Sloughs News
June, July, and August 2018

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Photo Courtesy of Joanne Ong
On Friday June 8, Wednesday June 20, Friday July 6, and Thursday August 23:

**Enhance the Vernal Pool Habitat at Warm Springs**

By Aidona Kakouros, USFWS Botanist/Ecologist

Do you like to work with the earth? Do the contemplative motions of weeding make your day calmer? Or does the act of weed removal deeply satisfy and energize you?

Take the opportunity to make a difference while enjoying the openness of the last remaining vernal pool grassland in the South San Francisco Bay at the Warm Springs Unit in Fremont, part of the Don Edwards San Francisco Bay National Wildlife Refuge. Weeding events at Warm Springs are both enjoyable and very satisfying projects mixing work and nature exploration! We have planned four weeding events for the summer: Friday, June 8, Wednesday, June 20, Friday, July 6 and Thursday, August 23. All the events start in the morning. We invite you to join us on any or all of them! Volunteering at the refuge does not require previous experience. Bring your enthusiasm and passion for the outdoors, connecting people with nature and culture, and we will teach you all you need to know. Gloves and tools are provided.

Contact aidona_kakouros@fws.gov for more information and driving directions.

When the vernal pools spring to life after winter rains, they can abound in living organisms and plants that will not be seen during the drier years. Many species that appear are considered threatened or endangered. Vernal pools in today's world are rare and hard to see unless you are patient and take the time.

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**After 20 Years of Educating Thousands the Living Wetlands Program Is Slated to End**

By Laura Mello, Volunteer

For 20 years the Living Wetlands Program provided a window on the refuge for school children in the early grades. Many school children as well as parents, siblings and volunteers were introduced to the plants and animals of the refuge. Mud labs were a messy but fascinating introduction to the bay's many microorganisms and a day spent on the refuge was remembered years later as, sometimes, the first time a child had ever seen a lizard or a hawk in its natural environment. Unfortunately a reallocation of funds in the budget of the City of San Jose meant the program could not continue. It will be missed.

There is more information about the demise of the Living Wetlands Program at http://www.sfbws.com/blog/2018/03/21/farewell-living-wetlands.
Hello everyone!

It is time once again for the Lange's Metalmark Butterfly counts at Antioch Dunes National Wildlife Refuge! We will be counting butterflies for several weeks in August and September and we can use your help.

We will be surveying on Thursdays in August and part of September. We will meet for training on site at 9:30 am, then survey until 4:00 pm, the times in which our butterflies are the most active.

The weekly count dates will be:
August — 2, 9, 16, 23, 30
September — 6, and 13
and if they are still active, Sept. 20.

We will be conducting counts until ZERO butterflies are seen, whenever that may be in September. You will be briefed on what to do and what to look for on each day of the count, so first-timers are welcome as well as veteran counters!

As you might guess, Antioch in summer is challenging. Temperatures can be very warm to hot, often with a nice breeze, and the terrain can be uneven and sometimes steep. There are many plants to step over, under and around, as well as prickly plant parts that will go home with you.

However, if you are of the hardy variety, the payoff is fabulous and worth it! Lange's Metalmark Butterflies are found nowhere else in the world, except at the Antioch Dunes National Wildlife Refuge!! Don't miss this opportunity to see this gorgeous endangered species!!!

Volunteers will need to wear sturdy shoes/boots, long pants like jeans and bring/wear sun-protection, sunglasses, hat, lunch and a WATER BOTTLE!!!

We can provide short gaiters to help keep weeds out of your shoes, but, if you have your own long pair, you might want to bring them. They really help keep the weeds out of shoes, socks and laces.

Please feel free to pass this information on to any adults (18+) that you think might be interested. Thank you for your interest in the Antioch Dunes National Wildlife Refuge!

Directions:
Antioch Dunes NWR (Contra Costa County): Volunteers will meet at 1551 Wilbur Avenue in Antioch, 94509.

From 680 heading north (near Walnut Creek/Concord), take Hwy. 242 East, which will lead you onto Hwy 4 East towards Pittsburg/Antioch.

From 680 heading south (from Benicia/Martinez), take Hwy 4 East towards Pittsburg/Antioch.

