



**CSMW Workshop Series  
Resource Protection Guideline Development  
Related to Coastal Regional Sediment Management**

**WORKSHOP #5  
13 JULY 2010  
10:00 AM – 3:00 PM  
SAN FRANCISCO ESTUARY INSTITUTE (SFEI)  
OAKLAND, CA**

**WORKSHOP OBJECTIVE**

“Information exchange and transfer; identify sediment management issues of concern relative to Bays, Lagoons, and Eelgrass habitats; obtain input on resource protection guideline development considerations for these habitats. Review relevant sections of Section 6 of draft BIA Document pertaining to Bays, Lagoons, and Eelgrass habitats and resources.”

Note: Agenda and PowerPoint presentation were posted to CSMW's web site ([http://www.dbw.ca.gov/csmw/BIA\\_workshop.aspx](http://www.dbw.ca.gov/csmw/BIA_workshop.aspx)).

**AGENDA AND DISCUSSION**

**1. Introductions and Background – Clif Davenport and Karen Green**

- Introductions of those in attendance and calling in/via webinar
- Review of workshop objectives and agenda

❖ **Background**

- Review of Agencies and Individuals Involved in Development of Resource Protection Guidelines
  - Sponsor Agencies
    - California Sediment Management Workgroup (CSMW)  
Co-Chairs: USACE and CA Natural Resources
    - Monterey Bay National Marine Sanctuary (NMS)
  - Contract Agencies
    - Beach Erosion Authority for Clean Oceans and Nourishment (BEACON)
    - USACE, Los Angeles District (Moffatt & Nichol contract)
  - Project Manager/Moderator
    - Science Applications International Corporation



- CSMW Mission Statement and Goals

- MISSION

- Conserve, restore, and protect California's coastal resources by developing and facilitating regional approaches to managing sediment imbalances.

- GOALS

- 1) To reduce shoreline erosion and coastal storm damages;
    - 2) restore and protect beaches and coastal habitat by restoring natural sediment supply from rivers, impoundments and other sources to the coast; and
    - 3) optimize the use of sediment from ports, harbors, and other opportunistic sources.

- Regional Sediment Management (RSM) in California (CA)

- CA Coastline is divided into littoral cells.
  - Sand has historically been impounded by Dams.
  - Sediment bottom line: The natural sediment supply to the coast has been reduced due to sea cliff armoring (20%), dams and debris basins (Santa Maria River, 68%; Santa Ynez River, 51%; Ventura River, 53%; Santa Clara River, 27%)
  - The road to solutions: CSMW is working to identify sediment-related problems due to dams, debris basins, dredging, sand and gravel in-stream mining, coastal structures, lack of project coordination, and inconsistent policies, procedures, and regulations. All operations need an environmentally safe approach.

- BIA Study & Workshop History

- CSMW held 8 public and 3 technical workshops in 2004 to gauge public's issues of concern related to biological resources in regional sediment management.
  - Based on response, CSMW commissioned Biological Impacts Analysis (BIA) study, which is titled "Review of Biological Impacts Associated with Sediment Management and Protection of California Biota."



- The document was reviewed by agencies and scientists over a two-year period with overall favorable response.
- Comments included requests to provide additional guidance relative to protection of coastal resources, which was the impetus of the current effort and workshop series.
- Today's workshop is the 4th in a series of 7, which are listed below.
  1. 2/18/10 Long Beach: Guideline Development and Agency Coordination.
  2. 2/24/10 Sacramento: Water Quality, Water-Sediment Resource Protection in Watersheds, and Resource Protection in Managed Areas.
  3. 6/16/10 Carlsbad: Habitats and resources associated with Sandy Beach, Dune/Strand, and Sandy Subtidal.
  4. 7/1/10 Moss Landing: Habitats and resources associated with Rocky Intertidal, Rocky Subtidal, Surfgrass, and Kelp Beds.
  5. 7/13/10 Oakland: Habitats and resources associated with Bays, Lagoons, and Eelgrass.
  6. 7/14/10 Eureka: Habitats and resources associated with Bays/Wetlands and Commercial Fisheries.
  7. 8/4/10 Orange County: Impact Assessment, Monitoring, and Database Tools.

