



Volume 23, No. 2

Many Partnerships Involved in South Bay Restoration

by Bryan W. Lapine

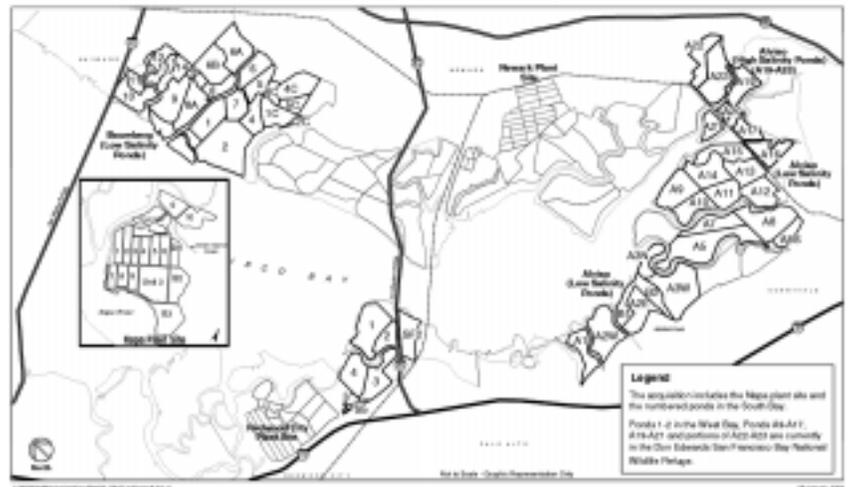
Over the past one hundred and fifty years, human activity has had a significant impact on the San Francisco Bay area. Once surrounded by nearly 200,000 acres of sprawling salt marshes and 100,000 acres of seasonal wetlands, vernal pools, creeks, and streams, today's Bay habitats stand greatly changed. Roughly eighty percent of the once expansive wetlands have disappeared and much of what remains has been significantly degraded. Development, pollution, filling, salt production, and the introduction of non-native plants and animals have all taken their toll on the embattled ecosystem. These practices continued unabated for nearly a century until scientists and citizens alike began to see the irreparable damage being done to the Bay area ecology.

Today, however, there is much reason for hope. In a widely anticipated agreement, the U.S. Fish and Wildlife Service and the California Department of Fish and Game have jointly acquired an extensive system of salt ponds in the South Bay and Napa areas from Cargill Salt, Inc. The Bay area now has an historic opportunity to restore great portions of these lands to their native, natural habitats. Comparable to projects in the Chesapeake Bay and Florida Everglades, the restoration of the South Bay will be one of the largest and most promising wetlands restoration projects undertaken.

Once restored, these lands will provide valuable ecological functions, offering habitat and abundant sources of food for fish and wildlife. Endangered and at-risk species will find homes in critical habitat set aside for their protection. Sustained by the rich ecosystem, countless numbers of shorebirds and waterfowl

from all over the Western Hemisphere will dot great expanses of the Bay landscape.

The restoration will also provide tangible economic benefits to South Bay communities. Restored wetlands will offer vital filters of urban runoff, purifying area water supplies. Acting as



natural water-control barriers, these lands will also help protect communities from flood damage. Another major component of restoration plans will provide for public access and recreation. Nature lovers, hikers, hunters, and birders will enjoy these areas for generations to come.

Essentially, humans now have the chance to "recreate nature" by expanding habitats that were nearly driven to the brink of permanent loss. In a rare reversal, land will be developed primarily for nature's sake. Restoration of the South Bay offers the opportunity to recreate one of the most biologically productive ecosystems on Earth.

Above: South Bay and Napa salt ponds acquired by U.S. Fish and Wildlife Service and the California Department of Fish and Game

Continued on page 2

Many Partnerships Involved in

The idea of restoring Bay area wetlands is not new however. To a large degree, this restoration project stands on the shoulders of decades of work and commitment by a wide array of partners. Similarly, its success will depend upon existing partnerships and the formation of many more to come.

The beginnings of South Bay restoration trace back to the early 1960s. A citizen-led

next several decades, this strategy was enhanced and expanded. Scientific proposals were published on what restoration would look like and how it would be achieved. “These groups desired to better define a vision,” reflects Don Edwards Refuge Manager Clyde Morris. “They laid the groundwork for many of the restoration projects in place today and for ones in years to come.” However, for their vision to be implemented, necessary lands would first have to be acquired.

Then in 1999, Cargill Salt Inc. approached the government about selling surplus salt ponds from its extensive salt-making properties. To modernize its San Francisco Bay operation, Cargill sought to consolidate production around its Newark plant. Negotiations between Cargill, the California Wildlife Conservation Board, and the U.S. Fish and Wildlife Service continued for the next several years. U.S. Senator Dianne Feinstein became personally involved in negotiations and also coordinated funding for the project. By May 2002, a preliminary agreement had been reached to purchase 16,500 acres (15,100 acres in the South Bay and 1,400 acres in Napa County) for \$100 million.

In addition to the initial negotiating partners, private foundations stepped forward to contribute necessary funds to secure the lands. A total of \$20 million was donated by private foundations, including the Richard and Rhoda Goldman Fund, the William and Flora Hewlett Foundation, the Gordon and Betty Moore Foundation, and the David and Lucille Packard Foundation. The State of California, through taxpayer-approved bond measures administered by the California Wildlife Conservation Board, contributed \$72 million towards the acquisition. An additional \$8 million came from Federal government appropriations.

With the purchase agreement completed, the restoration project has now entered the period whereby salt production on Cargill ponds is being phased-out and operations will begin to be transferred to the U.S. Fish and Wildlife Service and California Department of Fish and Game. The transfer is occurring on a pond-by-pond basis and is dependent upon Cargill lowering salinity levels in ponds to meet standards set by the Regional Water Quality Control Board. These standards will protect aquatic life from the adverse effects of water with excessive salt content being discharged into the Bay.

As each pond meets the water quality requirements, the U.S. Fish and Wildlife Service and the California Department of Fish and Game will begin to manage the lands. Lower salinity



Above From left: California Governor Gray Davis, U.S. Senator Dianne Feinstein, Assistant Secretary of the Interior Craig Manson, Chairman and CEO of Cargill Inc. Warren Staley, Lou Coleman of the Moore Foundation, and David Lewis of Save the Bay Association at announcement of acquisition (May 2002)

movement began to form with the shared vision of protecting remaining wetlands and restoring as much of these precious natural resources as possible. Citizen groups, particularly the South San Francisco Baylands Planning, Conservation and National Wildlife Refuge Committee (what would become the Citizen’s Committee to Complete the Refuge) and Save San Francisco Bay Association (Save the Bay), focused their efforts on educating the public and lobbying elected officials.

Public and political support continued to gather throughout the decade and in 1972 legislation was introduced by Congressman Don Edwards and area legislators to create the first urban National Wildlife Refuge. A bill was passed by the United States Congress, establishing what would later become Don Edwards San Francisco Bay National Wildlife Refuge. This would not be the final result of citizen efforts, but would prove a crucial starting point in the ambitious project of restoring the Bay to its natural splendor.

Further partnerships formed, involving citizens, scientists, and non-profit organizations. These groups worked together to construct a practical strategy for restoring the Bay. Over the

South Bay Restoration (cont.)

ponds will be transferred in a relatively short period of time, most likely one to two years. Higher salinity ponds could require anywhere from three to seven years.

