The San Francisco Bay Joint Venture Management Board

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The San Francisco Bay Joint Venture

Celebrating 15 years of partnerships protecting wetlands and wildlife

"As Chair of the San Francisco Bay Joint Venture, I would like to personally thank our partners for their ongoing support of our critical mission and goals in honor of our 15 year anniversary. This retrospective is a testament to the significant achievements we've made together. I look forward to the next 15 years of even bigger wins for wetland habitat."

Diane Ross-Leech
Chair, SFBJV management board
Pacific Gas & Electric Company – Director, Environmental Policy

The San Francisco Bay Area is breathtaking!

It's no wonder so many of us live here – 7.15 million of us, according to the 2010 census. Each one of us has our own mental image of "the Bay Area." For some it may be the place where the Pacific Ocean flows beneath the Golden Gate Bridge, for others it might be somewhere along the East Bay Regional Parks shoreline, or from one of our national park trails along the coast. Whatever impression comes to mind, recent polling tells us that most Bay Area residents feel a sense of pride about our natural heritage and a responsibility for its stewardship.

Restoring and protecting wetlands throughout the region is what the San Francisco Bay Joint Venture is all about. For the past 15 years, our partners – representing a diversity of interests from environmental and stewardship organizations to landowners, businesses and government agencies – have come together to turn the tide on wetlands destruction and bring back wetland habitats throughout the nine Bay Area counties.

It is in their honor that we offer this photographic retrospective to pay tribute to the power of partnerships and the progress that has been made towards ***Restoring the Estuary*** *in celebration of our 15th anniversary as the San Francisco Bay Joint Venture.*

Restoring The Estuary

Among its many attributes, the San Francisco Bay Area is a very important place for birds. From the mudflats where millions of shorebirds feed and rest on their migrations along the Pacific Flyway each year, to the salt marshes where endangered species such as the California Clapper Rail and salt marsh harvest mouse live; or from the salt ponds we see when we land at the San Francisco and Oakland airports, to the riparian corridors where rivers and creeks drain into the region's estuaries: the Bay Area is a wildlife hotspot.

One of only 15 "Hemispheric Reserves" certified by the Western Hemispheric Shorebird Reserve Network (WHSRN), San Francisco Bay and its coastal estuaries are also recognized as a high priority area for waterfowl by the North American Waterfowl Management Plan (NAWMP), noted in federal shorebird and seabird plans and identified as having several "Important Bird Areas" by the National Audubon Society.

These designations and acknowledgements of the region's wildlife resource values underscore the critical role of Bay Area habitats for birds and other species, while challenging us to both protect and share them. As important oases of life for animal and plant communities alike, wetlands and riparian corridors also provide significant ecosystem services such as filtering run off and slowing floodwaters, reducing erosion to stream banks and shorelines, recharging water supply and providing recreation opportunities.

Toward the end of the 20th century, it was clear that wetland and riparian habitats, both locally and nationally, were imperiled. Their decline became a rallying point for reversing habitat loss, recovering endangered species and developing a strategy to prevent more common species from becoming threatened. At the same time, NAWMP was emerging as a model for creating collaborative partnerships called 'Joint Ventures". Their charge was to bring back wetland habitat functions and recover waterfowl populations across the continent. In 1996, the San Francisco Bay Joint Venture (SFBJV) was launched to implement this continental program in the Bay Area.

Setting Goals

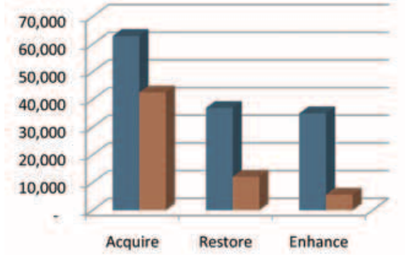
In 1999, the *Baylands Habitat Goals* report was published by a team of leading Bay Area scientists and agencies, becoming one of the first guiding documents for establishing wetland restoration targets in the region. No one agency or organization could deliver the ambitious goals outlined in the report on its own and as a result, the SFBJV gained increasing momentum as a leading regional partnership with the capacity to implement the vision of the report.

In 2001, a committee of Joint Venture partners drafted an Implementation Plan called – *Restoring the Estuary*. Built on the *Baylands Habitat Goals*, the plan added three more wetland and watershed subregions, identified goals for other wetland habitats outside the San Francisco Bay tidal zone and established targets for waterfowl, shorebirds and federal trust species based upon historic trends and habitat needs. Accomplishments toward these goals in each of the six subregions are tracked in an online, user-friendly Joint Venture database.

