

HUDSON-RARITAN ESTUARY COMPREHENSIVE RESTORATION PLAN
POTENTIAL RESTORATION OPPORTUNITIES
PROJECT SUMMARY SHEETS
Lower Bay

Restoration Opportunities
CRP Identification #: Site Name

- | | |
|---|---|
| • 800. Mt. Loretto | • 591. Shrewsbury/Navesink Rivers *TBD |
| • 64. Butler Manor Woods | • 117. Shadow Lake Dam |
| • 5. North Mount Loretto Woods | • 44. Many Mind Creek |
| • 111. Long Pond Park | • 20. Leonardo |
| • 53. Paw-Paw Hybrid Oak Coastal Woods | • 21. Ware Creek |
| • 63. St. Edward's Campground | • 22. Compton Creek |
| • 109. Lemon Creek | • 23. Natco Lake/Thorns Creek |
| • 6. Northern Sea View | • 24. East Creek |
| • 8. Pouch Camp | • 25. Flat Creek |
| • 580. Great Kills, Gateway NRA | • 26. Conaskonk Point |
| • 801. Great Kills Park | • 27. Matawan Creek |
| • 596. Crookes Point | • 802. Matawan Creek/ Keyport Harbor |
| • 578. Oakwood Beach | • 116. Matawan Creek/Keyport Harbor Mouth *TBD |
| • 582. Sea View Avenue Wetlands | • 28. Treasure Lake |
| • 13. South Beach Wetlands, Northern Section | • 29. Whale Creek/Long Neck Creek |
| • 579. Fort Wadsworth Beach | • 30. Marquis Creek |
| • 597. Verrazano-Narrows | • 571. Laurence Harbor |
| • 598. Hoffman-Swinburne Islands | • 807. Cheesequake State Park |
| • 599. Gravesend Bay | • 119. Cheesequake State Park (Atlantic White Cedar Forest) |
| • 155. Dreier-Offerman *TBD | • 120. Cheesequake State Park (Hook Lake) |
| • 593. Sandy Hook (shellfish restoration) *TBD | • 31. Cheesequake Marsh |
| • 594. Raritan Bay (oyster bed restoration) *TBD | • 32. Old Morgan Landfill/Raritan Bay Waterfront Park |
| • 118. Shrewsbury River Watershed (Multiple Sites) *TBD | • 33. South Amboy |
| | • 568. Global Landfill |
| | • 595. Raritan Bay (submerged rock bed) |
| | • 850. Matawan Creek: Freneau Fields/Hauser Farm *TBD |

CRP SITE 800. MT. LORETTO (UNIQUE AREA)

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: *The Mount Loretto Unique Area is situated on the south side of Hylan Boulevard between Page Avenue (west) and Sharrott Avenue (east) in Tottenville (40.506/-74.217).*

Watershed: Raritan Bay

Size: *Mount Loretto encompasses 241 acres, 49 of which are underwater lands.*

Ownership: NYS DEC

Site Description: *Historically, Mount Loretto was used as farmland for dairy and agricultural crops. In 1882, the Roman Catholic Mission of the Immaculate Virgin for the Protection of Homeless and Destitute Children acquired 258 acres of farmland and underwater lots on the site of the old Bennett farm along Raritan Bay and Prince's Bay. In 1883, the land was opened as a mission for orphaned children, but farming continued to dominate the landscape.*

Currently, Mt. Loretto Unique Area is a 194 acre open space reserve and nature preserve administered by the NYS DEC. The site contains extensive ecologically rich and diverse habitats including grassland, coastal woodland, freshwater and tidal wetlands, costal bluffs and shoreline, beach and open water and bay bottom in Raritan Bay. The majority of the sites acreage is in grassland and coastal marine habitats; approximately one mile of shoreline fronts Prince's Bay and Raritan Bay. The shorelines are the highest ocean facing bluffs in New York State; 50 acres of underwater lands and shoreline abut the coastal bluffs. An ephemeral palustrine inlet (swamp, bog and small pond) across the beach feeds a 5 + acre salt marsh consisting of a salt pond, fringe low and high marsh, and encroaching Phragmites. The northwestern boundary borders several residential properties along an upland wooded marsh area. A pond separates the residential houses and the sub-unit along the property boundary. The eastern property line borders Sharrott Avenue and adjacent to the eastern property line along Sharrott Avenue is a parking lot and fishing pier constructed by the City of New York. There are five bodies of water, one public parking lot, and two permanent structures on site.

Ecological and species functions are intact, however there is some impact from off-road vehicles, housing units, paved and unpaved roads.

Current Land Use: *Nature preserve*

Available Habitat: *Marine/coastal, grassland, forest, and tidal and freshwater wetlands. The bay is home to dozens of species of finfish and shellfish, including striped bass, winter flounder, bluefish, and the hard clam. It also is a major migratory pathway and overwintering area for numerous waterfowl, many of which can be observed in large numbers at Mount Loretto.*

Proposed Project: *Improve tidal connection, remove Phragmites, regrade/replant salt marsh margins. Remove debris from shoreline.*

Major resource management concerns include the presence of invasive species (wildlife and plant life), stormwater runoff, illegal activity, and encroachment from adjacent properties.

Projected/Estimated Costs:

Project Status: *In March of 2002, NYS DEC gained title to Mt. Loretto. Future site specific planning should be consistent with existing management plans.*

Partners: NYS DEC

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands - Preserve, enhance and support the expansion of fresh and saltwater wetland communities. Support native plant establishment and propagation by planting native species and managing invasive species. Examine relocating existing drainage ditches associated with Mount Loretto trails or facilities (as necessary) to reduce impacts to ponds and streams. Install and maintain erosion control devices on the Wetlands trails at Mount Loretto to minimize soil movement into wetlands. Future wetland water budget studies are proposed in the management plan.

Coastal and Maritime Forests - Maintain and improve the existing condition of the bluffs at Mount Loretto. Minimize bluff erosion by creating stabilizing structures in high-use areas. Manage invasive species and debris dumping. Improve and maintain grassland habitat for nesting and foraging birds. Install and maintain erosion control devices on the Grassland trails at Mount Loretto to minimize soil movement into the wetlands. Encourage native vegetation by planting native grass seed in both disturbed and undisturbed areas at Mount Loretto. Improve wildlife habitat by constructing Osprey stands

and bird boxes. Management plan proposes long-term studies to determine wildlife populations and resources required to manage grassland bird population.

Oyster Reefs - Continue to support the Shellfish Transplant Program and maintain a healthy environment for shellfish habitat at Mount Loretto offshore area.

Eelgrass Beds – Explore presence/absence of eelgrass beds and potential to develop these communities.

Shorelines and Shallows – Protect/rehabilitate overused shoreline areas; improvements may encourage use by migratory birds and threatened and endangered species, such as the piping plover and Roseate tern. Manage for debris, overuse, littering, and erosion.

