



Tide Rising

Fall 2020

Volume II, Issue 1



Publisher & Editor: [San Francisco Bay Wildlife Society](#) (SFBWS).

SFBWS is a not-for-profit Friends Group for the San Francisco Bay NWR Complex, working along with many Refuge volunteers to keep our public lands available for you and wildlife.

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GIVING TUESDAY

#OPTOutside

Partnerships & Supporters

In this issue:

- On our second year of Tide Rising, we begin by spotlighting partnerships that make a difference on the Farallon Islands and Salinas River National Wildlife Refuges.
- Read an exciting report on the Summer Camp 2020 delivered virtually
- Watershed Watchers describes long-term partnerships that have made this program alive and making a difference.
- Both Friends groups columns this year focus on partners that helped them deliver programs to support the Refuge and the Complex.
- The SFBWS staff have created a wonderful story activity about bees for young people.
- People of note this quarter will say goodbye to some, welcome others, and reflect on how indigenous people influenced habitats and wildlife in earlier days.

Thanks for reading and enjoy the rest of the San Francisco Bay Wildlife Society Fall Newsletter!

San Francisco Bay Wildlife Society

Editors: Ceal Craig, PhD; Renee Fitzsimons.

Contributors: Ceal Craig, Diane Kodama (USFWS), Francesca Demgen (Friends of San Pablo Bay), Renee Fitzsimons, Gerry McChesney (USFWS), Hope Presley, Rachel Caoili, Tracy Flor-Figueroa.

Masthead: Marsh at sunset (Renee Fitzsimons)

Current Refuge Complex Status

Refuge Status as of October 15, 2020

Don Edwards San Francisco Bay (DESFB) NWR: All public programs and volunteer events postponed.

- If you have a scheduled group program, contact staff person you made the reservation with to discuss options.
- Visitor Center in Fremont & Environmental Education Center in Alviso are currently closed. Check back for status changes. If you have questions or concerns regarding the EEC activities and events, please [contact us](#)
- The DESFB NWR Refuge trails remain open from sunrise to sunset. Stay healthy, and take care.

Other National Wildlife Refuges in the Complex:

- During the current public health emergency, whenever possible, outdoor recreation sites at Refuges will remain open to the public. For local conditions review the information on Refuge websites (for links see [Explore From Home](#) page) and call ahead.
- If visiting a Refuge, please ensure public health and safety by following guidance from the CDC and state and local public health authorities. You can do this by maintaining social distancing, avoiding overcrowding, and using good hygiene practices.

Farallon Islands National Wildlife Refuge ([More info](#))

*Established in 1909 by President Theodore Roosevelt as a preserve for breeding birds.
A designated State Ecological Reserve and part of the Golden Gate Biosphere Reserve.*

Partnerships Help Protect and Restore the Farallon Islands: *Will mice overwhelm it?*

by Gerry McChesney, Manager, Farallon Islands National Wildlife Refuge, U.S. Fish and Wildlife Service

They say it takes a village to raise a child. Much the same could be said about what it takes to manage a Refuge. Almost nowhere is this truer than our Farallon Islands National Wildlife Refuge (NWR). Partnerships of cooperation, joint stewardship, and longevity are essential.

When President Theodore Roosevelt established this Refuge in 1909, located about 30 miles offshore of the Golden Gate, only the smaller Middle and North Farallones, along with Noonday Rock, were included in this new preserve. The larger South Farallon Islands, including the largest island in the chain, Southeast Farallon Island (SEFI), was added to the Refuge in 1969 when the U.S. Coast Guard (USCG) began preparations to remove lighthouse keepers. Since that time, the U.S. Fish and Wildlife Service has managed these islands and their abundant wildlife in cooperation with USCG.

This newfound responsibility of managing the Farallones posed challenges to the Service. Maintaining a full time presence on the island became essential to protect the island's sensitive wildlife from disturbance and even illegal shooting that sometimes occurred. However, getting to the islands is difficult and often hazardous and Refuge budgets did not allow for staffing the island all year long.

A new organization then known as Point Reyes Bird Observatory (now called Point Blue Conservation Science) had just established a full-time research station in one of the two light keeper houses. In 1972, as the last light keepers departed the island ending an era spanning over a century, the Service entered into its second major partnership in managing the Farallon Islands. Still strong, the relationship between the Service and Point Blue likely stands as one of the longest continuous partnerships in the Refuge system. Point Blue Biologists have been on SEFI every day and night since April 3, 1968.

Through this long-standing partnership, the Service and Point Blue together have provided stewardship protecting invaluable seabird, seal and sea lion populations, and caretaking the infrastructure necessary to continue our work there.

Point Blue's biologists also help the Service monitor and study the abundant and unique Farallon wildlife. In 1971, nearly 50 years ago, Point Blue began a long-term monitoring program of the islands' seabird and marine mammal populations. Their studies have shown the effects of our Refuge stewardship and identified management needs. We've documented the returns of the rhinoceros auklet, northern elephant seal, and northern fur seal following their extirpation by earlier human inhabitants.



Common Murre (Gerry McChesney)

We were able to act when biologists discovered a rapid decline in the Refuge's common murre population, when birds were being killed in fishing nets (gill nets) and oil spills. As Pete Warzybok, Point Blue's Farallon Program Lead, stated, "For 50 years our cooperative work has been built on a mutual commitment to the understanding, preservation, and restoration of the Farallon Island's unique ecosystem. As with any true partnership, both parties benefit and are able to accomplish more together than either could on their own."



