Invitation to discuss
Coastal Regional Sediment Management Plan for the Eureka Littoral Cell

Humboldt Bay Harbor, Recreation and Conservation District
601 Startare Drive, Eureka, CA 95501 (Woodley Island)
July 27, 9:00 am - Noon

Agenda:
9:00 Introduction of attendees
9:15 Introduction of the project and methodology
10:15 Break
10:30 Issues particular to this study area
11:00 Participant questions and comments
12:00 Adjourn

Overall Scope of the Project
The scope of the project is to prepare a Coastal Regional Sediment Management Plan (CRSMP) for the Eureka Littoral Cell, and provide assistance in facilitating communication between the Coastal Sediment Management Workgroup (CSMW), Relevant Corps Districts (San Francisco and Los Angeles) and the Humboldt Bay Harbor, Recreation and Conservation District (HBHRCD), as well as assist in coordination with the various stakeholders involved in the study.

A Coastal Regional Sediment Management Plan is a comprehensive guidance and policy document discussing how regional sediment management can be implemented in an expeditious, cost-effective, and resource-protective manner. The plan typically incorporates a multitude of components including:

- Engineering
- Environmental
- Economics
- Recreation
- Policy
- Legal
- Real Estate
- Regulatory
- Financial considerations
- Physical processes and barriers
- Coastal watershed land-uses
- Current and projected watershed developments

(The meeting room is wheelchair accessible. Accommodations and access to Harbor District meetings for people with other handicaps must be requested of the Director of Administrative Services at 443-0801 five (5) working days in advance of the meeting.)

Objectives
The objectives of the plan are to:

1. Provide a strategy to restore and maintain shoreline structures;
2. Sustain recreation and tourism;
3. Enhance public safety and access;
4. Restore coastal sandy habitats through the region/littoral cell; and
5. Address areas with excessive sediment.

Data Collection & Compilation
This task includes reviewing and summarizing available data and information and compiling it in a geo-referenced ArcGIS, Microsoft Access database, or narrative formats. Information to be collected for the Eureka Littoral Cell coastal area includes relevant coastal studies describing physical processes in the region, location of coastal erosion hotspots, location of sensitive habitats and biota, location of potential sediment sources (e.g., harbors, dams, and opportunistic offshore borrow areas), location of potential sediment receiver sites (e.g., wetlands, beach nourishment, etc.), and data related to the physical characteristics of the sediment and the potential source areas and receiver sites.

An annotated summary of the reports reviewed will be prepared and provided in Excel or Word format. GIS shape files for data compiled from various sources will be provided in electronic format.

Data will be obtained from the CSMW, library databases, SF District Corps, the Humboldt Bay Harbor District, **and from stakeholders.**

There will be two additional meetings before the end of the year to discuss the plan as it is developed.

REMINDER FOR TUESDAY, JULY 27th MEETING
Please call 826-5421 to leave a message with any special needs or concerns.

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Coastal Regional Sediment Management Plan for the Eureka Littoral Cell

July 27, 9-Noon
Humboldt Bay Harbor District Office on Woodley Island

MEETING AGENDA

9:00	***Introductions***
9:15	***RSM Program And CSMW Objectives*** ***John Dingler and Cliff Davenport (CSMW)***
9:45	***Prior Work / Local Issues*** ***Adam Wagschal and David Hull (HBHRCD)***
10:15	***RSM Schedule / Desired Input From Stakeholders*** ***Dilip Trivedi & Betsy Watson (Moffatt & Nichol Team)***
10:30	***Break***
10:45	***Focused Discussion/ Potential Breakout Groups***
12:00	***Adjourn***

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COASTAL REGIONAL SEDIMENT MANAGEMENT PLAN (CRSMP)
EUREKA LITTORAL CELL, HUMBOLDT COUNTY
Meeting 1 Notes

Date: July 27, 2010 9AM

Location: Humboldt Bay Harbor, Recreation, and Conservation District Board Room, Woodley Island, Eureka, CA

Attendees: Attendance List attached

Moderator: Elizabeth (Betsy) Watson, Humboldt State University

Note Taker: Jacqui Brennan, Humboldt State University

Agenda:
- Introductions
- RSM Program And CSMW Objectives
- Prior Work / Local Issues
- RSM Schedule / Desired Input From Stakeholders
- Break
- Focused Discussion On Issues particular to this study area

Meeting Summary

1. RSM Program and CMSW Objectives

Presentation by John Dingler, Lead Planner, USACE San Francisco District

- CRSMP Framework
- Overall Goal of CRSMP – regional (not individual site specific).
- Concerns – Habitat, Sediment, TMDLs, Dredge Disposal, Coastal Processes, Shore Protection, Pollutants, and more (See PowerPoint for expanded list).
- Deliverables – Data Gathering and Compilation Report, Draft CRSMP Plan, Final CRSMP. Outreach efforts to stakeholders throughout.
- CRSMP Study Questions/Priorities
  - Sources of sediment
  - Wetland restoration / sediment "needs"
  - Retention of sediment & reduction of erosion
- CRSM *Plans Completed for:*
  - Southern Monterey Bay, Santa Barbara Littoral Cell and San Diego County
- Upcoming *CRSM Plans:*
  - Eureka, San Francisco Bay, North Monterey, LA County, Orange County

2. Prior Work / Local Issues

Presentation by David Hull, Exec Director, HBHRCD

- Three areas of Humboldt Bay: Arcata Bay (conservation), Mid Bay (harbor/port), South Bay (conservation)
- Major sources of sediment: Mad River and Eel River
- Other sediment sources: Watershed erosion / storm water (more information on storm water can be found through Fish & Wildlife GIS study mapping culverts)
- Dredging / disposal types in the region include: cutter head/barge disposal, clamshell/scows disposal, upland dredge disposal, and cutter head section dredge/beach disposal. District dredges at a 7 – 10 yr frequency. 2006/7 episode was about 230,000 CY at a $3.3 million cost.
- District recently acquired the Louisiana-Pacific upland disposal site
- Humboldt Bay listed as an "Impaired" water body for Dioxins. A Dioxin work group is in place who is working with the San Francisco Estuary Institute with the goal of developing Sampling and Analysis protocol for dredging.
- Entrance Channel shoal (danger to fishing boats). Corps dredged about 1.2 million cy/yr
- Currently seeking funds for continuation of the USACE's Long-Term Sediment Management Study (LTMS)
- LTMS goals are to maintain channels, minimize dredging, maximize use of dredged materials (Info from CRSMP can be used for Humboldt's LTMS as well as sediment management plan for Eureka Littoral Cell)
- Inner Bay - has not been dredged this year; only outer, sandier bay
- Project dredging issue: use of fine sediment on sandy beaches
- Possible issue in reuse: sand material as beneficial reuse; no capability for in-bay silty material at this time.

3. RSM Schedule / Desired Input From Stakeholders

CRSMP elements described by Dilip Trivedi, M&N

- Sediment Budget - Where is sediment coming from/going?
- Change mindset … "dredged spoil" to "beneficial reuse".
- Previous questions: [how] Can we reduce the amount of shoaling / dredging? Are there other disposal sites? Answers have come from regulatory side (in SF) which gives maximum amount of sediment for dredging…and regulates where it can be disposed.

- Possible issues with permitting/time-frame/funding and long-term planning.
- Overall Goal of CRSMP Plan:
  - Look at all sediment inputs/outputs, types of sediments, natural processes, and beneficial reuse options.
  - Fifty-year time-span for plan (Question: is that a reasonable time-frame?) with room to consider climate change.
  - Generate GIS database to be hosted on CSMW website.
  - Potential implementation (done over summer/early fall); goal to have working draft in October.
- Issues of fines: availability for restoration projects may capture the attention of City Gov. (possible barrier to City participation being the impression that the Harbor District is responsible…).
- Include in plan draft: possibilities/steps for reuse and restoration related to sea level rise/climate change, levees, and the replacement of tide gates, etc. to encourage city participation.
- Looking towards October meeting – expect draft summary of literature review beforehand

4. Focused Discussion On Issues particular to this study area

Discussion led by Betsy Watson

1. *Outreach* - Possible issue of interest and participation may be related to individual docks w/individual Corps permits that are not included in overall plan.
2. *Endangered Species*
   - Native plants (in another federal plan done in Crescent City an issue came up w/lilies…)
   - Birds: Potential impact to feeding; migration (Overall impact depends on the location of the project…)
   - Inland Region deals with birds and plants/must speak with Scott (Vicky Frey will email list to Noel Davis)
   - Marine Mammals
   - Fish:
     - Listing for Euchalon in Freshwater and North (found offshore);
     - Tidewater Goby
     - Candlefish (recently listed could be of concern in near shore disposal);

- Salt Coho salmon (state and federally listed);
- Spring and winter runs of Sacramento Chinook
- Longfin smelt

- Korie Schaefer / Bob Hoffman are contacts at NOAA Fisheries
- There is no designated critical habitat in nearshore.
- North American Green Sturgeon do come into Humboldt Bay - unsure where in near-shore but do move north/south through area.

Data Sources:

- PG&E Wave Connect Project has good summary of literature – see their website e-library
- Wave Connect Team – Milt Boyd (HSU) pooling info for impact wave study on species and will be compiling existing literature.

Consideration of MPA's:

- Are MPA's currently proposed for Eureka Littoral Cell? Proposed areas for MPA's can be found on Fish & Game's website.
- Sanctuaries and MPA's will be designated by 1st of next year

3. *Physical Processes*
   - Climate Change and Sediment Impacts in Humboldt Bay System
     - Need for modeling of sediment inputs and outputs for Humboldt Bay watershed (ongoing search for funding – Humboldt Bay Initiative).
     - Interest in ways this plan can address those needs or act as template
     - Specific physical impacts of erosion: some sites are known but specific locations and erosion/accreting rates are not documented.
   - Gap in data: physical processes related to the Bay
     - Minimal to no sediment data on local estuaries that feed into bay.
     - Tributary sediment input data is documented now for Elk, Freshwater, Jacoby Creek
   - Education and community awareness/involvement that includes participation by public in climate change discussion…
   - Sediment output from Mad and Eel make up significant percentage of total sediment coming out of watersheds in California
   - Eel River is the largest sediment source to bay (has never been documented)
     - When river floods, plumes are directed northward and incoming tide may bring it in.

- Littoral Cell data is from 1970's; watershed practices have changed.
    - Jeff Hansen from USGS is looking at this question through Wave Connect and has interest in further research work through CRSMP.
    - Input term for net sediment transport along the shoreline is still unknown despite modeling…half reports show sediment moves north and half south.
    - Enough modeling exists from local buoys to get consensus...but input term is unknown given outdated and changed practices (based on Geological Survey data from 60's 70's)
    - Need for report to dispute, refine, gain consensus
- Efforts that may address gaps in data include "virtual buoys," "DMMP," and "CMS Corps model"
- Need to talk to crab fishermen for anecdotal local current and sediment plume information (Contact Jimmie Smith who can suggest people who fish the beach).
- Plumes come north. Fine grains end up on beach and stay until waves re-suspend it.
    - Question: Natural occurrence that occurs w/flooding?
    - Need for winter sampling
- Local shellfish growers have knowledge on mad river slough flooding.
    - Shellfish grows know depth of silt (such flooding and silt disposal occurs in Winter)
    - Possibly no data exists but shellfish folks may be able to talk about processes. (Contact Tedd Keipur and Todd Van Herpe).
    - Redwood Sciences Lab: collected bed load and sediment temperature sampling from Jacoby Creek and possibly some on Mad River.
    - Graham Mathews and Associates reports
    - CHERT: County of Humboldt Extraction Review Team (bedrock extraction).
    - Caltrans: Consideration for future planning (potential sediment needs)
    - RCD: Salt River (Drains into Eel near Ferndale, only 1/2 mile above ocean) dredging project (good documentation exists on that project)

4. *Tectonics & Historical tide records*
    - Data on sea level rise from the North Spit gauge suggests a greater SLR rate than nearby buoys (benchmark may have moved during 1992 earthquake)… SLR rate based on North Spit gauge may be incorrect.
    - Most of big seismic activity locally has been after the last data collection. Data on tectonics may not be reliable (a couple of the bench marks need to be resurveyed).
    - Work done on tectonics include historic geological time

- Work done in Eel River Valley to measure benchmarks (10 yrs ago at least), showed valley had “tipped”

5. *Possible Reuse Sites*
    - Erosion of bluff South of Bay may be due to river erosion more than ocean erosion.
    - Coastal erosion occurs on bluffs north of Trinidad (outside of Littoral Cell) in Big Lagoon area.
    - Locations along the spits that could serve as reuse sites (dune stockpiles). Contact dune experts/people working on restoring native dune plants (Andrea Pickard at Fish & Wildlife, and contact Friends of the Dunes)
    - Project on Samoa for tsunami preparedness.
6. *More Local Contacts*
    - Pilots: River mouths migrate to the north - evidence of sediment pushing to the north? (Typical for river mouths to migrate during times of low flow and break through to normal path in high flood).
    - Offshore ocean habitat information can be found at the State from MLPA mapping project website, coastalwatershed.ca.gov, in the estuary section for mapping and understanding habitat, as well as many references.

Action Items for Study Team:

1. Reach out to Cities of Arcata, Eureka and the County of Humboldt to identify their issues and potential long and short-term projects.
2. M&N FTP site information to be provided to group to allow sharing of reference documents of relevance to the plan.
    - Post all literature compiled to date on the ftp site for team sharing
3. Research the FERC PG&E Wave Connect Project and pull data of significance.
4. Contact crab and shellfish fishermen to acquire relevant anecdotal information (i.e. current patterns and HB sedimentation).
5. Consider developing a checklist to circulate to agencies that conduct restoration projects (i.e. Caltrans and local jurisdictions).

