

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION

50 California Street • Suite 2600 • San Francisco, California 94111 • (415) 352-3600 • Fax: (415) 352-3606 • www.bcdc.ca.gov

February 18, 2010

TO: All Commissioners and Alternates

FROM: Will Travis, Executive Director (415/352-3653 travis@bcdc.ca.gov)
Mamie Lai, Assistant Executive Director (415/352-3639 mlai@bcdc.ca.gov)

SUBJECT: Approved Minutes of February 4, 2010 Commission Meeting

1. **Call to Order.** The meeting was called to order by Vice Chair Halsted at the Ferry Building, Second Floor in San Francisco, California at 1:10 p.m.

2. **Roll Call.** Present were Vice Chair Halsted, Commissioners, Bates, Brown (represented by Alternate Carrillo), Chiu, Goldzband, Gordon, Hicks, Lai-Bitker, Lundstrom, Maxwell, McGlashan, McGrath, Moy, Nelson, Reagan, Sartipi, Thayer (represented by Alternate Kato), and Wieckowski.

Not Present were: Resources Agency (Baird), Department of Finance (Finn), Speaker of the Assembly (Gibbs), Contra Costa County (Gioia), Santa Clara County (Shirakawa), U.S. Environmental Protection Agency (Smith), Napa County (Wagenknecht), and Governors Appointees (Randolph and Jordan Hallinan).

3. **Public Comment Period.** Vice Chair Halsted asked for public comment.

David Lewis, Executive Director, Save The Bay, stated that several months ago there was a briefing before the Commission from DMB about their proposed development in Redwood City. Many of the Commissioners were incredulous that they were proposing to build on salt ponds that can be restored to the Bay.

I want to give you a brief update on some developments since then. The California State Climate Adaptation Strategy came out in December of '09 and one of the strong recommendations in there was that the state should discourage developments in areas vulnerable to sea level rise that are restorable for important habitat. The site in Redwood City is probably the best example of that in the state.

The EPA, at the beginning of January 2010, issues its' first formal comment about these ponds since 2002. Among other things, they said it's a critically important aquatic resource that deserves special attention.

Save The Bay has done our own analysis of Clean Water Act jurisdiction on these ponds and we've provided that to the U.S. Army Corps of Engineers. That was done by Shute, Mihaly and Weinberger.

Opposition to this project on the peninsula, in other peninsula cities, is growing. Several are considering taking a formal position against it. The Port of Redwood City has expressed concerns about housing being developed next to their industrial uses. The Napa Plant site



Bay Conservation and Development Commission

BCDC MINUTES
February 4, 2010

along the Napa River is now being restored to tidal marsh by the Department of Fish and Game using federal stimulus funds.

On Monday (2-1-10) the Redwood City Council received a report that it had commissioned, with a half million dollars of DMB's money, to look at the development application. And incredibly, the cover of that report concluded that there are "no fundamentally insurmountable issues" to moving ahead with this development.

In fact, that report didn't mention the part of the California Adaptation Strategy that I just mentioned and, perhaps most significantly, it didn't mention that a development like this is unprecedented. Since the BCDC was created, the Clean Water Act, EPA -- there has never been development approved like this on a salt pond, never. That would seem to be, if not an insurmountable issue, then certainly one worthy of mention.

We've done an analysis of the insurmountable or challenging issues that actually are in the report but weren't mentioned to the Council, and the issues that aren't in the report that are significant. I'll leave that for you.

DMB started doing advertisements in Redwood City -- both video and print ads -- that claim this is an industrial site. There is one shack on this site, that's 1,400 acres, and they've managed to take pictures of it from three different angles to put in this ad. So we have presented for you an analysis of the federal, state and local zoning reasons why industry is not allowed on this land and, in fact, if DMB is doing industrial activity out there, or Cargill is, then all of those agencies should be pursuing enforcement actions and legal actions against them.

I will leave those with you and look forward to giving you additional updates if necessary.

4. **Approval of Minutes of January 7, 2010 Meeting.** Vice Chair Halsted entertained a motion to adopt the Minutes of January 7, 2010.

Prior to voting on the Minutes, Commissioner Goldzband remarked that, during that meeting, the first discussed issue on the agenda was the permit application process. He left the room at the start of that process because he figured that at some point PG&E more than likely is going to apply for a permit from BCDC and he probably shouldn't be involved in that. So he left the room and totally forgot to yell out that he was recusing himself. It's not reflected in those Minutes and won't be, but he just wanted to put that in.

Executive Director Travis suggested that, in the adoption of today's Minutes, the Commission can reflect those comments. Commissioner Goldzband stated that would be a perfect resolution.

MOTION: Commissioner Lundstrom moved, seconded by Commissioner Chiu, to approve the January 7, 2010 Minutes. The motion carried by voice vote, with Commissioner Sartipi abstaining, with inclusion of Commissioner Goldzband's comments as reflected in the paragraphs above.