Point Blue biologist Pete Warzybok with rhinoceros auklet chick (Gerry McChesney)



Farallon Partners:

Refuge manager Gerry McChesney with Point Blue partners (USFWS)

Farallon Islands National Wildlife Refuge

House Mice: Critical Challenge for the Farallones

These cooperative efforts with Point Blue and others identified impacts from a small yet destructive introduced species still living on the islands, the **house mouse**. House mice were introduced sometime in the 19th century by early island inhabitants. Like many islands worldwide, the Farallon ecosystem evolved without the presence of mice, rats, or other land mammals. And like so many other islands, the introduction of mice had destructive results. With these collaborative efforts, we've learned that the mouse population goes through an annual cycle, slowly increasing in summer, peaking in the fall, then crashing in the winter. A study by Island Conservation biologists found that at the fall peak, mice number as much as 500 per acre, the highest house mouse density recorded on any island in the world.

Additional research began to paint a clearer picture of the impacts of so many mice on the islands. Mice are impacting the islands' ashy storm-petrels, a rare seabird of which half of the world's population breed on the Farallones. Removing the mice would help the storm-petrels survive and recover. Mice feed on even rarer, endemic species found nowhere else in the world, the Farallon arboreal salamander and Farallon camel cricket. Mice also feed extensively on the islands' native plants, inhibiting growth.



Ashy Storm-Petrel (Gerry McChesney)



Farallon Arboreal Salamander (USFWS)

By the mid-2000s, Refuge staff realized that action was needed to halt mouse impacts on the Farallon ecosystem. By that time, techniques for completely eradicating rodents such as rats and mice from entire islands had been developed and were being used extensively in New Zealand and elsewhere. In 2000-2001, the first rodent eradication project in the U.S. was conducted successfully on Anacapa Island in the Channel Islands National Park off southern California. With that realization, the Service began to examine how house mice could be eradicated from the Farallones as a way to permanently eliminate their impacts on its ecosystem.

In 2004, the Service began working with the non-profit conservation organization Island Conservation, who had worked with the National Park Service on the successful Anacapa Island rat eradication project. Along with Point Blue and others, our partnership team examined how mice could best be eradicated from the islands safely and effectively. After years of studies, research trials, literature searches and consultations with other agencies and experts, a draft Environmental Impact Statement was released for public review in 2013.

Responding to public input, additional research was conducted and public comments were incorporated. The Service released the Final Environmental Impact Statement (FEIS) for the Farallon project in March 2019, which identified aerial broadcast of the rodenticide Brodifacoum-25D Conservation as the preferred alternative. It is the only proven method available for this task, and has been used safely and successfully on hundreds of islands around the world, including the well-known Anacapa Island project.

Much planning and environmental compliance activities remain to be done before this restoration project can move forward. To help with that, an even larger coalition of partners has come together including the American Bird Conservancy, The Nature Conservancy, Marin, California and National Audubon Societies, International Bird Rescue, and others. According to Brad Keitt of American Bird Conservancy, "The Farallon Islands provide incredibly important habitat for birds. Restoring these islands is among the most important actions we can take to help these birds, and the complex ecosystem of which they are a critical part, thrive into the future."

To learn more about the Farallon Islands Restoration Project, go to:

[Restore Farallones](#)

[Farallon Island NWR](#)

Archived [webinar](#) about the project

Salinas River National Wildlife Refuge ([More Info](#))

Formed in 1973, within 367 acres, this Refuge has six habitat types: Beach, dunes, salt marsh, saline ponds, Salinas River/lagoon, and grasslands. Located south of Moss Landing, it protects several threatened and endangered species, including Western snowy plover, Smith's blue butterfly, and Monterey spineflower.

Long Term Partnerships Benefit Western Snowy Plovers

by Diane Kodama, Refuge Manager, Salinas River National Wildlife Refuge

The year was 1993, when Jurassic Park was a blockbuster in theaters, President Clinton had taken the oath of office for his first term, the chart-topper "I Will Always Love You" by Whitney Houston played on radio stations everywhere and a group of conservation-minded individuals met for the first time around John and Ricky Warriner's dining room table in Watsonville, CA. This group was brought together by a common cause, the survival and recovery of the Western snowy plover, federally listed as threatened on the Pacific Coast that very year. Together, they established the groundwork for a collaborative partnership in the Monterey Bay area that has outgrown the dining room table, now including Point Blue Conservation Science, The Big Sur Land Trust, California State Parks (Monterey and Santa Cruz Districts), California Department of Fish and Wildlife, USDA Wildlife Services, the USFWS Ventura Fish and Wildlife Office and Salinas River National Wildlife Refuge.

watchful parent for protection. At 28 days, the chicks are considered fledged (capable of flight) and independent. Threats towards the survival of the plover include habitat loss from beach erosion, non-native invasive vegetation, coastal development, and sea level rise; mammalian and avian predation; and human use on beaches.

By combining resources and expertise, the partnership has implemented management strategies to protect nesting plovers and increase reproductive success, along the stretch of coastline from San Mateo County, north to Monterey, south. Efforts include using predator-proof fencing around nests in the 1990's, habitat restoration, outreach, and continued coordination on effective methods to reduce human disturbance in nesting areas. The success of these efforts has been measured by biologists, monitoring the fate of plover nests from egg to fledging, each breeding season.

