

EWN Session Information

Title: Engineering With Nature (EWN) for Sustainable Estuaries: Collaborating for "Triple-Win" Solutions

Session Chair: Dr. Todd S. Bridges, Senior Scientist, US Army Engineer Research and Development Center, US Army Corps of Engineers.

EWN is the intentional alignment of natural and engineering processes to efficiently and sustainably deliver economic, environmental and social benefits (i.e., "Triple-Win" solutions) through collaborative processes. Using this approach, EWN is able to expand the value of projects that beneficially integrate engineering and natural systems. With recent advances in the fields of engineering and ecology, there is an opportunity to combine these fields of practice into a single, collaborative and cost-effective approach when striving to achieve sustainable estuarine systems. In fact, the approach to developing sustainable, water-dependent projects in the coastal zone includes the following EWN elements: science and engineering that produces operational efficiencies; using natural process to maximum benefit; broadening/extending the benefits provided by projects; and applying a science-based, collaborative processes to organize and focus interests, stakeholders, and partners. In recent years, the EWN portfolio has grown in size and scope, and this has resulted in several advancements. This session will be used to highlight the many EWN collaborative initiatives that encompass our innovative approaches to sustainable, water-dependent projects that are located in estuarine systems. Moreover, specific projects will also be described in detail with considerable attention focused on reporting of lessons learned, benefits, opportunities and challenges. Examples of the discernable linkages between the EWN elements and resulting project outcomes will also be offered during the presentations. For more EWN information, please visit: www.engineeringwithnature.org

Speaker #1 Monica Chasten

Organization: US Army Corps of Engineers - Philadelphia District

Presentation Title: EWN Supports Navigation and System Resilience in Coastal New Jersey and Delaware

Presentation Description: Hurricane Sandy impacted USACE Philadelphia District (NAP)'s region, which required removal of shoals that impeded navigation. Beaches and other resources also required extensive repair. NAP adopted EWN and Regional Sediment Management (RSM) strategies to construct wetlands with dredged material. As an EWN Proving Ground, NAP transitions research advancements into field-scale projects. This presentation highlights the projects that resulted in a long-term, success story. Efforts to build momentum and achieve collaborative, "triple win" solutions will also be described.

Speaker #2 Georganna B. Collins, RLA

Organization: Ecology & Environment, Inc.

Presentation Title: Adopting an EWN Approach for Projects along the Texas Coast and Gulf of Mexico

Presentation Description: EWN is an integrated process which involves means and methods to develop "triple win" solutions that integrate nature with economic development and coastal flood risk management. This presentation highlights the application of EWN for coastal and riverine

systems in Texas and along the Gulf of Mexico. Projects include bird nesting islands, dune and beach habitats, marsh complexes and seagrass beds, which provided multiple benefits to coastal communities. This presentation also illustrates how this intentional alignment between science and engineering can be achieved.

Speaker #3: Elizabeth Murray

Organization: US Army Engineer Research and Development Center

Presentation Title: Using EWN Techniques to Restore Tidal Salt Marshes in Subsidized Former

Baylands Presentation Description: As subsidized former baylands in San Francisco Bay are reconnected to tidal flows, accretion is needed to raise the restoration surface to marsh plain elevation. Thus, restoration projects use barrier features such as mounds or berms in their designs to interrupt fetch, reduce wave energy and promote accretion of sediment carried by the tides. This presentation highlights the EWN techniques used to employ these features at Hamilton Wetlands and Sears Point. Ongoing efforts include monitoring and research. Wave model results also have implications for future restoration projects.

Speaker #4: Rob Holmes

Organization: Auburn University

Presentation Title: "Triple Win" Success for Coastal Projects using EWN and Landscape Architecture

Presentation Description: The field of landscape architecture is closely aligned with the economic, environmental, and social goals of EWN. Landscape architects bring additional methods and expertise, including representation, communication, and design skills that can aid in achieving those goals. This talk discusses lessons learned from collaborative work between EWN and landscape architects on projects including new coastal infrastructure in Texas and existing water-dependent infrastructure in several other states.

Speaker #5 Cathy Tortorici

Organization: NOAA-National Marine Fisheries Service

Presentation Title: EWN Collaborations Achieve Mutually Desirable Outcomes for USACE and NOAA

Presentation Description: By collaborating with the USACE on their EWN initiative, NOAA has identified overlapping goals that provide benefits to our trust resources. Using natural features instead of traditional hard structures can create habitat for commercially important fish and shellfish, and for endangered species. The presentation will offer insight into the EWN techniques that can aid in regulatory compliance, such as during Endangered Species Act consultations. Federal Agencies using EWN techniques in their actions can improve the regulatory process and maximize ecological benefits.