5. **Report of the Chair.** Vice Chair Halsted reported on the following:

a. **New Commission Member:** We have a new member of the Commission attending

today's meeting. The Sonoma County Board of Supervisors has approved Supervisor Valerie Brown's selection of Supervisor Efren Carrillo as her Alternate on BCDC. I'm sure the Commission joins me in welcoming Mr. Carrillo. Also, the Solano County Board of Supervisors has reappointed Supervisor Mike Reagan as the County's representative on BCDC and Barbara Kondylis as Mike's Alternate.

b. **Next BCDC Meeting:** As part of our continuing cost-cutting measures we are cancelling our next scheduled meeting, which would have been held on February 18th. Therefore our next meeting will be in four weeks, on March 4th. At that meeting, which will be held here at the Ferry Building, we will take up the following matters:

(1) We will hold a Public Hearing and Vote on an application to relocate the Exploratorium to Piers 15 and 17 on the San Francisco waterfront.

(2) We will hold a Public Hearing on an application to use fences and gates to control public access at the Ford Building in Richmond.

(3) We will consider allocating funds for a few mitigation projects and extending the contract that provides us with funding for our oil spill prevention program.

(4) We will have briefings on planning for the San Francisco waterfront.

(5) Finally, we will consider a status report on the progress we are making in carrying out our strategic plan.

c. **Orientation Briefing:** In place of the regular BCDC meeting on February 18th, we will hold an orientation briefing for new Commission members. The briefing, which will begin at 1:00 p.m. and last until 4:30, will be held at our office. I strongly encourage all new members of the Commission to attend this briefing, which is open to the public.

d. **Ex-Parte Communications:** In case you have inadvertently forgotten to provide our staff with a report on any written or oral ex-parte communications, I invite Commissioners who have engaged in any such communications to report on them at this point. There were none.

6. **Report of the Executive Director.** Executive Director Travis provided his report, as follows:

a. **Budget:** A few weeks ago we provided you with the budget Governor Schwarzenegger has proposed for BCDC in the 2010-11 Fiscal Year. The most important thing about the proposal is that there is one. The idea of eliminating General Fund support for BCDC, as was called for last May, is not part of the current proposal. While this is certainly good news, the Governor has also issued an executive order requiring BCDC and all other state departments to submit plans for reducing our staff costs an additional five percent. Fortunately, we can accomplish this without laying-off any staff because we currently have five vacant staff positions.

Our plan, which had to be submitted last Monday, calls for not filling two of these vacancies--a permit analyst and a planner. The three positions we will fill are a senior planner, who will replace Leslie Lacko (who recently resigned); a planner, who will focus on climate change work; and an enforcement analyst, who we desperately need to catch up with our backlog and help ensure that the honest folks who comply with the law aren't made to feel like chumps by the few who get away with not complying.

The new enforcement analyst, as is the case with all of our enforcement analysts, will be cross-trained in permits so we will be better positioned to deal with the increased permit workload that will come when the economy recovers. Our plan allows us to take advantage of the additional funding we are getting from the Metropolitan Transportation Commission and to

continue our many initiatives to address climate change. The enforcement analyst will be partially funded with money from the Bay Fill Clean-up and Abatement Account that is currently in our budget. That means that the money we do save will be General Fund money, which is what the state desperately needs.

We're pleased that by initiating proactive steps last year to reduce our spending and by carefully managing our staff vacancies we are able to comply with the executive order without having to resort to a lay-off. However, it still means that we won't be able to hire a permit analyst, as well as a needed planner. Holding these two positions vacant will have adverse impacts on our operations. I appreciate your continued understanding and patience as we deal with these challenges.

b. **Office Lease:** The lease for our office space expires in April of 2011 so we've begun exploring either extending the lease or moving to another suitable location. As part of this process, we've negotiated a revision in our current lease that will save the state over \$200,000 in the next year. Unfortunately, that savings doesn't stay in BCDC's budget; it goes into the General Fund. But, given the State of California's dismal budget situation, we're pleased to be able to help out.

c. **Personnel:** One of the vacancies we have comes as a result of Adam Parris resigning from our climate change team to become the head of the Regional Integrated Sciences and Assessments Program, which is part of NOAA's Climate Program Office in Silver Spring, Maryland. We look forward to continued collaboration with Adam because the program he heads funds multi-disciplinary science aimed at policy and decision makers on climate-sensitive issues, such as drought, wildfires, water supply, and even sea level rise. We will miss Adam and wish him every success and happiness as he and his wife Renee head back to the Chesapeake where they can raise their new son Quinn close to his grandparents, aunts, uncles, and numerous cousins.

Tamsen Drew is a new intern who will be part of our legal staff through April. She's a third year student at Hastings College of Law, where she was co-president of the Public Interest Law Foundation and editor of the Constitutional Law Quarterly and Women's Law Journal. She's also a graduate of UC Berkeley where she majored in architecture. Tamsen has worked for the San Francisco City Attorney's Office, Public Advocates, and the National Trust for Historic Preservation in Washington D.C., and won the Witkin Award for Excellence in legal writing and research in 2007.

d. **Statement of Economic Interests:** It is time, once again, for members of the Commission to file your annual Statement of Economic Interests. To assist you in meeting this requirement, we sent you a memo which explains how you can download the Form 700 and its instructions. If you need assistance getting this material, please contact Sandra Sneeringer of our staff. Your completed form must be received in our office or postmarked by April 1st.