After the ponds are transferred, they will be operated under an Initial Stewardship Plan. If left unchanged, the current closed pond system would continue to produce salt indefinitely. In this Initial Stewardship phase, U.S. Fish and Wildlife Service and California Department of Fish and Game managers will stop salt production by circulating Bay waters through the ponds.

A long-term restoration plan is also in the works. The California State Coastal Conservancy, in partnership with the California Department of Fish and Game and U.S. Fish and Wildlife Service, is facilitating this process. With help from the scientific community, data collection and the use of predictive modeling will aid in planning the optimal mix of habitat types to best benefit wildlife. In developing this long-term plan, partners are committed to preparing a scientifically sound and publicly supportable restoration and public access plan that can begin to be implemented within five years.

In early April, the first series of public meetings was held to discuss the long-term restoration plan. Such meetings serve the dual purpose of both informing the public while providing them the opportunity to express their thoughts and concerns. "There will be a lot of effort to assure that there are many opportunities for the public to learn about the project and provide input as we move forward," says Carl Wilcox, Habitat Conservation Manager for the California Department of Fish and Game. "We want input in the earliest stages of the planning process."

The planning and implementation of restoration efforts are being closely coordinated among the California Coastal Conservancy, the California Department of Fish and Game, and the U.S. Fish and Wildlife Service. "We're partners in this," says Wilcox. "We are working very closely on the restoration as a whole." The long-term plan will provide a comprehensive blueprint for restoration. However, the implementation will be continually subject to scientific review. "It will be an adaptive restoration plan," says Refuge Complex Manager Marge Kolar. "Intensive, on-going monitoring will be conducted and processes will be adjusted accordingly to ensure that we are getting the results we want."

The sheer scale of the project necessitates an extensive network of partnerships. State and



federal agencies will form an executive leadership group which will serve as an umbrella encompassing all of the needed partnerships and aspects of the project. Local governments, especially flood control districts, will be consulted and directly involved in water control and flood management issues. A National Science Panel and local Technical Committee, both consisting of respected scientists, will assist the project team by independently reviewing the development and implementation of the long-term restoration plan. Federal and state agencies will coordinate their efforts with non-governmental organizations to help maintain public interest and support. Private foundations will offer financial backing and oversight, and the public at-large will provide input throughout the process.

The current steps forward in Bay area habitat restoration are due in large measure to the preceding decades of work and commitment. With the common interest of protecting our valuable natural resources, a diverse coalition continues to be at the forefront of Baylands stewardship. This coalition will only continue to grow. "We will need many partners," says Marge Kolar. "It is such an historic, large-scale project that will alter the landscape of the South Bay forever. To be successful, cooperation among a larger number of partners is essential."

Above: Proposed operational structure for the long-term restoration (Courtesy of California Coastal Conservancy)

Bryan Lapine is the Visitor Services Intern at the San Francisco Bay National Wildlife Refuge Complex in partnership with the Student Conservation Association (SCA). He is a recent graduate of John Carroll University in Cleveland, Ohio.

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 from October 13, 2002 to April 18, 2003. These gifts will be used for capital, environmental education, habitat restoration, and interpretive programs at the San Francisco Bay National Wildlife Refuge Complex.

Sponsor

Olivia Sears
Jed Somit
Charles Strack

Participant

Bart Anderson, Gayle Anderson, Joyce E Bartlett, Thomas M Blalock, Marge Callow, Terry & Zeo Coddington, Helen E Conway, Albert & Sheila Faris, Jon Graff, Walter & Sandra Harvey, Kirsten Holmquist, Chris Kitting, Marge Kolar, Laura D Mattos, Clyde Morris, William Nesbet, Gloria P Newhouse, William Ostrander, Barbara Posch, Sally L Smyth, Strom Family, and Donna R Weisbrod-Potts

Supporter

John F Atwood, Peggy Bernucci, John Corcoran, Richard Cowen, Loring Dales, Orville D & Helen E Edson, Lynne Fitzjarrell, John C Giles, Dolores M Hansen, Beverly Hesse, Norman Houseworth, Sue Hunt, Melanie Ito & Charles Wilkinson, Bulent Jajuli, Dorthory Jay, William M Jardine,

Jeanette D Jensen, Bruce Kelly, Joan & Jens Kjemtrup, Herbert & Gisela Knoesel, Elena S Lass, Philip A Lathrap, Gladys E McFarland, Majorie Ottenberg, Chris Quinn, James E Runyeon Jr, Dale & Diane Schouten, Tom & Elena Shea, Ruth B & Olney Smith, Allen & Judy Sprague, David & Karen Stein, Dorthory Steiner, Cherie Swenson, Dolores Taller, Tanis Walters, and Rudy & Linda West

Family

Laura Avery, John R & J Evangelyn Boice, Richard & Dee Booth, Alice Bousquet, Lavonne M Coleman, Lynette & Paul Curthoys, Steve Ferguson & Dorthy Presley, Craig & Barbara L Heckman, Bonnie Hubbard, Wallace N Husbands, Beckie Kinghorn, David Jeiter & Yuka Yonebayashi, John & Melanie McKenna, Marcia McNally, Bill & Flo Moore, Monika Britt Null, Margaret & CJ Panton, Rodger Reilly, Larnders Roy, Lawrence & Lynne Schmitt, Jean Staats, Struble Family, Michael Terry, Ruth Troetschler, Judi Wellens, Carol Wolf, and Julianne Yeaman

Individual

Jack Alex, Carole M Azevedo, Richard Beidleman, Julia Butner, Cathy Caton, Ann Dee Clemenza, Bruce Cole, Crystal Collins, Daniel Davies, Joan B Dible, Bowen J Doerr, Margaret S Elliot, Donald R Emery, Norma Estes, Jean Fiske, Elsie Fraumeni, Winifred P Gegan, Christine Geiser, David S Ginsburg, Jack R Gorham, Kenneth & Theresa Goss, Susan Hampton, Jan Z Hintermeister, Dan O Hoffman, Catherine P Howard, Bobby E Jones, Locke C Jorgensen, Dave Keim, Irja L

Kosi, Colleen M Julian, James Kellenberger, Robert W Kirby Jr, , Arlene Kruse, William P Ledeen, Enid Leff, Terri Light, Suzanne Lutz, Eugene I Majerowicz, Roberta L Maloney, Arlene Maekakis, Bonnie Marks, Edward J McCluskey, Mary McDevitt-Brown, Eileen P McLaughlin, Bonnie J Michalek, Carol Mickelsen, Miranda L Miller, Edmund Morrissey, Jr, Ruth Mundy, Amelia Murphy, David H Oberg, Donna P Olsen, Curtis O'Sullivan, Frank H Parsons, Lorraine Pedretti, Kay Pepitons, Stewart Perlman, Albert Roffey, Suzanne D Rogers, Annemarie Rosengren, Marianne Schonfisch, William Scoggins, Georg Suchsland, Joyce T. Todd, Jean E Toonen, Tri-City Ecology Center, Phylliss J Vickers, Janet Walsh, Viola E Walters, Marti Watterman, Josephine Wellens, George L Wilkinson, Stella Yang, and Elisabeth Zall

Senior/Student

Rosemary Aurbrey, Ralph E Bloom, Davis Bromley, Diane L Ciucci, Jeffery M Dickemann, Deborah A Frederick, Judy Garvey, Alvie & Martha Hartsog, Gladys Heorodt, Richard M Hill, Leroy L Jensen, Lottie Jenvey, Doris R McCormick, Roger W Millette, Margaret Gale Moore, H Morton Newman, Alice Reeves, Catherine Schramm, Dean K Simonton, Samuel D Sparck, John H Tyler, and Eric D Winch



Thanks to BFI and the San Jose Tech Museum of Innovation for their generous contributions! BFI provided trash receptacles for a successful Earth Day Cleanup. The Tech Museum provided "Family Four Packs" as awards for the winners in the International Migratory Bird Day Poster Contest. These packs are good for entrance into the museum and for a viewing of Coral Reef Adventures, currently playing in the IMAX Dome Theater.





