



Volume 27, Number 3

The Endangered in Danger: Protecting the California Least Terns at Alameda Point

by Chris Miller

It's 5 a.m. and a hint of early morning light is starting to peek over the mountains to the east. The light blue tint of the sky gradually fills in with a darker, more brilliant shade. The orange glow from the sodium lights at the Port of Oakland, although still strong, shows signs of fading. I feel a light breeze coming in from the Northwest. It's carrying the salt air from the bay and beyond. The San Francisco skyline slowly reveals itself as the light fog melts into thin air.

They begin to stir, skimming quickly across the ground and taking flight with bouncy movements. I see 10, then 50, then 100 taking off to welcome the morning sky. The air fills with their morning song, which becomes magnified as more and more join the chorus. Pretty soon I am looking at 150 of them flying overhead. The phenomenon that so captivates me is the nesting of California least terns at the former Alameda Naval Air Station, renamed Alameda Point. I could watch these birds for hours. Their behavior is intriguing but I need to stay focused. I am not here to observe these birds. I am here to keep my eyes peeled for the "bad guys". Perhaps "bad guys" isn't the appropriate term. However, if the terns could communicate with us they may very well use that description. I am searching for predators, avian predators to be specific. What are avian predators, you may ask, and how are they connected to the terns?

California least terns, also known in the scientific community as *Sternula antillarum browni*, are a migratory bird that is federally listed as an endangered species. These birds migrate each year in the spring from Central America to nesting sites located along the California coastline. Many of the largest colonies exist in Southern California including



places such as Tijuana Slough, Camp Pendleton and Mission Bay. At the northern extent of their range is the Alameda Point colony in San Francisco Bay, which is the largest tern colony in Northern California.

Tern and chick on tarmac.

Photo: James Shadle, courtesy of Friends of Alameda Refuge

Continued page 2

The Endangered in Danger: Protecting

Their endangered status is due to a combination of impacts. Over much of the 20th century California least tern populations suffered from habitat loss, increased predation and pollution. However, after being federally listed in 1971, plans were initiated to help turn the tide for this species. When conservation studies began in the 1970s only 300 to 600 breeding pairs were documented in California. Regularly used nesting areas were protected from further human intrusion and development. In addition to



Aerial of Alameda Point

conserving habitat, predator management programs were instituted to give these fragile birds a chance against a plethora of human-introduced predators such as non-native red fox (*Vulpes vulpes*), as well as their thriving native predators. The statewide count of breeding pairs in 2006 was just over 7500. It doesn't take a math genius to see the progress that has been made.

The Alameda nesting area, although currently still owned by the U.S. Navy, is managed by the U.S. Fish and Wildlife Service based out of the San Francisco Bay National Wildlife Refuge Complex. Over the last nine years Alameda has ranked in the top ten largest sites for breeding pairs of California least terns. In fact Alameda has ranked in the top six for more than half of those years. During the nesting season, the U.S. Fish and Wildlife Service monitor the nesting colony daily, documenting nest, egg, chick and fledgling numbers, as well as incidents of predation.

Avian predators of the California least tern are primarily comprised of birds of prey (i.e. raptor species such as hawks and owls) and corvids (mainly American crows and common ravens). Small shorebirds are on the menu for many of these avian predators. What better place for them to dine than in areas which hold dense concentrations of prey items? The

California least tern colony exemplifies this type of situation. The most common raptors to prey on California least terns include species such as northern harriers, American kestrels, burrowing owls, great horned owls, and barn owls. Corvids, especially common ravens, are also responsible for a good portion of egg depredation. In a situation where no endangered or threatened species is involved these predator-prey relationships are left alone to interact in a natural way. However, since the California least tern is federally listed as an endangered species and its survival is still hanging on a balance, the U.S. Fish and Wildlife Service takes measures to conserve this species. When a particular avian predator is identified to be causing harm by depredating California least terns, the U.S. Fish and Wildlife Service works with U.S. Department of Agriculture Wildlife Services, a small agency tasked with resolving wildlife conflicts. USDA Wildlife Services, utilizing a wide variety of live-trapping techniques works to capture the identified problem avian predator. Once the bird is captured it is leg-banded (for the purpose of future tracking) and released in an area where it won't impact other endangered species. The relocation site will be distant enough so that its return to the Alameda least tern nesting site would be very unlikely. Last year, numerous adult terns and chicks began disappearing at regular intervals. The entire colony was at risk of losing an entire generation. After several days of intense observations and searching, a pair of burrowing owls were identified as the culprits. Once identified the owls' burrow was located and USDA Wildlife Services went into action, quickly capturing both the female and male. The owls were banded and released together at the San Luis National Wildlife Refuge in Los Banos where there is great burrowing habitat. The owls have no longer presented a problem to the Alameda least tern nesting area. This is just one example of many in which threats to the nesting California least terns have been resolved with a positive end result for both predator and prey species.

Because of limited resources and staffing the California least terns in Alameda can use your help watching for predators and collecting biological data. Just this past summer, the U.S. Fish and Wildlife Service coordinated with Friends of Alameda Wildlife Refuge, a subsidiary of Golden Gate Audubon Society, and started the Tern Watch predator monitoring program. The program has been a huge success. After completing three hours of training, volunteers take early morning or late afternoon shifts to monitor the colony, filling in gaps that U.S. Fish and Wildlife Service biologists are unable to cover.

the California Least Terns at Alameda Point



Photo: Chris Miller

The volunteers play a crucial role in helping to quickly identify problem predators as well as other disturbances to the nesting least terns. In addition, volunteers help collect behavioral data on the terns themselves. Those who monitor the colony regularly may view tern behaviors such as courtship rituals, feeding, the hatching and

fledging of chicks, and in some cases the mobbing response to avian predators, all of which are spectacular to see up close and in person. This volunteer opportunity enables the public to get an exclusive look inside the California least tern colony at Alameda Point and experience nature in a highly unlikely area - right in the middle of the San Francisco Bay Area metropolis. If you'd like to get more information about volunteering for Tern Watch contact the Alameda U.S. Fish and Wildlife Service Biologist Susan Euing at 510-521-9624. If you would like to learn more about the Alameda Point wildlife area or possibly get involved in other ways check out the Friends of Alameda Refuge website at www.fawr.org.

Chris Miller, originally from Hawaii, has been working in the conservation community protecting threatened and endangered plants and animals since 2000. In his current position as a wildlife specialist with USDA Wildlife Services, he is responsible for providing protection for the California least terns at Alameda Point.

Leading by Example

For the past few months I have been participating on the Department of the Interior Climate Change Task Force. This effort involves about 90 individuals representing the Department's eight land management agencies. We have been tasked with evaluating the effects of climate change on the Department's lands, water and wildlife, and identifying strategies for conserving those resources in a changing climate.