7. **Commissioner Consideration of Administrative Matters.** Executive Director Travis noted that the administrative listing was sent out on January 21st. If there are questions, Bob Batha is available to answer them.

Commissioner McGrath asked about the Eel Grass Project. He participated in some of those meetings and went out and looked at it, and it clearly didn't grow any eel grass; that was obvious at low tides. But it did put some sand on the beaches there. Where is the next likely candidate for restoration efforts, and the timeframe?

Caitlin Sweeney, BCDC staff, responded that the idea of this particular amendment is to

take a real bay-wide look at what the appropriate places are for eel grass restoration. It is highly likely that there are additional appropriate sites on the east bay, but where exactly those are is yet to be determined.

Mr. Batha added that, before selection of the north basin at Berkeley, the restoration site that failed, several sites along the East Shore State Park were looked at, trying to find the best one. We picked what we thought was the best one, with help from Keith Merkle, a noted expert on eel grass. It still didn't work out, so we decided to regroup and find out a little bit more about what eel grass needs and maybe focus our efforts elsewhere.

8. Vote on Application No. 2-09, Marin County Department of Public Works Application for the Tennessee Valley/Manzanita Connector Trail Project, in an unincorporated area of Marin County near Mill Valley. Vice Chair Halsted noted that a Public Hearing was held on this application at the last BCDC meeting. Max Delaney will present the staff recommendation.

Mr. Delaney stated that this project was brought before the Commission on January 7th for a Public Hearing. It would upgrade the existing Tennessee Valley Pathway by doubling the path's width and improving its service; making the path ADA-compliant; relocating a portion of the path from the marsh to an upland area; and elevating the remaining portion of the path as a new boardwalk, so that the path is no longer inundated at high tides.

In addition, other new public access amenities would include a new bicycle and pedestrian bridge across Coyote Creek; a new at-grade connector trail to the Manzanita Park and Ride; and a new crosswalk and traffic signal across Shoreline Highway.

By elevating the path as a boardwalk the project would allow for improved tidal circulation within Coyote Creek Marsh, as well as the restoration of approximately .27 acres of tidal marsh. The project would result in the net removal of 5,500 square feet of solid fill and the placement of 9,966 square feet of pile-supported fill. The total amount of new fill would be approximately 4,466 square feet of pile-supported fill.

The staff recommends that you approve BCDC Permit No. 2-09. Our recommendation includes a number of conditions designed to minimize project construction impacts and to ensure that the marsh restoration effort is successful, including implementing best management practices to protect endangered species and minimize impacts to the surrounding marsh and to Coyote Creek during construction; monitoring the restored tidal marsh areas to ensure these areas re-vegetate successfully; and ongoing maintenance requirements to ensure that the path remains safe and usable for the life of the project.

We did receive one additional comment letter before the close of the public comment period from the Alto Bowl Horse Owner's Association, and we have included a copy of this letter in your packets today.

MOTION: Commissioner McGrath moved, seconded by Commissioner Reagan, to approve the staff recommendations.

Commissioner Wieckowski asked about the 12-foot bridge for the horses. Is there an accommodation that can be made? Mr. Delaney responded that, during the process of working

with the Applicant on this project, staff did look at the possibility of going to 12 feet on the boardwalk. Basically, there are a couple of reasons why that isn't a possibility: A. it results in more fill, and we were really trying to work with the Applicant to minimize fill; and B. it would also result in reopening consultation with the resource agencies because of potential further impacts to the marsh. Lastly, it was proven to be cost-prohibitive to the Applicant, given the funding they had to work with for the project.

Commissioner Wieckowski asked about the possibility of 12 feet, not including the bridge but the pathways only; i.e., the access towards the bridge. Would the improvements along the senior center and etc. be 12 feet and then narrowed to ten feet? Mr. Delaney responded that the paved paths will all be 8 feet asphalt with two foot granular shoulders on each side, so in effect those will be 12 feet wide.

Commissioner Wieckowski noted that it's not clear from the letter that the horse owner's association wants the pavement increased to 12 feet or if it's just the shoulders. Mr. Delaney responded that the association was primarily looking for the boardwalk to be increased to 12 feet.

Vice Chair Halsted asked the Applicant if they have reviewed the recommendation and if they agree with it. Mr. Pat Echols, Marin County Public Works Department, responded that they have reviewed the conditions and accept them.

Commissioner McGrath commented that -- as someone who rides a bicycle three times a week -- regarding the segment across the waterfront, the greater width certainly provides the capacity to go faster but on that trail there are a number of narrow bridges and they do cause people to slow down. While it would be nice to have a trail that you could go at top bicycle speed and pass others, it's better than a lot of bicycle trails that are heavily used.

What I've seen on that trail is that people adapt to the conditions that they have, particularly bridges. They all slow down, with the exception of a few knuckleheads. So, while I would like a wider trail for selfish purposes, I think they've found a pretty good balance that is also in keeping with a much more heavily-used trail that is much more ridden. I will support this project "as is."

