

Humboldt Bay Initiative General Meeting
Monday, December 8, 2014, 9:00 – 11:00 am

MEETING NOTES

Welcome and Introductions

Roundtable

- Format focuses on HBI work groups (based on strategies from Strategic Plan).

Establish Humboldt Bay Initiative:

Jill Demers, CEINC & HBI

- Coastal Ecosystems Institute of Northern California (CEINC) is the nonprofit established from the Humboldt Bay Initiative and now fiscal sponsor of HBI and other projects. In 2013 – 2014, CEINC Board held strategic planning meetings to update mission and vision, developed a website (www.coastalecosystemsinstitute.org), and continues to be open to working with others on cooperative projects and/or offer fiscal sponsorship.
- HBI Steering Committee has been meeting monthly since July 2014 to discuss current strategies and focus, meeting planning, and future direction. Funding to continue the coordinator position is still up in the air, and organizing future meetings may depend on Steering Committee and other volunteers. Please contact Jill (jill@coastalecosystemsinstitute.org) if you are interested in participating.

Becky Price-Hall, City of Trinidad & HBI

- Last HBI Roundtable meeting was in Feb 2013 to review HBI Strategies and associated work groups. Since then, some work groups active through HBI and others active through other efforts/initiatives; Invasive Species, Sustainable Development, and Integrated Forestry are areas where activity mostly occurs through other efforts and initiatives. We are starting to consider these groups and those who participate in these groups as Liaison Groups, whose members can help keep HBI informed of other efforts and developments in the region. Active HBI work groups include Climate Change and Sediment Management.

Coordinated Response to Coastal and Climate Change

Joel Gerwein, State Coastal Conservancy (phone) –

- California Collaborative on Coastal Resilience (CCCR) Humboldt Pilot. The CCCR is an effort of the State Coastal Conservancy, Coastal Commission, Ocean Protection Council, and State Lands Commission to work together to assist local and regional groups with climate change adaptation. Initially the CCCR is focused on Humboldt County to develop a process that will be useful in other parts of the state. The CCCR is gathering information from key Humboldt stakeholders on what has already been accomplished, what still needs to be done, what the priority next steps are, and what are the best ways for our agencies to help through a 10 minutes questionnaire:
https://docs.google.com/forms/d/1J2iPQJ5THdmEKm7wXXi9P770EiBQeZOqL_doVJXCzt4/viewform?c=0&w=1&usp=mail_form_link. A follow-up workshop in the Humboldt Bay area will be held in February; a draft report will be distributed for review by Humboldt stakeholders, and a final report is expected in June 2015. *Please complete the Survey by the end of December.*
- RFP for Climate Ready Round 3: \$1.4 million to fund proposals; the Conservancy received \$16 million in funding requests. May be able to fund through other funds (Prop 1). The North Coast region submitted 22 proposals. Probably only one proposal from the North Coast will be selected during this grant round. Joel will be meeting with other reviewers next week to talk about the proposals, and the Conservancy expects to work to fund some of the declined

projects from this grant round through other means. If your project is declined, please feel free to contact Joel to talk about other ways the project may be funded.

CivicSpark Americorps Team – (Larry Goldberg, Team Leader; and Steve Luther, Hanna Nielsen, Robert Douglass, Drew Clark, Americorps Team Members)

- CivicSpark is working on climate change initiatives on a local level and is the first climate action group of its kind. Four highly qualified CivicSpark team members have been hired and working out of the Redwood Coast Energy Authority. They are scheduled to work on an electric car plan, a fuel distribution/alternative fuels plan, and climate action curriculum (with CEINC). They are looking to help assist with other projects; \$18/hr charge for this service. Contact Larry at lgoldberg@civicspark.lgc.org if you are interested in learning more or have a project idea.

Jay Patton, Cascadia Geosciences

- Update on the Vertical Reference System Working Group – evaluating tectonic contributions to local sea level in the region. Next month they will be installing the Trinidad tide gage, and looking to install in the future tide gages at the Chevron dock and Englund Marine. An end of the year report to Fish and Wildlife will be prepared and posted on their project website: <http://www.hbv.cascadiageo.org/>. Tectonic modeling will occur over next year to prepare a raster product (will include a predictive model for tectonic vertical land movement). Also adding historic tide gage locations based on the work of Jeff Anderson. Also expect to put out journal articles next summer, and release data and conduct a webinar at that time.