At Antioch, take A Street/Lone Tree Way exit and go left under the freeway. Proceed about one mile on A Street and then go right onto Wilbur Avenue. Proceed on Wilbur about one mile, cross over a concrete bridge and look for two large PG&E towers on the left. The entrance gate will be on the left between the two towers. You will see the large brown refuge sign next to the gate. Park at the bottom of the driveway.

If you are interested in volunteering for the August-September butterfly counts, Please contact Susan Euing at susan_euing@fws.gov. Please include your full name, phone number and email address. Susan will contact you in July to begin scheduling for survey dates on a first come-first served basis. NOTE: ONLY 8 VOLUNTEERS NEEDED PER SURVEY, SO SIGN UP SOON.
Mary and Gene Bobik Are Volunteers of the Year

At the annual Volunteer Appreciation Banquet on April 14, Refuge Complex Manager Anne Morkill announced Mary and Gene Bobik the winners of the Volunteer of the Year Award. Mary and Gene happened to be in the audience and they were able to receive their awards from Anne.

Mary and Gene Bobik have been volunteering 30 years for the refuge complex since 1988. They are particularly well known for their Twilight Marsh Walk, which has been going strong for 22 years. They have been hosting this popular interpretive walk about the Don Edwards Refuge almost without fail, even during inclement weather. Many visitors have enjoyed the program's relaxed pace with a special opportunity to see the refuge around sunset. On a rainy night they helped students who needed to do a report about the wildlife refuge. Instead of doing an abbreviated program, Mary and Gene gave the students a unique opportunity (out of the rain) to see the research that both done about the refuge.

Yet Mary and Gene really have been doing a lot of other things besides the Twilight Marsh Walk. In 1988 Mary devoted hundreds of hours helping to deliver environmental education programs as a volunteer teacher. For a number of years Mary and Gene have helped Biologist Susan Euing to monitor the least tern colony site in Alameda. They have done salt marsh harvest mouse surveys for the Don Edwards Biologist Rachel Tertes. On a few July 4th holidays, they have assisted Law Enforcement in an effort to prevent wildfires from illegal fireworks. They have often worked behind the scenes at major events, like the Coastal Cleanup and the Amazing Race.

The employees and volunteers are really pleased to recognize Mary and Gene for their enthusiastic support and for their work. We are all very lucky to know them and having them here helping our refuges.

Ceal Craig Wins Friends Group Volunteer of the Year Award

By Genie Moore, Environmental Education Center Director at the EEC in Alviso

Refuge Complex Manager Anne Morkill announced Ceal Craig as the winner of the Friends Group Volunteer of the Year at the Volunteer Appreciation Banquet. Ceal Craig has been volunteering since the early 2000’s. She started at the Environmental Education Center and always has been a reliable and dedicated volunteer.

She has assisted with a variety of tasks from organizing our lending library, to helping at special events, leading programs, and then ultimately joining the Board of the Friends group.

As a refuge volunteer she has taken on the tours of Drawbridge and has become the go to person and refuge expert on the topic. She has rewritten the Drawbridge book - which has just become available for sale. She has led many tours of Drawbridge, engaging people in the history of our fascinating ghost town. Ceal has shared information about Drawbridge with visitors and even the media (radio/ tv/ newspapers).

In addition to Drawbridge tours, Ceal supports the refuge as a board member of our Friends group the San Francisco Bay Wildlife Society. She led the charge in setting up the new Friends group agreement (first in the nation!), and has always supported the mutual programs and projects of the society and refuge. She has taken an active role in the negotiating grants and agreements. She provides valuable guidance on a local and regional level. She assisted with the conference in Los Banos in June of last year for visitor services staff of refuges and for other friends groups in the Southwestern Region. Ceal’s attention to detail, reliability, and dedication to the refuge, the staff, and other volunteers is a valuable asset to us all.
Ibrahim Khatri and Drue Freeman Win Volunteer Team of the Year

Ibrahim and Drue work as Saturday Welcome Desk Volunteer at the Environmental Education Center in Alviso. They are responsible for greeting visitors, answering questions, and recommending trails to hike. They are extremely welcoming, engaging and helpful towards our visitors. They also take on special projects. Ibrahim does a lot for the SFBWS Nature Store, including taking inventory and creating helpful tax spreadsheets. Drue is our resident handyman, always putting things away that are hard to reach and recently building our new display table!