Commissioner Sartipi asked if the alignment of the path has been finalized, as shown in Exhibit A? Mr. Delaney responded that it is the final alignment.

Commissioner Sartipi noted that the approach to the bridge, as he sees it on the exhibit, is on state property. Will the Applicant be working with the state on that? Mr. Delaney responded that they would.

Vice Chair Halsted asked for a straw vote -- if anyone is not able to vote for this project please let her know now. Seeing none, she called for the roll.

VOTE: The motion carried with a roll call vote of 17-0-0 with Commissioners Bates, Carrillo, Chiu, Goldzband, Gordon, Lai-Bitker, Lundstrom, Maxwell, McGlashan, McGrath, Moy, Nelson, Reagan, Sartipi, Kato, Wieckowski, and Halsted.

9. **Consideration of 2009 Annual Report.** Executive Director Travis read the staff recommendation. He indicated that the Commission is obligated by law to submit an annual report to the Governor and the Legislature, as BCDC has been doing for the last several years. Staff has prepared a brief summary report that has proven satisfactory in the past and recommends that the Commission take that approach again.

As you read through the report, despite the limitations on our budget, we have a lot to be proud of and have had a lot of accomplishments. I would appreciate a motion, second and positive vote to approve the text, subject to any typos, editing, or anything you see that we

ought to change. And if you see anything that you'd like us to change, please let me know right away because we will mail it out in the next few days.

MOTION: Commissioner Bates moved, seconded by Commissioner Lai-Bitker, to approve the staff recommendation. The motion passed unanimously by a show of hands.

Commissioner Lundstrom commented that it's very helpful to anyone picking up the report to look on the summary of permits, fill and mitigation, because people can say that the Commission doesn't look at any major permits, yet it has. If a person looks at the permit amendments and minor permits, even with the downturn in building you can see that the workload in permits is still considerable for the last number of years. I think that is very helpful to all, to look and see what the Commission does.

10. Briefing on Marsh Restoration Projects. Mr. Bob Batha provided the briefing. He stated that he will talk about what we've learned from the various marsh restoration projects that the Commission has approved over the last 40 years.

This is a complex and huge subject and to squeeze it into a briefing I've had to simplify and omit a lot of information. I would hope that by the end of the briefing you'll have a good idea of what we've learned about marsh restoration and how we go about designing successful restoration efforts, as well as an appreciation of how successful past restoration efforts have been, and a sense of the questions and issues to be faced by future restoration projects.

Since 1970 the Commission has approved over 90 restoration projects around the Bay. The Commission has played an important role in fostering Bay wetlands restoration. Some of the Commission's important restoration milestones include:

- (1) Approving the first substantial mitigation effort, with the Muzzi Marsh mitigation, for the construction of the ferry terminal and the dredging of the navigation channel in Corte Madera Creek.
- (2) Publication of the first marsh restoration design guidelines, in 1982.
- (3) BCDC's participation in the development of the Bay Lands Eco-system Habitat Goals Project and incorporation of some of the recommendations of that study into the Commission's Bay Plan.
- (4) We are currently working with NOAA and other agencies to develop sub-tidal goals to improve the management, science and restoration of sub-tidal habitats.

What does a healthy marsh in San Francisco Bay look like? Typically, it is made up of distinctive bands of vegetation corresponding to specific elevations. Whole shifts of plant communities take place within a change of elevation of a foot or two. Typically, low marsh is uniformly *Spartina* and occurs about a half-foot above mean sea level up to mean high water. The marsh plain occurs between mean high water and mean higher high water, followed by high marsh, and a band of transitional vegetation occurring on the inland side of the marsh.

Our healthiest marshes are also flooded and drained by a network of sinuous channels. Another typical feature of our wetlands are ponds and pannes. Pannes are typically found along the inland edge of the marsh and are only occasionally flooded by the highest tides. As this water evaporates, it creates highly saline soils that prevent plant colonization. These pannes are often the natural analog to salt ponds and are often heavily used by shore birds.

Nearly, all of the sites that have been restored around the Bay were formerly part of the Bay but have either been diked from tidal action or filled. A key factor influencing marsh design is the availability of sediment and sediment dynamics. Generally, lower elevations

accumulate sediment more rapidly, due to longer periods of inundation. Because many of the diked historic baylands that have been restored have subsided over time, from 1-2 feet to as much as 13 feet below mean sea level, the availability of sediment to bring these restored areas up to elevation that will support marsh vegetation is critical to understanding when or if these lands will return to emergent tidal marsh.

There is concern, but so far no evidence, that restoring the subsided salt ponds in the south Bay and the salt ponds and farmlands in the north Bay will create new sediment sinks that will lead to the erosion of adjacent mud flats. Further complicating the picture is that since 1999 some parts of the Bay have experienced a significant decrease in the amount of suspended sediment.