The Department manages approximately 650 million acres of land in the United States. That's about one acre out of every five. Through partnerships with private land owners and other public land agencies, our policies have a major influence on land management decisions on millions of acres of private land as well. These statistics illustrate that climate change can have substantial impact on the natural resources under the Department's care.

The Climate Change Task Force consists of three working groups covering legal and policy issues, scientific knowledge, and land management. I am in the land management working group which focuses on identifying how we might adapt to the predicted changes in our climate and how we can mitigate our own environmental footprints by reducing carbon dioxide (CO²) emissions.

The reduction of CO² is one of the reasons why we plan to renovate our visitor contact

station and our office, as was discussed in the Spring 2007 edition of *Tideline*. Our current facilities are outdated and therefore energy inefficient. There are several areas that need improvement. We hope to implement many design features that have been developed by the U.S. Green Building Council. By participating in the Leadership in Energy and Environmental Design Green Building Rating System, we will be able to measure and document building performance in the areas of sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. We also hope to incorporate on-site renewable energy components such as photovoltaics and geothermal heat pumps. Our goal is for the visitor contact station and offices to be a showcase for the San Francisco Bay Area and the Department's commitment to energy efficiency.

We will also be reducing our CO² emissions by replacing some standard-engine vehicles in our Refuge Complex fleet with hybrid-engine vehicles. As a wildlife conservation agency, we have the important responsibility to lead by example – and to inspire others to do the same.

Refuge Reflections

By Mendel Stewart



Trails

at Don Edwards San Francisco Bay National Wildlife Refuge

Don Edwards San Francisco Bay National Wildlife Refuge spans nine cities and three counties, and contains over 30 miles of hiking trails. Refuge Manager and birding enthusiast Clyde Morris continues to highlight trails found on America's first urban National Wildlife Refuge. For descriptions of other trails, contact Carmen Minch at carmen_leong-minch@fws.gov.

Name: Mallard Slough Trail

Mileage: 5.5 mile loop

Trail Use: Walking & bicycling; dogs are prohibited. During the waterfowl hunting season (mid October - late January), a 3.8 mile section of trail is closed from the water control structure along Mallard Slough to the railroad crossing to Alviso Slough Trail.

Trail Conditions: Flat, compacted dirt levee. Trail turns to mud after rain. Strong winds are common in the summer afternoons.

Highlights: This trail passes through a variety of wildlife habitats, provides views of the refuge's ghost town, Drawbridge, and connects with the Alviso Slough Trail making a 14-mile hike possible. It makes an excellent bike ride.

Directions to Trailhead: From Highway 880 or Highway 101, exit on Highway 237 toward Mountain View/Alviso. Turn north onto Zanker Road. Continue on Zanker Road and to the Don Edwards San Francisco Bay National Wildlife Refuge entrance (a sharp right turn at Grand Blvd). The trailhead is reached from the parking lot of the Environmental Education Center in Alviso. Walk through the butterfly garden or New

Chicago Marsh Trail to reach the levee overlooking the pond.

Trail Details: Once reaching the levee overlooking the pond named A16, turn right and follow the levee. Pond A16 is on your left while Mallard Slough is on your right. Mallard Slough is tidal and provides views of shorebirds on mudflats at low tide and ducks at high tide. Pond A16 have large numbers of ducks, cormorants, and pelicans in the winter, shorebirds in the spring and fall, and terns in the summer. Egrets, herons and gulls are found year-round. At 0.2 miles from the trailhead, there is a water control structure that allows water movement between the pond and the slough during low and high tides. Before this structure was built in 2005, this pond had been part of Cargill's salt production process for 60 years.

This first part of Mallard Slough is dominated by bulrush indicating that freshwater feeds into the slough. The common yellowthroat and

Alameda song sparrow, both species of concern in the State of California, breed here. It is also a great place to listen to the frantic song of the marsh wren, a feisty bundle of energy not found in true salt marshes.

For the next half of a mile, you pass a section of the slough great for seeing and photographing black-crowned night herons, great and snowy egrets and great blue herons. In the summer, this section of the pond has many families of mallards and gadwall. These ducks nest in the vegetated slough but bring the young to feed in the open waters of the pond.

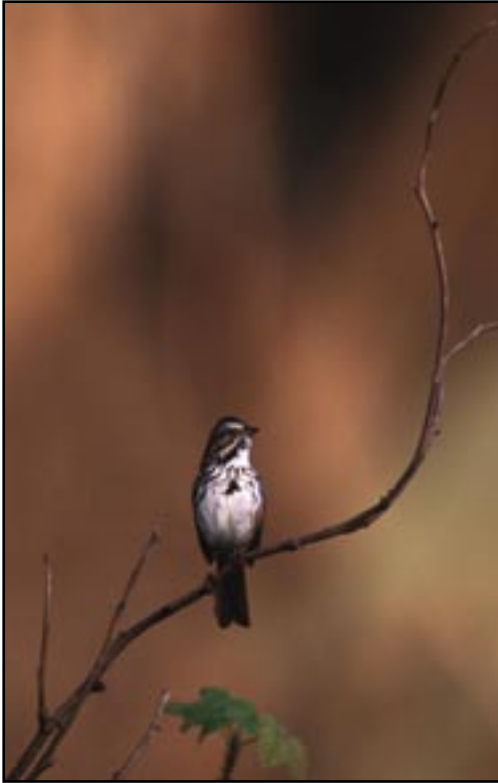
At 1.8 miles from the trailhead, one of five mud islands in Pond A16 is visible. This island provides bird nesting habitat in the summer and roosting habitat in the winter. In the summer, nesting American avocets, Forster's terns and an occasional black skimmer are fascinating to watch. American white pelicans and a variety of gulls also loaf on the island.

At the junction of Mallard Slough and Coyote Creek, the largest tributary in South San Francisco Bay, you can look across Coyote Creek to the levee breach of Pond A20. This former salt pond is restored to tidal action in 2005. The Union Pacific Railroad bridge over Coyote Creek is 2.5 miles from the trailhead. The town of Drawbridge was formed on the east side of Coyote Creek when the railroad was built in 1876. Railroad workers, fishermen, hunters and vacationers stayed here. Hotels and bars were especially popular during the prohibition years. You can still see some of the fading town's structures from this section of trail. Because of high train traffic, no one is allowed to walk on the tracks. This is strictly enforced.

The 3.8 mile mark brings you to the legal crossing of the railroad track. If you cross the track you will connect with the 9-mile Alviso Slough Trail. This loop trail connects you to the Alviso Marina. The shortest route to the Marina is to your left.

The last 1.5 miles of the trail is set between A16 and New Chicago Marsh. This marsh has subsided 10 feet below sea level. Pickleweed for the salt marsh harvest mouse is maintained by allowing small amounts of salt water from Coyote Creek into the marsh each summer. This marsh also provides habitat for nesting black-necked stilts, Forster's terns, and ducks. You will pass four more islands in Pond A16 as you complete the loop. These islands also provide excellent views of birds year-round. At 5.4 miles, you reach the New Chicago Marsh boardwalk which leads back to the parking lot.

