

# Bikini-ready for winter

With smiles as wide as the sun, bikini-clad marine marvels Caroline Gaynor (left) and Amy Koch embrrr-ace 2010 by chillin' with Mother Nature in the frigid waves off Coney Island during the Polar Bears' annual New Year's Day swim. For more on the daredevil dip, turn to Page 20. Photo by Paul Martinka

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Presentation Text Amendment

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Serving the Military Community in Greater New York

# Army Corps. of Engineers helping to restore Hudson River



The Comprehensive Restoration Plan includes 11 priority targets for ecosystem restoration. Photo courtesy USACE

#### BY JOANNE CASTAGNA, ED.D. While underway aboard the U.S. Army Corps of Engineer's vessel

Hayward, the Army Corps hosted a group of waterfront leaders, including congressional representatives and other key-decision makers from over 20 organizations, during a New York & New Jersey Harbor inspection that included traveling up the Hudson River.

"It's the 400th Anniversary of Henry Hudson's historic exploration up this great river." said Col. John R. Boulé II. the Army Corps' New York District Commander, as he addressed the group while



With the skyline of Manhattan in the background, Col. John R. Boulé II, Commander of the Army Corps' New York District addresses a group of waterfront leaders aboard the Army Corps' vessel HAY-WARD in the Harbor. Photo courtesy Keegan O'Connell-Lilly, Public Affairs, USACE, New York District

standing on the bow of the Havward.

Boulé said, "Our view must have been very different from his. Years of industrialization have considerably degraded the Hudson River that's part of the New

deck of the Corps vessel HAYWARD for a group photograph near the Statue of Liberty National Monument. Photo courtesy Christopher Gardner, Public Affairs, USACE, New York District

York - New Jersey Harbor Estuary," he informed the guests who were taking in the New York City skyline

and steady harbor breeze. The Army Corps' is presently helping to turn Continued on Page 27

Waterfront leaders and Army Corps personnel assemble on the

# Hudson

# Continued from Page 24

back the hands of time on the estuary. The agency hosted this event to celebrate the unveiling of an innovative comprehensive restoration plan created in collaboration with various partners with a joint focus on restoring the estuary.

Restoring the estuary will not only create a healthier environment for fish and wildlife, but it will also provide the public cleaner waters, healthier fisheries, increased flood protection, recreational opportunities, and a boost to the region's economy.

"The primary goal of the New York-New Jersey Harbor Estuary Comprehensive Restoration Plan is to develop a mosaic of habitats that provides maximum ecological and societal benefits to the region," said Lisa Baron, project manager, and marine biologist with the U.S. Army Corps,' New York District.

Baron along with a diverse group of technical experts and consultants with the Army Corps' New York District developed the plan as part of the Hudson Raritan Estuary Ecosystem Restoration Study with The Port Authority of New York and New Jersey, the project's local sponsor.

The plan was prepared in collaboration with the New York-New Jersey Harbor Estuary Program and more than sixty partnering organizations, including federal, state and local agencies, non-governmental organizations and regional stakeholders.

The overall plan is unique in that these agengios are procently loveraging



The eight regional areas encompassed in the Comprehensive Restoration Plan. A star in the Upper Bay regional area denotes the site of The Statue of Liberty National Monument. Photo courtesy USACE

#### sea.

The New York-New Jersey Harbor Estuary includes not only the harbor, but also rivers, wetlands, coastlines and open waters and is located within a complex ecological system within a metropolitan region with a population of 20 million people.

The plan's boundary covers a large region of the estuary, which is a 25-mile radius around the Statue of Liberty National Monument.

"To perform restoration work in the estuary. the plan divides the estuary into eight regional areas associated with specific watersheds," said · Peter Weppler, Chief of the Army Corps' New York District Coastal Ecosystem Section, who accisted in developing

the estuary is safe and accessible to the millions of estuary residents and visitors.