Over the past 27 years, the group has faced breeding seasons with devastating nest loss from emerging threats, such as the arrival and spread of ravens throughout the Monterey Bay area. But it has also seen numerous years of success in achieving the target goal for number of chicks fledged, as strategies are improved upon and new tactics are developed. What has always been a constant though, is Ricky's generous hosting of the coordination meetings (in a much bigger conference room now) and the commitment of the partners to the recovery of the Western snowy plover.



Top row: Adult plover with chick & Newly hatched chicks (Jenny Erbes)
Bottom row: Eggs and Adult plover (Matthew Slater)

A small white and buff colored shorebird with dark facial markings, the Western snowy plover nests on beaches and salt ponds in the Monterey Bay area, laying 3 speckled eggs in shallow scrapes. For 27-31 days, both the male and female parents take turns incubating the nest. Soon after hatching, the chicks are ready to follow the male in search of food, relying upon their camouflaged coloration and



Adult plover on nest (Matthew Slater)

People of Note

Indigenous People and the Environment. Celebrating Contributions of Genie Moore

by Ceal Craig, Newsletter Editor

Indigenous People and the Environment

October brings autumn temperatures and certainly less sunlight. However, this year, unusual by all accounts, we experienced less sunlight (and poor air) from high smoke levels. In addition, temps soared throughout the month.

October is also a time to reflect on the influences and history of indigenous peoples. As a non-native Californian, I have tried to learn about the history of indigenous people and descendants in the area I call home. When Peninsula Open Space Trust (POST) offered a three-part webinar on Indigenous Peoples of the Bay Area, with Mark Hylkema, Archaeologist and Tribal Liaison for the Santa Cruz District of California State Parks and Adjunct Professor at Foothill College, I signed up. These three webinars were packed with information, ideas, reflections, and stories: [Part I](#), [Part II](#), [Part III](#). The highlights below, along with information from other resources, are my synthesis and I apologize in advance for anything I misunderstood.

Ohlone is not a tribal designation per se, more a linguistic grouping, from the word Oljon. Mark described how the designation Ohlone came from various sources to be associated by researchers with a large number of local tribes. In 1924 when Native Americans became citizens and were counted in the US. Census, the census taker asked indigenous people at Mission San Jose and they responded with Ohlone of the West. Over 50 tribal communities in the Monterey and San Francisco Bay area are known as Ohlone. This is not all encompassing of tribes in this area; many indigenous people and their descendants are not part of that grouping. A few other language groups are known as Costanoan and Ramaytush (Cordero, 2019), for example.

Trading of obsidian points from the Lassen area shows the amount of travel and commerce between tribes. Olivella shells sometimes used as coinage and ornament date back to 7500 BCE. Acorns were a critical part of local indigenous people's diet, though it took a lot of work to make them edible. Gathering acorns using baskets,

splitting the nut (special rock cavity and pounder), taking out the meat, then pounding to a flour (stone bowl). Finally putting the meal on tops of leaves to leech out the tannic acids with boiling water made by dropping red-hot rocks into tightly woven baskets. What a richly textured history to learn more about!

I learned about a tragic misstep in our history: In 1860, the U.S. Congress authorized the Indentured Servitude Act supporting capture of indigenous people for use as slaves, especially children. Often parents would be shot. This horrendous legislation was repealed in 1863, but until 1877 Native Americans were bought and sold. Millions of dollars were paid by the State of California and the Federal government to vigilante groups in service of this.

Circling back to the introduction about challenges we are experiencing with forests and fire, further resources can be found on [POST's site](#) and this [Tribal Forestry](#): The intersection of industrial and indigenous forest management UC Berkeley event. From the POST site.

"Bringing fire back to the land" story and the Tribal Forestry video are particularly apropos considering the wildfires and their impact these past months. "Fire is one of the most natural and restorative processes that happens in nature. Native Californians who lived on this land burned regularly to aid the forest system. And, ecologists have discovered that many plants are fire adapted and only germinate after fire. Most of these plants, including redwoods, can survive fire relatively easily and grow vigorously after competitive trees are burned away"

Learning about the history of indigenous people in our area helps me understand more about our past. An important step in these times for all. I encourage all of us to learn what we can do to support and learn about indigenous people and descendants in the Bay Area.

Cordero, J. (2019, Summer). The Aramai. In *La Peninsula*, xlvii, 1, published by the San Mateo County Historical Association.

Celebrating Genie Moore: Inspiring Environmental Educator

In November, Genie Moore, Environmental Education Center Director, US Fish & Wildlife Service, is leaving us after twenty-plus years bringing her love of environmental education to a close in the South Bay. She and her family have moved to the Central Valley, and she will begin working for the U.S. Forest Service, at the Stanislaus Forest Summit Ranger's center as their Visitor Services Manager. We will miss her and wanted to share some stories from her with our members and readers.

In high school, Genie enjoyed camping and backpacking trips, "being outside, immersed in nature." She had an opportunity to volunteer with Sandy Spakoff

at the Don Edwards San Francisco Bay National Wildlife Refuge. She and a friend helped Sandy create water analysis activities for K-6 using dip netting. This was her first dip in the water, so to speak. Next, she earned a Bachelor of Science in Environmental Studies, at University of California at Santa Barbara. Later after joining the Service, she earned a Master's in Teaching from the University of San Francisco (USF) as well as a K-8 Teaching credential.



People of Note (continued)

Her earliest job was in customer service at a Santa Clara credit union. During her college summers, at NASA Ames, she worked in a microbiology lab for a couple of summers. She collected field samples at Yellowstone National Park. From this internship, she decided lab work was not her passion. However, her internships with environmental education sparked a light in her that has not left.

