

TOWARD AN ECOSYSTEM SERVICES APPROACH TO COASTAL MANAGEMENT



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Most coastal management decisions use some form of an ecosystem-based approach. With an ecosystem services approach coastal managers are better able to balance competing interests, uses, and needs by integrating natural and social sciences, two traditionally disparate disciplines. The National Estuarine Research Reserves and the Great Lakes Research Institute have used the approach outlined below to study and make decisions about the benefits of natural infrastructure.

1. Start with a specific management question. For example:

- How much do locals value natural buffers? What tradeoffs are they willing to make to protect these buffers?
- Green infrastructure approaches – how much will they potentially save the community in terms of flood damage reduction?



In Duluth, an economic assessment showed green infrastructure could reduce flood damage by \$89,000 annually over a 20 year planning horizon.



The Wells National Estuarine Research Reserve worked with stakeholders to understand how southern Mainers value natural buffers around water bodies and the tradeoffs they are willing to make to protect these resources for the future.

2. Use an ecosystem services approach. An ecosystem services project is informed by a specific management question and includes 4 key elements: stakeholder engagement, communication, biophysical science and social science. Each element is engaged from beginning to end.



3. Access information and resources. NOAA's Office for Coastal Management offers data and information to help coastal managers understand and incorporate an ecosystem services approach into their decision making process. The Office plays a key role in mapping and analysis, stakeholder engagement as well as communicating and translating ecosystem services information.



Data

- Coastal Land Cover and Change Information
- National Estuarine Research Reserves System-Wide Monitoring Program
- Ocean Use Participatory Mapping
- Marine Protected Area Inventory
- Environmental Sensitivity Index
- Critical Habitat Designations



Tools

- Coastal and Marine Ecological Classification Standard Crosswalk Tool
- Sea Level Affecting Marshes Model
- U.S. Environmental Protection Agency's interactive (EnviroAtlas)
- Gulf of Mexico Ecosystem Services Valuation Database (GecoServ)



Trainings

- Federal Resources Management and Ecosystem Services Guidebook
- A Guide to Assessing Green Infrastructure Costs and Benefits for Flood Reduction
- Stakeholder Engagement Strategies for Participatory Mapping
- Place-based case studies
- In person training and workshops
- Technical assistance