

Executive Summary

The Comprehensive Restoration Plan (CRP) for the Hudson-Raritan Estuary (HRE) is a master plan to guide ecosystem restoration efforts throughout the estuary. It is intended to be used by all stakeholders (environmental and community groups, government agencies, and others), thus allowing the whole region to work towards a series of common restoration goals providing benefits to the estuary.

This effort was initiated in 1988, when Congress recognized the New York-New Jersey Harbor as an estuary of national importance and accepted it into the National Estuary Program (NEP). Following this designation, the Harbor Estuary Program (HEP) completed a Comprehensive Conservation and Management Plan (CCMP) in March of 1996. Included among the CCMP's recommendations was the development of a comprehensive strategy for habitat protection and restoration. The US Army Corps of Engineers (USACE), in partnership with their non-Federal sponsor, The Port Authority of New York & New Jersey, joined the process of developing the strategy in 1999 with the initiation of the HRE Ecosystem Restoration Feasibility Study.

To enhance the scientific credibility of the project, beginning in 2005 the Hudson River Foundation and Cornell University led a series of workshops to craft a strategy to develop a restoration plan for this highly urbanized estuary. From the beginning, the scientists agreed that the restoration program should be focused on creating and restoring a mosaic of habitats within the human-dominated landscape.

To achieve this goal, a team of estuarine scientists identified 11 measurable objectives for restoration, termed Target Ecosystem Characteristics (TECs), each of which defines specific goals for an important ecosystem property or feature that is of ecological and/or societal value. The TECs reflect the broad interest of HRE stakeholders and address habitat and degradation issues. Achieving the objectives in the TECs will increase the sustainability and resiliency of the HRE. Each TEC has established short- and long-term objectives for each of eight planning regions within the estuary. For example, the short-term objective for the Coastal Wetlands TEC is to create or restore 1,200 acres of wetlands by 2015, while the long-term objective is to create or restore a total of 15,200 acres by 2050.

As a first step in the planning process, the HEP Habitat and Public Access Workgroups' acquisition and restoration site nomination process helped to catalog numerous restoration opportunities. Additional sites were identified during outreach efforts conducted as a part of USACE's Needs and Opportunities evaluation. Collectively, a total of 296 restoration and acquisition sites and 436 public access sites have been cataloged and included in HEP's New York City Open Accessible Space Information System (NYC OASIS). While many of these sites provide opportunities to conduct restoration activities, additional areas are needed to achieve the ambitious objectives of the program.

A series of Geographic Information Systems (GIS) analyses was conducted to identify additional restoration opportunities. These estuary-wide analyses helped to guide the planning efforts and to estimate whether the TEC objectives are achievable. For each target, existing datasets were used to identify habitat suitability (e.g., appropriate depth, water quality parameters, etc.) as well as potential constraints to ecological restoration. Preliminary findings indicate that sufficient habitat is available for achieving the TEC objectives throughout the eight planning regions.

There are many challenges to implementing the CRP. Restoration projects and their associated monitoring programs are costly. Therefore, achieving the objectives will require a substantial dedication of funds and creative funding strategies. Innovative local financing techniques, combined with State and Federal funding opportunities, will generate the support necessary to make these projects a reality. Mitigation and/or Natural Resources Damage Assessment funding should also be considered to support restoration projects. At this early stage of planning, accurately estimating project costs for all of the restoration opportunities would not be possible. The costs to conduct restoration vary greatly by project and by type of restoration (i.e., TEC). However, a rough estimate of the costs to achieve the Coastal Wetlands objectives range between \$262 and \$856 million (2008 dollars) for the short-term objective and \$3.3 to \$10.8 billion for the long-term objective, based on average costs per acre for this type of project. Considering that these are only the costs associated with one of the 11 TECs, funding to implement all the targets will be difficult to secure. The success of the CRP in improving the estuary's ecosystem is dependent upon successful partnering among stakeholders.

Multi-jurisdictional regulatory boundaries present another challenge to restoration planning within the HRE. Resource management agencies are tasked with balancing multiple, often conflicting goals of resource conservation while providing for compatible uses of the environment. Examples of policy issues that should be addressed include: 1) habitat exchange issues, 2) placement of fill in water, 3) beneficial use of dredged material for habitat restoration, 4) attractive nuisance issues, and 5) issues affecting management of contaminated sediments.

The CRP is considered a living document which is meant to be updated as projects are implemented so that lessons learned can be incorporated for the use and understanding of all stakeholders.