Tributary Connections – Monitor streambeds for flow, debris removal and stormwater inputs.

Sediment Contamination - Potential removal/ capping of contaminated sediment based on testing.

Public Access – Support on-going passive recreation improvements. Construct an interpretive educational trail with signs and kiosks educating visitors about the area, management, habitat, and wildlife, etc.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS: NYS DEC 2009, Alderson and Bowers 2012

B. Site History and Land Use: NYS DEC 2009

C. Biological Studies/ Fauna: NYS DEC 2009

D. Biological Studies/ General Environment: NYS DEC 2009

E. Geotechnical: NYS DEC 2009

F. Hydraulics and Hydrology:

***Work in progress**

G. Water and Sediment: NYS DEC 2009

H. Historical and Cultural Resources: NYS DEC 2009

I. Restoration Remediation and Design Plans: Alderson and Bowers 2012

REFERENCES:

Ecology and the Environment, Inc. for New York State Department of Environmental Conservation Division of Lands and Forests. 2009. Draft Unit Management Plan for Southern Staten Island: Mount Loretto Unique Area, Lemon Creek, Arden Heights Woods, Bloesser's Pond.

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

NYS DEC- <http://www.dec.ny.gov/outdoor/8291.html>

The City of New York Department of City Planning. 2011. Vision 2020 New York City Comprehensive Waterfront Plan.

Alderson, Carl and Justin Bowers. 2012. Reaching for the Past in Pursuit of the future: how can our present and past efforts inform the Hudson-Raritan Estuary Comprehensive Restoration Plan and the direction of habitat restoration going forward. A project for the New York-New Jersey Harbor & Estuary Program and New England Interstate Water Pollution Control Commission.



CRP SITE 64. BUTLER MANOR WOODS (This is a project within CRP. 800 Mt. Loretto)

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Block 7710 Lot 400. The site is south of Hylan Avenue between Page Avenue and Richard Avenue, Southwestern Staten Island, Richmond County, NY.

Watershed: Raritan Bay

Size: 47 acres

Ownership: *NYS DEC*

Site Description: *Butler Manor Woods was purchased from a developer in September, 2006 and is now part of the NYSDEC's Open Space Conservation plan. The site is located within Mount Loretto Unique Area, encompasses roughly 18 acres of wetlands with additional upland forest. Together with Long Pond Woods/North Mount Loretto Woods, the properties link more than 625 acres of state and city land. Site includes very high quality, mature Beech-Oak forest as well as many small Federally mapped freshwater wetlands and parts of NYS DEC mapped wetlands.*

Current Land Use: *Nature preserve.*

Available Habitat: *The property consists of woodlands and freshwater wetlands.*

Proposed Project: Acquisition- freshwater wetlands, including small stream.

Projected/Estimated Costs:

Project Status: *This 47 acre property, acquired in 2006, is part of Mt. Loretto Unique Area.*

Partners:

Project Contact: Clark Wallace, Trust for Public Land

Phone: (212) 677-7171

Website:

Project Funding Source: *Funding for the Butler Manor parcel comes from three sources: the Port Authority of New York and New Jersey, enforcement settlement revenues secured by the U.S. Department of Justice and administered by the U.S. Environmental Protection Agency, and two federal grants.*

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Preservation/restoration of forested wetland area, including potential acquisition of additional land. Potential removal of invasives with native species plantings.

Coastal and Maritime Forests - Preservation/restoration of upland forested area, including potential acquisition of additional land. Potential removal of invasives with native species plantings.

Tributary Connections – Investigate connections with North Mt. Loretto across Hylan Blvd. (a major commercial corridor in Staten Island).

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access - Support to on-going passive recreation improvements.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

ECOLOGY AND ENVIRONMENT, INC. for NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION Division of Lands and Forests. 2009. Draft Unit Management Plan for Southern Staten Island: Mount Loretto Unique Area, Lemon Creek, Arden Heights Woods, Bloesser's Pond.

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

TPL- http://www.tpl.org/tier3_cd.cfm?content_item_id=20981&folder_id=631

The City of New York Department of City Planning. 2011. Vision 2020 New York City Comprehensive Waterfront Plan.



CRP SITE 5. NORTH MOUNT LORETTO WOODS

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Parts of Block 7664 lot 1. Bounded by Amboy Road to the north, Hylan Boulevard to the south. Property is contiguous with Long Pond Park Preserve in Richmond County, Staten Island NY.

Watershed: Arthur Kill

Size: 100 acres

Ownership: NYS DEC

Site Description: *In 2008, New York State acquired this property in donation from the Port Authority, which had purchased the property from the Mission of the Immaculate Virgin. This site is contiguous with Long Pond Park forest and includes very high quality mature Beech-Oak forest as well as many small federally mapped freshwater wetlands and parts of NYS DEC mapped wetlands. The 42 acre Mill Creek freshwater wetland crosses this property. The creek's south branch originates within the property and gently winds its way past a series of small springs, channels, and vernal pools and collects and convey water towards Amboy Road. The wetland is situated on a rich and diverse red maple and oak assemblage. The marsh contains sedges and rushes. A portion of the marsh complex was adversely impacted by the stormwater discharge from a nearby NYC DOS road salt storage mound. The property contains many trails throughout its forested hardwood section. Together with Butler Manor Woods, the properties link more than 625 acres of state and city land.*

Current Land Use: Open space; passive recreation.

Available Habitat: *Tidal and freshwater wetland, upland forest, and grassland.*

Species such as the gray tree frog, pickerel frog, green frog, and red-backed salamander can be found among the sedges and rush, while the wood thrush, tufted titmouse, and American redstart can be seen dwelling amongst the red maple and oak forests.

Proposed Project: Upland/wetland acquisition and preservation.

Projected/Estimated Costs:

Project Status:

Partners: NYSDEC, NYCDOS, NYCDPR

Project Contact: Steve Zahn, NYSDEC

Phone: (718) 482-6464

Website: <http://www.dec.ny.gov/outdoor/44085.html>

Project Funding Source:

HEP Ratification Date: 11/2/2000

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Preservation/restoration of forested wetland area, including potential acquisition of additional land. Potential removal of invasives with native species plantings.

Coastal and Maritime Forests - Preservation/restoration of upland forested area, including potential acquisition of additional land. Potential removal of invasives with native species plantings.

Tributary Connections – Investigate connections with Mill Creek wetland across Amboy Road, a major north-south artery along the south-east shore of Staten Island.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access - Support to on-going passive recreation improvements.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Ecology and Environment, Inc. for New York State Department of Environmental Conservation Division of Lands and Forests. 2009. Draft Unit Management Plan for Southern Staten Island: Mount Loretto Unique Area, Lemon Creek, Arden Heights Woods, Bloesser's Pond.

The City of New York Department of City Planning. 2011. Vision 2020 New York City Comprehensive Waterfront Plan.