Laurel Goldsmith, Humboldt Bay NWR

- Update on dune topographic monitoring. Transects monitored by veg type, elevations and profiles determined by TRK units. Modeling work will be done in the future, and can be used as the basis for future change under different climate scenarios. They have seen sediment accumulation in last few years, and differences in accumulation and profile based on vegetation type. Within native dune grass, new sediment is stored before foredune where as in native dune mat veg types, they are seeing sediment stored behind the foredune.

Kat Powelson, USGS – Coastal Ecosystems Response to CC program (sent write-up for meeting)

- Staff from the US Geological Survey San Francisco Bay Estuary Field station's CERCC (Coastal Ecosystem Response to Climate Change) program held a workshop at the Red Lion in Eureka on October 2-3, 2014. Presented sea-level rise response models for parcels within Humboldt Bay (Eureka marsh, Jacoby marsh, Mad River Slough, Manila marsh, and Hookton Slough). Eureka was the second of seven workshops held at estuaries along the Pacific Coast. The findings from these workshops will be compiled into a report and released in January 2015. These workshops were held with support from the North Pacific and California Landscape Conservation Cooperatives.

Jeff Anderson, Northern Hydrology & Engineering

- Working on grant from State Coastal Conservancy and administered through CEINC to map sea level rise vulnerabilities. Final reports will be released in Jan 2015, data already on websites (www.coastalecosystemsinstitute.org and Harbor District <http://humboldtbay.org/>).

Mike van Hattem, CDFW

- Mike is transitioning to new role at CDFW focused on landscape conservation and climate change
- CDFW's Wetlands Restoration for Greenhouse Gas Reduction program (<https://www.wildlife.ca.gov/Conservation/Wetlands-Restoration>) is a new pot of money for

this year and next (and likely further into the future) created by AB32 (Cap & Trade bill). This grant program is focused on wetland restoration and greenhouse gas reduction in San Joaquin delta, CA coastal wetlands, and mountain meadows. Will require greenhouse gas reduction accounting. This grant is due Dec 19, 2014, which is a fast turnaround. Mike is willing to work with folks to submit applications, but also noted that getting positioned for this grant round next year will be important as well.

- Joel Gerwein has some resources for greenhouse gas accounting and the approach to calculating sequestration rates. Here are some links and thoughts provided by Joel via email:
 - The HSU paper is available here: <http://www2.humboldt.edu/sustainability/node/183>. To cut to the chase, the protocol estimates rates of tidal marsh carbon sequestration in SF Bay between 0.6 and 2.8 tons/acre/yr, while the HSU paper which looks at tidal marsh in the City of Arcata estimates rates of 0.8 tons/ac/yr, but I think this is just based on averaging some rates in the literature, not on actual measurements. You would need an estimate of carbon sequestration for the pastures in the project area in order to compare with these numbers.
 - You can find a study (Silver et al 2014) that reviews rates of carbon flux from grazing land at this website: http://nicholasinstitute.duke.edu/sites/default/files/niggmoca_r_4.pdf. There is a wide range in these numbers depending on management and rangeland type. However, it looks like historic tidelands that were drained for pasture are often net sources of carbon as soil carbon decays over time. On pages 10-11, the rates of carbon emission from pasture on historic tidelands are estimated at 0.65-4.45 tons of CO₂ eq per ac per yr. So at the low end of the emissions estimate for pasture, you might use an estimate of 1.45 tons C per acre per year net sequestration (.8 tons sequestered and 0.65 tons not emitted).
 - One complicating factor is that brackish marshes have a lower rate of carbon sequestration because they have the potential to emit more methane than salt marshes- as salinity decreases, methane emissions can increase, although this can depend on the hydrology of the marsh- i.e. how much of the time it is inundated.
 - Here is another good resource- draft protocol from Verified Carbon Standard: <http://www.v-c-s.org/sites/v-c-s.org/files/Methodology%20for%20Tidal%20Wetland%20and%20Seagrass%20Restoration%2C%207%20FEB%202014.pdf>.
 - Calloway et al. 2012. Estuaries and Coasts 35:1163–1181 provides info on Carbon Sequestration and Sediment Accretion in San Francisco Bay Tidal Wetlands