After college, as an SCA intern with the Refuge, she did Environmental Education (EE) work. At Las Vegas as an U.S. Geological Survey SCA intern, she tracked desert tortoises. She joined the Service as an EE specialist in Fremont mid-1998. In 2001, she moved to the EEC as its Director. She has been organizing and managing EE and interpretive programs at the Alviso location for 19 years providing educational opportunities for all ages, toddlers to seniors, K-12 students, clubs, and the public. "After and during college, what spoke to me...I loved working with kids, loved working with people, being out in nature and inspiring others, learning about and connecting with nature."

That first SCA internship with Sandy helped her develop skills. "I was not a good speaker, pretty shy. Sandy was a super mentor, really worked with me, gave me pointers on presentations for larger groups. Really enjoyed." Sandy Spakoff and Fran McTamaney, both in USFWS were very helpful. SCA was a good path to move into an EE career. "I could try things for a shorter amount of time, 4 - 6 months. If you didn't like it, you could try something else."

She is most proud of three outcomes: First, her work with George Mayne elementary school in Alviso (San Jose) to create a stronger relationship with the community. "Science night, field trips for different grade levels. The students came back in next years, [enjoying] the work with staff and volunteers. Having biologists speak to the students, sharing what a biologist does. Really rewarding. To be a part of the Alviso community and that strong relationship, learning and growing." Second, growing the annual Summer Camp (begun in early 1980s) proving "that connection with the South Bay, a free summer camp all these years - five days, with an overnight, first time sleeping outside, away from family." [Editor's NOTE: This year the Summer Camp was virtual - see the article elsewhere in the newsletter]. Last, being part of the Upland Habitat restoration project at the EEC, changing that old county landfill area to place with trails, viewpoints, and habitat for local wildlife. "That restoration truly helped the ecosystem and made the EEC more attractive. Prior to the restoration, the area was a fire hazard and did not provide good habitat for wildlife. The nursery - getting that started and maintaining it. Plants for the restoration were from the native plant nursery established at the EEC."

Genie hopes "the EEC will continue working with community, garnering increased involvement - it's in their backyard! Getting kids out on the Refuge to learn about the habit for the animals is most rewarding and benefits the Refuge. It will be wonderful to hear kids laughing on

the Refuge again." About the building where she spent all those hours: "I love the [EEC] building and when the kids are in learning and laughing, it comes alive."

Genie shared, "yes, lots of challenges over the years - furloughs, budgets, not getting information, pandemic... losing staff, that was difficult and challenging. But, we overcome challenges! Reinvent. Change with times. Change to stay relevant - that's cool we are able to that." She also expressed how much having the Society, the Friends group, "honestly, I am often the only one (at the EEC) if no Society staff were there. Providing funding, staff, the Service couldn't do this without the Friends group over the years. They filled in gaps in so many ways. The Friends group has some level of flexibility not available to a government agency." Chuckling, she remembered the Salt Marsh Manual Summer! "SO many iterations, lots of editing, we didn't have the best software tools (very old, clunky). Fran and I spent a whole summer doing this. Fran reviewing printed page at night, I did editing during the day. It took so much time! So different today!"

Last words for volunteers and Society members: "People may say you can't do that, won't work. Don't give up. We can do this." Delays occur, but "ultimately, we are able to do a lot of great things. Don't give up and keep at it!" Her next steps besides working for the U.S. Forest Service? "I plan to backpack again! Maybe not 50 miles. Going to take my kids backpacking in the mountains, enjoy the mountain lakes."



The U.S. Fish and Wildlife Service is recognizing Genie Moore and her father by naming the EEC pavilion in their honor. Moore's father has volunteered since 1990, putting in thousands of hours towards the EEC and its habitats.



Plaque for Moore Pavilion (Matt Brown)

Environmental Science on the Refuge

Teamwork Makes the Dream Work: Our Decades Long Partnership with SCVURPPP

by Hope Presley, Interpretive Specialist & Watershed Watchers Coordinator, SFBWS

Since 1992, the San Francisco Bay Wildlife Society (Society) has had a special partnership with the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), an association of municipal agencies in Santa Clara Valley that share a common stormwater discharge permit and aims to reduce pollution entering our local watersheds and ultimately the San Francisco Bay. There are many ways that SCVURPPP works to reduce urban runoff pollution, one of which is a public education and outreach program called Watershed Watchers.

This program is coordinated by the Society at Don Edwards San Francisco Bay National Wildlife Refuge Environmental Education Center in Alviso. There are lots of opportunities available for the public, schools, and community groups to learn about urban runoff pollution, how it effects local habitats, wildlife, and us, as well as what we can all do to help prevent it.

Partnerships such as this, are mutualistic in nature. Each stakeholder benefits from and contributes to the relationship. SCVURPPP provides funds, while meeting program objectives; the Society provides means of

employment, while fulfilling their mission; and the Refuge provides space, while increasing their visitation and open hours for the education center. Each year, thousands of people from Santa Clara Valley are educated on urban runoff pollution through their participation in programming held at the Refuge or at community-based outreach events.

Over the past 30 years, the Watershed Watchers program has grown and changed, but it still holds the same values and responsibilities. Given the current health crisis, programming has shifted to embrace online platforms and social media tools. This change has allowed this partnership to flourish and strengthen in ways it hasn't before. Although our programs are traditionally based in nature getting our hands dirty pulling weeds or observing animal behavior, we have learned how to embrace technology as an educational and communicative tool.