If your time is too short for the entire hike or if you would like to visit during the waterfowl hunting season, go left at the trailhead instead of turning right as recommended. The Cottonwood trees next to the parking lot may also offer great birding during the migration period. Warblers and vireos can be found here and not on the rest of the trail. Barn owls also frequently occupy the nesting box in one of the trees.



Alameda Song Sparrow.

Photo: Greg Block

*For More information
on trails, contact the
Don Edwards San
Francisco Bay National
Wildlife Refuge
Visitor Center Tuesday
through Sunday
10:00 a.m. – 5:00 p.m.
or call 510-792-0222
ext. 43.*



San Francisco Bay National Wildlife Refuge Complex

National Wildlife Refuge Week

Open House

Saturday, October 13
1 p.m. - 6 p.m.

Spend the afternoon discovering the biological, interpretive, environmental education, and restoration programs at the San Francisco Bay National Wildlife Refuge Complex Headquarters.



- Speakers
- Native Plant Sale
- Laboratory Activity
- Quilting workshop with Jennifer Snedeker and Reception
- Guided Walks
- Q & A with a Refuge Biologist
- Take your picture on an airboat

For a complete list of activities, schedule, and times, visit our website at <http://www.fws.gov/desfbay> in September, or call Carmen Minch at 510-792-0222, ext. 38.

San Francisco Bay National Wildlife Refuge Complex is located at 1 Marshlands Rd, Fremont. For directions, visit our website listed above.

AMERICA'S NATIONAL WILDLIFE REFUGES...
where wildlife comes naturally!



Volunteer Orientation Program

Prospective, new, and experienced volunteers are invited to our Volunteer Orientations. This is a new program intended to expose volunteers to the many refuges that make up the San Francisco Bay National Wildlife Refuge Complex, showcase the diverse volunteer opportunities, and offer training on a variety of topics. Orientations will be held approximately every other month on Saturday afternoons at the Visitor Center in Fremont.

November 10, 2 p.m. - 4 p.m.

General orientation followed by a team-building session led by Tia Glagolev.

Future orientations are tentatively scheduled for January, March, and May. Future topics include: Interpretation, Visitor Center Desk Operations, Basic Bird Identification, Seasonal Bird Walks, South Bay Salt Pond Restoration Project, and tours to various locations within the Complex.

Please call the Visitor Center to make a reservation so we can set up a chair for you, (510) 792-0222 ext. 43.



Fall Schedule:

September 8, 2 p.m. - 4 p.m.

General orientation followed by a guided tour of the Native Plant Nursery with our volunteer nursery supervisor, June Smith.

Don Edwards San Francisco Bay National Wildlife Refuge

Quilting Workshop

Join Jennifer Snedeker in creating a quilt for the Don Edwards San Francisco Bay National Wildlife Refuge Visitor Center.



1 Marshlands Rd, Fremont
Visitor Center Auditorium

Saturday, October 13
10 a.m. - 4 p.m.

Sunday, October 14
10 a.m. - 4:30 p.m.

Help create a quilt about birds of the bay. Drop in and draw, stamp or stencil birds on fabric, or help sew the quilt. All supplies will be provided. This program is free!

For more information, call
Carmen Minch at 510-792-0222 ext. 38.
Quilters reception to follow at 4:30 p.m. October 13

COMING SOON TO A REFUGE NEAR YOU . . .

SHARK DAY



OCTOBER 27, 2007 • 12:00 P.M. - 4:00 P.M.

AT THE DON EDWARDS SAN FRANCISCO BAY NATIONAL WILDLIFE REFUGE
ENVIRONMENTAL EDUCATION CENTER IN ALVISO.

SWIM BY AND PET A LIVE LEOPARD SHARK, MAKE
SHARK CRAFTS, GET YOUR FACE PAINTED, AND
MORE! ALL ACTIVITIES ARE FREE!

**FOR MORE INFORMATION AND DRIVING DIRECTIONS, CALL 408-262-5513
OR VISIT [HTTP://WWW.FWS.GOV/DESF BAY](http://www.fws.gov/desfbay)**

SPONSORED BY 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

Don Edwards San Francisco Bay National Wildlife Refuge
Presents

Coastal Clean-Up Day

1 Marshlands Rd, Fremont

Saturday, September 15, 2007

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 latex gloves and trash & recycling bags.

You supply energy, sturdy shoes, sun protection, and clothes you don't mind getting dirty.

All groups are welcome. No reservations needed!

Children under age 18 must have parental approval. Forms may be downloaded from our web site at

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

For more information, contact Carmen Minch at 510-792-0222, ext. 38

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 14, 2007 and July 20, 2007. These gifts will be used for capital, environmental education, habitat restoration, and interpretive programs at the Don Edwards San Francisco Bay National Wildlife Refuge.

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Participant

Gayle Anderson, Lavonne M Coleman, Helen E Conway, Robert & Harriet Jakovina, Locke C Jorgensen, and Lester Marks

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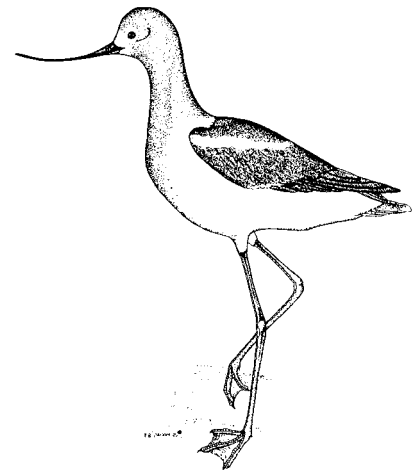
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Philip Lindsay, Sylvia C McLaughlin, Alberto Martinez, Clark Nakamura, Christopher Quinn, Jean L Salmon, Trudy Sawyer, Don J Thompson, Lillian R Timm, Phyllis J Vickers, Craig Williams, and Norma Zimmer



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 510-792-0222 ext. 40.

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:

- | | | | | |
|--|---|--|--|---|
| <input type="checkbox"/> \$20 Student/Senior | <input type="checkbox"/> \$50 Family | <input type="checkbox"/> \$100 Participant | <input type="checkbox"/> \$250 Sponsor | <input type="checkbox"/> \$1,000 Leader |
| <input type="checkbox"/> \$35 Individual | <input type="checkbox"/> \$75 Supporter | <input type="checkbox"/> \$200 Corporation | <input type="checkbox"/> \$500 Sustainer | |

Check Visa or MasterCard # _____ Exp. Date _____

Signature _____

Name _____

Address _____ City _____ State _____ Zip _____

Phone _____ *Thank you for your support!*

San Francisco Bay Wildlife Society Celebrates 20 Years

For two decades, the San Francisco Bay Wildlife Society has supported environmental education, interpretation, and biological programs at the Don Edwards San Francisco Bay National Wildlife Refuge. Our mission of promoting public awareness and appreciation of the San Francisco Bay and its natural history; and conserving and preserving the remaining bay lands as essential wildlife habitat is much the same now as when we held our first Board of Directors meeting at the refuge's visitor center in May 1987. The Coastal Park Association loaned start-up money to help fund our budding nonprofit and we were up and running.