The relationship between the amount of sediment suspended in the water and the rate of plant establishment is shown in the second graph. You can see that it's much longer for the elevations of the restored sites to reach an elevation capable of supporting marsh vegetation with less suspended sediment. So far there seems to be enough sediment to bring up the elevations of the newly restored ponds in the south and North Bay.

The alternating wet and dry conditions typical of marsh wetlands is important because of its' apparent association with methylmercury production, an important issue that has come up with recent restoration projects. Methylmercury is a form of mercury that is most bio-available to living organisms. It has profound negative impacts to nervous systems, development, and reproduction. Its production seems to be highest in areas that alternate between wet and dry conditions and those are the exact conditions you find in tidal wetlands. Mercury concentration doesn't seem to be strongly correlated with how much methylmercury there is in the system.

For the estuary as a whole, the amount of methyl mercury that is found in wetlands is very small but it may have significant local effects. There is some evidence that mature wetlands are actually a good sink for methyl mercury. It is my belief that we need to understand methyl mercury much better before we start changing our design of restoration projects to try to minimize the production of methylmercury.

Channel development is critical to creating a vigorous, healthy tidal marsh. Channels are relatively persistent and form more easily in an accreting restoration site, where sediment is being deposited, than where channels must erode into consolidated settlements.

A portion of the Muzzi Marsh was used for dredge disposal. The dredged sediments were originally placed in one area, and water decanted from the dredged sediments were allowed to drain through a series of four cells before it was discharged into the Bay.

When we were designing and building this site, we were just learning how to use equipment that worked in marshes. One of the things we learned is that it's much easier to work in a dry situation than in a wet situation. We tried to build a large channel that would snake along the back of the marsh and then connect to another channel. We lost a drag line in the mud and it took over a week to get it out. Thereafter the dragline hugged the levee and we built essentially a borrow ditch along the back side of the marsh to provide the needed tidal action.

To try to get tidal action into the interior of the high cells, we built a series of mosquito ditches into it. These ditches haven't really changed over time. The other channels in the lower cells are also very evident, and unchanged over time.

To promote channel development in sites that have a remnant channel network, a variety of site modifications have been tried to direct water into the remnant channels and away from the borrow ditches adjacent to the levee.

Cooley Landing in East Palo Alto, a former salt pond, lent itself to the effective use of ditch blocks and channel guides to force water into the historic channels. Three years after breaching we were successful in forcing the water into the historic channel network.

At windy sites, where the wind can keep sediment suspended in the water column, wind peninsulas have been designed to promote conditions that will still the water enough so that the suspended sediments will drop out by reducing the wind fetch within a pond and promoting sedimentation.

Sonoma Baylands, shortly before it was breached in 1996, had a very small natural channel leading to the proposed breach location. It was decided not to dredge the channel at the time of breaching because of the potential impacts on the exterior marsh and to the endangered California Clapper Rail, which lived in the marsh, even though we realized that the existing channel was in no way large enough to allow full tidal action into Sonoma Baylands. Four years later the channel was noticeably wider but was still limiting and restricting tidal action into the Sonoma Baylands, thereby not giving it the full benefit of all the sediment loads in the water entering the site.

By 2003 the channel had widened considerably and the site began receiving full tidal action. Over time, as sedimentation reduces the tidal prism within Sonoma Baylands, we can expect that channel to narrow as a new equilibrium is reached with the tidal prism within Sonoma Baylands. Today Sonoma Baylands has extensive mud flats and the beginnings of many networks of small channels in the mud flats; but what you can't see is that there are over 100,000 birds feeding there. In other words, it's not the emergent marsh that we intended to create when it was designed in 1995, but it is providing critical and necessary habitat for the Bay and is well on the way toward establishing emergent tidal marsh, as the plants are starting to march out onto the mud flats.

As great a habitat as Sonoma Baylands is, Carl's Marsh, which is located about a half mile away, up the Petaluma River, shows how rapidly a site can be restored if adequately supplied with sediment. Sedimentation in this region of the Petaluma River can be as high as 1½ feet per year.

Carl's Marsh was opened to the tides in 1994, just two years before Sonoma Baylands, but it is now fully vegetated with a well-developed channel network. The two important differences between Sonoma Baylands and Carl's Marsh is that Sonoma Baylands used dredged material to accelerate restoration, and the fact that the exterior channel severely limited how much tide actually reached the site for a number of years. Essentially, Carl's Marsh had about a 7-9 year head start on Sonoma Baylands.

Creating a wetlands on filled land poses different problems. The soils at such sites are often consolidated with little nutrients. The most expensive part of restoration is the grading and disposal of excess dirt. It is also expensive to grade such sites down to elevations that are suitable to support marsh vegetation. Channels also have a difficult time cutting into the consolidated soils. Such sites typically have fewer channels and it's the channels that promote the rich biological diversity in marshes. Sites with a pair channel network don't get as much tidal action and the benefits of sediment being carried in by the bay waters.

Channels are also where the greatest species diversity is found in marshes. The channels provide habitat for fish and benthic organisms. The slumping of channel banks, the eddies and still waters of the channels themselves, and the berms found along channels as sediment-laden

waters spill out over the channel banks create topographic relief, which is utilized by a number of plant and animal species.

