Napa Sonoma Marsh Restoration Group Meeting
USGS San Pablo Field Station Offices, Building 505, Mare Island
Thursday April 17, 2008
Meeting Notes

The Napa-Sonoma Marsh Restoration Group met on Thursday April 17, 2008 to receive updates on restoration projects, research, and other initiatives in the Napa Sonoma Marshes and vicinity.

Referenced presentations are provided in the meetings folder on the project website (napa-sonoma-marsh.org).

Monitoring Programs in the Napa-Sonoma Marshes

Bird and Vegetation Monitoring in the Napa Marshes (Nicole Athearn, USGS)

USGS is continuing to do monitoring in the Napa Sonoma Marshes in conjunction with Ducks Unlimited (DU) through a grant from the San Francisco Foundation. That funding will run out this summer, and USGS is continuing to look for more money. It would be especially important to capture winter data (December – February).

Bird Monitoring. USGS has seen increased bird use of restored and unrestored ponds. Of the 5 ponds that are monitored in the Napa Sonoma Marsh Restoration project (Ponds 1, 2, 3, 4, and 7), Pond 3 has the highest percentage of birds and a higher total overall. USGS believes that the higher percentage bird use may be associated with the greater variability in water levels that results from the variable pond bottom elevation. The pond is a very dynamic system that provides a lot of opportunity for foraging. Also, low tide surveys have shown a big increase in shorebird use at low tide.

Vegetation Monitoring. USGS recently completed a vegetation in survey in Ponds 3, 4, and 5. The survey used transects to assess spatial distribution of vegetation. The survey was not designed to estimate percent cover (transects were not random). An estimated 2- 3% average vegetation cover exists at the 3 ponds. USGS also surveyed the entire interior levee of Ponds 4 and 5.

There was little vegetation in Pond 5 except on the levees. The majority of the vegetation in Pond 4 was also on the levees. The predominant species in Pond 4 were pickleweed, bulrush, and ice plant (on the levees). The predominant species in Pond 3 was pickleweed; coyote brush, ice plant, and radish predominate on the levees.

Bathymetric Survey. The last bathymetric survey was done in 2004-2005. It shows significant accretion relative to the pre-breaching 2001 survey; however, there are some uncertainties with regard to the comparability of the two surveys. Accretion is continuing at a fairly rapid rate in Pond 3, and this year is probably the last year that USGS's kayak-based bathymetric survey technique using GPS and the Navisound Echo Sounder could be used in Pond 3. USGS has improved the technique, to make it almost three times as rapid as previously. The Conservancy will work with USGS to see if a Fall/Winter 2008 survey can be funded.

Discussion Comments. Several recommendations were made for future monitoring efforts. The vegetation survey results should clearly distinguish between the levee and wetland portions of the survey (to help understand whether non-native vegetation is being found in the actual wetlands). It would be helpful to collect some sediment cores during the next bathymetric survey to confirm accretion estimates. The bottom of the pond should be easy to distinguish from the recently accreted sediment, because it will be fairly hard compared to the newly-accreted sediment. It would also be very valuable to document other observations (e.g., the fact that the water is short-circuiting around many of the ditch blocks in the borrow ditches).

Biosentinel Fish Monitoring Update (Darrell Slotton, UC-Davis)
(presentation provided on project website)
The key findings that have been made in the past three years of biosentinel fish monitoring are that :

- Episodically-flooded wetlands result in methyl mercury hot spots in biota.
- The same effect is not seen in areas that stay wet or are flooded daily (i.e., tidal wetlands)

Episodic flooding can be natural (as in mature high marshes) or due to managed water movement, such as in duck ponds and managed seasonal wetlands. The monitoring period has covered a normal water year (2005), a historically high flood year (2006), and a drought year (2007), providing an excellent overview of the response of various areas of the Bay Delta to changes in annual rainfall and water flow. The effects of the variations in water flows were especially apparent in the results from episodically flooded areas; there was a big spike in methyl mercury concentrations in these areas in 2006, and a big drop in 2007 (2007 levels were approximately 10% of the 2006 levels). The spikes in methyl mercury concentrations associated with episodic flooding may be due to the "new reservoir effect" (higher bacterial activity leading to higher methyl mercury concentrations) and/or the fact that drying out solids makes mercury more available.