Although we were still quite small, one of our first actions as an organized Friend's group was to establish a bookstore in the visitor center. The store would carry field guides, natural history books, and maps to enhance the visitor's experience on the refuge. Through bookstore proceeds and fundraising efforts, the Wildlife Society purchased binoculars for people to borrow when visiting, materials for the volunteer program, and supplies to help conserve habitat for endangered species. The Wildlife Society also purchased the refuge's very first computer, laptop, and copy machine.

The Wildlife Society also wanted to educate adults and children to the wonders of the bay lands. We published a newsletter – *Tideline* – on a quarterly basis to advertise refuge educational and recreational activities. Each *Tideline* included a feature article, written by one of the refuge staff, to provide information about the bay and its environment. Twenty years later, *Tideline* is still going strong and now has experts from the community writing feature articles. It is now also available on-line for those who wish to receive it via the web. In addition to *Tideline*, the Wildlife Society has published two books: *Exploring Our Baylands* by Dianne Conradson and *Drawbridge, California: A Hand-me-down History* by Monte Dewey. These popular books offer insight into the natural history of the San Francisco Bay Area.

As time went on, the Wildlife Society was able to hire staff and expand operations. For many years, we supported refuges in California, Oregon, and Washington until those refuges were able to establish Friends' groups of their own. For more than a decade, we have been awarded grants from Santa Clara Valley Urban Runoff Pollution Prevention Program and the City of San Jose to hire an environmental education specialist

and an interpretive specialist for the Environmental Education Center (EEC) in Alviso. The environmental education specialist conducts field trip programs at the refuge and off-site in the schools of the Santa Clara Valley area. Both the interpretive specialist and the environmental education specialist offer programs at the EEC for children and adults, allowing the facility to be open on weekends.

Additional fundraising over the years resulted in the construction of an accessible boardwalk at the Environmental Education Center and in the preparation of a Restoration and Management Plan for Bair Island in Redwood City.

What do the next 20 years hold for the San Francisco Bay Wildlife Society? We will continue to be involved with the restoration of the former salt ponds and with the plan to build a new visitor center at Refuge Headquarters in Fremont. We support building a visitor center that is accessible for everyone and contains exhibits which emphasize and educate people about ongoing, local habitat restoration activities. This will be our biggest project to date. Undertakings of this size and scope will require assistance from many individuals. Your ideas and input are welcome to help make the new visitor center a place of community education.

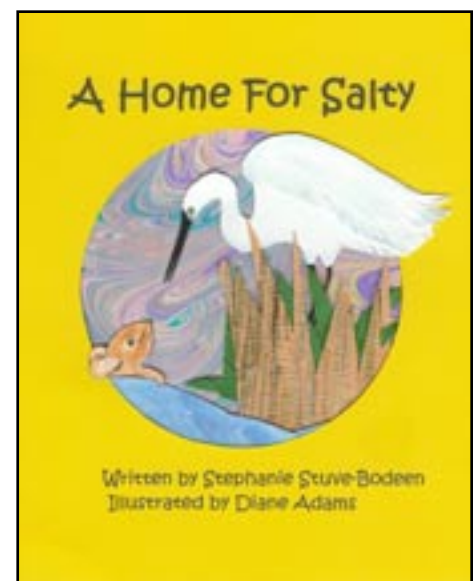
A Home for Salty

At last, a children's story book about the adventures of "Salty", the endangered salt marsh harvest mouse. *A Home for Salty* will be available for purchase on-line at the Friends of the San Pablo Bay website: www.pickleweed.org and in the bookstores of Don Edwards San Francisco Bay National Wildlife Refuge, at the Visitor Center in Fremont and the Environmental Education Center in Alviso. This endangered mouse lives only in San Francisco and San Pablo Bays' salt marshes.

Award-winning children's author

Stephanie Stuve-Bodeen revised the story from a refuge field trip story book and puppet activity to create this engaging tale of a marsh mouse's search for a suitable wetland habitat. Illustrator Diane Adams combined collage, drawing and marbled paper to beautifully enhance the action of the story.

The back cover engages the child in all of us. "Where would you like to live? In the quishy, icky mudflats? In the winding, watery slough? In the plump, pickleweed salt marsh? Come join Salty on her journey to find her home".



Autumn Activity Schedule

September

Saturday, September 8

Exploring the Dunes

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

Did you know there's a National Wildlife Refuge in Antioch? 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.

Feet, Beaks, & Eats

Environmental Education Center, Alviso
10:00 a.m. – 11:30 a.m.

Why does that bird have funny looking feet and a strange beak? Learn about birds' beaks and feet in a way you never have before. Discover how birds' beaks and feet are adapted to live in certain habitats and to eat certain types of food. Then enjoy a walk around the boardwalk to see the birds in action. Also learn how people have affected their habitat. Recommended for ages 7 and up. RESERVATIONS REQUIRED. Call 408-262-5513 ext. 102 to make a reservation.

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. Meet at the observation deck. Not suitable for young children. RESERVATIONS REQUIRED. Call 510-792-0222 ext. 43. Led by Mary and Gene Bobik.

Saturday, September 15

Coastal Cleanup!

Visitor Center Parking Lot, Fremont
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. No reservations needed. All groups welcome. Children under age 18 must have parental approval. Forms may be downloaded from

our web site at <http://www.fws.gov/desfbay>. For more information, contact Carmen Minch at 510-792-0222 ext. 38.

A Trip Back in Time

Visitor Center, Fremont
10:30 a.m. – 12:00 p.m.

Revive the vanishing knowledge of the history of the Don Edwards San Francisco Bay National Wildlife Refuge grounds by strolling the trails with docent Ray Studer. Ray spent most of 2004 researching the on-site salt production, railroads, and homes that were located on the refuge grounds until the 1950s. Using a collection of old photographs, the last vestiges of a way of life can be traced back to the 1850s that led to the construction of the town of Newark in 1876.

About Butterflies

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

Do you know the difference between butterflies, moths and skippers? Learn about these insects and their fascinating life cycles. We'll take a leisurely walk around our butterfly garden to see some of these beautiful insects. Led by Ed Kantack. Suitable for ages 7 and up. RESERVATIONS REQUIRED. Call 408-262-5513 ext. 102.

Saturday, September 22

Family Bird Walk

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

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. Learn about the salt marsh habitat along the way. A limited number of binoculars are available to borrow. Recommended for children ages 5-10. RESERVATIONS REQUIRED. Call 510-792-0222 ext. 43.

