

Marshes: Nature's Natural Filter

Salt marshes—also known as tidal marshes—are transitional areas located between land and water that experience the ebb and flow of tides. They occur in sheltered coastal areas protected from strong ocean currents and waves, and are found throughout the world. There are even marsh islands, like those found in Jamaica Bay, that are surrounded completely by water. Salt marshes are dominated by smooth cordgrass and other specialized vegetation highly adapted to this dynamic and saline environment.



own ecological treasure, once had approximately 16,000 acres of them, but today only about 1,200 acres remain. Few marshes exist on the Pacific coast due to the mountainous terrain and heavier waves.

Marshes play a critical role in maintaining a healthy and balanced environment that benefits humans and supports surrounding ecosystems by acting as a natural filter, trapping pollutants,

(Continued on reverse side)

In the United States alone, there are approximately 4 million acres of salt marshes located along the east coast from Maine to Florida and the Gulf of Mexico. Jamaica Bay, New York City's

Spotlight on Safety

Respiratory Safety

Respiratory hazards on the job come in many forms, many of which are undetectable.

Mists, fumes, dusts, gases and vapors can enter your lungs and cause serious damage to your health. There are several ways to help control such respiratory hazards.

One of the first steps is for both the employees and employers to be well aware of the respiratory hazards in the work place and to eliminate or minimize them through the use of accepted engineering and administrative controls. The following are engineering and/or administrative methods that can be used to protect DEP employees from respiratory hazards:

- Good ventilation.
- Change job processes to lessen airborne hazards.
- Replace hazardous materials with less harmful ones.
- Enclosure of workspace to control airborne hazards.

Whenever effective engineering and/or administrative controls are not feasible, appropriate respirators must be provided to employees who are exposed to airborne contaminants above the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL). Respirators are often used in two situations:

1. When EHS staff identifies job tasks requiring respiratory protection by performing a hazard assessment, and
2. When an employee asks to wear a respirator in a situation where the levels are below the OSHA PEL. Only a filtering face piece (dust mask) would be permitted for voluntary use and ONLY if they do not create a hazard and do not interfere with the employee's ability to work.

For more information on the agency's Respiratory Policy and voluntary use of respirators in situations below the OSHA PEL see

At DEP, everyone is responsible for safety. If you or anyone on your team is concerned about your working conditions, it's okay to ask your supervisor or your bureau's EHS liaison how they can help. If you've still got questions, you can call the EHS Employee Concerns Hotline. It's DEP's responsibility to acknowledge and fix unsafe situations, procedures, and practices. With your help, we'll not only get the job done, we'll make it safer for ourselves, our coworkers, our families, and our city.

CALL (800) 897-9677 OR SEND A MESSAGE THROUGH PIPELINE. HELP IS ON THE WAY.

Special Guest Commissioner's Corner

Col. John R. Boulé II

Commander, U.S. Army Corps of Engineers, New York District



The Army Corps of Engineers has been around since America's birth and doing work in New York City for just as long, originally serving the Revolutionary Army's engineering needs by building fortifications like the batteries in what is now the Upper East Side, targeting the East River and Fort Washington (which is now Fort Tryon in Upper Manhattan on the Hudson River).

The Corps' military construction has continued strong ever since, with New York District being responsible for construction at major Army and Air Force installations in the region like the U.S. Military Academy at West Point, Fort Drum in upstate New York, Fort Hamilton in Brooklyn and Joint Base McGuire-Dix-Lakehurst in New Jersey. As the nation grew, so did its need for commerce and reliable ways to move goods—ushering in the Corps' missions in civil works and navigation in the early 1800s. Over the years, the Corps, as America's public engineering agency, continued to expand into new areas, like flood-risk reduction, storm-risk reduction, permitting for development impacting wetlands, emergency response missions in support of FEMA. The latest big development in the Corps' mission has been a big emphasis on environmental projects and ecosystem restoration.

As the environmental mission has grown, the Army Corps and DEP, as well as other City, Federal, State and non-governmental partners have all been pooling capabilities in order to better serve the people of New York. The biggest recent example in the region is the Hudson-Raritan Estuary Comprehensive Restoration Plan (CRP). This CRP is a long term master plan to guide ecosystem restoration work throughout the Hudson-Raritan Estuary, which encompasses

the entirety of New York City. Learn more about the CRP here

One of the big success stories of the CRP is the ongoing restoration work in Jamaica Bay. More than 70 acres of salt marsh on two islands have been restored, which is crucial habitat for birds and marine life. We're also working to restore a third marsh island in the next couple of years.

We're proud to work side by side with the professionals at DEP, making this great city cleaner and healthier for people and wildlife. We plan to keep pushing the boundaries by continuing to partner with DEP in major studies addressing the best way to restore aquatic ecosystems in Jamaica Bay and Flushing Bay.

The Corps is also working with DEP on studying the Bronx River Basin, looking, not only how to restore the ecosystem there, but also coupling that with flood risk reduction. We're also working with DEP on studying how best to reduce storm vulnerability along the South Shore of Staten Island.

So as you can see, we're working closely with our DEP partners on projects throughout New York City to improve the safety and quality of life of the people we're all charged with serving. I'm confident that working collaboratively, we can keep making good things happen.

