

Sustainable Approaches to Restoring Coastal Habitat in the Heart of New York City

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Jamaica Bay has evolved over the past 25,000 years as an important and complex network of open water and coastal habitat. The wildlife use of these systems is commensurate with this complex network of natural systems – the 20,000 acres of diverse habitat support seasonal or year round populations of over 214 species of special concern. Because of its geographic size and diverse habitats, Jamaica Bay is a nationally and internationally renowned birding destination.

However, the valuable resources that comprise Jamaica Bay have been lost over time due to development. The current Jamaica Bay is only half of its pre-colonial extent. Filling, dredging, pollution, shoreline hardening, and other degradations have synergistically affected historic flow and sedimentation patterns in the Bay, eradicating natural habitat, impacting water quality, and modifying the rich ecosystem that was present prior to the extensive urban development of the watershed.

This presentation examines new approaches for ecosystem restoration and sustainability within the complex, urban environment of Jamaica Bay. A series of ecological pilot projects first identified in the Jamaica Bay Watershed Protection Plan have been implemented and are currently being monitored. The purpose of the pilot studies is to address uncertainties associated with these new approaches under NYC climate and environmental conditions to guide future practices, while also attempting to restore and maintain water quality and ecological integrity with the New York City metropolitan area. These pilot projects are unique in their exploration of sustainable approaches to address urban water quality and ecological concerns.

For example, eelgrass and oyster restoration studies are widely used elsewhere, but are new to the waters of NYC. Until recently, little attention has been paid to eelgrass and oyster enhancement and restoration in urban watersheds such as Jamaica Bay in waters that are closed to fishing and shellfishing. Over the past two years, we have been undertaking pilot projects within the Bay to restore eelgrass and oysters in Jamaica Bay, and will discuss the unique challenges of carrying out these projects, the lessons learned, and the direction for future efforts.

Other pilot projects include using wave attenuators to slow erosion of wetlands, testing the infiltration capacities of mussels to improve water quality, and harvesting algae for biofuel production.

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