Steve Stolper and Laurel Stell Win Special Achievement Awards for Innovative Programs

By Hope Presley

Both Laurel Stell and Steve Stolper bring innovative refuge programs to nontraditional audiences. Both Laurel and Steve are Weekend Program Interpretive Volunteers. Their programs help broaden the range of what we offer and they are sometimes given at other trails outside of the usual ones in headquarters and EEC areas.

Laurel frequently leads programs at SF2 called Pacific Flyway in Menlo Park, and at the EEC she presents Why Tides Matter. Laurel has also been involved in the Citizen Science Program and Phenology monitoring.

Almost monthly, Steve leads a program called Hike the Mallard Slough. He also does Crafts in the Outdoors: Beginning Leatherwork approximately once a quarter. He took on a new program - How to Hike, which he led for the first time on Bay Day 2017.

At the Volunteer Appreciation Banquet Hope Presley presented Laurel Stell and Steve Stolper their Special Achievement Awards.

A Walk Among the Wildflowers at the

The Volunteer Appreciation Banquet

This year on April 14 we served Mexican food from Tortilla Factory of Newark (courtesy of the San Francisco Bay Wildlife Society), had a fashion show featuring items from the VC Nature Store, received several entries to a Wild Flours dessert contest (like the Bear Box Dessert: No Humans Allowed), gave out laminated field identification guide to over 200 bay area birds, and thanked all of our volunteers for a job well done. The turn out was great this past year. Your work is truly amazing!
Stewardship Saturday in Fremont on Earth Day June 2, July 14, and August 11

Volunteering starts at around 9:30 am and finishes up by noon. Ask about flexible starting and end times to fit your schedule needs.

If you are interested in improving the refuge for visitors and for wildlife alike, join us at the visitor center for a stewardship project. We will do either a trash cleanup or a planting/weeding project. Dress appropriately for the task and for the weather. We will have gloves to lend and will provide the tools. Bring your own water bottle. Meet in the parking lot at the visitor center. Driving an additional two and one half miles may be required since the project may be at a different location.

Visitor Desk Training at the Don Edwards San Francisco Bay National Wildlife Refuge

Train to volunteer at the Fremont Visitor Center desk. Volunteers work a minimum of 2 shifts a month for a minimum of 4 months. You must be able to attend both training days to volunteer.

Training dates:
Sunday, July 15, 10:00 am – 3:00 pm
Wednesday, July 18, 6:00 pm – 8:00 pm

For more information and to register, visit https://donedwards_infodesk.eventbrite.com.

Native Plants Nursery

Work with our nursery doing weeding, pruning, and planting. Learn about restoring vegetation that is more drought resistant and better for wildlife. Your work will promote plant diversity and make the refuge more beautiful.

Questions? Please contact June Smith at wildflowers560@gmail.com
Volunteer Opportunities:

**Restoration Project Volunteers:** Volunteers are needed to work on the EEC’s ecotone habitat restoration project. In the fall and winter volunteers plant natives and in the spring and summer volunteers pull various invasive species to ensure that the native plants have a chance to thrive!

**Training:** Volunteer orientation and on the job training is provided.

**Questions:** Please contact Genie Moore at genie_moore@fws.gov or 408-262-5513 ext. 100.

**Additional Requirements:** All ages are welcome, but remember it is physical work, primarily outdoors.

**Hours:** Work is done Tuesdays from 9:30 am to 2:00 pm.

**Weekend Information Desk Volunteers:** Volunteers are needed to tell our story to visitors, field questions, answer phones, and check out our discovery packs and binoculars to visitors. Must be willing to interact with the public and feel comfortable fielding questions.

**Training:** Volunteer Orientation and a one hour information desk training is required.

**Questions:** Please contact Hope Presley at 408-262-5513 ext. 104 or hope.presley@sfbws.com.

**Additional Requirements:** One to two half-days per month for a six-month commitment.

**Hours:** Shifts are from 9:45 am to 1:30 pm and 1:30 pm to 4:45 pm on Saturdays.

**Citizen Scientists Plant Monitoring Program:** Help us monitor plants, birds, monarchs, reptiles, and/or the weather! Dates and hours are flexible.

