Ecosystem Services Assessment of the Nemunas River Delta, Lithuania

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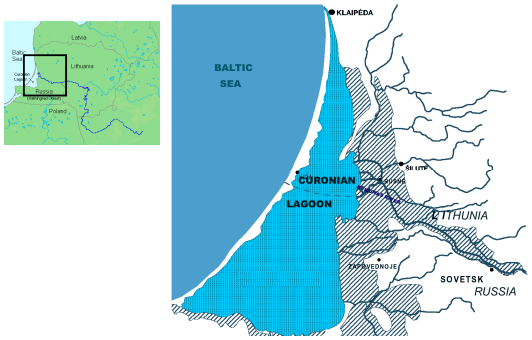
EPA United States Environmental Protection Agency

OVERVIEW/ STUDY SITE

Ecosystems at the interface of fresh and salt water provide many services to humans, and face a high risk of degradation.

We focused on ecosystem services of the Nemunas River Delta in Lithuania, to increase understanding of ecosystem services in transitional waters and provides an organizing framework for integrated environmental research and management in this region.



METHODS

Reviewed existing studies to: describe the services provided by the Nemunas Delta region and develop a conceptual model, using the DPSIR (Drivers-Pressures-State-Impact-Response) framework (Pirrone et al. 2005, Rekolained et al. 2003)

Analyzed conceptual model to identify synergies (services that responded similarly to pressures and may be bundled together) and tradeoffs among services

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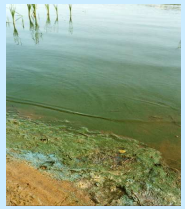
CONCEPTUAL MODEL FOR THE NEMUNAS DELTA ECOSYSTEM

A dominant pressure is nutrient loading, leading to algae blooms



Climate warming has been altering timing of flooding (Dumbraukas and Punys 2003). Pumping and dikes are used to manage floods and reduce economic damage (Lukianas et al. 2006)

Biodiversity service includes key nesting sites of rare and vulnerable bird species (IMEW, 2004)

The area experiences substantial uncontrolled landing of fish (up to 60% of the fish yield) (Breber 2008). Fisheries management could serve to regulate catch and reduce invasive species pressures (Olenin et al. 2007).

SYNERGIES AND TRADEOFFS AMONG ECOSYSTEM SERVICES