Did You Know?

...the history of the United States Army Corps of Engineers can be traced back to June 16, 1775, when the Continental Congress organized an army with a chief engineer and two assistants. Colonel Richard Gridley became General George Washington's first chief engineer; however, it was not until 1779 that Congress created a separate Corps of Engineers.

Focus on the Field



The greatest City on earth is known the world over for its architecture, its food and its people. But what a lot of people don't realize is that the City is an ecologist's dream: NYC supports an incredible ecosystem of diverse plants and animals. We're all stewards of the local environment, but DEP has a special responsibility to make sure our environment remains healthy and beautiful.

John McLaughlin, the Director of the Office of Ecological Services for the Bureau of Environmental Planning and Analysis, began working at DEP in 1992 and has been helping restore, expand and improve the City's ecology ever since. You can read more about the work John did—including planting thousands of native plants and clearing invasive species—in this week's feature article.

"DEP has improved the ecology of the New York by being a leader in environmental restoration projects, using science to guide the restora-

tion principles and using the most innovative technologies to better track and monitor these restorations," says John. Some of those "innovative technologies" include green infrastructure, which improves water quality and wildlife habitat, cools the City and even creates green spaces. The restoration of urban wetlands and adjacent uplands provide important habitat for migrating birds and important resources for local wildlife. These restorations also provide important aesthetic values for the residents of New York City for generations to come.

It's important to pursue the restoration of degraded urban habitats and new solutions like green infrastructure, because "despite the ultra-urban nature of New York City, there are many environmental gems that are ecological powerhouses, providing significant wildlife habitat for diverse animal and plant populations," says John.

One of John's favorite "gems" is Jamaica Bay—if you get the chance, swing down to see how beautiful it really is. It is one of the largest tidal wetland complexes in New York State and provides habitat for more than 300 bird species and roughly 100 species of fish. John holds a degree in Biology from Queens College

DEP: Then & Now

Then:

Elders Salt Marsh Island was originally comprised of 132 acres of wetland. Over the last 75 years, the island has significantly eroded and has become two separate islands, Elders East and Elders West. Of the original 132 acres of wetland, only 21 acres of wetland remained. Work to restore the islands began in 2006.



Now:

Nearly 500,000 cubic yards of sand and 900,000 smooth cordgrass plants were used in the restoration. The approximately \$25M project was jointly funded by the Army Corps of Engineers and the local sponsors, DEP and DEC. These restored islands now provide refuge for juvenile fish and food for many birds, including Great Egrets and Great Blue Herons.



Kudos Corner

A new section for Weekly Pipeline that will showcase some of the great work of DEP employees that merits congratulations. Please submit items for consideration to newsletter@dep.nyc.gov.

Excellent work by the Office of Ecological Services in the Bureau of Environmental Planning and Analysis for winning a \$318,371 grant from the Attorney General's office to design and construct a green infrastructure project that will capture 400,000 gallons of annual runoff before it flows directly into the Bronx River.

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nutrients, and sediments; providing habitat and food sources for countless organisms; improving water quality; and sheltering coasts from erosion by acting as a buffer zone against floods and waves.

Jamaica Bay's marshes provide a unique environment for both wildlife and urban recreation. This region hosts an eye-popping 325 bird species, about 100 species of fish, 50 butterfly species, and all different types of amphibians, reptiles and mammals. In addition, it is a critical stop over for migratory birds on the Atlantic flyway. Jamaica Bay is also the only National Park in the country that is accessible by subway.

Salt marshes were not always considered a valuable resource—since the late 18th century, these fragile ecosystems have been disappearing. The U.S. has lost more than half of its wetlands, many of them between 1950 and the mid-1970s, due to overdevelopment and natural phenomena, such as sea-level change and erosion from storms.

Fortunately, people have begun to recognize the importance

of these ecosystems. Federal, State, and local laws and regulations now protect, study, and restore these valuable marshes. In New York City, Mayor Bloomberg signed Local Law 71 on July 20, 2005, which required DEP to "assess the technical, legal, environmental, and economic feasibility" of a variety of protection measures as part of the Jamaica Bay Watershed Protection Plan. More recently, DEP has worked with the Army Corps of Engineers to restore two marsh islands in Jamaica Bay, Elders Point East and West, and the projects are a stunning success. DEP is also working with other environmental stakeholder groups to restore additional salt marsh islands within Jamaica Bay. All told, over the last 15 years, DEP has restored more than 440 acres of tidal and freshwater wetlands and upland habitats surrounding Jamaica Bay and its tributaries, including approximately 90 acres of salt marsh islands in partnership with the Army Corps of Engineers. And just this past year, the City announced an additional \$15 million dollars (which can be tripled with Federal matching funds) to do even more.

Event Calendar:

DEP's NYC Water-On-the-Go fountains will be out from September 8th - September 13th.

For specific information, click here.

Milestones

Congratulations to **Matthew Mahoney**, BCIA, and his wife Angela on the birth of their daughter Morgan, on September 1, 2010. Mother and baby are both doing fine.

Best wishes to Bakul Desai, BEDC, who is retiring on 9/10/10 after 27 years of service.

We welcome your feedback! To submit an announcement or suggestion, please email us at: newsletter@dep.nyc.gov.