**Training:** Volunteer Orientation includes one hour of training in the field with experienced volunteers.

**Questions:** Please contact Hope Presley at 408-262-5513 ext. 104 or hope.presley@sfbws.com

**Additional Requirements:** Volunteers must be ages 15 and up and monitor one field per month.
EEC Volunteer Orientation

If you have an interest in wildlife and their conservation, enjoy working with people, and are enthusiastic and dependable, the Environmental Education Center’s Volunteer Program is for you! As a volunteer, you will receive on-the-job training from staff and other volunteers in the project area you choose.

Volunteer Orientation

Volunteer orientations take place in the auditorium of the Environmental Education Center in Alviso from Saturdays, 11:00 am to 12:00 pm. Please contact Hope Presley at 408-262-5513 ext. 104 or hope.presley@sfbws.com.

Butterfly Garden Volunteers:

We need volunteers to keep the education center’s native plant demonstration garden thriving. This position will require restoration work in the garden that includes weeding, mulching, and planting.

History: Volunteers established this garden to provide critical habitat for songbirds and butterflies, and to demonstrate how to garden for wildlife using beautiful California native plants without the use of herbicides. It contains mature specimens of Ceanothus, fuchsia-flowered gooseberry, pink flowering currant, buckwheat, toyon, and black sage in a naturalistic setting.

To Apply: Please contact Hope Presley at 408-262-5513 ext. 104 or hope.presley@sfbws.com

Additional Requirements: One day a week for a three-month commitment is required.

Hours: Hours are flexible.

Outreach Volunteers:

Help us get out into the community and spread the word about one of the bay area’s best kept secrets – the refuge.

Training: Volunteer Orientation, outreach training and Refuge 101 training are provided.

Questions: Please contact Hope Presley at 408-262-5513 ext. 104 or hope.presley@sfbws.com

Additional Requirements: One event per quarter or four total is required for a one-year commitment.

Hours: Hours can vary depending on the event.
More Alviso Volunteer Opportunities!

**Environmental Education Volunteers:** Help lead school field trip activities that educate children about water conservation, our local endangered species and habitats that surround the bay! Two field trip programs are held at the EEC: Wetland Round-Up (K-4) and Habitat Restoration Service Learning (5-12). Volunteers help lead activities for groups of 10-15 students.

**Training:** Volunteers will shadow at least 2 field trips.

**Questions:** Please contact Genie Moore at 408-262-5513 ext. 100 or genie_moore@fws.gov or Hope Presley at 408-262-5513 ext. 104 or hope.presley@sfbws.com

**Additional Requirements:** Must be willing to get a background check and a TB test.

**Dates & Hours:** Weekdays as scheduled. Field trips are typically 4 hours from approximately 9:00 am – 1:00pm.

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**Restoration Work Day at the EEC in Alviso on Earth Day**

Environmental Education Center, Alviso

10:00 am to noon, Saturday, June 16

Are you interested in volunteering at the refuge? Come out for a Restoration Work Day. We will be working in the butterfly garden and surrounding trails. Work will include weeding, mulching, and planting native plants. This is a great opportunity for middle school, high school, and college students to gain volunteer hours. Great for scout groups and families as well. All ages and skill levels are welcome to join. Gloves and tools are provided. Bring a lunch to enjoy after. Reservations required. Visit https://restorationeec.eventbrite.com.

Questions? Call Hope at 408-262-5513 ext.104.

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**Volunteer Enrichment: Coyote Creek Lagoon Trail Hike**

Thursday, June 21, 9:30 am - Noon

We will meet at the Environmental Education Center* and head to the lesser known trails at Coyote Creek Lagoon. This hike will be casual so we can explore and see another part of the refuge. The hike is 2.5 miles (5 miles round trip) one way on compact gravel.

Wear hiking shoes, hat, bring water and a snack.

Please RSVP to Genie Moore, genie_moore@fws.gov; 408-262-5513 ext. 100.

