

## **Estuarine Wetlands Restoration in the San Francisco Bay Area: the Roles of Non-for-Profits.**

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### **Introduction**

Good Morning.

Thank you for his opportunity to speak to you about the very important roles that not-for-profit organizations, or what I will also refer to as NGO's, or non-governmental organizations, play in the ongoing restoration of estuarine habitats of the Bay Area.

Let me begin with some qualifying statements. As you will see, most of the NGO's in the Bay Area are focused on advocacy for restoration, rather than science, engineering, or land use regulation. I work for a scientific NGO, and I am therefore somewhat outside the center of the NGO community. In fact, the incorporating bylaws of my organization forbid me from advocating any particular position on issues about natural resource management, except to say that it ought to be science-based! But as scientist who has been much involved in regional ecological planning during the last decade I have come to know many of the NGOs in the region, and I have gained an appreciation for the critically important roles they play in the drama of ecological restoration.

I asked a few of the leaders of other NGO's in the Bay Area and some of my colleagues in government to comment on my thoughts for this presentation. I wish to thank Mike Sellers of National Audubon, David Lewis of Save San Francisco Bay Association, John Steere of the San Francisco Bay Joint Venture and, and Bruce Herbold of USEPA Region 9 for their help.

These people and some of their colleagues from other NGOs have provided examples of their products for you. I have placed a variety of reports, brochures, planning documents, and other products from Bay Area NGOs on the table by the front door. Contact names and places are listed in the documents.

## Setting

Slide 1: Map of Greater Golden Gate Watershed (boundaries of rivers and streams draining to SF Bay)

The Bay Area is the downstream part of the large watershed that drains almost 2/3 of California through the Golden Gate into the Gulf of the Farallones.

Slide 2: natural color landsat image of Bay Area

The Bay Area is a real place. It has geomorphic and intellectual presence. There is a significant amount of shared political issue and attitude. And there is San Francisco Bay as a centerpiece, a cultural and ecological nexus, a focal point of regional thinking. You might know the Bay Area as Silicone Valley, San Francisco and Berkeley, and the wine country of Napa and Sonoma. But it also includes Suisun as the largest diked estuarine marshland in the country, and the western part of the inland Delta that includes some of the most productive farm lands in California.

The Bay Area has all or part of nine counties. More than 7 million people live around the Bay. SF Bay is one of the most urbanized estuaries in the world.

Slides 3: regional map of historical baylands

But the region was not always so crowded. Here we see a map of wetland and related habitats of the region as it existed shortly before European colonization. Tidal marshes are shown in yellow-green, mudflats in brown, willow groves are bright green, and seasonal wetlands above the tides are pale yellow.

Slide 4: South Bay detail of historical baylands map

If we zoom into the South Bay area, near San Jose, we can see some of the details of historical ponds, lagoons, and springs shown in blue, and the narrow zones of riparian forest that used to border the larger creeks.

Slide 5: South Bay detail of modern baylands map

This is a map of the same area of the South Bay, showing the distribution of wetlands and related habitats as they exist today. Much of the tidal marsh has been converted into landfills, salt collectors, and other diked land uses.

Slide 6: regional map of historical tidal marshland

There used to be almost 200,000 acres of tidal marsh ....

Slide 7: regional map of modern tidal marshland

... now there are only about 30,000 acres, and almost all of this remaining marshland is widely scattered in smallish patches.

Slide 8: regional map of modern baylands

The existing landscape is a complex mosaic of interactions among natural processes and human operations. During the past 200 years of western land uses, the marshlands and other habitats have been diked, bulldozed, ditched, channelized, paved, grazed, buried, and in some places literally blown up.

But now there is a sincere desire to restore as much of the historical ecological functions of the region as possible. Terms like sustainability, ecological goods and services, as well as beneficial uses are working into the lexicon of planners throughout government. There has been much reduction in the deleterious practices of near-shore and within-bay dumping of dredged sediments. There is a vision shared among the agencies and NGOs for the restoration of 40,000 to 60,000 acres of tidal marsh. It seems like every local creek has a champion for restoration, and every year brings new creek restoration projects. There are even serious efforts to plan restoration at the watershed scale, with efforts to alter land use practices in headwater reaches that have negative impacts far downstream.

There is also a growing awareness that the historical landscape, though more natural than the modern landscape, was managed by indigenous people for thousands of years. We are starting to ask how native land management practices can be woven into the fabric of modern land use as part of the larger meaning of ecological restoration.

### **So, what is the role of the NGOs in this restoration initiative?**

Let's begin by saying that there are many kinds of NGOs that are involved in ecological restoration in the Bay Area, and there are many examples of each kind. Without forgetting that the community of NGOs is diverse and derives some of its strength from that diversity, we can state that most NGOs fit pretty well into one of two categories.