Species diversity diminishes significantly as you move away from channels. When we discuss topographic relief we're talking about a range that is less than six feet tall, but there is a lot more topographic relief along channels which promote a very rich biological community. It is along the channels where the endangered Clapper Rail is found, as well as the endangered Black Rail and Song Sparrow.

Higher vegetation grows along the channels because of the natural berms that are formed by channels as water carrying sediment spill out of the channel banks, is captured by the vegetation that is growing there, slowing the water and caring sediment to drop out.

Getting the water regime right is critical to successful restoration. Generally, restoration scientists try to create a tidal regime that is identical or closely mimics to that of adjacent Bay waters. But that is not always possible. Existing infrastructure such as culverts and roadways can restrict tidal action and limit the tides to a relatively narrow range. Existing channel dimensions, as we saw with Sonoma Baylands, can also restrict tidal action. When a wetland serves multiple uses, the demands of the different uses can also lead to management that limits tidal action.

Our success at creating emergent marshlands in such sites has been poor – White Slough in Vallejo; Charleston Slough in Mountain View, and Shorebird Marsh in Corte Madera have simply failed to provide conditions that support marsh vegetation.

At Shorebird Marsh the goal was to create a flood basin that also provided an emergent marsh. It has simply has failed to support marsh vegetation although, in the early 80's, there were several attempts to try and encourage emergent vegetation. In the end they simply gave up and decided to call it Shorebird Marsh and let it be mud. Again, this provides valuable habitat and it gets plenty of bird use.

Another physical process shaping marsh evolution is the erosion that some of our restored sites are experiencing. The exterior levee protecting Muzzi Marsh provided a valuable service as it allowed marsh vegetation to become established within the interior of the levees. But as the levee fails, the marsh is beginning to erode as well.

At Cogswell Marsh in Hayward, another mitigation site that the Commission required for mitigation for the construction of the San Mateo Bridge, former salt pond was returned to tidal action. Several hundred feet of the marsh has retreated inland as a result of no longer having the protection of the exterior levee.

One of the things currently shaping our wetlands is the spread of the invasive *Spartina Alterniflora* and our efforts to control it. Because it grows taller and more vigorously than our native cordgrass, and grows both higher in the marsh plain and lower onto the mud flats than our native cordgrass, there has been a great deal of concern that it will convert much of our Bay lands to a single species. Its aggressive growth also clogs channels and, as you've heard me mention in this presentation, channels are some of the most important parts of the marshes that we're creating. It is also an indiscriminate pollinator and it has hybridized freely with our

native cordgrass, creating even more problems for our attempts to get rid of it.

The most effective control of *Alternanthera* has been to spray it with herbicides. But as good as that control is, it's not perfect. In order to achieve complete control it often takes two or three years of spraying. Such spraying radically changes the environment of the watershed. A marshland that used to support a large population of Clapper Rails may be adversely affected.

However, this drop in clapper rail numbers seems to be bay-wide, not only in areas treated for *Alterniflora*, and we don't know why clapper rail population declined in places that weren't treated.

There is also an increasing awareness of the importance of high marsh and the upland transition zone. These are areas where many marsh animals go when the tides flood the lower reaches of the marsh and they seek out cover until the tide recedes. But we have developed right up to the upland edge of many wetlands, leaving only a small band of upland vegetation.

While there are only a few invasive plant species in the tidal wetlands, that's not the case in the upland edge, where there are several species that we're trying to get rid of - in this slide you can see ice plant, fennel, and Bermuda grass.

It takes a lot of care to establish a transition zone dominated by native plants, care that includes irrigation and weed suppression. Thus far, the best that we've been able to achieve in terms of trying to promote native plant coverage in a transition zone is about 60%. That was achieved by Caltrans at the Emeryville Crescent. Caltrans has led the way in designing sites that promoted the establishment of transition zone vegetation. And even in those cases, the best we've been able to achieve is 60% coverage by native plants.

Many of the Commission permits have required that the Bay edge of public access areas be planted with native vegetation. But all too often, if it's not weeded and irrigated, it just turns into a patch of weeds.

Another difficulty in establishing upland marsh and transitional habitat are people. For example, in a wetland created in 1989 as mitigation for the adjacent Schoonmacker Harbor in Sausalito, and despite the fact that a comfortable asphalt path was constructed within a few feet, the traffic of people and their pets has consolidated the soil, trampled vegetation, and kept this high marsh transition zone from establishing.

Finally, a word about animals. The target of many of our wetland restoration efforts has been to create habitat for the endangered California Clapper Rail and Salt Marsh Harvest Mouse. In other words, creating tidal salt marsh. But as we saw with Sonoma Baylands, where the goal was to create marsh for these species, the intervening stages provided essential habitat to countless other species, on its way to becoming a tidal marsh.

The early stages some of restoration sites have been colonized by other endangered species. At the former Napa Salt Plant site, the Least Tern, an endangered species, and the Snowy Plover have established highly successful breeding colonies in the middle of an area that is slated to become a tidal marsh. In fact, in the Bay Area, two of the six breeding sites that we have for the Least Tern have been established in the middle of areas slated to be tidal marsh.

