Tide Rising

Spring 2020 Volume 1, Issue 3

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.

TABLE OF CONTENTS

Endangered & Threatened Species

In this issue:

- Learn about critical work on the Ellicott Slough Dunes NWR from Diane Kodama, Refuge Manager for an **endangered salamander.**
- Aidona Kakouros, USFWS Wildlife Botanist, takes you to the Don Edwards San Francisco Bay NWR, Warm Springs Unit, a site with vernal pools supporting many **endangered and threatened species**.
- *Return of the Terns* (sounds like a novel!) by Alex Hartman and Josh Ackerman from USGS talk about decoys and nesting progress.
- People of Note celebrates two women of note that made a difference for our Refuges and the environment, and the endangered species they support.
- Hope Presley, SFBWS, provides ideas to Explore from Home with an Outdoor Scavenger Hunt activity to try.
- Paul Mueller, USFWS Volunteer Coordinator, shares last year's volunteer report recognizing the efforts of volunteers on the Refuge.
- Both Friends group share their thoughts and plans for coming quarters

If you can help (editing, articles, etc.) reach out to **NEWSLETTER email** and enter "VOLUNTEER" in the subject. Thanks for reading and enjoy the rest of the San Francisco Bay Wildlife Society **Spring** Newsletter!

San Francisco Bay Wildlife Society
Editors: Ceal Craig, PhD; Renee Fitzsimons
Contributors: Josh Ackerman, PhD; Ceal Craig, PhD; Alex Hartman, PhD; Aidona Kakouros; Diane Kodama; Paul Mueller; Hope Presley; Sharon Xiao

Current Refuge Complex Status

Refuge Status as of April 15, 2020

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

- 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.

Ellicott Slough National Wildlife Refuge (More info)

Ellicott Slough National Wildlife Refuge established in 1975 is located in Santa Cruz County within the Monterey Bay area.

Taking Steps Towards Endangered Species Recovery

by Diane Kodama, Refuge Manager for the U.S. Fish and Wildlife Service

As we approach the first 1 ½ gallon plastic bucket sunken into the ground, on a rain-soaked November morning, Refuge Biologist Chris Caris expresses cautious optimism that this pitfall trap will yield hoped for results. He peers into its depths and gently lifts up the wet sponge. Eureka! Hidden underneath are two small salamanders! With the black coloration and an orange pattern decorating their backs and tails, we are looking at juvenile Santa Cruz long-toed salamanders (SCLTS), a Federally Endangered species found on Ellicott Slough National Wildlife Refuge.

Chris conducts an examination of the juveniles and then releases them into nearby vegetation cover, to resume their first outbound migration from Calabasas Pond when night falls. Their journey will end after finding suitable underground shelter in the surrounding coastal scrub and oak woodland. Protected during hot summer months, they will remain in uplands for 2-3 years maturing into adults. We continue checking trap lines around the pond, with buckets yielding a hairy tarantella and more young salamanders.

The study progresses throughout winter, and with steady rainfall, captures shift to adult SCLTS migrating towards the pond, ready to court, and lay eggs. Upon completion of this mission, adults will return to upland retreats, leaving the next generation to hatch as aquatic larvae, hunt prey, and grow quickly, over the next 3-5 months. Larvae must gain sufficient bodily resources to undergo metamorphosis, transforming into salamanders that can breathe air and walk on land, before the seasonal pond dries out.

When adult outbound migration wraps up this spring, biologists will use data collected to calculate a SCLTS population estimate. This essential baseline information will tell us if the population is in the hundreds or thousands for the Calabasas Unit. By evaluating these results and repeating the study in the future, success of management actions on the Refuge can be measured. The data also contributes a valuable piece to the bigger picture. By combining Calabasas Unit results with similar studies across the salamander's range of occurrence, biologists can track overall species recovery progress.

< Metamorph & Larva *(Diane Kodama)*

Juvenile > *(Heather Butler)*

< Adult *(Leah Oscar)*

Adult Measured > *(Matthew Slater)*

Santa Cruz long-toed salamanders

Included on the very first Endangered Species List in 1967, the Santa Cruz long-toed salamander was initially thought to exist in only two locations: Valencia Lagoon and Ellicott Pond. Currently, 23 ponds sites have been documented to support salamander breeding in Santa Cruz and Monterey Counties. While this increase in locations improves this salamander's outlook, population estimates vary widely between ponds, with many numbering only in double digits to low hundreds and barely hanging on. Species survival is still at risk from continued pressures such as invasive weeds and land development; as well as from emerging threats such as salt-water intrusion, new parasite outbreaks and changing climate patterns. Dedicated to overcoming these challenges, agencies, land managers, biologists and researchers have joined forces to share knowledge, collaborate on management strategies and implement innovative research studies.

Efforts are underway to reconnect breeding ponds isolated by development & roads with the creation of passage corridors, upland habitat improvement, and acquiring land. Restoring linkages allows genetic exchange to flow again between populations, a vital species recovery step.

On the research front, biologists and academics are exploring the possibility of using environmental DNA analysis to detect the presence of federally-listed amphibians. If this method proves viable, a water sample from a pond could produce more accurate results than a seine or dipnet, when the pond is too deep or choked with vegetation to effectively survey. And strides are being made to fill in salamander knowledge gaps. One such study will identify physical and biological elements that contribute to a productive breeding pond. Existing ponds could then be managed for ideal conditions and new ponds built to meet these parameters.