*If you want to meet us there let Genie know and she will send you directions.
Volunteers from Bay Area Communities Help Refuge Time and Again

By Paul Mueller, Volunteer Coordinator of the San Francisco Bay National Wildlife Refuge Complex

In the volunteer narrative reports for the fiscal year (July 1 to June 30), I often write about the work of volunteer supervisors who accomplish a lot by inviting people to help them with their programs. Also, I mention specific volunteers who give the refuge many hours in maintenance, habitat restoration, environmental education, and visitor services. This year I decided to focus on the events which bring people from the urban communities of the Bay Area to help out at Don Edwards San Francisco Bay NWR.

From my perspective there are really two notable categories of volunteers at the Don Edwards SF Bay NWR — volunteers who work throughout the year and one time volunteers who attend special events. During the FY 2017, the Don Edwards SF Bay NWR hosted over 80 volunteer events that attracted 1,465 one time volunteers who gave 5,424 hours to the refuge. On the other hand, about 165 ‘regular’ volunteers contributed an extra 8,935 hours while working throughout the year. The grand total of volunteer hours in both categories was 14,360.

Regarding volunteer events, nearly 40 of them engaged school students on habitat improvement projects. In 2017 nine groups of Irvington students from Fremont doing “Change Projects” logged over 315 hours conducting planting and weeding projects under the auspices of our all-volunteer Native Plants Nursery in the Fremont section. Another notable group was San Jose Community College which brought out 5 to 15 students over 14 days in October and November 2016 to the Environmental Education Center in Alviso. Other students during the year came from Logan High School in Union City, Juana Briones School in Palo Alto, Fremont Christian School, Redwood City Day School, Saint Charles School in San Carlos, St. Edwards School in Newark, and Harker Middle School and Jesuit High School in San Jose. During their time on the refuge, young people learn first-hand about ways to improve the habitat for San Francisco Bay wildlife and witness the extent of a surprising decades old problem of tons of floating trash washing up next to the refuge’s bay facing trails.

Of special note, there were twenty-five Habitat Heroes, students from the wider San Francisco Bay area, who gave an impressive 925 hours of their own time to stage a summer camp for younger students at the Environmental Education Center in Alviso in August. Many of the Habitat Heroes attended the summer camp when they were younger. In the Habitat Heroes program they learn how to become mentors for younger participants of the summer camp and how to take on leadership roles for the camp.

Two of the events in FY 2017 had an outstanding number of volunteers. Last June 27, there were 404 Facebook employees at an event hosted by a partner Save the Bay. During the event, 3,360 pounds of invasive dittrichia (stinkwort) were pulled. Corporate volunteers at other events included Omron, FireEye, CDM, Caman Consulting, Global Foundries, Lam Research, and Materion Electrofusion.

The other large notable event was the California Coastal Cleanup on September 17 when 275 volunteers showed up at the refuge’s fishing pier in Fremont. The volunteers at the Coastal Cleanup gave 955 hours over a three-hour period. There were scouting groups, church groups, and employees from Thermo Fisher Scientific...
Bay Area Volunteers Help Refuge Numerous Times During the Year

(Continued from previous page.)

in Fremont and the Union Sanitary District in Union City. Some of the volunteers took shuttle vehicles to two areas about four miles down the Shoreline Trail. Others cleaned up the small beach and parking lot areas near the pier and walked to other areas along two levee trails. The truck drivers counted picking up 240 bags. They also collected other large items washed up by the high tides that included furniture, cushions, mattresses, buoys, broken piers, tires, and construction debris. The trash collected weighed an estimated 2,700 pounds. This event was sponsored in part by East Bay Regional Parks which supplied local advertising and the City of Fremont which lent a 30 yard dumpster.

The hunting programs at the Don Edwards SF Bay NWR and San Pablo Bay NWR are very noteworthy for their geographic location in the center of a five county urban area with a population estimated at 4.7 million. At the Don Edwards refuge, there were at least two events drawing in 30 hunting volunteers giving 120 hours repairing blinds and picking up trash. Also in the past year there have been other regular volunteers who have cleaned up the refuse in the hunting areas that the bay tides washed up against its levee trails.

Volunteers from Hope Services of Santa Clara and Mountain View often show up monthly to help clean the Environmental Education Center in Alviso and to work at the plant nursery. Last year, the volunteers contributed over 600 hours of restoration and maintenance work.