MEETING ATTENDEES

Dilip Trivedi, Moffatt & Nichol, dtrivedi@moffattnichol.com (Coastal Engineer)

Noel Davis, Chambers Group, ndavis@chambersgroupinc.com, (Marine Biologist)

Brian Leslie, Moffatt & Nichol, bleslie@moffattnichol.com, (Coastal Scientist, data gathering: GIS and literature review)

Chris Webb, Moffatt & Nichol, cwebb@moffattnichol.com (Coastal Scientist)

Susan Tonkin, Moffatt & Nichol, stonkin@moffattnichol.com, (Coastal Engineer)

Joel Benegar, USACE, joel.r.benegar@usace.army.mil

Betsy Watson, HSU, ew1@humboldt.edu

Jacqui Brennan, HSU, jab191@humboldt.edu

David Hall, HBHD, dhull@portofhumboldtbay.org

Adam Wagschal, HBHD, adam@portofhumboldtbay.org

John Dingler, USACE/SPN, John.r.dingler@usace.army.mil

Clif Davenport, CGS, clif.davenport@conservation.ca.gov

JB, USFWS, james_bond@fws.gov (concern for impact on endangered species/ geology +oceanography)

Susan Schlosser, Calif. Sea Grant, sschlosser@ucsd.edu (ecosystem-based management and climate change: relationship to sediment, wetlands + habitat)

Scott Downie, CDFG, sdownie@dfg.ca.gov (Watershed planning and assessment)

Diane Ashton, NMFS, diane.ashton@noaa.gov

Vicky Frey, CDFG, vfrey@dfg.ca.gov

Pete Oringer, oringer@humboldt1.com

Jeff Borgeld, HSU oceanography, borgeld@humboldt.edu

Jeff Anderson, MHE, jeff@northernhydrology.com

Peter Nelson, HT Harvey, pnelson@harveyecology.com

Pete Nichols, Humboldt Baykeeper, pete@humboldtbaykeeper.org

Jeff Hansen, USGS [via phone]

Humboldt Bay 2005

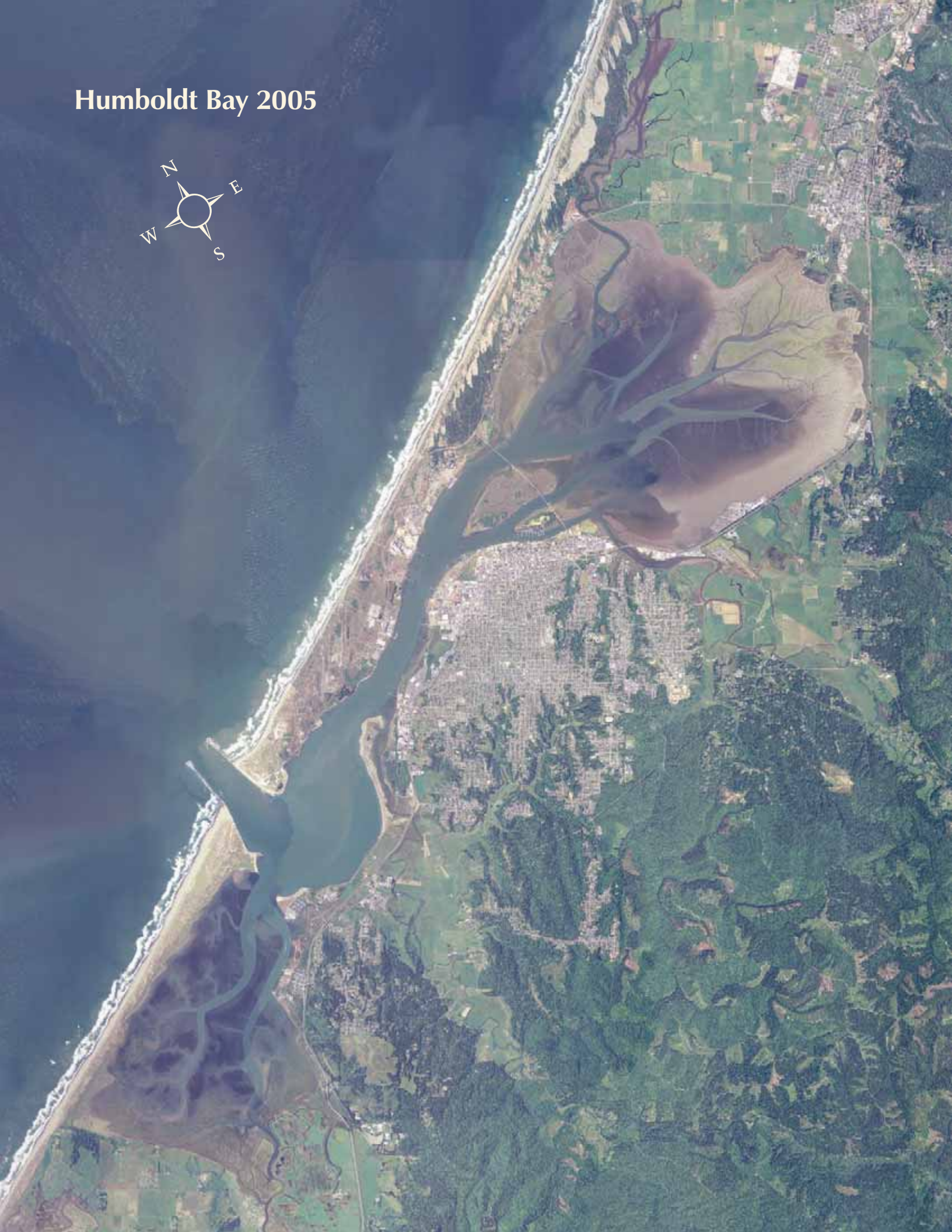

Figure ES-2: Humboldt Bay Primary & Secondary Boundaries

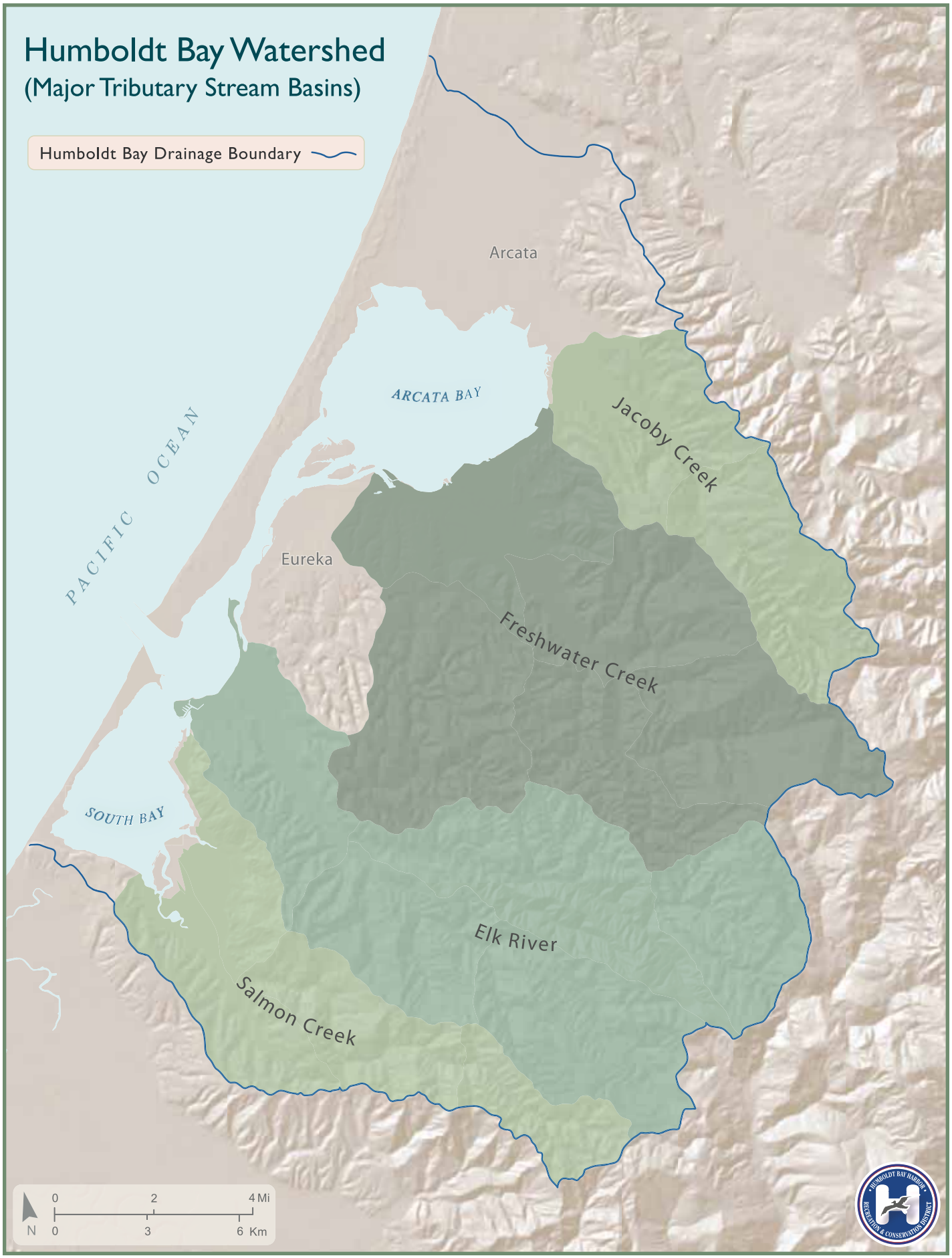

Figure ES-3: Humboldt Bay Watershed Area

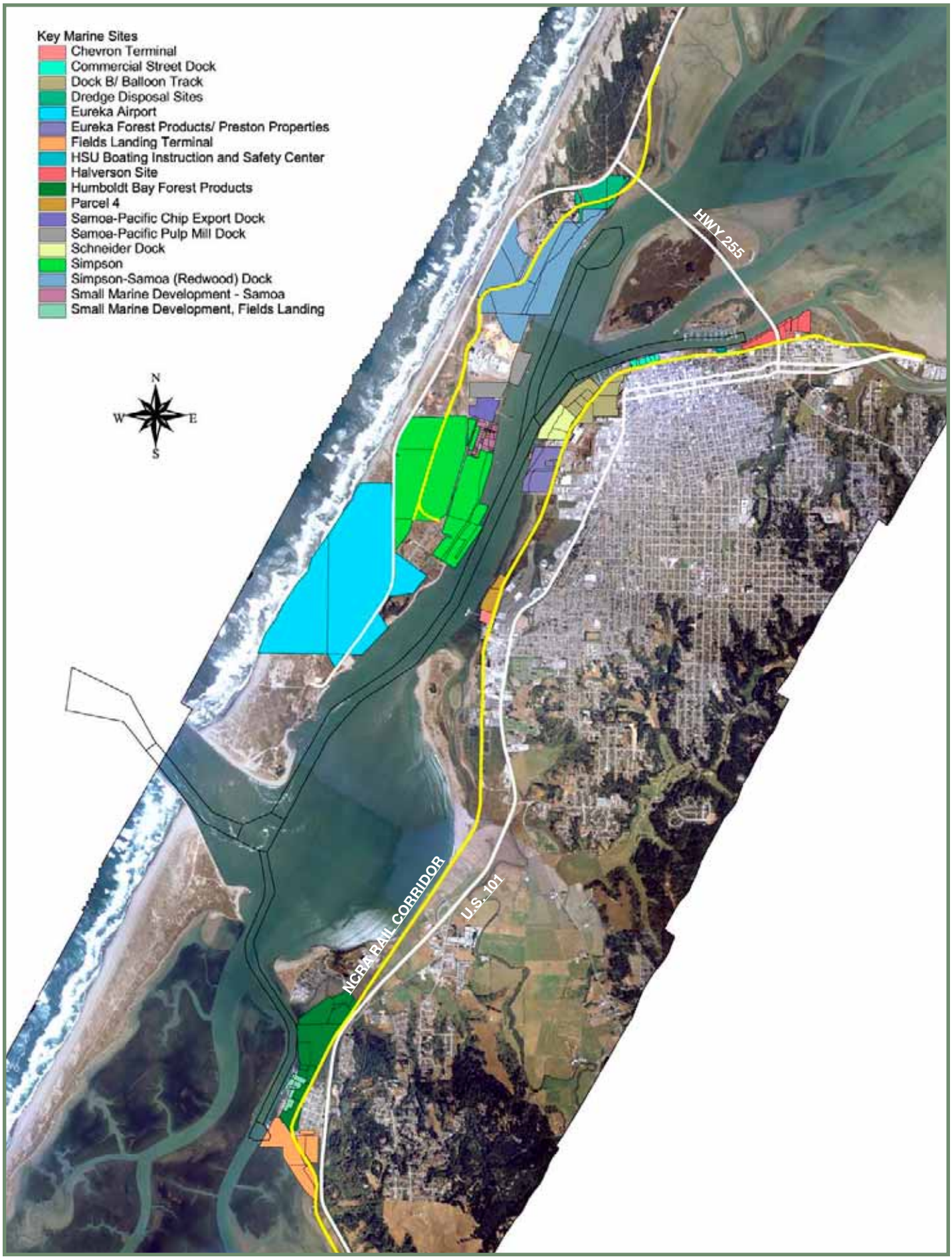

Figure 2-1: Key Marine Sites and Regions as defined in the 2003 Humboldt Bay Harbor Revitalization Plan

Figure 2-2: Port of Humboldt Bay Marine Terminal Properties—acreages are approximate

Figure 3-1. Existing coastal recreation sites near Humboldt Bay, showing visitor improvements (Friends of the Dunes)

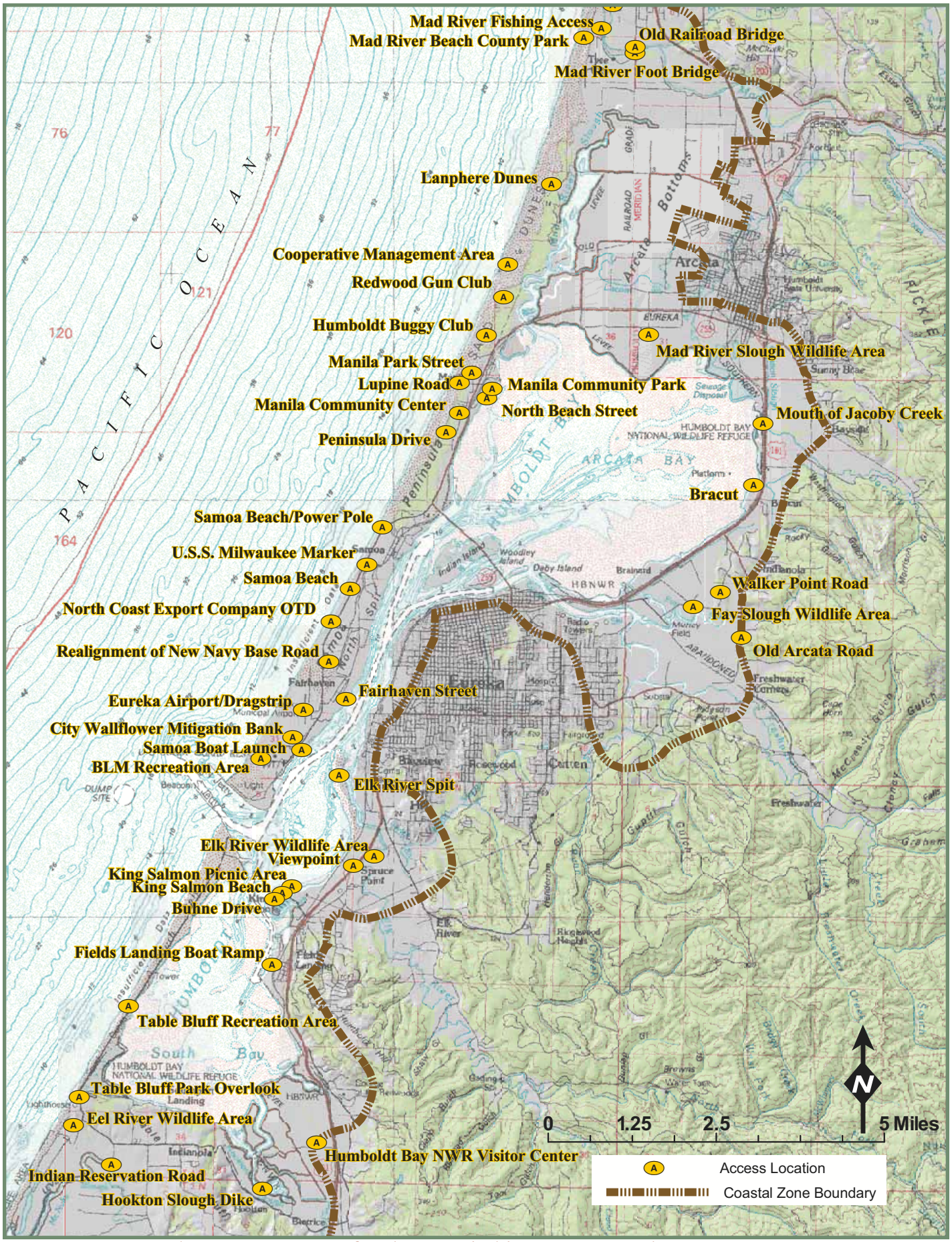

Figure 3-2. Coastal access inventory for the Humboldt Bay region, showing a selection of developed access points. (Source: County of Humboldt)