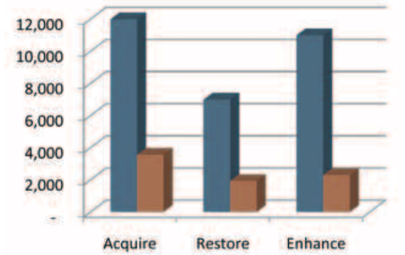
	Protect	Restore	Enhance
Bay Habitats	63,000	37,000	35,000
Seasonal Wetlands*	12,000	7,000	11,000
Creeks and Lakes	7,000	5,000	22,000

*This table reflects the interim seasonal wetland (SW) goals. The SW protection goal is the land identified by the SW public meetings plus the existing amount of SW protected by the JV partner projects. The SW restoration goal remains unchanged. The SW enhancement goal is the original 23,000 acres minus suisun's 6,000 and minus half of the original 12,000 acres for North Bay. The North Bay correction reflects projects that were originally planned as seasonal enhancement and are now planned as tidal restoration.

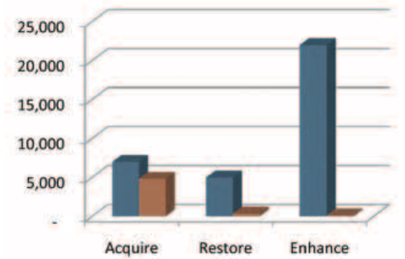
In the 15-year history of the San Francisco Bay Joint Venture, our partners have completed more than 140 projects, resulting in the protection, restoration and enhancement of nearly 70,000 acres of habitat. With many of the larger opportunities for acquisition now secured, current efforts have shifted to the restoration and enhancement of these already protected lands. Currently, partners are pursuing 160 additional projects that will provide linkages and connectivity throughout the watershed, from the open water to associated uplands upstream.



BAY HABITATS



SEASONAL WETLANDS



CREEKS AND LAKES

Geographic Scope

The six wetland and watershed regions identified in *Restoring the Estuary* include the original three from the *Baylands Habitat Goals Report* – North, Central and South Bay – plus the addition of the Coastal, Russian River and an expanded Suisun/Delta. Stretching into all nine Bay Area counties these wetland subregions, or basins, are mainly based on drainage or watershed flows. Each has a mixture and variety of habitat types and ecosystem functions with associated habitat protection, restoration and enhancement goals.

Adjacent to the SFBJV are two neighboring Joint Ventures. To the east, the boundaries of the Suisun/Delta subregion were drawn to ensure linkages and reduce overlap with the goals and activities of the Central Valley Joint Venture. As the program activities of the SFBJV grew, so did the Coastal subregion to include coastal habitat needs more proximal to the SFBJV than those of the Pacific Coast Joint Venture which runs the entire coast from Northern California through Canada, Alaska and over to Hawaii.

At the center of all these subregions is the Bay – a definite region unto itself with its own set of habitats generally defined by water depth.

Delta/Suisun

The Suisun subregion is located in Solano and the inland parts of Contra Costa counties downstream to the Carquinez Bridge. The region includes shoreline, vernal pools, seasonal wetlands, riparian corridors and tidal marsh, but does not include Suisun Marsh proper, which has historically been served by the Central Valley Joint Venture.

Completed Projects*

Alhambra Creek Restoration and Environmental Education Collaborative
Arroyo del Cerro – Diablo Foothills Regional Park
Big Break Regional Shoreline
Byron Vernal Pools
Delta Science Center Wetland
Diablo Gateway
Dutch Slough
Grizzly Creek – Lafayette
Marsh Creek Fish Ladder
Marsh Creek Reservoir Rehabilitation
Martinez Regional Shoreline Marsh
Mt. Diablo Creek – Clayton
Pacheco Marsh
Peyton Slough Wetland Complex Management
Roe Island
San Ramon Creek – El Capitan Drive
San Ramon Creek – Front Street to Diablo
Suisun Creek Watershed Enhancement Program
Walnut Creek Watershed Arundo donax Eradication Project
Wetland Reserve Program – Delta Property

*Projects are listed by subregion and include all acquisition, restoration and/or enhancement projects that have been completed in the 15 year history of the SFBJV. In some cases, projects that were completed as property acquisitions now have active restoration and/or enhancement projects at the site.

Dutch Slough

John Cain — Conservation Director, American Rivers

The Sacramento-San Joaquin Delta once encompassed 350,000 acres of freshwater tidal marsh and channels that were vegetated with tules, willows, ferns, cottonwoods and other freshwater species. Virtually all of this marsh was "reclaimed" for agricultural use in the second half of the nineteenth century. This devastating loss of habitat combined with water diversions, pollution and land use changes has resulted in a precipitous decline of the Delta ecosystem and its native fish populations.

The Dutch Slough Project spans nearly two square miles at the mouth of Marsh Creek in eastern Contra Costa County (CCC) and seeks to restore freshwater tidal marsh in the Delta for the benefit of endangered fish species including juvenile salmon, Sacramento splitail, Delta smelt and a host of birds.

In the late 1990's, CCC approved plans for a 4,500 unit development on the site, but environmental organizations working with state agencies persuaded

the landowners to sell their land to the state for tidal marsh restoration. Working together with the City of Oakley, a 55-acre community park and six miles of trail were incorporated into the design.