Coordinated Response to Invasive Species

Craig Benson, RCAA

- Regional Spartina Eradication Plan – Programmatic EIR in place and goal of total eradication in Humboldt Bay in 5 years. Grant for eradication on Refuge land coming to an end, the Wiyot have some grant money to treat Indian island and possibly Table Bluff. The Spartina working group meets monthly – next meeting Tuesday, Dec. 9 at 3pm at RCAA.
- Humboldt Weed Management Area – MOU with 29 signatories. Focus on early detection and rapid response as part of the Northwest Detection Plan – what invasive can be removed in 5 years and for less than \$100,000. They are currently focused on knotweeds – under 100 occurrences in Humboldt and Del Norte and recently requested \$500,000 to remove in these counties. Knotweeds have been a problem in southern Oregon riparian wetlands and impact salmonid ecosystems. Joel mentioned treatment methods for knotweeds by the Coastal Land Trust in Mendocino, will forward info to Craig. If you are interested in the Humboldt Weed

Management group and attending their monthly meetings, contact Craig at craig@nrsrcaa.org to be added to email distribution list.

James Ray, CDFW (Write-up)

- A recent summary report (2012) outlining CDFW monitoring of non-native European Green Crab (*Carcinus maenas*) in Humboldt Bay is available [here](#). No data was collected in 2013. James assumed responsibility for the surveys this year and the report will be updated with 2014 data by spring 2015. In summary, no Green Crab were observed at any of the sample sites in Humboldt Bay during 2014. Anecdotally, Green Crab numbers appear to be down along the North/Central California coast this year. Since monitoring began, Green Crab in Humboldt Bay appear to fluctuate at low levels, but have not exploded in the same way as observed in other North/Central Coast Bays. CDFW plan to continue monitoring indefinitely as time allows.

Study and Control of Sediment

Jeff Anderson, Northern Hydrology & Engineering

- CA Coastal Sediment Management Working Group update – State and federal (CRNA and Army Corps) with goal to improve management of sediment sources and looking for a group that can manage Eureka littoral cell plan. Jeff noted that current draft plan wasn't widely distributed, and final plan for Eureka is due Sept 2015. Data used to develop plan assumes an understanding of the sediment budget, however, we don't know sediment budget in our region. Jeff also noted that we should focus on getting the interests of our region into the plan, and that Diane Ashton and Vicki Frey have more history with the CA Coastal Sediment Management Plan and Working Group, but neither were able to attend today.
- Next steps for HBI Sediment Working Group – This group has not been all that active, although sediment often discussed at Climate Change Working Group meetings. In 2014, group will reconvene to establish focus – likely on regional sediment management, circulation and transport, water quality and turbidity, and some of the items highlighted in Adona White's update below.

Adona White, Water Boards (sent write-up)

- Suspended sediment monitoring in Elk and Freshwater: Ongoing suspended sediment, turbidity, and flow measured by HRC, GDRC, and Salmon Forever; Suspended sediment loads available generally from 2003-2014. In Freshwater Creek, HRC measures tribs, Salmon Forever measures Mainstem at Roelofs and Howard Heights Bridge. GDRC measures on Ryan Creek.
 - Salmon Forever has no funding to continue doing loads on forks but have a great lab setup with all equipment.
- Elk River Sediment TMDL:
 - RWB developing sediment TMDL for Upper Elk River (downstream boundary is at Berta Road on upper Mainstem)
 - In July 2013, RWB released to public the Peer Review draft Staff Report for Upper Elk River and response to comments. Peer review draft identified significant load reductions from hillslope sources to meet water quality objectives, load reductions from instream deposits in impacted middle reaches are necessary to support beneficial uses and abate nuisance flooding and identified Staff is working on public review draft that is anticipated to be released in Spring 2015. The primary regulatory vehicle to implement the Upper Elk River TMDL is proposed to be WDRs for timberlands. Additionally, non-regulatory means of implementation include the formation of a watershed stewardship group and remediation and restoration of instream deposits within the middle reaches of Elk River.
 - Feasible remediation and restoration actions are being evaluated under the Elk River Recovery Assessment which began in 2014 and will be completed in 2017. Involves

characterizing existing conditions and desired conditions, modeling hydrodynamics and sediment transport. Results will provide basis for restoration strategy. Funding from State Board, SCC, and HRC. CalTrout is lead, sub to NHE and Stillwater Sciences.