NYC DEC- <http://www.dec.ny.gov/outdoor/44085.html>

Office of the Borough President Staten Island- <http://www.statenislandusa.com/pages/state.html>

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed. http://library.fws.gov/pubs5/web_link/text/rb_form.htm

TPL- <http://www.dec.ny.gov/outdoor/45385.html>



CRP SITE 111. LONG POND PARK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Site is bounded by Page Avenue, Hylan Avenue and Amboy Street Richmond County, Staten Island NY.

Watershed: Raritan Bay

Size: 137 acres

Ownership: NYC DPR

Site Description: *Long Pond Preserve combines a variety of habitats, from upland oak-beech woods, to swamp forests, bogs, and vernal ponds. Long Pond, protected from pollution by the surrounded forest, provides open water habitat for waterfowl, fish, reptiles, and amphibians. This preserve is the only location in the city in which the pickerel frog (*Rana palustris*) has been observed. Long Pond Park is contiguous with the northern Mount Loretto Woodlands, and both areas combined are potentially large enough to provide safe breeding habitat for forest interior birds. The park provides an important stop on the Atlantic flyway for migrating birds as well as being a place of respite and recreation for many people. Mature beech, oak and hickory woodlands provide much of the foliage in the park, with many of the trees over sixty years old. They help to support an understory layer of spicebush (*Lindera benzoin*), blueberry (*Vaccinium spp.*) and many herbaceous plants.*

Long Pond and other bodies of water in the park have been incorporated into the Bluebelt water drainage system by the New York City Department of Environmental Protection. Encompassing several parcels of state-protected wetlands on the island's south shore, the Bluebelt system was specifically designed to provide storm water drainage for the neighboring communities.

Current Land Use: Permanent protection- forever wild.

Available Habitat: Floodplains, open waterways, and swamp bogs. Has invasive plants pushing out native vegetation. Park also contains an extensive forested section, with floodplains, open waterways, and swamp bogs.

Proposed Project:

Projected/Estimated Costs:

Project Status:

Partners: NYSDEC

Project Contact: Michael Feller, NYC Parks/NRG

Phone: (212) 360-1424

Website: www.nycgovparks.org/sub_about/parks_divisions/nrg/

Project Funding Source:

HEP Ratification Date: 3/4/1999

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Preservation/restoration of forested wetland area. Potential removal of invasives with native species plantings.

Coastal and Maritime Forests - Preservation/restoration of upland forested area. Potential removal of invasives with native species plantings.

Tributary Connections – Investigate connections with Paige Ave. wetlands and Mill Creek wetlands across Amboy Road.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access - Support to on-going passive recreation improvements.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Forever Wild- <http://www.nycgovparks.org/greening/nature-preserves/site?FWID=11>

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

The City of New York Department of City Planning. 2011. Vision 2020 New York City Comprehensive Waterfront Plan.



CRP SITE 53. PAW-PAW HYBRID OAK COASTAL WOODS

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Site is located south of Hylan Boulevard between Page and Joline Avenue and abuts Raritan Bay, Tottenville, Staten Island, NY.

Watershed: Raritan Bay

Size: 30 acres

Ownership: TPL, NYC DPR

Site Description: Tottenville first drew scientific attention when in 1888 William T. Davis found *Quercus phellos* and a number of its hybrids there. *Asimina triloba* (paw-paw) was first noted in the Tottenville area in the late 1940's. Historically, many plants now considered rare and endangered for New York State (Clemants 1989) were collected in the Tottenville region.

Site description from Greller et al. 1992- The site contains a low ridge adjacent to a narrow, shallow pond. The ridge and pond appear to be man-made because of the shape of the pond, the lack of any similar ponds nearby, and the degree of human disturbance to the nearby woodlands, including dumps, pathways, abandoned roads, etc. Some *Asimina triloba* are present on the shore opposite the ridge; the ridge population extends into the adjacent lowland swamp forest. The surrounding forests are characterized by the presence of *Quercus phellos*, *Q. marilandica*, *Q. prinoides*, in addition to the more common oaks of lower New York State: *Q. rubra*, *Q. velutina*, *Q. coccinea*, and *Q. palustris*. These woodlands have been called "Hybrid Oak Woods" in recognition of the occurrence of *Quercus x brittonii*, *Q. x bushii*, *Q. x rudkinii* and *Q. x heterophylla*. All these oaks persist here despite a severe fire in 1963. *Dicentra eximia*, endangered in New York State (Clemants 1989), was recently discovered near the pawpaw stand.

Current Land Use:

Available Habitat: Mixed/Hybrid Oak Coastal woods, forested wetlands.

Proposed Project:

Projected/Estimated Costs: \$10,000,000

Project Status: 8 acres acquired, subdivision under construction, partially acquired.

The Joline Avenue freshwater wetland restoration was implemented by NYS DEC in 1998.

Partners: TPL, NYCDPR.

Project Contact:

Phone:

Website: www.nycgovparks.org/sub_about/parks_divisions/nrg/nrg_home.html

Project Funding Source: NYCDPR

HEP Ratification Date: 12/11/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Preservation/restoration of forested wetland area. Potential removal of invasives with native species plantings.

Coastal and Maritime Forests - Preservation/restoration of upland forested area. Potential removal of invasives with native species plantings.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access - Support to on-going passive recreation improvements.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS: Alderson and Bowers 2012.

B. Site History and Land Use: FWS 1997

C. Biological Studies/ Fauna: FWS 1997

D. Biological Studies/ General Environment: FWS 1997

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans: Alderson and Bowers 2012.

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.

http://library.fws.gov/pubs5/web_link/text/rb_form.htm

Greller AM, R. Buegler, E. Johnson, R. Matarrazo, K. Anderson. 1992. Two unusual plant communities in Tottenville, Staten Island, New York, with *Celtis Occidentalis*, and *Asimina Triloba*. Bulletin of the Torrey Botanical Club 119(4), 446-457.

The City of New York Department of City Planning. 2011. Vision 2020 New York City Comprehensive Waterfront Plan.

New York/ New Jersey Harbor Estuary Program Habitat Workgroup 2001 Status Report.

Alderson, Carl and Justin Bowers. 2012. Reaching for the Past in Pursuit of the future: how can our present and past efforts inform the Hudson-Raritan Estuary Comprehensive Restoration Plan and the direction of habitat restoration going forward. A project for the New York-New Jersey Harbor & Estuary Program and New England Interstate Water Pollution Control Commission.



CRP SITE 63. ST. EDWARD'S CAMPGROUND

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing acquisition & restoration, preservation, and/or mitigation site.

Location: NY-Block 6765 Lot 100 and Block 6765 Lot 1.444 Woodvale Ave., Pleasant Plains, Staten Island, Richmond County NY.

Watershed: Raritan Bay

Size: 5 acres

Ownership: Convent of Franciscan Sisters, NYC Parks.