#### ❖ Work Products

- BIA Study: draft report will be finalized early next year based on received review comments and input received during the workshop series.
- Abbreviated User's Guide: will provide condensed version (key topics) and cross-references to BIA report and the developed Resource Protection Guidelines.
- Work Plan: received recommendations or suggestions that would require additional or separate work efforts will be summarized in an action plan.

#### ❖ User's Guide and Resource Protection Guideline Organization

- Primary objective is to provide streamlined version of the BIA document that will be of practical use to variety of end users.
- The document will include overview summaries of sediment management activities, project types, impact issues by project phase, monitoring, and performance evaluation.



- The guide will be habitat-based and presented with a flow path approach (resources, impact issues, protective measures, monitoring considerations).
- Resource Protection Guidelines will include the following types of information: issue statement, guideline description, rationale, references (as applicable), and effectiveness considerations.
- Cross reference tables will be provided that organize guidelines by habitat, species group, impact type, project phase. In addition, a cross reference table will be provided to the BIA document for more detailed discussions of relevant topics.
  - Comments or Questions:
    - a. Is draft report available? *Response:* It is not publicly available yet, but may be released on a case-by-case basis by CSMW (via Clif) with understanding that it is draft and subject to revision. Anyone interested in obtaining the draft report should contact Clif directly.
    - b. Is Chapter 6 (Mitigation Measures) still under revision? *Response:* Yes, and that section will incorporate relevant input from the current workshop effort to develop resource protection guidelines.

## 2. Bay and Lagoon Habitats

- Topics
  - Issues of Concern, BMPs, Mitigation Measures, Identify guideline topics of particular interest, Discuss guideline considerations to improve resource protection of beneficial uses, Identify critical data gaps.
- Sediment Management Activities
  - Maintenance Dredging or Excavation  
(Dredge Site, Discharge Site).
    - Beneficial Reuse  
(Beach Nourishment, Shoreline Protection).
    - Coordination  
(SF BCDC, USACE, EPA, Resource Agencies, State Lands, CCC).
- Comments or Questions:
  - a. Slide 34 - add wetlands creation under beneficial reuse.

- Listed Species and Species of Special Concern
  - Comments or Questions:
    - a. Karen inquired whether there are additional or specific species of concern in the San Francisco Region? *Response:* Green sturgeon, long fin smelt, and delta smelt. Shorebirds, Belding's savannah sparrow, Salt marsh harvest mouse, and marine mammals, including harbor porpoise and gray whales – there has been increase in number of sightings of gray whales feeding in San Francisco Bay over recent years.
    - b. Long Fin Smelt is a challenge for projects in the Bay. There is no specified environmental window; applicants must provide assessment of whether or not there will be impacts. *Follow-up Action:* Obtain guideline from Carolyn Box.
    - c. Nesting Bank Swallows are a species of concern near Ocean Beach. They nest in the bluff so concerns include disturbance and placing material on habitat (e.g., rock revetment along bluff to control erosion).
    - d. Dunes are concern; grain size compatibility and species.
    - e. Native Oyster is a species of concern.
    - f. Karen asked what happens if project area includes overlapping environmental windows. *Response:* Work window gets shorter. If there is need to work outside approved window, formal consultation is required.
    - g. Consultation is required if project area is located near a marine mammal haul out site.
  - Bay and Lagoon Habitats of Concern
    - Softbottom subtidal, sandy beach, tidal flat, eelgrass meadow, kelp bed, rocky riprap, and marsh-wetland.
    - Comments or Questions:
      - Slide 36 - Also include rocky intertidal, rocky outcrops, and hard artificial substrates (piers, wharves). Submerged vegetation also includes Sago pondweed, wigeon grass, macroalgae – suggest a general category such as SAV (submerged aquatic vegetation).