The Napa Sonoma Marsh area specifically has seen a reduction in methyl mercury since Ponds 4 and 5 were breached. This effect may be due to the high levels of sulfur in the pond bottom soils, which bind mercury. While this binding effect cannot be expected to be permanent, large amounts of sulfur are likely to be made available as the pond bottoms are exposed to tidal action.

The other area in the North Bay that is monitored in some detail consists of the marshes along the Petaluma River. These are mature, high marshes, that are only flooded periodically (typically every 4 to 6 weeks). Biosentinel fish in these marshes have shown elevated levels of methyl mercury. This is consistent with data from sites in the San Joaquin valley that also experience episodic flooding. These marshes also experience much more boat traffic than they have historically, leading to erosion. It is unclear whether this is affecting methyl mercury production; the soils that are released could liberate or bind methyl mercury.

There is no funding to continue the monitoring program in 2008. Dr. Slotton and his team are looking for funding to try to continue at least key portions of their work to continue to further the research on the phenomena they have identified.

Update on Napa Plant Site Project

South Unit Update (Susanne von Rosenberg, GAIA)

As discussed at the last meeting, Cargill has officially notified DFG that it will be not be able to achieve 97% salt removal using conventional harvesting techniques. There are physical limitations to the system, and Cargill has harvested as much salt as is feasible. Cargill is continuing to evaluate alternative salt removal options, and is currently conducting modeling of one of the options. The change in the salt removal process may require some modifications of the permits.

The Resources Legacy Fund has agreed to fund the design of the South Unit to the 50% stage, and has a grant application in to WCB to take the design to the 100% stage. WCB will decide on the grant application at the May Board meeting. The design will need to be integrated with the alternative salt removal process as appropriate. Initial steps in the design process, including additional geotechnical studies and other data gathering activities can start now, but the detailed design schedule will depend in part on Cargill's progress with the salinity reduction process. Further biological consultation is also required, in accordance with the USFWS Biological Opinion. The hope is to be ready to go to construction in Summer 2010.

North and Central Units Bidding and Construction Process Update (Steve Carroll, DU)

DU has issued bid documents and received bids. The project team is still waiting for the Corps permit; there were some administrative issues with the NMFS consultation process. The consultation has been concluded, and now it's just a matter of getting the permit in hand. WCB is deciding on the grant proposal for construction at the May Board meeting. We have to have the permit in hand before then, otherwise WCB will defer action on the grant proposal.

Update on Napa River Salt Marsh Project Ponds 6 - 8

Design, Permitting, and Cost Update (Seth Gentzler, URS)

(presentation provided on project website)

URS has completed its design work for Ponds 6 – 8. The 50% design was submitted in April 2007, and the 90% design was submitted in February 2008. Further work is on hold, pending involvement from the Corps. The State of California is expecting the Corps to take the lead in contracting the work for Ponds 6 – 8. Consequently, the Corps has to review the 90% design, and then finalize it. The best case schedule would lead to initial construction in late summer 2009 (see more discussion below under the Corps process update).

The design for Ponds 6 – 8 was divided into 2 units: Ponds 6 and 6A, and Ponds 7, 7A, and 8 (the Upper Ponds). Ponds 6 and 6A are an island and are a separate hydrologic unit from Ponds 7, 7A, and 8. The objectives for Ponds 6 and 6A are:

- Maximize Habitat for Shorebirds and Waterfowl
- Improve Management Flexibility
- Improve Levees

The objectives for the Upper Ponds are:

- Achieve Pond 7 bittern reduction in 8 years
- Provide a new outfall to Napa Slough
- Demolish siphon to Ponds 6/6A