To learn more about the Santa Clara Valley Urban Runoff Pollution Prevention Program and the Watershed Watchers Program, please [visit to learn more](#) or reach out to our Watershed Watchers Program Coordinator, [Hope Presley](#).



Check out the new self guided tour,
**Living on the Edge: A Tour of Bay
Habitats, at the Environmental
Education Center in Alviso!**



The concept of [#OptOutside](#) is an alternative to participating in Black Friday. Conceived by REI, it is a day to experience our beautiful outdoors instead of going shopping! It is a mindset about choosing to spend time outdoors. Spending time in nature is part of healthy routine for all members of your family!

SNOWY
Western Snowy Plover



SCAN THIS CODE TO FIND
OUT MORE!



Annual Marsh-In Summer Camp Goes Virtual!

by Tracy Flor-Figueroa, 2020 Summer Camp Associate, SFBWS

The Marsh-In Summer Camp program not only celebrated its 40th anniversary this year, but it also was the first ever virtual summer camp program for an Urban National Wildlife Refuge! Traditionally held at the Don Edwards San Francisco Bay National Wildlife Refuge Environmental Education Center in Alviso, this year we adapted due to the COVID-19 pandemic. During this challenging and unpredictable time, the education staff implemented new efforts to bring the outdoor summer camp experience into camper's homes. Even though we could not physically gather it was important for us to continue to connect with our community, offering them a fun and educational at-home experience. Once shelter-in-place began, the education team including both USFWS and SFBWS staff took the initiative to figure out how the summer camp program could progress. Remaining adaptable in order to tackle these changes, for both USFWS and the San Francisco Bay Wildlife Society, working together was critical to the camp's success.

It took five months to prepare for Virtual Marsh-In Summer Camp, almost twice the amount of time compared to previous years! We also had to learn how to use new tools and techniques for this new format. In the process of developing the first virtual education program for the site, it was necessary to allow plenty of time for planning and learning. We hosted a week-long camp with live interactive sessions, videos, and self-guided activities. Campers were also mailed "Camp Kits," which contained all the materials needed for each activity. We introduced campers to both Don Edwards and Salinas River National Wildlife Refuges, highlighting two key species: the California Ridgway's Rail and the Western Snowy Plover. And of course, we could not have a summer camp without songs!

The incredible diversity of the communities surrounding our Refuges is a hallmark of the Bay Area. Our target audiences are from local communities adjacent to Refuge land, which includes Alviso and Newark for Don Edwards and Castroville for Salinas River. During the 2019-20 school year we began a new partnership with Newark Unified School District, participating in Science Night events and hosting field trips for all seven elementary schools. This ongoing effort to establish and maintain relationships with our neighboring communities led to 80 percent new applicants for this year's summer camp program. 35 percent of applicants came from Newark. We also continued to expand our relationship with the community of Castroville by providing the Camp Kits to the North County Recreation and Park District. They distributed the kits to campers that attended their camp program for children of essential workers.

Habitat Heroes, the middle and high school group leaders, continued their participation and bridging the connection between staff and campers. Refuge volunteers were also given the opportunity to participate as chaperons, after many

months of volunteer activities being postponed. The Habitat Heroes and volunteers always help make the summer camp program a success, and this year was no different! Camper parents were also instrumental, facilitating the self-guided activities for their camper(s) at home.

Even as our program platform changed due to the pandemic, one thing did not change and that was the engagement with our community. Converting the Marsh-In Summer Camp program to a virtual format was no easy task, but the education team embraced this challenge in order to provide a quality experience for our Refuge community. The learning curve of using new web applications, editing software, and virtual presentation skills was not only experienced through the development processes, but also during live sessions. This experience has also allowed the team to develop educational opportunities for school groups this fall, recycling and expanding this content to include all seven Refuges within the San Francisco Bay National Wildlife Refuge Complex. We will continue to work with our communities to provide support and resources through this year of distance learning. We will also continue to share our story with our local and national communities to be a resource for future virtual programming. Providing this education program to our local community during this troubling time was an unforgettable task.



Student at Summer Camp!
(Saikia Partha)

Virtual Marsh-In Summer Camp was held August 3-7, 2020, reaching 52 campers in grades 1-6 and 20 Habitat Heroes in grades 7-12. The San Francisco Bay Wildlife Society supports this program financially through donations, grants, and staff. Monetary support was provided by Cargill. Questions or comments?: [Email us](#)



Friends Corner

San Francisco Bay Wildlife Society

by Cecilia (Ceal) D. Craig, PhD, President, Board of Directors

On the Trail.....

Ducks are coming into Bay area ponds. Renee Fitzsimons (VP SFBWS) and I walked at Shoreline in Mountain View last week, suitably distanced and masked. We saw green winged-teals! So exciting. Plus some shovelers and willets.



Green-winged teal at Shoreline Park (Ceal Craig)

Earlier in mid September, my husband and I had a socially distanced lunch on the Moss Landing Sea Harvest restaurant deck, watching otters and seals frolic. We saw marbled godwits, terns, a long-billed curlew (not pictured), and a caterpillar at the Moss Landing State Beach!



Marbled godwits, terns, caterpillar
Moss Landing State Beach
(Ceal Craig)

Impacts, Planning, and Changes

The SFBWS hopes to find a contractor to be the editor/graphic designer to take over the *Tide Rising* efforts; however, in these times, that effort is on hold. [Write me!](#)

The SFBWS continues to explore long term partnerships, to develop and support collaborative programming for the community and schools, habitat stewardship efforts, wildlife research, and recreational opportunities.