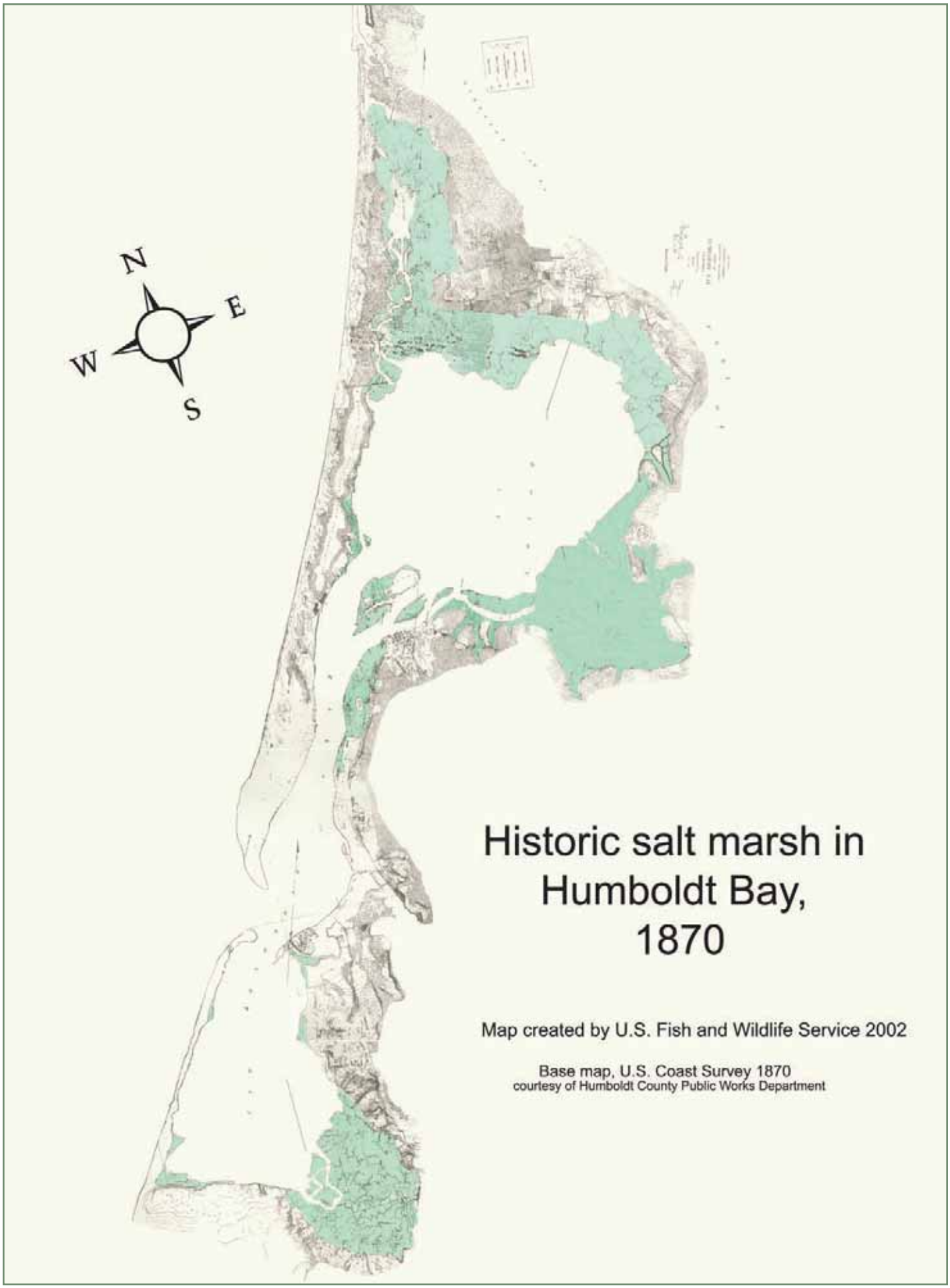
N
E
S
W
Historic salt marsh in Humboldt Bay, 1870
Map created by U.S. Fish and Wildlife Service 2002
Base map, U.S. Coast Survey 1870
courtesy of Humboldt County Public Works Department

Figure 4-2: Humboldt Bay Wetlands. Three main categories depicted, subtidal wetlands (channels and deepwater), intertidal bottom and shore with marshes excluded, and intertidal marshes.

Figure 2-1: Humboldt Bay Water Use Designations


E
S
N
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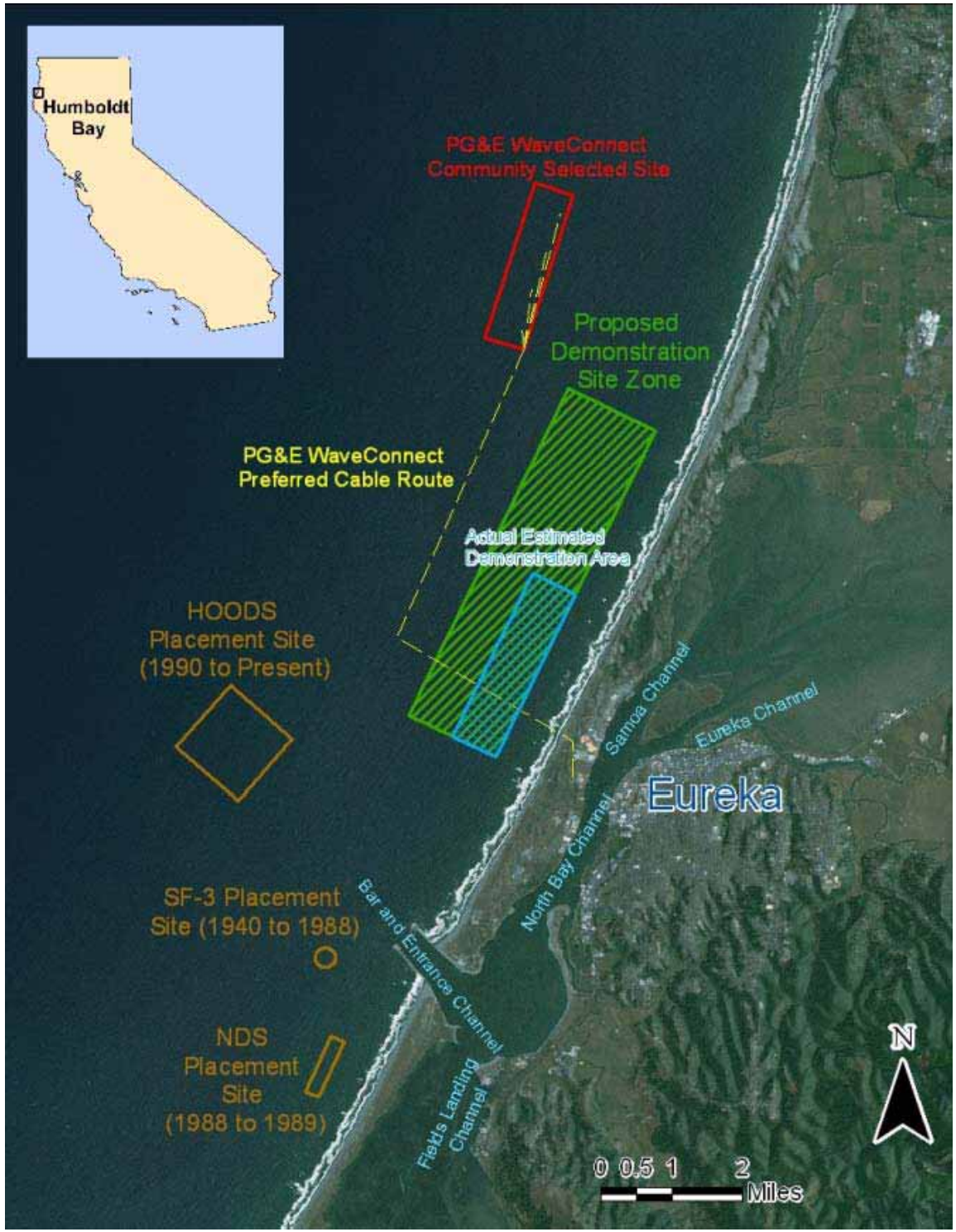
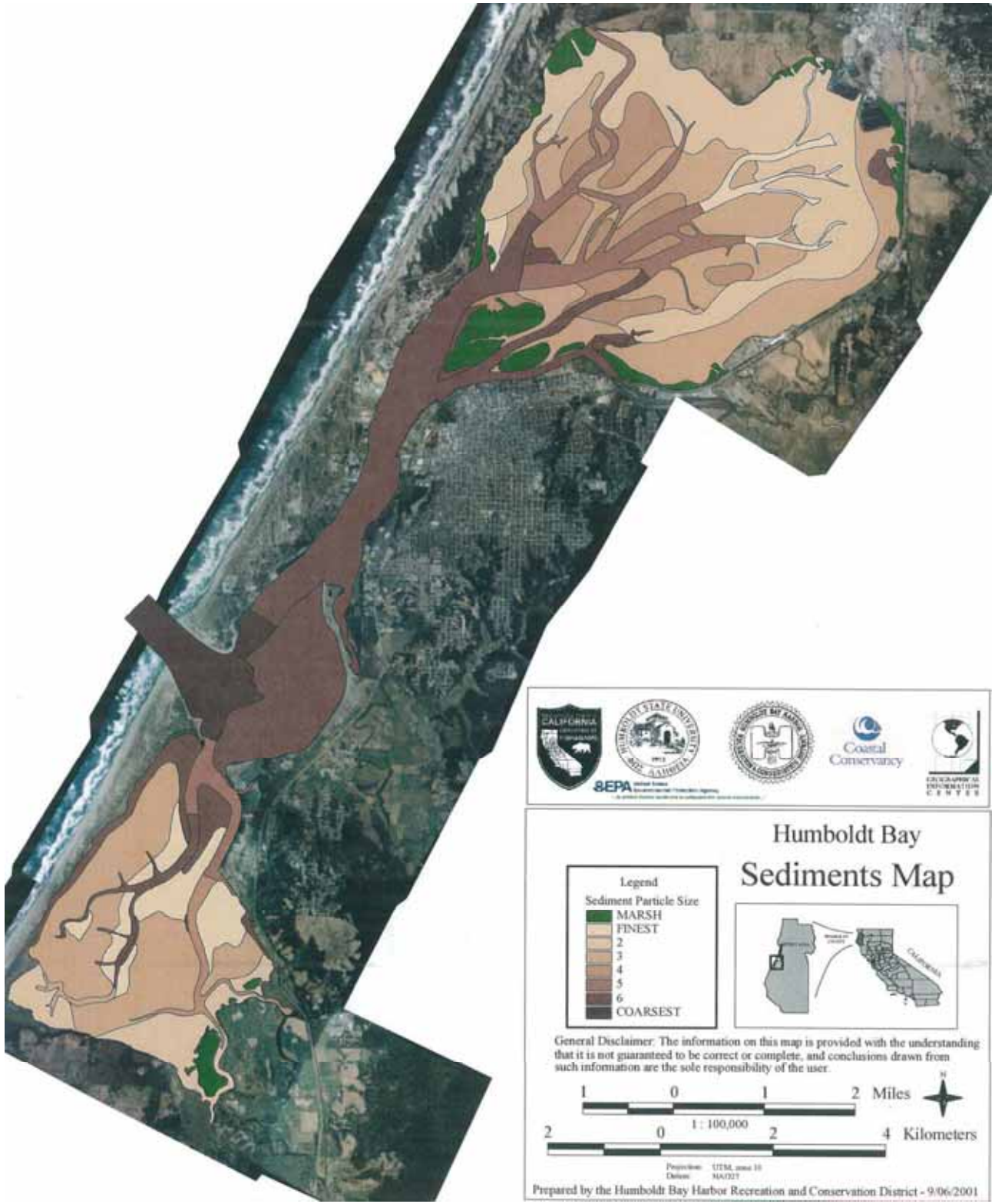
Humboldt Bay 2005


Humboldt Bay
PG&E WaveConnect Community Selected Site
Proposed Demonstration Site Zone
PG&E WaveConnect Preferred Cable Route
Actual Estimated Demonstration Area
HOODS Placement Site (1990 to Present)
SF-3 Placement Site (1940 to 1988)
NDS Placement Site (1988 to 1989)
Samoa Channel
Eureka Channel
Eureka
North Bay Channel
Bar and Entrance Channel
Fields Landing Channel
N
0 0.5 1 2
Miles


Coastal Conservancy
Humboldt Bay
Sediments Map
Legend
Sediment Particle Size
MARSH
FINEST
2
3
4
5
6
COARSEST
General Disclaimer: The information on this map is provided with the understanding that it is not guaranteed to be correct or complete, and conclusions drawn from such information are the sole responsibility of the user.
1 0 1 2 Miles
1 : 100,000
2 0 2 4 Kilometers
Prepared by the Humboldt Bay Harbor Recreation and Conservation District - 9/06/2001

Chapter 3.0 presents the ***Harbor Element Planning Policies*** that carry out the District's obligations for managing Humboldt Bay as a port. In addition, this policy chapter addresses the District's approach to the ongoing maintenance of levees, dredged areas, and other elements of the human-modified bayscape, while also presenting policies that will help guide future restoration and enhancement planning work within the Bay.

Table ES-2: Harbor Element Policies

Harbor-Related Land Use and Development	Page
HLU-1: Harbor-related uses shall have priority under this Plan within the portions of Humboldt Bay designated for port-related or harbor-related uses	164
HLU-2: Assist local, regional, and state agencies in identifying and protecting harbor-related land uses in Humboldt Bay, and in developing increased institutional capability in the planning, regulatory, and development programs related to such uses	165
HLU-3: Assist in removing potential constraints for marine-dependent or coastal-dependent land uses along the Samoa Peninsula, Fields Landing Channel, Eureka shorelines, and other harbor-related areas (from Harbor Revitalization Plan)	165
HLU-4: Assist in removing potential constraints for marine-dependent or coastal-dependent land uses on harbor-related parcels in the South Bay (from Harbor Revitalization Plan)	165
HLU-5: Provide information for the public, and for decision-makers and staff of government institutions, to facilitate protecting and enhancing harbor-related opportunities for Humboldt Bay	166
HLU-6: Develop "specific plans" for District-owned parcels	166
HLU-7: Proposals for bay-related activities approved by the District shall incorporate appropriate noise control measures to avoid or reduce noise effects on events and activities carried out near the bay, to the extent feasible	166
Shoreline Management	**Page**
HSM-1: Develop an inventory of shipping terminal facilities necessary to carry out adopted harbor-related planning policies for Humboldt Bay	167
HSM-2: Develop an inventory of shoreline protection devices, identify potential needs for additional protection, and develop standards for new and existing Humboldt Bay shoreline protection	167
HSM-3: Develop appropriate, consistent shoreline protection guidelines for commercial, industrial, and residential development around Humboldt Bay	168
HSM-4: Require maintenance according to the District's adopted shoreline protection standards	169
HSM-5: Require evidence that shoreline protection proposals protect the environment and meet District requirements	169
HSM-6: Require the use of non-structural shoreline protection where feasible and appropriate	169
HSM-7: Identify needs for potential shoreline improvements necessary to accommodate bay water surface elevation changes, including potential effects of climate change	169
HSM-8: Develop coordinated plan for addressing seismic effects, land stability, and tsunami response plan for Humboldt Bay	170

Toxic Materials Management	Page
HTM-1: Enhance public outreach and educational programs addressing the impacts of toxic materials to Humboldt Bay and surrounding lands, and assist in educational efforts to prevent toxic spills	178
HTM-2: Monitor, comply with, and assist in updating as necessary the oil spill contingency plans for Humboldt Bay	178
HTM-3: Assure compliance with North Coast Air Quality Management District Rules for Particulates	178
HTM-4: Projects shall incorporate appropriate odor-control measures	178
Regulatory Streamlining	**Page**
HRS-1: Develop and implement a regulatory coordination process for projects around Humboldt Bay that are consistent with adopted plans	179

The ***Recreation Element Planning Policies*** in Chapter 4.0 address the interrelationships among the District's jurisdiction with those of other local agencies, including access "across" the shoreline. The requirements of various state and federal acts have been considered. To the extent possible, long-range plans for recreational improvements have also been incorporated.