With partnerships at the range-wide level gaining momentum, and work at Ellicott Slough National Wildlife Refuge continuing for native habitat restoration and pond management, we are inspired to take the next steps towards Santa Cruz long-toed salamander recovery. In the hopes that each milestone achieved, will lead us to another autumn morning of checking buckets, and finding an increase in the number of endangered salamanders, ready to continue the cycle of life.

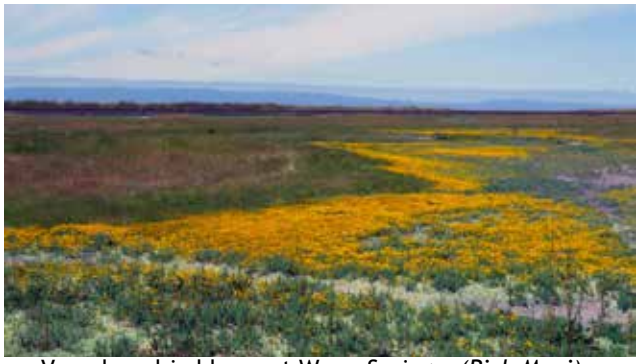
Don Edwards San Francisco Bay National Wildlife Refuge: WARM SPRINGS UNIT

Vernal pool habitats are a small (700+ acres) vital part of DESFB NWR. Vernal pools are short-lived, seasonal wetlands. Several species, such as endangered vernal pool tadpole shrimp and Contra Costa goldfields are found only in these unique wetlands.

Vernal Pool Tour

by Aidona Kakouros, Botanist, San Francisco Bay National Wildlife Refuge Complex

Have you ever seen a vernal pool in bloom? There is this precious piece of land in Fremont, the **Warm Springs Unit** of *Don Edwards San Francisco Bay National Wildlife Refuge.* 719 acres of grassland dotted with more than two hundred vernal pools and home to several threatened and endangered species. The pools are shallow ground depressions that fill up with winter rainwater. As temperatures warm in the early spring, water starts to evaporate. While the soil is moist, tiny flowers erupt and delicate grasses emerge forming vibrant carpets in a variety of colors and textures. The effect is truly kaleidoscopic!



Vernal pool in bloom at Warm Springs. *(Rich Mooi)*

I invite you to our first virtual vernal pool wildflower tour! Close your eyes, take a deep breath, feel the spring breeze whispering through the grass blades, hear the bees buzzing, and feel the warm sun kissing the silky flower petals. Open your eyes and admire the brilliant golden rings of goldfields at the shallow margins of the vernal pool. Rest your eyes on the soft light green carpets of woolly marbles (*Psilocarphus brevissimus*) further in the pool. Vivid blue and purple downingias (*Downingia pulchella*) adorn the deeper spots. One glance at their cheerful tricolored faces can take away all your worries! In the deeper pools or during wet years, they form extensive blue blankets. Drink in this beauty!

We are getting closer to the vernal pool; drop to your knees and you will discover so many treasures! You notice whitetip clovers (*Trifolium variegatum*) with inflorescences resembling fancy cupcakes, inspect the pale sack clover's (*Trifolium depauperatum*) balloon like flowers, and admire the perfection of the tiny vernal pool popcorn flowers (*Plagiobothrys stipitatus*) arranged in graceful sprigs. If you lean closer to the ground, you may spot the cute little mouse tail (*Myosurus minimus*), a member of the Ranunculus family and one of the first bloomers here. The rare *Navarretia prostrata* or prostrate pincushion plants seem like stylish boutonnieres pinned on the mud. They are still plentiful in Warm Springs!

Undeniably, the golden *Lasthenia conjugens*, the federally endangered Contra Costa Goldfield, is the star of our show! Do not get deceived by their abundance in this pool! This is a finicky species with very limited occurrence, ten sites in all, and with unique inundation regimes requirements and other biological parameters. Protection from development and acquisition of the Warm Springs Unit by the Refuge came after the discovery of this endangered species by local environmental groups and their tireless pursuance for protection; a testament of how the Endangered Species Act works to save whole habitats. The take home message here is that local community efforts and forethought play a significant role in conservation, especially when powerful laws and regulations are in place to protect biodiversity and enable direct citizen involvement.

Today Warm Springs is the last vernal pool grassland in the south San Francisco Bay and the only locally remaining reference site for this habitat type, once widely spread around the Bay. As a sensitive habitat that requires active management, there is no public access. However, every year in spring, we hold public tours for all who want to visit the site, experience the beauty of vernal pools, and learn more about on-site conservation management. This spring is different, and as we shelter in place, we had to cancel tours and any other volunteer events. We hope that next spring it will be safe to renew our invitation and take you to a live vernal pool tour. Until then, stay healthy and take care. For all things that matter, such as health or environmental conservation, our community efforts make us stronger and put us in a better place!

Contra Costa Goldfields & Downingias

A sea of cheerful Downingias

Wooly marbles *(RIch Mooi)*

Whitetip clovers

Little mouse tail in bloom

People of Note

March was Women's History month. Two women of exceptional influence on environmental movement are highlighted here. Rachel Carson was a women of note whose book, *Silent Spring*, 1962, is credited as a catalyst for the modern environmental movement. Florence LaRiviere, a local hero, was instrumental in the formation of Don Edwards San Francisco Bay NWR.