In 2003, the California Department of Water Resources bought a 1,166-acre site from the Emerson, Gilbert and Burroughs families who had run dairy cows on the land for more than 100 years. The project will create 640 acres of freshwater tidal marsh, 100 acres of managed wetland for the California Black Rail and other bird species, 240 acres of pasture for the Swainson's Hawk and other upland species and thirty five acres of riparian habitat along several miles of tidal channels. Project construction is scheduled to begin in the summer of 2012 and be completed by 2015.

Suisun Creek

Laurel Marcus — Watershed Scientist, California Land Stewardship Institute

The Suisun Creek Watershed Program began with a small group of concerned landowners who valued the beauty of this historic agricultural center and the high quality steelhead trout habitat in Suisun Creek. Together with non-profits and state agencies, they produced the Suisun Creek Watershed Assessment and Habitat Enhancement Plan. The plan identified priority actions for the watershed, including extensive monitoring of water temperature and quality, re-operation of Lake Curry, a municipal on-stream reservoir, invasive non-native Arundo donax removal (pictured), planting thousands of native plants and other bank stabilization and sediment reduction projects in partnership with private landowners.

McQueeney Ranch – an historic cattle ranching property that stretches along 1.5 miles of Wooden Valley Creek and is a major tributary to Suisun Creek – exemplifies the success of this kind of planning and collaboration. Dan McQueeney, a 5th generation rancher, realized the riparian corridor on his property had suffered from past grazing practices. In cooperation with the California Land Stewardship Institute and with funding from the CALFED and American Recovery and Reinvestment Act programs, McQueeney planned and implemented a re-vegetation project along the creek. This also included developing alternatve water sources and installing cattle fencing and a drip irrigation system. Altogether over 800 native tree seedlings were planted along the 1.5 miles of Wooden Valley Creek in early 2010.

North Bay

The North Bay subregion consists of the submerged lands, wetlands and uplands of San Pablo Bay. It is bounded to the east by the Carquinez Strait – connecting it to the Suisun subregion upstream. Downstream it abuts the Central Bay subregion.

Completed Projects

American Canyon
Bahia
Bull Island
Carl's Marsh
Carriger Creek – Fish Passage
Champlin Creek
Cullinan Ranch
Dickson Ranch
Fernandez Ranch
Gallinas Creek
Gray's Ranch
Hamilton/Bel Marin Keys Wetlands
Hill Property
Huichica Creek Grassland
Huichica Creek Ponds
Little Island Farms
Lower Tubbs Island
Lower Wildcat Creek
Miller Creek
Napa Plant Site
Napa River Flood Protection Project
Napa River Rutherford Reach
Napa Sonoma Marsh – Camp Two, Pond 2A, Pond 8
Napa–Sonoma Marshes Wildlife Area
North Parcel – Leonard Ranch
North Point Joint Venture
Norton Pond
Petaluma Marsh
Petaluma River
Pond 1 Levee
Ringstrom Bay
Robert Dickson
Rush Creek/Cemetery Marsh
Russ Island
San Pablo Creek
Scottsdale Marsh
Simmon's Slough
Sonoma Baylands
Sonoma Creek & Tributaries: Nathanson Creek Preserve & Parkway
Stanly Ranch – North
Students and Teachers Restoring a Watershed (STRAW) – various projects
Tolay Creek
Tolay Creek Ranch
Tolay Lake Regional Park
Tubbs Island Levee Setback
Tubbs Island Marsh
Viansa Wetlands
Wildcat Creek – San Pablo
Zinfandel Lane Fish Passage Project







Napa Sonoma Marshes Wildlife Area

Renee Spenst Ph.D — Regional Biologist, Ducks Unlimited

San Pablo Bay (SPB) lies at the terminus of the Sacramento and San Joaquin Rivers, which drain approximately 40 percent of the landmass of California. All Central Valley Chinook salmon must pass through SPB during migration, as do half of the migratory birds in the Pacific Flyway. SPB is also particularly important for scaup and Canvasback. Overall, the region has high biodiversity, with more than 380 species present. At least 10 federally listed species live within the watershed as well as state species of concern such as California Black Rail.

The history of this area is defined by the conversion of productive coastal marshes for agriculture and commercial uses beginning in the late 1800s and salt production since the 1950's. First in 1994 and then in 2003, a combined total of nearly 11,500 acres of former salt production ponds were purchased for restoration by the state and other partners. To date over half that area has been restored by California Department of Fish and Game, Ducks Unlimited and a broad array of federal and state agencies and foundation partners. Historic tidal marsh channels have been re-established and internal earthworks have been removed to allow for the slow dilution of salts within the ponds. Levees have also been breached to restore tidal hydrology. The area now provides a habitat mosaic of shallow and deep water, tidal channel, mudflat and marsh for shorebirds, diving and dabbling ducks. A glimpse of this renewal can be seen as you cross the Mare Island Bridge and look to the north.