- What are exotic species of concern? *Response:* *Ascophyllum*, *Undaria*, non-native eelgrass, invasive cordgrass, Japanese wireweed, etc. *Follow-up Note:* See exotic invasions SFEI website.
- Maintenance dredging is limited by project area work windows and species types present.
- Karen asked if buffer distance still used for pelicans, although they are now de-listed. *Response:* Believe there is a 5-yr window for monitoring of delisted species. Communal roosts are protected.
- Potential dredging impacts include direct effects of sand removal and operation of equipment (e.g., remove invertebrates and habitat, entrainment); indirect effects such as disturbance, noise, turbidity, and sedimentation; and potential for accidental contaminant leaks and spills.
  - Comments or Questions:
    - a. Slide 39 – also include potential for introduction of invasive species, visual disturbance, and contaminant exposure (resuspension). *Comment Note:* It was clarified that document addresses effects in context of “clean” sand.
    - b. Interest in guidelines relative to contaminants – what to do when have contaminant concerns. Even if assume sediments that are beneficially reused are clean – in San Francisco there is potential for exposure to contaminants with almost any dredging project.
    - c. Add use of sand to cap contaminated sites as another potential type of beneficial reuse.
    - d. Concern expressed that some agencies such as RWQCB are viewing sediment as a waste – becoming more challenging for beneficial reuse. This is something that hopefully will be addressed in the regional sediment management plan to be prepared for the bay. It was clarified that there is inconsistency in how this is being viewed by different regional boards and more education was needed relative to beneficial reuse of dredged material.
  - Sand Placement Impacts include direct effects of sand placement and operation of equipment (e.g., bury, crush, smother invertebrates); indirect effects such as disturbance, noise, turbidity, and sedimentation; and potential for accidental contaminant leaks and spills.

- Comments or Questions:
  - a. There is always some level of man-made chemicals present in sediment. Is there a completed study that provides good reference of sediment management? *Response:* Los Angeles Contaminated Task Force is example. *Follow-on Note:* <http://www.coastal.ca.gov/sediment/sdindex.html>.
  - b. We need to identify beneficial uses of sediment better? We need a better process for determining what impact contaminated sediment is having on receiving environments. Thresholds for levels of contamination are not easily understood, which causes a lot of inconsistencies with permit requirements.
- Invertebrate Recovery
  - Studies indicate that time associated with invertebrate recovery are rapid for frequently disturbed navigation channels (~1-6 months) and slower for areas infrequently disturbed.
  - Recovery may be enhanced if:
    - Minimize change to bathymetry and hydrodynamics.
    - Minimize change to substrate characteristics of dredge and discharge areas.
    - Avoid stockpiling of dredged material below the ordinary high water line.
- Comments or Questions:
  - a. Long Term Management Strategy (LTMS) for San Francisco currently being updated.
  - b. USACE San Francisco District is preparing a programmatic consultation with NMFS to assess the possibility of reseeding areas overtaken with invasive species with native benthic species. A pilot study was done to assess feasibility. There are efforts elsewhere where seeding is taking place – see <http://www.reclamthebay.org/>.
  - c. Rate of recovery depends on hydrodynamics in the local area.
  - d. Would be interested in more discussion of dredging of contaminated areas.
  - e. Will the document provide recommendations for sediment management activities? *Response:* The report describes different types of activities but does not provide specific recommendations.
  - f. Subtidal Habitat Goals recently prepared – collaborative effort BCDC, NOAA, Coastal Conservancy, SF Estuary Institute - Draft

50 year plan that provides vision for protection, restoration and research of subtidal system. Provides precautionary Approach and identifies data gaps. Baseline considered 2010. Appendices summarize existing conditions, acreages identified for restoration, management plan for creosote derelict pilings, exotic stressor narratives (contaminants, suspended sediments, artificial structures). Final document in November 2010. Will include web-based interactive GIS.

g. Subtidal Habitat Goals Integration:

- The “Baylands Ecosystem” document provides regional plan for tidal wetlands in SF Bay.
- The “Upland Habitat Goals Project”, managed by the Bay Area Open Space Council, focuses on stream, riparian, upland habitats, native plants.

h. There are a lot of data gaps when assessing actual turbidity and sedimentation impacts on invertebrates. This also can be very site specific.

o Dungeness Crab

- Issues of concern:
  - Damage, entrainment, sedimentation
- Protection Considerations:
  - Observe environmental windows during construction
  - Utilize measures to reduce turbidity/sedimentation near nursery areas (i.e. silt curtains, operation controls)
- Comments or Questions:
  - a. Sand waves promote migration in San Francisco Bay.

o Lobster

- Issues of concern:
  - Damage, sedimentation, turbidity
  - Reduction in living space (e.g., reduced reef heights)
- Protection Considerations
  - Avoid degradation of rocky and surfgrass habitats
  - Avoid night-time dredging near breakwaters or riprap during the closed fishing seasons (1<sup>st</sup> Thursday after March 15 until Friday preceding first Wednesday in October).

- Tidewater Goby
  - Issues of Concern:
    - Unnatural breaching of lagoon inlets, increased tidal mixing, sedimentation
  - Protection Considerations:
    - Conduct pre-construction surveys
    - Relocate prior to construction
    - Use source control measures to minimize sedimentation of habitat.
  - Comments or Questions:
    - a. This is issue for San Francisco – occur in coastal lagoons, Tomales Bay, ditches of restoration areas.
- Green Sturgeon
  - Issues of concern are disturbance, forage reduction
  - Protection Considerations:
    - Coordinate with NMFS if within critical habitat.
    - Minimize changes to hydrodynamics and substrate associated with dredging to promote benthic recovery.
    - Avoid dredging near inlets to freshwater tributaries during migration to spawning grounds, if present.
  - Comments or Questions:
    - a. NMFS is developing a programmatic Biological Opinion for dredging. There are issues associated with entrainment, hinderance to migration, foraging, habitat degradation. Contact: David Woodbury Santa Rosa Office
    - b. The adult populations move throughout the Bay but we don't know much about juvenile populations.
- Smelts
  - Issues of Concern
    - Disturbance and forage reduction.
  - Protection Considerations:



- Delta Smelt – Consult with FWS, DFG to identify appropriate protective measures.
- Longfin Smelt - Schedule within environmental work window approved for area.
  
- Comments or Questions:
  - a. Longfin – DFG wrestling with take issues - environmental window under revision. Hydraulic dredging is more of an issue than clamshell dredging. Temperature and depth are important considerations.
  - b. Currently, applicant must make determination of impacts. No guidance is available on assessment.
  
- Salmonids
  - Issues of Concern
    - Entrainment, Sedimentation, Turbidity, Noise, Lights
  - Protection Considerations
    - Schedule within approved environmental work windows.
    - Avoid hydraulic pumping operations if the cutterhead or dragarm is within 3 ft of the bottom.
    - Avoid night-time dredging in areas of salmonid outmigration.
    - Shield lights in areas of salmon migration.
    - Minimize sedimentation and turbidity of eelgrass meadows used as nursery habitat by salmonids.
    - Maintain open inlets to tributaries used by salmonids.
  
- Comments or Questions:
  - a. Are you suggesting active maintenance of the inlets or that you don't plug inlets? Should include language that you should not obstruct inlets or open inlets where they're intended to be naturally closed. *Response:* Agree, will clarify terminology.
  - b. Most projects are conducted during environmental windows. In a few cases, projects consult to work outside windows; e.g., Valero project is able to dredge year round and abide by windows per the resource agencies.



- c. When dredging occurs outside dredge windows, are there examples of consultations/measures taken to mitigate? *Response:* Could check Port Sonoma consultation or Valero consultation.
  
