

Handout

Agenda Item 5A

Date May 12, 2016

NBWA
May 6, 2016

Living Shorelines; Marilyn Latta, CA State Coastal Conservancy
Hard structure vs Nature-based infrastructure.

ACOE requires looking at SLR for projects; State Coastal emphasized and funds natural approaches. National Living Shorelines conference in Maryland. Have to prove that a living shoreline wouldn't work before doing a hard infrastructure. Lots of volunteers involved with restorations. Helps stretch \$. Big focus on "Edge Zones" for upland ecotone slope, etc. **SF Bay Subtidal Habitat Goals Report**. Lots of monitoring on one 1-acre project to develop data for fish, birds, etc. at oyster and eelgrass restoration. Eel grass: traps sediment, reduces erosion, sequesters carbon.

Nature Conservancy restoration site south of Loch Lomond in SR. Shellbag mound, eelgrass plot and combo. Using artificial reef elements. Testing different designs of the artificial reefs. Checkerboard plots. Need for more shells—looking for restaurant support for shells. SF State was lead with students on construction of reefs and eelgrass planting. UC Davis as well. 3.8M oysters at height of numbers but as they grow, not all make it; 750K oysters survived. Shell bags were the best b/c more complex structures. Oysters do better when lower in the water. Increase in all species (nudibranchs, Dungenous crabs, birds, shrimp, benthic diversity in mud). Black oystercatchers increased. Acoustic monitoring of fish movements showed more fish.

Reefs block wave action and get sediment accretion behind them. Heavy balls sank a bit. Assessing 7 sites for next phase; upper transition zone being included. Testing coconut coir logs. Sfbaylivingshorelines.org

Need for more pilot projects by 2030 to keep pace with SLR. Signage along Bay Trail. Goal to develop new wetlands behind the reefs. Richmond Marsh, next project, to create more marsh as pilot project. Not a lot of historic data of eelgrass or oyster colonies; lots of gaps.

Flood protection Meets Ecosystem Restoration: A new Vision for Managing Channels at the Bay Margin, Flood Control 2.0; Scott Dusterhoff: **Resilient Landscapes Program**, SFEI. Jeremy Lowe's presentation at conference leads in to this. SFEI-ASC to help biz and govt to achieve ecosystem health through collaborative independent science. Napa Valley Historical Ecology project (Robin Grossinger), featured in NY Times recently. San Pablo Bay Shoreline Change (*Shifting Shores*; funded by EPA), where shoreline is growing or shrinking and why. Petaluma Watershed Historical Hydrology, EPA funded, Sonoma RCD, just started this project. Lower Novato Creek Landscape Vision is current project. Historical Ecology giving hints for what is now needed to create resilient landscape planning and policy

Flood control channels are aging, constrained by complex landscape setting, and need to be dredged/cleaned regularly which create habitat impacts. Outdated channel designs; increased value of the dredged sediment; climate change resulting in more intense rain; **designed for watershed conditions of 60 years ago, not for today.** Flood Control 2.0 Project to develop tools and processes to integrate habitat restoration and creation into planning. In San Fransisquito Novato and Walnut Creeks. Supplying tech, economic and permit/policy guidance. **Sedimatch:** Dating service for sediment supplying projects and those which need it! ID'ing opportunities and constraints. Collaborative process working with local engineers and planners, regulators and policymakers. Will assess improvements associated with future vision.

In Novato, plan to increase tidal marsh, horizontal seepage levee to help Novato San w/excess water & support brackish marsh habitat. Moving towards full watershed (upland) management tech including LID, permeable infrastructure, etc. Hydrologic study on Watershed Program website. So much water in the creek, need for restoration of marsh for infrastructure protection. Imperative to begin with the baylands work. Novato Creek Baylands Historical Ecology Study on web; on Amazon.

Conference Review, Judy Kelly: Netted \$12K with this conference, more than budget estimate. Summary sheet available – ask Judy Kelly.

Encouraging letters to the Editor in support of Measure A.

Next Time: Climate Project w/Sonoma Ecology Center, Caitlin Cornwall. Gary Bakker from Bay Institute “The Case for the Bay” and how important fresh water flows are for the lower portion of the Bay. The Bay needs to receive MORE water than its been getting in the past many years.

June 3, Novato San.

Request for surveys from all regarding future NBWA direction. Send to Judy Kelly.