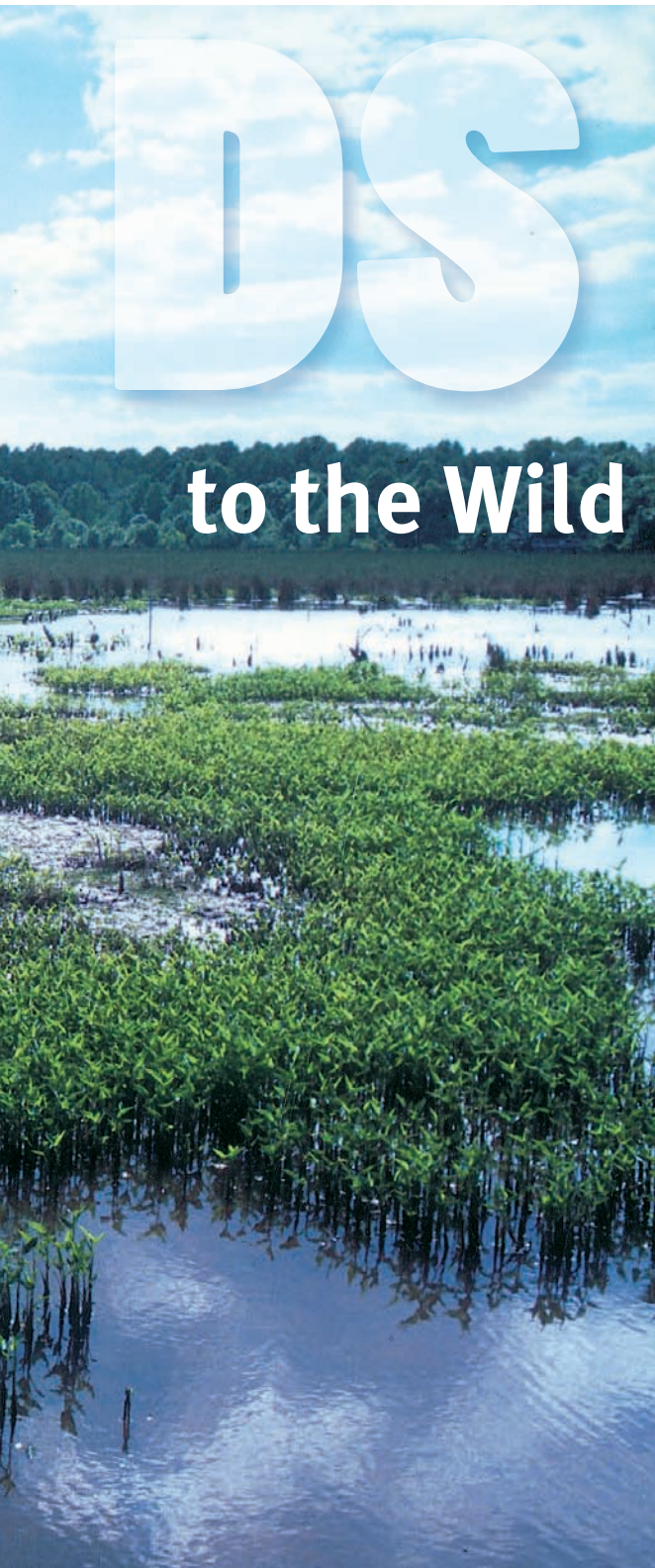


Returning

WETLAND





Four wetland restorations give promise to the future of these unique public lands.

By JoAnne Castagna, Ed.D.

Ebony Howard, an eighth-grade student from Elizabeth, N.J., stands on a pier and carefully lifts a starfish from a water-filled glass aquarium as her giggling classmates surround her. She shrieks as one of its arms breaks off.