- Improved pond management flexibility

A key element of the design for the Upper Ponds is the Mixing Chamber, where the bittern from Pond 7 is mixed with water from Ponds 7A and 8 and the recycled water pipeline to dilute the bittern to levels that are safe for discharge. Separate objectives were developed for the Mixing Chamber, due to the challenges of ensuring that the Mixing Chamber will function properly to completely mix the bittern with the dilution water. Design criteria for the Mixing Chamber are:

- Mixing chamber inflow of ambient water ~ 14,000 afy
- Initial bittern release = 1% of Mixing Chamber inflow = 140 afy
- Design to provide flexibility for future increase in bittern release as concentration of bittern in Pond 7 decreases
- Provide complete mixing

URS evaluated several approaches to managing the operation of the mixing chamber, and determined that using an automated system was the best approach. It provides the greatest flexibility, has data collection and reporting capabilities, and can provide emergency notifications. In addition, the system would be implemented with standard gates, which can be used for future pond management, and would result in much less infrastructure than other options (this additional infrastructure would require removal after the bittern removal process is complete).

URS is continuing to work on permit applications. An RWQCB permit, and a BCDC permit (for DFG) and Consistency Determination (for the Corps) will be required. The goal is to move the process along as far as possible, given the lack of funding at the Corps. The existing RWQCB permit covers Ponds 6 and 6A, the existing BCDC permit does not. The RWQCB permit for the bittern discharge (but not the remainder of the restoration effort) will most likely have to be an NPDES permit.

The NSM project team has met with RWQCB to determine the baseline water quality data that will be required to support the permit application. The Conservancy retained URS to develop a water quality sampling plan and analyze the samples. The program will consist of sampling at four locations. DFG will collect the samples. There will be two sampling events: in Spring 2008 and Fall 2008. The samples will be analyzed for the following parameters:

- Priority Pollutants
  Pesticides/PCBs, volatile organics, semi-volatile organics, metals, mercury, chromium VI, hardness, turbidity
- Field Measurements
  Dissolved oxygen, pH, salinity, water temperature, tidal stage, weather

<u>Corps Process Update (Susanne von Rosenberg, GAIA)</u>
(presentation provided on project website)
Congress authorized the complete project, which consists of restoration of Ponds 1 – 8 and the recycled water pipeline. The Corps had recommended authorization of restoration of Ponds 4 - 8 only. Congress did not provide any appropriations for the project for Fiscal Year 2008 (FY2008). The Conservancy and Sonoma County Water Agency are lobbying for $8 million in

appropriations for FY2009. About $50K currently remain from design funds slated for Ponds 4 – 8. The Corps has proposed to reprogram the remaining funds to the South Bay Shoreline Study.

The Conservancy, DGF, and SCWA are starting work with the Corps. There are some administrative hurdles to using the remaining funds that have to be addressed. Once that is done, DFG and SCWA can start working on the Project Partnership Agreement (PPA) with Corps. The PPA spells out the contractual relationship between the Corps and the local sponsors for the project. The three local sponsors will also be working with the Corps to figure out how we will get credit for the work done on Ponds 1- 3, and to get a specific line-item budget request to allow cost-shared work on the pipeline.

Before the Corps can expend any remaining funds, the San Francisco District has to receive implementation guidance from Corps headquarters. This implementation guidance has been received, and the San Francisco District can now go ahead with work on Ponds 4 – 8 (providing funding can be made available). The implementation guidance states that there needs to be a specific appropriation for Ponds 1- 3 and the pipeline in order for the Corps to be able to do cost-shared work on those components. SCWA is proceeding with plans to initiate design; a grant has been approved, and the funds should be received in the near future. The San Francisco District will likely need to justify the federal interest in Ponds 1 – 3 and the recycled water pipeline (i.e., why it makes sense to spend federal funds on these components of the restoration project).

