

AUTUMN 2009

Volume 30, Number 3

Tideline



Don Edwards / Antioch Dunes / Ellicott Slough / Farallon Island / Marin Islands / Salinas River / San Pablo Bay

The National Wildlife Refuge System – One of America’s Greatest Success Stories

U.S. Fish and Wildlife Service

If you travel much in the wilder sections of our country, sooner or later you are likely to meet the sign of the flying goose—the emblem of the National Wildlife Refuges.

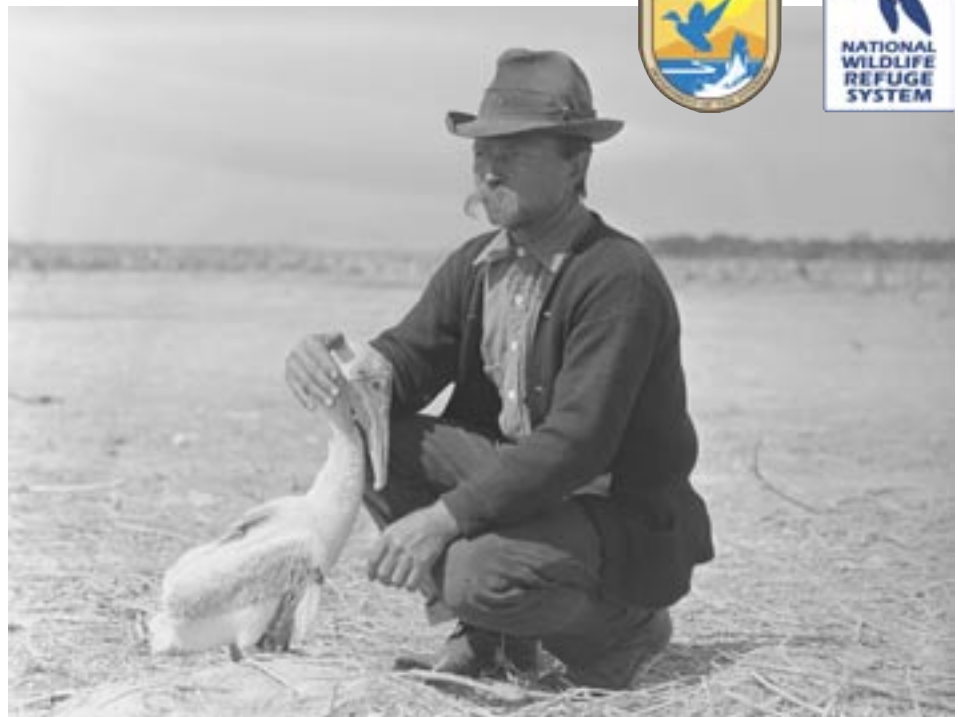
You may meet it by the side of a road crossing miles of flat prairie in the middle West, or in the hot deserts of the Southwest. You may meet it by some mountain lake, or as you push your boat through the winding salty creeks of a coastal marsh.

Wherever you meet this sign, respect it. It means that the land behind the sign has been dedicated by the American people to preserving, for themselves and their children, as much of our native wildlife as can be retained along with our modern civilization.

—Rachel Carson

For more than a century, National Wildlife Refuges have partnered with countless numbers of individuals and organizations to successfully conserve our nation’s fish, wildlife, and plants. Administered by the U.S. Fish and Wildlife Service, the system has grown to more than 545 National Wildlife Refuges, encompassing more than 95 million acres.

The birth of the National Wildlife Refuge System has been accredited to President Theodore Roosevelt when he signed an executive order to establish 3-acre Pelican Island as the first Federal Bird Reservation. Although there had been



Paul Kroegel, first wildlife warden. Photo: FWS

earlier federal actions to protect wildlife resources on designated areas, such as in 1869 when President Ulysses S. Grant identified the Pribilof Islands in Alaska in need of protection for the northern fur seal, it was the first time that land was set aside specifically for the sake of wildlife. The Pribilof Islands, located in the Bering Sea, were the site of the world’s largest rookery of the commercially valuable northern fur seals. The Federal government had an interest in obtaining revenue from the management of the fur resource.

Pelican Island provided habitat for brown pelicans and other water birds. It was the first of its kind to be set aside for a non-marketable form of wildlife. Paul Kroegel, the first warden employed by the government, was paid \$1 a month by the Florida Audubon Society since funds had not been set aside by Congress to manage and protect the reservation.

This action, along with increasing public support for protecting the country’s

continued next page

wildlife resources after witnessing the near extinction of the bison and increased devastation of wading bird populations by plume hunters in Florida spurred the protection of several other islands and parcels of land and water.

The need for sound management of these reservations or refuges had become apparent as the knowledge of preservation and conservation requirements grew. In 1905, the Bureau of Biological Survey was established with the responsibility for new reservations and “set-aside” areas. During this period, sea bird populations on the Pacific coast were declining due to their extensive exploitation for eggs, feathers and guano. In response to this growing bird resource threat, Federal reserve status was granted to Quillayute Needles, Washington in 1907 and to Farallon Islands, California and areas of the Hawaiian Islands in 1909. By the time he left office in 1909, President Roosevelt issued 51 Executive Orders that established wildlife reservations in 17 states and three territories.

It wasn't until 1929 when the reservations became known as a “Refuge System.” Wildlife reservations, established primarily by Executive Order, were still for the

most part too few and too small to ensure adequate protection of such wide-ranging migratory species as waterfowl and shorebirds. Initial attempts to provide for the systematic acquisition of new lands for refuges had begun in 1921. A bill was introduced in Congress that would establish a “Refuge System,” a Migratory Bird Refuge Commission, and a one-dollar Federal hunting stamp. The bill was rejected four times during the next eight years. Finally, in 1929, it became law under the Migratory Bird Conservation Act, but only after it was stripped of any provisions for refuge hunting areas and a Federal hunting stamp. The costs for managing and expanding the system were to be funded by Congressional appropriations. Despite these shortcomings, this Act provided the authority under which the National Wildlife Refuge System grew in the years that followed.

A major stimulus for the Refuge System came in 1934 with the passage of the Migratory Bird Hunting and Conservation Stamp Act (known as the Duck Stamp Act). The Act's later amendments increased the price of the stamp providing a continuing source of revenue for acquisition of migratory bird habitat. They also authorized that a part of a refuge's area could be opened to waterfowl hunting.

For several decades the Bureau of Biological Survey had remained in the Department of Agriculture and the Bureau (formerly Commission) of Fisheries in the Department of Commerce. In 1939 both bureaus were transferred to the Department of the Interior through an Executive Branch reorganization. They were merged to form the Fish and Wildlife Service in 1940. Then in 1956, two bureaus were formed under the U. S. Fish and Wildlife Service-- the Bureau of Sport Fisheries and Wildlife (which included the Division of Wildlife Refuges) and the Bureau of Commercial Fisheries. Subsequently, the Bureau of Commercial Fisheries was transferred in 1970 to the Department of Commerce and became the National Marine Fisheries Service, while the Fish and Wildlife Service still remains a bureau of the Department of the Interior.

The Fish and Wildlife Act of 1956 established a comprehensive national fish and wildlife policy and broadened the authority for acquisition and development of refuges. The funds necessary to implement this authority, however, were not immediately forthcoming. Without increased funding, land acquisition during the 1950's could



Theodore Roosevelt

not keep pace with the high rate of drainage (primarily due to intensive agricultural development) of waterfowl breeding habitat in the prairie pothole country.

To remedy this situation, Congress passed an amendment to the Duck Stamp Act in 1958 which authorized the Waterfowl Production Area (WPA) program. To fund the WPA program and accelerate the wetland preservation effort, Congress also passed the Wetlands Loan Act of 1961. As later amended, this Act authorized a loan of \$200 million to be spent over a period of 23 years and to be repaid from duck stamp revenues.

Recognizing new public demands for recreational activities after World War II, Congress passed the Refuge Recreation Act of 1962. This Act authorized the recreational use of refuges when such uses did not interfere with the area's primary purposes and when sufficient funds were available to conduct recreational activities. The Act also clarified the appropriateness of public use on refuges, encouraged efforts to provide wildlife-oriented recreation, interpretation and environmental education activities, and required that such uses be compatible with the purposes for which the lands were acquired.

Perhaps the law of greatest significance to wildlife refuges since the Migratory Bird Conservation Act of 1929 has been the National Wildlife Refuge System Administration Act of 1966. The Act provided guidelines and directives for

Did you know:

- Wildlife refuges are home to more than 700 species of birds, 220 species of mammals, 250 reptile and amphibian species, and more than 200 species of fish.
- Wildlife refuges provide habitat for more than 250 threatened or endangered plants and animals, including manatees, California condors, and the Antioch Dunes evening primrose.
- Each year, millions of migrating birds use refuges as stepping stones to rest as they fly thousands of miles south for the winter and return north for the summer.
- Numerous waterways and coastlines restore and protect important fisheries like bluefish, bass, and walleye.
- There are seven National Wildlife Refuges in the San Francisco Bay and Monterey Bay Areas.

administration and management of all areas in the system including “wildlife refuges, areas for the protection and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, game ranges, wildlife management areas, and waterfowl production areas.”

In addition, the 1966 law established the standard of “compatibility,” requiring that uses of refuge lands must be determined to be compatible with the purposes for which individual refuges were established. This standard was later strengthened and clarified in the National Wildlife Refuge System Improvement Act of 1997.

In 1997, Congress provided much-needed organic legislation with the passage of the National Wildlife Refuge System Improvement Act. This legislation amended the National Wildlife Refuge System Administration Act of 1966 and provided significant new guidance for the management of the Refuge System. It provided a new statutory mission statement and directed that the Refuge System be managed as a national system of lands and waters



Photo by Lee Karney

devoted to conserving wildlife and maintaining biological integrity of ecosystems. The law also clarified management priorities by declaring that certain wildlife-dependent recreational uses are appropriate activities on refuges, strengthened the compatibility determination process, and required the Service to undertake comprehensive conservation planning for each refuge.