What are the take-home messages? First, restoration needs to be designed taking into account a host of site-specific factors. There's no single cookie cutter approach; a lot of different things need to be taken into consideration.

Our knowledge of how to restore wetlands is also improving all the time. Fifteen or twenty years ago it was a major concern of most of the resource agencies not to use dredged materials in wetland restoration. Now almost all the agencies are clamoring to use the mud

from dredging projects and view it as a resource that can accelerate our restoration projects.

The other thing is to be patient. "You can't always get what you want, but if you try sometimes, you just might find, you get what you need." When I first heard Mick Jagger sing that 40 years ago, I thought he was talking about teenage angst, but he was also very prescient, and was talking about marsh restoration. It just takes time, and you'll get something really good.

Commissioner McGlashan asked if Mr. Batha could present this briefing at the next Restoration Authority meeting in April; Mr. Batha said he could.

Commissioner Nelson commented that it was great to have this report and very rewarding for some of the Commissioners, as some of the projects mentioned have been worked on by many Commissioners over many years. Ten years ago there was a lot of speculation that there was an enormous slug of sediment from hydraulic mining that was working its way through the system. That was a decade ago when we were starting to see the real drop-off in sediment rates. In the last decade do we have a better handle on what is driving the reductions in suspended sediment rates and marsh erosion that we are seeing in parts of the Bay?

Mr. Steve Goldbeck, a member of BCDC's sediment team, responded that BCDC will sponsor a workshop in April that will bring together all of the noted people working on sediment processes in San Francisco Bay to talk about that. Part of what is happening, from the understanding we get talking with folks at USGS and other researchers, is that there is a slug of material that came down and worked its way through the estuary. Also, a lot of the watersheds leading into the Bay that drained much of the Sierra Nevadas have been dammed, and that's decreased the amount of sediment entering the system.

What USGS has seen in other places is that, at first, you don't notice it, and then over time all of a sudden, sediment level entering the system will drop off precipitously. And that's what they're seeing in San Francisco Bay. Likely we're going to return, in terms of suspended sediment levels, to what the Bay looked like before the hydraulic mine period.

Commissioner McGrath stated that we know that there are literally hundreds of dams on the streams, yet San Francisco Bay continues to be quite turbid and wetlands continue to form. The recent State of the Estuary Conference and the recent Regional Monitoring Program devoted a lot of time to this.

On the San Francisco Estuary Institute web page you can get the pulse of the estuary; it has quite a bit of detail. We are very fortunate to have had some excellent USGS people working on this issue for over 20 years. The falloff in suspended sediment, beginning about the year 1999, is very dramatic, and it does indicate that the block that was in San Pablo Bay has largely dissipated. And I think there's some other information that supports that. So we're going to be a little sediment starved.

Commissioner Nelson asked about the California Clapper Rail. It was mentioned that one of the reasons we've done a lot of restoration in the Bay is to help restore this endangered species. The last drop-off in Clapper Rail populations 10-15 years ago was in substantial part due to the rise of invasive Red Foxes, and I believe those populations have now been successfully eliminated from the tidal marshes. Do we have a handle on what's causing this new decline in Clapper Rail population?

Mr. Batha responded that we don't. Undoubtedly some of it is correlated to the eradication of the *Spartina Alterniflora*. They've been doing the *Spartina Alterniflora* eradication program for a number of years but it was only last year that they got permission to spray earlier in the growing season, which corresponds to the nesting season of the Clapper Rail. They wanted to spray earlier because if they spray later, many of the seeds of the *Alterniflora* have already set, so the spraying wasn't nearly as effective.

Fish and Wildlife Service agreed and said "let's spray earlier." But now we've had this pronounced effect and we're still digesting the information. I haven't heard any good hypotheses to explain the decline.

Vice Chair Halsted stated that, although this briefing wasn't scheduled for a Public Hearing, if anyone has comments they can come forward.

Ms. Ellen Johnck, Bay Planning Coalition, thanked Mr. Batha for his presentation. She commented that, related to the Commission's recent discussion and consideration of climate change and issues of sea level change and, looking at the projects created over the last several years, she wondered to what extent the co-benefits of managing for flood protection and flood risk damage reduction have been incorporated into some of these designs? Or has it been entirely focused on habitat?

And, depending on your answer to that, in the future, Ellen would like to see, as we develop conditions and recommendations for how to proceed with restoration, that we look at the benefits of trying to combine design for successful habitat restoration along with managing for flood control.

Mr. Batha responded that we're just beginning to try and do that. In discussing this presentation with Steve Crooks of Phil Williams Associates, he and I talked a little bit about the importance of trying to capture as much sediment as we can from all sources. We both live in Mill Valley, where the bike path was just approved, and that channel is dredged every ten years or so but the marshes in Richardson Bay are not getting enough sediment; they are sediment starved.

