Webinar 1: Elkhorn Slough - How a long-term data collection effort has recently been informing regulatory decision making

Link to WebEx recording: <https://mmancusa.webex.com/mmancusa/ldr.php?AT=pb&SP=MC&rID=52358632&rKey=7281640dbcb2eafd>

1. Explicit outcome(s)
   * 1. Improved relationships between the Elkhorn Slough NERR and the water quality regulators at the California Regional Water Quality Control Board
     2. Improved water quality regulation: total maximum daily load regulations (TMDLs) now call for limiting key nutrient pollutants from the dominant source of these to the Elkhorn Slough
2. How outcome(s) was measured
   * 1. Explicit and repeated reference to Elkhorn Slough NERR-associated data and personal communications in the approved water quality regulatory policy
3. Methodology
   1. How was collaboration managed?
      1. Coastal Training facilitated information exchange including formal and informal needs assessments in collaboration with NERR water quality staff
      2. Many hours of NERR staff time spent strategizing about the best way to spend their time, what they had to offer
   2. How was communication managed?
      1. Elkhorn Slough NERR allocated a limited and defined amount of staff time for this issue and Coastal Training helped to plan events and communication accordingly
      2. Planned meetings were the central communication methodology
         1. In-person meetings at the Central Coast Water Quality Control Board (they had no travel budget)
         2. Email requests from Board to NERR
      3. Networking with experts
         1. Peer-review of draft ruling by NERR staff and associates
   3. How were data translated?
      1. NERR water quality science staff created graphs of water quality data
      2. NERR water quality science staff translated data and graphs during personal meetings with Board
      3. NERR water quality staff published findings in peer-reviewed journals
4. What could have been improved?
   * 1. Including those who feel burden of regulation (farmers, municipalities) might reach more decision makers and help strengthen partnerships with the NERR
5. What went well?
   * 1. Increased recognition of the value of the NERR data
     2. Improved regulations that recognize the connectivity of adjoining waters to the Elkhorn Slough
     3. Widespread recognition of 600-fold increase in the size of the Elkhorn Slough watershed

Webinar 2: Mission-Aransas - How this NERR is taking water quality monitoring to their community- with a water quality report card

Link to WebEx recording:

<https://mmancusa.webex.com/mmancusa/ldr.php?AT=pb&SP=MC&rID=53962712&rKey=fea89da796ec999c>

1. Explicit outcome(s)
   * 1. Spurred feasibility study to increase water circulation
     2. Construction of stormwater retention ponds in watershed
     3. Upgrade of wastewater treatment plan
     4. Informed citizenry and elected officials
     5. Forming bonds and collaborations with communities
        1. New visitor center resulted from these bonds
2. How outcome(s) was measured
   * 1. The water quality station was setup and conducted using the same methods as the Mission-Aransas NERR’s System Wide Monitoring Program (SWMP) for comparison purposes
     2. 12 newspaper articles in one year on this project
     3. Increased demand for information from citizens
3. Methodology
   1. How was collaboration managed?
      1. The collaboration is managed through the City of Rockport Water Quality Committee and the Reserve staff (Manager, CTP Coordinator, Stewardship Coordinator and Research staff)
   2. How was communication managed?
      1. Communication has been a major part of this project. Little Bay is the focal point of the community and as such it receives a lot of attention by the concerned citizens. This project requires more communication than other projects and communication that is targeted for the lay public. A report card approach was developed to help communicate the data to the public. This report card is presented on a quarterly basis. An annual “state of the bay” meeting will also be held to communicate to the public.
   3. How were data translated?
      1. The Little Bay Report Card includes measurements of both water quality and is based on the following parameters: temperature, salinity, dissolved oxygen, turbidity, chlorophyll, and nutrients. Water quality is compared to SWMP measurements taken in Aransas Bay. This comparison with Aransas Bay will be used to provide a “grade” for each parameter and will be factored into the overall score. Aransas Bay is generally regarded as a “healthy” bay with good water quality and healthy habitats.
4. What could have been improved?
   * 1. Guidance on how to relay that there are no finite water quality ranges for biological measurements such as chlorophyll
     2. If funding were maintained, could have continued online web portal for community to access water quality data
     3. The demand for more information is more than the Reserve might be able to fulfill- ask the community for more financial support.
5. What went well?
   * 1. The report card approach seems to work well and give the community ample information on a consistent basis that is easily understood
     2. Learned to use less jargon when targeting the community

Webinar 3: Grand Bay- How Grand Bay’s water quality program is interacting with a phosphate spill in their estuary

Link to WebEx recording:

<https://mmancusa.webex.com/mmancusa/ldr.php?AT=pb&SP=MC&rID=55079122&rKey=d434e86fd07c625b>