Site Description: The property is located on the southeastern portion of Staten Island with access to the Raritan Bay. It consists of 2 lots on block 6765 containing a total of 9.3 acres. Lot 100 (4.28 acres) is cleared and maintains a large convent building. Lot 1(5.02 acres) is currently leased. *The five-acre triangular property on the shore of Raritan Bay is currently undeveloped, it extends south of Hylan Boulevard along 800 feet of shoreland, and is adjacent to the only natural red clay bluffs in the New York City area. The value of this parcel is enhanced by several surrounding existing conserved properties.*

Current Land Use:

Available Habitat:

Proposed Project: Acquisition of upland habitat (Scrub/Shrub & Open Fields/Lawns).

Projected/Estimated Costs:

Project Status:

Partners:

Project Contact: James Gilmore &/or Nanci Auletto

Phone: (718) 4824875/(718) 482-1136

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal and Maritime Forests - Preservation/restoration of a buffer of upland forest, bluff and beach property. Potential removal of invasives with native species plantings and a buffer of unfragmented upland forest around the bluffs to reduce the local seed source for invasive species introduction.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access - Support to on-going passive recreation improvements.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use: FWS 1997

C. Biological Studies/ Fauna: FWS 1997

D. Biological Studies/ General Environment: FWS 1997

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

*Work in progress

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

The City of New York Department of City Planning. 2011. Vision 2020 New York City Comprehensive Waterfront Plan.

Michigan State University Extension- <http://mnfi.anr.msu.edu/communities/community.cfm?id=19926>



CRP SITE 109. LEMON CREEK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Southwest from the intersection of Hyland Boulevard and Seguin Avenue, Staten Island, Richmond County, NY.

Watershed: Raritan Bay

Size: ~ 51 acres.

Ownership: *The NYS DEC Lemon Creek parcel encompasses 41.796 acres on the northern side of the Hylan Ave. bridge to Oswald Place. This site is connected to a 105.77-acre wetland and upland parcel owned and operated by the NYC DPR. NYC DPR also owns the southernmost section of Lemon Creek from the southern edge of Hylan Boulevard Bridge to the Raritan Bay.*

Site Description: *The 51 acre site is contiguous with a larger expanse of state-owned marsh north of Hylan Boulevard, making it the largest and most pristine on Staten Island's south shore. Steep forested slopes rise on either side of the marsh. A freshwater pond, only 100 feet from Raritan Bay, is adjacent to the only purple martin (*Progne subis*) colony in New York City. Lemon Creek empties into Prince's Bay and, ultimately, Raritan Bay. The main source is a small freshwater pond near Woodrow Road, known as Porzio's Pond.*

The site has been designated a Significant Coastal Fish and Wildlife Habitat. The intertidal marsh includes a marsh dominated by salt marsh cordgrass that is inundated by marine tidal water twice a day. The high marsh is dominated by salt meadow grass, spike grass, and black grass with salt marsh elder, groundsel bush, and giant reed in the upper areas that are inundated by storm surges and spring high tides. Wetland vegetation also includes hardwood swamp of red maple and swamp white oak. Dogwoods dominate the shrub layer and emergent vegetation includes giant reed. Lemon Creek appears to support a sustainable estuarine fish population, although it is not known to be a major spawning or nursing area for fish. In addition, no obstructions to fish migration were observed in the NYSDEC portion of the site. There are three tributaries that flow into the main channel, one in the northeast corner (approximately 400 feet in length), one that drains the Drenzo Court area in the central east portion of the site (approximately 810 feet in length), and a small tributary that drains from Bayview Avenue in the central west portion of the site (approximately 580 feet in length). The Lemon Creek watershed has recently undergone restoration through NYC DDC. The 10 acre, lower estuarine NYC DPR section of the site contains a small boat harbor.

Current Land Use: *The site is a designated "Forever Wild" nature preserve and is part of the Staten Island Bluebelt. Lemon Creek is zoned single- and two-family detached residential units and community facilities. Land to the north and west of the management area are similarly classified. Lands to the immediate south permit both general residential units and community facilities.*

Available Habitat: *Salt marsh, freshwater wetland, forest.*

Proposed Project: *Excavate *Phragmites* and other invasives, regrade and plant with native salt marsh species (e.g. *Spartina* spp.). Enhance adjacent upland habitat.*

Projected/Estimated Costs:

Project Status: *Lemon Creek has recently undergone extensive watershed restorations through NYS DDC. The project involved the creation of seven BMP locations throughout the Lemon Creek Watershed area. It established storm water outlets for several upcoming projects to alleviate flooding conditions in the area. Extensive environmental work at these locations included the construction of several stilling basins to slow storm water flow, a micropool for solids capture, an*

extended holding pond with forebay to aid in the settlement of suspended solids, culvert replacements with riffle/pool construction for fish passage and the reconstruction and stabilization of streams and environmental landscaping. All future site specific planning should be consistent with existing projects and management plan.

Partners: NYSDEC

Project Contact: Harbor Estuary Program

Phone: (212) 637-3816

Website: www.harborestuary.org

Project Funding Source:

HEP Ratification Date: 12/11/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Preservation/restoration of wetland habitat to include invasive removal and native plantings. Management plan proposes storm water management and water budget and water quality studies. Future storm water management plans will incorporate existing BMPs throughout the Lemon Creek Watershed.

Coastal and Maritime Forests – Preservation/restoration of upland woods and riparian forest habitat to include invasive removal and native plantings. Install and maintain erosion control devices as needed.

Shorelines and Shallows – Debris removal and management of existing shorelines.

Tributary Connections – Assessment of flow at 3 tributaries.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access – Support ongoing improvements to passive recreation including trails, signage and educational materials informing the public about wildlife at the Management Areas.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS: NYS DEC 2009, Alderson and Bowers 2012.

B. Site History and Land Use: FWS 1997, NYS DEC 2009

C. Biological Studies/ Fauna: FWS 1997, NYS DEC 2009

D. Biological Studies/ General Environment: FWS 1997, NYS DEC 2009

E. Geotechnical:

***Work in progress**

F. Hydraulics and Hydrology:

G. Water and Sediment: NYS DEC 2009

H. Historical and Cultural Resources: NYS DEC 2009

I. Restoration Remediation and Design Plans: Alderson and Bowers 2012.

REFERENCES:

Ecology and Environment, Inc. for New York State Department of Environmental Conservation Division of Lands and Forests. 2009. Draft Unit Management Plan for Southern Staten Island: Mount Loretto Unique Area, Lemon Creek, Arden Heights Woods, Bloesser's Pond.

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.

http://library.fws.gov/pubs5/web_link/text/rb_form.htm

The City of New York Department of City Planning. 2011. Vision 2020 New York City Comprehensive Waterfront Plan.