Table ES-3: Recreation Element Policies

Recreational Administration	Page
RA-1: Humboldt Bay Management Plan Advisory Committee as a forum for recreation opportunities	184
RA-2: Partnerships with other recreation providers	185
RA-3: Recreation opportunities to be integrated with other District functions	185
RA-4: Capital improvement program and recreation budgeting	185
Recreational – Opportunities Planning	**Page**
ROP-1: Recreation planning to be an ongoing and coordinated function	186
ROP-2: Needs assessment and related use preference data	186
ROP-3: Identification of designated recreational use areas	186
ROP-4: Future recreation areas to be reserved as needed	186
Recreational Facilities and Access	**Page**
RFA-1: Safe and appropriate public recreational access to and use of the Bay	187
RFA-2: Project approvals shall incorporate public access and associated services and amenities where appropriate	187
RFA-3: Water-oriented recreation facilities; access for fishing and shellfish harvesting	187
RFA-4: Coastal-dependent industrial and commercial uses may take priority in designated Harbor areas	188
RFA-5: Environmentally and culturally sensitive areas	188

The growing attention to the ecological or conservation importance of Humboldt Bay, regionally, nationally, and internationally, requires a policy framework found in the ***Conservation Element Planning Policies*** in Chapter 5.0. This chapter addresses the District's conservation-related responsibilities and powers while attending to the statewide and national policy framework that is of interest to many Humboldt Bay stakeholders.

Table ES-4: Conservation Element Policies

Maintaining and Enhancing Aquatic Ecosystem Functions	Page
CAE-1: Base management decisions on maintaining the Humboldt Bay ecosystem, including the bay, the watershed, and the nearby ocean	200
CAE-2: Maintain, restore, and enhance aquatic ecosystem integrity	201
CAE-3: Protect and maintain environmentally sensitive habitat areas	201
CAE-4: Work cooperatively to develop and implement a restoration and enhancement plan for Humboldt Bay's aquatic ecosystems	202
CAE-5: Work cooperatively to develop and implement a water-quality maintenance plan for Humboldt Bay	202
Aquatic Species Management	**Page**
CAS-1: Maintain biological diversity and important habitats throughout Humboldt Bay	203
CAS-2: Maintain and enhance conditions required by commercially important fish, invertebrate, and plant species	204
CAS-3: Maintain and enhance habitat for sensitive species	204
CAS-4: Control or remove non-indigenous invasive species	205
CAS-5: Fill placement may be used for habitat enhancement purposes	205
CAS-6: Fill placement may be used for cultural resource protection purposes	205
Humboldt Bay Ecosystem Management Program Elements	**Page**
CEP-1: Impacts to streams, wetlands, estuaries, and coastal waters may be authorized for specific purposes or project types	206
CEP-2: Dredging may be approved under specified conditions	207
CEP-3: Revetments, breakwaters, and other shoreline structures may be approved under specified conditions	207
CEP-4: Functional capacity of aquatic ecosystems must be maintained	207
CEP-5: Water quality protection is required	208
CEP-6: Mitigation program requirements are identified	209
CEP-7: Mitigation efforts must follow an identified sequence, with avoidance preferred and compensation least-favored	209
CEP-8: Mitigation proposal elements are defined	210
CEP-9: Mitigation must be implemented before or at the same time as the impact being mitigated	210

Humboldt Bay Ecosystem Management Program Elements—*continued*	Page
CEP-10: Buffer requirements are defined for proposals affecting the Bay and other aquatic ecosystems	210
CEP-11: Determinations about boundaries, buffers, or other environmentally sensitive areas require specific information	211
CEP-12: Indian Island use shall be restricted to environmental and Native American purposes, and management decisions shall be made cooperatively	211
CEP-13: Greenhouse gas emissions to be considered	211
Public Involvement and Outreach	
CPE-1: District maintenance of communications with media	212
CPE-2: Increased use of District website for communicating about Bay management	212
CPE-3: Humboldt Bay Management Plan Advisory Committee as forum for environmental resources and other management considerations	212

Chapter 6.0 identifies the general ***Implementation Program*** anticipated for enactment by the District's Board of Commissioners in order to enable and carry out the Plan's recommendations. The primary responsibility for the Plan's implementation lies with the Board of Commissioners and with District staff, working in collaboration with applicants, other agencies, and the public. The implementation program also includes the development of an Advisory Committee of interested citizens and agency representatives, which will coordinate with District staff to review and establish priorities for implementation tasks. The role of the Advisory Committee is expected to be focused on providing advice to the District's staff and the District's Board of Commissioners regarding implementation priorities.

The implementation approach described in Chapter 6.0 incorporates three general courses of action, depending on specific circumstances:

- When the implementation involves a proposed project or other definite action, the District's staff will review the proposed application with respect to the Plan's policies, recommending action to the Board of Commissioners.
- When the implementation of the Plan's policies involves the development by the District of procedures (e.g., a "shoreline protection manual" or similar standardized approach to Bay management), District staff and the Advisory Committee will consider the relative priorities for District implementation, and the Advisory Committee will recommend priorities for staff development of the relevant materials. Staff will develop the procedural guidance, consulting with other agencies and with appropriate experts and interested parties. When the appropriate procedures have been developed, District staff will present the material to the District's Board of Commissioners for consideration and adoption, including public review elements. When adopted by the Board, these procedures will become standards for implementing the Plan.
- When the implementation of Plan policies includes collaborative planning or action by the District and other agencies (e.g., the development of a Bay-wide wetland enhancement or restoration plan, or the development and enactment of a memorandum of agreement that the District will act jointly with another agency to carry out a policy that covers a shared interest), District staff and the Advisory Committee will consider the relative priorities for District implementation, and the Advisory Committee will recommend priorities for staff development of appropriate memoranda. These recommendations will be presented to the District's Board; upon direction from the Board, staff will convene

1990. NOAA Fisheries is responsible for responding to potential effects to marine mammals. The Department of Fish and Game's Office of Spill Prevention and Response is responsible for state-level spill responses regarding wildlife and habitat.

In general, the District does not exercise direct regulatory authority over water quality in Humboldt Bay. The District does, however, have the authority to regulate certain uses within the Bay that may be associated with water quality concerns. In these circumstances, the District may require practices or physical measures that have been demonstrated to have beneficial effects on water quality.

4.3.4 Sediment Dynamics Related to Runoff

As noted above (subsection 4.2.1), sedimentation in Humboldt Bay clearly has two sources, and the primary source has been identified as the near-shore Pacific (that is, sediment delivered to Humboldt Bay by inflowing tidewaters). The District's responsibility for maintaining navigable depths in the Bay elevates the District's interest in sediment management within the Bay's watershed, although the District lacks authority to constrain land use practices in the basin.

As a general perspective on sediment distribution in Humboldt Bay, it may be useful to consider sediment distribution to be an element in a dynamic equilibrium with the capability of tidal currents to redistribute sediment delivered from the watershed or the inlet. Tidal dynamics (particularly in combination with wind-driven waves) within the Bay characteristically rework the tidal flats, distributing the sediments according to the capability of tidewaters for moving sediment. Fine sediments (e.g., clays and silts) are characteristically carried by slowly moving tidewater to higher elevations (the "high flats" and "salt marshes" described by Shapiro and Associates 1980). Coarser sediments (e.g., fine sands) are generally moved by more competent flows and end up in the lower intertidal and shallow subtidal zones near smaller channels. The stronger and more turbulent flows in larger channels have a greater competence for moving sediment, and fine sediments are carried out of these larger channels, leaving them dominated by coarser sands, with gravels and larger shell debris in the largest channels.

At the present time it is unclear whether sediment produced within the Humboldt Bay watershed significantly affects the aquatic environment once the sediment reaches tidewater. Recent studies carried out in Arcata Bay related to the effects of mariculture found that the sediment surface elevation first increased, then decreased, and that there was no net sediment surface elevation change over the course of a recently completed three-year study (S. Rumrill, pers. comm.).

This Plan recognizes that a basin-wide concern exists with respect to the sediment mobilization effects of land use practices such as forestry or development. The potential effects of sediment mobilization may include the accumulation of sediment in surface watercourses, with attendant impacts on instream aquatic habitat values. Sediment accumulation may also affect the capability for surface streams to convey storm flows without flooding. When sediment mobilized in the Humboldt Bay watershed reaches the Bay the finer sediments are likely to be distributed according to the dynamic model summarized above, and excess fine material may be exported from the Bay on outgoing tides. Coarser sediments are likely trapped within the larger tidal channels in the Bay, thereby increasing the shoaling that adversely affects navigation.

4.4 Ecosystem and Environmental Resource Patterns

The Humboldt Bay Management Plan does not address the entire Humboldt Bay watershed; nor does the Plan address the nearshore Pacific Ocean. The District's primary area of concern (the Plan Boundary) includes the intertidal and subtidal land within the Bay; the District also has a secondary area of management concern (the Sphere of Interest) that includes additional lands that would have come under District jurisdiction had the District existed in 1850 (see Section I; the District has an additional interest in the remainder of the Humboldt Bay watershed, primarily in terms of how events in the watershed may affect concerns that lie under the District's direct jurisdiction). The

Harbor Element Planning Policies

CHAPTER 3.0

3.1 Chapter Overview

The District, the City of Eureka, the County of Humboldt, and other local, regional, and state agencies recognize that one major focus of Humboldt Bay's management is the Port of Humboldt Bay, the largest harbor along the Pacific Coast between Coos Bay, Oregon, and San Francisco Bay. A Management Plan for Humboldt Bay must, therefore, include a policy framework for harbor-related uses. The Management Plan includes, in this Section, goals and policies that are generally related to land uses and development activities that are subject to District jurisdiction (activities that are not subject to the District's jurisdiction may still be regulated by other local, state, and federal agencies).

Bar warning sign—North Jetty

In addition, this chapter incorporates the substance of elements of the Coastal Act that are directly related to the maintenance of port-related or harbor-related facilities in Humboldt Bay. The District's jurisdiction over the facilities in Humboldt Bay is subject to the policies adopted by the California Legislature in the Coastal Act, which require the maintenance of existing coastal-dependent industrial facilities. In addition, the Coastal Act requires the maintenance of commercial fishing and aquaculture operations and opportunities. The Coastal Act's concerns for maintaining coastal-dependent industrial and shipping options is balanced by its concerns for protecting environmentally sensitive areas; this balance is also a signal feature of the District's approach to Humboldt Bay management, as reflected in this Plan.


Entrance Bay

This Plan chapter is focused on goals, objectives, and policies for these harbor-related elements. The policy basis established in this chapter will be considered by the District and other agencies as the framework for the District's actions in maintaining the commercial and industrial elements of Humboldt Bay that fall within the District's jurisdiction (i.e., the tidelands; the channels, and the dredging that is necessary to maintain them; the maintenance of shoreline protection devices; the creation, maintenance, or removal of shipping terminals and docks; the protection of the Humboldt Bay ecosystem for commercial fishing and aquaculture purposes; and the maintenance or development of aquatic or shoreside aquaculture).


Lumber barge in tow

As in other chapters in this Plan section, these policies are meant to be applied as an overall set of guidelines and within specific contexts, not singularly or in isolation. "Harbor" policies in this chapter must also be considered in conjunction with recreation and conservation policies that are identified in other parts of this document, given that the Public Trust incorporates uses in all of these categories.

As described in Section I, most of the harbor-related uses covered by this chapter are included within "Entrance Bay," which extends from approximately the Highway 255 bridge on the north to the Bay entrance and the channel to King Salmon and Fields Landing on the south. Most of the potential uses described by policies in this chapter occur predominantly within Entrance Bay. The policies in this chapter also incorporate mariculture uses that occur in Arcata Bay. This Plan chapter includes the designation of a "Mariculture District" in Arcata Bay, within which mariculture activities are identified as a preferred use (see below).

In 2003 the District, the City, and the County completed the ***Port of Humboldt Bay Harbor Revitalization Plan***, a joint effort to identify potentially advantageous harbor-related uses within the Bay (see Section II for additional information). Because the Revitalization Plan forms an essential element in the overall planning context for the Port, it is also an important part of the policy recommendations underlying the Humboldt Bay Management Plan, and the recommendations included in the Harbor Revitalization Plan that are important for District management of harbor functions are included in this Plan.

As indicated in the Revitalization Plan, harbor-related planning will work best if it is focused on activities and locations within the Bay that are particularly advantageous for Humboldt Bay and for coastal dependent industries that are suited for this region (Table 3-1). This Plan makes no presumptions with respect to the restoration of rail service to the Humboldt Bay region, and this Plan also recognizes that a number of the recommended revitalization approaches do not lie within the jurisdiction of the District. To the extent that the recommended actions do lie within the jurisdiction of the District, this Plan identifies implementation approaches that will assist in achieving the goals of the Revitalization Plan. Other Revitalization Plan elements may require actions by the City of Eureka and/or the County of Humboldt.

The Harbor chapter of this policy document incorporates policies that relate to numerous port-related activities carried out by the District, many of which were the subjects of comments from agencies or members of the public during the public review of the preliminary draft Plan. Based on the comments, a modification was made in one proposed policy:

- Policy language included in the Draft Plan has been modified to direct increased District consultation with the cites adjoining the Bay, which also manage tidelands, in order to develop a coherent approach to tidelands management for aquaculture uses of the tidelands.

In considering comments, District decision-makers determined that a number of the comments regarding mariculture/aquaculture carried policy implications significant enough to warrant continued study and future policy deliberation. Several sub-topics related to the management of mariculture will be considered further by District staff and decision-makers, in consultation with relevant federal, state, and local agencies, aquacultural practitioners, and members of the public, with the goal of formulating and adopting additional policy guidance during the initial revision period for the Plan (three to five years):

- Mariculture/aquaculture is correctly recognized as an appropriate Trust use of tidelands in the Bay, and the District's management approach must appropriately consider a variety of factors that may affect future mariculture proposals for Humboldt Bay, including:
  - Species or taxonomic groups being cultured or that could be cultured
  - siting options (including shoreside siting)
  - culturing technologies

Several substantive comments were made during the initial Plan review regarding Management Plan policy language for which District decision-makers determined that the proposed policies did not reflect the District's interests, including the following:

- Several commenters that requested that the District adopt policy language forbidding the use of "biocides" within areas subject to District jurisdiction. These suggestions have not been incorporated. In part this stems from the fact that the District is not a regulatory agency with respect to biocides (as has been consistently noted in the Plan). The decision to forego such a policy focus also arises from the District's policy decision to focus on exotic species management and/or habitat restoration, for which the District expects to maintain the possible use of herbicides as an optional tactic.
- The District will not adopt a policy focus regarding energy efficiency as a requirement for Bay management. While the District generally prefers energy-efficient designs and operations in District facilities and among applicants for District approvals, the District will not at the present time adopt or consider a policy addressing this topic.
- The District will not adopt a policy requiring that non-structural shoreline protection methodologies (such as extensive wetlands) be implemented in all shoreline protection instances. The already-proposed policy in the Plan clearly specifies the District's existing interest in non-structural methods, but the District's proposed policy maintains a feasibility test that District decision-makers determined to more fully reflect District's concerns for effectiveness.

Three additional Harbor-related policy elements proposed in comments were judged by District decision-makers to exceed the District's legal authority, and are not included in the Draft Plan, although the Draft Plan already included District approaches that reflect the District's existing authority under appropriate state and federal laws for these policy areas:

- Tsunami preparedness is an "emergency services" concern that is explicitly linked to federal and state agencies. While the District participates in the response teams for many kinds of emergencies that may affect Humboldt Bay (including oil spills, as noted below), the District is a "follower" rather than a policy-setter. As noted in the Draft Plan, one area in which the District has authority to act is in identifying the need for, and steps to accomplish, protecting or restoring Humboldt Bay's readiness to assist in large-scale emergency responses, including tsunami recovery. Appropriate policy language is already included in the Plan.
- Oil spill prevention and other toxics management concerns are also activities for which the District lacks legal authority to formulate primary policy. Such concerns are regulated by many federal and state laws, and federal and state agencies are designated under those laws as the primary policy-

With Rail Service Restored	With Current Rail Conditions
Marine-Dependent Industrial Projects	Marine-Dependent Industrial Projects
Niche Bulk Cargoes	Niche Bulk Cargoes
Marine Science & Tourism	Marine Science & Tourism
Aquaculture & Commercial Fishing	Aquaculture & Commercial Fishing
Boat Building & Vessel Repair	Boat Building & Vessel Repair
Forest Products Cargo Handling	Forest Products Cargo Handling
Public Bulk/Marine Industrial Dock Investment	Public Bulk & Marine Industrial Dock Investment
Coastal Feeder Barge Development	

Table 3-1. Recommended Harbor Revitalization Strategies.
(Source: Port of Humboldt Bay Harbor Revitalization Plan, 2003)

setters and responders to adverse events. The District participates in these programs, assuring that the requirements are met for Humboldt Bay. Appropriate policy language is already included in the Plan.

