

Classroom to the World

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The sun rises over the Meadowlands

It was a few minutes before 5:00 AM on a day in late May. The sun had not yet risen, but the sky was already a blue-grey as we prepared to head down river with Captain Bill Sheehan, the original Hackensack Riverkeeper himself, a towering personality and an indefatigable promoter for the Meadowlands, at the wheel of his brand-new pontoon boat, the Edward Abbey. For two of us, this was a photographic expedition, but for Carlo, the third member of our U.S. Fish & Wildlife Service team, it was a chance to observe a restoration site in the Meadowlands from the river's point of view. Later that afternoon, Bill was to take a group of Girl Scouts on one of his famous "Eco-Cruises." We had a good idea of what the scouts were in for: Riverkeeper's two boats ply the waters of the Meadowlands almost continuously, putting students and elected officials—anyone, in fact, with eyes to see and ears to hear—in immediate contact with the environment, pocked as the earth and water are with the open sores of centuries of abuse. Bill will not let you miss the yellowed stratum at the shoreline containing foul-smelling and lethal levels of chromium lying beneath the shell of the factory that once refined the metal. At another spot he points out garbage bags and other debris falling into the river



No longer transporting lye, this barge now removes sewage from Bergen County

as a former landfill slowly erodes its waste into the water. A Riverkeeper Eco-Cruise will jolt even the most apathetic out of their conservationist lethargy. The educational ploy is simple: let the Hackensack Meadowlands speak for itself. An osprey's abrupt dive to the water is exhilarating to see, while the sight of a still anchored barge that capsized one night, spilling many gallons of caustic lye into the waterways and killing hundreds of fish, is sobering.

Indeed, the Hackensack Meadowlands is a dynamic classroom for ecological education. Congressman Steven Rothman (NJ9th) joins a host of other notables when he predicts that the Meadowlands will become a model for land conservation worldwide. Certainly, amidst one of the most densely populated areas in the world, the Meadowlands' successful support for wildlife provides important insights for solving the problems of

balancing urban impacts with environmental quality. The fact that the Meadowlands is literally in sight of the Manhattan skyline is also logistically advantageous: not only is it easily accessible to the major transport corridors of the world, it is also located for maximum media visibility. Furthermore, the Meadowlands provides a crucial buffer to pollutants that would otherwise pour into the Newark Bay and the waterways of the harbor estuary. It is thus an ideal laboratory-classroom for studying the crucial role that wetlands can play in urban environments.

Other concerns occupy scholars as well. For example, Jared Eudell, a recent graduate of Fairleigh-Dickinson University, studied how the direction of the current affects barnacle colonies in the Meadowlands. Jared researched the density and maximum height of the colonies as well as the diversity of species within them. Presently, Beth Ravet of Rutgers University is conducting her doctoral studies on the interaction between salt marsh vegetation in the Meadowlands and the microbial communities associated predominantly with plant roots. In 1998, the New Jersey Meadowlands Commission and Rutgers University initiated a partnership to create the Meadowlands Environmental Research Institute, whose mission is to build a plan for preserving and restoring the Meadowlands that is scientifically defensible. Research is essential for preparing such a plan.



Symbiosis: the Empire State Building grounded in the Meadowlands

At the other end of the educational spectrum, the Commission's Meadowlands Environment Center has focused since its founding in 1983 on primarily the elementary and middle school grades. Why is the Hackensack Meadowlands such a valuable educational tool? Because the Meadowlands is accessible enough to study easily, and lessons learned can be applied universally. Then too, in an increasingly populated world, first-hand knowledge of how to remediate and restore heavily degraded areas is an ever more valuable commodity. The Center offers a wide variety of field trips / courses for all grade levels. With such titles as "Trash Party" and "Worms Eat My Garbage," the curricula engage the interest and pique the curiosity of young learners. The Center also offers summer seminars for teachers and helps to prepare Education majors at two local colleges for State certification.

Fortunately, plans are developing to restore the Hackensack Meadowlands ecosystem as an oasis for wildlife and a buffer against flooding and contaminants in an urban setting. The Meadowlands has already proven to be an invaluable resource for ecological studies. Scholars from kindergarten to post-doctorate / practitioner levels will continue to learn much from this complex and diverse 8,400-acre coastal estuary.