From the earliest years national wildlife refuges have played a major role in the evolution of resource conservation in the United States. The history of the Refuge System is the history of farsighted actions,

untiring efforts, and generous donations from untold numbers of dedicated individuals from both government and private sectors. These individuals have recognized that our wildlife resources are an invaluable national heritage. They have collectively pressed for their protection and won, often against conflicting interests. As we approach National Wildlife Refuge Week October 10-17, 2009, it is a good time to reflect upon the collective efforts of these dedicated people in creating what is regarded as the largest and most outstanding wildlife conservation program in the world – the National Wildlife Refuge System.

For more information on the fascinating history of the National Wildlife Refuge System, and the people who helped make it what it is today, log on to www.fws.gov/refuges/history.

Come celebrate the National Wildlife Refuge System during National Wildlife Refuge Week and take part in one or all of the scheduled events! See the activity pages in this issue, or log on to www.fws.gov/desfbay/refugeweek.htm.

Projects provide a lifetime of opportunity

In my 25-year career with the U.S. Fish and Wildlife Service, I have had the opportunity to live in five states and work on several National Wildlife Refuges. Most of my jobs have been in urban areas such as Atlanta, Georgia; central and south Florida; Memphis, Tennessee; Washington, DC; southern and now northern California. In our agency, moving around the country is encouraged as a way to gain a diversity of experiences to perform our jobs better. Looking back, I saw each of my moves to a new city as an opportunity to experience new wildlife, new people, new outdoor adventures, new challenges and yes, new opportunities.

Over the years my life has changed; I married and now have two wonderful children. Moving again has less appeal. You might think this is because of the difficulties of moving; leaving behind friends and colleagues and engaging the learning curve of another new job. While these are factors, I am not sure these are the only reasons. I am beginning to believe it is because the opportunities in the Bay Area and the San Francisco Bay National Wildlife Refuge Complex are so vast they will take a lifetime to fully experience.

Opportunities abound in the San Francisco Bay Area - socially, culturally and environmentally. As public support for a more natural and sustainable ecosystem pours in, the Bay Area's landscape is

Recovery and Reinvestment Act, commonly called the stimulus bill, will provide additional funds for restoration around the bay. Already, stimulus funding is helping us enhance projects started earlier this year to



Refuge Reflections

by Mendel Stewart

transforming. The South Bay Salt Pond Project on the Don Edwards San Francisco Bay NWR is moving forward with projects designed to improve wildlife habitat while providing places for people to reconnect with the bay in locations that had been cut off from the public for generations. Hundreds of acres of former commercial salt ponds, both on the refuge and at the Eden Landing Ecological Reserve, are being converted to places for wildlife and people.

Future opportunities look bright also. It was recently announced that the American

provide a universally accessible visitor center with improved exhibits, and to modernize our offices and special events auditorium /conference room.

Perhaps these are the opportunities I have been searching for all these years... opportunities to do good things with great people in a great location.

If you would like to learn more about bay restoration please see www.southbayrestoration.org. You can also download audio tours about the Don Edwards Refuge at www.yourwetlands.org/audio_tours.htm

Outer Bair Island Restoration Completed!

By Renée Spenst, Ducks Unlimited

After a century of absence, tides now flow in and out of Outer Bair Island. This is the first completed component of a larger restoration project aimed at restoring 1,400 acres of the entire 2,600-acre Bair Island complex. Historically, the island complex (composed of Inner, Middle, and Outer Bair Islands) located in Redwood City was part of a large expanse of tidal wetlands that extended along the southeastern edge of San Francisco Bay. The island complex was diked and drained for agriculture in the late 1800's. In 1946 the area was converted to salt production, which continued until 1965.

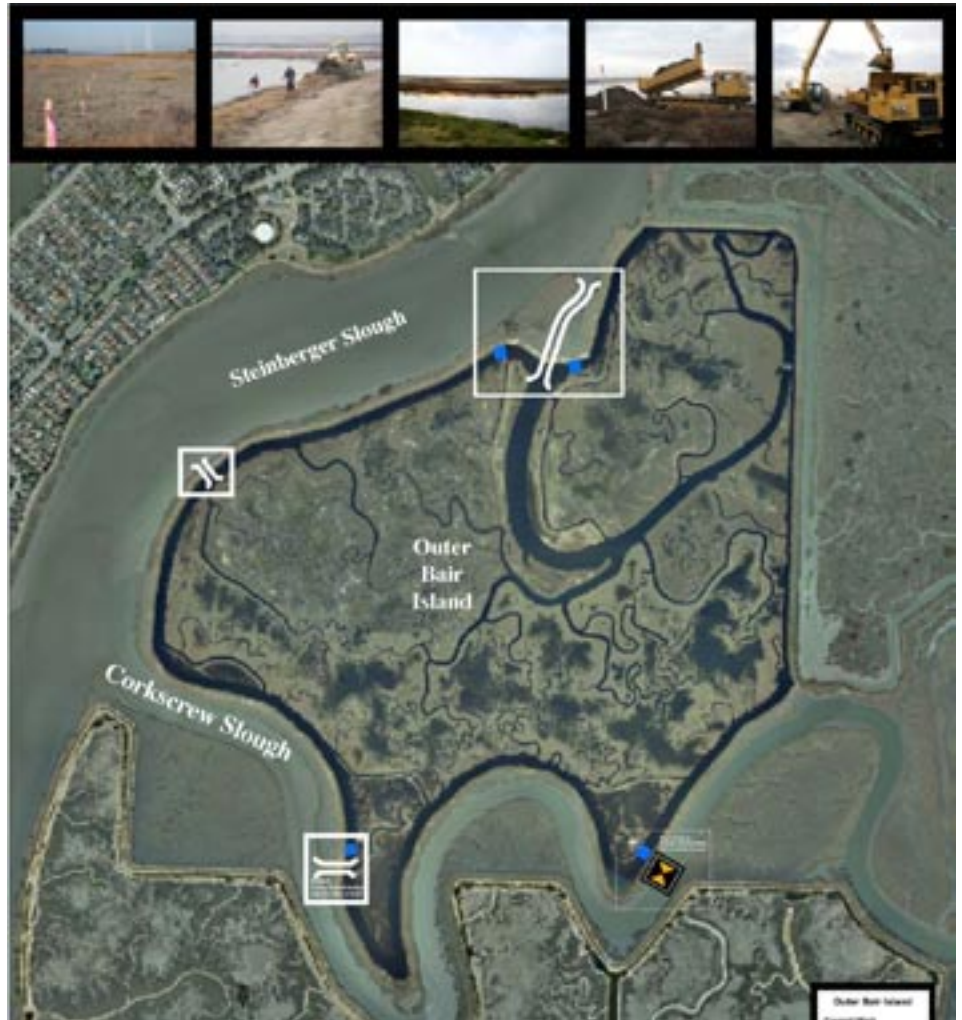
The broader restoration goal is to restore tidal marsh to all three islands in the Bair Island Complex. Restoration will occur in stages. Timing for restoration of Middle and Inner Bair is dependant on completion of fill placement on Inner Bair. Currently, beneficial re-use fill planning and implementation efforts are under way and projected to be completed in four years. The restoration of Outer Bair Island proceeded independently of work on Inner and Middle Bair and is the beginning of the long process of restoring some of the historic wetland functions and values to this unique area.

The goal of the 468-acre Outer Bair project is to restore a more natural tidal hydrologic regime and salt marsh habitat on Outer Bair Island. To complete the restoration, several specific construction activities were required.

First, the perimeter levee was breached in two locations to restore tidal exchange between Steinberger Slough and remnant tidal sloughs within the island (see map). This phase was complicated due to the difficult site access and large tidal variations. Work could only proceed during higher tides, when an airboat was normally used to access the island. Given the tidal cycle, some of the residents became overly familiar with the buzz of its engines during the early morning hours.

Second, a pilot channel was excavated through the perimeter marsh at the eastern breach to reconnect a historic slough in the island's interior to Steinberger Slough. This portion of the project required a specialized hydraulic dredge from Seattle to work in the challenging tidal areas.

Third, the internal borrow ditch



Map of Outer Bair Island Breaches. Photo Courtesy of Ducks Unlimited

created to build the perimeter levees for agriculture and salt production was blocked with earthen plugs on each side of the large breach in order to direct tidal flow into historic slough channels. The dredged material from the pilot channel was used to fill portions of the borrow ditch to further promote natural tidal restoration.

This project will have a myriad of benefits for people and wildlife. Restoration of system dynamics, in conjunction with an invasive species control and native vegetation planting effort will increase the quality and quantity of habitat for listed species such as California Clapper Rails and Salt Marsh Harvest Mouse. Resident and wintering waterfowl and shorebirds will also benefit from the restored shallow water and mudflat habitat resulting from reintroduced tidal fluctuations. Furthermore, tidal action and the improved tidal flushing regime should decrease the amount and duration of

standing water and will assist with mosquito control, an important aspect given the potential for West Nile Virus vectors within close proximity to a large urban area.

Projects such as this do not happen quickly or without plenty of participation. Ducks Unlimited completed this project with the help of many partners, including U.S. Fish and Wildlife Service, California Department of Fish and Game, California Wildlife Conservation Board, California Coastal Conservancy, North American Wetlands Conservation Council, Kenneth A. Lester Family Foundation, and Moffatt & Nichol. Particular recognition is warranted for the Peninsula Open Space Trust, which initially helped preserve the island complex, and most recently stepped into the gap left by California's budget crisis to provide interim funding towards the completion of this project.