Forever Wild- http://www.nycgovparks.org/sub_about/parks_divisions/nrg/forever_wild/site.php?FWID=10

NYC Parks- <http://www.nycgovparks.org/parks/R079/pressrelease/19875>

NYC DDC- http://www.nyc.gov/html/ddc/html/projects/featured_09.shtml

Alderson, Carl and Justin Bowers. 2012. Reaching for the Past in Pursuit of the future: how can our present and past efforts inform the Hudson-Raritan Estuary Comprehensive Restoration Plan and the direction of habitat restoration going forward. A project for the New York-New Jersey Harbor & Estuary Program and New England Interstate Water Pollution Control Commission.



CRP SITE 6. NORTHERN SEA VIEW

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing acquisition, restoration, preservation, and/or mitigation site.

Location: The Northern Sea View site is located in the Willowbrook Neighborhood Staten Island, east of Brielle Ave. between Susan Wagner High School, and Sea View Hospital in Staten Island, Richmond County, NY.

Watershed: Arthur Kill

Size: 50 acres

Ownership: NYC DCAS

Site Description: *Site includes woodlands and a serpentine barren grassland and is contiguous with the Staten Island Greenbelt. The 50 acre site was the subject of a "request for proposals" issued by the New York City Economic Development Corporation (EDC). In July 2000, EDC awarded the project to Met Council and SFDS. Met Council and SFDS have limited development to 15.39 acres of the 50-acre site. DCAS intends to transfer the remainder of the 50-acre parcel to the Department of Parks and Recreation (DPR) to be preserved as public open space and added to the Greenbelt. The 15-acre site is part of the Farm Colony-Seaview Hospital Historic District. It is surrounded by moderate density housing and community uses such as the Sisters of Charity independent living facility, St. Elizabeth's Manor, the Jewish Community Center of Staten Island, Seaview Hospital Rehabilitation Center and Home, and Susan Wagner High School. The Staten Island Greenbelt abuts the site to the south and east. The development site is mostly wooded. Approximately 1/3 of the development footprint is located on land previously developed with housing for Seaview Hospital staff. The applicants request authorization to alter steep slope (> 15% slope) and serpentine barrens. Approximately 5,000 square feet of steep slope would be altered. The development was sited on the ridgeline to avoid disturbing the steep slope area. Serpentine barrens cover 4,500 square feet which would be disturbed by development.*

Current Land Use: *The site is zoned institutional and vacant lot. Surrounding lands are zoned residential.*

Available Habitat: Woodlands and grasslands with a small amount of freshwater emergent and forested wetland.

Proposed Project: Woodland/grassland acquisition and preservation.

Projected/Estimated Costs:

Project Status: Development planned.

Partners:

Project Contact: Dr. Margaret B. Garguillo, NYC Parks/NRG

Phone: (212) 360-1423

Website: www.nycgovparks.org/sub_about/parks_divisions/nrg/nrg_home.html

Project Funding Source:

HEP Ratification Date: 11/2/2000

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal and Maritime Forests – Acquisition/preservation of the woodland and grassland.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:
B. Site History and Land Use:
C. Biological Studies/ Fauna:
D. Biological Studies/ General Environment:
E. Geotechnical:

F. Hydraulics and Hydrology:
G. Water and Sediment:
H. Historical and Cultural Resources:
I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

Staten Island Greenbelt- <http://www.sigreenbelt.org/>

City Planning Commission July 14, 2004/Calendar No. 36 C 040278 PPR
<http://www.nyc.gov/html/dcp/pdf/cpc/040278.pdf>

NYC EDC- <http://www.nycedc.com/project/seaview-senior-living-center>

The City of New York Department of City Planning. 2011. Vision 2020 New York City Comprehensive Waterfront Plan.



CRP SITE 8. POUCH CAMP

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing acquisition, restoration, preservation, and/or mitigation site.

Location: Camp Pouch is adjacent to the Greenbelt, and is contiguous with High Rock Park in Staten Island, Richmond County, NY.

Watershed: Arthur Kill

Size: *Approximately 143 acres.*

Ownership: *Greater New York Council of Boy Scouts (GNYC)*

Site Description: *Site is the largest parcel within the Staten Island Greenbelt and one of the only privately owned ones. Pouch Camp strengthens the link between other sections of the Greenbelt such as the grounds of Sea View Hospital, Richmond Country Club, and High Rock Park and has been a state conservation priority since the mid-1980s. The site is not open to the public (although fishing permits are issued and hikers can request permission to walk through). Trails through the greenbelt run along its edge, overlooking the camp's native hardwood forest and understory dotted with glacial kettle ponds, streams, and swamps.*

In 2009, citing financial stress, GNYC announced plans to market and sell Pouch Camp. Currently, GNYC is working with The Trust for Public Land to preserve a large portion of the property in three a phases conservation easement process.

Current Land Use: The site is zoned as open space and vacant lot

Available Habitat: *This site contains very high quality native freshwater ponds, forested and emergent wetlands.*

Proposed Project: *Preservation/acquisition- development threat.*

Projected/Estimated Costs:

Project Status: *The Trust for Public Land, is currently involved in safeguarding Pouch Camp through three phases of conservation easement:*

Phase 1 was completed in 2012, placing an easement over 43 acres, which includes Berlin Lodge, the trading post, the main parking lot, campgrounds and cabins and most of Ohrback Lake. The easement was subsequently transferred to NYSDEC. Phase 2 would protect 25 acres and Phase 3 another 24 acres, mostly cabins, trails and wetlands. Left out in the proposal is an equally large parcel of land, which includes the Camp-o-ree field -- the site deemed especially at risk because it is most suitable for development

The nonprofit Trust for Public Land received a commitment of \$1 million to aid in the purchase of a perpetual conservation easement for Phase 1. Another \$4 million is needed to complete the first phase, expected by late summer or early fall 2012. Another \$10 million is needed for the second and third phases between 2013 and 2014.

Partners: TPL, NYSDEC, Port Authority

Project Contact: Steve Zahn, NYSDEC

Phone: (718) 482-6464

Website: www.nycgovparks.org/sub_about/parks_divisions/nrg/nrg_home.html

Project Funding Source:

HEP Ratification Date: 11/2/2000

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Acquisition/preservation.

Coastal and Maritime Forests-

Acquisition/preservation.

Public Access – Support ongoing efforts for public access after acquisition is secured.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:PPOW 2010

B. Site History and Land Use: FWS 1997, PPOW 2010

C. Biological Studies/ Fauna: FWS 1997, PPOW 2010

D. Biological Studies/ General Environment: FWS 1997, PPOW 2010

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed. http://library.fws.gov/pubs5/web_link/text/rb_form.htm

Stephanie Slepian. February 2012. Major progress in push to save Staten Island's Pouch Camp. Staten Island Real-Time News. http://www.silive.com/news/index.ssf/2012/02/post_274.html

Protectors of Pine Oak Woods, Inc. The Greenbelt in Peril Save Pouch Camp 2010 – 2011. <http://www.siprotectors.org/PPOW%20Book.pdf>

Gotham Gazette- <http://www.gothamgazette.com/article/parks/20100217/14/3183>

Staten Island Greenbelt- <http://www.sigreenbelt.org/>

The City of New York Department of City Planning. 2011. Vision 2020 New York City Comprehensive Waterfront Plan.