Breuner Marsh

Brad Olson — Environmental Programs Manager, East Bay Regional Park District

In March 2011, after a four-year legal battle, the East Bay Regional Park District quietly completed acquisition of the 218-acre former Breuner property at Point Pinole Regional Shoreline. The Park District used $6,800,000 of its own capital funds to obtain possession of the property through eminent domain proceedings. The property owners had appealed the jury's verdict all the way to the State Supreme Court. Ultimately their appeal was rejected and the Court ordered that the property be conveyed to the Park District. After more than thirty years of public opposition to several development proposals – including an airport, business-park, mitigation bank, housing and transit village developments – this piece of the East Bay shoreline has finally been permanently protected.

In 2010, the District began planning a 140-acre "Restoration and Public Access Project" encompassing the former Breuner property and adjacent Giant Marsh at Point Pinole Regional Shoreline. Preliminary plans call for restoration of both historic tidal and seasonal wetlands, along with important upland buffer areas for high tides and rising sea levels, as well as filling a key gap in the San Francisco Bay Trail.

Central Bay

The Central Bay subregion includes submerged lands, wetlands and uplands, as well as the Golden Gate. It extends along the west shore from Point San Pedro to Coyote Point and along the east shore from Point San Pablo to the San Leandro Marina. Draining the interior of Contra Costa and Alameda Counties, this region also includes all of San Francisco, as well as portions of Marin and San Mateo counties.

Completed Projects

Arroyo Viejo Creek Restoration at Arroyo Viejo Park
Arroyo Viejo Creek Restoration at Knowland Park/Oakland Zoo
Baxter Creek Booker T. Anderson Park Project
Baxter Creek Gateway Project
Berkeley Meadow – Eastshore State Park
Breuner Marsh
Cascade Canyon
Cerrito Creek – Pacific East Mall
Cerrito Creek – El Cerrito Plaza
Cerrito Creek – San Pablo west to Pacific East Mall
Claremont Creek
Clinton Basin Wetlands
Codornices Creek – lower (San Pablo Ave. west)
Codornices Creek Watershed Restoration Action Plan
Crissy Field
Glen Echo Creek Restoration at Glen Echo Park
Heron's Head Park
Islais Creek – Tidal Channel
Marin Islands National Wildlife Refuge – Restoration and Stewardship
Martin Luther King Jr. Regional Shoreline – Restoration and Stewardship
Mountain Lake
Native Oyster Monitoring Report, UC Davis
Peralta Creek
Peralta Creek Restoration Project at Cesar Chavez Park
Pier 94 North
San Anselmo Creek – Salmonid Passage – Corte Madera Creek Watershed
San Leandro Creek – South Hills Property
San Lorenzo Creek
Sausal Creek – Bridgeview Erosion Control Project
Sausal Creek – Dimond Canyon
Sausal Creek Native Plant Propagation
Tiscornia Marsh
Triangle Marsh – Corte Madera
West Stege Marsh Remediation and Restoration

Crissy Field and Tennessee Hollow

Michelle O'Herron — Science Communication Specialist, Golden Gate National Parks Conservancy

The teeming salt marsh at Crissy Field was filled in the early 1900s to create a racetrack, festival grounds and later, an Army airfield. By the time the National Park Service acquired it in 1994, it was a badly neglected military dump. A monumental restoration effort was launched with the support of the Evelyn & Walter Haas, Jr. Fund and Colleen and Robert Haas, the Golden Gate National Parks Conservancy and 2,400 community donors. Over 3,000 volunteers helped remove 87,000 tons of hazardous material and 70 acres of concrete and hand-planted 130,000 salt grass plugs. By 2001, Crissy Field had become a stunning 100-acre mosaic of tidal marsh, dunes, grassy fields and trails.

Today, it supports 105 plant species, nearly 100 bird species and 25 different kinds of fish. This beloved urban oasis, which marked the 10th anniversary of its transformation in 2011, inspires over 1 million people to visit each year, volunteers to dedicate thousands of hours and students of all ages to become environmental stewards. Restoration of the 270-acre Tennessee Hollow watershed that feeds Crissy Marsh is also underway. In coming years, the corridor adjacent to Crissy Field will be restored, creating a connected riparian-marsh system that has not existed at this site for over a hundred years.

Oro Loma Marsh

Nancy Schaefer — Land Conservation Services and first SFBJV Coordinator

In 1997, the Management Board of the San Francisco Bay Joint Venture and supporters gathered to mark two significant milestones – the signing of the Joint Venture Working Agreement and the tidal marsh restoration at Oro Loma Marsh. A White-tailed Kite hovered over the marsh along the Hayward shoreline under a brilliant blue sky as if to herald the event unfolding below. With 31 signatories, the agreement captured the Management Board's intent to pool resources and work together as a Joint Venture to ultimately achieve the developing vision of the *Baylands Goals Report* and the *North American Waterfowl Management Plan*.

As the first project under the Joint Venture banner, the Oro Loma Marsh restoration epitomizes the partnerships that have made the Joint Venture so successful. With funding from the Wildlife Conservation Board, Department of Parks and Recreation, the California Coastal Conservancy and others, the East Bay Regional Park District initiated the project within the Hayward Regional Shoreline, restoring the 364-acre tidal marsh with seasonal wetlands and transitional uplands.