- Ballast-water regulation (essentially a focus on exotic species) is an area in which the District has historically been a leader, but this concern is also now delegated to federal and state agencies under existing federal and state laws. The District will continue to collaborate with these agencies to identify and implement appropriate control approaches for vessels entering Humboldt Bay, but the District does not have the option of adopting policy and performance requirements that are incompatible with those established in adopted federal and state laws.

The policies in this chapter are arranged by the following categories:

- Harbor-Related Land Use and Development (Policies HLU-1 through HLU-7)
- Shoreline Management (Policies HSM-1 through HSM-8)
- Dredging and Waterway Maintenance (Policies HWM-1 through HWM-8)
- Commercial Fishing and Aquaculture (Policies HFA-1 through HFA-8)
- Toxic Materials Management (Policies HTM-1 through HTM-3)
- Regulatory Streamlining (Policy HRS-1)

3.2 Harbor-Related Land Use and Development

3.2.1 Goals and Objectives

The Revitalization Plan identified potential sites for marine-dependent (or coastal dependent) industrial uses, and recommended implementation elements to assure that these sites would be available for use by potential coastal dependent industrial users; the HBMP does not address upland land uses, but the District can utilize the policy focus in the HBMP to assure that areas within the District's jurisdiction support coastal-dependent uses identified in adopted land use plans

Goals

- Assure (with upland agencies) the availability and readiness of large coastal dependent industrial sites adjacent to Humboldt Bay
- Assure (with upland agencies) the development and long-term maintenance of harbor-related infrastructure in Humboldt Bay

Objectives

- Working with local governments, protect designated water-dependent or coastal-dependent industrial sites near Humboldt Bay and maintain opportunities for designating additional water-dependent or coastal-dependent industrial sites and uses near Humboldt Bay
- Working with local, state, and federal agencies, facilitate reviews that are necessary for implementing water-dependent or coastal-dependent uses and other harbor-related uses and infrastructure

3.2.2 Policies

HLU-1: Harbor-related uses shall have priority under this Plan within the portions of Humboldt Bay designated for port-related or harbor-related uses

Policy: Within the portion of Humboldt Bay identified in this Plan as having a priority for harbor-related uses (see Figure 2-1 in Chapter 2.0), the District shall adopt, for elements that are subject to the District's jurisdiction, and identify a preference for, proposals and uses that are related to the existence of Humboldt Bay as a port or harbor. Such uses include, but are not limited to, the following:

- Shipping terminals, docks, wharves, and other facilities and operations related to national or international shipping.
- Marinas, piers, docks, buying stations, processing plants, and other facilities and operations that are related to commercial and recreational fishing and other related water-based uses.
- Docks, piers, floats, and other facilities and operations that are related to aquaculture, mariculture, and similar uses.
- Chandlers, offices, warehouses, yards, and other

shoreside facilities and operations, to the extent that these uses are subject to the District's jurisdiction.

Harbor-priority use areas shall be protected for harbor-related uses and ancillary activities. Other uses, especially public access and public and commercial recreational developments, shall be permissible uses provided they do not significantly impair the efficient utilization of the harbor-priority areas.

Discussion: This policy establishes a priority for harbor-related uses in areas that are designated by the District, the County, the cities, the Coastal Commission, or other parties as reserved for water-dependent, coastal-dependent, or harbor-related uses.

HLU-2: Assist local, regional, and state agencies in identifying and protecting harbor-related land uses in Humboldt Bay, and in developing increased institutional capability in the planning, regulatory, and development programs related to such uses

Policy: The District shall consult with the County of Humboldt, the City of Eureka, the City of Arcata, the California Coastal Commission, and other use-regulating agencies in order to identify upland areas that are reserved for water-dependent activities and uses (or "coastal-dependent" activities and uses, as defined in the California Coastal Act). The District shall assign a policy priority to harbor-related elements or actions that are associated with such uses, including shoreline protection, wharfage or terminal development, dredging, and other development or maintenance actions. The District shall seek to assure that other local land use and zoning documents incorporate the protection of harbor-related uses within the Humboldt Bay watershed, and that other use-regulating agencies are prepared for protecting and facilitating such uses.

Discussion: This policy addresses actions that are associated with protecting land use designations that support the continued identification of Humboldt Bay as a port or harbor. Policies that recognize the significance of Humboldt Bay as a regional port are needed from local, regional, and statewide regulatory agencies; appropriate actions by these agencies include reviews of potential effects on harbor-related functions within the Bay, and local, regional, and statewide policies that protect the harbor-related functions against potential conflicts from non-harbor uses. In addition, this policy authorizes the District to assist other agencies as necessary to assure the availability and readiness of sites for harbor-related uses.

HLU-3: Assist in removing potential constraints for marine-dependent or coastal-dependent land uses along the Samoa Peninsula, Fields Landing Channel, Eureka shorelines, and other harbor-related areas (from Harbor Revitalization Plan)

Policy: The District shall work collaboratively with the City of Eureka, the County of Humboldt, and the California Coastal Commission to assure a "pre-designation" and "pre-zoning" of industrial sites on the Samoa Peninsula, in the King Salmon and Fields Landing region, and along the Eureka shoreline in order to remove potential obstacles for coastal-dependent or marine-dependent industrial uses.

Discussion: The District will monitor future land use decision-making and local agency land use discussions to assure that appropriate designations are maintained, and that decision-makers consider potential implications of future actions on these land uses. If appropriate, the District will consult with other local agencies to increase the visibility of shoreline sites for harbor-related uses, and will assist applicable upland land use agencies in obtaining necessary approvals to assure the designation of such sites.

HLU-4: Assist in removing potential constraints for marine-dependent or coastal-dependent land uses on harbor-related parcels in the South Bay (from Harbor Revitalization Plan)

Policy: The District shall work collaboratively with the County of Humboldt and the California Coastal Commission to assure a "pre-designation" and "pre-zoning" of industrial sites in the South Bay (King Salmon and Fields Landing) to remove potential obstacles for coastal-dependent or marine-dependent industrial uses.

Discussion: The District will monitor future land use decision-making to assure that appropriate

designations are maintained, and that decision-makers consider potential implications of future actions on these land uses. If appropriate, the District will consult with other local agencies to increase the visibility of shoreline sites for harbor-related uses, and will seek necessary approvals to assure the designation of such sites.

HLU-5: Provide information for the public, and for decision-makers and staff of government institutions, to facilitate protecting and enhancing harbor-related opportunities for Humboldt Bay

Policy: The District shall increase public and decision-maker awareness about processes and land use issues related to harbor-related uses in Humboldt Bay. The District shall assure that elected and appointed decision-makers and the public are informed about how decisions affecting Humboldt Bay's harbor-related functions are made, and that the potential effects on the harbor's functions resulting from inappropriate land use planning decisions are communicated to decision-makers and the public.

Discussion: In order to maintain the availability of coastal-dependent or water-dependent (i.e., harbor-related) land uses, staff and decision-makers in land use agencies must be aware of the land use requirements of these uses. In addition, members of the public who are aware of these requirements will help maintain the appropriate policy focus for the land use agencies. This policy establishes a District responsibility to monitor the land use decision-making for local agencies and to provide information to the agencies and the public with respect to the needs of harbor-related uses.

HLU-6: Develop "specific plans" for District-owned parcels

Policy: The District shall create site-specific management plans for the parcels which the District currently owns, or that the District may acquire in the future, including: (1) Woodley Island, (2) the Buhne Point/King Salmon restoration area, (3) the Fields Landing boat repair facility/Kramer Dock, (4) the Park Street mitigation site, (5) the District's Elk River parcel, and (6) the Samoa redwood dock facility. The management plans shall designate suitable land uses at each facility, together with management options and policies that the District shall use to implement this Plan on each site.

Discussion: The District-owned sites represent locations at which the District has the authority to enact the policies in this Plan directly. In planning the uses of these sites the District has an increased ability to carry out the policies in this Plan. The site-specific plans that will be developed will identify the District's desired uses and the nature of the management directions that follow from this Plan's policies. The District will adopt the site-specific plans with appropriate environmental reviews and with full public participation in the decision-making process.

HLU-7: Proposals for bay-related activities approved by the District shall incorporate appropriate noise control measures to avoid or reduce noise effects on events and activities carried out near the bay, to the extent feasible

Policy: The District shall consider the potential noise and vibration effects of proposals that are subject to the District's jurisdiction. Should evidence indicate that the proposed actions may be associated with significant noise- or vibration-related effects on important cultural or social activities that occur near the bay (including Native American activities as well as cultural and economic events sponsored by other governments or by independent groups of bay users), the District shall require that mitigation measures be incorporated into the activities covered by the proposals in order to avoid or reduce potentially significant noise and vibration effects to the greatest extent feasible.

Discussion: Some bay uses (particularly new facility construction or the rejuvenation of existing docks, bulkheads, etc.) are likely to be associated with episodic short-term to intermediate-term noise generation (e.g., pile-driving), and some potential bay uses could be associated with operating noise concerns. Even short-term noise generation could adversely affect cultural uses, however, such as some Native American ceremonial events on Indian Island or shoreside cultural events such as "Blues by the Bay." The District has limited authority to address potential noise impacts

resulting from land uses in upland areas, because those uses are subject to the regulatory jurisdiction of other agencies. This policy establishes the District's authority to require mitigation for noise generated by proposals that are subject to District jurisdiction. It is likely that this policy will primarily be implemented in conjunction with the District's approval of proposals for construction projects.

3.3 Shoreline Management

3.3.1 Goals and Objectives

Harbor management within Humboldt Bay includes maintaining the docks and shoreline protection features that enable the harbor's long-term operation.

Goals

- Maintain shipping terminals, marinas, and related shoreside facilities within Humboldt Bay that support commercial shipping and other water-dependent or coastal-dependent uses
- Maintain shoreline protection measures that protect uplands from encroachment by the Bay while protecting the Bay from the effects of upland uses

Objectives

- Identify and develop concurrence regarding necessary improvements for existing shipping terminals that will accommodate anticipated future needs
- Identify needs for future or new shipping terminals necessary to implement adopted land use plans for the Humboldt Bay region
- Identify and develop concurrence regarding shoreline protection measures needed for protecting developed levees, seawalls, docks, and other shoreline features
- Develop a coordinated regulatory approach to shoreline development planning and approval

3.3.2 Policies

HSM-1: Develop an inventory of shipping terminal facilities necessary to carry out adopted harbor-related planning policies for Humboldt Bay

Policy: Acting in conjunction with the City of Eureka, the County of Humboldt, and other affected parties, the District shall develop an inventory of existing shipping terminal, dock, wharf, pier, and similar shoreline facilities within Humboldt Bay. The uses of each structure under current management practices shall be identified, along with needed improvements in order to maintain existing uses. The District, in conjunction with the City, the County, and the public, shall also identify prospective or potential future uses for the existing facilities, together with an assessment of necessary improvements that will be needed in order to meet prospective future uses.

Discussion: Maintaining harbor-related activities within Humboldt Bay means maintaining terminal facilities. These facilities are considered coastal-dependent uses and are also a priority for coastal plan implementation. In order to maintain the facilities they must be recognized as essential facilities or sites. The shipping terminal facilities have an inherent relationship to the channels within Humboldt Bay, and the channels and the terminal facilities must be understood to be mutually interdependent

The interrelationships among the shipping terminals and the Bay's channels places the primary responsibility for maintaining this inventory with the District, and the primary local agency responsibility for assuring the implementation of policies related to harbor activities and shipping rests with the District.

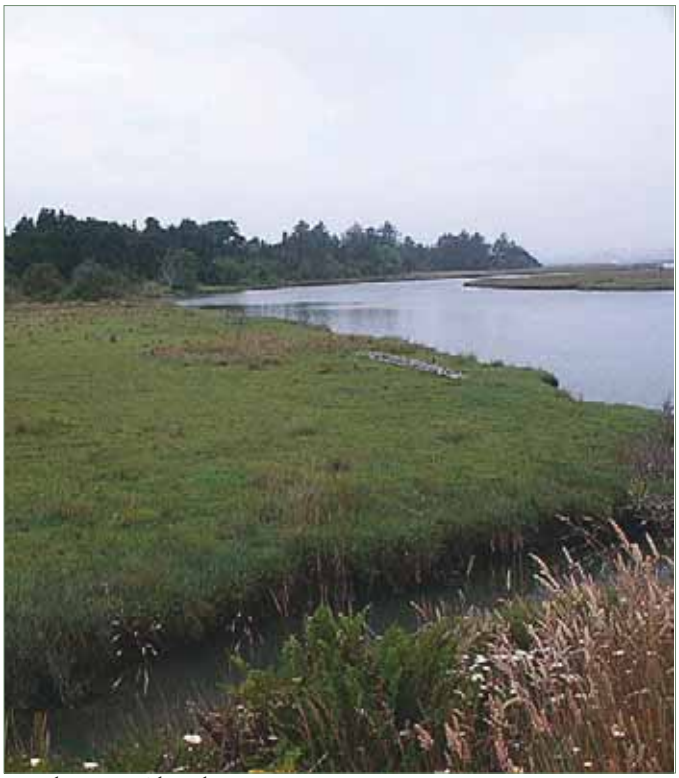
The District will consult with the Coastal Commission and the U. S. Army Corps of Engineers with respect to the long-term maintenance needs of the identified shipping facilities, including the potential need for new or replacement terminal facilities.

HSM-2: Develop an inventory of shoreline protection devices, identify potential needs for additional protection, and develop standards for new and existing Humboldt Bay shoreline protection

Policy: The District shall develop a program for conducting an inventory of the shoreline protection devices within Humboldt Bay, including levees, slope protection, bulkheads, pilings, and other devices that protect the shoreline and adjacent uplands from potential losses because of erosion or shoreline failure.

The inventory shall include a preliminary assessment of the integrity of existing shoreline protection devices, and shall include a preliminary assessment of any deficiencies that may exist in the overall shoreline protection system of the bay. The District shall develop a consistent set of standards with respect to shoreline improvements (levee protection, levee maintenance programs, culvert replacement policies, etc.), which shall apply for all shorelines of Humboldt Bay. The standards shall be developed with a consideration of any improvements necessary to increase shoreline protection in consideration of anticipated increases in sea level, potentially increased erosional forces resulting from increased storminess, and other factors that may be deemed relevant by the District. These standards shall include considerations for public access. Additionally, these standards shall address potential effects to cultural resources.

Discussion: The District will seek technical assistance in developing a proposed program of "standard improvements" for use by the District and other local governments. The District will identify appropriate guidelines and standards for shoreline areas that will be impacted by development. The standards will address the circumstances normally encountered in maintaining shoreline structures and facilities, and will also identify adequate payments to local agencies to assure that the level of review necessary to assure the safety of the proposed projects will be provided.



Mad River Slough

The District will seek to develop a "Humboldt Bay Blue Book" that provides standards and details of acceptable practices, designs, materials and methods for culvert/tidegate installation, road crossing installation and protection, levee repair and armoring, shoreline protection, piling installation/removal, maintenance dredging and other activities in Humboldt Bay. Consistent standards may enable regulatory streamlining for proposals that are developed in conformance with the adopted land use documents; proposals that meet the pre-requirements for the "standard improvements" may warrant reduced regulatory reviews.

HSM-3: Develop appropriate, consistent shoreline protection guidelines for commercial, industrial, and residential development around Humboldt Bay

Policy: The District shall work collaboratively with the City of Arcata, the City of Eureka, the County of Humboldt, relevant state and federal agencies, the Wiyot Tribe, and other interested parties to identify appropriate guidelines for shoreline protection that meets the requirements of the local, state, and federal agencies. The District shall incorporate standards and guidelines that address potential seismic effects and land-stability hazards, including effects that are related to tsunami events that may affect shoreline stability and bay-margin land uses in the Humboldt Bay region.