Sunday, September 23

A Day by San Pablo Bay, with Bay Nature & Friends

9:00 a.m. to 3:00 p.m.

Join Bay Nature, PRBO Conservation Science, the Coastal Conservancy, Friends of San Pablo Bay NWR, and SF Bay Joint Venture for a day exploring two of the bird-friendly wetland areas described in *Highway to the Flyway: The Road to Restoration on San Pablo Bay* (Bay Nature, Jul-Sept 2007): Sonoma Baylands (9 a.m. - 12 noon) and Cullinan Ranch/Pond One (1-3 p.m.). Sign up for one or both hikes. Space is limited;

reservations required (hikes@baynature.com /510-528-8550). More information at www.baynature.com.

Saturday, September 29

Zoo Birds!

Happy Hollow Park and Zoo, San Jose
8:30 a.m. – 10:00 a.m.

Interpretive Specialist, Lindy Nice, takes "Children's Beginning Birdwatching" on the road. Learn about wild birds that live at Happy Hollow Park and Zoo. The birds found at the zoo are ones commonly seen in backyards. Kids will be able to identify and learn about the birds they see at home. Program is free with park admission. Suitable for ages 5 and up. Reservations required. Call Vanessa Rogier at 408-277-3065.

Wonders of Our Waterworks

San Jose/Santa Clara Water Pollution Control Plant, Alviso
9:00 a.m. – 12:00 p.m.
OR 1:00 p.m. – 4:00 p.m.

Join us on a special tour of the San Jose / Santa Clara Water Pollution Control Plant and wetlands of the Don Edwards San Francisco Bay National Wildlife Refuge. Learn firsthand how our everyday activities impact wetlands around the Bay. Discover how wastewater is treated and how you can help endangered species that live on the refuge. For more information and to register for this program, please complete the tour request form at <http://www.sanjoseca.gov/esd> or call Carolina at 408- 975-2551 by September 19, 2007. Recommended for ages 10 and up.

Community Service

Environmental Education Center, Alviso
1:30 p.m. – 4:00 p.m.

Do you need to fulfill community service requirements? Help remove invasive non-native plants from our chemical-free demonstration gardens. Bring your own gloves or borrow a pair of ours. Tools and drinking water provided. Layers and long pants are recommended. Be prepared to get dirty and wet. Recommended for age 9 and up. Reservations required. Call 408-262-5513 ext. 102.

Bird Watching by Van

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

Whether you are a novice or expert birder, this program is designed for people who enjoy watching birds but are unable to walk far. Bird watching will be done by van with some brief stops. The

Don Edwards San Francisco Bay National Wildlife Refuge

1 Marshlands Road, Fremont – (510) 792-0222 • 1751 Grand Blvd, Alviso – (408) 262-5513 • <http://www.fws.gov/desfbay>

Autumn Activity Schedule

vans cannot accommodate wheelchairs; birders must be able to maneuver into and out of the van on their own. Join Ceal Craig as she drives you on the levees to view fall birds. This two-hour trip is not suitable for children. Space is very limited. RESERVATIONS ARE ESSENTIAL. Call 408-262-5513 ext. 102.

Sunday, September 30

Native Species Scavenger Hunt

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

The refuge is a mosaic of different habitats, each supporting an array of wildlife unique to the South Bay. Come enjoy the outdoors as we embark on a scavenger hunt while exploring the refuge habitats! We will get up close and personal with the salt marsh, sloughs, and former salt ponds on this short and easy trek. Binoculars and I.D. charts in hand, we will look at and identify native plants and animals. We will also learn how people impact each habitat. Recommended for all ages. Reservations required. Call 408-262-5513.

A Ghost Town in SF Bay?

Visitor Center Auditorium, Fremont
2:00 p.m. - 3:00 p.m.

That's right! On Station Island nestled in the salt marshes of south San Francisco Bay, the town of Drawbridge once boomed. Was it a quiet, peaceful community of nature lovers, or a rip-roaring gang of two-fisted rowdies? Excellent slide show and presentation. Led by Pat Anthony.

October

Saturday, October 6

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. Space is limited to the first 50 people! You must arrive at 8 a.m. to participate. RESERVATIONS REQUIRED. Call 510-792-0222 ext. 43 to reserve yourself a spot.

Wonderful Wildflowers

Environmental Education Center, Alviso
10:30 a.m. - 12:00 p.m.

Do you enjoy wildflowers, bugs, and butterflies? Learn about native wildflowers and find out how insects are important pollinators of fruits and flowers. Then take a walk through our butterfly garden and enjoy a scavenger hunt. Native plant specialist June Smith will be leading the walk. Program will go on rain or shine. Recommended for all ages. RESERVATIONS REQUIRED. Call 408-262-5513 ext. 102.

Webelos Naturalist Program

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

Calling all Webelos of Santa Clara County! Do you need to earn a Naturalist Badge? We've got a program just for you. Learn about birds, migration, flyways, food chains, human impacts, and the importance of wetlands. Then take a walk and use our binoculars to spot birds in the wild. Program will go on rain or shine. RESERVATIONS REQUIRED. Calls for reservations begin August 27th at 9:00 a.m., no exceptions. Call 408-262-5513 ext. 102.

Saturday, October 13

Quilting Nature Workshop

Visitor Center Auditorium
10:00 a.m. - 4:00 p.m.

The San Francisco Bay is home for many bird species and many others stop here during their migration. Learn about these wonderful birds while helping quilt artist Jennifer Snedeker create a quilt about birds of the bay to display in the Visitors Center. Visitors can drop in and draw, stamp or stencil birds on fabric, or help sew the quilt.

Exploring the Dunes

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

Did you know there's a National Wildlife Refuge in Antioch? 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.

Community Service

Environmental Education Center, Alviso
1:30 p.m. - 4:00 p.m.

Do you need to fulfill community service requirements? Help remove invasive non-native plants from our chemical-free demonstration gardens. Bring your own gloves or borrow a pair of ours. Tools and drinking water provided. Layers and long pants are recommended. Be prepared to get dirty and wet. Recommended for age 9 and up. Reservations required. Call 408-262-5513 ext. 102.

SF Bay National Wildlife Refuge Complex Open House

Newark Slough Learning Center, Fremont
(Down the hill from the Visitor Center)
1:00 p.m. - 6:00 p.m.

In just a few short hours, experience some of the

National Wildlife Refuge Week is October 6-13!

biological, interpretive, environmental education, and restoration programs at the San Francisco Bay National Wildlife Refuge Complex through speakers, exhibits, and nature walks. Meet a Refuge Biologist and take pictures of the airboat used to survey endangered species. Participate in creating a new interpretive exhibit for the Visitor Center in the Quilt Workshop held by Jennifer Snedeker. Experience the refuge at twilight at both the Fremont and Alviso site. For a complete schedule and times, log on to our web site at <http://www.fws.gov/sfbayrefuges> beginning in September.