A biologist with the U.S. Army Corps of Engineers quickly assures

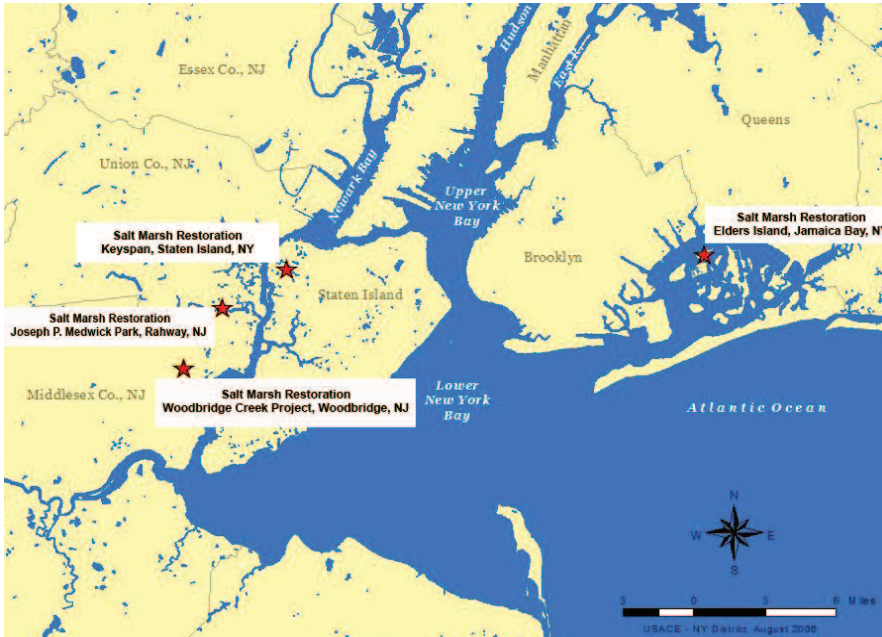
her that it will grow back and regenerate, and that it will be okay. The starfish was ultimately placed safely in its natural habitat in the Hudson River Estuary.

The students were taking part in the fourth annual Earth Day Celebration sponsored by the Corps and other agencies, held on the Elizabeth Marina City Dock in April.



(above) Workers plant native wetland plants on the Joseph P. Medwick restoration site in Rahway, N.J. (left) The sun sets on Elders East, a completed estuary restoration project on Jamaica Bay, N.Y.

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The U.S. Army Corps of Engineers has recently taken on several wetlands restoration projects in the greater New York City area.

Howard and several other students learned that the nearby Hudson-Raritan Estuary—the starfish’s home—can be restored by keeping it pollution-free.

It was on a sunny, breezy day when the more than 200 New Jersey high school students gathered on the dock that overlooks the estuary. Corps ex-

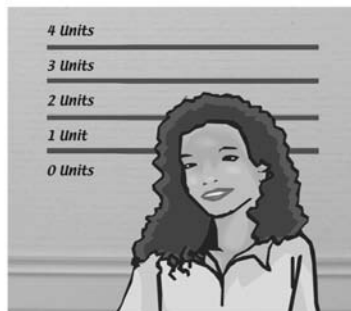
perts described to the students that an estuary is a semi-enclosed coastal body of water with one or more rivers or streams flowing into it, and with a free connection to the open sea. The Hudson-Raritan Estuary is one of several estuaries in the area on park, recreation and public lands that have seen declines in habitat quality for wildlife due to such problems as pollution and invasive species.

Students were taught by various Earth Day volunteers about the effects of pollution on their environment. Scientific experts taught students through a variety of interactive educational stations where glass water-filled touch tanks containing estuary marine life were featured. Interactive pollution and water quality testing demonstrations were also conducted. The students also boarded a U.S. Coast Guard vessel for a tour and boarded the Corps’ vessel Hocking as it traveled near the estuary.

Aboard the Hocking, Corps experts

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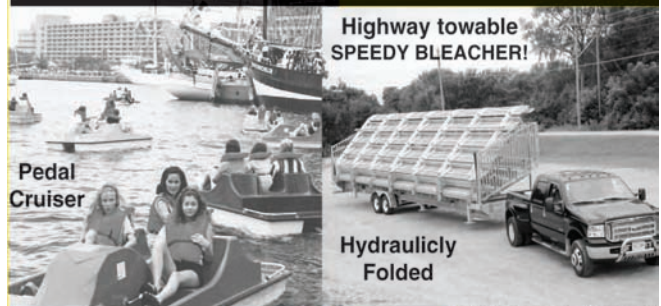
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discussed the estuary's rich history, current condition, and the Corps' ongoing port activities and the continuing environmental restoration projects in the estuary, four of which were recently completed with much success.

The estuary is 16,212 square miles and is one of the most populated, with 20 million people residing in the region. It surrounds the Port of New York and New Jersey. For more than 200 years, the New York District has managed the port's navigation, development and maintenance and is one of the Corps' largest civil works missions.

Through the decades, the salt marshes along the shores of navigation channels have experienced some degradation and habitat loss due to a number of factors—including years of commercial construction and development along the shore and increased boat traffic. To restore these areas, the Corps' has an environmental restoration program in place.

Maintaining the health of the estuary is important because salt marshes clean the water environment, reduce flood risks and provide essential fish and wildlife habitats. Salt marshes are land that is either covered by shallow water or contain waterlogged soil.

In 2006, the New York District, in cooperation with the Port Authority of New York and New Jersey, and state and local agencies successfully completed four salt marsh restoration projects in the estuary that are preserving and restoring more than 143 acres of salt marsh.