Discussion: As identified in the Revitalization Plan, there is a need for a coordinated review of planning policy for the shoreline of Humboldt Bay, particularly involving coastal-dependent industrial uses. The review should align the elements of the planning documents of these jurisdictions, and the review should also accommodate the policy requirements of the California Coastal Commission and the U. S. Army Corps of Engineers. The review should accommodate site-specific concerns for various shoreline types, and should address the regulatory process for individual projects that are consistent with the adopted plans. Development proposals consistent with the standards of such a plan may warrant reduced regulatory reviews.

HSM-4: Require maintenance according to the District's adopted shoreline protection standards

Policy: Authorized protective projects shall be maintained according to a District-approved long-term maintenance program which assures that the shoreline will be protected from tidal erosion, and that the project will have acceptable effects on environmental resources during the life of the erosion-control project.

Discussion: Maintenance of the installed shoreline protection shall be considered part of the application of the District-approved improvements. The District may withhold approval for proposals that do not include adequate information to allow the District to assess long-term shoreline protection adequacy. At the same time, the District will evaluate the proposed shoreline protection for potential adverse long-term consequences to environmental resources and physical features of Humboldt Bay (as by erosion or accretion), and may direct that the shoreline protection measures be modified in order to reduce adverse long-term effects on the environment.

HSM-5: Require evidence that shoreline protection proposals protect the environment and meet District requirements

Policy: Shoreline erosion control projects and the maintenance or reconstruction of existing erosion control facilities shall only be approved where: (a) the project is necessary to protect the shoreline from erosion; (b) the type of the protective structure is appropriate for the project site and the erosion conditions at the site; and (c) the project is properly designed and constructed. The District shall require design documents as part of the application for shoreline erosion-control projects that demonstrate knowledge of the District's requirement and experience in coastal erosion processes. Designs shall demonstrate appropriate consideration for public access improvements.

Discussion: The adequacy of designs for shoreline structures requires the application of the standards developed by the District in consultation with other agencies. In addition, the protection of the aquatic environment in Humboldt Bay requires that unnecessarily extensive shoreline protection be avoided. This policy addresses the District's submittal and review standards.

HSM-6: Require the use of non-structural shoreline protection where feasible and appropriate

Policy: Shoreline protective projects shall include provisions for nonstructural methods (such as marsh vegetation) where feasible. Along shorelines that support marsh vegetation or where marsh establishment has a reasonable chance of success, the District may require that the design of authorized protective projects include provisions for establishing marsh and transitional upland vegetation as part of the protective structure. Designs shall consider elements to enhance public access, where feasible and appropriate.

Discussion: Where feasible, the District will include the use of non-structural shoreline protection. This policy assures that restoration or enhancement projects are not required to incorporate shoreline protection standards that adversely affect the purposes of such projects.

HSM-7: Identify needs for potential shoreline improvements necessary to accommodate bay water surface elevation changes, including potential effects of climate change

Policy: The District shall consult with the County of Humboldt, the City of Arcata, the City of Eureka, other affected local agencies, relevant state and federal agencies, and affected local parties to identify the potential effects on the Humboldt Bay shoreline and nearby areas that may occur because of meteorological or climate-related water surface-level fluctuations in the bay prior to the year 2050. Based upon these consultations, the District and other affected parties shall develop a plan that identifies any necessary shoreline alterations or maintenance programs needed to accommodate the water-level fluctuations. The District shall adopt findings with respect to the contents and recommendations of this plan when approving District operational programs or when approving any application for project approval submitted to the District.

Discussion: The District is the local agency responsible for shoreline management within Humboldt

Bay to the line of Mean High Water, and this policy directs the District to monitor the need for potential actions by the District or others that may result for the bay's shoreline because of future sea level increases. As this Management Plan is adopted there is no consensus on the extent of sea level rise that may result from changing climate, but the District has found that there is evidence that supports a projected future increase in sea level. This policy directs that the District form a collaborative working group that includes other agencies concerned about sea level in Humboldt Bay, and the policy also directs that the District prepare a plan to address any necessary District responses to rising sea level. The subsequent plan will identify appropriate District responses with respect to rising sea level and the extent of proposal-related actions that the District will assign to applicants for District approval.

HSM-8: Develop coordinated plan for addressing seismic effects, land stability, and tsunami response plan for Humboldt Bay

Policy: The District shall work collaboratively with the California Office of Emergency Services, other appropriate local, state, and federal agencies, and other interested parties to identify roles and responsibilities that are appropriate for the District in responding to seismic events, tsunamis, or other major sources of damage to infrastructure or regions of Humboldt Bay that are subject to District jurisdiction. The District shall develop suitable emergency response plans for all District-owned properties or facilities that address such events, and shall assure that persons who visit District-owned sites are apprised of the elements of these plans.

Discussion: Currently there is no coordinated plan for addressing effects within Humboldt Bay or along its shorelines that might result from major earthquake or tsunami damage. This policy provides direction to the District to develop a response plan for areas within the bay subject to District jurisdiction, in coordination with appropriate federal, state, and local emergency response agencies, earthquake and tsunami-preparedness interests, and other local affected or interested parties. The plan will also provide response direction for District-owned sites and facilities within the bay.

3.4 Dredging and Waterway Maintenance

3.4.1 Goals and Objectives

Assuring that Humboldt Bay's harbor functions continue to be available in the future requires that the shipping channels within the bay, as well as the bay's entrance, be maintained at depths suitable for commercial vessels in use in the world today. The Management Plan identifies the District's responsibility for planning and maintaining these channels.

The construction, excavation, or deepening of channels and marinas and/or the periodic maintenance dredging of the channels and marinas in Humboldt Bay are necessary for the continued harbor-related functions that are the subject of this Plan chapter. Maintaining these waterways also supports recreational boating and fishing pursuits enjoyed by residents and visitors, as well as supporting the activities commercial fishermen and others who depend on safety in navigating Humboldt Bay.

Goals

- Maintain Humboldt Bay's channels to be compatible with the requirements of commercial shipping and other water-dependent uses of the Bay
- Conduct channel maintenance dredging that is compatible with maintaining environmental resource values in Humboldt Bay

Objectives

- Dredging and other channel maintenance activities within Humboldt Bay should be developed or maintained that:
  - insure that navigational safety is maintained for all users
  - insure that ships and maritime vessels may travel safely into and out of Humboldt Bay
  - maintain the usability of identified waterfront commercial and water-dependent industrial sites
  - maintain public facilities such as Woodley Island Marina and the City of Eureka Public Marina

- maintain natural processes that protect beach or shoreline stability
- maintain existing environmental resources associated with the Bay's channels

3.4.2 Policies

HWM-1: Safe navigation in Humboldt Bay is a priority

Policy: The District shall assist the U. S. Coast Guard and the U. S. Army Corps of Engineers in identifying the requirements for maintaining safe navigation within Humboldt Bay, including channel depth, channel markings, the absence of obstructions, and other factors that may arise from time to time.

Discussion: This policy establishes the District's overriding responsibility to assure safe navigation in the areas under the District's jurisdiction, and directs that the District consult with the relevant federal agencies to assure appropriate action.

HWM-2: Dredging may be authorized to meet Plan purposes

Policy: Dredging within Humboldt Bay or in the Bay Entrance may be authorized when:

- dredging will serve water-dependent (coastal-dependent) uses, or will maintain or enhance navigational safety;
- materials to be dredged meet appropriate quality requirements of the North Coast Regional Water Quality Control Board and the U. S. Environmental Protection Agency;
- dredging will be carried out with the least-environmentally damaging feasible method available;
- dredging will include the minimum volume necessary to accomplish the proposed purposes; and
- dredged materials will be disposed of in accordance with adopted District, Regional Water Quality Control Board, and U. S. Environmental Protection Agency requirements.

Discussion: Dredging is a necessary harbor-maintenance activity. This policy establishes the essential conditions under which dredging may be authorized as compatible with this Plan.

HWM-3: Re-deposition of dredged materials within Humboldt Bay may be authorized to meet Plan purposes

Policy: Dredged materials may be reused or deposited within Humboldt Bay areas subject the District's jurisdiction only for the following uses:

- the restoration or enhancement of environmentally sensitive or valuable habitat conditions, for which findings may be made that the use of dredged materials results in the desired ecological conditions, consistent with this Plan;
- the development of suitable water-dependent (coastal-dependent) uses, consistent with this Plan; and
- the development of appropriate coastal access or recreation projects, consistent with this Plan.

The dredged material shall be deposited only at locations approved by the District, in the volumes approved by the District. The District shall only approve dredge disposal proposals that include adequate information to allow the District to find that the volume of material and the quality of the material to be disposed of are suitable for the proposed uses, including suitability for structural characteristics as well as suitability for habitat characteristics. In addition, the District must find that the proposed disposal or re-use will not adversely affect navigation within Humboldt Bay.

Discussion: Disposing of dredged material is a necessary harbor-maintenance activity. Most dredged spoil disposal does not take place within Humboldt Bay. When consistent with approved plans for restoration or enhancement of environmental values, dredge spoil placement inside Humboldt Bay may have an environmentally positive effect. This policy establishes the essential conditions under which dredge-spoil placement inside Humboldt Bay may be authorized as compatible with this Plan.

HWM-4: Placement of fill within Humboldt Bay may be authorized to meet Plan purposes

Policy: The placement of fill into areas subject to the District's jurisdiction may be approved if the District finds that the fill and the uses proposed for the fill are consistent with the Public Trust Doctrine, that

the fill placement constitutes the least environmentally damaging alternative method for achieving the desired uses, and that any adverse effects resulting from the fill placement are mitigated to the greatest practicable extent.

Discussion: Fill placement into Humboldt Bay or other waters subject to the District's jurisdiction may be carried out when the purposes of the proposed fill placement are consistent with this Management Plan and other local, state, and federal laws. This policy establishes the District's authorization to approve the placement of fill into Humboldt Bay, subject to consistency with appropriate laws and with the Plan.

HWM-5: Potential dredged-material management options and alternative disposal methods shall be identified in a Long Term Management Strategy for Humboldt Bay

Policy: The District shall develop a Long Term Management Strategy (LTMS) for Humboldt Bay, incorporating the following goals:

- Maintain in an economically and environmentally sound manner those channels necessary for navigation in Humboldt Bay and eliminate unnecessary dredging
- Maximize the use of dredge material as a beneficial resource
- Establish a cooperative permitting framework

The District shall consult with academic institutions, other agencies, and interested parties, as appropriate, to identify potential re-use alternatives and sites for dredge spoils. Appropriate options shall include wetland restoration or enhancement, levee maintenance, or other uses that are consistent with this Plan or other adopted land use documents.

Discussion: The District will take a leadership role in developing an LTMS, which shall focus on identifying an inventory of sites around the Bay, and the type and quantity of material necessary, that may be beneficial in habitat enhancement, material disposal, and other forms of dredged material re-use. The District will identify areas around Humboldt Bay where dredge material could enhance habitat or other desirable land uses.

HWM-6: Sediment dynamics in Humboldt Bay shall be identified and a sediment management approach for Humboldt Bay shall be developed

Policy: The District shall cooperate with academic institutions, other agencies, and interested parties, as appropriate, to characterize the processes by which sediment enters, leaves, and is stored within Humboldt Bay. This cooperation may take the form of data-management assistance, mapping, funding, or other appropriate approaches. The District shall assist in the development of a sediment-management program or approach for Humboldt Bay.

Discussion: The District will assist in appropriate ways in the development and implementation of sediment management models for Humboldt Bay, owing to the importance of sediment dynamics in the Bay's management for harbor-related uses. To the extent possible, the District will collaborate with personnel from academic institutions and agencies to develop a Humboldt Bay Sediment and Dredged Material Management Plan. The District will assist in the development of management models for maintaining adequate channel depth for navigation, flood control, and water conveyance while reducing the adverse effects of dredging activities on Humboldt Bay's resources. Possible model focuses include:

- Potential alternative dredge-spoil disposal sites
- Potential dredged-material re-use options for habitat restoration
- Potential models of sediment transport, erosion, and deposition

HWM-7: Evaluate the extent of maintenance dredging required to meet the Management Plan's objectives

Policy: The District shall monitor the extent of maintenance dredging that is necessary to attain the policy balance required by the Management Plan. The District shall adopt an internal management objective that directs District personnel to monitor sediment deposition within the bay's navigation channels, in moorages, near docks, and in other locations that have historically needed dredging to maintain their utility for bay users. The District shall also monitor user needs by actively soliciting comments from bay user groups

and interested parties. District staff shall annually report to the Board of Commissioners regarding the current need for maintenance dredging. The District shall consider, no less frequently than once during each five-year period in which the Management Plan is in effect, whether the overall maintenance dredging policy framework adopted for the bay continues to meet the Management Plan's objectives.

Discussion: Maintenance dredging is a major activity carried out in Humboldt Bay, in part by the District and in part by federal action agencies. The District has concluded that meeting the Management Plan's objectives will require that maintenance dredging continue in the future. This policy directs that the District monitor (in conjunction with the sediment-dynamics monitoring called for in the previous policy) the need for the maintenance of dredged depths required to meet the Management Plan's objectives for uses in the bay (e.g., navigation channels, moorages, etc.).

HWM-8: Evaluate channel maintenance alternatives for the community of King Salmon

Policy: The District will assist the residents in the community of King Salmon in developing a program for maintaining channels in the community of King Salmon, to the extent possible

Discussion: King Salmon experiences both physical and financial constraints in maintaining the channels within the community. The District will assist in developing a maintenance program for King Salmon, to the extent feasible, including sediment-management options and potential funding options.

3.5 Commercial Fishing and Aquaculture

3.5.1 Goals and Objectives

The California Coastal Act states:

- "[F]acilities serving the commercial fishing and recreational boating industries shall be protected and where feasible, upgraded. Existing commercial and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry." (Section 30234)
- "[T]he economic, commercial, and recreational importance of fishing activities shall be recognized and protected." (Section 30234.5)
- "Ocean front land that is suitable for coastal dependent aquaculture shall be protected for that use, and proposals for aquaculture facilities located on those sites shall be given priority, except over other coastal dependent developments or uses." (Section 30222.5)
- "The Legislature finds and declares that salt water or brackish water aquaculture is a coastal dependent use which should be encouraged to augment food supplies and to further the policies set forth in Chapter 4 (commencing with Section 825) of Division 1." (Section 30411(c))

These policy statements from the Coastal Act emphasize the importance of these coastal-dependent uses for the Management Plan.

Goals

- Humboldt Bay will continue to support commercial fishing and aquaculture
- Commercial fishing and aquaculture management will be based on increased knowledge about the fishery and other environmental resources in the Bay, and the effects of management on them

Objectives

- Management plans for aquaculture in Humboldt Bay, addressing both aquatic areas and potential sites for land-based operations, will be based on increased knowledge of the Bay ecosystem and the effects of aquaculture on it
- An area will be designated in Arcata Bay in which aquaculture is to be considered a preferred use of Humboldt Bay tidelands
- The District will establish, with the City of Arcata and the City of Eureka, compatible policies with respect to tidelands managed for mariculture or aquaculture

- Where appropriate, shoreside land areas will be designated that support commercial fishing and aquaculture, and necessary infrastructure and improvements will be developed
- Management of commercial fisheries resources will be based on increased scientific knowledge of fish population dynamics, habitat dynamics, and the overall productivity of the Bay and nearby Pacific Ocean
- Consumers of aquatic species will adopt management that is fully informed regarding ecosystem processes and regulations that affect these resources
- Actions that affect populations of native and desirable non-native marine species in Humboldt Bay will be understood, monitored, and integrated into Bay management
- Requirements for Essential Fish Habitat will be identified and implemented as part of the Bay's management

3.5.2 Policies

HFA-1: The District shall plan for, designate locations for, and seek to provide adequate berthing, marina space, moorage, and other facilities necessary to meet the operational and maintenance needs of commercial fishing vessels, recreational boats, and other small watercraft

Policy: The District, in collaboration with the California Department of Boating and Waterways, other state and federal agencies, local government jurisdictions, members of the commercial fishing fleet, recreational user groups, and other interested parties, shall monitor, on an ongoing basis, the need for berthing or moorage space for small watercraft in Humboldt Bay. Should the monitoring indicate a need for additional marina slips, berthing space, or other moorage needs for small watercraft (including space needed by the commercial fishing fleet using Humboldt Bay, as well as the needs of recreational boaters and those using other small watercraft) the District shall assume the lead responsibility for pro-actively developing plans for increasing the available berthing in the bay. The District shall also consider needs for waterside and shoreside support facilities and services appropriate for these user groups, including a need for boat repairing and maintenance facilities, and shall pro-actively plan for meeting identified needs.