This fiscal year (FY21) that began on October 1, we began moving to a new domain: SFBayWS.org Over time our email addresses, website, and other collateral will change to this. The old addresses still work!

The Department of the Interior audit of Friends group recently published a report that may have an impact on our future roles and responsibilities as a Friends group. Still early days yet on its recommendations. We will be reviewing the report to identify any gaps in our governance based on the report's recommendations. At this point, I am not aware of any major issues for us; nonetheless, the report will need in-depth review.

Last but not least, this will be my last column as President for the Society after service for 10 years as President and 15 years on the BOD. Renee Fitzsimons, prior VP, will be picking up the reins and I'll be moving to Treasurer. Chris Kitting will continue as Secretary and Neil Butani will be Vice-President.

We do need five more Directors! So please help the Society you care about by volunteering to join us. Next issue we hope to feature our officers so our members and readers can learn more about them and see yourself in that list!

WE MISS YOU at the SFBWS Nature stores!

We are back! Opening an online store.

Would you like some nature-oriented gifts for the holidays?

Currently our in-store sites at the Environmental Education Center in Alviso and Visitors Center in Fremont are closed. We have missed you! Since restrictions continue, we are opening an online Nature Store. Soon the holidays will be here and you will be able to purchase our unique apparel and education items for you to gift during this traditional giving season.

Continue to support conservation and educational efforts; a portion of all proceeds directly benefits the San Francisco Bay National Wildlife Refuge Complex. Share the gift of conservation and experience making a difference at the same time.





WE CAN'T WAIT TO SHARE WHAT WE HAVE IN STORE FOR YOU!

COMING SOON
Online Nature Store
click our link below

Look for our

- Hoodies
- T-shirts
- Sticking stuffers and more!

CALI
California Ridgway's Rail

<https://sfbayws.org/nature-store/>



Partnerships and Supporters

San Pablo Bay, Marin Islands, and Antioch Dunes National Wildlife Refuges are all fortunate to have great partnerships and supporters. Located about a mile off shore, it takes a boat for weeding work party volunteers to access Marin Islands, making the Bay Area Sea Kayakers the perfect partners. Under the watchful eye and expert guidance of Refuge Biologist Meg Marriott the volunteers perform vegetation management tasks to enhance growing conditions for the nearly 100 species of native plants. In return, the kayakers are welcomed onto Marin Islands National Wildlife Refuge, which is normally closed to the public.

Replenishing the sand in *Antioch Dunes National Wildlife Refuge* is driven by a mutually beneficial partnership between the Port of Stockton, the U.S. Army Corps of Engineers, and the Refuge. Since 2013, sand that is a nuisance to the Port of Stockton restores habitat for the endangered Lange's metalmark butterfly at the Refuge. "BP" (*Before the Pandemic*), EarthTeam's environmental education program brought Antioch High School students to the Refuge to help with habitat management and clean-up litter at the San Joaquin River's shoreline. Wildlife Refuge Specialist Louis Terrazas is able to accomplish so much more due to these **partnerships** and the **support** of the docent corps and the California Wildlife Foundation.

The implementation of social distancing, closed schools and canceled field trips has increased the need for distance learning opportunities. The *Friends of San Pablo Bay NWR* have partnered with Island Energy, Ducks Unlimited, and Cargill to bring life in an osprey nest into the classroom and onto the web.



With a body that is 2 feet long and a wing span of 6 feet, osprey need a huge nest. The camera will be focused on a nest atop a pole at the north end of Mare Island near Highway 37. By the time the birds return to the nest in February or March 2021 to lay their eggs everything will be ready for their video debut. Live feed, video clips and still images will be captured to highlight egg laying, egg hatching, chick feeding, and fledging. During chick rearing season (spring and summer) the male brings fish to the nest to feed the downy chicks.

Osprey exhibit site fidelity, which means that the same birds will come back to this nest year after year; offering opportunities for long term data collection and comparisons with other nesting pairs on Mare Island and beyond. For example, comparisons may be possible with observations from an osprey nest cam at Point Richmond established by Golden Gate Audubon Society and partners. It's going to be an exciting spring for osprey watching. Stay tuned and we'll let you know the web address as soon as it's available.



Antioch Dunes NWR is on the south bank of the San Joaquin River, west of the Antioch Bridge
(Francesca Demgen)

East and West Marin Islands, off San Rafael
(Francesca Demgen)



Osprey nest atop pole at north end of Mare Island
(Francesca Demgen)



Come spring, we'll be able to see into this osprey nest using the new webcam

(Taken through binoculars:
Francesca Demgen)

Join the *Friends of San Pablo Bay National Wildlife Refuge* by becoming a [member](#).

This Friends group supports three Refuges within the San Francisco Bay NWR Complex: [San Pablo Bay](#), Antioch Dunes, and Marin Islands.

Explore from Home

San Francisco Bay Wildlife Society

Kids Activity Page: The Story of Betty the Bee See last two pages

Living on the Edge: A Bay Habitats Tour

by Rachel Caoili, Interpretive Associate, SFBWS

Taking a walk or bike ride at the Don Edwards SF Bay National Wildlife Refuge? Make sure to bring your mobile device! A new self-guided tour is now available at the Environmental Education Center in Alviso! This tour is brought you by a partnership of many local, state, and federal organizations: San Francisco Bay Wildlife Society, Keep Coyote Creek Beautiful, San Francisco Bay Bird Observatory, US Fish and Wildlife Service, and the California Coastal Conservancy through the Whale Tail License Plate Program.