Native Plant Sale

Newark Slough Learning Center, Fremont
(Down the hill from the Visitor Center)
1:00 p.m. - 5:00 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. Follow the signs to the sale.

Saturday, October 13 continued next page

Don Edwards San Francisco Bay National Wildlife Refuge

1 Marshlands Road, Fremont - (510) 792-0222 • 1751 Grand Blvd, Alviso - (408) 262-5513 • <http://www.fws.gov/desfbay>

Autumn Activity Schedule

Saturday, October 13

Family Bird Walk

**Newark Slough Learning Center, Fremont
(Down the hill from the Visitor Center)
1:00 p.m. - 3:00 p.m.**

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. Learn about the salt marsh habitat along the way. A limited number of binoculars are available to borrow. Recommended for children ages 5-10. RESERVATIONS REQUIRED. Call 510-792-0222 ext. 43.

Adult Beginning Birdwatching

**Newark Slough Learning Center, Fremont
(Down the hill from the Visitor Center)
3 p.m. - 5:00 p.m.**

Can you tell an avocet from a black-necked stilt? Join Paul Bridges for a beginning bird watching program and get to know the most common refuge visitors. Start with a slide show to learn how to recognize the regulars, and then take a walk with Paul to try your new skills. A limited number of binoculars are available to borrow. Program intended for adults.

Meet the Quilter Behind the Quilt Exhibit Reception

**Visitor Center Auditorium, Fremont
4:30 p.m. - 5:30 p.m.**

Meet Jennifer Snedeker who works with the Bay Quilt Project. Jennifer is exhibiting her nature quilts in the Visitor Center Auditorium from September through November. Quilts on display will feature bay lands and animals seen in the San Francisco Bay Area. Jennifer will be holding free quilting workshops all weekend at the Visitor Center as part of National Wildlife Refuge Week and will donate the finished product to the refuge.

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. Meet at the observation deck. Not suitable for young children. Led by Mary and Gene Bobik.

Sunset Stroll

**Environmental Education Center, Alviso
6:00 p.m. - 7:30 p.m.**

Come explore the marsh at sunset. Join us for an easy stroll around the Education Center. Many marsh creatures are just waking up to start their "day." Find out what critters are active as the sun goes down, and why. How do humans affect these nocturnal creatures? Dress warmly as the wind picks up in the evening. Suitable for ages 7 and up. RESERVATIONS REQUIRED. Call 408-262-5513 ext.102.

Sunday, October 14

Quilting Nature Workshop

**Visitor Center Auditorium
10:00 a.m. - 4:30 p.m.**

The San Francisco Bay is home for many bird species and many others stop here during their migration. Learn about these wonderful birds while helping quilt artist Jennifer Snedeker create a quilt about birds of the bay to display in the Visitors Center. Visitors can drop in and draw, stamp, or stencil birds on fabric, or help sew the quilt.

Saturday, October 20

Webelos Naturalist Program

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

Calling all Webelos of Santa Clara County! Do you need to earn a Naturalist Badge? We've got a program just for you. Learn about birds, migration, flyways, food chains, human impacts, and the importance of wetlands. Then take a walk and use our binoculars to spot birds in the wild. Program will go on rain or shine. RESERVATIONS REQUIRED. Calls for reservations begin August 27th at 9:00 a.m., no exceptions. Call 408-262-5513 ext. 102.

A Trip Back in Time

**Visitor Center, Fremont
10:30 a.m. - 12:00 p.m.**

Revive the vanishing knowledge of the history of the Don Edwards San Francisco Bay National Wildlife Refuge grounds by strolling the trails with docent Ray Studer. Ray spent most of 2004 researching the on-site salt production, railroads, and homes that were located on the refuge grounds until the 1950s. Using a collection of old photographs, the last vestiges of a way of life can be traced back to the 1850s that led to the construction of the town of Newark in 1876.

Exploring Owls

**Visitor Center Auditorium, Fremont
1:00 p.m. - 3:00 p.m.**

Owls have captivated human imagination for centuries. Curious about how they hunt, how they see and hear, and what they eat? Come listen to a presentation, view owl body parts, listen to their calls, and dissect their pellets to see what they eat. Recommended for ages 7 and up. Led by Paul Bridges. Reservations required. Call 510-792-0222 ext. 43.

Rachel Carson Celebration!

**Environmental Education Center, Alviso
1:30 p.m. - 3:30 p.m.**

Discover the woman behind the legend. Having spent much of her life exploring nature, Rachel Carson developed an appreciation for national wildlife refuges. Join us for coffee and cake as we honor this amazing woman's accomplishments with the U.S. Fish and Wildlife Service, and the time she devoted to preserving our nation's wild places and oceans. After a discussion and nature walk, you will understand why Rachel Carson described refuges as a sanctuary for both wildlife and people. RESERVATIONS REQUIRED. Call 408-262-5513 ext. 102.

Sunday, October 21

Marsh Mud Mania

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

What's that wiggling and squiggling? Think that brown stuff is just mud? Think again!!! Come take a slough hike, collect some ooey, gooey mud, and discover which critters the birds find during a low-tide feast. We'll also compare mud creatures from two different habitats to see what they can tell us about the health of these muddy homes. Recommended for ages 5 and up. Reservations required. Call 408-262-5513.

Saturday, October 27

Shark Day!

**Environmental Education Center, Alviso
12:00 p.m. - 4:00 p.m.**

They're baaack! Just when you thought it was safe to visit the refuge. . . Live, wild, San Francisco Bay leopard sharks will be visiting us. Join us for a fun-filled day of guided walks, games, shark teeth necklaces, shark petting, mud creature lab, and crafts. All activities and crafts are FREE! No reservations necessary.

Don Edwards San Francisco Bay National Wildlife Refuge

1 Marshlands Road, Fremont - (510) 792-0222 • 1751 Grand Blvd, Alviso - (408) 262-5513 • <http://www.fws.gov/desfbay>

Autumn Activity Schedule

Sunday, October 28

Halloween Slough Who: An Owl Exploration

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

Who...who...who did that owl eat? Bet you can find out! Come celebrate Halloween and solve the mystery of who ate whom and learn a bit about these nocturnal predators. We will debunk owl myths with an in-depth Powerpoint presentation, hike the habitats to search for owl clues, and dissect owl pellets to discover exactly who that owl ate! Recommended for ages 7 and up. Reservations required. Call 408-262-5513.

November

Saturday, November 3

Zoo Birds!

Happy Hollow Park and Zoo, San Jose
9:00 a.m. – 10:30 a.m.

Interpretive Specialist, Lindy Nice, takes "Children's Beginning Birdwatching" on the road. Learn about wild birds that live at Happy Hollow Park and Zoo. The birds found at the zoo are ones commonly seen in backyards. Kids will be able to identify and learn about the birds they see at home. Program is free with park admission. Suitable for ages 5 and up. Reservations required. Call Vanessa Rogier at 408-277-3065.