Discussion: The District's enabling legislation directed that the District provide adequate berthing, moorage, and/or anchorage for the range of maritime activities carried out with smaller watercraft that take place in Humboldt Bay. The identification of boating-related berthing, mooring, or anchorage options constitutes an essential part of the District's trust obligations for tidelands management. This policy codifies the District's legislative obligations in the Management Plan, directing that the District monitor and plan for necessary berthing, moorage, anchorage, maintenance and repair, and other facility needs for the various categories of smaller watercraft that use Humboldt Bay. When a need for additional berthing, moorage, repair yard, or other facilities is identified, the policy directs that the District plan for and develop those facilities, including securing funding and approvals from other agencies where necessary.

HFA-2: Support the improvement of existing fish landing, buying, and processing facilities in the Humboldt Bay area

Policy: The District shall coordinate with the City of Eureka, the County of Humboldt, other appropriate agencies, local fish buyers and processors, and other affected private interests with respect to the needs of commercial fishers and seafood buyers. Improvement or modernization of existing commercial fishing facilities and construction of new commercial fishing boat berthing, fish off-loading, and fish handling facilities shall be developed at appropriate sites under District jurisdiction having access to Bay waters and to land transportation routes, subject to approval under policies in other applicable plans.

Discussion: In collaboration with other local agencies and affected parties, the District will evaluate current fish landing, buying, and processing facilities and identify needs for improvement. The District will seek to maintain existing facilities, or to develop new or upgraded facilities where appropriate, for loading and offloading fishing gear, machinery, and fish.

HFA-3: Protect appropriately designated shoreside areas for the development, maintenance, or expansion of commercial fish processing and aquaculture facilities or activities

Policy: The District shall coordinate with the City of Eureka, the County of Humboldt, and other appropriate land use agencies to assure that lands for commercial fish landing or processing facilities, or for aquacultural uses, will continue to exist near Humboldt Bay in designations such as "waterfront commercial," "coastal dependent industrial," "marina," or "agriculture."

Discussion: In collaboration with other agencies and affected parties, the District will assure that land use plans continue to include designated sites for commercial fish processing and aquacultural uses.

HFA-4: Assist in developing agency approval strategies and funding for commercial fishing and aquacultural marketing and outreach activities in Humboldt Bay

Policy: The District, in collaboration with other agencies and members of the commercial fishing and aquaculture sectors, shall seek investment in public marketing and outreach for fishing-related or aquaculture-related commercial ventures, where appropriate. These efforts shall include fishery resources such as salmon, albacore, halibut, crabs, and oysters.

Discussion: The District will assist commercial fishers and aquaculture operators in identifying and taking advantage of opportunities for developing new fish- or aquaculture-related markets.

HFA-5: Identify additional aquaculture opportunities in Humboldt Bay

Policy: The District shall support efforts by the aquaculture industry to develop new products or new markets. The District shall coordinate mariculture management so that these uses are compatible with management for ecological values and recreational uses. Commercial aquaculture or mariculture operations and facilities shall be identified as compatible with other management goals in the portions of Humboldt Bay designated in this Plan as having a priority for mariculture use and port-related uses. The District shall work collaboratively with the City of Arcata and the City of Eureka to coordinate policies regarding the management of tidelands within the Bay for aquaculture purposes.

Discussion: The District will continue to support research regarding the effects of commercial aquaculture on the Humboldt Bay ecosystem. The District will support evaluations of aquacultural potential for additional species in Humboldt Bay (including seed-nurturing opportunities), including recreationally important species. The District will support studies of using HBMWD's industrial water supply for aquaculture purposes. The District will support potential aquaculture opportunities associated with any potential industrial project that would generate process (cooling) water.

The District will continue its work in improving the conservation and management practices related to mariculture in Humboldt Bay, including improvement in existing operations within Humboldt Bay. Because both of the cities adjoining the Bay bear responsibilities for tidelands management, the District will work with the cities in order to identify a coherent management approach, and to the extent feasible to develop consistent management guidelines, for aquaculture/mariculture in the Bay's tidelands.

HFA-6: Designate a Preferred Aquaculture Use Area in Arcata Bay, and require Best Management Practices to meet environmental constraints

Policy: The District shall, upon consideration of protecting the existing environmental resources present in Arcata Bay and in conjunction with knowledge about the state's support of aquaculture, designate a region within Arcata Bay that shall be designated as an "Aquaculture Preferred Use Area." Within this area, the District shall regulate aquaculture as a priority use, subject to environmental constraints established by existing laws and regulations. The District shall require the implementation of a suite of industry-adopted and agency-approved Best Management Practices as the regulatory basis for aquacultural operations within the designated area. The District shall use information gained from monitoring the aquaculture activities to refine or modify the Best Management Practices and

other conditions of approval (that is, the District shall employ "adaptive management" in its management of aquaculture operations in Humboldt Bay).

Discussion: The District expects to identify, in a time frame that includes the life of this Management Plan, a combination of specific use areas and agency-adopted Best Management Practices (BMPs) addressing the environmental effects of aquaculture. When the suite of BMPs have been developed and adopted, the District intends to allow aquaculture operators additional freedom to plan and execute culturing activities within the designated area within Arcata Bay. At the present time the District does not have a definite expectation for the fraction of the designated area that will be leased or permitted; (the general area under consideration is identified in Figure 2-1, in Chapter 2.0), and the area used is expected to be a subset of the area shown in the figure. At the present time, the area under Lease or permit for the primary oyster grower in Humboldt Bay is approximately 300 acres, and it is likely that the actual areas used by this grower in the future will not be a significantly greater percentage of the designated aquaculture ("mariculture") combining designation (approximately 3950 acres).

The District may approve proposals for aquacultural uses in other areas subject to District jurisdiction, using any of a variety of technical and managerial approaches that otherwise comply with local, state, and federal requirements; the District expects to refine the policy approach that will support this result through collaboration with appropriate agencies, aquaculture operators, and members of the public, in order to formalize appropriate policy in a future revision to this Plan.

The suite of BMPs that will be required by the District is expected to be developed through time as a result of studies currently being conducted in Humboldt Bay and in other west coast estuaries in which oyster mariculture is conducted. The regulation of mariculture impacts on Humboldt Bay is a District responsibility, in collaboration with other regulatory and trustee agencies, and the District intends to adopt management requirements for mariculture that are compatible with both the continuation of the industry and the protection of Humboldt Bay's environmental resources.

HFA-7: Identify ecological and environmental factors affecting Humboldt Bay's fish populations, and the ecosystem elements that support them

Policy: The District shall support legislative and educational efforts to develop a more thorough understanding regarding the life histories of all fish and invertebrate species that affect commercial fishing and aquaculture. The District shall support increased outreach to assure that the increased understanding is communicated to fishers, resource users, and decision-makers at all levels.

Discussion: The District will support research activities concerning commercially or recreationally important fish species that are found in Humboldt Bay, particularly research and educational efforts by U.C. Cooperative Extension's Sea Grant program and Humboldt State University. The District will also support research and educational programs with state and federal agencies, and efforts by private individuals and corporations. The District will assist in distributing and publicizing the results of this research and identifying the implications for managing Humboldt Bay.

HFA-8: Identify and implement the requirements for Bay management with respect to Essential Fish Habitat

Policy: The District will assist the Pacific Fisheries Management Council and NOAA Fisheries in identifying Essential Fish Habitat (EFH) in Humboldt Bay, and in integrating the EFH elements into the Management Plan and its long-term implementation.

Discussion: The Federal Magnuson-Stevens Fisheries Conservation Management Act sets forth mandates for NOAA Fisheries, regional fishery management councils, and federal action agencies to identify and protect important marine and anadromous fish habitat. The Councils, along with NOAA Fisheries, must identify Essential Fish Habitat in fishery management plans for all managed species. The PFMC must also consult with those undertaking activities that could affect these species or the habitats in order to help them avoid or minimize impacts to the habitats and, where possible, to foster enhancement of degraded habitats.

The District will work cooperatively with NOAA Fisheries and other agencies to identify Essential Fish Habitat, and to reduce adverse impacts to the habitats of all managed species. The District will cooperate with research personnel to foster research needed to identify important habitat factors for the covered species in the Humboldt Bay ecosystem.

HFA-9: Develop agreement with the Wiyot Tribe to facilitate cultural resource management

Policy: The District will work collaboratively with the Wiyot Tribe to develop a mutual understanding of shared trust interests, including but not necessarily limited to cultural resources and the avoidance or mitigation of potential impacts under the authority or control of the District.. The District will seek to develop a memorandum of understanding with the Tribe, which may address matters pertaining to cultural resource protection, use of Native American monitors during certain construction activities, and other matters of mutual interest.

Discussion: The District's trust role in managing Humboldt Bay's resources is established by state law. This policy expresses the District's desired relationship with the Wiyot Tribe, in which the District seeks to develop management approaches that are sensitive to the Tribe's concerns about the possible effects of plan implementation on cultural resources in the Humboldt Bay region.

HFA-10: Institute procedures to ensure compliance regarding cultural resources and related matters

Policy: In implementing this plan, the District shall ensure that project proponents comply with state law and regulations (including, but not limited to, CEQA and the CEQA Guidelines, and recommendations of the Native American Heritage Commission) with respect to identifying and mitigating potential effects on historical properties, archaeological sites, and human remains. The District shall consider the following procedures, as appropriate:

a. Contacting the affected or potentially affected tribal organizations
b. Contacting the North Coast office of the California Historic Resources Information Center to obtain a cultural resources record search
c. Conducting archaeological field investigations
d. Contacting the Native American Heritage Commission for a Sacred Lands file search
e. Including in construction plans and documents provisions to be followed in the event of an accidental discovery and, in areas of known cultural sensitivity, to arrange for the presence of a certified archaeologist and/or a culturally affiliated Native American Monitor
f. In cases where significant cultural resources are identified in project planning, consider avoidance as defined in CEQA Guidelines Section 15370

Discussion: This policy codifies within the Management Plan the recommended or required cultural resources protection practices currently recognized in California.

3.6 Toxic Materials Management

3.6.1 Goals and Objectives

The District supports a close coordination of local, state, federal, and private entities in order to enhance spill prevention and response, as well as the elimination of dumping and the accumulation of debris.

Goals

- Prevent spills in Humboldt Bay
- Minimize the impact of spills on Humboldt Bay
- Minimize water-borne debris in Humboldt Bay
- Eliminate illegal dumping

Objectives

- Spill response and cleanup procedures will be enhanced in Humboldt Bay through increased coordination among local, state, and federal agencies and personnel
- Planning measures and implementation procedures for spill prevention and response will continue to be improved
- The level of public involvement in, and knowledge about, the effects of illegal dumping on the Bay's environmental resources will be improved,

leading to reduced dumping, protecting water quality and environmental resources

- Compensation obtained through environmental resource damage assessments and potential penalties or fines will be applied to improving spill prevention and cleanup capabilities

3.6.2 Policies

HTM-1: Enhance public outreach and educational programs addressing the impacts of toxic materials to Humboldt Bay and surrounding lands, and assist in educational efforts to prevent toxic spills

Policy: The District shall work with the entities who are involved with spill prevention and management in Humboldt Bay to improve existing public outreach and information programs to inform members of the public and the staff and decision-makers of local, state, and federal agencies about the District's efforts to reduce or eliminate the introduction of toxic materials into the aquatic environment, including Humboldt Bay and the wetlands and streams in the watershed which drain to Humboldt Bay.

Discussion: Improved public education is needed that addresses the harm to Humboldt Bay and the Humboldt Bay watershed that is caused by the misuse of toxic materials, and the improper disposal of trash, in the Humboldt Bay watershed. The District will develop an educational and outreach program that addresses the harm to the aquatic environment that results from this pollution source. The District will support and promote the efforts of the Clean Boating Network. The District will consider sponsoring an annual event to clean up trash around Humboldt Bay. Where technically feasible, the District's program will identify methods for removing floating debris.

HTM-2: Monitor, comply with, and assist in updating as necessary the oil spill contingency plans for Humboldt Bay

Policy: The District shall take appropriate measures to ensure that activities subject to District jurisdiction comply fully with oil spill contingency plan requirements of the Office of Spill Prevention and Response, the U. S. Coast Guard, and other appropriate organizations. The District shall actively collaborate in reviewing and updating the relevant plans.

Discussion: The District will maintain and update periodically the inventory and map of environmentally sensitive and economically significant areas in and adjacent to Humboldt Bay. The District will assist in periodically reviewing the Environmental Sensitivity Index, existing agreements, contacts, response phone numbers, and documents such as the County of Humboldt Emergency Operational Plan Annex A, County of Humboldt Area Plan for Hazardous Materials Plan. The District will assist other responsible agencies in evaluating various response scenarios, ranging from small spills to catastrophic spills. The District will assist in updating the plan to include care for injured wildlife. The District will seek to assure that adequate containment materials and equipment are available to address the full range of spill circumstances that may occur in Humboldt Bay.

HTM-3: Assure compliance with North Coast Air Quality Management District Rules for Particulates

Policy: The District shall assure that activities subject to District jurisdiction incorporate affirmative actions to assure compliance with AQMD Rule 420 (Particulate Matter) and Rule 430 (Fugitive Dust Emissions), or succeeding AQMD rules that carry out the AQMD's management program for particulate matter.

Discussion: The North Coast Unified Air Quality Management District is a regulatory agency charged with assuring compliance with federal and state air quality law and regulations. The AQMD has adopted plans that address the region's air quality. The District is a responsible agency with respect to this issue, and this policy directs the District to "pass through" the need for compliance with adopted AQMD plans and policies.

HTM-4: Projects shall incorporate appropriate odor-control measures

Policy: The District shall adopt a standard for projects subject to District jurisdiction that approved projects shall not produce nuisance levels of odors. The

District shall require that projects that may be associated with odoriferous emissions adopt feasible mitigation measures to avoid or reduce the odors.

Discussion: This policy directs the District to address the potential for proposals considered by the District to result in odors, and to include odor-reduction measures in CEQA reviews and permits for projects approved by the District.

3.7 Regulatory Streamlining

The District seeks to coordinate and simplify the regulatory processes affecting management actions and appropriate development proposals in Humboldt Bay. The District would like to consolidate permit forms, requirements, and review processes, for projects affecting fill placement, maintenance dredging, culvert/tidegate replacement, and other harbor-related management or development activities, while maintaining full environmental protection.

