

**HUMBOLDT BAY EELGRASS MANAGEMENT PLAN  
COLLABORATIVE PARTNERS MEETING #3  
MEETING MINUTES  
Harbor District Conference Room - 601 Startare Drive, Eureka  
February 6, 2017 9:00 – 12:00**

**ATTENDEES**

Whelan Gilkerson (Merkel & Associates)  
Keith Merkel (Merkel & Associates)  
Kathy Rogers (Merkel & Associates)  
Vanessa Blodgett (Planwest/Harbor District)  
George Williamson (Planwest/Harbor District)  
Patrick Higgins (Humboldt Bay Harbor District)  
Kasey Sirkin (ACOE)  
Bianca Hayashi (County of Humboldt Public Works)  
Greg O'Connell (SHN)  
Jack Crider (Humboldt Bay Harbor District)  
Emily Benvie (City of Arcata)  
Matt Goldsworthy (NOAA/NMFS)  
Tim Nelson (Wiyot Tribe)  
Erik Schlagenhauf (Hogg Island Oyster Company)  
Jon Finger (Hogg Island Oyster Company)  
Emily Teraoka (Stillwater)  
Rebecca Garwood (CDFW)  
Joe Tyburczy (California Sea Grant Extension)

Lauren Garcia (California Coastal Commission) – on phone  
Cassidy Teufel (California Coastal Commission) – on phone  
Jennifer Kalt (Humboldt Coast Keeper) – on phone

**WELCOME AND INTRODUCTION (*Vanessa Blodgett, Planwest/Harbor District*)**

- Plan Outline and Key Components
- Up-front Project Checklist & Guidance – How to determine whether a project may impact eelgrass and what to do about it
- Preliminary Inventory & Evaluation of Eelgrass Mitigation/Restoration Opportunities
- Regulatory Tools & Programs: Capturing Value within Available Regulatory Framework & Desirable Management Planning Structure

**HUMBOLDT BAY EMP PLAN OUTLINE AND KEY COMPONENTS (*Whelan Gilkerson, Merkel & Associates*)**

- Humboldt Bay Eelgrass Comprehensive Management Plan (Document)
  - Introduction
    - Description of Humboldt Bay (Physical Geography, Natural Resources, Port/harbor facilities critical to the Bay)
    - Humboldt Bay Eelgrass in context  
California, Pacific Flyway, and under SLR
    - Need for Plan

- CEMP, poor history of mitigation performance, high prescriptive planting ratios
- Eelgrass believed near carrying capacity in Bay
- Regional economy drives programmatic action
  - Plan overview
    - Plan purpose
    - Plan covers entire system
    - Core focus area
- Humboldt Bay Eelgrass
  - Eelgrass distribution, abundance, and wetland/ecological functions in Humboldt Bay
    - Baseline assessment – 2009 Benthic Habitat plus supplemental sidescan survey Fall 2016
  - Threats to eelgrass/fill placement
    - Watershed related impacts
      - Fine sediment loading-light attenuation and sediment aggradation, eutrophication; dredging
      - Boat wake; shading, circ patterns, storm water runoff
      - Mariculture activities
      - Others?
    - Sea level rise and ocean acidification
      - Only large system with substantial capacity for shoreward transgression with SLR
      - Potential buffering capacity for ocean acidification
      - Sediment trapping and mediated aggradation
- Comprehensive Management Plan Framework
  - Eelgrass Mitigation Policy Standards (CEMP) and CMP Structure
  - Plan Implementation
    - Harbor District Dissemination of Information EMP website
      - Pre-project Checklist and Guidance
      - KMLs depicting known benchmark eelgrass coverage
      - Depth range in the bay
    - Inventory, evaluation, and prioritization of mitigation/restoration opportunities
    - Consider approach for valuation of restoring former tidelands, increased tidal prism to enhance eelgrass and salt marsh challenges in quantifying gains
    - Regulatory/permitting mechanism(s)
    - Promote/establish system-level long-term monitoring
      - Understand interannual variability in eelgrass abundance and distribution as an indicator of overall system health and the effects of climate change on the Humboldt Bay Ecosystem
      - Enhance understanding of eelgrass for management planning and implementation
- Humboldt Bay Eelgrass Management
- Humboldt Bay Eelgrass Management Webpage
  - Component of Harbor District Website
  - Additional Resources and Appendices
    - Pre-project checklist
    - Guidance documents
    - Existing eelgrass data

## HOW TO DETERMINE WHETHER A PROJECT MAY IMPACT EELGRASS AND WHAT TO DO ABOUT IT

- Local Resources
  - EMP, existing information, early contact with agencies and specialists

- EMP Implementation & Project Checklist
  - Plan distribution and public/project applicant engagement (Harbor District)
  - Agency process support and dissemination
  - Project Checklist & guidance component to facilitate education and communication

