

## **Subtidal and Intertidal Habitat Goals for Humboldt Bay and the Eel River Estuary**

### *Advisory Team Meeting Notes*

*February 14, 2008, 1:30 to 4:30 pm, Eureka Sea Grant Office*

- I. In Attendance:** Diane Ashton (NOAA Fisheries), Steve Cannata (DFG), Annie Eicher (California Sea Grant Extension), Mark Finkbeiner (NOAA Coastal Services Center—Charleston), Vicki Frey (DFG), Joel Gerwein (Coastal Conservancy), Dorn Moore (NOAA Coastal Services Center—Charleston), Andrea Pickart (USFWS), Bill Pinnix (USFWS), Kirsten Ramey (DFG), Susan Schlosser (California Sea Grant Extension), Tyler Smith (DFG). Joining via teleconference: Christina Hoffman (NOAA Coastal Services Center—Oakland), Becky Pollock (NOAA Coastal Services Center—Oakland).
  
- II. Habitat Slide Show—Susan Schlosser**
  - A. Summary of the morning's field trip summary: sites visited during the driving tour included Vance Avenue (on the North Spit), under the Samoa Bridge, mudflats near Green Diamond Mill (between Arcata and Eureka), and the Del Norte Street pier in Eureka. By boat, we toured North Bay, looking at eelgrass beds, oyster aquaculture, channels, and mudflat.
  - B. Habitat Slide Show: a supplement to the morning field trip, showing a variety of habitats for the purpose of discussion. Selected sites—views at different times of year (summer vs. winter).
  - C. *Notes on questions/discussion during the field trip and/or the slide show RE: how specific habitats will be mapped is included in the following section on "Mapping Specifications."*
  
- III. Mapping Specifications—Dorn Moore and Mark Finkbeiner, Coastal Services Center.**
  - A. In support of our EBM and Habitat Goals projects, mapping of subtidal and intertidal habitats of Humboldt Bay and the Eel River Estuary will be performed by Photo Science in conjunction with NOAA Coastal Services Center.
  - B. Aerial imagery data collection is scheduled for spring-summer 2008, weather permitting.
    1. Criteria for scheduling flight:
      - a. Within one hour (on either side) of a minus one foot tide (-1 ft. MLLW) or lower.
      - b. Sun angle between 30 and 45 degrees.
      - c. Low turbidity, calm conditions (winds under 10 mph).
      - d. Clear skies (no fog, clouds, or haze).
    2. Target windows of opportunity: May 7 through 10, June 4 through 8. If none of these days are conducive for the flight, low tides in July and August will be the next targets.
  - C. Spatial resolution: 0.5 meters.
  - D. Spatial accuracy: +/- 3 meter horizontal spatial accuracy.
  - E. Spectral bands: color and near infrared.
  - F. Mapping units: the Coastal and Marine Ecological Classification Standard (CMECS) classification system developed by NOAA will be used to classify habitats.
  - G. Minimum Mapping Unit (MMU): 100 square meters. Fringe habitats and tidal channels as narrow as 3 meters can be mapped.
  - H. Data points will be collected (by Sea Grant staff in conjunction with Photoscience staff) for ground-truthing and also for validation. The accuracy requirement for the product in 85% overall and 80% per habitat type.