CRP SITE 596. CROOKES POINT

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.1 miles south from the end of Buffalo Street Richmond County NY

Watershed:

Size: 420 acres

Ownership: NPS

Site Description: *Much of this area was once marshland, used as a landfill in the 1930s and 1940s. Over time, erosion separated Crooke's Point from the rest of Staten Island, and it became known as Crooke's Island. It was reattached when Gateway was built. Crooke's Point has been designated as a "natural area" permitting low-impact public use, such as fishing. Despite its reinvention as a park through use of landfill, Crooke's Point is an important resting and feeding habitat for migratory bird and insect populations.*

Gateway National Recreation Area has begun the restoration of a two-acre pilot project at Crooke's Point, to create a barrier island habitat. This project will replace non-native and invasive plant species with native trees and shrubs that will nurture a more diverse wildlife population at the coastal area. The National Park Service (NPS) is partnering with New York City Department of Parks and Recreation and MillionTreesNYC. The park intends to create a small version of what is natural for a barrier island habitat in the New York Harbor area. On Wednesday, January 25, 2012 the park began clearing paths 8-10 feet wide for access, spaced 30-40 feet apart, using earth-moving equipment. In February, herbicides will be used in accordance with the Integrated Pest Management plan developed by the NPS Northeast Region. Use of herbicides will be limited in scope to avoid adverse environmental effects in the soil, water or wildlife.

Strong opposition to NPS plan has been voiced by local environmental groups including PPOW and NYRP.

Current Land Use: Gateway National Recreation Area

Available Habitat:

Proposed Project: *Uplands and dune restoration.*

Projected/Estimated Costs:

Project Status:

Partners: NPS

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal and Maritime Forests- Preservation/restoration of upland habitat and dune to include removal of invasive species and planting with natives.

Coastal Wetlands – Preservation/restoration of freshwater and tidal wetlands.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access – Support ongoing improvements to passive recreation.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

National Parks Service- <http://www.nps.gov/gate/parknews/crookes-point-restoration-begins.htm>



CRP SITE 580. GREAT KILLS, GATEWAY NRA

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.1 miles east from the intersection of Hyland Boulevard and Buffalo Street, Richmond County, NY. Site is west of the WWTP and east of Buffalo St.

Watershed:

Size:

Ownership: NPS

Site Description: *Freshwater and tidal wetland interior of the beach south of Oakwood Creek. Site is dominated by invasive species, prone to flooding and experience erosion along the Bay portion. The topography of the watershed conveys stormwater flows from the northeast to the southwest and ultimately to the Lower Bay via three stream branches, two of which are located on this site. The West Branch, which originates along the unbuilt Willowbrook Parkway in the hillier upper watershed, flows south into Great Kills Park in the GNRA where a stream channel and storm sewer converge. This channel flows east and then south to eventually reach the Lower Bay below the Oakwood Beach WWTP. The property also contains a smaller branch in the center of the watershed draining a wide channel that originates at Hyland Boulevard. This man-made channel runs along the mapped but unbuilt bed of Adelaide Avenue before turning west into the unbuilt bed of Falcon Avenue. This stream then turns south to connect with the West Branch near the WWTP.*

A portion of the property falls within the drainage area tributary to the Oakwood Beach Bluebelt.

Bluebelt: NYC DEP proposes to amend the drainage plans for three watersheds within the Mid-Island (South Shore) area of Staten Island. The proposed project covers the Oakwood Beach, New Creek, and South Beach watersheds located in Staten Island Community Boards 2 and 3, an area approximately 5,000 acres in size. Each of these watersheds has surface water features such as streams, ponds and wetlands that would be utilized with the objective of protecting and enhancing these resources through the preservation and improvement of existing streams and wetlands. The objective of the proposed project is to provide comprehensive stormwater management and address chronic flooding of streets and properties in Mid-Island while preserving and enhancing existing wetlands. BMPs would be included to provide improved stormwater conveyance, attenuation of stormwater velocities, management and control of stormwater volumes and pollutant removal to reduce flooding of private properties and public streets. In addition, three new proposed outfalls would convey stormwater runoff to Lower Bay. Also, the proposed project includes designs for additional and upgraded sanitary sewers for wastewater conveyance to the Oakwood Beach Wastewater Treatment Plant (WWTP).

Current Land Use: National Park, recreation, open space.

Available Habitat:

Proposed Project:

Projected/Estimated Costs:

Project Status:

Partners:

Project Contact:

Phone:
Website:
Project Funding Source:
HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Support to NYC DEP, NYC DPR and others to restore freshwater and tidal wetlands, construct tide gates, assess erosion impacts and implement controls to resolve issues in the bay.
Coastal and Maritime Forests – Support to NYC DEP and NYC Parks to restore dunes and upland forested area.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.
Public Access – Support to ongoing efforts to improve recreation opportunities.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:
B. Site History and Land Use:
C. Biological Studies/ Fauna:
D. Biological Studies/ General Environment:
E. Geotechnical:

F. Hydraulics and Hydrology:
G. Water and Sediment:
H. Historical and Cultural Resources:
I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

NY/NJ Botany- <http://nynjctbotany.org/lgtoc/lggrkill.html>

National Parks Service- <http://www.nyharborparks.org/visit/grki.html>

DEP Mid Island Bluebelt Drainage Plan-
http://www.nyc.gov/html/dep/html/environmental_reviews/midisland_bluebelt_drainage_plan.shtml

USACE Oakwood Beach Storm Damage Reduction-
<http://www.nan.usace.army.mil/project/newyork/factsh/pdf/oakwoodb.pdf>

NYC DPR Cedar Grove Beach Rehabilitation- <http://www.nan.usace.army.mil/project/newyork/factsh/pdf/oakwoodb.pdf>

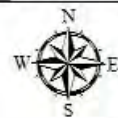


US Army Corps
of Engineers
New York District

Great Kills, Gateway NRA NYC

Lower Bay

0 125 250 500 750 1,000 Feet



CRP SITE 801. GREAT KILLS PARK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 1 mile southeast of the intersection of Hylan Boulevard & Guyon Avenue, Richmond County, NY. Site is bounded by Kissam Ave. and Fox La.

Watershed: Lower Bay

Size: 100 acres, ~ 50 acres

Ownership: NPS, Savo Brother/Fine Corporation.