Rachel Carson

Rachel Carson, 1944
(USFWS)

Born in 1907, in rural Pennsylvania, Rachel Carson's early years were spent on a family farm, exploring and learning about the habitats and species around her. From her earliest days, she showed a passion for sharing her ideas and what she learned with others. Entering college to study writing, she switched to biology mid-way. "Upon graduation from Pennsylvania College, Carson was awarded a scholarship to complete her graduate work in biology at Johns Hopkins University in Baltimore, an enormous accomplishment for a woman in 1929" (USFWS, n.d., para. 2). Next, came a career in educating the public about the environment.

Carson began as a junior aquatic biologist for the Bureau of Fisheries, only one of two professional women in that bureau. Her gift for writing clear and compelling stories was useful to the Bureau and ultimately she became an aquatic biologist for the new Fish & Wildlife service in 1943. Eventually becoming editor-in-chief for USFWS publications, she honed her writing skills. She wrote three books from 1941 to 1962, until she wrote Silent Spring, published in 1962. By then she had left the Service to spend more time writing.

Silent Spring grew from her own research and that of others. "With the help of Shirley Briggs, a former Fish and Wildlife Service artist who had become editor of an Audubon Naturalist Society magazine called Atlantic Naturalist [and] Clarence Cottam, another former Fish and Wildlife Service employee, [they provided] Carson with support and documentation on DDT research conducted but not generally known" (para. 9). Her work drove a USFWS study on the effects of DDT and resulted in a complete ban of DDT in the United States.

Carson died of cancer at age 57. She influenced generations to come and helped many species thrive in the future. Certainly a notable person for this issue's theme. USFWS named a Refuge in Maine after her in 1969 to commemorate her influence and contributions.

For more information, view the video on this site and read more about this inspiring woman who fought for threatened and endangered species in many ways. Join the Rachel Carson Book Club, organized by "Friends of the National Conservation Training Center. [It] provides a forum for dialogue and discussion about current environmental issues through the study of Rachel Carson's writing" (USFWS, 2020, para. 10).

US Fish & Wildlife Service. (n.d.) Rachel Carson biography.

US Fish & Wildlife Service. (2020). Rachel Carson: A conservation legacy.

Florence LaRiviere, 2015.
(USFWS)

Florence LaRiviere

In the late 1960s, Florence LaRiviere, Art Ogilvie (Santa Clara County Planner), Tom Harvey (San Jose State University Professor) garnered the attention of Congressman Don Edwards to drive the formation of what today is known as the Don Edwards San Francisco Bay National Wildlife Refuge. A congressional act was signed into law in 1972 authorizing the Refuge, taking four plus years of perseverance and passion. As interest in the Refuge grew, more land as added in 1988 with another bill sponsored by Edwards.

LaRaviere's journey began in 1951 when she and her husband went on a picnic by the west side of the Bay from their Palo Alto home. This quotation from her will likely resonate with many of us: "I will tell you there is nothing so lovely, no place so charming, as the marsh in the evening. The tide changes and moves the cordgrass. It bends back and forth…the only sound – it can be very quiet – is the birds jumping into the air and crying as they fly"(Racey, 2019, para.3). For more about LaRiviere, read the interview with her by Meagan Racey (2020).

LaRiviere, F. (2015). Remembering the Honorable Don Edwards.

Racey, M. (2019). South Bay icon.

The Legacy of Rachel Carson and the Ecological Effects of the Coronavirus (SARS-CoV-2)

by Sharon Xiao,USFWS SCA Intern

April 22, 2020 marks the semicentennial of the globally recognized celebration, Earth Day (Earthday.org, 2020), and the establishment of the Environmental Protection Agency (EPA). Rachel Carson (see page 6 of newsletter) had a major influence on these milestones. Carson's writings were based upon her research of the sea, but her last and notable book, Silent Spring (1962) was written to expose the detrimental effects of the many chemicals that were being produced during WWII. These chemicals are known as pesticides, insecticides, and herbicides, and the main chemical of concern was dichlorodiphenyltrichloroethane more commonly known as DDT.

DDT is an insecticide that was being widely used in agricultural practices, lawn management, and even household use. The intent for DDT was to combat malaria by eliminating mosquitoes. Silent Spring brought attention to the damages inflicted upon the ecosystems and wildlife caused by the liberal spraying of DDT. Carson wrote, "Had the chemicals reached this remote creek by hidden underground streams? Or had it been airborne, drifting down as fallout on the surface of the creek?... DDT was found in the tissues of fish from a hatchery where the water supply originated in a deep well. ...there was no record of local spraying" (1962, p. 42). She wrote, "We must not only be concerned with what is happening to the soil; we must wonder to what extent insecticides are absorbed from contaminated soils and introduced into plant tissues" (p. 59). DDT was being passed onto tissues of organisms higher up in the food chain and into environments where the sprayings were not detectable. (EPA.gov).

After controversial attacks on Carson by the media and chemical companies, her eloquent writings further seized the U.S. administration into implementing environmental legislation. The U.S. Department of Agriculture (USDA) initiated minimal cancellation of the chemical in 1957. After the EPA was established under President Nixon, it announced the final cancellation on all remaining uses of DDT on June 14, 1972 and the cancellation became effective on December 31, 1972. Having influence over the implementations of the Clean Air Act, Clean Water Act, and the EPA, the New York Times bestseller, Silent Spring, has sold more than 500,000 copies in 24 countries. Silent Spring enlightened the public and brought a revolution. This was the dawn of the modern environmental movement and continues to be an inspiration for many environmental stewards and aspiring environmentalists.