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 510-792-0222 ext. 43 beginning August 28 for reservations. Led by June Smith.

Who Did the Owl Eat?

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

Learn all about owls and their adaptations that enable them to be superb hunters. Learn about food chains and the habitats that owls hunt in. Then see what an owl eats by dissecting an owl pellet. Can you figure out the mystery of who the owl ate? Recommended for ages 4 and up. RESERVATIONS REQUIRED. Call 408-262-5513 ext. 102.

Sunday, November 4

Wacky Wastewater Olympics

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

Come one, come all to the Wacky Wastewater Olympics! Olympians will first train for their event by learning about wastewater pathways with a fully functioning watershed model. Once warmed up, Olympians will join forces and team up to run through Bay fog, crawl inside sewer pipes, slither through storm drain, dodge river boulders, and scoot their way to the finish line! This is a great opportunity for boy scout and girl scout groups! Recommended for ages 4 and up. Reservations required. Call 408-262-5513.

Saturday, November 10

Family Bird Walk

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

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. Learn about the salt marsh habitat along the way. A limited number of binoculars are available to borrow. Recommended for children ages 5-10. RESERVATIONS REQUIRED. Call 510-792-0222 ext. 43.

Community Service

Environmental Education Center, Alviso
1:00 p.m. – 4:00 p.m.

Do you need to fulfill community service requirements? Help remove invasive non-native plants from our chemical-free demonstration gardens. Bring your own gloves or borrow a pair of ours. Tools and drinking water provided. Layers and long pants are recommended. Be prepared to get dirty and wet. Recommended for age 9 and up. Reservations required. Call 408-262-5513 ext. 102.

Saturday, November 17

Webelos Naturalist Program

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

Calling all Webelos of Santa Clara County! Do you need to earn a Naturalist Badge? We've got a program just for you. Learn about birds, migration, flyways, food chains, human impacts, and the importance of wetlands. Then take a walk and use our binoculars to spot birds in the wild.

Program will go on rain or shine. RESERVATIONS REQUIRED. Calls for reservations begin August 27th at 9:00 a.m., no exceptions. Call 408-262-5513 ext. 102.

ABCs of Raptors

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

It's a hawk . . . or is it? It may be an accipiter or a buteo. Perhaps it's a kite or falcon. What if it's a vulture? Learn the difference as we explore the birds of prey we call raptors. Suitable for ages 7 and up. Led by Ed Kantack. RESERVATIONS REQUIRED. Call 408-262-5513 ext. 102.

Sunday, November 18

Habitat Hike

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

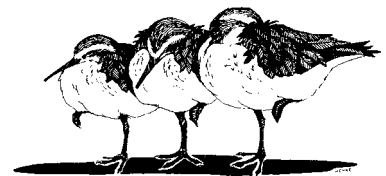
Do you enjoy exploring nature? Do you find yourself curious about where mice sleep or how birds stay dry in the rain? If so, then you may be a habitat hominid! What is a habitat hominid? It's a person who loves learning about where local animals and plants live. Come take a walk and explore the habitats at the refuge. Along the way we will learn about wetland and upland habitats that have been human-altered. We will observe and identify plants, birds, and other animals we see on this short and easy trek. This program is wheelchair and stroller accessible. Recommended for all ages. Reservations required. Call 408-262-5513.

Saturday, November 24

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. Meet at the observation deck. Not suitable for young children. RESERVATIONS REQUIRED. Call 510-792-0222 ext. 43. Led by Mary and Gene Bobik.



Don Edwards San Francisco Bay National Wildlife Refuge

1 Marshlands Road, Fremont – (510) 792-0222 • 1751 Grand Blvd, Alviso – (408) 262-5513 • <http://www.fws.gov/desfbay>

Field Trips to the Refuge

General Field Trip Program Information

FREE field trip programs are offered at two sites at the Don Edwards San Francisco Bay National Wildlife Refuge. The Wetland Round-Up field trip programs is offered at the Newark Slough Learning Center in Fremont, and Wetland Round-Up and Slow the Flow 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 students. All programs have been correlated to the appropriate State of California Education Standards.

Educators and adult leaders design and conduct their own field trips after attending a Field Trip Orientation Workshop. Adult volunteers must be recruited to lead the activities at the different learning stations and to chaperone the rotation of student groups. We provide easy to follow "scripts" for each station, but both "leaders" and "chaperones" are strongly encouraged to attend a workshop. It is our policy that lead educators must attend a workshop every two years.

Field Trips at the Learning Center in Fremont

Wetland Roundup

Investigate creatures of the mud flats, plankton and other creatures in the slough, and the pickleweed in the salt marsh. This field trip is designed for grades K-6, for up to 65 students. Wetland Roundup is offered Tuesday-Friday from October - December.

Reservations for fall field trips begin on Wednesday, September 5th between 4:00 p.m. and 5:00 p.m. Call 510-792-0222 ext. 0 to make a reservation in Fremont.

For more information or to schedule a field trip after the initial call-in date, call the Environmental Education Intern at 510-792-0222 ext. 42.

Please note: Reservations for Spring 2008 will begin on Tuesday, December 4 from 4:00 p.m. - 5:00 p.m.

Field Trip Orientation Workshop Dates at the Learning Center in Fremont

Call the Environmental Education Intern at 510-792-0222 ext. 42 to attend an orientation.

Wetland Round-Up 4:00 p.m. - 7:30 p.m.

Thursday, September 27

Tuesday, October 30

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 program is designed for up to 65 students in grades K-6. Wetland Round-Up is offered Monday - Thursday from October 15 through December 13.

Reservations for fall field trips begin on Wednesday, September 5th between 4:00 p.m. and 5:00 p.m. Call 408-262-5513 to make a reservation in Alviso.

Please note: Reservations for Spring 2008 will begin on Tuesday, December 4, from 4:00 p.m. - 5:00 p.m.

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

Call the environmental education intern at 408-262-5513 ext. 103 to attend an orientation.

Wetland Round-Up 4:00 p.m. - 7:30 p.m.

Monday, October 1

Thursday, November 1

Thursday, November 15

Please note: The cutoff date to make a workshop reservation is the Friday before each orientation.

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.

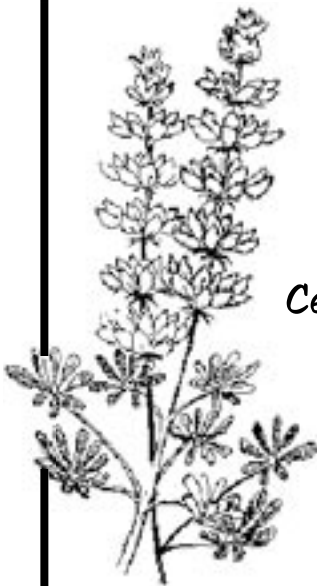
5th and 6th Grades: We offer a combined classroom presentation and an all day hands-on field trip at the refuge.