SAN FRANCISCO BAY NATIONAL WILDLIFE REFUGE COMPLEX

*The San Francisco Bay National Wildlife Refuge Complex would like to thank the following for helping to make the **Tramp and the Roughrider** performances and the National Wildlife Refuge System Centennial Celebration a stunning success!*

The Mercury News
The Newspaper of Silicon Valley
MercuryNews.com



San Francisco Bay Wildlife Society

Janet Ady
Ayad Al-Shaikh
Pat Anthony
Applied Materials
Norton Bell
Gene and Mary Bobik
Patty Castle
Tom and Camilla Chin
City of San Jose
Cloud Nine Catering
Community Impact
Ellie Cohen, Point Reyes Bird
Observatory
Ceal Craig
Alvin Dockter
Matt Domenech

Bev Drollman
Tooky and Gene Campione
Druai Consulting
Congresswoman Anna Eshoo
Seth Fisher
Betty Foster
Joy McGoran
Fricke-Parks Press
Annmarie Henning
Amanda Kahn
Julie Kitzenberger
La Quinta Inn and Suites
Florence LaRiviere, President, Citizens
Committee to Complete the Refuge
Peter Martin

Doug McConnell
Laurie McEwen
Eileen McLaughlin
Mission 53 Post Office
David Miyako
The Moss Family
Susan Moss
Newark Java
Ohlone College
Dave Paullin, Fish and Wildlife Service,
CA/NV Operations Office Supervisor
Brian Popper
Lynn Raggianti
Santa Clara Valley Urban Runoff
Pollution Prevention Program

Michael Sears
Sir Speedy Printing
Gary Smith
Alan Sprague
Starbucks Coffee Company
Lee Stetson
Alan Sutterfield
Teri Tith
Wild Bird Center, Los Gatos
Wild Birds Unlimited, Fremont
Wildlife Stewards
Meredith Williams
Wayne and Gladys Valley Foundation
Dennis Wu

NATIONAL WILDLIFE REFUGE SYSTEM 1903 - 2003



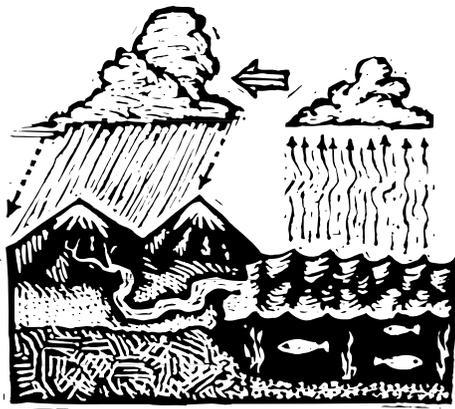
*Now for Sale at the Visitor
Center in Fremont...*

Bay Nature Magazine -
the quarterly magazine that explores and celebrates the
magnificent Bay Area natural world!



www.baynature.com

SEA Series: Science, Environment, Art



SEA is an opportunity for 2nd-6th graders to take a closer look at salt marshes/watersheds and our impact on them. Participants visit the Refuge once a week for four consecutive weeks to participate in variety of hands-on activities.

Cost is FREE! However, because this program is funded by the City of San Jose and the Santa Clara Valley Urban Runoff Pollution Prevention Program, enrollment for SEA is limited to residents of the following cities: San Jose, Santa Clara, Alviso, Milpitas, Saratoga, Los Gatos, Monte Sereno, Campbell, Cupertino or Sunnyvale.

Day 1 – Green Friends: What kinds of plants live here in our watershed? Get to know some of our green friends and learn how to put them to use in crafts.

Day 2 – Wet Friends: What lives in the water of our watersheds? Take a look at some of the creatures that make their home in salt marsh water and salt marsh mud. Find out what they eat, and what eats them! Make a fish print to take home.

Day 3 – Watershed Friendly: After seeing what lives in our watershed, find out how you can take care of it. Make a water saver for home, and learn how to use recycled items from around the house in art.

Day 4 – Food Friendly: You are what you eat! Learn how what you eat effects our watershed and world. Take an organic taste test, and then make some organic food creations. Adults are invited to join their children for this end-of-series organic meal.

**For students entering 4th-6th grades:
Wednesdays, July 9th, 16th, 23rd, and 30th, 9 a.m. -11 a.m.**

Day 1 – Green Friends: What kinds of plants live here in our watershed? Get to know some of our green friends and learn how to put them to use in crafts.

Day 2 – Feathered Friends: Take a trip to a bird banding research station. Find out what kind of research methods are being used in the South Bay area to track bird populations. You may even get to see a bird up close and personal.

Day 3 – Watershed Friendly: How can you keep your watershed healthy to protect wildlife? Make your own paper out of recycled newspaper and learn other ways YOU can impact our world.

Day 4 – Food Friendly: You are what you eat! Learn how what you eat affects our watershed and world. Take an organic taste test, and then make some organic food creations. Adults are invited to join their children for this end-of-series organic meal.

****All application materials must be received by the Refuge by June 18th, 2003. All accepted participants will be notified by 5:00 p.m. on June 20th.**

Application



Don Edwards San Francisco Bay National Wildlife Refuge

SEA Series: Science, Environment, Art

*Environmental Education Center, Alviso
(408) 262-5513*

Child Name _____

Date of Birth _____

Grade entering in Fall _____

Parent/Guardian's Name(s) _____

Mailing Address _____

City _____

State _____ Zip Code _____

Parent Home Phone Number _____

Parent Work Phone Number _____

****Remember to attach a copy of utility bill or other proof of residence, and your child's hand-written letter or picture (see REQUIREMENTS section).**

REQUIREMENTS

1. Must commit to attending all four sessions *on time*.
2. Must be **entering 2nd-6th grade** in fall of 2003.
- 3a. **Entering 2nd-3rd graders** must *handwrite* a letter explaining why they would like to attend SEA.

or

Draw a picture of an animal or plant that *lives in the San Francisco Bay area* with one sentence explaining why he or she would like to attend the series.

- 3b. **Entering 4th-6th graders** must *handwrite* a letter explaining why they would like to attend SEA. Half page notebook paper minimum, 1 page maximum.
4. Complete the application form.
5. Submit a copy of a utility bill or other proof of residence in one of the following cities: San Jose, Santa Clara, Alviso, Milpitas, Los Gatos, Saratoga, Monte Sereno, Campbell, Cupertino, and Sunnyvale.

****SEA participants will be ineligible for the Refuge's Marsh-In summer camp.**

Mail all application materials to:

ATTN: Sharon Miyako
P.O. Box 411
Alviso, CA 95002

SCHEDULE

**For students entering 2nd-3rd grades:
Thursdays, July 10th, 17th, 24th, and 31st, 9 a.m. -11 a.m.**

The Common Murre Restoration Project: Moving Forward

By April Robinson and Gerry McChesney

Just off the coast of Pacifica, on a small islet known as Devil's Slide Rock (DSR), 200 Common Murres (*Uria aalge*) huddle together in the foggy sunlight of a spring afternoon. At first glance, this may not seem like an impressive number. But to the small group of biologists working for the Common Murre Restoration Project, these 200 birds signify a remarkable achievement.