Fast forward, worldwide 144,104 people had died from COVID-19 and just over two million global cases were known as of April 16, 2020 (Worldmeter, 2020), and more since. Theories of the origin of the coronavirus (SARS-CoV-2) are still being explored. One theory is the virus host may have been transferred directly from (or through) fruit bats or from trafficked animals, such as pangolins to humans (Bale, 2020). Early speculation was that the virus might be transferable from humans to wild animals. The USDA (Daly, 2020) announced in early April that a tiger at the New York City Bronx Zoo tested positive with the disease. Is it possible that this pandemic virus will have impacts beyond the human population? Will it disrupt other organisms, further impacting ecosystems and the food chain? Much like what Carson found as she shared in Silent Spring, one species can severely impact other species and life on this planet.

Fifty years after the EPA began, people continue to advocate for environmental protections. People throughout the world are increasingly concerned about climate change, the effects of plastics polluting the sea, tackling wildlife trafficking, and debate continues about the use of specific potentially harmful chemicals. People traveling overseas to learn about fascinating cultures and exploring extraordinary sites are commonplace in contrast to one hundred years ago. The supply chain for food, services, and products is global and ever increasingly interwoven. Humans are more connected than they have ever been before.

The planet is a single entity without boundaries. As diverse as planet Earth is, all countries, oceans, continents, and organisms are entirely interconnected. No boundaries exist for water to drink, air to breathe, and soil where food is grown. Rachel Carson wrote, "in a very real and frightening sense, pollution of the groundwater is pollution of water everywhere" (Carson, 1962, p. 42) From a coronavirus that emerged from Wuhan, the capital of Hubei province in China, the planet's inhabitants now face a worldwide pandemic affecting all living organisms that are vulnerable. This planet is delicate and its ability to rebound can be severe. For a healthier planet, society needs to practice environmental stewardship by living sustainably and consciously. Taking simple measures such as consuming ethically, recycling and reusing items, and avoiding toxic chemicals and plastics are habits to unfold for a more sustainable society just as Rachel Carson had hoped for all of us.

To learn more about Rachel Carson and her legacy visit: https://www.rachelcarson.org/

REFERENCES

Bale, R. (2020, March 26). Trafficked pangolins can carry coronaviruses closely related to pandemic strain. National Geographic: Animals: Coronavirus Coverage

Carson, R. (1962/2002). Silent Spring. New York, NY: Houghton Mifflin.

Daly, N. (2020, April 5). Tiger tests positive for coronavirus at Bronx Zoo, first known case in the world. National Geographic: Animals: Coronavirus Coverage

Earthday.org (2020). The history of Earth Day.

EPA.gov

Worldometer. (2020, April 16, 18:29 GMT). COVID-19 Coronavirus Pandemic

Return of the Terns

-- Social attraction helps Forster's terns return to a key nesting area in South San Francisco Bay

by Alex Hartman, PhD, Wildlife Biologist, USGS; Josh Ackerman, PhD, Research Wildlife Biologist, USGS

Pond A16 is a large, 240-acre pond in the Alviso Complex of the U.S. Fish and Wildlife Service Don Edwards San Francisco Bay National Wildlife Refuge. Since at least the early 2000s, Pond A16 has been a major nesting area for South San Francisco Bay waterbirds, including American avocets, black-necked stilts, and especially Forster's terns. Between 2005 and 2011, Pond A16 supported 100-200 Forster's tern nests every year. In 2012, Pond A16 was temporarily drained to allow for the construction of 16 new islands. This island construction was part of a larger effort by the South Bay Salt Pond Restoration Project to increase nesting habitat. The new nesting habitat was to help offset habitat lost from the conversion of managed ponds to tidal marsh. Following island construction Forster's terns did not return to nest in Pond A16 for the next 6 years (from 2013 to 2018).

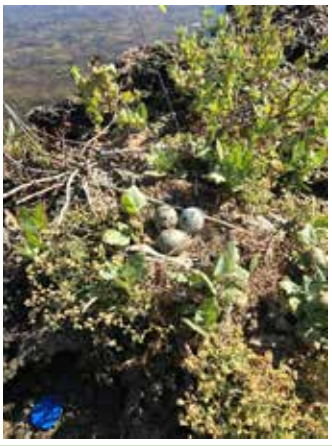
In an effort to re-establish this important nesting colony, the U.S. Geological Survey teamed-up with the San Francisco Bay Bird Observatory and the USFWS Don Edwards San Francisco Bay National Wildlife Refuge, with funding from Valley Water, to implement a social attraction project. Social attraction is a technique whereby biologists mimic the look and sound of a real bird nesting colony. These social attraction methods sometimes work because many colonial waterbirds, like terns, prefer to nest next to other birds. Using bird decoys and recorded colony calls, biologists designed fake tern nesting colonies in Pond A16 to attract real birds to nest. Fifty hand-carved wooden Forster's tern decoys and a solar-powered colony call broadcasting system were deployed on each of 6 islands in Pond A16 in 2017. Although bird surveys indicated that Forster's terns increased their use of the pond and were observed more around islands with decoys than in other areas of the pond, no Forster's terns nested in the pond during 2017. But social attraction efforts take time, and often need several years to get birds to nest and build an enduring colony.