South Bay

The South Bay subregion includes the submerged lands, wetland and uplands from the southern edge of the Central Bay south to the limits of the watersheds, such as Coyote Creek and the Guadalupe River, which feed the Bay. Receiving the least rainfall of all the subregions, it also has the fewest major streams.

Completed Projects

Alameda Creek Fisheries Restoration
Bair Island
Bosley/Weaver – Brushy Peak Regional Preserve
Eden Landing Ecological Reserve
Invasive Spartina Control Efforts in San Francisco Bay
Lower Guadalupe River
Mission Creek
Moseley Tract
Oro Loma Marsh
Outer Bair Island
Ravenswood Preserve
Shoreline at Mountain View
South Bay Salt Ponds Acquisition
South Bay Salt Ponds: Alviso – Knapp Tract (Pond A6)
South Bay Salt Ponds: Eden Landing Ponds 3C 4 4C 5 6B 6C 8 8A and 9
South Bay Salt Ponds: Ravenswood SF2
Sycamore Grove Regional Park
Tehan Creek
Triangle Marsh – Newark

South Bay Salt Ponds

John Bourgeois — Executive Project Manager, South Bay Salt Pond Project

For over a hundred years, thousands of South San Francisco Bay acres, spanning an area the size of Manhattan, were drained and diked to produce salt. In 2003, under the leadership of Senator Dianne Feinstein, the South Bay Salt Ponds were purchased from Cargill, Inc. using state, federal and private funds. Over the ensuing five years, hundreds of individuals, recreational groups, scientists, environmental and business organizations and public agencies devoted countless hours to developing a 50-year restoration plan for the largest wetlands restoration project – over 15,000 acres – on the West Coast.

In addition to restoring tidal wetland and enhancing pond habitat for wildlife, the Project will improve flood protection and expand public access and recreational opportunities for more than 3 million South Bay residents.

Since 2008, the Project has added tidal gates to most of the former salt ponds' levees and breached several others. It has opened more than 4,000 pond acres to the Bay, built 30 nesting islands for birds and opened a key Bay Trail section linking Palo Alto with Sunnyvale along the Bay edge. Three years into implementation, researchers are already seeing significant increases in types and numbers of fish and birds – from herring and anchovies to Pintail ducks – inhabiting the restored areas.

Bair Island

Eric Mruz — Refuge Manager, Don Edwards San Francisco Bay National Wildlife Refuge

In 2011, the US Fish and Wildlife Service and California Department of Fish and Game began taking the final steps towards restoring the remaining 1,400 acres of Bair Island to its more natural habitat state as tidal wetlands. Drained long ago for grazing lands and salt evaporation ponds, a restored Bair Island will provide renewed native vegetation and critical wildlife habitat for endangered species, reduce mosquito habitat and offer revitalized public access.

When construction is complete over one million cubic yards of clean dirt will have been hauled onto the island with the goal of raising the level of Inner Bair to ensure that when tidal action is re-introduced, the area will quickly become a more natural vegetated marsh. Portions of existing levees at strategic locations will also be breached in order to bring back tidal action to the remaining areas of Middle and Outer Bair Island. By 2013, Bair Island will once again be a refuge not only for the endangered California Clapper Rail and the salt marsh harvest mouse, but also for shorebirds, waterfowl, harbor seals and a variety of other wildlife.









The Coastal subregion includes the coastal watersheds of San Mateo, San Francisco, Marin and Sonoma. Characterized by short, steep watersheds that lead to pockets of tidal marsh with strong marine influences, it also includes the submerged and intertidal lands of the Pacific Ocean to the crest of the Coastal range.

Completed Projects

Capistrano Fish Passage Restoration Project
Frenchmans Creek Fish Passage Improvement Project
Giacomini Wetlands
Lake Merced
Mori Point
Pescadero Marsh
Pillar Point Marsh
Purisima Farms
San Gregorio Farms
San Pedro Creek Tidal Area

Giacomini Wetlands Restoration

Lorraine Parsons — Wetlands Ecologist, National Park Service

In the 1940s, more than 50 percent of the coastal Marin County estuary wetlands of Tomales Bay were impacted when the historic coastal salt marsh was converted into a 563-acre dairy. While agricultural conversion did not eliminate wetlands, it did eliminate habitat for wildlife and substantially reduce the ability of floodplains to improve water quality flowing into Tomales Bay.

In 2000, the National Park Service bought the former Waldo Giacomini Dairy and in 2008, completed restoration of more than 600 acres of wetlands – approximately 12 percent of the remaining wetlands on the outer central California coast. While mitigation monies and Congressional appropriations paid for the land purchase and project planning, most of the $6 million in restoration funding came from private and public grant sources that were secured with the assistance of the Point Reyes National Seashore Association, the park's non-profit partner and the San Francisco Bay Joint Venture.