Site Description: *Freshwater wetland interior of Oakwood Beach and dunes are prone to flooding and dominated by Phragmites which were fed by tidal waters passing through a formerly non-functioning tide gate and bulkhead. USACE completed a flood control study in 2000 resulting in a tide gate repair. The topography of the watershed conveys stormwater flows from the northeast to the southwest and ultimately to the Lower Bay via three stream branches. The East Branch, which runs through this property, begins in Great Kills Park east of Kissam Avenue. This stream flows south and west to a tide gate that is situated immediately south of the Oakwood Beach WWTP.*

Several projects are taking place in the area:

Bluebelt: NYC DEP proposes to amend the drainage plans for three watersheds within the Mid-Island (South Shore) area of Staten Island. The proposed project covers the Oakwood Beach, New Creek, and South Beach watersheds located in Staten Island Community Boards 2 and 3, an area approximately 5,000 acres in size. Each of these watersheds has surface water features such as streams, ponds and wetlands that would be utilized with the objective of protecting and enhancing these resources through the preservation and improvement of existing streams and wetlands.

The objective of the proposed project is to provide comprehensive stormwater management and address chronic flooding of streets and properties in Mid-Island while preserving and enhancing existing wetlands. BMPs would be included to provide improved stormwater conveyance, attenuation of stormwater velocities, management and control of stormwater volumes and pollutant removal to reduce flooding of private properties and public streets. In addition, three new proposed outfalls would convey stormwater runoff to Lower Bay. Also, the proposed project includes designs for additional and upgraded sanitary sewers for wastewater conveyance to the Oakwood Beach Wastewater Treatment Plant (WWTP).

USACE SSSI: The study area is located along the south shore of Staten Island, New York City, New York. The study area covers about 13 miles of coast on Staten Island, extending along lower New York Bay and Raritan Bay from Fort Wadsworth to Tottenville at the mouth of Arthur Kill. The area has a long history of storm damage. The shoreline experienced major erosion and storm damage from the Northeaster of December 1992 and the March 1993 storm. These storms caused evacuations in several communities, damage to hundreds of structures from flooding, and loss of 30 structures from erosion. The loss of beachfront now leaves the area increasingly vulnerable to severe damages even from moderate storms. The feasibility study was initiated in August 2000, and is looking to develop structural and non-structural plans of improvement for the study area problems. The feasibility study had been delayed the last few years due to a lack of Federal and non-Federal funding. The study is now back underway and currently includes the optimization and selection of line of protection and interior drainage improvement plans, which are both necessary to provide hurricane and storm damage reduction to the project area. USACE plan of action links to bluebelt (above).

Current Land Use:

Available Habitat: *Degraded- freshwater wetland, forested/scrub and dune.*

Proposed Project:

Projected/Estimated Costs:

Project Status:

Partners: NYSDEC

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Support to NYC DEP and others to restore freshwater wetlands, remove invasive species, restore streams, and tide gate construction.

Coastal and Maritime Forests – Support to NYC DEP and NYC DPR to restore dune structure, dune vegetation, and upland forested area. Additionally, support to NYC DEP and NYC DPR to assess need for

sand placement to expand beach and increase protection from storm damage.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access – Support to ongoing efforts to improve recreation opportunities.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

USACE. 2009. WETLAND DELINEATION REPORT SOUTH SHORE OF STATEN ISLAND FEASIBILITY STUDY.

USACE- www.nan.usace.army.mil/project/newyork/factsh/pdf/oakwoodb.pdf

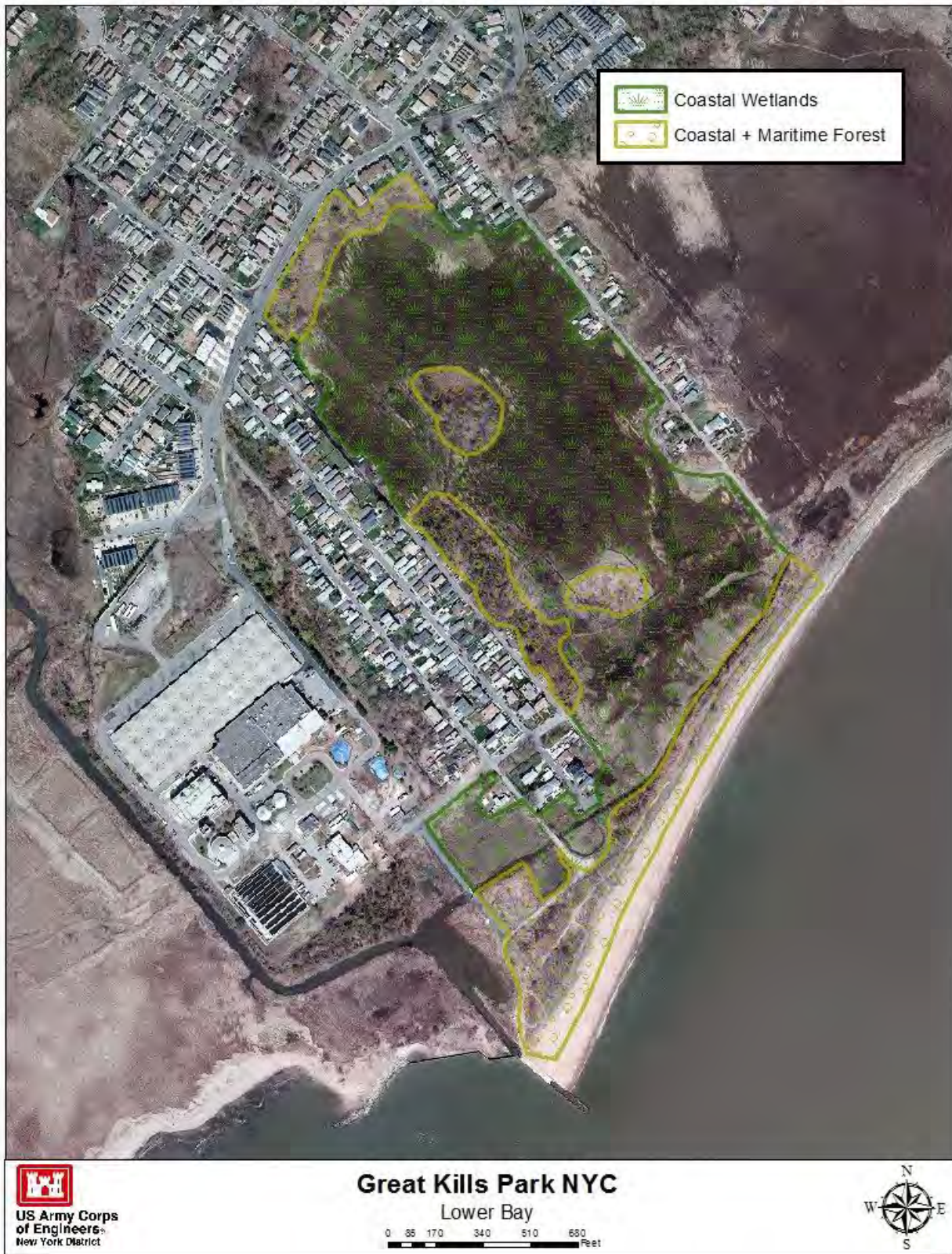
DEP Mid Island Bluebelt Drainage Plan-

http://www.nyc.gov/html/dep/html/environmental_reviews/midisland_bluebelt_drainage_plan.shtml

USACE Oakwood Beach Storm Damage Reduction-

<http://www.nan.usace.army.mil/project/newyork/factsh/pdf/oakwoodb.pdf>

NYC DPR Cedar Grove Beach Rehabilitation- <http://www.nan.usace.army.mil/project/newyork/factsh/pdf/oakwoodb.pdf>



CRP SITE 578. OAKWOOD BEACH (CEDAR GROVE BEACH)

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.2 miles south from the corner of Garibaldi Avenue and Cedar Grove Avenue, Richmond County, NY. Wetlands are bounded by Ebbitts St. and Kissam Ave.