Web Cam Provides Real-Time Access to National Wildlife Refuge Known as “California’s Galapagos”

U.S. Fish and Wildlife Service

An innovative partnership of government agencies and California non-profits is providing the public unprecedented access to one of the oldest and most remote wildlife sanctuaries in the nation, the Farallon National Wildlife Refuge. A first-ever live web cam was recently activated (June 8) that beams live pictures of bird and ocean activity to a worldwide audience from the remote island refuge, located in the Pacific Ocean 27 miles west of San Francisco.

The webcam is the result of a partnership between the U.S. Fish and Wildlife Service, California Academy of Sciences and PRBO Conservation Science. The camera, hosted on the California Academy of Science website at: <http://www.calacademy.org/webcams/farallones>, provides real-time access to the 100-year old refuge, which hosts the largest seabird colony in the continental United States.

The solar-powered camera is perched atop a lighthouse on top of Southeast Farallon Island, one of four island groups that make up the Farallon NWR. The webcam provides clear views of the seabirds, seals, and possibly even sharks that inhabit the rocky islands and surrounding waters. The live webcam feed is accompanied by animal identification guides, Farallones history, and research and conservation information.

The Farallon National Wildlife Refuge was established in 1909 by President Theodore Roosevelt “Öas a preserve and breeding ground for native birds.” The 211-acre refuge is managed as part of the San Francisco Bay National Wildlife Refuge Complex and consists of four island groups- Noonday Rock, North Farallon, Middle Farallon and South Farallon. Approximately 350,000 seabirds of 13 species breed, and thousands of five species of seals and sea lions breed or haul out the islands. Gray whales, blue whales, and humpback whales migrate and feed off the islands every year. The area is also an important feeding ground for great white sharks.

“We’re proud to have this outstanding partnership and pleased to provide virtual access of these beautiful and amazing islands to the public,” says Gerry McChesney, Acting Refuge Manager. “This way anyone can appreciate what it’s like to be on this very sensitive wildlife refuge.”

The webcam is an Axis 233D network dome camera with half hi-definition resolution. It beams image data via a microwave link between Southeast Farallon Island and

San Francisco’s Twin Peaks. The pan, tilt, and zoom features of the camera provide 360-degree views of the islands. The camera automatically scans the islands when not being controlled remotely by research staff. Network infrastructure for the webcam was provided by the City and County of San Francisco’s Department of Technology.

“Since the islands are not accessible to the general public, the webcam will be a valuable tool not only for scientists, but for casual observers as well,” says Dr. Jack Dumbacher, curator of ornithology & mammalogy at the California Academy of Sciences and lead scientist on the project. “The wildlife observations that we glean from this webcam will assist with ongoing research, guide conservation decisions, and hopefully inspire citizens to care about this valuable resource right in San Francisco’s backyard.”

Over 40 years of data on Farallon Islands’ wildlife have been collected by PRBO Conservation Science in cooperation with the U.S. Fish and Wildlife Service. The findings of these long-term studies have assisted with the establishment of the adjacent Gulf of the Farallones National Marine Sanctuary, contributed to state laws that protect white sharks and restrict use of commercial gill nets, and provided a greater understanding of marine ecosystem conservation.

“The Farallon Islands are California’s

Galapagos - truly a jewel of the San Francisco Bay Area that supports an amazing abundance of seabirds, seals, sea lions and sharks,” says Ellie M. Cohen, President and CEO of PRBO Conservation Science. “We are thrilled to bring PRBO’s 24/7 research and stewardship on this rocky laboratory to the public through this new website.”



Above: California Sea Lions

Photo: USFWS/Zachary Coffman



Get outside!

All summer long create memories with your digital camera that will last a life time.



Upload your favorite nature photos to our new Image Mosaic at www.fws.gov/letsgooutside. Watch your image become part of a painting created by one of the world's greatest wildlife artists, Robert Bateman.

Habitat Restoration and Construction Volunteers Needed on the Farallon Islands

Come participate in restoration activities and minor construction projects on the Farallon Islands. Volunteers are needed for two to three-day stays. Primary activities will include pulling non-native vegetation by hand, helping U.S. Fish and Wildlife Service biologist inventory non-native plants and assisting in minor construction projects. Experience is highly preferred! As is good spirits, the ability to carry heavy objects, work outside for an extended period of time doing laborious work and work on your hands and knees. Open ocean travel to the island by boat and all meals will be provided.

If interested please email Zach Coffman at zachary_coffman@fws.gov and include a resume with applicable experience and a daytime phone number.

Swim on by for...

SHARK DAY

At the Don Edwards San Francisco Bay
National Wildlife Refuge
Environmental Education Center
1751 Grand Blvd, Alviso



Saturday, October 3rd, 2009

12:00 p.m. - 3:00 p. m.

Pet a live leopard shark, discover mud creatures, have your face painted, make shark crafts, and much, much more!

All activities are FREE!

For more information and driving directions,
call 408-262-5513

or visit <http://www.fws.gov/desfbay>

Sponsored by the U.S. Fish and Wildlife Service, San Francisco Bay Wildlife Society, Santa Clara Valley Urban Runoff Pollution Prevention Program, and the City of San Jose



SAN PABLO BAY NATIONAL WILDLIFE REFUGE

Join us in the North Bay for these **FREE** events!

Fall Events 2009

October through January

Native Planting Days TBA

Come work with our restoration team! We will be planting natives as a part of our efforts to restore & enhance natural habitat for wildlife on the refuge. Bring your own work gloves and wear your gardening duds. Please refer to our website for further information. Reservations will be required!



Saturday, December 5th

"Holly Days" for the Birds:

Refuge Headquarters

Learn about wintering birds on the refuge & the native plants they enjoy. Find out what you can do to help wild birds in your own backyard. Make a winter bird treat to take home (*note: may contain peanuts!*) More info can be found on our website.

Reservations required!



Additional Information:
www.fws.gov/sfbayrefuges
Call 707-769-4200 for RESERVATIONS

SP Bay NWR
7715 Lakeville Hwy
Petaluma, CA 94954

Don Edwards San Francisco Bay
National Wildlife Refuge

Presents

Coastal Clean-Up Day

Dumbarton Fishing Pier Parking Lot
Marshlands Rd, Fremont

Saturday, September 19, 2009

8:30 a.m. - 12:00 p.m.

Join thousands of people around the world for
International Coastal Clean-Up Day.
Help wildlife and the environment in your own backyard.
We'll supply plastic gloves and trash & recycling bags.
You supply energy, sturdy shoes, sun protection, and
clothes you don't mind getting dirty.

RESERVATIONS REQUIRED!

Call 510-745-8695 to sign up.

Space is limited to 75 people.

Children under age 18 must have parental approval.

For more information, contact Carmen Minch
at 510-745-8695

Connections to Pier Fishing

Don Edwards San Francisco Bay National
Wildlife Refuge in Fremont

Saturday, October 17

8:00 a.m. - noon

Learn how to fish on the Dumbarton Fishing
Pier! Space is limited to the first 50 people.
All equipment will be provided. Please come
on time. Call 510-745-8695 for reservations.
For more information, see page 12.



Don Edwards San Francisco Bay National Wildlife Refuge and REI Outdoor School present

The Amazing Refuge Race

October 10, 2009 • 2:00 p.m.

**In celebration of National Wildlife Refuge Week,
Don Edwards San Francisco Bay National Wildlife
Refuge is hosting its first Amazing Refuge Race!**

Armed with GPS units, you and your team will "race" against other teams by attempting to complete required tasks on the refuge. Teams must try to locate a given set of coordinates using a GPS unit. Once at that location, the team works together to complete a task. When that task is completed, the team will receive the next set of coordinates. The team that completes all tasks and arrives at the finish first wins!

Intrigued? Log on to <http://www.fws.gov/desfbay> or call Carmen at 510-377-9229 for additional information and rules. Don't have a GPS unit? Borrow one from REI Outdoor School at the refuge on the day of the race. Take a 1-hour introductory course at 12:30 p.m. to learn how to use the unit.

Registration is required! You may register up to 5 people for your team. There is a minimum of 2 people per team. The refuge may place individuals on teams containing fewer than 5 people to ensure maximum participation. Registration deadline is September 30, 2009. Call 510-745-8695 to register. There is no cost to enter.



Don Edwards San Francisco Bay National Wildlife Refuge
2 Marshlands Rd., Fremont, CA 94560 510-745.8695

Thank you San Francisco Bay Wildlife Society Donors!

We gratefully acknowledge the following donors who have made gifts to the San Francisco Bay Wildlife Society between April 1, 2009 and July 17, 2009. These gifts will be used for publishing *Tideline*, capital, environmental education, habitat restoration, and interpretive programs at the Don Edwards San Francisco Bay National Wildlife Refuge.

Employer Matching Gift Program

Cisco Employees and SanDisk Corporation

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Helen E Conway and United Airlines

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Phyllis Browning, Arthur & Big Al Garibaldi, Richard & Imogene Hilbers, and Jens Steineke

Supporter

Wilfred Baer, John C Giles, Laurence E Stearns, and Carol Wolf

Family

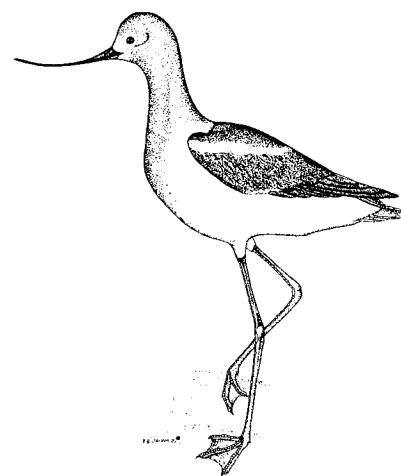
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Senior/Student

Jack Alex, Harriette Atkins, Ruth Bailey, Patricia Berg, Lyle P Bickley, Charles Brownold, Anne Braham, Patricia Callaway, Mary M Davis, Steve Ferguson, Elsie Fraument, David S Ginsburg, Margaret Howden, George J Kern, Miriam F Leiseroff, Sister Clarice Lolich, Alberto Martinez, Miranda L Miller, Howard Pfozter, David Stronck, and Eric D Winch



Help Us Help the Refuge

Mail your donation to: **San Francisco Bay Wildlife Society, P.O. Box 234, Newark, CA 94560.** You may also fax your membership donation using a Visa or MasterCard number to 510-792-5828.