Since levee breaching, changes in the restored wetland have been dramatic. Once tides surged back into 350 of the 550 acres of former pasturelands, thousands of waterfowl and shorebirds flocked to the Giacomini Wetlands, with waterbirds totaling as high as 11,488 during a single count in December 2010. Populations of special status species have expanded within the newly restored marsh as well, including federally endangered tidewater goby, state threatened California Black Rail and federally threatened California red-legged frog.

Redwood Creek

Carolyn Shoulders — Project Manager, Golden Gate National Recreation Area

Draining the southern flank of Mount Tamalpais, Redwood Creek at Muir Beach is the mouth of one of the most protected and naturally functioning watersheds in the Bay Area. With more than 90 percent of its lands protected from development, the creek supports Coho salmon, Steelhead trout, the California red-legged frog and the Northern Spotted Owl, as well as an ancient redwood forest, native grasslands and coastal scrub.

While the watershed has many natural resource values, the creek and wetland system at Muir Beach is highly disturbed due to historic human uses. In the early 1990's the National Park Service initiated a vision to restore the site, which garnered full support from a range of partners. Involving the removal of a levee road and rotation of the existing parking lot, the restoration is now underway and Redwood Creek is being reconnected with its floodplain. The primary goal of the project is to restore natural creek processes and enhance habitat for listed species while continuing to accommodate the access enjoyed by hundreds of thousands of visitors to the park each year.

Russian River is the only land-locked subregion, abutting the Coastal subregion to the southwest and the North subregion to the southeast. With the densest concentration of seasonal wetlands and vernal pools, the habitat focus of this region is the Laguna de Santa Rosa and the riparian corridor of the Russian River.

Laguna de Santa Rosa

Hattie Brown — Conservation Science Program Manager, Laguna de Santa Rosa Foundation

As the largest tributary of the Russian River, the Laguna de Santa Rosa waterway drains a 254-square mile watershed which includes the Santa Rosa Plain Wetland Complex and the communities of Windsor, Santa Rosa, Rohnert Park, Cotati, Sebastopol and Forestville in the Russian River watershed. The Laguna supports remnant vernal pool habitat, much of which has been lost in recent decades due to changes in land use. Vernal pools are seasonal wetlands that once occurred throughout California grasslands and provide refuge for many rare endemic organisms.

The Laguna de Santa Rosa Foundation began restoration work on the Laguna in 2007 and since then has installed about 50 acres of restoration plantings, including over 10,000 native trees and shrubs. Partnerships with local cities, Sonoma County, the state of California and private landowners helped the Laguna Foundation gain recognition for the floodplain as a Wetland of International Importance by the Ramsar Convention* on February 2, 2011. Born out of an interest in protecting migrating waterfowl, this intergovernmental treaty recognizes many important functions of wetlands including flood control, species habitat and human recreation. With this designation, 4000 acres of the wetlands were added to the 900 million acres of RAMSAR wetland sites worldwide.

*The Ramsar Convention is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

Lower Pitkin Marsh Preserve

Wendy Eliot — Conservation Director, Sonoma Land Trust

West of the Laguna De Santa Rosa is a renowned system of riparian, freshwater marsh, wet meadow and oak woodland habitats, which is home to over 350 plant species and known as Lower Pitkin Marsh Preserve.

In 2007, Sonoma Land Trust (SLT) purchased a 27-acre portion of the marsh with federal, state and local agency partners and vital support from neighbors. Called Lower Pitkin Marsh Preserve, it encompasses the finest known examples of rare acidic, nutrient-poor wetlands in Sonoma County and supports several endemic species, including the only known population of the federally endangered white sedge (Carex albida). Thanks to two good rain years and critical habitat treatments conducted by SLT, partners and volunteers, white sedge reproductive effort has increased 217 percent over the last three years. In 2010, SLT accepted a conservation easement on 6 acres adjacent to its Preserve, expanding protection of Lower Pitkin Marsh Preserve and its unique vegetation types, rare plant species and diverse wildlife.

The Open Bay is comprised of water-column habitat as well as several underlying intertidal and subtidal habitats, including mud and sand, rock, shellfish beds, submerged aquatic vegetation, macro-algal beds and artificial substrates.

Open Bay

Susan E.W. De La Cruz Ph.D — Wildlife Biologist, United States Geological Survey;
Beth Huning — Coordinator, San Francisco Bay Joint Venture

The waters of the open bay are inextricably linked to the six watershed and wetland subregions surrounding the San Francisco Bay estuary. Here, freshwater delta flows and coastal ocean waters blend together and allow for an essential exchange of sediment, nutrients, oxygen and organisms. As a result, open bay habitats team with life and are critical for a variety of fish, mammals and birds during all or part of their lifecycle.

As one of the largest estuaries along the Pacific Flyway, San Francisco Bay draws over one million shorebirds and over 300,000 diving ducks annually to feed in its expansive intertidal mudflats and shallow shoals. This represents up to 67 percent of shorebirds and over 40 percent of several diving duck species that migrate and winter along the West Coast of the United States. Tidal flats and subtidal shoals support an extensive community of diatoms, invertebrates and forage fish as well as algaes and aquatic vegetation critical for migratory birds. These habitats are essential as foraging stopover sites during migration.