Photographs Page 25 USFWS / James Cramer

Photograph USFWS / Gene Nieminen



The Riverkeeper's Hugh Carola takes students on an eco-tour



The Commission's Don Smith uses his boat as a classroom

Photograph NJMJC



Students birding on a Riverkeeper eco-cruise



Out for an educational voyage

Photographs USFWS / NJMJC



While Capt. Bill talks two youngsters focus on the wildlife

Photographs USFWS / Hackensack Riverkeeper

A Major League Player in the Ecosystem

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A recent publication from the Pew Oceans Commission warns: "Half the U.S. population currently lives in the one-fifth of our land area along the coasts; by 2025, demographers anticipate three-quarters of the U.S. population will reside in coastal regions." The Commission further notes that if today's land consumption trends continue, the percentage of coastal acreage that has been developed will increase from 14 percent in 1997 to more than 25 percent by 2025. And these figures deal only with development impacts. What about degradation caused by invasive species and loss of wetlands due to sea level rise? The threats to the Meadowlands and other estuaries in our nation are both real and alarming. Few individuals understand



A great blue heron stalking prey on a mudflat

A great egret and a black-crowned night heron at the water's edge

Photographs USFWS / Gene Nieminen

Without the buffer of the Meadowlands, flood control, sea level rise and storm surges would become a nightmare. Development has already made flooding a problem. In his book *Fields of Sun and Grass*, John R. Quinn quotes George Fosdick, then mayor of Ridgefield Park, as commenting in the mid-1990s: ". . . since I was first elected commissioner in 1978, we've had, here in Ridgefield Park, three of what the Department of the Interior calls 'hundred-year floods' . . . To me, they're filling in all the places where the water used to run off and be absorbed . . ." In regard to sea level rise, a July 2001 report by the Columbia Earth Institute entitled *Climate Change and a Global City*, forecasts potential consequences that include wetland losses over the next 20 to 100 years in the NY / NJ Harbor Estuary. Flooding and sea level rise are not the only concerns. Landfilling and industry have greatly strained the Meadowlands' capacity to absorb pollution, reduced its acreage, and continued to dump even more contaminants.

With this in mind, concerned stakeholders increasingly pursue new and creative partnerships to protect the Hackensack Meadowlands. Vested stakeholders can accomplish habitat restoration and enhancement that are beyond the scope of what government can accomplish alone, a concept recognized as essential to restoration by the Father of Wildlife Management, Aldo Leopold, more than 50 years ago.

The consumer lifestyle and the priority we give to a strong economy place development pressure on natural resources. Our challenge is to protect and restore priority areas such as the Hackensack Meadowlands. These actions need to be integrated into the inevitable renewal of the area's urban infrastructure. The next time you drive the New Jersey Turnpike past the Meadowlands Sports Complex, take time to admire the other attraction, the expansive landscape inhabited by waterfowl, wading birds, raptors, songbirds, and communities of fish and shellfish that make the Meadowlands a major league estuary. Let's keep the home team healthy and bring the fans in to enjoy the experience.

the breadth of these threats, so one of the challenges in the NY / NJ Harbor Estuary is to increase public awareness of the need to conserve and restore those precious few natural resources, particularly large complexes such as the Hackensack Meadowlands.

How important, really, is the Meadowlands to the NY / NJ Harbor Estuary? Sports fans certainly make use of the area: both the NY Giants and Jets play at Giants Stadium in the Meadowlands Sports Complex. Other teams use the Complex as well. The Meadowlands is in the major leagues when it comes to sports. But environmentally?

If the 130 acres that the Complex has paved over for parking were extended to include the whole of the Meadowlands, how would the entire estuary be affected? Certainly, all the species that reproduce in, and depend on, the complex of uplands and wetlands would be deprived of habitat. Migratory birds, that spend a relatively small but vital

portion of the year resting and feeding in the Meadowlands, and even species that simply use the area for foraging, would have to find other sources of sustenance. Clearly, an immense segment of both the flora and the fauna would be gone forever. Just as importantly, without this significant natural land base the opportunity to pursue habitat restoration and enhancement would be lost.

In the mid-1990s, the U.S. Fish & Wildlife Service's Coastal Program Office worked with a large number of dedicated partners to document the crucial importance of the Hackensack Meadowlands to local, regional, and national populations of fish, wildlife, and native vegetation in the report entitled *Significant Habitats and Habitat Complexes of the New York Bight Watershed*. Since publication and distribution, those committed to conserving the area have used the report as a foundation to counter attempts to send this remnant of a once vast habitat complex into the realm of asphalt and concrete. But what of the future?