- Humboldt Bay Action Plan – during the public scoping for the Basin Plan Triennial review, during which we evaluate potential Basin Plan revision priorities, comments from Humboldt Baykeepers suggested reevaluation of the Humboldt Bay Action Plan, last updated in 1994. Staff recommended adding it to the 2014 triennial review as a medium priority. While coordination and collaboration with multiple stakeholders are critical to addressing the water quality issues in Humboldt Bay, and the revision of the Humboldt Bay Action Plan could be a vehicle to promote stronger partnerships, it is not essential to accomplishing that larger goal. Also see Humboldt Bay TMDL and tributary TMDL discussion below.
- Humboldt Bay dioxin and PCB TMDL Action Plan - Humboldt Bay was listed under Section 303(d) of the Clean Water Act as impaired due to PCBs in 2002. The listing was expanded in 2006 to include dioxin toxic equivalents. Data evaluated during the 2012 listing cycle confirmed exceedances of PCBs and dioxin toxic equivalents in sediment and tissue samples. Development of a TMDL has not been initiated. Various stakeholders with an interest in the state of Humboldt Bay formed a Working Group to meet and discuss the issues associated with dioxin contamination in the Bay. Regional Water Board staff participated in the Working Group up through 2010 with the goal of helping to develop a standardized sampling and analytical protocol. With the loss of staff to retirement in that year, the Regional Water Board's involvement in the effort came to an end. As a general matter, there have been no staff resources applied to the dioxin toxic equivalents and PCB issue in Humboldt Bay from 2011-2014. Staff recommend adding this issue to the 2014 triennial review list as a medium TMDL priority, on the basis that the individual projects are being addressed through other programs.

Craig Benson, RCAA –

- Mad River, Freshwater Creek, Elk River 303d listed due to sediment. Mad River – TMDL established, no monitoring & compliance plan, Elk River – Nearly finalized, Freshwater creek – TMDL not established.

Jenny Curtis, USGS

- Tidal marsh sediment deposition study as a HSU Senior capstone project. Using clay bed marker pads to study sediment deposition. Students installed pads in in McDaniel's Slough in May 2014, and Jenny installed pads at Jacoby Creek (a pioneer marsh, recently underwent spartina removal) and Arcata Marsh (bayside of levee at McDaniel's Slough) in Dec 2013. At these 3 sites, there are 22 pads, November sampling. Most sedimentation occurred nearby channels or bay itself.
- Submitted EPA wetlands grant for sediment flux – using *insitu* monitoring systems, good feedback, but rejected. Will resubmit this spring.
- Also submitted an expression of interest to CenCos.
- Noted that set tables in Jacoby Creek are low hanging fruit – these have never been calibrated and never read – that would give some good elevation change data.

Promote Sustainable Development

Vanessa Metz, Coastal Commission

- Low Impact Development (LID) is a development approach that seeks to maintain the natural hydrologic character of the site rather than directing runoff into stormwater systems that discharge into creeks and the bay. LID is a cost-effective method for managing runoff and protecting water quality and the environment. The Coastal Commission has developed a draft

model Local Coastal Plan which emphasizes the use of LID to protect open space, pollutant source control, and retaining water on site.

Becky Price-Hall, City of Trinidad/HBI

- The cities of Arcata, Eureka, Trinidad and the county (HBI partners) participate in the North Coast Stormwater Coalition which works to reduce stormwater pollution through public education and outreach, coordinating pollution prevention efforts and implementing pollution control measures. The new State NPDES stormwater discharge permits will be requiring LID for new development and redevelopment. The Stormwater Coalition is developing LID technical materials and providing training to municipal staff, developers and contractors. The group meets monthly on the 2nd Wednesday of the month. North Coast Stormwater Coalition- <http://www.northcoaststormwatercoalition.org>

Morguine Sefcik, RCAA (provided Write-up)

- North Coast Stormwater Coalition's (NCSC) Low Impact Development Pilot Project (Project) is a two year project to improve awareness and usage of LID techniques and planning, and to reduce discharges to the storm drain systems of communities in Humboldt and Mendocino Counties. RCAA partnered with the Cities of Fortuna, Eureka, Arcata, Fort Bragg, and the Counties of Humboldt and Mendocino on this project. The project ends in March of 2015. Objectives include regional outreach; increased awareness of LID practices for officials, planners, consultants, contractors, industrial-scale and small businesses, and homeowners; train municipal staff to conduct Illicit Discharge Detection inspections; 65% engineered LID design plans to retain stormwater and protect water quality for 3 sites to be used by municipalities to obtain funding for 100% design plans and implementation (sites: Clam Beach south parking lot, Fortuna Avenue in Fortuna and Minnesota Ave Alley in Fort Bragg. The grant also provided funding for partnering cities and counties to develop one or two conceptual LID site design per community, and will create a report detailing the local barriers to LID and appropriate next steps for LID incorporation in our community.