Diving ducks are among the most conspicuous users of open bay habitats and San Francisco Bay is particularly noted for its' wintering diving waterfowl populations. Taken together, Surf Scoters, Greater Scaup and Lesser Scaup comprise an average of approximately 75 percent of open Bay waterfowl, while another formerly abundant species, Canvasback, has declined in recent years. Given rapid declines of Scaup and Scoter across North America and regional declines of Canvasback, the US Geological Survey, which has studied the ecology of diving ducks here and throughout the Pacific Flyway for over 16 years, is working to understand the role wintering habitats play in their overall survival and productivity.

Although the Bay is the most invaded estuary in the nation and possibly on the planet, the food chain of the open waters supports many other water birds such as cormorants and Common Murres, as well as waders, such as egrets and herons. Sturgeon and migrating salmon pass through these waters and spawn in the rivers and tidal marshes. Currently, native oysters are being restored to filter pollutants and experimental restoration sites are determining methods for bringing back native eelgrass beds, which host invertebrates and provide spawning habitat for herring and other fish. In addition, Joint Venture partners are now planning pilot "Living Shoreline" projects that will integrate restoration of subtidal habitats with vegetated shorelines and marshes through strategic placement of plants, rocks, sand and other structural organic materials thereby linking open water, subtidal, mudflats, shoreline and marsh habitats over the long-term.

Joint Venture partners have recognized that restoring tidal wetlands also must include integration with open water to provide the habitat values needed for target species and for a more fully functioning wetland system.

Looking Ahead

Over the last 15 years, SFBJV partners have been committed to bringing back habitat function to wetlands in the region. While the "low hanging fruit" of habitat protection opportunities may have been "picked", there are still many areas that have been identified for future protection, restoration and enhancement. Partners initially rallied to restore tidal areas, but other wetland habitats have not been ignored. Tidal wetlands will always be primary, but in the coming years seasonal wetlands, riparian corridors and open water habitats will receive more focus, with attention paid to their connectivity.

Working with willing landowners and managers, partners are mapping important areas throughout the watershed region to identify crucial inland wetlands and connect riparian habitats with tidal wetlands and open water areas, thereby completing a suite of habitats and allowing for more contiguous ecological functioning in support of a variety of target species.

Much has happened since *Restoring the Estuary* and our implementation goals were finalized 10 years ago. Our boundaries have changed, some habitats that were initially identified for one water regime have been restored or managed for another and better GIS and mapping capabilities are now available. We also have new information about issues that range from carrying capacity and waterfowl foraging habits, to new seasonal wetland mapping and the potential challenges associated with a changing climate, such as sea level rise. All of these will be incorporated into an update of our Implementation Plan.

In addition to providing models for sea level rise, climate adaptation and habitat conversion, recently developed tools will help us target and prioritize habitats, track progress toward our goals, enable our partners to evaluate how projects are functioning in the context of the larger system and inform management decisions. Some of these resources are listed on the following page.

San Francisco Bay Joint Venture Monitoring and Evaluation Plan and Project Tracking Database

With the addition of a Science Coordinator to the Joint Venture staff in 2010, the development of a monitoring and evaluation plan through a multi-stakeholder process is underway. The plan will determine priority research, set monitoring goals and help assess the effectiveness of conservation delivery partnership activities. Monitoring data will, over time, provide guidance for future conservation planning and adaptive management and help insure our actions are of greatest and intended benefit.

Monitoring, applied research and adaptive management will be even more important to ensure that projects – particularly the large-scale projects – are functioning as designed and that species are benefiting overall. For example, the South Bay Salt Pond restoration is being completed in phases. It is imperative that when habitats are changed, they are monitored so that any unintended consequences to species other than those targeted by the restoration activity can be addressed.

The SFBJV has collaborated with Ducks Unlimited to create what has become an award-winning online space where Joint Venture partners store and access project details in a user-accessible and updatable format. From the geographic locations and descriptions of acquisition, restoration and enhancement projects to the associated planning, monitoring and funding needs and activities, this database system has been a key feature helping the SFBJV partnership meet its goals and will be expanded to incorporate new data as needs are identified.

Conservation Lands Network (Bay Area Open Space Council)

The Conservation Lands Network was created as part of the Upland Habitat Goals Project, a science-based, regional approach to protecting the important biodiversity of the Bay Area. The project is a five-year science-based study by over 125 organizations and individuals tasked to identify the most essential lands needed to sustain the "natural infrastructure" of our region. Over 4.3 million acres were studied and over 1,000 variables were considered – from redwood forests to California red legged frog habitats and from climate change to migratory routes. This decision-support tool will help partners assess where conservation actions will most benefit species beyond the tidal regions of the Bay.