3.7.1 Goals and Objectives

Goals

- A consolidated regulatory review process that meets the requirements of local, state, and federal agencies, which shortens and simplifies the time and effort levels needed in order to accomplish desirable harbor-related projects

Objectives

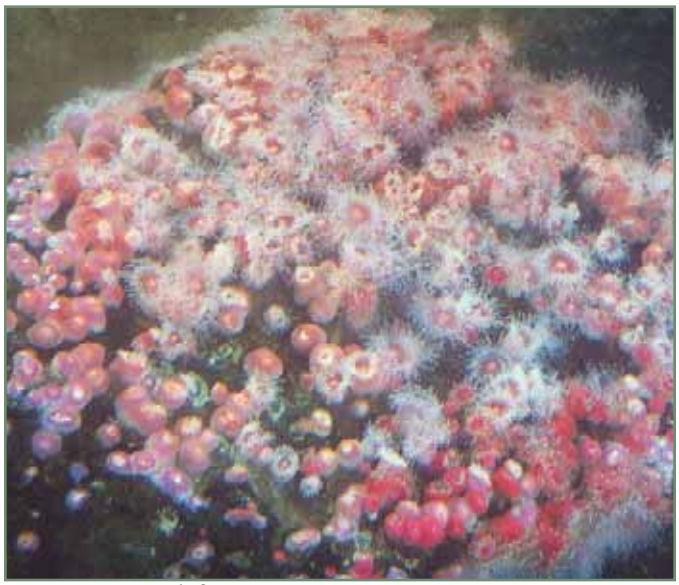
- Develop a consolidated application process that allows the District to accept applications that meet the submittal requirements of other agencies
- Reduce redundancy in application forms and submittal requirements, and reduce the time and effort necessary to complete applications for the several approval agencies
- Increase the level of coordination among regulatory agencies, reducing delays that affect desirable harbor-related projects

3.7.2 Policies

HRS-1: Develop and implement a regulatory coordination process for projects around Humboldt Bay that are consistent with adopted plans

Policy: Working collaboratively with regulatory agencies having responsibilities for the Humboldt Bay watershed, the District shall seek to develop a review process for harbor, shoreline, and other physical management elements that consolidates federal, state, and local requirements for applications and environmental documentation. The primary focus of this program shall be to coordinate, combine, and simplify the processes associated with applying for harbor-maintenance projects in Humboldt Bay.

Discussion: The District desires to simplify and unify the processes that applicants must follow for proposals that involve dock construction, fill placement, maintenance dredging, culvert/tidegate replacement, and other activities in or adjacent to Humboldt Bay that are subject to the District's jurisdiction. The District seeks to develop a combined review process for proposals that are consistent with adopted planning documents and other legal requirements that could streamline regulatory reviews. Ideally, an applicant could submit one application to the District that would result in shortened, combined review processes that included other agency approvals. To accomplish this goal the District would develop an application format that addresses requirements of all of the regulatory agencies. Ideally the District would like to develop a process that achieves regulatory consistency among agencies reviewing harbor-related applications, in terms of information needs, submittal requirements, impact assessments, mitigation requirements, and conditions of approval.



Corynactis californica

REMINDER FOR TUESDAY, JULY 27th MEETING
Please call 826-5421 to leave a message with any special needs or concerns.

Invitation to discuss
Coastal Regional Sediment Management Plan for the Eureka Littoral Cell

July 27, 9-Noon
Humboldt Bay Harbor District Office on Woodley Island

MEETING AGENDA

9:00	***Introductions***
9:15	***RSM Program And CSMW Objectives*** ***John Dingler and Cliff Davenport (CSMW)***
9:45	***Prior Work / Local Issues*** ***Adam Wagschal and David Hull (HBHRCD)***
10:15	***RSM Schedule / Desired Input From Stakeholders*** ***Dilip Trivedi & Betsy Watson (Moffatt & Nichol Team)***
10:30	***Break***
10:45	***Focused Discussion/ Potential Breakout Groups***
12:00	***Adjourn***

Overall Scope of the Project
The scope of the project is to prepare a Coastal Regional Sediment Management Plan (CRSMP) for the Eureka Littoral Cell, and provide assistance in facilitating communication between the Coastal Sediment Management Workgroup (CSMW). Relevant Corps Districts (San Francisco and Los Angeles) and the Humboldt Bay Harbor, Recreation and Conservation District (HBHRCD), as well as assist in coordination with the various stakeholders involved in the study.

A Coastal Regional Sediment Management Plan is a comprehensive guidance and policy document discussing how regional sediment management can be implemented in an expeditious, cost-effective, and resource-protective manner. The plan typically incorporates a multitude of components including:

- Engineering
- Environmental
- Economics
- Recreation
- Policy
- Legal
- Real Estate
- Regulatory
- Financial considerations
- Physical processes and barriers
- Coastal watershed land-uses
- Current and projected watershed developments

Objectives

The objectives of the plan are to:

1. Provide a strategy to restore and maintain shoreline structures;
2. Sustain recreation and tourism;
3. Enhance public safety and access;
4. Restore coastal sandy habitats through the region/littoral cell; and
5. Address areas with excessive sediment.

Data Collection & Compilation

This task includes reviewing and summarizing available data and information and compiling it in a geo-referenced ArcGIS, Microsoft Access database, or narrative formats. Information to be collected for the Eureka Littoral Cell coastal area includes relevant coastal studies describing physical processes in the region, location of coastal erosion hotspots, location of sensitive habitats and biota, location of potential sediment sources (e.g., harbors, dams, and opportunistic offshore borrow areas), location of potential sediment receiver sites (e.g., wetlands, beach nourishment, etc.) and data related to the physical characteristics of the sediment and the potential source areas as well as receiver sites.

An annotated summary of the reports reviewed will be prepared and provided in Excel or Word format. GIS shape files for data compiled from various sources will be provided in electronic format.

Data will be obtained from the CSMW, library databases, SF District Corps, the local sponsor, **and from stakeholders.**

There will be two additional meetings before the end of the year to discuss the plan as it is developed.

COASTAL REGIONAL SEDIMENT MANAGEMENT PLAN (CRSMP)
EUREKA LITTORAL CELL, HUMBOLDT COUNTY
Meeting 1 Notes

Date: July 27, 2010 9AM

Location: Humboldt Bay Harbor, Recreation, and Conservation District Board Room, Woodley Island, Eureka, CA

Attendees: Attendance List attached

Moderator: Elizabeth (Betsy) Watson, Humboldt State University

Note Taker: Jacqui Brennan, Humboldt State University

Agenda:
- Introductions
- RSM Program And CSMW Objectives
- Prior Work / Local Issues
- RSM Schedule / Desired Input From Stakeholders
- Break
- Focused Discussion On Issues particular to this study area

Meeting Summary

1. RSM Program and CMSW Objectives

Presentation by John Dingler, Lead Planner, USACE San Francisco District

- CRSMP Framework
- Overall Goal of CRSMP – regional (not individual site specific).
- Concerns – Habitat, Sediment, TMDLs, Dredge Disposal, Coastal Processes, Shore Protection, Pollutants, and more (See PowerPoint for expanded list).
- Deliverables – Data Gathering and Compilation Report, Draft CRSMP Plan, Final CRSMP. Outreach efforts to stakeholders throughout.
- CRSMP Study Questions/Priorities
  - Sources of sediment
  - Wetland restoration / sediment "needs"
  - Retention of sediment & reduction of erosion
- CRSM *Plans Completed for:*
  - Southern Monterey Bay, Santa Barbara Littoral Cell and San Diego County
- Upcoming *CRSM Plans:*
  - Eureka, San Francisco Bay, North Monterey, LA County, Orange County

2. Prior Work / Local Issues

Presentation by David Hull, Exec Director, HBHRCD

- Three areas of Humboldt Bay: Arcata Bay (conservation), Mid Bay (harbor/port), South Bay (conservation)
- Major sources of sediment: Mad River and Eel River
- Other sediment sources: Watershed erosion / storm water (more information on storm water can be found through Fish & Wildlife GIS study mapping culverts)
- Dredging / disposal types in the region include: cutter head/barge disposal, clamshell/scows disposal, upland dredge disposal, and cutter head section dredge/beach disposal. District dredges at a 7 – 10 yr frequency. 2006/7 episode was about 230,000 CY at a $3.3 million cost.
- District recently acquired the Louisiana-Pacific upland disposal site
- Humboldt Bay listed as an "Impaired" water body for Dioxins. A Dioxin work group is in place who is working with the San Francisco Estuary Institute with the goal of developing Sampling and Analysis protocol for dredging.
- Entrance Channel shoal (danger to fishing boats). Corps dredged about 1.2 million cy/yr
- Currently seeking funds for continuation of the USACE's Long-Term Sediment Management Study (LTMS)
- LTMS goals are to maintain channels, minimize dredging, maximize use of dredged materials (Info from CRSMP can be used for Humboldt's LTMS as well as sediment management plan for Eureka Littoral Cell)
- Inner Bay - has not been dredged this year; only outer, sandier bay
- Project dredging issue: use of fine sediment on sandy beaches
- Possible issue in reuse: sand material as beneficial reuse; no capability for in-bay silty material at this time.

3. RSM Schedule / Desired Input From Stakeholders

CRSMP elements described by Dilip Trivedi, M&N

- Sediment Budget - Where is sediment coming from/going?
- Change mindset … "dredged spoil" to "beneficial reuse".
- Previous questions: [how] Can we reduce the amount of shoaling / dredging? Are there other disposal sites? Answers have come from regulatory side (in SF) which gives maximum amount of sediment for dredging…and regulates where it can be disposed.

- Possible issues with permitting/time-frame/funding and long-term planning.
- Overall Goal of CRSMP Plan:
  - Look at all sediment inputs/outputs, types of sediments, natural processes, and beneficial reuse options.
  - Fifty-year time-span for plan (Question: is that a reasonable time-frame?) with room to consider climate change.
  - Generate GIS database to be hosted on CSMW website.
  - Potential implementation (done over summer/early fall); goal to have working draft in October.
- Issues of fines: availability for restoration projects may capture the attention of City Gov. (possible barrier to City participation being the impression that the Harbor District is responsible…).
- Include in plan draft: possibilities/steps for reuse and restoration related to sea level rise/climate change, levees, and the replacement of tide gates, etc. to encourage city participation.
- Looking towards October meeting – expect draft summary of literature review beforehand

4. Focused Discussion On Issues particular to this study area

Discussion led by Betsy Watson

1. *Outreach* - Possible issue of interest and participation may be related to individual docks w/individual Corps permits that are not included in overall plan.
2. *Endangered Species*
   - Native plants (in another federal plan done in Crescent City an issue came up w/lilies…)
   - Birds: Potential impact to feeding; migration (Overall impact depends on the location of the project…)
   - Inland Region deals with birds and plants/must speak with Scott (Vicky Frey will email list to Noel Davis)
   - Marine Mammals
   - Fish:
     - Listing for Euchalon in Freshwater and North (found offshore);
     - Tidewater Goby
     - Candlefish (recently listed could be of concern in near shore disposal);

- Salt Coho salmon (state and federally listed);
- Spring and winter runs of Sacramento Chinook
- Longfin smelt

- Korie Schaefer / Bob Hoffman are contacts at NOAA Fisheries
- There is no designated critical habitat in nearshore.
- North American Green Sturgeon do come into Humboldt Bay - unsure where in near-shore but do move north/south through area.

Data Sources:

- PG&E Wave Connect Project has good summary of literature – see their website e-library
- Wave Connect Team – Milt Boyd (HSU) pooling info for impact wave study on species and will be compiling existing literature.

Consideration of MPA's:

- Are MPA's currently proposed for Eureka Littoral Cell? Proposed areas for MPA's can be found on Fish & Game's website.
- Sanctuaries and MPA's will be designated by 1st of next year

3. *Physical Processes*
   - Climate Change and Sediment Impacts in Humboldt Bay System
     - Need for modeling of sediment inputs and outputs for Humboldt Bay watershed (ongoing search for funding – Humboldt Bay Initiative).
     - Interest in ways this plan can address those needs or act as template
     - Specific physical impacts of erosion: some sites are known but specific locations and erosion/accreting rates are not documented.
   - Gap in data: physical processes related to the Bay
     - Minimal to no sediment data on local estuaries that feed into bay.
     - Tributary sediment input data is documented now for Elk, Freshwater, Jacoby Creek
   - Education and community awareness/involvement that includes participation by public in climate change discussion…
   - Sediment output from Mad and Eel make up significant percentage of total sediment coming out of watersheds in California
   - Eel River is the largest sediment source to bay (has never been documented)
     - When river floods, plumes are directed northward and incoming tide may bring it in.

- Littoral Cell data is from 1970's; watershed practices have changed.
    - Jeff Hansen from USGS is looking at this question through Wave Connect and has interest in further research work through CRSMP.
    - Input term for net sediment transport along the shoreline is still unknown despite modeling…half reports show sediment moves north and half south.
    - Enough modeling exists from local buoys to get consensus...but input term is unknown given outdated and changed practices (based on Geological Survey data from 60's 70's)
    - Need for report to dispute, refine, gain consensus
- Efforts that may address gaps in data include "virtual buoys," "DMMP," and "CMS Corps model"
- Need to talk to crab fishermen for anecdotal local current and sediment plume information (Contact Jimmie Smith who can suggest people who fish the beach).
- Plumes come north. Fine grains end up on beach and stay until waves re-suspend it.
    - Question: Natural occurrence that occurs w/flooding?
    - Need for winter sampling
- Local shellfish growers have knowledge on mad river slough flooding.
    - Shellfish grows know depth of silt (such flooding and silt disposal occurs in Winter)
    - Possibly no data exists but shellfish folks may be able to talk about processes. (Contact Tedd Keipur and Todd Van Herpe).
    - Redwood Sciences Lab: collected bed load and sediment temperature sampling from Jacoby Creek and possibly some on Mad River.
    - Graham Mathews and Associates reports
    - CHERT: County of Humboldt Extraction Review Team (bedrock extraction).
    - Caltrans: Consideration for future planning (potential sediment needs)
    - RCD: Salt River (Drains into Eel near Ferndale, only 1/2 mile above ocean) dredging project (good documentation exists on that project)

4. *Tectonics & Historical tide records*
    - Data on sea level rise from the North Spit gauge suggests a greater SLR rate than nearby buoys (benchmark may have moved during 1992 earthquake)… SLR rate based on North Spit gauge may be incorrect.
    - Most of big seismic activity locally has been after the last data collection. Data on tectonics may not be reliable (a couple of the bench marks need to be resurveyed).
    - Work done on tectonics include historic geological time

- Work done in Eel River Valley to measure benchmarks (10 yrs ago at least), showed valley had “tipped”

5. *Possible Reuse Sites*
    - Erosion of bluff South of Bay may be due to river erosion more than ocean erosion.
    - Coastal erosion occurs on bluffs north of Trinidad (outside of Littoral Cell) in Big Lagoon area.
    - Locations along the spits that could serve as reuse sites (dune stockpiles). Contact dune experts/people working on restoring native dune plants (Andrea Pickard at Fish & Wildlife, and contact Friends of the Dunes)
    - Project on Samoa for tsunami preparedness.
6. *More Local Contacts*
    - Pilots: River mouths migrate to the north - evidence of sediment pushing to the north? (Typical for river mouths to migrate during times of low flow and break through to normal path in high flood).
    - Offshore ocean habitat information can be found at the State from MLPA mapping project website, coastalwatershed.ca.gov, in the estuary section for mapping and understanding habitat, as well as many references.

Action Items for Study Team:

1. Reach out to Cities of Arcata, Eureka and the County of Humboldt to identify their issues and potential long and short-term projects.
2. M&N FTP site information to be provided to group to allow sharing of reference documents of relevance to the plan.
    - Post all literature compiled to date on the ftp site for team sharing
3. Research the FERC PG&E Wave Connect Project and pull data of significance.
4. Contact crab and shellfish fishermen to acquire relevant anecdotal information (i.e. current patterns and HB sedimentation).
5. Consider developing a checklist to circulate to agencies that conduct restoration projects (i.e. Caltrans and local jurisdictions).

MEETING ATTENDEES

Dilip Trivedi, Moffatt & Nichol, dtrivedi@moffattnichol.com (Coastal Engineer)

Noel Davis, Chambers Group, ndavis@chambersgroupinc.com, (Marine Biologist)

Brian Leslie, Moffatt & Nichol, bleslie@moffattnichol.com, (Coastal Scientist, data gathering: GIS and literature review)

Chris Webb, Moffatt & Nichol, cwebb@moffattnichol.com (Coastal Scientist)

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Clif Davenport, CGS, clif.davenport@conservation.ca.gov

JB, USFWS, james_bond@fws.gov (concern for impact on endangered species/ geology +oceanography)

Susan Schlosser, Calif. Sea Grant, sschlosser@ucsd.edu (ecosystem-based management and climate change: relationship to sediment, wetlands + habitat)

Scott Downie, CDFG, sdownie@dfg.ca.gov (Watershed planning and assessment)

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