Pre-Workshop Read-Ahead Materials for Each Participant

The Organizing Committee (OC) would like to draw your attention to several items for your review and consideration before the HEA Metric Workshop begins.

1. **Initial Introductions** – On the morning of the first day of the workshop, you will be asked to briefly describe yourself and what expertise/experience you bring to the Workshop topic. You will also be asked to fill in a response to the statement, "This workshop will be a success for me if …" Each participant will have no more than one minute to respond during the Initial Introduction so please give some thought to your response before the workshop begins. The purpose of this initial exercise is two-fold. One, is to efficiently communicate to all participants the nature and diversity of expertise available to them at the workshop. Two, by knowing your expectations, the OC can modify the workshop to help ensure we meet your needs to the extent possible.

2. Look Over the List of Marsh Metrics – Please review the enclosed list of marsh metrics for assessing ecosystem function with HEA. You will notice that both structural and functional marsh metrics are included in the list. In many instances, structural marsh metrics may be appropriate surrogates for ecosystem function. The list is not intended to be comprehensive nor static. You will be given the opportunity to add, delete, or modify the list of metrics during the Workshop. This list is only intended to get you started thinking.

3. Review the Matrix of Metrics – During the workshop you and your colleagues will be asked to evaluate (and eventually rank) each structural and function metric using a number of different evaluative criteria (e.g., cost, feasibility, sensitivity, scalability). These evaluative criteria along with the list of metrics will yield a Matrix of Metrics. Prior to the Workshop, please review the enclosed sample Matrix of Metrics. In this instance, Aboveground Plant Productivity is used as an example. As with the list of metrics, you and your colleagues will be given an opportunity of modify the matrix as you see fit.

Thanks so much for taking the time to look over these Pre-Workshop materials. The Organizing Committee is looking forward to meeting and working with you!

From NOAA Coastal Ocean Program, Decision Analysis Series No. 23, Volume 1 (2003):
Functional Habitat Characteristics: parameters that describe what ecological service a habitat provides and may be used as a measure to determine how well a particular place performs a specific function.
Structural Habitat Characteristics: parameters that define the physical composition of a habitat; the functions of an ecosystem can perform are often dependent upon its structure.

From NOAA's Habitat Equivalency Analysis: An Overview (revised version May 23, 2006):
Habitat Equivalency Analysis (HEA) is an example of the service-to-service approach to scaling. The implicit assumption of HEA is that the public is willing to accept a one-to-one trade-off between a unit of lost habitat services and a unit of restoration project services (i.e. the public equally values a unit of services at the injury site and the restoration site). HEA does not necessarily assume a one-to-one trade-off in resources, but instead in the services they provide. Consider a marsh as the resource and primary productivity a resource service. Suppose the replacement project provides only 50 percent of the productivity per acre of marsh as the injured site would have provided, but-for the injury. In order to restore the equivalent of lost productivity per year, then, the replacement project requires twice as many acres of marsh. Habitat equivalency analysis is applicable so long as the services provided are comparable.

This alphabetical list of metrics for salt marsh was developed to stimulate thinking on the topic and should not be considered exhaustive. This list may not include new or emerging metrics on the horizon and may contain metrics that do not merit further evaluation.

Aboveground or Belowground Vegetative Productivity
Adjacent submerged aquatic vegetation
Algae
Avian or terrestrial animal abundance, species richness, density, or presence/absence
Benthos abundance, species richness, density, or presence/absence (could be benthic macroinvertebrates or benthic infauna)
Chemical profile of water or porewater (e.g., dissolved oxygen or salinity)
Concentration or presence/absence of toxics
Current velocity quantification
Distance to Open Water or Ratio of Emergent Vegetation and Open Water
Elevation and microtopography quantification
Epiphytic invertebrate abundance, species richness, density, or presence/absence
Fish and shellfish abundance, species richness, density, or presence/absence
Flood Mitigation Value/Storm Abatement
Frequency or width of trenasse or tidal creeks
Groundwater/Recharge Function
Habitat Value for Feeding or Refuge
Human use for recreation or subsidence; Aesthetics
Nutrient profile/availability
Organic matter content
Percent Cover (live and dead)
Percent Invasives
Percent survival of adults or seedling survival
Plant Height
Rate of Marsh Expansion or Contraction
Redox potential
Remote sensing (e.g., color of a pixel correlates to marsh health)
Sediment accretion rates
Sediment Contamination
Sediment grain size
Sediment transport quantification
Species Composition
Stem Density
Threatened and Endangered Species abundance, species richness, density, presence/absence
Tidal dynamics
Water depth
Water Quality Improvement or Degradation
Water source identification/hydrologic exchange
Wave energy quantification