***Informal Groups*** lack legal status and usually have an intense local focus. For example, many creeks have a "friends" group of local citizens who have come together to help protect and care for their creek.

These informal groups are very important members of the regional community of natural resource conservation. Given our particular climate and geology, most of our streams and non-tidal wetlands are small and seasonal. There are many examples of critically important habitat patches that are not much larger than the tables you are sitting around. There are examples of watershed fisheries severely disrupted by the misalignment of a single 24-inch culvert. When you get above the tides, the natural ecological grain size of the Bay Area is small. And within the tidal zone, land use has carved up the historically

large patches of tidal marsh into much smaller remnants. Understanding the conditions of these precious places requires many eyes in the field. The informal groups of observers provide much of the information that managers and regulators need. In the Bay Area, federal and state laws for natural resource protection, such as the ESA and CWA, meet the ground through local NGOs.

#### SIDE BAR

In the early 1980's a local group of citizens assigned themselves to the task of restoring and protecting Strawberry Creek. It's a small but perennial stream that flows through the UC Berkeley campus, where it was touted by campus managers as natural landscaping but actually was biologically dead. The group had evidence from graduate students in ecology that the chemistry labs might be a source of creek pollution. After being rebuked by the university as untrained troublemakers, the group sent a student into the laboratories for inorganic chemistry to run non-toxic dye down the drains. It was subsequently shown that the laboratory drains had been mistakenly plumbed directing into the little creek. After another year or two of back and forth between the group and the campus, the university decided to undertake a restoration project, with the creek group much involved. Now the little creek supports abundant insects and native fish.

As further evidence of the valuable roles played by informal NGOs, I would like to draw your attention back to this map of modern wetlands and related habitats around the Bay. This map could not have been produced without the voluntary help of hundreds of citizens and dozens of local interest groups. They came to SFEI and we went to them so that they could compare the map to their local photos and knowledge. This map represents more than 20,000 hours of volunteer time. It not only has the accuracy of ecological definition that regional scientists can provide, and the cartographic sophistication of leading engineers for information technology, it also has the validation of caring citizens who know the local conditions best.

***Formal organizations*** have special legal status under section 501c3 of the federal tax code, and therefore they have management structures, Boards and Directors, and laws of incorporation.

There is a rich history of environmentalism through formal organizations in the Bay Area. We can begin by thinking back over the work of the Sierra Club, and continue with the Trust for Public Lands, Earth Island Institute, and so many others. The Save SF Bay Association is 40 years old this year. It was the first environmental NGO in the nation to focus on estuarine issues. It produced the first coastal zone legislation, the Petris Act, and this created the SF Bay Conservation and Development Commission, which is the coastal

zone management agency inside the Golden Gate. Environmental activism is emblematic of the Bay Area.

Overhead: simple diagram of 3 major aspects of natural resource management in the Bay Area.

NGOs have a large influence on regulation through advocacy and technical advice and review of restoration policies, programs, and projects. This diagram shows regulation, management, and science/engineering as the three main aspects to the regional community for natural resource management. The diagram also suggests that most of the NGOs are involved with advocacy, although there are some NGO's that provide critically important technical help.

**Advocacy** has many meanings, including outreach, fundraising, legal action, and validation. Let me elaborate briefly.

*Outreach and education:* The SF Bay Joint Venture, which is actually a consortium of NGOs, agencies, and the private sector, has held tours of wetlands projects for elected state and federal officials. The Marin County Environmental Forum has held tours for officials in Marin County. These legislative tours are effective ways to communicate public interests to elected officials. Other NGOs such as Kids in Creeks, Adopt a Watershed, and Rivers of Words, develop original curricula for elementary and secondary schools. Save the Bay does much with canoe trips and by other means to bring the public to the Bay. Much of the outreach materials that are used by the county and city programs for non-point source pollution control are produced by NGOs.

*Fundraising:* The Citizens to Complete the Refuge, Marin Audubon Society, National Audubon Society, SF Bay Joint Venture, and SF Bay Foundation are just some of the NGOs that have been able to build funds for environmental research, land acquisition, education programs, and so on. The community has many NGOs that understand money and how to raise it, although they re-invest it all back into the environment and their organizations. The community has a growing record of successful legislation that benefits many NGOs in addition to the sponsors, and that improves the overall status of the community and the environment. The NGOs in the Bay Area have been very active in their support of state and federal legislation that might bring in money for conservation.