As recent as the early 1980s, DSR was covered with a colony of nearly 3,000 murres. But within a few years, this bustling hive of activity was wiped out as a result of human impact. In the 1970s and early 1980s, tens of thousands of murres were drowned in fishermen's gill nets. The final blow to the colony came in 1986, when about 6,300 murres were killed in the *Apex Houston* oil spill. Many murres in the area were killed by this spill, and those that remained did not return to breed at DSR in the years that followed.

The Common Murre Restoration Project, established using funds from a lawsuit against the responsible oil company, was given the task of restoring the seabird colony on DSR. Biologists investigated methods used in other seabird restoration projects. One approach, known as Social Attraction, had been particularly successful with other colonial seabird species. This approach uses wooden decoys, mirrors, and other props to simulate a large bird colony to attract real birds. Knowing that murres are gregarious birds who tend to breed in large colonies, scientists decided to employ Social Attraction methods to bring the murre population back to DSR.

Social Attraction is proving a remarkable success. Within 48 hours of placing the very first decoys, two pairs of murres were seen. In 1996, the first year Social Attraction equipment was set up on DSR, six pairs of breeding murres were observed on the rock and three chicks were raised. In every year since, the colony has increased in the number of murre breeding sites and chicks raised. The project's ten year goal of seeing 100 murre breeding sites on DSR was accomplished after only six years, with 113 breeding sites observed in 2001. In 2002, the colony reached a post-spill high of 123 breeding pairs.

Though the colony has seen continued growth and success, it is by no means free from dangers. Disturbance from aircraft and boats, oil spills, and other factors still pose significant threats to the murres.

With the ongoing success at DSR, some of the biologists' attention has shifted to another nearby islet, San Pedro Rock (SPR). This nearshore rock, about a mile north of DSR, was home to a sizable murre colony until the early twentieth century when it was wiped out by commercial egg harvesters. Murres typically lay only one egg per breeding season, though occasionally they will lay a replacement egg if their first egg is lost. With such a low clutch size, the San Pedro colony was soon devastated by eggging practices, and has never returned. Biologists hope that the same Social Attraction techniques which are proving successful on DSR may be used to bring murres back to SPR.

Since the establishment of the decoy colony on SPR in 1998, murres have been seen on the rock. However, none have stayed long enough to establish breeding territories. In 2002, biologists observed murres exhibiting pairing behavior on SPR, a hopeful sign that murres may recolonize the rock in the future. In 2003, biologists put out Brandt's Cormorant decoys along with the murre decoys. Murres will often breed alongside Brandt's Cormorant nests, and it is hoped that the addition of cormorant decoys will make SPR more attractive to breeding murres.

Biologists are now preparing for the eighth breeding season of the project. We are optimistic that this year will see more murres on San Pedro Rock, and maybe even our first egg! We'll also continue to monitor and work to further strengthen murre numbers on DSR in hopes that a thriving, self-sufficient colony will remain when all our work is done.



Left: Live common murres on Devil Slide Rock

Below: Common murre decoys and mirrors deployed on Devil's Slide Rock.





DON EDWARDS NATIONAL WILDLIFE REFUGE
ENDANGERED SPECIES AWARENESS
2003 POSTER EXHIBITION



Celebrating the Centennial year of the National Wildlife Refuge System, Don Edwards National Wildlife Refuge is also marking its 21st consecutive Endangered Species Awareness Poster Contest. This year's contest has yielded an impressive array of posters portraying endangered species which are found on a National Wildlife Refuge. Ranging from second through sixth grades, students from Newark, Union City, Fremont, and East Palo Alto area schools researched, designed, and created their own posters.

Second Grade



1st Place - Derrick Long

Delaine Eastin Elementary

2nd Place - Alex Kuns

Warwick Elementary

3rd Place - Katie Wang

Delaine Eastin Elementary

Honorable Mention - Brian Luu

Delaine Eastin Elementary

Third Grade



1st Place - Kendra Toy

Warwick Elementary

2nd Place - Sunny Ha

Warwick Elementary

3rd Place - Hannah Chen

Weibel Elementary

Honorable Mention - Michelle Wong

Warwick Elementary



Fourth Grade

1st Place - Alyssa Yee

Warwick Elementary

2nd Place - Julie Griffin

Warwick Elementary

3rd Place - Zhimin Xie

Warwick Elementary

Honorable Mention - Sharlene Dong

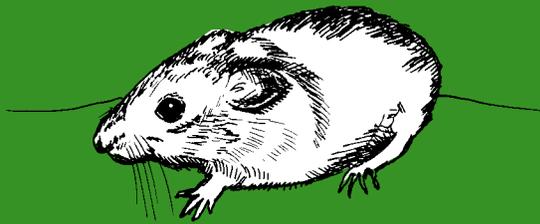
Warwick Elementary



Fifth Grade



1st Place - Melissa Nguyen
Schilling Elementary



Sixth Grade



1st Place - Francesca Giovacchini
Warwick Elementary
2nd Place - Michelle Chen
Warwick Elementary
3rd Place - Corrine Tu
Forest Park Elementary
Honorable Mention - Chris Lim
Warwick Elementary

BEST IN SHOW



Sabrina Baretto, 4th Grade
Warwick Elementary



Special thanks goes to Aquarium of the Bay, California Academy of Sciences, Coyote Point Museum, Lindsay Wildlife Museum, Monterey Bay Aquarium, San Francisco Zoo, and the Tech Museum of Innovation for their donations of award prizes. To Bay Frames of Newark for their contribution of materials and services in framing our Best in Show winner. To Linda Patterson and Donna Weisbrod-Potts for serving on the judging panel. To teachers, educators, and parents for their support, and especially to the students for their hard work and artistic efforts.

Summer Activities Schedule

at Don Edwards San Francisco Bay National Wildlife Refuge

June

Watershed Diorama Demonstrations

Sundays in June, 1:00 p.m. - 4:00 p.m.

Environmental Education Center, Alviso

Been thinking about stopping by the Center for an activity but the scheduling never works out? Well, drop in any Sunday afternoon this summer for a hands-on demonstration of our amazingly detailed and functioning South Bay watershed diorama. It is sure to dazzle and educate visitors of all ages. Learn what a watershed is and see how important our actions are towards maintaining healthy South Bay habitats! All ages are welcome.

Sunday, June 1

Water Wizards

Environmental Education Center, Alviso

3:30 p.m. - 4:30 p.m.

Come play with the magic water jar! How about a water fireworks display? Water does some WEIRD things! Come find out why as you play and experiment with water games that will dazzle your friends. Ages 7 and up. RESERVATIONS REQUIRED. Please call Sara Polgar at 408-262-5513 x104 to reserve a spot.*

Saturday, June 7

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 birdwatching field guides, 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. Led by Eileen McLaughlin.

Children's Beginning Birdwatching

Environmental Education Center, Alviso

10:00 a.m. - 11:30 a.m.

It's nesting season! Come find out what it takes to raise a bird family in the salt marsh. Make your own birdbook to take home. Then go out on the trails to see what birds (and maybe chicks) are out and about. Great for children 5 and older. Led by Peg Bernucci.

Community Service Day

Environmental Education Center, Alviso

1:00 p.m. - 3:00 p.m.

Calling all high schoolers looking to fulfill community service requirements, or anyone else who just wants to pitch in at a one time Refuge project. Fight non-native plants in the EEC's habitat gardens. Bring work gloves if possible. Some pairs available for loan. Long pants and long sleeves recommended but not required. Recommended for ages 9 and up. RESERVATIONS REQUIRED with Sharon Miyako at 408-262-5513 ext 102.