For a gift membership, call 510-794-8170.

San Francisco Bay Wildlife Society is a nonprofit 501(c)(3) organization which raises money and awareness for the San Francisco Bay National Wildlife Refuge Complex.

YES! I want to support San Francisco Bay Wildlife Society and its programs with my membership. My dues include a subscription to *Tideline* and 15% discount at the Don Edwards SF Bay National Wildlife Refuge bookstore. Enclosed is my contribution of:

- \$20 Student/Senior \$50 Family \$100 Participant \$250 Sponsor \$1,000 Leader
- \$35 Individual \$75 Supporter \$200 Corporation \$500 Sustainer

Check Visa or MasterCard # _____ Exp. Date _____

Signature _____

Name _____

Address _____ City _____ State _____ Zip _____

Phone _____ *Thank you for your support!*

June Smith receives highest volunteer award!

By Carmen Minch

"Under June's green thumb, her passion for native plants, and her willingness to step up as volunteer manager, our Refuge Complex's Native Plant Nursery blossomed. Thanks to June's dedication, the nursery is now a valuable resource for restoration, wildlife habitat creation, and public education." With these heartfelt words of appreciation, June was honored as *Volunteer of the Year* for the San Francisco Bay National Wildlife Refuge Complex at the annual Volunteer Appreciation Banquet held on June 20, 2009.

Her knowledge and ability became immediately apparent when she started volunteering at the nursery many years ago and refuge staff soon began to seek out June's expertise in native plants, propagation techniques for habitat restoration and landscaping, and even identification! When it was time to expand and update the native plant nursery, June was involved with the design and construction of the new greenhouse. June continues to be instrumental in assisting the Volunteer Coordinator in managing volunteers who work at the

nursery and community groups who come to help control invasive vegetation. She can always be counted on to accept and supervise volunteers of all ages, including children from elementary school, high school students needing community service hours, and Eagle Scouts who are completing projects.

June's volunteer service even extends far beyond the native plant nursery. She is involved with several special events and interpretive programs throughout the year. She runs the plant sale every year during National Wildlife Refuge Week, assists with annual events like Spooky Slough, South Bay Bird Fest, and summer camp, and develops and leads seasonal wildflower walks and the ever-popular Webelos Naturalist Badge program.

Sometimes it is difficult to believe June's not a staff member. Her dedication, hard work, and expertise are traits we have come to rely on while her unfailing enthusiasm and happy nature make her a joy to be around.

June, our sincerest gratitude and appreciation for you do!



National Wildlife Refuge Week October 10-17



Annual Sale of Native Plants Saturday, October 10, 2009 1:00 p.m. - 4:00 p.m.

Help save water use by landscaping your yard with California native plants. Attract hummingbirds and butterflies to your neighborhood. Sale will be held at the Visitor Center located at the first parking lot to your right.

Don Edwards San Francisco Bay National Wildlife Refuge
2 Marshlands Rd, Fremont, CA
For more information, call Carmen Minch at 510-745-8695.

Autumn Activity Schedule

September

Saturday, September 5

* Marshlands of Dreams

Visitor Center, Fremont
10:30 a.m. – 11:30 a.m.

Join a refuge ranger on a 1-mile walk of the LaRiviere Marsh Trail to find traces of the past. Prior to marsh restoration, learn how Californians utilized the area for farming, quarrying, salt production, and transportation. There are opportunities for bird watching as well. Led by Paul Mueller.

Sunday, September 6

* Plankton Power

Environmental Education Center, Alviso
2:00 p.m. - 3:30 p.m.

What does plankton really look like? What do they actually do? Here is your chance to find out during this exciting program! Participants will help collect a plankton sample from our salt pond and then observe real-life plankton using microscopes and other tools. RESERVATIONS REQUIRED – All ages are welcome. Call Eric at 408-262-5513 ext. 104.

Saturday, September 12

* Alviso Slough Trail - 9-mile loop

Meet by the restrooms in Alviso Marina, Alviso
Directions below.
8:30 a.m.

Let's Go
Outside!

Meet new people while getting fit and healthy! This is the seventh walk featured in the Refuge Rambler club. This trail is nine miles, flat, and level. The walk is self-paced and you may

turn back at anytime. Hats, water, and sunscreen are strongly recommended. There are no restroom facilities once on the trail. You do not need to be a Refuge Rambler to join this walk. No reservations are needed. A refuge representative will be there to greet you at 8:30 a.m. Directions: From Hwy 237, exit at Lafayette/Gold St. Head north onto the Gold St. Connector and left onto Gold St. Turn left onto Elizabeth St. and right onto Hope St., which leads straight to the Alviso Marina.

Cruisin' Towards Restoration

Environmental Education Center, Alviso
9:30 a.m. – 12:00 p.m.

The salt ponds of the South Bay are undergoing an amazing transformation. We'll journey by van out into this unique landscape to discover the rebirth of the Bay's edge through wetlands restoration. Recommended for ages 12 and over. Space is very limited. RESERVATIONS REQUIRED. Call Jennifer at 408-262-5513 ext. 106.

* Junior Girl Scout Wildlife Badge

Environmental Education Center, Alviso
10:00 a.m. – 12:00 p.m.

Calling all Junior Girl Scouts of Santa Clara County! Anyone out there need to earn a Wildlife badge? Come to the Wildlife Refuge and learn about features of different creatures, observe animal behavior, hear how you can help wildlife, and so much more. Take a walk to explore the habitats. Maximum ratio of 1 adult for every 5 children. Space is limited to 20 people and program fills quickly. **Reservations for fall scout programs begin on Thursday, August 27 between 3 p.m. - 4 p.m. and will continue until program is booked.** Call Debra at 408-262-5513 ext. 102. Note: badges are not provided.

Exploring the Dunes

Antioch Dunes NWR, Antioch
10:00 a.m. – 11:00 a.m.

Here's your chance to explore this refuge that is usually closed to the public. This guided tour (1-1.5 mile) will focus on the wonders of Antioch Dunes National Wildlife Refuge. Wear sturdy shoes for the sandy hike along the dunes. All ages welcome. No reservations required. No facilities. Contact 510-521-9624 for additional information and directions.

* Life at the Bottom of the Food Chain

Visitor Center, Fremont
10:00 a.m. – 12:00 p.m.

Wetlands microbes are often called "the lungs of the earth." Explore the dynamics of microbial communities in LaRiviere Marsh. Join microbiologist Wayne Lanier, PhD for a brief presentation in the Visitor Center; then a microscope hike to LaRiviere Marsh where we will sample and view the most ancient creatures on earth. See how they produce the oxygen we breathe and take up the carbon dioxide we produce. Ages 9-90 years. Call 510-745-8695 for reservations.

Sunday, September 13

* Beginning Bird Watching

Environmental Education Center, Alviso
9:30 a.m. – 11:15 a.m.

Ever wonder what birds we have in our own community? Come learn about the many local and migratory birds. We'll start with a slide show indoors to learn how to recognize the regulars, then borrow binoculars and take a walk to try out your new skills. All ages welcome. Reservations required. Call Debra at 408-262-5513 ext. 102.

Webelos Naturalist Program

Visitor Center, Fremont
10:00 a.m. – 12:00 p.m.

Attention Webelos! Earn your naturalist badge in just two hours. During this hike, learn about birds, flyways, food chains, and the importance of wetlands. Bring your binoculars, or borrow one of ours. Space is limited to 15 Webelos. Call 510-745-8695. Led by June Smith.

* Drawbridge Van Excursion

Environmental Education Center, Alviso
1:00 p.m. – 3:30 p.m.

There's a ghost town in the San Francisco Bay? That's right! Nestled on an island in the salt marsh of South San Francisco Bay, the town of Drawbridge once boomed. Was it a quiet, peaceful town full of nature-lovers, or a rip-roaring town full of two-fisted rowdies? Led by Ceal Craig. We'll start with a slide show, then take a short van excursion to view Drawbridge across Coyote Creek. Program is intended for adults and space is very limited. RESERVATIONS ARE ESSENTIAL. Call Debra at 408-262-5513 ext. 102. Note: we do not go into the town itself – we go to the closest spot that one can legally view Drawbridge.

Saturday, September 19

Coastal Cleanup Day

Dumbarton Fishing Pier, Fremont
(2.5 miles past the Visitor Center)
8:30 a.m. – 12:00 p.m.

Join thousands of people around the world for International Coastal Clean-Up Day. Bring a hat, sturdy shoes, water, sunscreen, and gloves if you have them. Space is limited to 75 people. Children under 18 must have parental approval. For reservations call the Visitor Center at 510-745-8695.

Community Service

Environmental Education Center, Alviso
10:00 a.m. – 12:00 p.m.

Do you need to fulfill community service requirements? Or would you just like to come lend a hand? Come help in our native plant garden by removing non-native plants, pruning, mulching, or doing various other jobs that help protect wildlife and clean up our gardens. Bring your own gloves or borrow a pair of ours – tools are provided. Dress in layers and bring water and sunscreen. Be prepared to get dirty! Ages 9 and up. Participants 18 and under must be accompanied by a chaperone. Please call Debra for reservations at 408-262-5513 ext. 102.