Encouraged by the greater use of the pond after the first year of social attraction efforts, biologists tried again in 2019. In this second year of using social attraction, 35 Forster's terns nested in Pond A16! This was the first time Forster's terns nested in the pond since the new islands were constructed in 2012. Moreover, just under half of those nests hatched young chicks, an impressive success rate for a ground-nesting waterbird in San Francisco Bay. Now that Forster's terns have returned to nesting in Pond A16, a once-important nesting colony has been re-established with hopes that this colony will grow and can help turn the tide of their population decline. One added benefit? The public has easy access to view this colony from a respectful distance via the USFWS Don Edwards San Francisco Bay National Wildlife Refuge's trail system. Enjoy the birds!

This work was made possible by a generous grant from Valley Water's Safe, Clean Water Priority D3: wildlife habitat restoration program. Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Forster's tern decoy on A16 island
(Alex Hartman, USGS)

Forster's tern
(Sam Lei, USGS)



Forster's tern nest in Pond A16, 2019
(Jeanne Fasan, USGS)

Helping Forster's Terns Survive & Thrive on DESFB NWR

Newly hatched Forster's tern chick in Pond A16, 2019
(Jeanne Fasan, USGS)

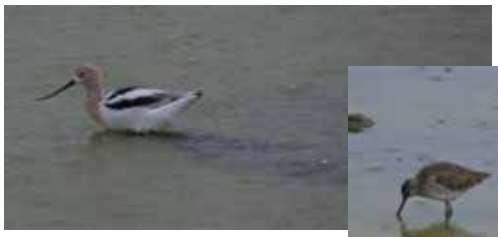
***Partners*:**
USGS, USFWS, Valley Water, SFBBO

Solar panel for colony call broadcast system
(Jeanne Fasan, USGS)

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

Don Edwards Alviso Entrance

Shorebirds at entrance road *(Ceal Craig)*



Avocets

Dowitchers>>

On the Trail.....

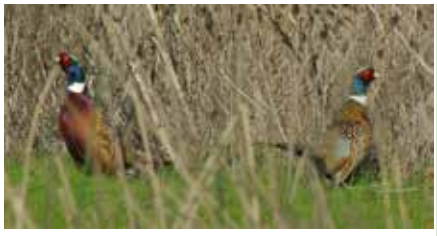
March 14, 2020, Saturday, about 5pm at the Environmental Education Center in Alviso/San Jose

The day before a Self-Isolate order was to go in effect for seniors and people at risk (March 15), my husband and I drove to visit the EEC. Remember what the situation was then? Just over a month ago.

As of that morning, 5 people had died and 288 tested positive for COVID-19 in California. That week many concerts and events were being postponed after Santa Clara County issued a moratorium on large gatherings on March 13 (day before we went to the EEC). Then the county issued a Shelter-in-Place March 16, two days after our visit. A few days later, March 19, Governor Newsom issued a Stay-at-Home order for all but essential workers. By April 9 when I wrote this, California had 19,472 cases with 541 deaths with 1484 cases in Santa Clara County and 50 deaths. **How much had changed, about a month from our visit** and then later when you read this.

These photos were taken that last afternoon at the EEC. It was raining, getting close to sunset, and we did not leave the car. Shorebirds were plentiful, not too many ducks. Avocet plumage was changing to breeding season colors, though a bit muted. Trees were blooming in Alviso and on streets everywhere. Then, we did not realize the magnitude of what would happen, though we feared more. The birds cheered us up that evening. I won't forget that trip and the weeks thereafter.

Green-winged Teal pair. Ring-necked ducks Colusa NWR
Feb-14, 2020 (*Ceal Craig*)



Snow Geese & Pheasants at Sacramento NWR
Feb-14, 2020 (*Ceal Craig*)

Impacts, Planning, Changes

What's happening at the San Francisco Bay NWR Complex Refuges? What has the SFBWS been doing? What will we be doing? Several of these questions are answered in other places in the newsletter already. Moreover, we have discussed program impacts with grantors (Santa Clara Valley Urban Runoff Pollution Program and Bohannon Foundation), and adapting programs as best we can. Hope Presley, our Watershed Watchers Interpretive Specialist, arranged a virtual Tai Chi session. I found it warmed me up, mentally and physically (never done Tai Chi before!) I've listened to it more than once. See the list of ideas developed by Hope for virtual nature exploring and a scavenger hunt elsewhere in this issue. We had a Board of Directors meeting virtually. Last, we are developing future grant requests for today's times and the future. And email is still very active for all of us.

SFBWS still hopes to find a contractor to be the Editor/graphic designer taking over the *Tide Rising* efforts from me; however, in these times, that effort is on hold. We welcome new volunteers and a Board of Directors member or two! Write me!

Helpful Links for Data & At-Home Stress Relief

Resources on COVID-19 and California

MeditOcean Series from Monterey Bay Aquarium

Make your Backyard Bird Friendly TIPS

Spring blooms in Alviso *(Ceal Craig)*

An earlier visit on February 14, 2020, to the Central Valley NWRs (Sacramento and Colusa), saw hundreds of snow geese and greater-white front geese populating the ponds, along with many kinds of ducks (ring-necked, green-winged teal, cinnamon teal, Northern pintail, Northern shoveler, gadwall, bufflehead), and several shorebird species.

Spotting a pair of male ring-necked pheasants at Sacramentor NWR brought back fond memories of walks in Minnesota in my teen years.

