

San Francisco Bay National Wildlife Refuge



Department of the Interior
U.S. Fish and Wildlife Service

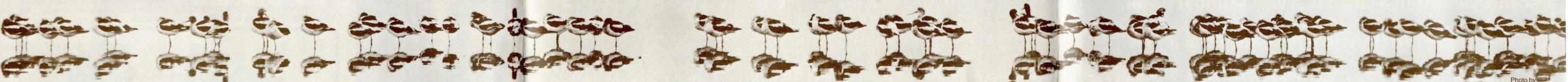


Photo by Bruce MacGregor



Photo by Don Weden

San Francisco Bay National Wildlife Refuge is a place to learn about the Bay environment through exhibits and naturalist programs; to observe and photograph wildlife; to hike, hunt and fish; and to enjoy some precious open space in the heart of a great metropolitan area.

Enjoying the Refuge

Admission to the Refuge and all facilities is free.

Visitor Center

Your first stop should be the visitor center, located near the Dumbarton Bridge toll plaza. Indoor exhibits and a self-guiding trail will introduce you to the Bay environment and local wildlife. The Visitor Center is open seven days a week from 10 a.m. to 5 p.m. It is closed on all national holidays except Memorial Day, Independence Day and Labor Day.

Books, posters and other educational items are for sale to increase your enjoyment and understanding of the Refuge. Proceeds aid the Refuge's educational programs.

Environmental Education Center

The Environmental Education Center is available to classes and organized groups by reservation only. Teachers and group leaders must attend an orientation program and conduct their own activities. Some equipment and lesson plans are available at the Center. Telephone (408) 262-5513 on weekdays from 8:00 a.m. to 4:30 p.m. for further information and reservations. There is no charge for use of the Center.

The Environmental Education Center contains no facilities for the general visiting public. Visitors are welcome to use the Center's parking lot and trails, but are requested not to enter the building or interfere with classes. The parking lot gate is locked at 4:30 p.m. on weekdays, and all day Saturday and Sunday.

Interpretive Programs

Refuge naturalists and volunteers offer a wide variety of films, guided walks and other activities. Call (415) 792-3178 for recorded program information, or pick up a schedule of events at the Visitor Center.

Teachers and group leaders who wish to schedule special activities should call (415) 792-0222 at least a month in advance.

Wildlife Observation

The hills, marshes and waterways of the Refuge are the home of hundreds of species of animals, yet visitors can walk right by most of this wildlife without ever seeing it! One secret to seeing more wildlife is to look quietly, since noise scares most animals away. Another is patience — take your time and look carefully. Binoculars and field guidebooks can help too.

Look for snails grazing on the mudflats, brine shrimp swimming in the salt ponds and spiders spinning webs among the hillside grasses.

Rabbits, ground squirrels, gopher snakes and other small animals are often seen along the Tidelands Trail. Please do not attempt to pet or feed them; they could bite, and human food is not good for them anyway!

Birds are here throughout the year but winter is the best time to see large flocks. Check at the Visitor Center for up-to-date birding information.

Trails

The Refuge is crisscrossed by miles of hiking trails. Trailheads are located at the Visitor Center, Alviso and Coyote Hills Regional Parks.

Trails are periodically closed due to levee maintenance. Check at the Visitor Center for the latest trail information.

All motor vehicles are prohibited on Refuge trails.



Photo by Don Weden

Boating

Recreational boating is permitted on San Francisco Bay and its tributaries, but not on salt evaporation ponds. Canoes and kayaks are recommended, since motorboats scare away wildlife.

Mallard Slough is closed to boaters from March 1 through August 31, and Mowry Slough is closed from March 15 to June 15, to protect sensitive wildlife species using these areas.

Many sloughs are empty of water at low tide. If your boat becomes stuck in the mud, wait for the next high tide to float it free. Don't attempt to walk out across the marshes and mudflats; you may become stuck in deep, soft mud.

Public launching ramps are located at Redwood City, Palo Alto and Alviso Marinas, and near the Refuge Visitor Center.