*Legal Action:* Most of the public hears about law suits that are brought against private companies or governmental agencies by NGOs. There are certainly many examples of this in the Bay Area. The Bay Keeper recently sued to make sure that all environmental protection codes were obeyed during planning and implementation of projects to control invasive aquatic weeds with herbicides. The Committee to Complete the Refuge successfully sued the Port of Oakland for illegal filling of wetlands, and as a result got the Port to pay for a large restoration project. There are many other examples of suits brought by NGOs and won. As a result, the threat of a suit has become a tool to help NGOs steer political processes. The private sector and the agencies take the threat of law suits seriously. In fact, some agencies occasionally depend upon suits to advance the

planning process or to get plans implemented. Just as regulators can sometimes use the threat of heavy-handed regulation to nurture cooperation by private interests, NGOs can use the threat of legal action to make sure the partnership includes them, and to keep the partnership focused and productive.

*Validation:* NGOs can put representation into representative government. NGOs can advocate for the environment and for the people who benefit from the environment. NGOs give voice to rivers and wetlands, kayakers and duck hunters. NGOs often represent the “public “ in public policy for the environment.

#### SIDE BAR

The state of California is required by the USEPA to conduct tri-annual reviews of water quality standards for San Francisco Bay. Both EPA and the State ignored this requirement for a number of review cycles. Some prominent NGOs in the region threatened to file suit against the agencies for failing to comply with their own rules. The State subsequently issued a review but it ignored the critically important topic of freshwater flow requirements into SF Bay. It is generally understood that inflows through the Delta control water quality in the Bay. It was therefore argued that, by ignoring the amount and quality of these flows, the State was not conducting a proper review. The NGOs, especially the Bay Institute, assembled scientific testimony that was delivered to the State at formal hearings. Through these hearings the EPA worked with the State to create the Bay-Delta Oversight Council that included NGOs to address flow issues. To make a long story short, the Oversight Council evolved into CALFED, the California Water Accord, and the largest ecological restoration program in North America. And no law suit was ever filed over the inadequate water quality reviews.

The relationship between regulation, science, and advocacy has matured to the degree that tensions can usually be managed and people and organizations can be held accountable and focused on central issues as defined by the concerned public. Law suits are not always the only choice or the first choice.

*Science and Engineering:* The Bay Area has a thriving academic community. In addition to Stanford, UC Davis, UC Santa Cruz, and UC Berkeley, there are five state colleges and nine junior colleges with active environmental research programs. The Bay Area also enjoys the regional focus of the USCOE, USFWS, USEPA, and USGS. The amount of academic and agency-based environmental science that is conducted for the Bay Area increases each year. And yet, a relatively small number of non-for-profit science institutions play large roles in local and regional environmental science and engineering. For example, the Point Reyes Bird Observatory and the SF Bay Bird Observatory have the longest continuous records of observations of bird populations in the intertidal zone and creeks around the Bay. These data are often cited as part of the rationale for management decisions about these habitats. Ducks Unlimited and California Trout are

involved with the conceptual designs and engineering plans for many wetlands and creeks in the region. These scientific NGOs have their own newsletters and technical publication series, and many of their staff scientists publish in refereed journals. The scientific NGOs are not ignored in the Bay Area. They are full members of the regional community of environmental scientists.

The San Francisco Estuary is an unusual scientific NGO. There is nothing like it in the Bay Area and there are few analogues elsewhere. SFEI was created in 1993 through the Estuary Program of the US Clean Water Act as a stand alone non-for-profit outside of the policy structure of any agency or special interest to coordinate publicly funded environmental research and monitoring in the region. Simply stated, the conservation community needed a neutral entity to manage regional monitoring programs and assess environmental conditions. SFEI has initiated a monitoring program for bay water and sediment, is on the verge of starting a wetlands monitoring program, and has drafted a plan to monitor watersheds. SFEI has also been able to bring together all the key state and federal agencies to develop a regional GIS and to establish quantitative, scientific, habitat goals that are shared by the agencies at all levels of government and the NGOs. The habitat goals serve as the framework for regional restoration. Without a neutral but scientifically strong organization that belongs to everyone rather than anyone, the restoration efforts of the Bay Area would lack the direction, sense of purpose, and rationale provided by the goals. In order to be neutral, SFEI has had to sustain from advocacy.

### **In Summary**

The environmental NGOs of a region can have a very strong and useful voice in natural resource management through advocacy and science.

NGOs can organize themselves around regional environmental issues of common interest, and thus collectively increase the strength of their voices. But they must remain flexible to re-organize themselves as the issues change.

A primary goal of many NGOs in the Bay Area is protection of existing resources, even as they aim for restoration.

One indicator of a maturing relationship between NGOs and other members of a regional conservation community is the extent to which the NGOs are included in planning and oversight committees. In the Bay Area, NGOs are prominent members in restoration planning and design.

Ecological restoration is cultural. In the Bay Area, NGOs have become a major part of the culture by providing political pressure, scientific leadership, and validation of public policy.

Thank you.

# Natural Resource Governance