His idea is that we need to take some of the sediment from these channels - and Coyote Creek is managed as both a slough and a flood control channel - and feed our marshes in Richardson Bay. I think that we don't know yet how to do that, but there is certainly an awareness that sediment is a valuable resource. Getting the sediment to the restoration sites, as well as augmenting our existing marshes, is going to be challenging and something I'm sure the Commission will be facing in the future. Ms. Johnck added that the maritime industry will be glad to help on that.

Commissioner McGlashan noted that they are now conducting, with county flood control staff, a tidal prism study of Bothin Marsh, contemplating the notion of moving Coyote Creek channel to the north after it crosses below Highway 1.

The notion is that we'll get better tidal scouring of Coyote Creek and therefore less dredging, but also maybe some sediment load that can get into the marsh, kind of up high, and then let storm water move it down in an easterly direction. That's the theory, and we're

working with the Army Corps of Engineers and others to check that out and see if it works. Mr. Batha responded that that was great; and that those were some of the ideas the staff were talking about.

Commissioner Lundstrom asked if staff is working with the Corps of Engineers on this, particularly in relationship to the flood control districts who have problems in terms of where to dispose of dredge spoils. It becomes very costly and some flood control districts can't afford to dispose of materials because of where the dredge spoil sites are.

Mr. Goldbeck responded that BCDC has actually received several grants from the Coastal Impacts Assistance Program, and one through the Corps of Engineers, to begin working on a regional sediment management plan for the Bay that would address some of the issues that we've been talking about, in terms of sediment processes and ways to change our management practices. We'll be coming back to you with more information on this in the future.

The workshop that we'll be co-sponsoring in April with USGS is to try and give us the "kickoff" in terms of the scientific information available and needed to form a basis to go forward. But some of these ideas, like trying to capture the material from flood control dredging projects and keeping it in the system, are some of the things that we'll be looking at to try to help the marshes persist, particularly in the face of sea level rise.

Also, we believe that the approach of the LTMS, which was set up as a 40/40/20 split, where 40% was going to go to beneficiary use; 40% to the ocean; and 20% to remain in Bay disposal, is something of a misnomer. The LTMS has really been predicated on the notion using dredged material for beneficial use. Hamilton wetlands has been the biggest project re-using dredge material; in part because we got a congressional authorization from the Corps to construct it. That is a way to take dredged material and place it right where you're going to need it. We think that probably will continue to be the flagship approach, particularly for the big navigational dredging projects, because when you talk about feeding marshes with dredged material it's nice to talk about taking a little bit and putting it here or there, but these dredging projects are usually on the order of hundreds of thousands or millions of cubic yards at a time. So it's better to put it into large restoration sites.

We're going to look, through our regional sediment planning approach, at what's appropriate for all projects. Just today the Coastal Conservancy voted to expand the Hamilton site to encompass the Bel Marin Keys parcel next door and restore that as well, so it's looking good.

Commissioner McGrath remarked that he had heard that, after the Port of Oakland Project, only about a million cubic yards had gone into Hamilton. But then he had also heard that there had been an infusion of money into the Corps' maintenance budget. Can you tell us a little about that? Mr. Goldbeck responded that there was some money from the federal government's economic stimulus program, so the Corps had additional money for dredge projects; money that they didn't have through their maintenance program. And part of that money came to Hamilton from the Redwood City Project that hardly ever gets dredged to its full depth. We were hoping to use it at the Bair Island site right next door but at that time the Fish and Wildlife Service wasn't ready to accept it. So we took a fair amount of material from

there, since there was less dredging because there was less sediment and therefore less material.

We are trying to work with the Corps and dredging sponsors to come up with ways to increase the amount of material from private projects going to Hamilton. So far, most of the material has come from the Port of Oakland's 50-foot deepening project.

Commissioner McGrath asked what the current price differential between in-bay disposal, Hamilton disposal and ocean disposal is? I guess that's the hill we need to climb. Mr. Goldbeck stated that it is. As you know, it's always very difficult to get the exact numbers from the Corps making for these comparisons because it takes awhile to figure out how much things really cost.

It really depends on the differential between whatever disposal options the project would go to otherwise. If it's going to in-bay disposal, then the cost differential can be on the order of \$15. If the option is ocean disposal, the cost differential can be on the order of \$4-5. And then it also changes depending on what the dredgers are charging to go to each site.

And what we're trying to do is to work with the Corps and the dredging people to try and come up with something that's a little more predictable in trying to figure out what the differential is and come up with a plan to try and get the material there.

11. Consideration of Strategic Plan Status Report. Executive Director Travis remarked that the main thing is to remind the Commission that there will be an all-day workshop on April 29th. As you can see, we've virtually completed all the objectives in the current plan; there are no changes needed in any of them.

12. New Business. There was no new business

13. Old Business. There was no old business

14. Adjournment. Upon motion by Commissioner Nelson, seconded by Commissioner Wieckowski, the meeting adjourned at 2:25 p.m.

Respectfully submitted,

WILL TRAVIS
Executive Director

Approved, as corrected, at the
San Francisco Bay Conservation and
Development Commission Meeting
of March 4, 2010

R. SEAN RANDOLPH, Chair
BCDC MINUTES
February 4, 2010