*Are we thinking the scale of the KML use will be at the project level or baywide?*

*Will there be something within the plan that will help people use the KMLs on Google Earth? Need to make sure it is user friendly to be effective.*

*Caution regarding regional data set*

*Harbor District is lead on implementation*

*Agencies need to use the same tools and provide support*

#### **PRE-PROJECT EELGRASS CHECKLIST AND UP FRONT GUIDANCE FOR PROJECT APPLICANTS**

- Pre-project Guidance & Checklist as stand-alone Appendix and node within EMP webpage
- Provide kml/kmz overlays of baseline eelgrass distribution (2009 NOAA Benthic Habitat Data and Supplemental 2016 hydroacoustic survey data)
- Highlight benefits of preliminary survey
  - (improves procedural efficiency, informs project design, potential cost savings)

*Make Harbor District's job a little easier*

*Help applicant be informed*

*Eases the permitting process*

#### **CHECKLIST ELEMENTS**

1. Project-Area of Potential Effect?
2. Checklist/questionnaire
  - New Projects
  - Repair/Maintenance Projects
  - Construction Activities
  - Operational Activities
3. If 'yes', preliminary eelgrass survey recommended

*Defining APE really critical. It is important for the agencies and project proponent that it be big enough to capture any potential impacts without being too big.*

*Reference site should be identified up front*

*Better sense of the roadmap up front*

#### **CHECKLIST/QUESTIONNAIRE**

*New Projects -*

- Is the project located within 100 feet of previously mapped (known) eelgrass habitat?
- Will any construction or new operational traffic occur within the vicinity of existing eelgrass?
- Is any portion of the project located in an area with depths ranging from -10 to +4 feet MLLW?
- Does the project result in new cover, shading or other form of light reduction of open water areas?
- Is the project anticipated to affect wind or tidal circulation patterns within the bay?
- Could the project affect ambient water clarity or temperature?

- Does the project result in any placement of fill, including shoreline armor?
- Is the project anticipated to lead to an increase in boat traffic that could affect nearby eelgrass habitat through grounding, prop scarring, wake, or shading impacts?

*Maintenance/Repair Projects and Construction Activities*

- Is project construction likely to increase turbidity? To what extent and for what duration?
- Will construction require the use of a barge or other vessel that may temporarily impact the bay floor (e.g. spud poles, anchoring, prop scarring, etc) within known eelgrass habitat or within depths ranging from -10 to +4 feet?
- Will construction require the use of turbidity curtains in proximity to eelgrass habitat?
- Will project construction result in temporary shading from moored/anchored working vessel(s)?

*Do you anticipate some of these questions overriding others?*

*Possibility of structuring this as a flowchart*

*Don't want to over or under look in planning process*

**ADDITIONAL RESOURCES**

- Google Earth – Kml overlays of benchmark eelgrass distribution
- Provide project applicants with basic understanding of eelgrass habitat in relation to project area

**PRE-PROJECT GUIDANCE – PRELIMINARY SURVEYS**

- High accuracy surveying/mapping critical to assessing and communicating eelgrass-project interactions
- For a preliminary survey-mapping is the focus
- Is eelgrass likely to be affected by my project? How much? (reference site may or may not be required, turion density data not required)
- Survey Methodology-Driven by project scale, depth distribution, eelgrass abundance

*Baseline survey does not remove need for pre-con survey*

**RECOMMENDED EELGRASS SURVEYING METHODS**

Driven by project scale, depth range, eelgrass abundance

Depth Range	Project Scale	Recommended Survey Method
Intertidal (-1 to +4 ft):	0-1,000 m <sup>2</sup>	Total station/sub-meter GPS
	0-3,000 m <sup>2</sup>	Total station/sub-meter GPS/low-altitude
Subtidal (-10 to -1 ft):	3,000 m <sup>2</sup> -100 ha	Low-altitude UAV
	50 ha+	Manned aircraft
	0-1,000 m <sup>2</sup>	Total station/sub-meter GPS w/ diver
	1,000-2,000 m <sup>2</sup>	Sub-meter GPS/single-beam or SS sonar
	2,000 m <sup>2</sup> +	SS sonar

*These are suggestions – guidance only*

*Need to meet accuracy standards set in CEMP*

*Will there be a repository for the information as it comes in?*

*Seems someone should be tracking when projects are happening and what the estimate on eelgrass impacts is*

*Important to be careful with developing mitigation credit when using grant funding*

*Do you envision credits becoming a commodity?*

#### **EARLY OFF RAMP FOR 'NO EELGRASS' FINDING?**

- Analysis/Findings from Preliminary Survey-key
  - Eelgrass present and needs to be addressed
  - Eelgrass absent but site it suitable, needs pre-con survey
  - Eelgrass not present and not likely, no further work required
- Inform need for further eelgrass mitigation/monitoring program development
- Criteria for consensus

