of the watershed to reduce erosion and to repair places susceptible to loss of soils. Many other sites remain vulnerable and need improvements.

Habitat Protection

Careful stewardship of the land is critical to the protection of habitats. Many property owners utilize "best management practices" on their land, thereby helping to nurture natural resources. However, development and mismanagement are a constant threat. Land acquisition and conservation easements are effective protection measures, but they are costly. Therefore, organizations and agencies must work together to protect the threatened habitats in the watershed and along the bay. A significant example is the successful work of the Morro Estuary Greenbelt Alliance, numerous partners and contributors to create a "greenbelt" of open space around Los Osos comprised of rare dune scrub and verdant riparian areas.

Trapping Sediment

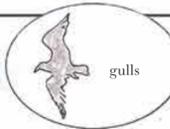
One of the most effective ways to reduce the amount of sediment deposited in the estuary is to restore the natural floodplains upstream of the estuary. As high flows spread across the floodplain, the mud, sand and silt in the storm waters is deposited across these wetlands instead of carried to the bay.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

Freshwater Conservation

Throughout the area, residents and visitors are trying to conserve water. That means more fresh water for creeks and the estuary.

Habitat Restoration

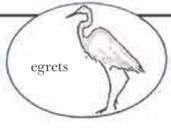
Environmentally valuable habitat is being restored or created along creeks, in dunes, along the bay shore and in the watershed. Examples include projects to replace exotic plant species with native species, restore creeks to their natural shapes, re-create floodplains and wetlands, improve water quality by limiting cattle access to creeks, and remove barriers that prevent fish from spawning in creeks. Over 3000 acres have been protected or restored in the Morro Bay Watershed through the work of the many partners in the Morro Bay National Estuary Program.



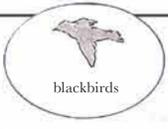
gulls



pelicans



egrets

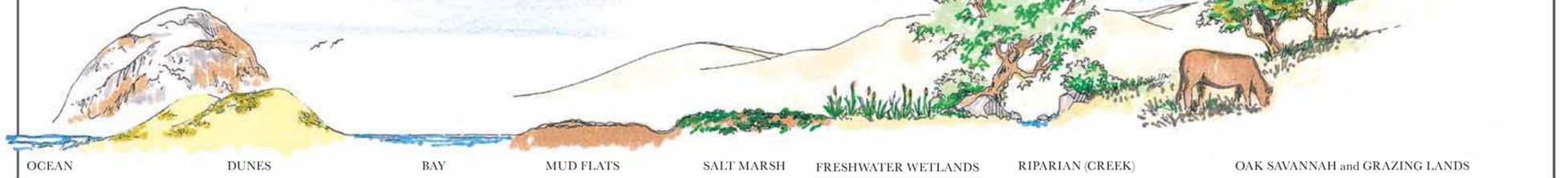


blackbirds



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 water go down the drain.
- 2 **Use native plants and plants that don't need a lot of irrigation when landscaping.**
- 3 **Don't dump household pollutants like automobile oil, paint or household cleaners down drains.** Remember, all storm drains eventually empty into the estuary or the ocean.
- 4 **Make your boat pollution-free.** Use pump out stations. Avoid gas engines in the back bay. Don't clean boats where paint chips can get into the bay.
- 5 **Clean up after your dog.** Especially along the bay front, this can be a significant source of pollution.
- 6 **Keep a respectful distance from birds and wildlife.** Especially when canoeing and kayaking, don't get too close to birds or marine mammals. Use binoculars for observation. Also, please keep your dog from chasing birds and wildlife.
- 7 **Learn more about natural resources and the ecosystem.** The Natural History Museum, the MBNEP Nature Center, and libraries are good places to start.
- 8 **Let your elected officials know: protecting the estuary is important.** Drop a line or send an e-mail reminding them that these resources are fragile and need our help.
- 9 **Contribute toward conservation efforts.** Select an organization working on estuary protection and make a donation. The Morro Bay National Estuary Program is one such non-profit that welcomes your donations.
- 10 **Volunteer your time.** There are many ways people can contribute and many organizations are looking for help. Besides, it's usually a lot of fun! Call (805) 772-3834 to discuss volunteer opportunities.



Photos by: R and K Maschenitz ©

Estuary Program Partners

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

- Bay Foundation of Morro Bay · California Polytechnic State University
- California Coastal Commission · California Coastal Conservancy
- California Conservation Corps · California Department of Boating and Waterways
- California Department of Corrections (Men's Colony)
- California Department of Fish and Wildlife · California Department of Forestry
- California Department of Health Services · California Department of Parks and Recreation
- California Department of Transportation · California Department of Water Resources
- California National Guard (Camp San Luis) · California Native Plant Society
- Central Coast Regional Water Quality Control Board
- Central Coast Salmon Enhancement · Central Coast State Parks Association
- Central Coast Women for Fisheries · City of Morro Bay
- Coastal Alliance on Plant Expansion · Coastal Resources Institute
- Coastal San Luis Resource Conservation District · County of San Luis Obispo
- Cuesta College · Farm Bureau · Land Conservancy of San Luis Obispo County
- Los Osos / Baywood Chamber of Commerce
- Los Osos Community Services District · Morro Bay Beautiful
- Morro Bay Chamber of Commerce · Morro Bay Commercial Fisherman's Association
- Morro Coast Audubon Society · Morro Estuary Greenbelt Alliance
- National Marine Fisheries Service · Natural Resources Conservation Service
- Nature Conservancy · Partners for the Conservation of the Los Osos Coastal Dunes
- San Luis County Air Pollution Control District · Sierra Club
- San Luis Obispo Botanical Garden · San Luis Obispo County Community Foundation
- Small Wilderness Area Preservation · SLO Green Build · Trust for Public Land
- UC Cooperative Extension · US Army Corps of Engineers
- US Bureau of Land Management · US Coast Guard
- US Environmental Protection Agency · US Fish and Wildlife Service
- US Forest Service · Wildlife Conservation Board

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