Botanical Wanderings

Visitor Center, Fremont

2:00 p.m.-3:30 p.m.

Discover the diverse summer habitats from the hilltops to the marsh. Use our free plant list to help identify the great variety of plants that thrive in this unique urban refuge. Bring binoculars to get a better look at birds and animals we may encounter on the trail, or borrow a pair of ours. Led by Alvin Dockter.

Twilight Marsh Walk

Visitor Center, Fremont

7:30 p.m. - 9:00 p.m.

Experience the salt marsh at twilight on an easy stroll along Tidelands Trail (1 1/3 mile). 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 510-792-0222. Led by Mary and Gene Bobik.

Night Skies

Visitor Center Parking Lot, Fremont

9:00 p.m. - 10:00 p.m.

Observe the stars from the San Francisco Bay Refuge. Learn a couple of constellations and star names and view a star cluster through a telescope. Great fun for the whole family. RESERVATIONS REQUIRED! Program subject to cancellation due to cloudy skies. Call 510-792-0222. Led by Ralph Libby.

Thursday, June 12

Marsh Babies

Environmental Education Center, Alviso

10:00 a.m. - 11:00 a.m.

What color is a salt marsh? What does a salt marsh sound like? Come out for this stroller-

friendly walk, and enjoy one of the busiest seasons at the Refuge. Bring you baby along to touch, listen, smell, and maybe even taste the marsh. Geared for ages 2 and under. Led by Sharon Miyako

Friday, June 13

Gosling Honks

Environmental Education Center, Alviso

10:00 a.m. - 11:00 a.m.

Come out and quack like a duck or honk like a goose on the Refuge trails. Sing a song, and explore the mystery box on this stroller-friendly hike. Geared for ages 3-5. Led by Sharon Miyako

Saturday, June 14

Habitat Gardening

Environmental Education Center, Alviso

9:00 a.m. - 10:00 a.m.

Want to turn your backyard into a wildlife refuge? Come for a tour of the Refuge's chemical-free habitat gardens. Discover drought-resistant plants that add beauty to your yard while attracting butterflies and birds. Led by Sharon Miyako

Feathered Families

Environmental Education Center, Alviso

11:00 a.m. - 12:00 p.m.

What does it mean to be part of a bird family? Is it big? Small? Noisy? Competitive? And what do dad's do in feathered families? Come find out on this leisurely stroll around Refuge trails. Bring a lunch, and enjoy a meal afterwards at our picnic tables. Led by Sharon Miyako.

Going BATTY!

Environmental Education Center, Alviso

7:00 p.m. - 8:00 p.m.

Meet a few of those nocturnal flying mammals up close and personal! Join the Bat Conservation Fund as they clear up a few of the mysteries surrounding bats and their lives. Learn about a few bats that can be found in the Bay area. All ages welcome. Please call to reserve your spot with Sharon Miyako at 408-262-5513, ext. 102.

*This Slow the Flow program is sponsored by a grant for the City of San Jose.

<http://desfbay.fws.gov>

For information and reservations, phone between 10:00 am and 5:00 pm. For directions, see page 16

Visitor Center, 1 Marshlands Road, Fremont (510) 792-0222

Environmental Education Center, 1751 Grand Blvd., Alviso, (408) 262-5513

Summer Activities Schedule

at Don Edwards San Francisco Bay National Wildlife Refuge

Starry Nights

Environmental Education Center, Alviso
8:30 p.m. - 9:30 p.m.

What are those twinkling lights up in the sky? Is that a planet or a star? Join volunteer Ralph Libby for an inside introduction to the night sky, followed by some telescope time! This program is subject to weather conditions and will be cancelled in the event of cloudy skies.

Sunday, June 15

Father's Day Feather Walk

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

Grab your dad, grand-dad, uncle, or brother, or bring them all, and come out to the Refuge to celebrate Father's Day! We will hike the trails and learn how some feathered friends raise their young. Bring along a brown bag lunch for after the walk and enjoy a summer picnic on the Refuge. All ages welcome! Call Sara Polgar to let her know that you will be coming; 408-262-5513 x104. *

Saturday, June 21

Watershed Watcher Clean-Up

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

Come find out what you can do at home to take care of our planet. Stencil and clean up a storm drain to protect our creeks and coast. After working hard to protect the watershed, return to the Center to make your very own Watershed Watcher t-shirt. Bring gloves and water. Trash bags provided. This is a great service project for Scout groups or home-school groups. RESERVATIONS REQUIRED with Sharon Miyako at 408-262-5513 ext 102.

What are the Parts that Make a Marsh?

Visitor Center Auditorium, Fremont
1:00 p.m. - 2:00 p.m.

Join us for a puppet show and find out what the parts are that make a marsh! Afterwards, we'll take a short walk on the trail to find those parts and view plankton through hand lenses and a special microscope. Recommended for ages 3-6. Led by Bryan Lapine.

Sunday, June 22

Beginning Birdwatching for Adults

Environmental Education Center, Alviso
9:00 a.m. - 10:00 a.m.

Nesting season is in full swing. Come out to see the Refuge's feathered summer residents taking care of their families. Learn the basics of birdwatching as well as taking a look through a spotting scope at nesting terns, avocets, and stilts. Led by Sharon Miyako.

Saturday, June 28

Habitat Comparison Walk

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

Did you know the Tidelands Trail traverses through five vastly different habitats? Join us for a leisurely walk through each of the habitats and learn what makes them unique from one another. Led by Ed Kantack.

Tiny Tracks

Visitor Center, Fremont
12:00 p.m. - 2:00 p.m.

Calling all trackers! Who left that footprint? Where did the fox go? What did the owl eat for dinner? Why is that scat there? Come for a hike at the Refuge to help find answers to these mysteries. See the Refuge through new eyes as we explore tracks, trails, pellets and poop. RESERVATIONS REQUIRED with Ken Clarkson at 510-792-0222.

Sunday, June 29

Critter Cafe

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

Mud and water are pretty boring stuff, right? No way! Come take a closer look at some of the tiny, wiggly, squiggly creatures we'll find in samples of mud and water from marshes at the Don Edwards San Francisco Bay National Wildlife Refuge. Learn about macroinvertebrates and plankton — the tasty treats that shorebirds are eating at our five-star marsh 'cafes' at the Refuge. Ages 6 and up; parents must accompany children. RESERVATIONS REQUIRED with Sara Polgar; 408-262-5513 x104. *

*This Slow the Flow program is sponsored by a grant for the City of San Jose.

July

SEA SERIES: Science, Environment, Art

Environmental Education Center, Alviso
SEE FULL PAGE DESCRIPTION AND APPLICATION in Tideline, page 6.

Watershed Diorama Demonstrations

Environmental Education Center, Alviso
Sundays in July, 1:00 p.m. - 4:00 p.m.

Been thinking about stopping by the Center for an activity but the scheduling never works out? Well, drop in any Sunday afternoon this summer for a hands-on demonstration of our amazingly detailed and functioning South Bay watershed diorama. It is sure to dazzle and educate visitors of all ages. Learn what a watershed is and see how important our actions are towards maintaining healthy South Bay habitats! All ages are welcome.

Thursday, July 3

Quacky's Puppet Show

Environmental Education Center, Alviso
9:00 a.m. - 10:00 a.m.

Take a quick walk around the EEC's trails to spot some of the Refuge's wildlife. Return to the building and check out the adventures of Quacky the Duck and his friend Gabby. Call Sharon Miyako for RESERVATIONS at 408-262-5513 ext. 102.

