

AN ECOSYSTEM MANAGEMENT TOOL FOR THE SELECTION OF ENVIRONMENTAL AND SOCIO-ECONOMIC INDICATORS IN URBAN ESTUARIES

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Because estuaries provide important economic and environmental benefits to human populations, and because humans cause severe impacts on the health of these ecosystems, urban estuarine ecosystems and humans are intimately linked. In the United States, coastal areas are currently experiencing intense environmental degradation as the coastal population is growing at unprecedented rates. Current environmental monitoring efforts are not working to change users' behavior as estuary health continues to decline. In order to protect human health and the environment, a clearer connection needs to be made between life on land and impacts in the sea. A major barrier to changing users' behavior is that too much focus is placed on environmental indicators, and not enough on socio-economic indicators - ones that the public can understand and value. This body of research is geared to protect human health and the environment through the use of an innovative and common protocol for the selection of environmental and socio-economic indicator tools which can be used by local decision makers and understood by the public to evaluate the current health of urban estuaries and potentially modify users' behavior.

The inclusion of human influences on ecosystem interactions calls for new management tools for studying natural systems and for solving economic and health problems. We currently lack a common and unifying framework for indicator selection. Indicators are quantitative or qualitative measures that provide information about the status of or changes in natural, cultural, and economic aspects of an ecosystem. Therefore, a common ecosystem management tool was developed for indicator selection, one that engages a broad range of stakeholders by asking users to identify socio-economic and environmental goals, thus making the vital connection among humans and the environment. The U.S. EPA is encouraging adoption of a management framework that encompasses a holistic approach to natural resource management. A common approach to indicator selection will result in a common language among scientists, decision-makers, and citizens so that ecosystem monitoring can influence environmental policy. In addition, the application of a predetermined and analytical approach to indicator selection

will reveal specific indicators that are common and valuable across all estuaries and allow for comparisons among coastal systems.

This presentation demonstrates a community's capability to make decisions that affect the environment. This environmental decision-making research includes components of community-based participatory research, environmental behavior modification, and environmental education. As a result of this research, urban estuary managers will be able to use a common monitoring design across political jurisdictions, a common language, and appropriate indicators to measure valuable resources. Management initiatives will include both natural science and social science components which will help users understand socio-economic linkages to ecosystem change.

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