Bike the Levees

Environmental Education Center, Alviso
10:00 a.m. – 12:00 p.m.

Join Ed Kantack for an easy 5-mile bike ride along the levees. Get a glimpse of Drawbridge and see a variety of our spring and summer birds. Helmets are required and knobby tires are recommended. Space is limited. Call Debra at 262-5513 ext. 102 for reservations. Open to all ages. Parental discretion is advised.

* Webelos Naturalist Badge

Environmental Education Center, Alviso
2:00 p.m. – 4:00 p.m.

Anyone out there need to earn a Naturalist badge? Learn about birds, migration, flyways, food chains, human impact, and the importance of wetlands. Then take a walk and use our binoculars to spot birds in the wild. Maximum ratio of 1 adult for every 5 children. Space is limited to 20 people and program fills quickly. **Reservations for fall scout programs begin on Thursday, August 27 between 3 p.m. - 4 p.m. and will continue until program is booked.** Please call Debra at 408-262-5513 ext. 102. Note: badges are not provided.

Twilight Marsh Walk

Visitor Center, Fremont
6:30 p.m. – 8:00 p.m.

Experience the salt marsh at twilight on an easy stroll along Tidelands (1 1/3 mile) Trail. At the setting of the sun we will observe the beginning of nature's night shift. Come discover the sights, sounds, and smells of the refuge as night descends. Not suitable for young children. RESERVATIONS REQUIRED. Call 510-745-8695. Led by Mary and Gene Bobik.

Sunday, September 20

* Water Wizards

Environmental Education Center, Alviso
11:00 a.m. - 12:30 p.m.

We rely on water for all sorts of uses in our daily lives, even our bodies are made up of it. So what makes water so special? Come find out at this program and become a Water Wizard! Participants will learn about the unique properties of water through games, activities, and demonstrations. RESERVATIONS REQUIRED – All ages are welcome. Call Eric at 408-262-5513 ext. 104.

* Trails are generally level. Surface and trail conditions vary. Please call for accessibility information.

Visitor Center, 1 Marshlands Road, Fremont – (510) 745-8695 • Environmental Education Center, 1751 Grand Blvd, Alviso – (408) 262-5513

Medicinal Plant Walk

Visitor Center, Fremont

1:00 p.m. – 2:30 p.m.

Join a naturalist and learn the medicinal properties of plants commonly found on the refuge. Find out how these plants can be used to make home remedies for colds, coughs, indigestion and much more. Reservations Required. Call 510-745-8695. Led by Roy Sasai.

Friday, September 25

* Night Sky Party!

Environmental Education Center, Alviso

7:30 p.m. – 9:30 p.m.

Meet the stars of autumn! Join amateur astronomer, Bob Havner, and some friends, as we learn about constellations. Make a star chart and then venture outside to view the night sky through a telescope. Afterwards, warm up with some hot chocolate. Bring your own binoculars or spotting scopes if you have them. Dress warmly, as it gets cold in the evening. Fun for the whole family! Program will go on sprinkling rain or shine. Program will be canceled only if it is pouring rain. RESERVATIONS REQUIRED - please call Debra at 408-262-5513 ext 102.

Saturday, September 26

Community Service

Visitor Center, Fremont

8:45 a.m. – 12:00 p.m.

If you are interested in improving the refuge for visitors and for wildlife, join us in Fremont for a community service project. We will do either a trash cleanup or a planting/weeding project. Dress appropriately for the task and for the weather. Tools and gloves will be provided. Bring your own water bottle. Meet in the parking lot at the Visitor Center. Driving an additional 2.5 miles may be required since the project may be at a different location. For more information, or to make reservations, call 510-745-8695 and leave us your name, your telephone number and the number of people in your group.

Bike Tour on the Levees

Environmental Education Center, Alviso

9:30 a.m. – 11:30 a.m.

The salt ponds of the South Bay are undergoing an amazing transformation! Journey by bike out into this unique landscape and discover the rebirth of the Bay's edge through wetlands restoration. Salt Ponds A16 and A17 will play a starring roll in this leisurely 5.5-mile tour of the South Bay Salt Pond Restoration Project. Helmets are required and knobby tires strongly encouraged. Recommended for ages 8 and over. RSVP by calling Jennifer at 408-262-5513 ext.106.

* Family Bird Walk

2:30 p.m. – 4:30 p.m.

Visitor Center, Fremont

Let family walks become a shared time of nature learning. We'll begin by helping kids create their personal bird watching field guides, and then head out onto the trails to find those birds. A limited number of binoculars are available to borrow. Recommended for children ages 5-10. RESERVATIONS REQUIRED. Call 510-745-8695.

Sunday, September 27

Salt Marsh Adventure for Children

Visitor Center, Fremont

2:00 p.m. – 4:00 p.m.

Come for a short walk along the salt marsh as we go on our adventure to study the plant and animal life. We shall

explore the marsh using magnifying glasses. Every child must be accompanied by a responsible adult. The program is targeted for kids ages 6 to 10. Reservations are required. Call 510-745-8695. Led by Mansur Nur.

October

Saturday, October 3

* Shark Day!

Environmental Education Center, Alviso

12:00 p.m. – 3:00 p.m.

Join us for an afternoon of exploration and celebration of sharks! We'll have guided walks, games, crafts, face painting, story time, and various other hands-on activities. Get up close and personal with a live shark, and then explore their local habitats! Don't miss this special event! Great fun for the whole family and everything is absolutely FREE! No reservations necessary. Visit our website for directions. For more information, contact Debra at 408-262-5513 ext. 102 or Eric at ext. 104.

Sunday, October 4

* Life at the Bottom of the Food Chain

Visitor Center, Fremont

10:00 a.m. – 12:00 p.m.

Wetlands microbes are often called "the lungs of the earth." Explore the dynamics of microbial communities in LaRiviere Marsh ponds. Join microbiologist Wayne Lanier, PhD for a brief presentation in the Visitor Center; then a microscope hike to LaRiviere Marsh where we will sample and view the most ancient creatures on earth. See how they produce the oxygen we breathe and take up the carbon dioxide we produce. Discover how the tides shape these vital communities. Easy short hiking level. Ages 9-90 years. Call 510-745-8695 for reservations.

Saturday, October 10

Exploring the Dunes

Antioch Dunes NWR, Antioch

10:00 a.m. – 11:00 a.m.

Here's your chance to explore this refuge that is usually closed to the public. This guided tour (1-1.5 mile) will focus on the wonders of Antioch Dunes National Wildlife Refuge. Wear sturdy shoes for the sandy hike along the dunes. All ages welcome. No reservations required. No facilities. Contact 510-521-9624 for additional information and directions.

* All About Owls

Environmental Education Center, Alviso

10:00 a.m. – 12:00 p.m.

Learn all that you've ever wanted to learn about owls here at the refuge! Where do owls eat? What do owls eat? How do we not hear them when they flap their wings? Through an interactive presentation and owl pellet dissection, we'll find the answers to all these questions! Paul Bridges will lead the way. Please call Debra at 408-262-5513 ext. 102 for reservations.

* Marshlands of Dreams

Visitor Center, Fremont

10:30 a.m. – 11:30 a.m.

Join a refuge ranger on a 1-mile walk of the LaRiviere Marsh Trail to find traces of the past. Prior to marsh restoration, learn how Californians utilized the area for farming, quarrying, salt production, and transportation. There are opportunities for bird watching as well. Led by Paul Mueller.

* Brownie Eco-Explorer Patch

Environmental Education Center, Alviso

2:00 p.m. – 4:00 p.m.

Autumn Activity Schedule

Come and learn about habitats, food chains, and how you can help wildlife. Then take a walk to explore the refuge habitats. Maximum ratio of 1 adult to 5 children. Space is limited to 20 people and program fills quickly. **Reservations for fall scout programs begin on Thursday, August 27 between 3 p.m. - 4 p.m. and will continue until program is booked.** Please call Debra at 408-262-5513 ext. 102. Note: badges are not provided.

LaRiviere Marsh/Tidelands Trail Walk – 1.5 mile-loop

Meet at the Visitor Center, Fremont

1:00 p.m.

Let's Go
Outside!

This is the eighth and final walk featured in the Refuge Rambler club. If you've completed seven out of eight walks in the series, congratulations!

Be sure to bring your passport to the Visitor Center for your free All-Star T-shirt! This trail is 1.5 miles. The walk is self-paced and you may turn back at any time. Hats, water, and sunscreen are strongly recommended. You do not need to be a Refuge Rambler to join this walk. No reservations are needed. A refuge representative will be there to greet you at 1:00 p.m.

Introduction to GPS Workshop

Visitor Center, Fremont

12:30 p.m. – 1:30 p.m.

The San Francisco Bay National Wildlife Refuge Complex and REI Outdoor School has teamed up once again to bring an Introduction to Global Positioning System (GPS) demonstration to the refuge for National Wildlife Refuge Week. Learn how to use a GPS unit. REI Outdoor School will have a limited number of units to practice. No reservations necessary.

Annual Native Plant Sale

Visitor Center, Fremont

1:00 p.m. – 4:00 p.m.

This is your chance to purchase that perfect native plant to add to your garden! Whether you're looking to re-landscape your yard with drought-resistant plants, or you want to create habitat for neighborhood birds and butterflies, this is the place to be. Sale will take place at the Visitor Center in Fremont.

The Amazing Refuge Race

Visitor Center, Fremont

2:00 p.m.