Saturday, July 5

Beginning Birdwatching for Adults

Environmental Education Center, Alviso
9:00 a.m. - 10:00 a.m.

Nesting season is in full swing. Come out to see the Refuge's feathered summer residents taking care of their families. Learn the basics of birdwatching as well as taking a look through a spotting scope at nesting terns, avocets, and stilts. Led by Sharon Miyako.

Twilight Marsh Walk

Visitor Center, Fremont
7:30 p.m. - 9:00 p.m.

Experience the salt marsh at twilight on an easy stroll along Tidelands Trail (1 1/3 mile). 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 510-792-0222. Led by Mary and Gene Bobik.

<http://desfbay.fws.gov>

For information and reservations, phone between 10:00 am and 5:00 pm. For directions, see page 16

Visitor Center, 1 Marshlands Road, Fremont (510) 792-0222

Environmental Education Center, 1751 Grand Blvd., Alviso, (408) 262-5513

Summer Activities Schedule

at Don Edwards San Francisco Bay National Wildlife Refuge

Night Skies

Visitor Center Parking Lot, Fremont
9:00 p.m. - 10:00 p.m.

Observe the stars from the San Francisco Bay Refuge. Learn a couple of constellations and star names and view a star cluster through a telescope. Great fun for the whole family. RESERVATIONS REQUIRED! Subject to cancellation due to cloudy skies. Call 510-792-0222. Led by Ralph Libby.

Sunday, July 6

Salt Marsh Histories

Environmental Education Center, Alviso
9:00 a.m. - 10:00 a.m.

Take a leisurely stroll and learn about human activity from the late 1800's up to the present. "Meet" three unique friends from salt marsh history during the walk, and gain a different perspective on the lands of the Refuge. Geared for adults. Led by Sharon Miyako.

Water Wizards

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

Come play with the magic water jar! How about a water fireworks display?? Water does some WEIRD things!! Come find out why as you play and experiment with water games that will dazzle your friends. RESERVATIONS REQUIRED with Sharon Miyako at 408-262-5513 ext 102.

Friday, July 11

Marsh Babies

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

What color is a salt marsh? And what does a salt marsh sound like? Come out for this stroller friendly walk, and enjoy one of the busiest seasons at the Refuge. Bring your baby along to touch, listen, smell, and maybe even taste the marsh. Geared for ages 2 and under. Led by Sharon Miyako.

Saturday, July 12

Water Art

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

Create three different crafts related to water. Take them home for your own or give to a friend for a gift. Make a shark print or a crayon resist underwater scene. Optional half hour trail exploration following. RESERVATIONS REQUIRED with Sharon Miyako at 408-262-5513 ext 102.

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 birdwatching field guides, 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. Led by Eileen McLaughlin.

Botanical Wanderings

Visitor Center, Fremont
2:00 p.m. - 3:30 p.m.

Discover the diverse summer habitats from the hilltops to the marsh. Use our free plant list to help identify the great variety of plants that thrive in this unique urban refuge. Bring binoculars to get a better look at birds and animals we may encounter on the trail, or borrow a pair of ours. Led by Alvin Dockett.

Sunday, July 13

Avian Antics

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

Join us at the Refuge as we explore the trails and check out the birds feasting on slough critters during low tide. Learn a little bird trivia along the way, like why some birds eat their own feathers or which Refuge bird finds a mate for life? Bring your own binoculars, or borrow a pair of ours! Ages 7 and up. RESERVATIONS REQUIRED. Call 408-262-5513 x104 to reserve a spot!*

Friday, July 18

Children's Beginning Birdwatching

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

It's nesting season! Come find out what it takes to raise a bird family in the salt marsh. Make your own birdbook to take home, and then go out on the trails to see what birds, and chicks, are out and about. Great for children 5 and older.

Saturday, July 19

Community Service Day

Environmental Education Center, Alviso
9:00 a.m. - 11:00 a.m.

Calling all high schoolers looking to fulfill community service requirements, or anyone else who just wants to pitch in at a one time Refuge

project. Fight non-native plants in the EEC's habitat gardens. Bring work gloves if possible. Some pairs available for loan. Long pants and long sleeves recommended but not required. Recommended for ages 9 and up. RESERVATIONS REQUIRED with Sharon Miyako at 408-262-5513 ext 102.

Habitat Havoc

Environmental Education Center, Alviso
4:00 p.m. - 5:00 p.m.

Come out as the afternoon winds down to play some wildlife games along Refuge trails. See and learn about what animals may be coming out as the sun goes down. Suitable for ages 7 and up. And then STAY FOR THE SPECIAL PROGRAM AT 5:30pm.

Reptilian Revelry (and Amphibians too!)

Environmental Education Center, Alviso
5:30 p.m. - 7:00 p.m.

The Bay Area Amphibian and Reptile Association will be bringing a few of their scaly friends to visit the Refuge in Alviso. Find out what makes these cold-blooded friends so interesting, and meet them up close and personal. Space is limited at this program for the comfort of the animals. RESERVATIONS REQUIRED with Sharon Miyako at 408-262-5513 ext 102.

Sunday, July 20

Making Tracks with the Blue Goose

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

Follow the animal tracks wherever they may lead, find out what animals left the tracks, and put together all the clues they leave behind. Then you can discover who the Blue Goose is. You might even catch a glimpse of one. After the chase is over, remember all the tracks you learned by making a track scarf to take home with you. Geared for ages 7-10. Minimum of 5 children needed. RESERVATIONS REQUIRED with Sharon Miyako 408-262-5513 ext 102.

Saturday, July 26

What are the Parts that Make a Marsh?

Visitor Center Auditorium, Fremont
1:00 p.m. - 2:00 p.m.

Join us for a puppet show and find out what the parts are that make a marsh! Afterwards, we'll take a short walk on the trail to find those parts and view plankton through hand lenses and a special microscope. Recommended for ages 3-6. Led by Bryan Lapine.

<http://desfbay.fws.gov>

For information and reservations, phone between 10:00 am and 5:00 pm. For directions, see page 16

Visitor Center, 1 Marshlands Road, Fremont (510) 792-0222

Environmental Education Center, 1751 Grand Blvd., Alviso, (408) 262-5513

Summer Activities Schedule

at Don Edwards San Francisco Bay National Wildlife Refuge

August

Watershed Diorama Demonstrations

Environmental Education Center, Alviso
Sundays in August, 1:00 p.m. - 4:00 p.m.
Been thinking about stopping by the Center for an activity but the scheduling never works out? Well, drop in any Sunday afternoon this summer for a hands-on demonstration of our amazingly detailed and functioning South Bay watershed diorama. It is sure to dazzle and educate visitors of all ages. Learn what a watershed is and see how important our actions are towards maintaining healthy South Bay habitats! All ages are welcome.

Saturday, August 2

Children's Beginning Birdwatching

Environmental Education Center, Alviso
10:00 a.m. - 11:30 a.m.
Make your own birdbook to take home, and then go out on the trails to see what birds (and maybe chicks) are out and about. Learn to name a few of those feathered friends you see up in the sky.

Sunday, August 3

A Ghost Town in San Francisco Bay?

Visitor Center, 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.

Saturday, August 9

Water Art

Environmental Education Center, Alviso
10:00 a.m. - 11:00 a.m.
Create three different crafts related to water. Take them home for your own or give to a friend for a gift. Make a shark print or a crayon resist underwater scene. Optional half hour trail exploration following. RESERVATIONS REQUIRED with Sharon Miyako at 408-262-5513 ext 102.