- I. Responses to various questions about mapping and/or habitat classification:
  1. Photo Science and NOAA staff welcome input from our group, including features we would like to include (e.g., pilings, because of known habitat use by some species) or the way we would like to see something mapped (e.g., the use of “patchy” as a modifier when appropriate); also—any information/knowledge we have of the bay that may help them with photo-interpretation (e.g., based on wind and other conditions pre-flight, we may have expectations on where to find wrack accumulations—it would be good to share this type of information with them), or if we give them information such as point locations of native oyster beds, the information could be added as an attribute layer associated with a polygon.
  2. Areas that are submerged at the time of the flight will be mapped as subtidal and only further defined if water conditions are clear enough to allow photo-interpretation (e.g., the subtidal edge of eelgrass beds.)
  3. The upper boundary of mapping will be the mean high water line, as determined based on indicators such as plant community; mapping will extend into brackish marsh where there is a natural transition, but will not extend landward of levees or other breaks in tidal inundation.
  4. Where applicable, modifiers will be added to the mapping unit (e.g., to distinguish patchy from continuous eelgrass beds; however sparse vs dense continuous beds will likely NOT be differentiated).
  5. Eelgrass/algae mixtures—will be labeled according to which is more prevalent.
  6. Unconsolidated Bottom/Shore—it can be difficult to distinguish substrate type (e.g., sand vs. mud vs. gravel) in analysis of the aerial imagery.
  7. Wrack can be distinguished from living vegetation by infrared photography, and (if covering a large enough area) will be mapped as a separate mapping unit, whether occurring as a fringe along the shoreline or covering larger areas on either the mudflat or higher within emergent marsh.
  8. Woody debris—where there are large accumulations, e.g., the Eel River estuary, will constitute a mapping unit.
  9. Ephemeral habitats—will be mapped as whatever is visible and discernible at the time of the flight (e.g., floating eelgrass mats, wrack, algal beds). In the report, we will try to address the ephemeral nature of these habitat types, present what is known RE: temporal variability, and identify research needs.

**IV. Habitat Priority Planner**—(Dorn Moore and Mark Finkbeiner, Coastal Services Center, made a presentation the following day at the Ecosystem-Based-Management meeting in Eureka).

- A. This is a new software package developed by NOAA to assist with managing natural resources. The software allows development of scenarios to prioritize goals, query locations for specific flora, fauna or demographics, and estimate impacts of new boat ramps, etc.
- B. Software requirements: ESRI ArcMap 9.2 (service pack 3) with Spatial Analyst.
- C. Data requirements: Land cover data in a raster format (e.g., NOAA’s [Coastal Change Analysis Program \(C-CAP\) data](http://www.csc.noaa.gov/crs/lca/ccap.html) : [www.csc.noaa.gov/crs/lca/ccap.html](http://www.csc.noaa.gov/crs/lca/ccap.html) ), plus point, line, or polygon data sets that fit your project goals.
- D. Habitat Priority Planner (HPP) is available as a free download from [www.csc.noaa.gov/hpp](http://www.csc.noaa.gov/hpp)

- E. Potential uses for our Habitat Goals project:
1. During the Conservation Action Planning process, we may be able to use HPP to help us better understand stressors present in our watershed.
  2. Once the mapping is complete, the map can serve as a layer and we can use HPP to perform spatial analysis metrics, to analyze site-specific supporting data, and to prioritize habitats based on defined criteria.

**V. Project Updates –**

- A. The meeting notes for 01/24/08 were approved and will be posted to the project website.
- B. The mission statement was discussed. Based on comments, the following is proposed, and this will be posted to collaborative tools as version 5 of the mission statement:

*Our mission is to integrate information about bay and estuarine habitats and selected species, identify research needs, and develop ecosystem-based management recommendations using a collaborative process.*

**VII. Work Assignments**

- A. Assignments for Sea Grant Staff
1. Write up 02/14/08 meeting notes and circulate to AC for review.
  2. Post revised Mission Statement to collaborative tools discussion group.
  3. Continue compiling annotated bibliography on Humboldt Bay and Eel River Estuary subtidal and intertidal habitats.
  4. Prepare agenda for 03/13/08 meeting.
- B. Assignments for Advisory Committee
1. Review these meeting notes and contact Annie with comments or corrections. After approval at our 03/13/08 meeting, the notes will be posted to the website.
  2. Add comments/revisions to draft mission statement if desired.
  3. Make copies of pdf files to contribute to our pdf library and/or make arrangements with Annie to have hard copies of reports scanned. Select several documents to annotate.

**VII. Meeting Schedule. All meetings to be held at the Eureka Sea Grant office**

- **Thursday, March 13, 2008, 1:30-4:30 p.m.**
- **Thursday, April 10, 2008, 1:30-4:30 p.m.**
- Thereafter: generally the second Thursday of every month, 1:30-4:30 p.m., unless otherwise noted