Sign up to participate in the Amazing Refuge Race! Using a GPS unit, teams of five will "race" to the coordinates given and perform specific tasks. Once the tasks are completed, teams will be given another set of coordinates. First team to the finish line wins! Teams may use their own GPS unit, or borrow one from REI Outdoor School at the refuge. You may form your own teams or one can be assigned to you. For more information, log on to <http://www.fws.gov/desfbay>, or call Carmen at 510-377-9229. REGISTRATION IS REQUIRED. Call 510-745-8695 to register for free.

* Trails are generally level. Surface and trail conditions vary. Please call for accessibility information.

Visitor Center, 1 Marshlands Road, Fremont – (510) 745-0695 • Environmental Education Center, 1751 Grand Blvd, Alviso – (408) 262-5513

Autumn Activity Schedule

Twilight Marsh Walk Visitor Center, Fremont 5:30 p.m. – 7:00 p.m.

Experience the salt marsh at twilight on an easy stroll along Tidelands (1 1/3 mile) Trail. At the setting of the sun we will observe the beginning of nature's night shift. Come discover the sights, sounds, and smells of the refuge as night descends. Not suitable for young children. RESERVATIONS REQUIRED. Call 510-745-8695. Led by Mary and Gene Bobik.

Sunday, October 11th

Medicinal Plant Walk Visitor Center, Fremont 1:00 p.m. – 2:30 p.m.

Join a naturalist and learn the medicinal properties of plants commonly found on the Don Edwards San Francisco Bay National Wildlife Refuge. Find out how these plants can be used to make home remedies for colds, coughs, indigestion and much more. Reservations Required. Call 510-745-8695. Led by Roy Sasai.

*Wetlands Water Cafe Environmental Education Center, Alviso 1:00 p.m. - 3:00 p.m.

Wetlands can be filled with all sorts of nutrients and organisms that build a diverse web of life. Come visit the wetlands of South Bay at the Environmental Education Center during this program. Participants will use our lab to observe wetland critters up close, and learn about their role in the ecosystem. RESERVATIONS REQUIRED – All ages are welcome. Call Eric at 408-262-5513 ext. 104.

Saturday, October 17

Connections to Pier Fishing Dumbarton Fishing Pier, Fremont 8:00 a.m. – 12:00 p.m.

Have you ever wanted to try fishing but didn't know how to begin? Learn the fundamental basics of catch and release fishing at the Dumbarton fishing pier! Discover the types of wildlife living in the San Francisco Bay, learn the safety and ethics of fishing, and then try your luck out on the pier with our fishing poles. All participants receive free box with tackle. No fishing license needed! Space is limited to the first 50 people! You must arrive at 8 a.m. to participate. RESERVATIONS REQUIRED. Call the Visitor Center at 510-745-8695.

Beginning Birding Clinic Environmental Education Center, Alviso 9:00 a.m. – 11:30 a.m.

If you can't tell your egrets from your cormorants this class is for you! We'll learn about binoculars, identification books, and other birding basics through hands-on activities and conversation. Then we'll go out into the field to practice our new skills. Binoculars and books provided during the class, but if you have

your own please bring them. Be prepared to be outdoors in the weather for about an hour. RESERVATIONS REQUIRED. Call Jennifer at 408-262-5513 ext.106.

*Water, Water, Everywhere! Environmental Education Center, Alviso 1:30 p.m. – 3:00 p.m.

Where does the water come from and where does it go? Learn about the water cycle and watersheds. Build a model of a watershed and see if you can predict where the water will go! Recommended for ages 8 and up. Led by Ed Kantack. Please call Debra at 408-262-5513 ext. 102 for reservations.

*Beginning Bird Photography Workshop Environmental Education Center, Alviso 3:00 p.m. – 5:00 p.m.

Whether you are interested in photography tips or would like to get to know some of the birds commonly sighted at the refuge, join us! We will discuss ideal sighting and photography conditions, lighting, composition, and equipment. We will also have a slide show to familiarize you with some common shorebirds at the refuge. Then we will go on an easy walk and try out our skills. Please be sure to bring your camera or binoculars and wear comfortable walking shoes. Led by Jennifer Woo. Recommended for ages 14 and up. Please call Debra at 408-262-5513 ext. 102 for reservations.

Sunday, October 18

Bird Drawing and Sketching Environmental Education Center, Alviso 10:30 a.m. -12:30 p.m.

Drawing and sketching is a great way to make field observations, record what you have seen, and to express yourself through art. Come join us for an introduction to pencil and charcoal drawing and sketching – we will cover concepts such as shapes, forms, and shading. We will use refuge specimens and mounts to take a closer look at textures and fine details. Materials will be provided. RESERVATIONS REQUIRED – Ages 12 and up. Call Eric at 408-262-5513 ext. 104.

Saturday, October 24

Community Service Visitor Center, Fremont 8:45 a.m. – 12:00 p.m.

If you are interested in improving the refuge for visitors and for wildlife, join us in Fremont for a community service project. We will do either a trash cleanup or a planting/weeding project. Dress appropriately for the task and for the weather. Gloves and tools will be provided. Bring your own water bottle. Meet in the parking lot at the NEW Visitor Center. Driving an additional 2.5 miles may be required since the project may be at a different location. For more information, or to make reservations, call 510-745-8695 and leave us your name, your telephone number and the number of people in your group.

Sunday, October 25

Slough Who?? Environmental Education Center, Alviso 2:00 p.m. - 4:00 p.m.

It's that time of year again! Come and learn about the spooky nocturnal residents of Alviso and what their life is like. Owls nesting at the Environmental Education Center are top predators and have fascinating ways of hunting, consuming, and disposing of their prey. Participants will learn about owl behavior, and anatomy of prey animals through owl pellet dissection. RESERVATIONS REQUIRED – All ages are welcome. Call Eric at 408-262-5513 ext. 104.

Salt Marsh Safari for Adults Visitor Center, Fremont 2:00 p.m. – 4:00 p.m.

How can anything survive in a salty, gooey place that gets flooded twice a day? Come along on this short nature walk and discover the answer! Reservations are required. Call 510-745-8695. Led by Mansur Nur.

Saturday, October 31

*Family Bird Walk 2:30 p.m. – 4:30 p.m. Visitor Center, Fremont

Let family walks become a shared time of nature learning. We'll begin by helping kids create their personal bird watching field guides, and then head out onto the trails to find those birds. A limited number of binoculars are available to borrow. Recommended for children ages 5-10. RESERVATIONS REQUIRED. Call 510-745-8695.

November

Saturday, November 7

Webelos Naturalist Program Visitor Center, Fremont 10:00 a.m. – 12:00 p.m.

Attention Webelos! Earn your naturalist badge in just two hours. During this hike, learn about birds, flyways, food chains, and the importance of wetlands. Bring your binoculars, or borrow one of ours. Space is limited to 15 Webelos. Call 510-745-8695. Led by June Smith.

*Advanced Bird Photography Workshop Environmental Education Center, Alviso 10:00 a.m. – 1:00 p.m.

Continuing where "Beginning Bird Photography" left off, this 3-hour workshop will first address aesthetic issues (e.g., advanced composition) and natural phenomena (animal behavior, seasons, tides). Then we will focus on photography such as exposure, depth of field, flash, etc. Material is geared toward SLR cameras, but much is applicable to any camera type. Lastly, we'll take an optional stroll on the refuge to practice what we learned. Bring your camera if you have one. Not suitable for children. Program led by Paul Bridges. Reservations are required. Call Debra at 408-262-5513 ext. 102.

Salt Pond Restoration 101: An Introduction to the Project Environmental Education Center, Alviso 11:00 a.m. – 12:00 p.m.

Restoration of 15,100 acres of South San Francisco Bay salt ponds to wetlands habitats has begun. Please join us for overview of this incredible project happening in our backyard. Program will be held indoors in the auditorium. All are welcome! Led by Jennifer Heroux.

*Marshlands of Dreams Visitor Center, Fremont 10:30 a.m. – 11:30 a.m.

Join a refuge ranger on a 1-mile walk of the LaRiviere Marsh Trail to find traces of the past. Prior to marsh restoration, learn how Californians utilized the area for farming, quarrying, salt production, and transportation. There are opportunities for bird watching as well. Led by Paul Mueller.

*** Trails are generally level. Surface and trail conditions vary. Please call for accessibility information.**

Visitor Center, 1 Marshlands Road, Fremont – (510) 745-8695 • Environmental Education Center, 1751 Grand Blvd, Alviso – (408) 262-5513

*** Discover Ohlone Uses of Plants**
Environmental Education Center, Alviso
1:30 p.m. – 3:00 p.m.

Are you learning about the Ohlone Indians at school, or are you just curious? Then this is the program for you! Explore the plants that were traditionally used by the original inhabitants of this area, the Ohlone Indians. Then enjoy a guided walk around our native plant garden. Fun for the whole family! Led by teacher/librarian Pat Hartinger. Reservations required. Call Debra at 408-262-5513 ext. 102.

Sunday, November 8

*** Tracking Through the Slough**
Environmental Education Center, Alviso
10:00 a.m. - 12:00 p.m.

Who's been walking in the wetland and slogging through the slough? Find out at this hands-on program where participants will learn all about tracks, the refuge animals that make them, and what these critters tell us about the health of our watershed. Participants will learn about track identification, and make their own tracking guides! RESERVATIONS REQUIRED – All ages are welcome. Call Eric 408-262-5513 ext. 104.

*** Life at the Bottom of the Food Chain**
Visitor Center, Fremont
10:00 a.m. – 12:00 p.m.

Wetlands microbes are often called “the lungs of the earth.” Explore the dynamics of microbial communities in LaRiviere Marsh ponds. Join microbiologist Wayne Lanier, PhD for a brief presentation in the Visitor Center; then a microscope hike to LaRiviere Marsh where we will sample and view the most ancient creatures on earth. See how they produce the oxygen we breathe and take up the carbon dioxide we produce. Easy short hiking level. Ages 9-90 years. Call 510-745-8695 for reservations.