Integrated Forest Management

Dave Fuller, BLM

- Headwaters Forest. BLM with 7500 acre parcel; 3000 acre of this old growth, the rest logged and about 50 miles of roads (now removed). They are treating young 2nd growth forests to create future "old growth." Target of 1600 ac of younger forests completed, now evaluating of this treatment to monitor, adapt, and adjust

Craig Benson, RCAA

- Sits on McKay Tract Community Advisory group. The County acquired 900 acres, and now has management plan in place. Looking for public access points, and although it is officially closed, the public is accessing it. Craig expects the County to move fast to establish access and trails; the Trails Trust interested in volunteering. There may be an opportunity for Phase 2 for 600 more acres.

Emerging Issues: Drought

Jenny Curtis, USGS – soil moisture and streamflow

- Working on water balance model for state, gave update for HUC 8 basins. Dataset goes back to 1896. Soils drier and recharge less than 1976-77 drought. Groundwater depletion is an issue, especially with this drought. There has been a cumulative desiccation of the landscape since 2006-2007, which was a wet year. In the last 8 years, found 20% decrease in runoff, 30% decline snowpack, but only 8% decline in precip. The North Coast has some of the largest declines in the

state. Data seems to be indicating that there is high variability in climate, especially an increase in extreme dry climate, but we haven't seen the extreme wet climate. Water balance data from 2010 and before and available.

- Groundwater website and data available (<http://www.water.ca.gov/groundwater/casgem/>), part of mandated monitoring recently implemented by CA Legislature.
- Also noted that the Water Resources Element of General Plan to be discussed Monday, Dec 15th.

Reg Kennedy, NOAA NWS

- Since October 1, rainfall values for Humboldt County ranged from 90 to 110% of normal. The outlook for December calls for above normal temperatures (55%) and above normal precipitation (45%). The seasonal outlook, January through March, favors above normal temperatures and equal chances for above normal, normal or below normal precipitation.
- Humboldt County in Extreme Drought, D3, except for far Humboldt County, near Del Norte County line, Severe Drought, D2.
- The seasonal drought outlook calls for drought continuing but improves.
- El Niño update as of December 4: There is now an approximately 65% chance El Niño conditions will develop this winter and last into spring 2015. Assuming that El Niño fully emerges, the forecast consensus favors a weak event.
- Rivers running about 60% of normal.

Other HBI partner activities & ecosystem-based projects

- Eelgrass Management Working Group has started meeting to determine objectives, outline, and funding opportunities for a Humboldt Bay Eelgrass Management Plan. Contact Adam Wagschal for more info (awagschal@harveyecology.com).

Rhea Williamson, HSU

- Rhea attended the OPC/MPA meetings in early December. The Water Bond that recently passed will create funding opportunities. There will be \$30 million from Water Bond going to OPC for issues related to water quality. OPC is also trying to retain unrestricted Prop 84 funds. Expect the OPC will put out the 2nd round of RFPs (\$2.5 mil available) in the future.

Jen Kalt, Humboldt Baykeeper

- King Tide Photo Initiative – drop in sea pressure caused 1ft increase above predicted tidal height of recent series of King Tides starting Dec 5. Tides topped 9.13 ft on Wednesday, and were probably highest of the year. Next King Tides Dec 22 and Jan 20. Contact Jen at jkalt@humboldtбайkeeper.org if you want to participate in King Tide Photo Initiative.

Adona White, Water Boards (Write-up)

- Aquatic Ecosystem Restoration Policy - Regional Water Board staff has developed a draft policy to address permitting issues specific to restoration projects. The policy articulates the Regional Water Board's support for aquatic ecosystem restoration projects designed to restore impaired beneficial uses of water. It articulates the Regional Water Board's existing authority to permit these kinds of projects. It will also acknowledge that restoration projects sometimes result in short term water quality impacts (e.g., increased turbidity); but, they are deserving of permitting certainty because of the long-term water quality benefits they promise. The policy will affirm that no provisions of the Basin Plan should be viewed as inhibiting the permitting of restoration projects. The draft policy was released for public comments on November 17, 2014. A workshop for the proposed policy was held on November 20, 2014. It is scheduled for Board's consideration and adoption in January 2015.