There were other events that attracted people from the many communities along with volunteers to fill out the positions needed. These events were recreational and educational in nature attracting large audiences, participants, and volunteers working behind the scenes. They included Connection to Pier Fishing, Bird Fest on Mother’s Day weekend, Shark Day, the Amazing Refuge Race, Summer Camp, Christmas Bird Count, and Vernal Pool Walks at Warm Springs. They were staffed mostly with regular volunteers and were not categorized strictly as ‘events’ drawing in random one time volunteers. If counted, it could be said that the Don Edwards SF Bay NWR has close to 100 events annually that involve regular and one-time volunteers.

Regardless of how event volunteers are counted, the Don Edwards SF Bay NWR has one of the largest contingent of volunteers in the country giving one of the highest total hours for a refuge in the service. What makes it all possible is the staff at the refuge and in the region willing to take on partners and volunteers from the many area cities in order to accomplish so much more than otherwise possible.
The Farallon Islands National Wildlife Refuge (FINWR) staff organized 20 volunteers working 954 hours to support refuge operations. The majority of this time consisted of ten volunteers spending a total of 32 days on the FINWR applying herbicide to control invasive plants. Additional volunteers spent 12 hours on the island at a time assisting with facility maintenance projects.

Three volunteers from the Golden Gate National Recreation Area (GGNRA) spent nine days and 216 hours on the refuge repairing damaged trails and rock walls.

There were additional volunteers that contributed 55 hours assisting with logistics such as driving vehicles to transport cargo and personnel, shopping for food and supplies, and packing cargo.

In the past, the FINWR reported volunteer hours contributed by a contracted partner, Point Blue Conservation Science (Point Blue). In addition to Refuge organized volunteers, 14,667 hours of time is contributed by volunteers working directly for Point Blue who are stationed on the remote island refuge year-round assisting with and conducting biological monitoring (13,419 hours). In order to support this volunteer effort, Point Blue also manages a volunteer organization known as the Farallon Patrol, comprised of boat owners who volunteer their time and vessels to support the logistics of maintaining a permanent remote biological field station. There are also shoppers that volunteer to purchase necessary food and supplies and ensure they are delivered in time to make it on each boat trip.

The FINWR contains a diversity of biota which requires a huge effort to research and monitor. Equally challenging is the effort involved with maintaining this remote island field station. The stewardship of the FINWR requires the constant support and assistance provided by dedicated volunteers which ensures that these natural resources will remain in perpetuity.
In a partnership with Students and Teachers Restoring A Watershed (STRAW) this Point Blue Conservation Science program achieves San Pablo Bay NWR’s efforts to provide environmental education and interpretation. The program also helps fulfill the Service’s mission in restoring habitats by creating near-shore habitat for endangered salt marsh harvest mice. Descending on San Pablo Bay NWR, trowel wielding students from K through 12, along with parents and teachers volunteer three to five hours in one day projects where some 50 to 150 plants are established. With 494 volunteers culminating in 2009 hours of time equates to saving the Service $48,497.47 in restoration. Students participating in these projects often get their parents to take them back to the refuge to show-off the plants they put in the ground.

Volunteers from the City of Antioch and surrounding communities offer establish plants on the Sardis Unit, Antioch Dunes NWR. Refuge Biologist Susan Euing demonstrates the proper technique for planting.

Refuge intern Hannah Hodgson helps students from Sutter Elementary establish nectar plants for the Lange’s metalmark butterfly. Sutter Elementary has been a consistent source of students, teachers, and parents volunteering to establish and weed around native plants on Antioch Dunes NWR in their conservation efforts for the butterfly.

Antioch Dunes NWR was established in 1980 to protect the Contra Costa wallflower and the Antioch Dunes evening primrose. However, creation of the refuge had an even greater distinction – protecting an insect. Lange’s metalmark butterfly, with a wing span not much wider than a quarter, resides in habitat maintained through a wide assortment of refuge volunteers and volunteer organizations. Whether they are a group of citizens from the City of Antioch, Antioch High School, scouting troops, or from what has become a ‘go to source’ of forever eager volunteers - Sutter Elementary – people want to plant, weed, and otherwise work to keep Lange’s alive in the wild. With 161 volunteers providing one to four hours of their time, 808 plants were established in 437 hours equating to $10,549.18 in restoration. Nectar and host plants and the two endangered plants receive considerable care and nurturing through the wonderful assortment of volunteers.