Once appropriations are received, we will work with the Corps to complete the design and permitting process for Ponds 6 – 8 and the pipeline. The Corps will need to review the 90% design and permit applications that are currently being prepared, and then finalize the design. The best case schedule would include finalization of the design, and development of a PPA by late 2008. Permitting and contracting would occur in the first half of 2009, and construction could start in late summer 2009. This schedule is dependent on working out the administrative hurdles to using the currently remaining funding, and on receiving an adequate level of appropriations for FY2009.

Cullinan Ranch Project Update (Christy Smith, USFWS)
(presentation provided on project website)
The Federal Register notice for the Cullinan Ranch Restoration Project DEIS/R is scheduled to go out this week. The preferred restoration alternative consists of tidal marsh restoration of the entire property. This will require some work on the levees along the south side of the property. Approximately 1 mile of Hwy 37 is below mean high tide level. The Cullinan Ranch Restoration Project will build a buttress levee to 10 feet NGVD along this portion of the highway, and will reinforce the remainder of the levee along Hwy 37 (approximately 2 miles). The project will also raise the Pond 1 levee, construct 2 water control structures through the Pond 1 levee, and dredge a channel in Pond 1 to allow water flow to the water control structures. The buttress levee will have a slope of 10:1 to create immediate habitat, and the Pond 1 levee will have a slope of 7:1, both to protect the levee and to create habitat. The northern levee, along Dutchman Slough, will be lowered along the entire length of the slough, to elevations between

mean high water and mean higher high water. The excess sediment will be sloped into Cullinan. The lowered levee and the newly-sloped sides of the levee will also provide immediate habitat.

Other features will include a canoe/kayak access location near the existing DFG parking lot at Pond 1, an information kiosk, a fishing/wildlife viewing pier slightly to the north of the kayak access, and an acceleration/deceleration lane for the existing parking lot. The fishing pier will reach out to deeper water, and both the fishing pier and the kayak access will be ADA accessible. USFWS is currently developing a Wildlife Compatibility Determination, and is hoping to also allow fishing from shore, and possibly from boats, as part of the public access for this area. (This has not been allowed anywhere else on the Refuge.)

The restoration process will consist of slowly flooding up the wetlands in winter to ensure that mammals have a chance to escape to higher ground without forcing them all onto Hwy 37. Once the site has enough water in so that there is a layer of water across the entire site, it will be breached to the north, starting at the west end of the property. The breaches will start at the west to encourage flow through South Slough, which was historically the main slough in the area, rather than Dutchman Slough. The western portion of the levee is the most stable, and breaching to the west may result in portions of the levee further east breaching spontaneously. Four breaches are planned, and the breach locations will be adjusted east or west depending on field conditions. A fifth breach may be created to Guadalcanal Village, the restoration project to the east, that was completed several years ago.

In addition, the Pond 3 south levee may also be breached to Dutchman Slough. This was planned as part of the Napa Sonoma Marsh Restoration Project, but was deferred to avoid putting pressure on the existing north levee of the Cullinan Ranch site. Modeling indicates that creating these breaches would limit the increase in flow in Dutchman Slough. The goal is to avoid putting pressure on the levees at Pritchett Marsh at the mouth of Dutchman Slough.

The hope is to obtain all material necessary to construct site features (ecotone, buttress levee) from within the property. This would reduce costs (from approximately $16 million to $6 to $10 million) and environmental impacts. Cullinan Ranch was diked off very early, before the use of hydraulic mining became widespread, and as a result concentrations of mercury within the site are lower than in surrounding locations.

Currently, the seasonal wetlands at the site are degrading, and non-native vegetation is prevalent. The site also has significant mosquito problems, and it lacks connection to the rest of the marsh system. Several smaller tasks required to proceed with the project have already been completed. The power tower bases have been strengthened, and a boardwalk to reach the towers has been hand-constructed. Also, there were small areas near the old ranch buildings were metals were present slightly in excess of wetland criteria. The soil containing elevated levels of metals has been removed, and USFWS is in the process of removing small quantities of soil containing excess levels of DDT breakdown products.