North Bay Notes

Friends of San Pablo Bay National Wildlife Refuge

by Francesca Demgen, BOD member

Friends of San Pablo Bay NWR Website

If you are searching for a combination science, history and government lesson to teach the kids at home, here are some questions and answers from the Friends of San Pablo Bay National Wildlife Refuge (the Refuge).

Question 1: What does the endangered salt marsh harvest mouse have in common with canvasback ducks?

Answer: They both can swim and drink salt water. And providing and enhancing habitat for them is central to the Refuge's mission. A large portion of the canvasback ducks that migrate on the Pacific Flyway to and from Alaskan NWRs stop at San Pablo Bay.

Question 2: How does the Refuge grow to provide habitat patches large enough to sustain populations of endangered species such as Ridgway's rail and the salt marsh harvest mouse?

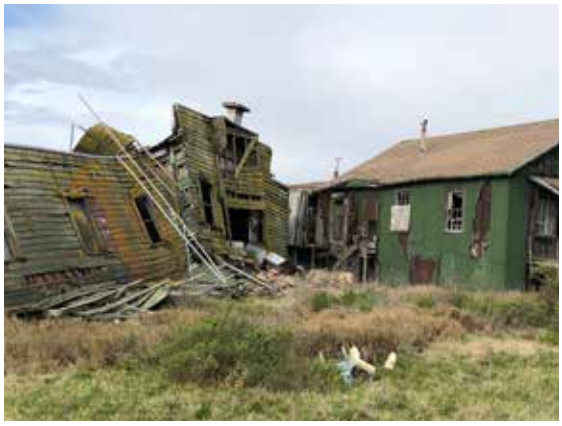
Answer: Since 1974, starting with 185 acres, this Refuge has expanded to own or manage more than 19,000 acres.

Question 3: What do duck clubs, salt ponds, oat hay ranches and military installations in the central part of San Pablo Bay watershed have in common?

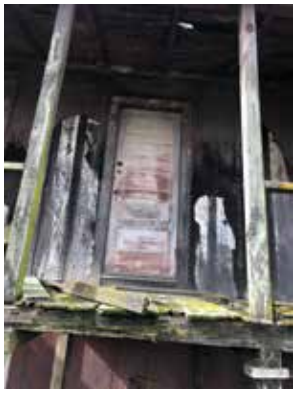
Answer: Many are part of the San Pablo Bay National Wildlife Refuge or the Napa-Sonoma Marshes and are being preserved and enhanced to meet the goal of restoring a large portion of the 52,800 acres of historic tidal wetlands (BCDC 1997). The exciting news is that more than 35,000 acres are being managed by state and federal wildlife agencies. Step by step significant progress is being made!

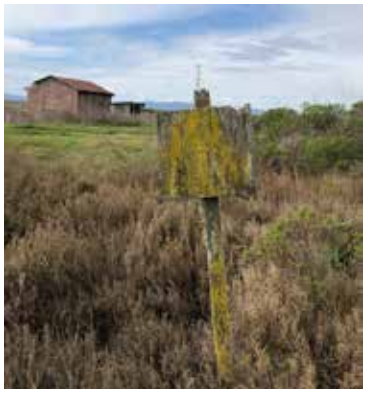
The most recent addition to the San Pablo Bay NWR was a duck club for more than one hundred years. In the early 1900's the Field and Tule Land Company established a duck club and by the 1930s club members had erected buildings and were managing the diked wetlands for waterfowl (see below). In the 1940s a new owner gave his name to the Fleishhacker Duck Club, selling it a decade later, in the 1950s to H. Louis "Bud" Detjen, Jr. a Life Member of the California Waterfowl Association.

Growing the refuge is a multi-step process, beginning with identifying parcels, often adjacent to existing refuge lands and placing them within the refuge acquisition boundary. The more than 400 acre Detjen Duck Club located between Highway 37 and Skaggs Island was within the Refuge's expansion boundary. When the family was ready to sell the property they wanted it to continue providing habitat for wildlife. Representative Mike Thompson made a request for acquisition funds from the Department of the Interior's Migratory Bird Conservation Commission in spring 2019. Don Brubaker the Refuge manager at the time attended the hearing in case the Commission members had questions about the 3.2 million dollar funding request. The funds were approved and on November 16, 2019 ownership of the former duck club transferred from the Detjen-Prati families to the US Fish and Wildlife Service refuge system. This property may already provide habitat for endangered species and has the potential to be enhanced in the future.



Decaying buildings: Former Detjen Duck Club, the newest addition to the refuge





Site already boasts areas of dense tall pickleweed

It's easy to imagine hunters enjoying the marshes they managed as waterfowl habitat at the Detjen duck club. Duck club water management channel with alkali bulrush in the foreground. Alkali bulrush is commonly planted in duck clubs. Its small brown, hard-coated seeds help grind the duck's food in its crop. A door from the past will be cleared away for future habitat.

This new acquisition will be opened to the public after the collapsing builds are demolished to protect public safety.

Photos: *(Francesca Demgen)*

Explore from Home

San Francisco Bay Wildlife Society

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

Staying engaged with your local National Wildlife Refuges from home

With our new reality of most of us staying home, teachers teaching virtual classes, and parents assisting their kids with school work while potentially also working from home, we want to provide some fun and educational resources available to our community and supporters. There are lots of great opportunities to stay engaged and connected to nature, some online and some activities that you can do in your own neighborhood. Always remember to stay safe and don't do anything you don't feel comfortable doing.