Subtidal Habitat Goals Report

A multi-year planning process for subtidal habitats resulted in the first-ever comprehensive report about these submerged areas and offers a bold vision for a continuum of habitat types from the bottom of San Francisco Bay to the ridge tops that ring it. Released in January 2011 by the California Coastal Conservancy/ Ocean Protection Council, Bay Conservation and Development Commission, NOAA Fisheries and Restoration Center and the San Francisco Estuary Partnership, together with the Baylands Ecosystem Habitat Goals and the Uplands Habitat Goals, the Subtidal Goals represents a milestone in regional habitat planning for San Francisco Bay.

State of the Birds Report

The first regional *State of the Birds* report was released in September, 2011 by PRBO Conservation Science and the SFBJV. Modeled after the national *State of the Birds* reports, this scaled-down version for the Bay Area compiles a wealth of existing data sets from leading Bay Area scientists and organizations to identify trends, status, threats and actions by habitat type for the region's birds. The report will provide guidance and recommendations for species where habitat protection, restoration and enhancement can help with recovery or prevent further population decline.

Funding the work that needs to be accomplished in the years ahead will be an ongoing challenge. In an era of declining revenue and resources, conservation priorities and delivery will need to be more scientific and focused. Enhancing degraded habitats may be the most cost effective way of improving wetland function. The pace of habitat delivery may slow or accelerate depending upon resources, but based on the past 15 years of dedicated work, we can proudly say that San Francisco Bay Joint Venture partners are resourceful and committed to protecting and restoring our natural heritage.

Retrospective Photos

All photos by SFBJV Coordinator, Beth Huning unless otherwise noted. Beth was the 2011 recipient of the North American Nature Photography Association Philip Hyde Grant award, in support of conservation photography.

(cover) Avocets – Pond 1A at Napa Sonoma Marshes; (inside cover) USGS
1 Richardson Bay and San Francisco
2 Shorebirds over Tubbs Island
3 Snowy Plover — Ben Pless
4 Great Egret
5 Skaggs Island
6 Black Necked Stilt; California Clapper Rail
8 Dutch Slough
10 Dutch Slough — Michelle Orr; (smaller) Dutch Slough
11 (top to bottom) Suisun Creek, Twin Creeks Vineyard: March 2007 — Laurel Marcus; Feb 2009 — Darcie Luce; March 2011 — Darcie Luce
12 Pied-billed Grebe
14 (Top left & top middle) Green Island Unit, Napa Sonoma Marshes State Wildlife Area; Napa Sonoma Marshes salt panne; (middle left) Levee breach Tubbs Island, San Pablo Bay National Wildlife Refuge; (bottom left) Shorebirds at Tubbs Island — all courtesy of Ducks Unlimited; (top right) Chinook — URS Corporation;
15 (left to right) Tubbs Island; Hamilton wetland restoration site; Skaggs Island sunset; (bottom left) Moonrise over Skaggs Island; (bottom right) Breuner Marsh, Richmond
16 San Francisco Bay from Hayward Shoreline
18 (left) Crissy Field, San Francisco restoration project before and after; (background) people walking at Crissy Field — all courtesy of Golden Gate Parks Conservancy
19 (top left) Crissy Field wetlands; (bottom left) Long-billed Curlew; (lower right) Oro Loma Marsh, Hayward Shoreline
20 White Pelicans, Don Edwards National Wildlife Refuge, Alviso
22 South Bay Salt Pond Restoration Project and Don Edwards National Wildlife Refuge
23 (top left to bottom right) LaRiviere Marsh, Don Edwards National Wildlife Refuge; levee breach, Island Ponds, Alviso; shorebirds, Eden Landing; Salt pannes, Pond A6; Raccoon tracks, New Chicago Marsh; South Bay salt ponds — Caroline Warner; Marbled Godwits — Rich Stallcup; Alviso Slough; Double-crested Cormorant
24 Shorebirds, Tomales Bay
26 (left to right) Planting levees in Phase 1, Giacomini Wetlands Restoration; Excavating red-legged frog habitat, Giacomini Wetlands Restoration; Giacomini Wetlands Restoration Project from Bolinas Ridge; (large left) Red-legged frog habitat post-restoration, Giacomini Wetlands Restoration; (small right) Levee re-vegetation, Giacomini Wetlands restoration
27 Redwood Creek restoration at Muir Beach
28 Burke's Goldfields — Hattie Brown
30 (left) Laguna de Santa Rosa; (middle) Sebastopol meadowfoam; (right) Burke's Goldfields — Hattie Brown
31 (top) Pitkin Marsh — Stephen Joseph, courtesy Sonoma Land Trust; (bottom) White Sedge — Tony Nelson, courtesy Sonoma Land Trust
32 Young *Egregia menziesii* (feather boa kelp) off of Angel Island — Lorenz & Avelar, www.Lorenz-Avelar.com
34 Willets roosting
35 (top left) Female Scaup; (bottom left) Western Grebe; (right) Great Blue Heron
36 (top) Black-bellied Plover; (bottom) Spartina, Sonoma Baylands; (lower right) Old duck blind, Skaggs Island
37 Restoration sign, New Chicago Marsh, Don Edwards National Wildlife
38 Petaluma Marsh

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