1. Explicit outcome(s)
   * 1. Phosphate company agreement with state water quality agency
2. How outcome(s) was measured
   * 1. $1 million settlement to the Reserve
     2. Corrective actions
     3. New preventative measures implemented, including better communication
3. Methodology
   1. How was collaboration managed?
      1. Community contacted NERR about fish kill
      2. NERR contacted State agencies
      3. NERR staff worked closely with State water quality agency throughout the situation
   2. How was communication managed?
      1. Phone calls, emails, meetings
      2. ‘A lot’ of meetings, including NERR staff travel to Jackson to meet with water quality agency
   3. How were data translated?
      1. State water agency used raw data- esp. pH time series
      2. Expertise from NERR crucial – esp. to determine extent of impact
4. What could have been improved?
   * 1. Real time water quality alarm would have helped
5. What went well?
   * 1. Improved relationships with water quality agencies and other partners (e.g., fish agency)
     2. Good coordination between agencies
     3. Funding for a new monitoring station
     4. Real time telemetry set up with alarms
     5. Incident used to illustrate use of SWMP data in high school ed curriculum
     6. Improved sewer connections in nearby communities

Webinar 4: Great Bay - Great Bay Nutrient Monitoring, Partnerships, and Getting Data to Management

Link to WebEx recording:

<https://mmancusa.webex.com/mmancusa/ldr.php?AT=pb&SP=MC&rID=56015802&rKey=351318b6f40acbd9>

1. Explicit outcome(s)
   * 1. Wastewater treatment plants upgraded in 2 municipalities
     2. Draft numeric criteria have been proposed based on ecological endpoints of dissolved oxygen (DO) and eelgrass (*Zostera marina*) bed health (largely areal expanse).
     3. A collaborative “integrated watershed management” (IWM) approach, in which GBNERR has been participating
     4. Publication of numeric nutrient criteria (to protect DO and eelgrass) for Great Bay, informed by SWMP data
     5. State of Estuary document published
     6. Great Bay nitrogen non-point source study drafted
2. How outcome(s) was measured
   * 1. Actions noted (above)
3. Methodology
   1. How was collaboration managed?
      1. UNH contractor collects SWMP data for Reserve
      2. Raw SWMP data used for numeric nutrient criteria for nitrogen
      3. NERR research staff sit on water quality advisory committees
      4. NERR staff and partners educate communities about pollutants
   2. How was communication managed?
      1. NERR provided funding for data collection
      2. All other communication managed via UNH and
   3. How were data translated?
      1. Suggested NNE criteria transferred to EPA’s Region I office in Boston: these were adequate to establish policy for point source dischargers (wastewater treatment plants).
4. What could have been improved?
   * 1. Litigation along with contentious public discussion and process
     2. Reduce some of the tension, particularly work by EPA with the communities to bring them along early on in the process so they would better understand the science, permit limits, and the benefits of nutrient control
     3. UNH could have cited NERR funding for SWMP data collection
5. What went well?
   * 1. Enormous amount of public outreach and education by the principal parties, including GBNERR’s Coastal Training Program, as well as PREP’s “State of Our Estuary” triennial conference that tracks key indicators, including nitrogen, dissolved oxygen, and eelgrass using combined data
     2. Reserve perceived as neutral party in providing data, alone, in a very controversial arena
     3. Regulations formed from NERR data has forced action to reduce pollutants, now real need to research solutions for better management strategies

Webinar 5: Utilization of Apalachicola NERR SWMP data in support of Numeric Nutrient Criteria Development for Apalachicola Bay

Link to WebEx recording:

<https://mmancusa.webex.com/mmancusa/ldr.php?AT=pb&SP=MC&rID=56836932&rKey=ba2ee576548761a5>

1. Explicit outcome(s)
   * 1. Better informed numeric nutrient endpoint for the EPA
     2. NOAA declaration of commercial fishery disaster due to oyster die off triggered by nutrient reductions due to water diversions
     3. Support for FLA vs. GA lawsuit over water diversion dispute
2. How outcome(s) was measured
   * 1. Documents from above
3. Methodology
   1. How was collaboration (and communication) managed?
      1. Apalachicola NERR staff expertise and sampling stations used by the State Department of Environmental Protection Division of Environmental Assessment and Restoration (DEAR): the DEAR and NERR staff worked closely together to develop numeric criteria for the estuarine systems.
      2. ANERR held public workshops for the numeric criteria, where they presented monitoring data
      3. Technical meetings between DEAR and ANERR staff- not only for the Apalachicola Bay, but all FLA estuaries
      4. Field sampling assistance between ANERR and DEAR
      5. Data sharing directly via CDMO and other data not at CDMO emailed directly; metadata helped.
      6. DEAR questions about data directly answered by ANERR
4. What could have been improved?
   * 1. ANERR needed to add TP and TN to monthly SWMP sampling, as this is needed to be applicable to numeric criteria work,
     2. DEP lab now used to maintain compliance with FLA’s technical and quality assurance rules
5. What went well?
   * 1. Extensive and productive communication between DEAR and ANERR staff in establishing the numeric criteria
     2. EPA had good additional information to improve the approved numeric nutrient criteria
     3. 20 years of negotiations between FLA and GA have been improved for the long term data from ANERR
     4. Data used in Congressional hearings about water diversion issues