# **Habitat Restoration**

The habitats that are being considered for restoration and creation include coastal wetlands, shellfish reefs, islands for waterbirds, coastal and maritime forests, and eelgrass beds.

## **Coastal Wetlands**

Coastal wetlands are the regional areas that connect the estuary's open waters to dry land.

"Due to industrialization, nearly 80 percent of the wetlands have been lost and most of what remains is degraded," said Baron, who has been involved in various types of environmental restoration initiatives and projects for more from the land. Wetlands filter and detoxify our water by catching contaminated sediments in the water.

"Wetlands are also nature's sponges and act as shoreline barriers and stabilizers. They diminish wave impact, reduce erosion and provide a buffer from flooding for our coastal areas and the communities living there." said Jodi McDonald, Chief of the Army Corps' New York District Ecosystem Restoration and Flood Risk Management Section, who is also a marine biologist responsible for developing the reports that justify the Army Corps involvement in performing the restoration opportunities presented in the plan.

The plan has identified over 26,000 acres of wetlands throughout the estuary that is suitable for coastal wetlands creation and restoration.

### Shellfish Reefs

One of the plan's priorities is to restore and create shellfish reefs including oysters, the keystone species for the estuary, mussels and clams, as well as other shellfish. These reefs are intricate underwater structures made up of live shellfish and lavers of emptv shells.

Oyster reefs have been almost eliminated due to poor water quality conditions, disease and overharvesting. In fact, the estuary supported a thriving oyster industry up until the late 1800s, covering approximately 200,000 acres.

These reefs provide nooks and crannies and potential nursery grounds for other species because they provide hiding places, feeding grounds, and egg attachment sites for many cies of birds.

These birds include long-legged wading birds such as herons, ibises and egrets that provide a vital role in the health of the environment. estuaries' These birds help regulate the population of other species by consuming these other species for food

# Coastal and Maritime Forests

Coastal and maritime forests are found on the fringe of seacoast habitats behind the dunes or a wetland and provide critical upland habitat.

Maritime forests have trees that are often stunted by salt spray and high winds and they may grow in unusual, gnarled shapes.

These hardy forests are needed by many species because they provide a home, food and a nesting place for migratory birds. They also contribute to shore stabilization and flood control, as well as moderate global climate change.

Over the years, these forests have been destroyed by timber harvests and development.

# **Connecting Habitats**

The plan not only includes ways to create and restore habitats, but also methods to connect the habitats so that they can benefit from one another. These methods include rebuilding shorelines and creating habitats for fish, crabs and lobsters.

Over the years, the estuary's 1.000 miles of natural shorelines have been replaced with piers, docks, and bulkheads. These structures destroyed the naturally sloped shorelines that transitions from shallow to deep water needed by fish and sea life to thrive.

verse habitats, the plan ? suggests connecting and creating a mosaic of habitats, including oyster reefs, eelgrass beds and tidal marsh habitats, wherever possible throughout the estuary.

#### Habitat Support **Structures**

The plan also focuses on the estuary's physical landscape, balancing necessary urban infrastructure with environmental restoration. These ways include opening up tributar- BR ies that may be obstructed by man-made barriers and improving the water quality of enclosed water ways.

Tributaries are streams that flow into larger streams or bodies of water. Networks of tributaries connect rivers and streams to the estuary.

Each year, migratory fish must navigate these connections, swimming many miles upstream to spawn. Man-made barriers such as dams can prevent fish from reaching egg-laying sites, threatening the future of these fish populations.

The plan recommends removing unnecessary barriers and reconstructing others to include such things as fish ladders that can connect upstream habitats with the rest of the estuary. In addition, dams that currently don't allow fish passage could be reconstructed to do so.

In some areas of the estuary bodies of water are isolated or enclosed, such as dead-end canals. Often these areas collect pollution discharge and storm water runoff, resulting in water that is polluted, stagnant, contains sparse vegetation, has low species diversity and emits noxious COLPS, INCW TOLK DISULICE.