Camping

The Refuge is open during daylight hours only. Camping is available at many nearby parks and beaches.

Fishing

Fishing in San Francisco Bay and its tributaries must be done in accordance with California state fishing regulations. A fishing license is not needed by anglers using the Dumbarton and Ravenswood piers, which will open late in 1984.

Hunting

Certain areas of the Refuge are open to waterfowl hunting—a long-standing south Bay tradition in the fall and winter. Hunting information and regulations are available at the Visitor Center.

Firearms are prohibited except in designated hunting areas.

Pets

Pets are permitted only on the Tidelands Trail, which begins at the Visitor Center. They must be kept on a leash at all times.

Pets are prohibited inside the Visitor Center and elsewhere on the Refuge.

Closed Areas

Parts of the Refuge are closed to visitors for safety reasons, or to protect ecologically sensitive areas or private property.

Please obey signs!

Vandalism and Litter

Each year the Refuge must spend several thousands of dollars to repair vandalized signs and facilities. If you see vandalism occurring, please report it immediately. Help us save your tax dollars.

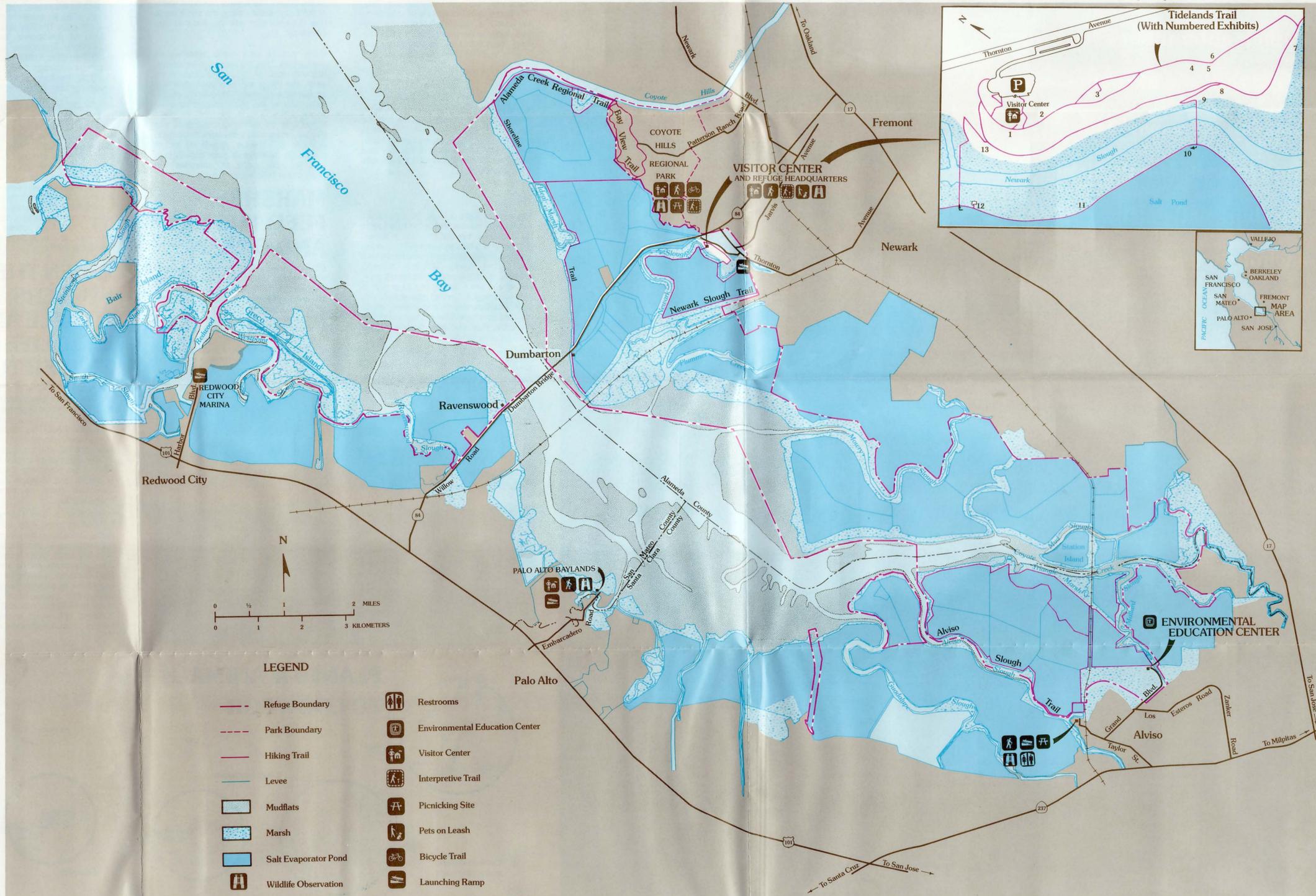
Please dispose of trash in the receptacles provided at the Visitor Center and trailheads, or take it home with you. Don't waste our time or your tax dollars to pick up litter!