As you ride your bike or hike along the trails, be on the lookout for five royal blue signs with a QR code on them! Scan the code with your phone camera or app to learn more about the habitats, wildlife, history, and so much more! Since we can't be with you during this time, we hope this resource brings a Ranger-led feel to your experience at the Refuge. If you enjoy this self-guided tour, post some pictures with the hashtag #livingontheedgesf or share them with us on our [Facebook page](#)

The Story of Betty the Bee

Betty the Bee lives in a hive near the Don Edwards San Francisco Bay National Wildlife Refuge. She is a worker bee. She cleans the hive, collects nectar and pollen for the hive, and takes care of baby bees. Betty's favorite job is to fly around and visit bright flowers that have nectar. Nectar is a sugary liquid that bees love to eat.

Betty flies to visit the Wildlife Refuge when it is time to collect nectar and pollen because there is a diversity of plants there that have lots of nectar flowers.

Wildlife Refuge plants and trees are small, native flowers attract many insects that also eat nectar like butterflies and other native bees like Betty.

When Betty visits a flower to collect nectar, pollen sticks to her legs and body. Pollen are tiny grains that contain instructions on how to make new plants. Betty flies to more flowers with pollen attached to her body. Pollen.

Betty visits another flower and pollen falls off her body to the flower. This is called cross-pollination. Betty carried pollen from one flower to another, so we call her a pollinator.

With the pollen that Betty carried and dropped off, the plant is now fertilized and has the chance to make new plants.

The plant will make fruits with seeds in them. The fruit and seeds will fall to the ground and grow into a new plant. Or humans will pick the fruit to eat.

As a pollinator, Betty the Bee spreads pollen and helps plants make new plants. Betty also helps plants make fruit that we eat or use to make other foods. We give many pollinators a helping hand. The bees are not. Can you think of other pollinators like Betty the Bee?

Betty collects all the nectar and pollen she can carry and flies back to her hive. She flies back and forth to that her hive has enough food. Betty has a large room and sharing in her body.

The time when her hive is full, Betty can leave and the plants around it are gone. Betty leaves and the land where she flies her habitat is gone. Construction to build homes and other buildings has happened on the land where Betty lives.

Without her home, or habitat, where will Betty go?

Will she find food to eat?

Will she be able to find and take a new colony of bees?

Will she survive alone with no bees to go to?

The habitats of Betty the Bee, and other pollinators have been destroyed or changed. Buildings, roads, farms, cities, and highways.

Without their homes, the number of pollinators is going down.

It's important to have pollinators who will help us eat the food we need. What happens if we lose our Betty pollinators who come to live that habitat?

Although Betty and pollinators are small insects, they are very important because they help make food plants. Pollinators like Betty are the world's tiny superheroes and like many superheroes they need abilities to help them. We can be their superhero!

A special way to help Betty the Bee and other pollinators is to give them a home while the spaces are lost and broken.

Staff Changes

USFWS Staff Changes

Leaving -- Genie Moore, Environmental Education Center Director (see separate article)

Joining -- On Oct 13 Temporary Wildlife Biologist, Jerrod Stellers, joined the Complex. Joe Crandall and Scott Page arrived as new RV resident volunteers.

SFBWS Staff Changes

Arriving & Leaving -- Rachel Caoili is leaving us for another organization. Olivia Poulos is joining as the Watershed Watcher Associate in Rachel's place.

Volunteer Recognition

by Ceal Craig, SFBWS & Rachel Tertres, USFWS

Norton Bell, a 20-year Refuge volunteer retired from volunteering in early 2019 and died later that year (see *Fall Rising, Fall 2019*). **In this issue, we wanted to recognize his impact as a volunteer.** In 1996, Norton began his life long passion with seals when he learned how to conduct harbor seal surveys apprenticing under harbor seal expert, Dianne Kopec. Then in 1998, Norton began surveying two important, though understudied, harbor seal pupping and haul out sites in the Don Edwards San Francisco Bay National Wildlife Refuge, Mowry and Newark Sloughs. His work highlighted how important these two locations were, with over 600 surveys at each of the two locations, contributing over 6,000 volunteer hours.

Norton enjoyed outdoor activities so much that instead of hopping in his car each week to get to the Refuge, sometimes he biked or kayaked across the Bay. Stories from his hiking, camping, and biking trips throughout California, the United States, and abroad kept conversations exciting for our interns, volunteers, and staff that joined him on surveys.

Norton received the USFWS Volunteer of the Year Award in 2004 for his contributions to the harbor seal surveys, in addition to his volunteering at other Refuges throughout the Refuge Complex. Norton's dedication, active lifestyle, thirst for knowledge, and contribution to science were an inspiration to those that have been fortunate to make his acquaintance. We will all miss you Norton.



In his honor, a bike repair station will be installed at the Visitor Contact Station next year



Copyright BANG

National Wildlife Refuge Association

Defends the integrity of the National Wildlife Refuge System with advocacy, restoration and research.

Find out about NWRA, mission, their methods, and the results of four decades of advocacy.

THANK YOU TO SFBWS SUPPORTERS!

We gratefully acknowledge the following donors who have made gifts to the San Francisco Bay Wildlife Society between July 1 to September 30, 2020.

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“ After Black Friday and Cyber Monday...
there is **GIVING TUESDAY, December 1st!**

#GivingTuesday is a global day of giving when people around the world contribute to and promote the causes they care about! Supporting the San Francisco Bay Wildlife Society on Giving Tuesday means contributing to:

- environmental education programs
- community engagement programs
- conservation and research programs



SALTY
Salt Marsh Harvest Mouse

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Help Us Protect Your San Francisco Bay Wetlands!