* This *Slow the Flow* Program is sponsored by a grant from the City of San Jose.

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 birdwatching field guides, 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. Led by Eileen McLaughlin.

Canoe the Sloughs

Newark Slough Boat Launch
11:00 a.m. - 2:00 p.m.
Ducks paddle the Slough in the winter; humans paddle the Slough in the spring and fall. Experience the Refuge from a duck's point of view. Bring your own canoe, paddles, and life vest (mandatory!). Learn about the ecology of the salt marsh, and identify the birds, plants, and mammals of the Slough. Meet at the Newark Slough boat launch off of Thornton Avenue. No inflatables please!! RESERVATIONS REQUIRED!! Led by Ed Kantack.

Sunday, August 10

Salinity Sleuths

Environmental Education Center, Alviso
3:00 p.m. - 4:30 p.m.
Step into the shoes of a scientist and strap on our field detective packs for a hands-on investigation where we will collect water samples, use plant clues, and do some sleuthing around to answer the question "How salty is it?" You will need to bring along keen senses of taste, smell and sight to determine which plants and animals live in the Refuge's salty habitats! Appropriate for ages 9 and up. RESERVATIONS REQUIRED. Call 408-262-5513 x104 to reserve a spot!*

Saturday, August 16

Botanical Wanderings

Visitor Center, Fremont
2:00 p.m.-3:30 p.m.
Discover the diverse summer habitats from the hilltops to the marsh. Use our free plant list to help identify the great variety of plants that thrive in this unique urban refuge. Bring binoculars to get a better look at birds and animals we may encounter on the trail, or borrow a pair of ours. Led by Alvin Dockter.

Twilight Marsh Walk

Visitor Center, Fremont
7:00 p.m. - 8:30 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 510-792-0222. Led by Mary and Gene Bobik.

Night Skies

Visitor Center Parking Lot, Fremont
8:30 p.m. - 9:30 p.m.
Observe the stars from the Refuge. Learn a couple of constellations and star names and view a star cluster through a telescope. Great fun for the whole family. RESERVATIONS REQUIRED! Subject to cancellation due to cloudy skies. Call 510-792-0222. Led by Ralph Libby.

Saturday, August 23

What are the Parts that Make a Marsh?

Visitor Center Auditorium, Fremont
1:00 p.m. - 2:00 p.m.
Join us for a puppet show and find out what the parts are that make a marsh! Afterwards, we'll take a short walk on the trail to find those parts and view plankton through hand lenses and a special microscope. Recommended for ages 3-6. Led by Bryan Lapine.

Twilight Walk

Environmental Education Center, Alviso
7:00 p.m. - 8:30 p.m.
Bring the family to enjoy the last daylight hours of a summer day! See the salt marsh in a different light, and possibly even some different animals coming out to enjoy the night. Geared for all ages. Bring a picnic dinner to enjoy before the walk.

Saturday, August 30

Making Tracks with the Blue Goose

Environmental Education Center, Alviso
2:00 p.m. - 3:30 p.m.
Follow the animal tracks wherever they may lead, find out what animals left the tracks, and put together all the clues they leave behind. You can discover who the Blue Goose is. You might even catch a glimpse of one! After the chase is over, remember all the tracks you learned by making a track scarf to take home with you. Geared for ages 7-10. Minimum of 5 children needed. RESERVATIONS REQUIRED with Sharon Miyako 408-262-5513 ext 102.

<http://desfbay.fws.gov>

For information and reservations, phone between 10:00 am and 5:00 pm. For directions, see page 16

Visitor Center, 1 Marshlands Road, Fremont (510) 792-0222

Environmental Education Center, 1751 Grand Blvd., Alviso, (408) 262-5513

Field Trips to the Refuge



Free Discovery Packs available at the Visitor Center and Environmental Education Center!

Explore the Refuge salt marshes, salt ponds, and birds with your family or small youth group! The discovery pack includes an activity booklet and equipment such as dip nets, magnifying glasses, and bug boxes that you will need to take a close look at the salt marsh plants, brine shrimp, and birds! The backpack is suitable for up to six people, from kindergarten - adults. There are also Discovery Packs for larger groups free of charge at the Visitor Center in Fremont and at the Environmental Education Center in Alviso. The Visitor Center is open Tuesday - Sunday, 10 am - 5 pm.

For questions or to reserve a pack please call 510-792-0222. The Environmental Education Center is open Saturday and Sunday from 10 am - 5 pm. For questions please call 408-262-5513.

Celebrate the Centennial by participating in a field trip program at the Refuge! We offer **FREE** field trip programs at two sites; **Wetland Round-Up** and **Trekking the Refuge** at the **Visitor Center in Fremont**, and **Wetland Round-Up** and **Sinks, Sewers, and Sloughs** at the **Environmental Education Center in Alviso**. These programs actively involve teachers, adult volunteers, and students in investigating the diverse habitats and wildlife found 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.*

Wetland Round-Up Field Trip

Investigate creatures of the mud flats, plankton in the slough, brine shrimp in the salt pond, and pickleweed in the salt marsh on the Wetland Round-Up Field trip. This field trip is designed for grades K-6, for up to 65 students. *The Wetland Round-Up field trips will be offered from October - December, 2003. Field trip reservations for this program will begin on Monday, September 8, 2003 from 4:00 pm - 5:30 pm. To schedule a field trip at the Visitor Center in Fremont, call Ken Clarkson at 510-792-0222. For reservations at the Environmental Education Center in Alviso call Genie Moore at 408-262-5513.*

Trekking the Refuge Field Trip

Trek the one-mile Tidelands Trail and learn about the natural history of the Refuge! Explore pickleweed in the salt marsh, brine shrimp in the salt pond, and creatures in the slough during three activities! Available only at the Visitor Center in Fremont, Trekking the Refuge Field Trip is designed for grades 3-6, for up to 36 students. **The Trekking the Refuge field trips will be offered in June and July.** For more information, call Ken Clarkson at 510-792-0222.

Field Trip Orientation Workshops

Educators and Youth Group Leaders conduct the Wetland Round-Up or Trekking the Refuge field trips after attending a Field Trip Orientation Workshop. The Orientation Workshops provide the information you need to design and conduct your own field trip. Teachers must recruit adult activity leaders and chaperones for each activity. We provide easy to follow scripts for leading activities. Teachers participating in the Fall 2003 Orientation Workshops will receive the latest editions of the

educator guides. Both activity leaders and chaperones are strongly encouraged to attend a Field Trip Orientation Workshop. **To ensure that educators have the most up to date information for a successful field trip, it is our policy that educators must attend this workshop every two years in order to bring their class on a field trip.** To reserve a place for yourself and adult volunteers who plan to lead activities on your field trip, call the education staff at the **Visitor Center in Fremont at 510-792-0222**, or at the **Environmental Education Center in Alviso at 408-262-5513.**

Trekking the Refuge Field Trip Orientations at the Visitor Center in Fremont

4:00 p.m. - 8:00 p.m.

Tuesday, June 17, 2003

Tuesday, July 8, 2003

Fall Workshop Orientations will be announced in the Fall issue of Tideline.