Handicapped Access

Access for handicapped visitors varies extensively from facility to facility throughout the Refuge. Call or write for specific information.

For current recorded information 24 hours a day, call (415) 792-3178.

For more information contact:
San Francisco Bay National Wildlife Refuge
P.O. Box 524
Newark, CA 94560
Phone: (415) 792-0222



Mudflats

Mudflats are one of the Bay's most valuable and least appreciated resources. A double-handful of mud may contain 40,000 tiny living creatures—a veritable smorgasbord for the larger wildlife of San Francisco Bay.

Open Water

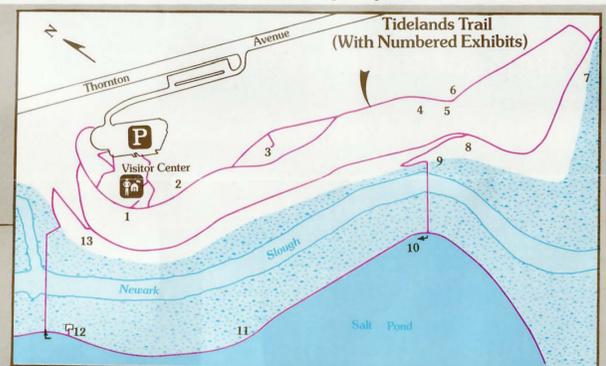
The Bay, creeks and sloughs within the refuge support populations of seals, fish, diving ducks and other birds.

Salt Marshes

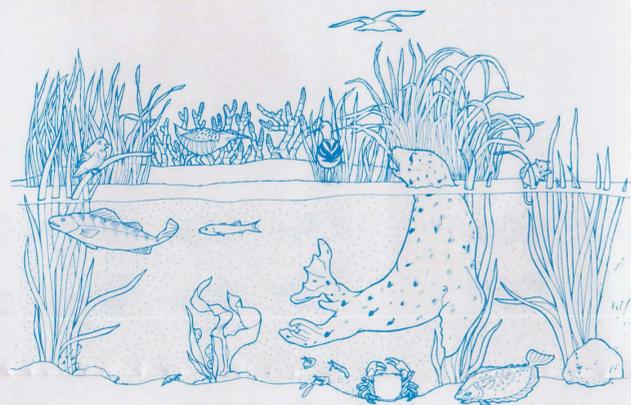
Salt marshes teem with life of all kinds, from tiny snails and crabs to fish, birds and seals. For some of these animals, the marsh is a permanent home; for others, it is a place to raise their young or rest during long migrations.

Salt Ponds

Salt evaporation ponds provide a resting and feeding area for many species of water birds. The water in these ponds evaporates in five years, leaving salt behind. The ponds' many colors are caused by bacteria and algae living in the water.