Mail your donation to: San Francisco Bay Wildlife Society,
P.O. Box 234, Newark, CA 94560.

You may also become a member at www.sfbayws.org.

For a gift membership, call 510-792-0222 ext. 364.

[LINK here](#)

San Francisco Bay Wildlife Society is a not-for-profit 501(c)(3) organization, a Friends group for the San Francisco Bay National Wildlife Refuge Complex.

YES! I want to support San Francisco Bay Wildlife Society and its programs.

My membership will help the *San Francisco Bay National Wildlife Refuge Complex* and its south Bay and Outer Bay Refuges

(Don Edwards, Salinas River, Ellicott Slough, and the Farallon Islands)

Enclosed is my contribution of:

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Thank you for your support!

For more than 30 years, the San Francisco Bay Wildlife Society has:

- Introduced the refuge to tens of thousands of students of all ages
- Helped fund the Bair Island restoration and Management Plan, restoration work at Antioch Dunes NWR, and uplands restoration at the Environmental Education Center (EEC)
- Provided Saturday staff in EEC through long-term partnership with the Santa Clara Valley Urban Runoff Pollution Prevention Program
- Provided funding for a new boardwalk at the New Chicago Marsh Trail at the EEC.
- Funded a new greenhouse
- Provided funds for a native plant nursery
- And much more....

Help continue this tradition by becoming a Supporting Member of the Society.

Benefits include:

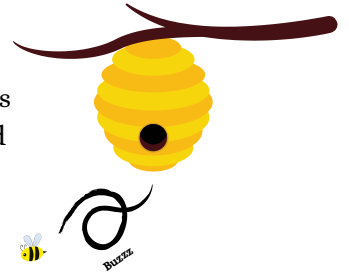
- Tax deduction to the extent permitted by law
- Free book - Exploring Our Baylands
- 15% discount at SFBWS Nature Stores
- The joy of helping protect this important environment
- Free subscription to *Tide Rising* newsletter

www.sfbayws.org



The Story of Betty the Bee

Betty the bee lives in a hive near the Don Edwards San Francisco Bay National Wildlife Refuge. Betty is a worker bee. She cleans the hive, collects nectar and pollen for food, and takes care of baby bees. Betty's favorite job is to fly around and visit bright flowers that have nectar, a sweet sugary liquid that bees love to eat.



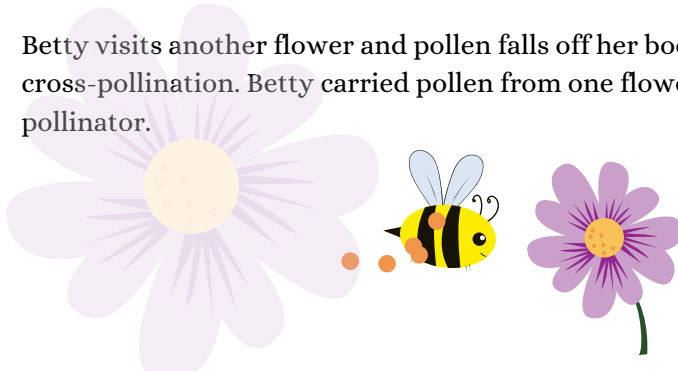
Betty likes to visit the Wildlife Refuge when it is time to collect nectar and pollen because there is a Butterfly Garden there that has lots of native flowers.



With their bright petals and nice smell, native flowers attract many insects that also eat nectar like butterflies and of course bees like Betty.

When Betty visits a flower to collect nectar, pollen sticks to her legs and body. Pollen are tiny grains that contain instructions on how to make more plants. Betty flies to more flowers with pollen attached to her body. Buzzzzz...

Betty visits another flower and pollen falls off her body into the flower. This is called cross-pollination. Betty carried pollen from one flower to another, so we call her a pollinator.



With the pollen that Betty carried and dropped off, the plant is now fertilized and has instructions to make new plants.

The plant will make fruits with seeds in them. The fruit and seeds will fall to the ground and grow into a new plant. Or humans will pick the fruit to eat.

As a pollinator, Betty the Bee spreads pollen and helps plants make new plants. Betty also helps plants make fruit that we eat or use to make other foods. We rely on many pollinators to help make the foods we eat. Can you think of other pollinators like Betty the Bee...?



Betty collects all the nectar and pollen she can carry and flies back to her hive. She flies back and forth to find her hive but cannot her home. Betty feels a huge rumble and shaking in her body.

The tree where her hive was has been cut down and the plants around it are gone. Betty's home and the land where she flies, her habitat, is gone. Construction to build homes and other buildings has begun on the land where Betty lives.

Without her home, or habitat, where will Betty go?

Will she find her colony?

Will she be able to find and join a new colony of bees?

Will she survive alone with no home to go to?

The habitats of bees like Betty and other pollinators have been removed to construct buildings, stores, homes, streets, and freeways.

Without their homes, the number of pollinators is going down.

If we continue to lose pollinators what will happen to us? How can we help pollinators who continue to lose their habitats?

Although Betty and pollinators are small creatures, they are very important because they help plants make more plants. Pollinators like Betty are the world's tiny superheroes, and like many superheroes they need sidekicks to help them. We can be their sidekicks!

A special way to help Betty the bee and other pollinators is to give them a home within the spaces we live and call home.