Longer-term, there may be an opportunity for additional public access through the Guadalcanal property. That property, which was restored by CalTrans, is expected to transfer to USFWS sometime in 2009. USFWS is working on ways to get pedestrian access from Mare Island to

Guadalcanal (under the Mare Island bridge), to provide direct opportunities for local residents to access the property.

Sears Point Project Update (John Brosnan, Sonoma Land Trust)
(related presentation available on project website)
The Sears Point Restoration project has been making great progress. The Draft EIS/R is due out in 4 – 6 weeks. USFWS and DFG are the NEPA and CEQA lead agencies, respectively. The existing Conservancy grant will cover completion of the EIS/R and permitting. DU will likely be chosen to do the design.

The area south of the railroad tracks will be restored to tidal marsh and the area between the railroad tracks and Hwy 37 will be managed seasonal wetlands, with varying degrees of agricultural use. Biological surveys of the seasonal wetland areas have shown that agricultural use helps keep out non-native vegetation. Grazing and watershed management plans are being developed to enhance resources on the 1,215-acre upland area north of Hwy 37. The plans for the upland area include providing habitat enhancements to re-establish the California red-legged frog, stream corridor enhancements, vernal pool enhancement, and control of non-native plants.

Currently, the North Coast Railroad (SMART) is doing work on the railroad tracks. They are clearing vegetation, replacing culverts, etc. Therefore, the restoration plan assumes the rail line will be active. This is consistent with the planning process to date.

The project includes a lot of public access. Five public access alternatives were evaluated. The biggest concern is the presence of the hunt club (the Blackpoint Sportmen's Association, a pheasant hunting club). As part of the development of the project plan, SLT worked hard to find an alternate location for the club (as a mitigation measure). However, providing an alternate location for the hunt club would require analyzing the potential impacts associated with each possible alternative location. As a result, the project is not providing an alternative location. Hunting will still be allowed in some form in the tidal marsh area once DFG takes over, but it will be waterfowl hunting.

There is also an optional element in the DEIS/R for connection between the Sonoma Baylands project and the Sears Point project. Ecologically, creating the connection would be ideal. However, the Sonoma Baylands levee is an engineered Corps levee, and the administrative burden associated with breaching the levee to the Sears Point project could be huge.

It has always been SLT's goal to transfer the property to public agencies once it has been restored. All of the property south of Hwy 37 will be transferred to the two agencies: USFWS will receive the seasonal wetlands, and DFG will receive the tidal marsh areas. USFWS can take title and honor the existing land leases, so the transfer process for the area between Hwy 37 and the railroad tracks is expected to begin shortly. The San Pablo Bay National Wildlife Refuge is currently working on the Comprehensive Conservation Plan (CCP) for the new property.

The intention is to add the tidal marsh areas to DFG's existing Tolay Creek project. The challenge associated with transferring this property is that DFG requires existing activities to be discontinued. There are currently two leases in the area that is to be converted to tidal marsh:

the hunting club and limited farming and care-taking activities. The leases expire in June 2009, and the plan is to start the property transfer process in July 2009. Construction of the tidal wetland restoration is slated to begin in August 2009, and is expected to require 2 – 3 years to complete.

The estimated cost for the restoration itself is $12 - $15 million, with almost $12 million being required for the tidal restoration. Much of the cost associated with tidal restoration is associated with reinforcing the levee for the railroad tracks. SLT has secured a $750,000 NAWCA grant for initial construction, and is hoping to receive $1 million from the USFWS National Coastal Wetland Restoration Grant Program. Other funding sources need to be identified.

Bay Trail Project Update (Cynthia Ripley, City of American Canyon)
Progress is being made with the design and funding of the Bay Trail segment on the east side of the Napa Plant Site project. A detailed project update will be provided at the next meeting.

Next Meeting
A date for the next NSMRG meeting has not been selected. An announcement will be sent out 4 weeks in advance of the next scheduled meeting.