San Francisco Bay is many things to many people:
 a port of call for world commerce,
 a scenic view from a city hill, a vast sailboat basin,
 a moderator of the climate—to some, even a
 garbage dump and a cesspool. One
 aspect of the Bay that few
 people are aware of is its
 value as a habitat for fish
 and wildlife. People speeding along
 in their automobiles see little
 of the teeming life of the
 Bay, but those who take
 time to walk quietly along
 the shore will discover
 a whole new world.



HUNDREDS OF WILDLIFE SPECIES USE THE BAY

Over the course of a year, about 250 species of birds use San Francisco Bay. This figure includes millions of shorebirds and waterfowl, including half of the canvas-back ducks on the west coast. The Bay provides them with food, resting space and nesting sites—in short, all of the comforts of home.

Bird life is most abundant in fall and winter, when birds from Canada, Alaska and the Pacific Northwest converge on the Bay to escape the blizzards raging further north. Great "rafts" of ducks use the Bay and thousands of shorebirds crowd each mile of the shoreline.

These great flocks of birds, as spectacular as they are, merely hint at the richness of life in the Bay. Beyond the view of casual observers is a hidden world of living creatures as diverse as striped bass, mud snails and harbor seals. Valuable seafood species, including halibut, sturgeon, oysters, clams and crabs, spend all or part of their lives here. Billions of microscopic animals, shellfish, worms and insects live in the water and mud. A double handful of San Francisco Bay mud may contain 40,000 tiny living creatures!

Photo by Jeff Pohorski



Willet



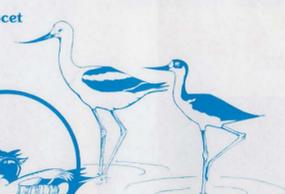
Cordgrass (left) and pickleweed



Least sandpiper



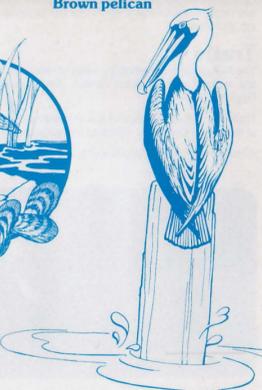
Shoveler



Black-necked stilt



Snails and mussels



Brown pelican

PLANTS & ANIMALS TO LOOK FOR

Photo by Bruce MacGregor

FISH AND WILDLIFE NEED SALT MARSHES

How does the Bay support such an abundance of life? The answer lies in the ability of the salt marshes along the shoreline to trap nutrients and use the sun's energy efficiently.

Many people view these marshes as wastelands. They are flat and monotonous, rich with odors of decay and clouds of insects. But things are not always what they appear to be, for these "wastelands" are actually one of the most productive living communities on earth. Sunlight, fertile soil contributed by rivers, and nutrients and oxygen brought in by the tides combine to promote a luxurious growth of marsh plants. So intensive is plant growth that, acre for acre, many salt marshes out-produce our best farms!

MARSHES FEED THE BAY AND OCEAN

Although animals eat some of the salt marsh vegetation, most of it eventually dies and decays. Tides and currents carry bits of decomposed plants, coated with bacteria and algae, throughout the Bay and into the ocean. Small animals like clams, worms and young fish feed on this material. These may, in turn, be eaten by seals, birds or other large animals in a complex food web that includes humankind.

PEOPLE NEED THE BAY

People benefit from the Bay in many ways. We harvest shellfish from the mudflats, and eat the herring, bass and crabs that spawn here. Birders and waterfowl hunters enjoy the great flocks of birds. Boaters take advantage of the deep central portion of the Bay, while hikers and photographers find the shoreline an excellent place to pursue their interests. The Bay also functions as a natural air conditioner, keeping nearby cities cooler in summer and warmer in winter than cities further away. Finally, the salt marshes along the shoreline are a natural water-treatment plant which cleanses wastes and toxic chemicals from the water.

People and wildlife both suffer when an area like San Francisco Bay is degraded. Once-common bird species become less abundant, and the quality of hunting and fishing deteriorates. There are fewer oysters and other shellfish to harvest, and many of the remaining ones are unfit for human consumption. Polluted water makes swimming and boating less pleasant, if not downright dangerous. Industrial development limits public access and enjoyment of the precious shoreline. Some wildlife species are pushed to the brink of extinction, or disappear forever from the face of the earth.