Saturday, November 14

Community Service
Visitor Center, Fremont
8:45 a.m. – 12:00 p.m.

If you are interested in improving the refuge for visitors and for wildlife, join us in Fremont for a community service project. We will do either a trash cleanup or a planting/weeding project. Dress appropriately for the task and for the weather. Gloves and tools will be provided. Bring your own water bottle. Meet in the parking lot at the NEW Visitor Center. Driving an additional 2.5 miles may be required since the project may be at a different location. For more information, or to make reservations, call 510-745-8695 and leave us your name, your telephone number and the number of people in your group.

*** Monster Bacteria and Other Suspicious Critters**
Environmental Education Center, Alviso
10:00 a.m. – 12:00 p.m.

Let's explore the salt marsh's hidden habitats! See monster bacteria, some of whom love rotten eggs, and some of whom make the air we breathe. Dr. Wayne Lanier knows all about it! Join our microbial ecologist for a short hike where we will use field microscopes to dive down into a tiny world – an ecology hidden from view. Ages 8 to 80 and beyond! Please call Debra at 262-5513 ext. 102 for reservations.

Exploring the Dunes
Antioch Dunes NWR, Antioch
10:00 a.m. – 11:00 a.m.

Here's your chance to explore this refuge that is usually closed to the public. This guided tour (1-1.5 mile) will focus on the

wonders of Antioch Dunes National Wildlife Refuge. Wear sturdy shoes for the sandy hike along the dunes. All ages welcome. No reservations required. No facilities. Contact 510-521-9624 for additional information and directions.

*** Brownie Eco-Explorer Patch**
Environmental Education Center, Alviso
2:00 p.m. – 4:00 p.m.

Come and learn about habitats, food chains, and how you can help wildlife. Then take a walk to explore the refuge habitats. Maximum ratio of 1 adult to 5 children. Space is limited to 20 people and program fills quickly. **Reservations for fall scout programs begin on Thursday, August 27 between 3 p.m. - 4 p.m. and will continue until program is booked.** Please call Debra at 408-262-5513 ext. 102. Note: badges are not provided.

*** ABC's of Raptors**
Environmental Education Center, Alviso
1:00 p.m. – 3:00 p.m.

Is it an accipiter or buteo? It could also be a falcon or a kite. Learn the difference as we explore the birds of prey we call raptors. Recommended for grades 3 and up. Kids make their own raptor guidebook! Led by Ed Kantack. Call Debra at 262-5513 ext. 102 for reservations.

Twilight Marsh Walk
Visitor Center, Fremont
4:00 p.m. – 5:30 p.m.

Experience the salt marsh at twilight on an easy stroll along Tidelands (1 1/3 mile) Trail. At the setting of the sun we will observe the beginning of nature's night shift. Come discover the sights, sounds, and smells of the refuge as night descends. Not suitable for young children. RESERVATIONS REQUIRED. Call 510-745-8695. Led by Mary and Gene Bobik.

Sunday, November 15

*** Beginning Bird Watching**
Environmental Education Center, Alviso
9:30 a.m. – 11:15 a.m.

Ever wonder what birds we have in our very own community? Come learn about the many local and migratory birds. We'll start with a slide show indoors to learn how to recognize the regulars, then borrow binoculars and take a walk to try your new skills. All ages welcome. Reservations required. Call Debra at 408-262-5513 ext. 102.

Medicinal Plant Walk
Visitor Center, Fremont
1:00 p.m. – 2:30 p.m.

Join a naturalist and learn the medicinal properties of plants commonly found on the refuge. Find out how these plants can be used to make home remedies for colds, coughs, indigestion and much more. Reservations Required. Call 510-745-8695. Led by Roy Sasai.

Saturday, November 21

Beginning Birding Clinic
Environmental Education Center, Alviso
9:00 a.m. – 11:30 a.m.

If you can't tell your egrets from your cormorants this class is for you! We'll learn about binoculars, identification books, and other birding basics through hands-on activities and conversation. Then we'll go out into the field to practice our new skills. Binoculars and books provided during the class, but if you have your own please bring them. Be prepared to be outdoors for about an hour. RESERVATIONS REQUIRED. Call Jennifer at 408-262-5513 ext.106.

Autumn Activity Schedule

Community Service – Gardening
Environmental Education Center, Alviso
10:30 a.m. – 12:30 p.m.

Come help in our native plant garden by removing non-native plants, pruning, mulching, or doing various other jobs that help protect wildlife and clean up our gardens. We'll be starting preparations for planting native species. Bring your own gloves or borrow a pair of ours – tools are provided. Dress in layers and bring water and sunscreen. Be prepared to get dirty! Ages 9 and up. Participants 18 and under must be accompanied by a chaperone. Please call Debra for reservations at 408-262-5513 ext. 102.

*** Family Bird Walk**
2:30 p.m. – 4:30 p.m.
Visitor Center, Fremont

Let family walks become a shared time of nature learning. We'll begin by helping kids create their personal bird watching field guides, and then head out onto the trails to find those birds. A limited number of binoculars are available to borrow. Recommended for children ages 5-10. RESERVATIONS REQUIRED. Call 510-745-8695.

Sunday, November 22

Birds in Culture
Environmental Education Center, Alviso
1:00 p.m. - 2:30 p.m.

What do turkeys, eagles, and hummingbirds all have in common? We rely on birds nearly every day as a source of food or as parts of an ecosystem – they even appear in our money! Sign up for this program and find out how birds have been important parts of various cultures all over the world. Participants will see a slide show, hear a story, and take part in a craft that illustrates the significance and symbolism of our feathered friends. RESERVATIONS REQUIRED – All ages are welcome. Call Eric at 408-262-5513 ext. 104.

Deep Ecology in the Marsh for College and University Students
New Visitor Center, Fremont
2:00 p.m. – 4:00 p.m.

Come to the refuge to learn about the basic ecological principles as they apply to a salt marsh. We shall understand the nature of the intricate relationships that exist between the various entities found in the marsh. At the end, we will have a much clearer and deeper understanding on the “interconnected as well as the interdependence of objects” in nature. Reservation required. Call 510-745-8695. Led by Mansur Nur.



*** Trails are generally level. Surface and trail conditions vary. Please call for accessibility information.**

Visitor Center, 1 Marshlands Road, Fremont – (510) 745-8695 • Environmental Education Center, 1751 Grand Blvd, Alviso – (408) 262-5513

Field Trips to the Refuge

General Field Trip Program Information

We offer FREE field trip programs at two sites at the Don Edwards San Francisco Bay National Wildlife Refuge. Wetland Round-Up field trip programs are offered at the Visitor Center in Fremont, and Wetland Round-Up and Slow the Flow field trip programs are offered at the Environmental Education Center in Alviso. These programs actively involve teachers, adult volunteers, and students in investigating the diverse habitats and wildlife at the refuge. The hands-on, small-group activities are designed to teach basic ecological concepts and to introduce endangered species, migratory birds, and wetland habitats to the students. All programs have been correlated to the appropriate State of California Education Standards.

Educators and adult leaders conduct their own field trips after attending a Field Trip Orientation Workshop. The Orientation Workshop allows you to design and conduct your own field trip. In addition, adult volunteers must be recruited to lead the activities at the different learning stations and to chaperone the rotation groups of students. We provide easy to follow "scripts" for each station, but both "leaders" and "chaperones" are strongly encouraged to attend a Field Trip Orientation Workshop. It is our policy that lead educators must attend training every two years. Location of activities and trail conditions may vary. Please call for accessibility information.

Field Trips at the Learning Center in Fremont

Wetland Round-Up

Explore the habitats of the refuge! Investigate creatures of the mud flats, collect plankton from the slough, and taste pickleweed from the salt marsh. This field trip is designed for grades K-6, for up to 65 students. Wetland Round-Up is offered Tuesday – Friday from October 1 - December 12, 2009.

NEW MAIL-IN RESERVATION PROCEDURES FOLLOWS.

Field Trip Orientation Dates at the Learning Center in Fremont

All Orientations are from 4:00 p.m.-7:30 p.m.

Wednesday, September 30

Thursday, October 15

Tuesday, November 3

Call the Environmental Education Intern at 510-377-7269 to attend an orientation.

Mail-In Registration for Fall Wetland Round-Up Field Trips for Fremont

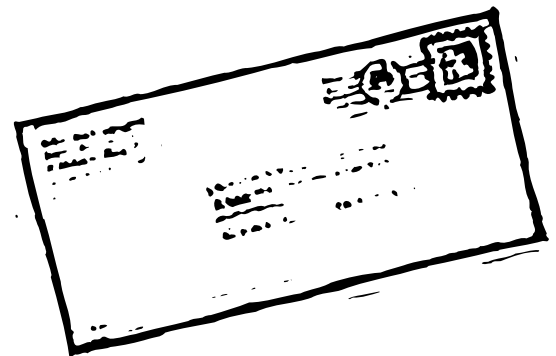
Due to the renovation of our headquarter facilities in Fremont and relocation of our Education Office, the registration process for the Wetland Round-Up Field trips to Fremont has changed. A new mail-in registration will replace the former call-in process. Here's how it works:

- Mail-in registration for **Fall 2009** will begin on August 31, 2009.
- Registration Forms will be available on-line at http://www.fws.gov/desfbay/EE_Registration.htm
- You will be able to choose from a list of available dates and indicate your 1st, 2nd and 3rd choices on the form.
- Completed forms should be mailed to our offices in the following manner:
WRFT Registration/ EE Office
9500 Thornton Ave.
Newark, CA 94560
- You may also FAX your request to:
(510) 745-9285, attention EE program

OR, you may drop off your completed form at the new Visitor Contact Station along Marshlands Rd at the Refuge in Fremont.