*Don't want to force someone to do unnecessary surveys*

*Save applicants money*

*Save agencies time*

#### **POTENTIAL MITIGATION/RESTORATION OPPORTUNITIES**

- Spatial and temporal factors of mitigation and conservation
- Historic changes in Humboldt Bay and effects on eelgrass
- Eelgrass habitat/use differences within Humboldt Bay
- Mitigation/restoration site prioritization, opportunities, scale
- Removal of derelict infrastructure
- Substrate remediation
- Mitigation transplanting and site development
- Synergistic restoration of former tidelands
- Experimental transplanting without site manipulation

*Not included in list is the idea of filling or dredging to create eelgrass habitat*

*Lowering area rather than filling usually more effective*

#### **SPATIAL AND TEMPORAL FACTORS**

- Area of eelgrass impact relative to site's capacity to develop additional habitat
- Ownership/development/redevelopment considerations
- Understanding near-term needs (e.g. mitigation for project-related impacts) vs long-term trends) e.g. legacy effects and sea level rise)

#### **HISTORIC CHANGES IN HUMBOLDT BAY AND EFFECT ON EELGRASS**

- Eelgrass habitat presumed to be largely stable through time
- Early surveys: Salt marsh habitat well represented (e.g. 1870), eelgrass not depicted but described in survey records
- A historic look at Humboldt Bay

*Thank you to Aldaron Laird for HB Historical Atlas data set*

#### **REVIEW OF PRELIMINARY INVENTORY OF EELGRASS SLIDE**

- Inventory limited to current bay footprint

- Opportunities include:
  - Debris removal
  - Substrate remediation
  - Site modification for bare-root transplanting (e.g. sand shoal)
  - Experimental (unmanipulated site) transplanting
- Additional small-scale opportunities at project site level

*Stayed outside of Coast Seafood land lease*

*Potential conflicts in land use in the North Bay*

*Humboldt Bay needs plan regardless of Coast Project*

*Coast has opportunities for their own project needs within their leasehold*

#### **WORKING WATERFRONT EELGRASS MITIGATION AND RETORATION OPPORTUNITIES**

- Debris removal-principal opportunity within developed working waterfront
- Piling fields, wharves, derelict floats, other legacy shoreline infrastructure
- High likelihood of success
- Good strategy for mitigating smaller impacts at the site level
- Credit for 'footprint' effect and relatively high cost of removal limits scale of opportunity

#### **SOUTH BAY EELGRASS MITIGATION AND RESTORATION OPPORTUNITIES**

- Debris removal and sand shoal sites – primary opportunities in South Bay
- Experimental transplant potential at King Salmon Cove-wave energy affects seed retention, transplants more likely to persist
- Sand Shoal sites – reflect a legacy of shoreline modification, armoring, and dredging-related changes in Bay morphology

#### **CHARACTERIZING SUBSTRATE CONDITIONS**

- Understanding differences between sand flats or shoals and mudflats
- Distribution related to location and energy gradients in wind/wave exposure
- Both capable of supporting eelgrass given suitable energy conditions
- Differences in benthic species richness/abundance and wildlife use

#### **SUBSTRATE REMEDIATION TO RESTORE HISTORIC EELGRASS HABITAT**

North Bay-Legacy bottom hardening site

- Outside current mariculture operations
- Approximately 1/3 – 1/2 acre of eelgrass restoration capacity-patchy eelgrass surrounds site
- Landowner receptive to conservation easement
- Excavation vs dredging

Travel Lift

- Silted in over time
- Now at an elevation conducive to growing eelgrass
- Large enough site that you may need to look offsite to offset the impact
- Speaks to the needs of the plan

Caltrans Mitigation Site for Impacts Related to the Safety Corridor

- Historically provided salt marsh habitat
- Fringing eelgrass habitat as of 2009
- Could bring the elevation up, which would benefit salt marsh and eelgrass

## **EMP PROJECT TRACKING AND MITIGATION CREDIT/CAPTURE**

- Project Tracking
- Humboldt Bay EMP (CMP) as a mechanism for capture
- Ledger mechanism to standardize accounting

*CDFW/NMFS currently tracking*

## **MITIGATION CREDIT/CAPTURE**

- Potential incentive for maintaining the tracking system: HD retains the surplus that may result from successful project-level mitigation, shared value, recuperated costs?
- In lieu of a mitigation bank, CMP and database could provide an initial 'market' function
- Capturing value within the regulatory frameworks available and desirable management planning structure
  - In lieu fee program
  - Mitigation Bank
  - RGPs
  - Other

*Currently, all projects under CEMP are facing the 4.81 mitigation ratio  
Ratio would come down if you have credits already available*

*How do you account for the inconsistency of eelgrass year to year in your tracking?*

*Discussion regarding regional monitoring programs using subsampling, establishing benchmark years, creating frequency distribution data over time*