WHEN THE BAY SUFFERS, PEOPLE AND WILDLIFE SUFFER TOO

Despite the richness of life they support and the benefits they provide, many people still see little value in protecting San Francisco Bay and similar areas along the California coast. This "wasteland" attitude has led to the disappearance of 1/3 of San Francisco Bay and the destruction of 3/4 of its salt marshes in a little over a century. Other bays along the California coast—Humboldt and Newport Bays, for example—have fared no better than San Francisco Bay.

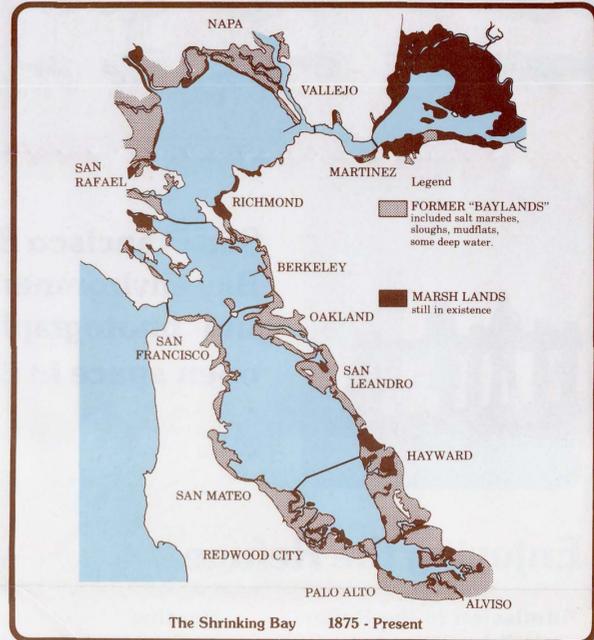
Destruction of San Francisco Bay has taken many forms. Fifty-thousand acres of marsh have been transformed into evaporation ponds in order to extract the salt from Bay water. Other marshes have been drained to create land for homes and industries. Some areas along the shoreline have been filled for airports, railroads and highways, while others have been dredged away to build marinas and port facilities. Garbage and liquid wastes have been spread on the marshlands and poured into the water.

A QUEST TO SAVE THE BAY

By the 1960's local citizens were becoming alarmed at the rapidity of the Bay's destruction and mobilized to save some of what was left. Their action resulted in the creation of this 23,000 acre National Wildlife Refuge in 1972. The Refuge protects a variety of natural and man-made habitats for wildlife, and provides opportunities to enjoy and learn about the Bay environment.

Citizen interest also resulted in the acquisition of shoreline property by the National

Park Service, East Bay Regional Park District and other agencies, and in the formation of the San Francisco Bay Conservation and Development Commission to regulate shoreline development. In addition to managing San Francisco Bay National Wildlife Refuge, the Fish and Wildlife Service manages several other Bay Area Refuges, inventories Bay resources, conducts wildlife and fisheries research, and cooperates with other agencies to monitor and regulate all activities which may affect Bay resources.



PROTECTING THE BAY IS EVERYBODY'S JOB!

An unpolluted San Francisco Bay, with abundant wildlife and a publicly accessible shoreline, is a legitimate and attainable goal. Whether or not this goal will be reached depends on whether enough people care, and care enough to act upon their conviction. Government agencies can't do it alone.

You can help by:

1. Understanding the effects of pollution, dredging, filling and shoreline development upon the Bay and its wildlife.
2. Joining conservation groups that support the preservation of baylands and fight against water pollution.

3. Voicing your opinions to elected officials.
 4. Voting for people and projects that protect the Bay.
- Ultimately, the Bay's future will be determined by people just like you!

"San Francisco Bay, with all its beauty and immense human pressures, is just one of many places with a problem. It's up to the people whether the Bay lives as an example to the world, or dies as a dreadful warning."

— from "Shall The Bay Live"