- o Pacific Herring
  - Issues of Concern: damage, sedimentation, turbidity
  - Protection Considerations:
    - Should schedule within approved environmental work windows.
    - Minimization of sedimentation and turbidity of eelgrass meadows.
  - Comments or Questions:
    - a. There is language in permits that if spawning is observed, halt construction.
    - b. Other issues of concern include potential contamination spills or entrainment.
  
- o Least Tern
  - Protection Considerations:
    - Schedule outside breeding season if within 3,000 ft of nest sites.
    - Consult with USFWS if project within 1 mile of nesting colony during breeding season.
    - Use measures to reduce turbidity.
    - Direct or shield lights away from nest sites.
    - Maintain near surface water clarity in the project area.
    - Maintain ambient noise levels or <60 dB at nest sites.
  - Comments or Questions:
    - a. Environmental window for San Francisco Bay only applies to maintenance dredging/disposal. Other types of projects need to coordinate with DMMO (Dredging Material Management Office) and informally or formally consult with appropriate resource agencies.
    - b. 60 dB seems to too loud a level of SF Bay.
    - c. Recommend protective measures start with need to consult. This is true for salmon, green sturgeon, and other species as well.



d. If project is within San Francisco Bay, refer to DMMO at the San Francisco District USACE. Appendix I of the LTMS includes Best Management Practices.

o Snowy Plover

▪ Issues of Concern

- Disturbance and turbidity.

▪ Protection Considerations:

- Schedule outside breeding season if within 1,500 ft of nest sites.
- Consult with USFWS if project is within critical habitat.
- Use measures to minimize invertebrate recovery.
- Maintain ambient noise levels or <60 dB at nest sites.
- Direct or shield lights away from nest sites.

➤ Comments or Questions:

- a. Other issues of concern include trash and attraction of predators.
- b. Another protection consideration is not disturbing or maintain a wrack line.
- c. The noise level seems high for northern California.
- d. Light is a critical issue at nesting & overwintering areas.
- e. San Francisco Bay Bird observatory is using cameras to observe impacts of light levels on Snowy Plover nest sites at South Bay Salt Pond Restoration.
- f. Buffer distance to nest sites depends on local conditions. There may be different considerations depending on time of year and location.
- g. Predator control and reduction should be monitored. USFWS has nest enclosures they recommend for use.

➤ Clapper Rail

- Issues of Concern:

- Disturbance, sedimentation.

- Protection Considerations:

- Consult with USFWS if species has potential to occur.
- Buffer distance to attenuate noise < 60 dB or ambient at nest sites during the breeding season.



- Minimize access routes in marsh areas according to a pre-approved vehicle route plan.
- Avoid removal of [native] cord grass
- Any removal of cord grass [invasive] will be in accordance with a pre-approved plan and will be conducted during lower tidal stages to expose plant base.

➤ Comments or Questions:

- a. Environmental window outside nesting season.
- b. Invasive cord grass species is of concern.
- c. Project examples with mitigation measures for clapper rail include Restoration in Tomales Bay – Giacomni Marsh, and Bair Island Restoration within the Don Edwards San Francisco Bay National Wildlife Refuge.

➤ Marine Mammals

▪ Issues of Concern:

- Disturbance, turbidity

▪ Protection Considerations:

- Use measures to reduce turbidity (e.g., silt curtains, operation controls, as appropriate).
- Minimize use of construction equipment within 1,000 feet of seal haul-outs or within 2,000 feet if pups are present.
- Buffer distance to attenuate noise < 60 dB or ambient near areas of concentration.

➤ Comments or Questions:

- a. For breeding harbor seals there is an environmental window near rookeries (Rider's Island, Redwood Creek, Bair Island).
- b. San Rafael and Bay Bridge Seismic Retrofit projects included measures to protect marine mammals and fishes from noise (e.g., bubble curtain, which is not applicable to sediment management projects), may include some relevant information.
- c. San Francisco Bay Joint Venture is a good resource regarding habitat restoration. Goals are to protect, restore, increase and enhance all types of wetlands, riparian habitat and associated uplands throughout the San Francisco Bay region to benefit birds, fish and other wildlife.