Participate in our Community Cleanup. Going on walks in your neighborhood and noticing litter? Check out our Blog Post on how you can help cleanup your community to prevent pollution while also staying safe and healthy.

Junior Ranger activity books are a wonderful resource for kids and students! We have three different options to choose from – choose one or choose all. Some activities you can do on your own at home, or by checking out Refuge websites and YouTube videos. We encourage you to come visit us at the Refuge once we are back in operation to complete the book and receive a Junior Ranger Badge!

- DESFB NWR: Alviso and Fremont
- San Pablo Bay NWR

Check out our DESFB NWR coloring book. Great for kids and students of all ages to learn about the Refuge, habitats, and wildlife! Celebrate Earth Day 2020 by participating in the DESFB NWR's Teen Art Show. For details and how to submit your work, click here.

Check out the webcam at the Farallon Islands provided by a partnership with California Academy of Sciences. You can join the queue to choose different locations and perspectives to find birds flying and seals swimming!

Follow us on our Facebook pages for more fun activities and information: San Francisco Bay Wildlife Society & San Francisco Bay NWR Complex and Friends of San Pablo Bay NWR.

The USFWS National Conservation Training Center has a live webcam of a Bald Eagle nest located on their property in West Virginia! A chick hatched in late March! Watch to see the adults bring the Eaglet food and teach it how to fly.

Explore information about wildlife and habitats on each of our local Refuge's webpage:

- Salinas River NWR
- Antioch Dunes NWR
- Farallon Islands NWR
- Ellicott Slough NWR
- San Pablo Bay NWR
- Don Edwards SFB NWR
- Marin Islands NWR

Staff Changes

USFWS Staff Changes

Promotions -- Rachel Tertes, Wildlife Biologist for Don Edwards San Francisco Bay NWR. Melisa Almato, Acting Refuge Manager for the San Pablo Bay, Marin Islands, and Antioch Dunes NWR

Arriving -- Matthew Baird, Fish & Wildlife Officer.

SFBWS Staff Changes

Arriving -- Brett Stormoen, Biologist Technician (Bohannon Grant)

DESFB NWR Fremont Nature Play Area

OPEN to walk-ins

June Smith & Carmen Leong-Minch building Nature Play Area {Omron Volunteers)

Last, but not least, some ideas for learning more about our environment and for helping species in your backyard. See links below

- Outdoor Sensory Scavenger Hunt
- 19 ways to make your backyard more bird friendly

Volunteers at Warm Springs in 2019.
Hoping we can do this again soon to help our Refuges!

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.

Outdoor Sensory Scavenger Hunt

To Look For

- ❑ An insect. *What kind of insect is it?*

- ❑ Clouds in the Sky
- ❑ A Butterfly! *What color is it?*

- ❑ A Storm Drain. *Do you know where this drain leads?*

- ❑ Something Green that is *not* a plant!
- ❑ A Native Plant, such as an Oak Tree or a California Poppy. *What did you find?*

- ❑ 2 Different Types of Trees
- ❑ Something Yellow!
- ❑ A squirrel!
- ❑ A Spider Web. *Why do spiders build webs?*

- ❑ 3 Different kinds of leaves. *Draw one of the leaves:*

- ❑ Water. *Where did you find water?*

- ❑ An Animal Home. *What animal lives there?*

To Listen For

- ❑ Birds Singing. *Keep track of how many different songs you hear:*

- ❑ Wind Rustling through the Trees
- ❑ Human Sounds. *Name a human-made sound:*

- ❑ Bees buzzing!

- ❑ Leaves moving on the ground

To Feel

- ❑ The Leaves of a Plant. *Do the leaves feel soft, smooth, or rough?*

- ❑ The Sun on your Skin

- ❑ A rock. *Describe how it feels:*

- ❑ The Wind brushing your face
- ❑ A Pinecone
- ❑ The Bark of a Tree. *What does the bark feel like?*

To Smell

- ❑ A Flower! *Does it smell good or bad?*

- ❑ Has it rained recently? Could you smell the rain?

For ideas of how to prevent urban runoff pollution in your community, visit mywatershedwatch.org!

San Francisco Bay Wildlife Society

Santa Clara Valley *Urban Runoff* Pollution Prevention Program

Volunteer Corner

Paul Mueller, USFWS Volunteer Coordinator

Volunteer Report FY2019 (July 2018 - June 2019)

The San Francisco Bay National Wildlife Refuge Complex has prioritized restoration goals, to develop ways to reduce biological and human threats to habitat work, and to create a multiyear comprehensive work plan. All seven Refuges identified the need to use volunteers and interns as one of strategies of implementing their plans.

FY2019 became the first year to start implementing the work plan. Removing invasive weeds to improve the habitat for target species rose close to the top as a priority. Two interns signed up as volunteers, Aurelie Muckenhirn and Madeline Schwarz working under the direction of Biologists Cheryl Strong and Rachel Tertes went after the highest ranked invasive weeds such as Algerian sea lavender, pepperweed, yellow starthistle, and hybrid spartina. They also pulled other high ranked weeds such as dittrichia, French broom, Italian thistle, fennel, poison hemlock, and alkali Russian thistle. Both interns also got involved in conducting wildlife surveys particularly focused on the species identified in the prioritization planning and tallied up 550 hours.