Baron along with a diverse group of technical experts and consultants with the Army Corps' New York District developed the plan as part of the Hudson Raritan Estuary Ecosystem Restoration Study with The Port Authority of New York and New Jersey, the project's local sponsor.

The plan was prepared in collaboration with the New York-New Jersey Harbor Estuary Program and more than sixty partnering organizations, including federal, state and local agencies, non-governmental organizations and regional stakeholders.

The overall plan is unique in that these agencies are presently leveraging their funds and forces in an effort to reduce redundancy, become more efficient and save tax payers a considerable amount of money. It will also serve as a master guide and framework for all restoration efforts throughout the estuary.

The plan involves many partners because the New York-New Jersey Harbor Estuary spans 1,600 square miles across New York and New Jersey. An estuary is the area where the fresh waters of a river meet the salt water of the cludes not only the harbor, but also rivers, wetlands, coastlines and open waters and is located within a complex ecological system within a metropolitan region with a population of 20 million people.

The plan's boundary covers a large region of the estuary, which is a 25-mile radius around the Statue of Liberty National Monument.

"To perform restoration work in the estuary, the plan divides the estuary into eight regional areas associated with specific watersheds," said Peter Weppler, Chief of the Army Corps' New York District Coastal Ecosystem Section, who assisted in developing the plan. He is also a biologist with an extensive background in ecological investigations.

These eight regional areas are delineated on the regional areas map that accompanies this article.

The plan includes 11 priority targets for restoration, recognized as Target Ecosystem Characteristics that include methods to restore and create habitats, ensure these habitats live in harmony and with the surrounding urban infrastructure, and to ensure tors.

#### Habitat Restoration

The habitats that are being considered for restoration and creation include coastal wetlands, shellfish reefs, islands for waterbirds, coastal and maritime forests, and eelgrass beds.

#### **Coastal Wetlands**

Coastal wetlands are the regional areas that connect the estuary's open waters to dry land.

"Due to industrialization, nearly 80 percent of the wetlands have been lost and most of what remains is degraded," said Baron, who has been involved in various types of environmental restoration initiatives and projects for more than 18 years.

"Wetlands provide such an incredible benefit to the region, on so many levels. Their vegetation provides a critical habitat for wildlife, fish and migratory birds."

Baron continued, "We live in an urban environment where there are lots of hardened surfaces and surface water runoff." Surface water runoff is water, from rain, snowmelt, or other sources that flows from the land surface into water ways, which can bring with it contaminants oysters, the keystone species for the estuary, mussels and clams, as well as other shellfish. These reefs are intricate underwater structures made up of live shellfish and layers of empty shells.

Oyster reefs have been almost eliminated due to poor water quality conditions, disease and overharvesting. In fact, the estuary supported a thriving oyster industry up until the late 1800s, covering approximately 200,000 acres.

These reefs provide nooks and crannies and potential nursery grounds for other species because they provide hiding places. feeding grounds, and egg attachment sites for many species. Shellfish also improve water quality. As shellfish feed, they filter sediment from the water and improve water clarity. They filter out about 50 gallons of water every day. They act like a filtration unit in your pool or aquarium at home.

Islands for Waterbirds

The plan will restore island habitats for birds whose numbers have declined considerably in the estuary due to hunting, pollution and habitat loss. The estuary supports 300 speby timber harvests and development.

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The plan suggests replacing abandoned piers with naturally sloped shorelines and creating new piers and other shore structures that will be designed in a way to have less of an impact on the natural shoreline and foster habitat complexity.

Regional fish, crabs and lobsters, such as the American lobster, blue crab and striped bass, require many different habitats to breed, raise their young and to develop into full maturity.

To provide these di-

tions.

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To learn more about the New York-New Jersey Harbor Estuary Comprehensive Restoration Plan and how you or your agency can get involved, please visit www.TheWatersWe-Share.org. Specific questions can be sent to Lisa Baron, Lisa.A.Baron@ usace.army.mil

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