- d. Incidental take authorization or letters of authorization (LOA) or incidental harassment authorization (IHA) must be obtained as applicable.
  - e. May wish to contact Monica DeAngeles (NOAA, San Diego ) for more information regarding protective measures.
- o Eelgrass
    - Issues of Concern:
      - Sedimentation, disturbance, turbidity
    - Protection Considerations:
      - Avoid construction in eelgrass meadows.
      - Prepare anchor, dredge, and pipeline plans to avoid or minimize potential disturbance near eelgrass.
      - Minimize reduction of near bottom light levels to <20% of surface irradiance. Avoid <20% of surface irradiance for period greater than 2 weeks.
    - Comments or Questions:
      - a. CA eelgrass mitigation policy from NOAA is in internal review. Bob Hoffman leading the effort.
      - b. For EFH, NMFS requires no net loss of eelgrass plants.
      - c. SF Bay Subtidal Habitat Goals – identify potential eelgrass habitats. Use eelgrass mapping & predictive model of where eelgrass could occur (Merkle & Associates). [Biomitigation.org](http://Biomitigation.org) (Caltrans) has relevant reports.
      - d. NOAA Santa Rosa - 3:1 mitigation ratio – 1.2 plants per every plant loss – discourage any change in light levels (shading). Protective measure includes 250 m buffer (or BMP to reduce turbidity). Zimmerman Study was the reference for the light levels.
      - e. Pre- and post-construction eelgrass surveys conducted to verify no impacts or need for mitigation.
      - f. EFH programmatic – flow chart – indirect effects. Laura (NOAA) will provide copy.
      - g. Dwarf eelgrass - non-native, invasive eelgrass – problem in Humboldt Bay, where eradication efforts were initiated in 2003.
  - o Types of BMP's and Effectiveness Considerations

Several types of operational controls and other BMPs may be used to control turbidity during dredging.

- Comments or Questions:
  - a. Silt curtains – typically recommended if eelgrass or another sensitive habitat is in the vicinity.
  - b. Best Management Practices – Carolyn (BCDC) and Fari (USACE) will check if there is standard language that is typically included in permits.
  - c. Beth Christiansen is regional POC for water quality in the SF Bay.
- Water Clarity
  - Comments or Questions:
    - a. Example slide not too relevant for SF Bay where at low tide, 1/3 of Bay is exposed and another 1/3 is less than 6 feet in depth.
    - b. Turbidity naturally varies seasonally and depends on wind. Variable in different areas of bay based on local conditions.
    - c. David Schoellhamer – USGS – long term suspended sediment monitoring – the pulse of the estuary
    - d. Some areas of bay are erosional with sediment deficit due to scouring.
    - e. A two day workshop with BCDC and USGS (Sediment Dynamics in SF Bay Workshop) was held recently to identify data gaps/needs. Minutes from the workshop should be available soon.
    - f. Does source of sediment influence resource protection guidelines?  
*Response:* Yes, as offshore dredging has different impacts than obtaining sand from upland areas.
    - g. There is need of turbidity thresholds relevant to marine resources and birds.
    - h. Interested in sand retention being included in document
    - i. Living shorelines and PEM's (Pressure Equalizing Modules) should be mentioned in the Draft Report. *Response:* PEM's are mentioned on CSMW website but scientists haven't been able to prove their effectiveness. NMS Monterey Bay had PEM's as an alternative but eliminated them due to lack of proven science.



### 3. Workshop Process & Products & Next Steps

- Next Steps
  - Summarize received Input.
  - Draft Resource Protection Guidelines will be reviewed and finalized based on received comments.
  - Guidelines will be incorporated into the Abbreviated User's Guide.
  - The draft BIA document will be finalized base on received comments.
  - A Work Plan will be prepared for recommended additional efforts.
- Next Workshop: July 14<sup>th</sup> @. Humboldt Bay Harbor Recreation & Conservation District, Eureka.

*ADJOURN*



## WORKSHOP ATTENDEES

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