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Chesapeake Bay: A case study in resiliency and restoration

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Abstract

Chesapeake Bay is the largest estuary in the United States and arguably the best studied estuary in the world. Situated in the mid-Atlantic region and with a watershed sprawling over several regulatory jurisdictions with competing interests, the Bay presents a unique case study in resource management. The characteristic properties of Chesapeake Bay, with its thousands of kilometers of shoreline and shallow, nutrient-retentive waters creates its two most important features: its productivity and vulnerability. The fisheries of the Chesapeake Bay and productive farmland, early drivers of settlement and subsequent economic growth in the region, continue to play a significant role in management of the watershed. Since European colonization, shifting land-use patterns, from agriculture to urbanization, and the associated input of excessive nutrients, sediments, and toxins, have had a deleterious impact on the Bay's water quality and thus overall ecosystem health. In 1972, heavy rainfall and runoff associated with Tropical Storm Agnes pushed a teetering ecosystem into near collapse. This event was coincident with emerging landmark environmental regulation at the Federal level. In response, local research institutions began documenting the declining health of the ecosystem and the Chesapeake Bay Program was established in 1983. Continuing research and the evolving challenges associated with climate change have resulted in a constantly evolving regulatory and management regime aimed at improving the health of the Chesapeake Bay region and its citizens. A historical survey of the unique regulatory and management challenges associated with Chesapeake Bay is instructional, as it highlights that diverse stakeholders can use research to drive policy and ultimately affect quantitative improvements in ecosystem health. Agility in management and policy is key, given the dynamics of population growth and evolving demands and challenges within the ecosystem.

Keywords

COAST Card, restoration, socio-environmental report cards, environmental literacy