Sinks, Sewers, and Sloughs Field Trip*

This Slow the Flow program 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. The program is appropriate for grades 5-12 (although a modified field trip is available for college groups) and up to 36 students. **Call the education staff at 408-262-5513 for a reservation this summer or fall!**

Classroom and Outreach Presentations

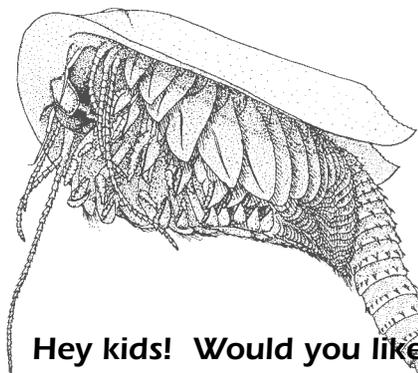
For those educators who cannot bring students to the Refuge, Slow the Flow offers **FREE** classroom and outreach programs at your school! These 50-minute programs are appropriate for grades 5-12 and adults (up to 36 participants), with a maximum number of five presentations per day. **Call 408-262-5513 to make a reservation this summer or fall!**

*The Slow the Flow Program is an environmental education program sponsored by a grant from the City of San Jose. 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.

The Don Edwards San Francisco Bay National Wildlife Refuge

Presents

Junior Naturalist Summer Day Camp 2003



Hey kids! Would you like to step into the shoes of a naturalist and join us for an adventure to explore the wetlands of the San Francisco Bay? Meet new friends? Spend a week outdoors at the Don Edwards San Francisco Bay National Wildlife Refuge? If so, check out all of the details below....

Where: Don Edwards San Francisco Bay National Wildlife Refuge
Visitor Center in Fremont (by the Dumbarton Bridge)

Who: Students entering 3rd, 4th (Mon-Thurs), 5th, and 6th grade (Mon-Fri)

When: July 21th - 25th Monday, Tuesday, Wednesday 9:00 am - 2:00 pm
*Thursday 6:30 pm - 9:30 pm for students entering 3rd and 4th grade
6:30 pm - overnight camp out for students entering 5th and 6th grade only
Friday - camp ends at 10:00 am for students entering 5th and 6th grade

Cost: FREE!!!!

How to Apply: Fill out the form below. Applicants will be accepted on a first come basis; however, first time participants will be given priority. **In addition**, please write a letter (one page or less) telling us why you would like to participate in our program. Applicants must be able to attend all sessions. Junior Naturalists will need to bring their lunch, water bottle, daypack, outdoor clothing, sturdy footwear, and sun screen. Application deadline is 5:00 pm on **Friday, June 27, 2003**. Participants will be notified by mail.

Please send your letter and application to: The Junior Naturalist Program

P.O. Box 524
Newark, CA 94560

----- **Registration Form** -----

Name: _____

Address: _____

Phone Number: (_____) _____

Grade Entering in the fall: _____ Birth Date: _____

Have you participated in the program before? _____

Parent/Guardian Signature: _____

Don't forget to write a letter about why you want to participate!!!

Questions??? Call Ken Clarkson at 510-792-0222

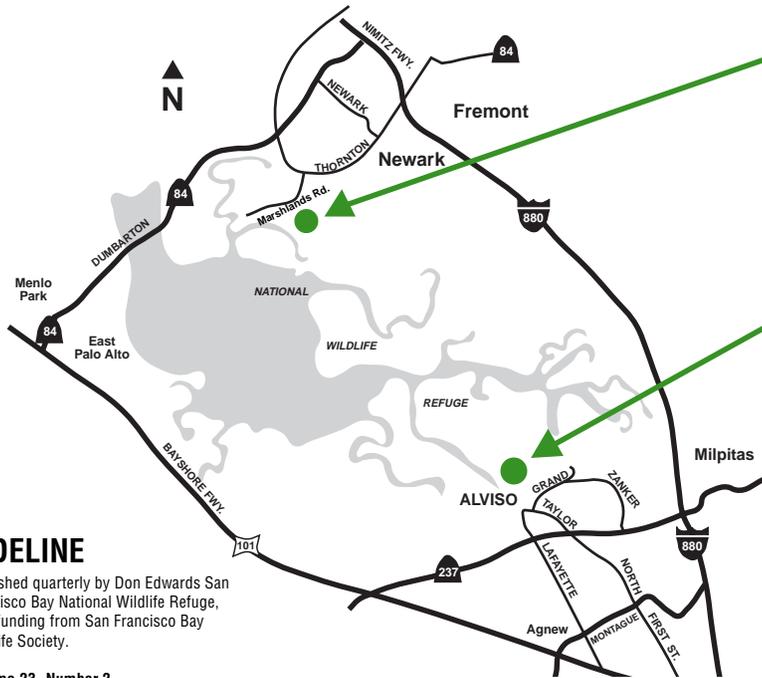
UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
DON EDWARDS SAN FRANCISCO BAY
NATIONAL WILDLIFE REFUGE
P.O. BOX 524
NEWARK, CALIFORNIA 94560
OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

FIRST-CLASS MAIL
POSTAGE & FEES PAID
U.S. Fish & Wildlife Service
Permit No. G-77



Inside this Issue

- 1-3 South Bay Restoration
- 4-5 Thank Yous
- 6 SEA Series Activity
- 7 Murre Project Update
- 8-9 Poster Contest Winners
- 10-13 Summer Activities Schedule
- 14 Field Trips to the Refuge
- 15 Jr. Naturalist Day Camp



Refuge 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.

Refuge Environmental Education Center

(408) 262-5513
Directions: From I-880 or Highway 101, exit on Highway 237 toward 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 Don Edwards San Francisco Bay National Wildlife Refuge to accommodate individuals with disabilities. If you have any questions concerning the refuge's programs, or if you need any accommodation to enable you to participate in the refuge's programs, please contact a visitor services staff person at the Visitor Center at (510) 792-0222 or at the Environmental Education Center at (408) 262-5513.

Board of Directors

President: Jim Ferguson
Vice President: Donna Weisbrod-Potts
Treasurer: Bart Anderson
Secretary: Jed Somit
Directors: Karen Evans, Sue Ten Eyck, Christopher Kitting, Laura Sharp

Staff

Interpretive Specialist: Sharon Miyako
Education Specialist: Sara Polgar
Program Administrator: Sue Ten Eyck

Tideline is On-Line

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

TIDELINE

Published quarterly by Don Edwards San Francisco Bay National Wildlife Refuge, with funding from San Francisco Bay Wildlife Society.

Volume 23, Number 2

Editor: Bryan Lapine
To receive Tideline, to submit an address change, or to submit other newsletter correspondence, write to: Tideline, Don Edwards San Francisco Bay National Wildlife Refuge, P.O. Box 524, Newark, CA 94560-0524.

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: Marge Kolar
Deputy Project Leader: Mike Parker
Don Edwards San Francisco Bay Refuge Manager: Clyde Morris
Farallon Refuge Manager: Joelle Buffa
San Pablo Bay Manager: Christy Smith
Don Edwards Refuge Operations Specialist: Bart McDermott
South Bay Refuges Manager: Ivette Loreda
Antioch Dunes Refuge Manager: Chris Bandy
Chief of Visitor Services: Sandy Spakoff
Outdoor Recreation Planner: Carmen Minch
Environmental Education Specialists: Fran McTamane, Genie Moore, Ken Clarkson
Volunteer Coordinator: John McClure
Law Enforcement Officers: Barry Tarbet
Biologists: Joelle Buffa, Joy Albertson, Ivette Loreda, Diane Kodama, Giselle Downard, Rachel Hurt, Sally Reynolds, Gerry McChesney
Administrative Staff: Sheila Blackman Bahan, Ellen Tong
Maintenance Staff: Juan Flores, Arthur Chan, James Griffin, Wes Skelton

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 and seven other National Wildlife Refuges.