STRAW Volunteers Give Over 2,000 Hours for Salt Marsh Harvest Mouse Restoration

A 2017 Volunteer Report for San Pablo Bay NWR by Don Brubaker, Refuge Manager of the North Bay Refuges

In a partnership with Students and Teachers Restoring A Watershed (STRAW) this Point Blue Conservation Science program achieves San Pablo Bay NWR’s efforts to provide environmental education and interpretation. The program also helps fulfill the Service’s mission in restoring habitats by creating near-shore habitat for endangered salt marsh harvest mice. Descending on San Pablo Bay NWR, trowel wielding students from K through 12, along with parents and teachers volunteer three to five hours in one day projects where some 50 to 150 plants are established. With 494 volunteers culminating in 2009 hours of time equates to saving the Service $48,497.47 in restoration. Students participating in these projects often get their parents to take them back to the refuge to show-off the plants they put in the ground.

With Mount Diablo in the eastern skyline, students participating in a STRAW project receive environmental education and interpretation from Point Blue Conservation Science interns and refuge staff. Here on the Sonoma Creek Marsh Unit, students learn the importance of establishing near-shore habitat used as high tide refugia by the endangered saltmarsh harvest mouse and Ridgway’s rail, and other wildlife species. In a team effort, a gum plant is established among pickle weed that has self-propagated on a transition zone built against an existing levee at Sonoma Creek Unit, SPBNWR. These students will have likely helped plant a diverse palette of species in a short amount of time. And be able to come back years later and point to the plants they established.
Although the refuge volunteer trash pickup group lost four of its six long time members in early 2017, the remaining two members removed 17 truckloads of trash in 2017. That would be a pile four feet by eight feet and 68 feet tall! In 2017 we made a number of kayak trips to pick up trash on remote bay beaches in addition to bike riding and driving the accessible levees at the edge of the bay to remove trash. Every day innumerable items of trash get into the bay. Without removal, our bay shores will become covered with trash again.

An April 21, 2018 Earth Day Report

From an April 21 e-mail from Brian and Katrina Higgins: Attached are our pictures from the Earth Day cleanup. We had two very full truckloads from the 37 volunteers that helped pick up. Katrina took five volunteers in the mini-van on the Shoreline Trail just north of Ideal Marsh and picked up along the levee. Brian took eight volunteers in the full size van on the Shoreline Trail just south of Alameda Creek and picked up along the levee there. After we pick up all their bags in the truck, and the bags other volunteers filled on their walk down the Hetch Hetchy Pipeline building.

From Brian and Katrina Higgins on a May 5 Stewardship Saturday:

These are the pictures from last weekend's truckloads. The first picture is the truck is half full in Mountain View (Stevens Creek). Yes, that is a hotel mini fridge and a whole pile of orange trash bags that were melted together. The second picture is in Mountain View ready to drive back to refuge HQ. Yes, that is a small kid's mattress and a sailboat hatch on top that we used to strap down and keep all the bags secured for the freeway drive back. We think the square pipe structure might be floatation off a duck blind. The third picture shows what we picked up along the Shoreline Trail.
Wildflowers Gone ... Well.... Wild!

Meg Marriott, Wildlife Biologist for San Pablo Bay NWR and Marin Islands NWR

On October 11, only a few wisps of smoke remained while wildfire raged elsewhere. The 37 Fire covered 1,660 acres of which, 222 acres were refuge on Sears Point Unit.

Sears Point area after the 2018 spring rains

I am so excited to report that the native wildflowers and vegetation (and our riparian gully restoration) not only survived the October fire, but are thriving!!! I have attached "before" and "after" pictures of the area I was in ... while taking the wildflower photos (same location in both pics - just slightly different angle). Mama Nature is a pretty amazing gal.

Save the date, September 15. Participate in the great California Coastal Cleanup at the fishing pier at the end of Marshlands Road. Consider helping behind the scenes at the registration tables, driving a truck, being a team leader or more. Additional information will be coming about this event. Thanks.