Biologist Aidona Kakouros and Ivette Loredo for Warm Springs and Bair Island areas utilized interns and volunteers for a variety of projects totaling over 1,200 hours during FY 2019. They listed "Weed Warriors", Earth Day, aquatic surveys, and docent tours of the vernal pools. Many of their volunteers came from nearby companies like Thermo Fisher Scientific Company and Lam. Ivette Loredo has also coordinated with Save the Bay to help out on restorations projects going on at Bair Island.

Biologist Susan Euing recorded 1860 hours and brought in 340 volunteers overall at Alameda Point, a contracted area on the former naval air base. She also recruited Sunday volunteers doing planting and weeding projects through an organization called "Friends of the (Future) Alameda Wildlife Refuge" and a large contingent for a least tern monitoring program. Susan has done numerous volunteer appreciation dinner events which draw many of her regular volunteers.

The EEC Restoration Garden in Alviso continues to have a lot of volunteer activity with over 1100 hours coming from regular volunteers and 575 people coming out for special events giving another 1545 hours. This facility is shared with the San Francisco Bay Bird Observatory which recruits its own volunteers for projects on the refuge. (Volunteer hours from the SFBBO are no longer reported in the RAPP report since the recruiting is done by SFBBO.) Core volunteers who have accumulated a lot of hours over the years include Charlie Moore, Stew Perlman, Sharon Nelson (who retired from volunteering in July or August 2018) Jay Jeong, and John Ryan. It also benefited mightily from Hope Service of Mountain View, Hope Services, employees from Apple, ID Tech, and Globalfoundries, and students from at least a dozen schools.

In Fremont, Volunteers helped out with the creation of the Nature Discovery Garden by planting and doing weeding projects, a Stewardship Saturday events picking up trash and pulling French broom, the California Coastal Cleanup, and a few corporate events that got Cargill, E&E Company, and Stanford University graduate students from the computer science department. These events pulled in about 210 volunteers and 590 hours. Of special note was the Nature Discovery Garden which was being created by Recreational Planner Carmen Minch just before she retired.

Overall, Don Edwards San Francisco Bay had 1,401 volunteers with 7,471 hours reported for habitat restoration and wildlife related work, 668 hours reported for maintenance, and 5,536 hours for visitor service, recreation, and environmental education. The total of volunteer hours for fiscal year 2019 was 13,675.

Mary & Gene Bobik
Volunteers of Year
(Jonathan Shore)

June Smith
Volunteer of Year
2009
Nursery Manager
(USFWS)

Unfortunately, in FY2019 the Native Plants Nursery (NPN) operation in Fremont was closed due to several plant pathogens being detected. Plants for revegetation projects in the wake of the NPN are now being obtained from certified local nurseries or from the garden operation at the refuge's Environmental Education Center in Alviso. Still the NPN recorded 275 hours from regular volunteers and 328 hours from 34 individuals in school groups, most of those were students from Irvington High School in Fremont. Looking back there were several banner years. In 2013, there were approximately 300 volunteers logging over 2000 volunteer hours. In 2010 there were over 3000 hours generated.

June Smith ran the NPN for 22 years often putting in 20 hours a week. She did much of the recruiting taking on high school students, scouting groups, court order traffic ticket community service volunteers, corporate groups and many others. Each year she organized a great fund raiser and educational program selling local native plants which raised money for the San Francisco Bay Wildlife Society. In 2009 she received the Volunteer of the Year Award for the refuge complex. She is sitting on the sidelines for now hoping for facility improvements that would allow the community to come back and volunteer in a big way as in the past.

THANK YOU TO SFBWS SUPPORTERS!

We gratefully acknowledge the following donors who have made gifts to the San Francisco Bay Wildlife Society between January 1 and March 31, 2020.

Senior/Student
- Kumi Ishida
- Nancy Milligan

Individual
- Locke Jorgensen
- Lawrence Rosenblum
- RoseMary Wright
- Stella Yang

Family
- Rachel Birkey
- Edward Dowling
- Gerald & Susan James
- Laura Jamieson
- James Kellenberger
- Bruce Kelly
- Douglas & Beckie Kinghorn
- Robert W Kirby Jr

Supporter
- Kathryn Schmidt
- Dale & Diane Schouten
- Juan Takekawa

Participant
- John F Atwood
- Kim Brink
- Norman & Marcia Houseworth
- Mark Jackson
- Laura Mello
- Varon Smith
- Tri-City Ecology Center
- Yoo Hsiu Yeh

Sponsor
- Mary & Gene Bobik
- Dolores Hansen
- Mark A & Kathleen Soulard

Corporate & Foundation Donations
- AmazonSmile
- American Online Giving Foundation
- Pledgeling Foundation
- Cargill Salt
- PayPal Giving Fund

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.sfbws.com.
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 S*an 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:

☐ $20 Student/Senior ☐ $35 Individual ☐ $50 Family ☐ $75 Supporter ☐ $100 Participant	☐ $200 Corporation ☐ $250 Sponsor ☐ $500 Sustainer ☐ $1,000 Leader
☐ Check Enclosed	☐ Credit card payment, use PayPal at www.sfbws.com/donate

Name _____

Address_____

City _____State _____ Zip _____

Phone _____ Email _____

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 Nature Stores
- The joy of helping protect this important environment
- Free subscription to Rising Tide newsletter

www.sfbws.com