We will not be accepting electronic versions of the forms at this time.

- All forms received will be opened on September 15, 2009.
- Every effort will be made to accommodate your requests. However, we may need to offer alternative dates if we cannot assign you your preferred dates.
- Selections will be made in a timely fashion. You will be notified by your preferred method as indicated on your form.
- We will continue to take requests after September 15, 2009 until all available dates for the fall season (Oct –Dec) have been filled.
- Details about Spring registration will be in the Winter issue of Tideline and also posted on our website.



Field Trips at the Environmental Education Center in Alviso

Wetland Round-Up

Investigate the butterflies in the butterfly garden, taste pickleweed in the salt marsh, or discover the creatures that live in the slough water on a Wetland Round-Up Field Trip. This field trip program is designed for up to 65 students in grades K-6. Wetland Round-Up is offered Monday – Thursday from October to December 2009.

We will begin scheduling Fall 2009 field trips on Thursday, September 10 from 4:00 p.m. – 5:00 p.m. We will begin scheduling Spring 2010 field trips on Tuesday, December 8, 2009. For more information, call the Environmental Education Intern at 408-262-5513 ext 103.

Field Trip Orientation Workshop Dates at the Environmental Education Center in Alviso

All Orientations are from 4:00 p.m. – 7:30 p.m.

Tuesday, October 6

Wednesday, October 28

Thursday, November 19

Call the Environmental Education Intern at 408-262-5513 ext. 103 to attend an orientation. ** Please note: The cut off date to make a reservation is the Friday before each orientation date.

The Slow the Flow Program

Slow the Flow provides an experiential learning environment for students and educators to explore the topics of water use, wastewater treatment, and habitat preservation. Activities and presentations focus on the relationship between personal habits and their effects on local habitats. Slow the Flow is an environmental education program offered at no cost through the cooperating efforts of the City of San Jose, U.S. Fish and Wildlife Service, and the San Francisco Bay Wildlife Society. Slow the Flow programs are available to educators and groups located in San Jose, Alviso, Milpitas, Santa Clara, Saratoga, Monte Sereno, Los Gatos, Campbell, and Cupertino.

Programs are offered to 5th – 12th grade students, although a modified field trip is available for college groups. Educators are encouraged to contact us to discuss options for customizing field trips and classroom presentation activities and schedules.

Reservations for the Slow the Flow program are on a first – come basis. For more information or to make a reservation, call Eric McKee, the Slow the Flow Program Coordinator at 408-262-5513 ext. 104.

Free Discovery Packs available at the Environmental Education Center in Alviso!

Explore the salt marsh habitat and the birds of the refuge with your family or small youth group! The Discovery Pack includes an activity booklet and equipment such as magnifying lenses, binoculars and bug boxes that you will need to take a closer look at the salt marsh and the birds! The back pack is suitable for up to 6 people, ages kindergarten - adults. There are also group packs available for 12 – 24 people. Please call in advance if you would like a group pack. You can check out the Discovery Packs free of charge at the Environmental Education Center. The Environmental Education Center is open Saturday and Sunday from 10 a.m. – 5 p.m. For questions please call 408-262-5513 ext 103.

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San Francisco Bay National Wildlife Refuge Complex

Administered by the U.S. Fish and Wildlife Service, San Francisco Bay National Wildlife Refuge Complex exists to preserve wildlife habitat, protect threatened and endangered species, protect migratory birds, and provide opportunities for nature study. Seven refuges are managed from the headquarters in Fremont: Antioch Dunes NWR, Don Edwards San Francisco Bay NWR, Ellicott Slough NWR, Farallon NWR, Marin Islands NWR, Salinas River NWR, and San Pablo Bay NWR.

Project Leader:..... Mendel Stewart
Deputy Project Leader:..... John Bradley
Don Edwards Refuge Manager:.....Eric Mruz
Don Edwards Warm Springs Unit Manager:.... Ivette Loreda
Farallon Refuge Wildlife Specialist:Zach Coffman
North Bay Refuges Manager: Christy Smith
North Bay Wildlife Specialist:..... Louis Terrazas
South Bay Refuges Manager:..... Diane Kodama
Refuge Planner:Winnie Chan
Chief of Visitor Services:..... Karla Tanner
Outdoor Recreation Planners: Jennifer Heroux and Carmen Minch
Environmental Education Specialists:Tia Glagolev, Genie Moore, and Kimby Wells
Volunteer Coordinator:..... Paul Mueller
Law Enforcement Officers:..... Kevin Watts
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San Francisco Bay Wildlife Society

A nonprofit 501(c)(3) cooperating association established in 1987 to promote public awareness and appreciation of San Francisco Bay and fund education and outreach programs at San Francisco Bay National Wildlife Refuge Complex.

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Tideline is On-Line

Visit our web site, which features past issues of **Tideline**, at <http://www.fws.gov/desfbay>

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Tideline



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Don Edwards / Antioch Dunes / Ellicott Slough / Farallon Island / Marin Islands / Salinas River / San Pablo Bay

Headquarters

& Visitor Center

(510) 745-8695

Directions: From Highway 84 (at the east end of the Dumbarton Bridge), exit at Thornton Avenue. Travel south on Thornton Avenue for 0.8 miles to the Refuge entrance on the right. Turn right into the Refuge and follow Marshlands Road to the stop sign. Turn left into the parking lot.

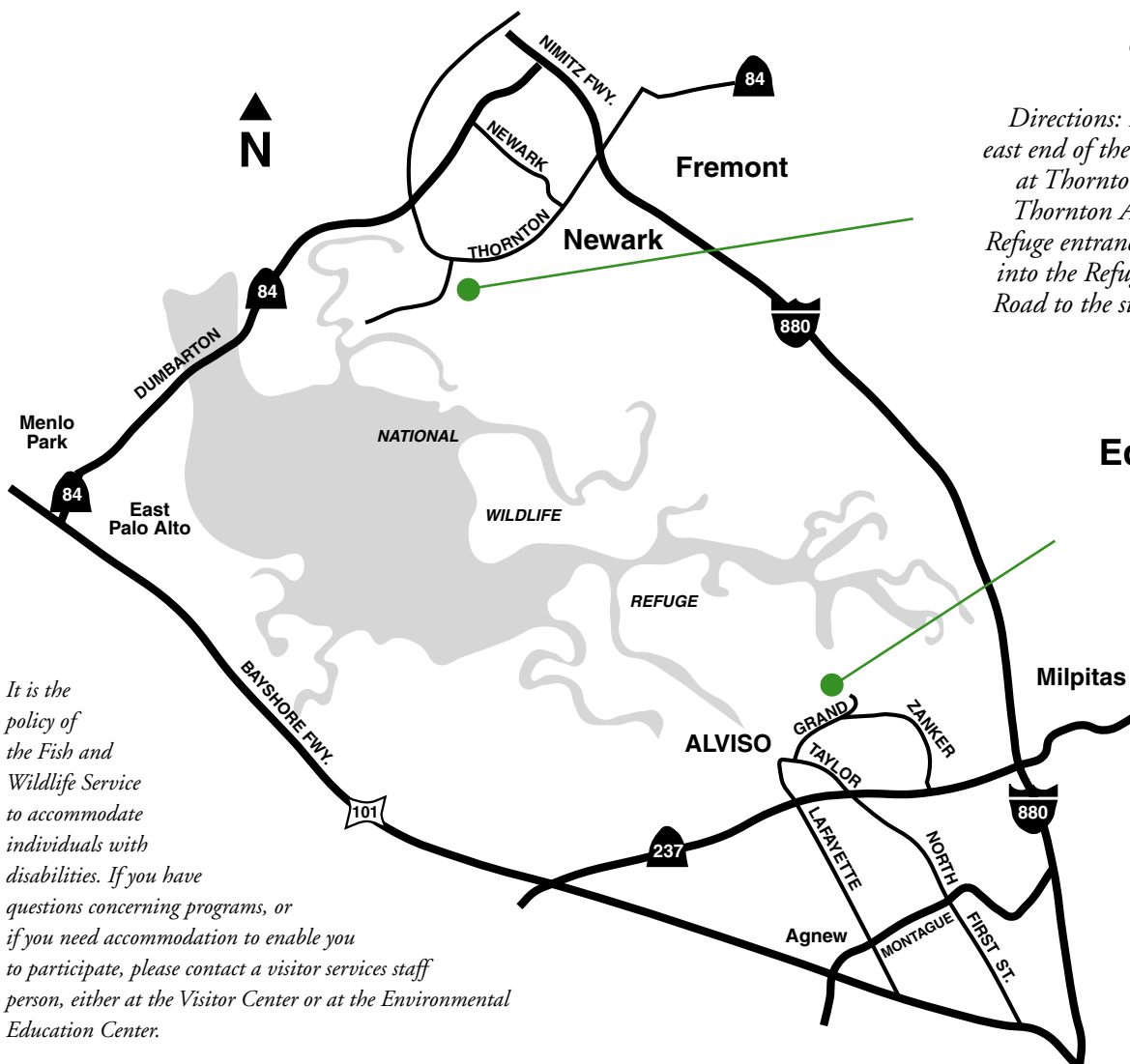
Environmental Education Center

(408) 262-5513

Directions: From I-880 or Highway 101, exit on Highway 237 toward Mountain View/Alviso.

Turn north onto Zanker Road.

Continue on Zanker Road to the Environmental Education Center entrance road (a sharp right turn at Grand Blvd.) The distance from 237 to the entrance road is 2.1 miles.



It is the policy of the Fish and Wildlife Service to accommodate individuals with disabilities. If you have questions concerning programs, or if you need accommodation to enable you to participate, please contact a visitor services staff person, either at the Visitor Center or at the Environmental Education Center.