7th - 12th Grades: We offer classroom presentations and/or a field trip at the refuge.

Educators are encouraged to contact us to discuss options for customizing field trips and presentation activities and schedules. Slow the Flow Programs are available throughout the year in Alviso. Reservations for the Slow the Flow program are on a first come basis. Call program coordinator, Tina Simmons, at 408-262-5513 ext. 104 for more information, or to schedule a field trip or presentation for the fall (October - December, 2007).

Sale of Native Plants

Saturday, October 13, 2007
1:00 p.m. - 5:00 p.m.



Attract hummingbirds and butterflies to your neighborhood with California native plants. Sale will be held at the Newark Slough Learning Center located down the hill from the Visitor Center.

Don Edwards San Francisco Bay National Wildlife Refuge
1 Marshlands Rd, Fremont, CA
For more information, call Carmen Minch at 510-792-0222

Connections to Pier Fishing

Don Edwards San Francisco Bay National Wildlife Refuge in Fremont

Saturday, October 6
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 510-792-0222 ext. 43 for reservations. For more information, see page 11.

TIDELINE

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Editor: Carmen Minch

To receive *Tideline*, email carmen_leong-minch@fws.gov, or write to: **Tideline**, Don Edwards San Francisco Bay National Wildlife Refuge, 9500 Thornton Ave, Newark, CA 94560.

San Francisco Bay National Wildlife Refuge Complex

Founded in 1974 and administered by the U.S. Fish and Wildlife Service, Don Edwards San Francisco Bay National Wildlife Refuge exists to preserve wildlife habitat, protect threatened and endangered species, protect migratory birds, and provide opportunities for nature study. Six additional refuges are managed from the headquarters located in Fremont: San Pablo Bay NWR, Antioch Dunes NWR, Salinas River NWR, Ellicott Slough NWR, Marin Islands NWR, and Farallon NWR.

Project Leader: Mendel Stewart
Deputy Project Leader: John Bradley

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Refuge Manager: Clyde Morris

Don Edwards Warm Springs
Unit Manager: Ivette Loreda

Don Edwards Refuge
Operations Specialist: Eric Mruz

Farallon Refuge Manager: Joelle Buffa

Farallon Refuge Operations Specialist: Zack 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 Planner: Carmen Minch

Volunteer Coordinator: Laurie McEwen

Environmental Education
Specialists: Fran McTamane, Genie Moore,
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Law Enforcement Officers: Sean Reier,
Walter Duran

Biologists: Joelle Buffa,
Joy Albertson, Giselle Downard, Rachel Hurt,
Gerry McChesney, Susan Euing

Maintenance Staff: Larry Wade, Juan Flores,
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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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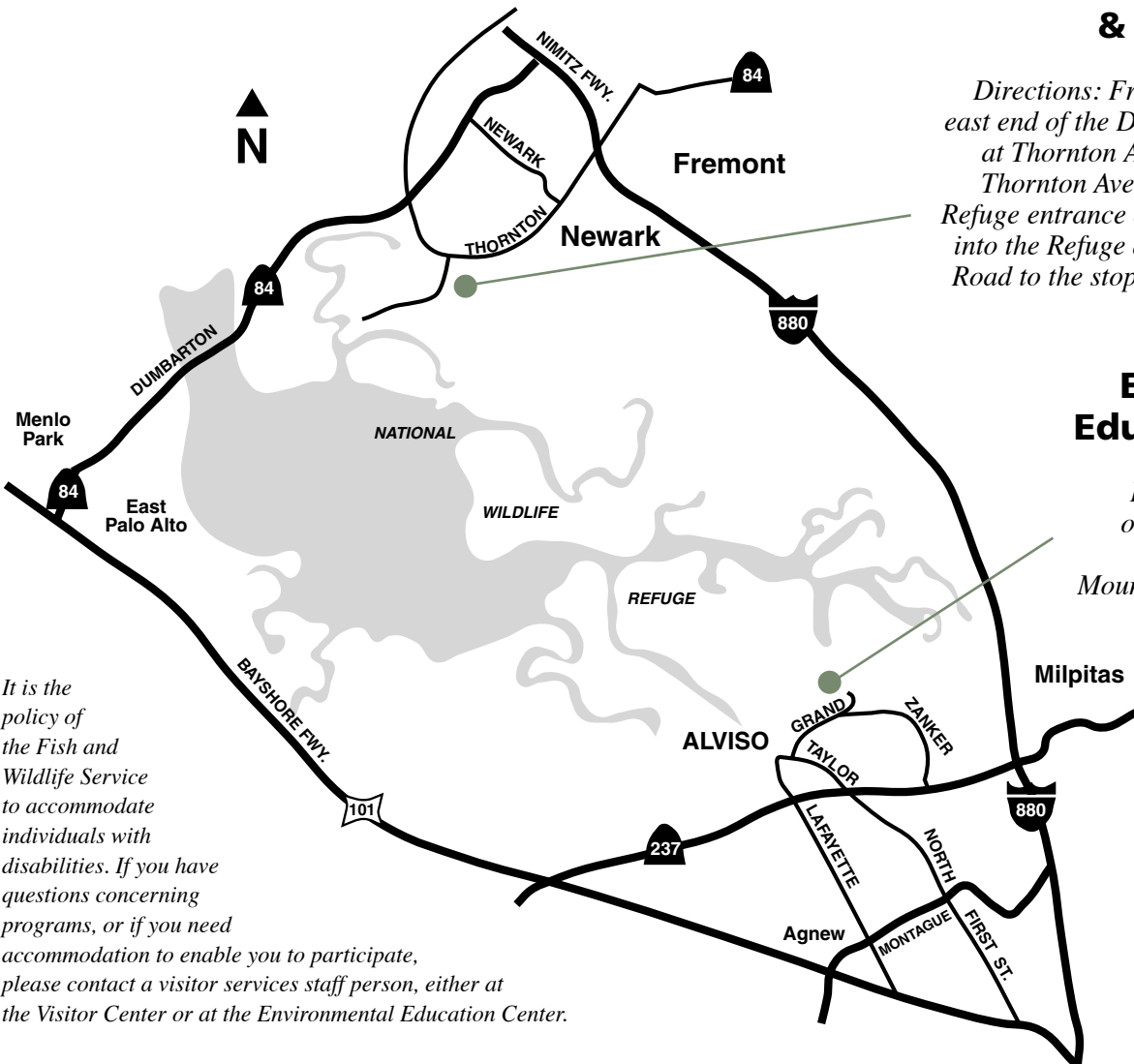
Tideline is On-Line

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

UNITED STATES
 DEPARTMENT OF THE INTERIOR
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 DON EDWARDS SAN FRANCISCO BAY
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Headquarters & Visitor Center

(510) 792-0222

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.