Keyspan, Staten Island, N.Y.

One of the first salt marsh areas identified for restoration by the Corps was the nine acres of marsh adjacent to the Keyspan Corporation Facility in Staten Island, N.Y.

In recent years, areas of the site have been overrun by an invasive species of common reed called *Phragmites Australis*. "This reed is a problem because its roots can grow very thick and high preventing tide water from penetrating the area frequently," says Kerry Anne

Donohue, project engineer, New York District, U.S. Army Corps of Engineers. "Without a frequent tide, fish, shellfish and other food sources, birds and mammals cannot exist," adds Donohue who is the district's ecosystem restoration team leader in their Engineering Division.

The Corps removed the reeds and

36,200 cubic yards of soil, graded the land to suitable elevations for native plants, and planted a diverse group of 107,000 native plants including cordgrass, salt hay and marine shrubs.

The plants are providing a food source for fish and other marine life in the estuary and are also providing vegetation for nesting birds. Water flow to



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the area has been reestablished, improving the water and soil quality and promoting the return of native fish and wildlife.

**Joseph P. Medwick Park,
Rahway, N.J.**

The Corps focused their attention to

restoring approximately 14 acres of salt marsh, located in the northern portion of Joseph P. Medwick Park along the southern shore of the Rahway River.

Years ago, a berm was built on the banks of the Raritan River, cutting off the site from the daily tide. As a result, the area was overrun by the same inva-

sive reed that affected the Keyspan project. The reeds prevented a normal tide of water from flowing into the site and has degraded the site, adversely affecting its fish nurseries and the bird and wildlife habitats that live there.

The Corps removed the reed and approximately 30,000 cubic yards of soil, re-contoured the land and planted 270,000 plugs of native wetland plants, including saltmarsh cordgrass, salt hay and marine shrubs. Water flow to the area has been restored as well.

Elders Island, Jamaica Bay, N.Y.

Located in the boroughs of Brooklyn and Queens, the easternmost areas of New York City, is the Jamaica Bay Gateway National Recreation Area, a popular park visited by millions each year and home to a variety of wildlife species, including migratory birds and fish nurseries.

Since colonial times, 90 percent of the Jamaica Bay marsh islands have degraded and the remaining acres of islands are disappearing at a rate of 44 acres per year, faster in the last decade. If the islands are not restored, they will be completely lost within the next three decades.

The Corps is successfully restoring these islands—one of them being Elders Point Island. The island is composed of two separate islands that are connected by mudflats—Elders East and Elders West—that totaled approximately 21 vegetated acres prior to the Corps' restoration.

The restoration plan for Elders Point Island includes re-contouring the land using dredged sand from various harbor channels and restoring the existing vegetation.

In the summer of 2006, 250,000 cubic yards of sand were pumped onto Elders East and 700,000 plants were hand-planted including saltmarsh cordgrass, salt hay and spike grass. Today, marsh grass is flourishing on Elders East, promoting the return of wildlife. The tentative schedule for Elders West is to place sand on the island next year and plant vegetation in 2009.

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**Woodbridge Creek Project,
Woodbridge, N.J.**

Woodbridge Creek is a salt marsh with a diversity of vegetation and wildlife. In recent years, the invasive reeds have disrupted bird and wildlife habitats by hindering the flow of the tide.

The Corps restored approximately 23 acres of the marsh. In addition, approximately eight acres adjacent to the site were restored in cooperation with the National Oceanic and Atmospheric Administration and the New Jersey Department of Environmental Protection. These additional acres helped to restore the land adversely affected by the 1990 Exxon Bayway Oil Spill.

The restoration included removing soil from within the marsh, grading the land elevations, making it suitable for native marsh vegetation to flourish, and replanting a variety of more than 240,000 marsh plants.

As a result of a returning tide, juvenile fish species are creating nurseries there, and bird and wildlife habitats are returning to the site.

“This was a great opportunity to energize the students, our future environmental leaders, about the health of their own estuary in the New York and New Jersey Harbor, and understand the connection between land and water,” explains Col. Nello Tortora, commander of the Corps of Engineers New York District.

Tortora hopes that by educating the next generation of conservation decision-makers, more public lands can be preserved for the enjoyment of future generations. And as these examples demonstrate, headway is being made and successes are forthcoming.

Perhaps when a new generation of eighth graders steps onto a New Jersey pier, it will be to hear about how their predecessors kept wetlands clean and healthy so they could be enjoyed by everyone. **P&R**

For additional information about the New York District’s Hudson-Raritan Estuary Program, visit www.nan.usace.army.mil/harbor/.



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