Watershed:

Size: 100 acres

Ownership: NYC DPR and Federal Parks

Site Description: *Freshwater wetland interior of Cedar Grove Beach and dunes are prone to flooding and dominated by Phragmites fed by tidal waters passing through a formerly non-functioning tide gate and bulkhead. USACE completed a flood control study in 2000 (see below) resulting in a tide gate repair. The topography of the watershed conveys stormwater flows from the northeast to the southwest and ultimately to the Lower Bay via three stream branches. The East Branch, which runs through this property, begins in Great Kills Park east of Kissam Avenue. This stream flows south and west to a tide gate that is situated immediately south of the Oakwood Beach WWTP.*

Several projects are taking place in the area:

Bluebelt: NYC DEP proposes to amend the drainage plans for three watersheds within the Mid-Island (South Shore) area of Staten Island. The proposed project covers the Oakwood Beach, New Creek, and South Beach watersheds located in Staten Island Community Boards 2 and 3, an area approximately 5,000 acres in size. Each of these watersheds has surface water features such as streams, ponds and wetlands that would be utilized with the objective of protecting and enhancing these resources through the preservation and improvement of existing streams and wetlands.

The objective of the proposed project is to provide comprehensive stormwater management and address chronic flooding of streets and properties in Mid-Island while preserving and enhancing existing wetlands. BMPs would be included to provide improved stormwater conveyance, attenuation of stormwater velocities, management and control of stormwater volumes and pollutant removal to reduce flooding of private properties and public streets. In addition, three new proposed outfalls would convey stormwater runoff to Lower Bay. Also, the proposed project includes designs for additional and upgraded sanitary sewers for wastewater conveyance to the Oakwood Beach Wastewater Treatment Plant (WWTP).

USACE SSSI: The study area is located along the south shore of Staten Island, New York City, New York. The study area covers about 13 miles of coast on Staten Island, extending along lower New York Bay and Raritan Bay from Fort Wadsworth to Tottenville at the mouth of Arthur Kill. The area has a long history of storm damage. The shoreline experienced major erosion and storm damage from the Northeaster of December 1992 and the March 1993 storm. These storms caused evacuations in several communities, damage to hundreds of structures from flooding, and loss of 30 structures from erosion. The loss of beachfront now leaves the area increasingly vulnerable to severe damages even from moderate storms. The feasibility study was initiated in August 2000, and is looking to develop structural and non-structural plans of improvement for the study area problems. The feasibility study had been delayed the last few years due to a lack of Federal and non-Federal funding. The study is now back underway and currently includes the optimization and selection of line of protection and interior drainage improvement plans, which are both necessary to provide hurricane and storm damage reduction to the project area. USACE plan of action links to bluebelt (above).

Cedar Grove Beach Rehabilitation: NYC DPR proposes to restore Cedar Grove Beach. The project includes the demolition of a majority of vacant beach bungalows and adaptive reuse of others for park related purposes. The proposed

action will provide improved beach access to the area for the general public and include the rehabilitation of existing parking areas on site, minor rehabilitation of the existing pick up sport play area, construction of a new playground and construction of a new bike path.

Current Land Use:

Available Habitat: Degraded- freshwater wetland, forested/scrub and dune.

Proposed Project: Improve tidal flow to wetlands, remove Phragmites, regrade/replant with native vegetation (*Spartina* spp.), clear large debris from beach area.

Projected/Estimated Costs: USACE Flood Control-\$2,675,000

Project Status:

USACE Flood Control Study: The subject area is situated between Great Kills Harbor and New Dorp Beach. The problem area is adjacent to the Gateway National Recreation Area, south of Oakwood Creek. The shoreline has eroded over the past 40-50 years, and protective works including a wooden seawall adjacent to a tide gate at the mouth of Oakwood Creek, a stone riprap revetment, and the tide gate have deteriorated. As a result, residents of the Oakwood Beach community and the nearby New York City sewage treatment plant facility are vulnerable to consistent storm damages. Beyond significant flooding during storm events, the area has experienced flooding during normal high tides, depending upon prevailing wind conditions. In addition, this situation poses serious environmental concerns, as freshwater wetlands are in danger of being converted to tidal wetlands. Project work included a levee, a tide gate over Oakwood Creek, the raising of the access road to the septic tank discharge area, the raising of portions of Mill Road, Tarlton Street, and Dugdale Street, and a wetland mitigation area. The U.S. Army Corps of Engineers signed a project cooperation agreement with the NYS DEC in July 1998. Construction was completed in May 2000. The project was officially turned over to the State of New York for operation and maintenance on October 26, 2000.

Partners: NYSDEC, USACE.

Project Contact: Anthony Ciorra (USACE), Erin Morey (NYC DEP),

Phone: (212) 264-1038, (718)-595-6443

Website: anthony.ciorra@usace.army.mil

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Support to NYC DEP and others to restore freshwater wetlands, remove invasive species, restore streams, and tide gate construction.

Coastal and Maritime Forests – Support to NYC DEP and NYC Parks to restore dune structure, dune vegetation, and upland forested area and assess need for

sand placement to expand beach and increase protection from storm damage.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access – Support to ongoing efforts to improve recreation opportunities.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

USACE. 2009. WETLAND DELINEATION REPORT SOUTH SHORE OF STATEN ISLAND FEASIBILITY STUDY.

USACE- www.nan.usace.army.mil/project/newyork/factsh/pdf/oakwoodb.pdf

DEP Mid Island Bluebelt Drainage Plan-

http://www.nyc.gov/html/dep/html/environmental_reviews/midisland_bluebelt_drainage_plan.shtml

USACE Oakwood Beach Storm Damage Reduction-

<http://www.nan.usace.army.mil/project/newyork/factsh/pdf/oakwoodb.pdf>

NYC DPR Cedar Grove Beach Rehabilitation- <http://www.nan.usace.army.mil/project/newyork/factsh/pdf/oakwoodb.pdf>



CRP SITE 582. SEA VIEW AVENUE WETLANDS

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.1 miles south of Slater Boulevard Staten Island, Richmond County, NY.

Watershed:

Size:

Ownership: NYC DEP

Site Description: *This property is part of the Staten Island Bluebelt, a network of streams, ponds and other wetlands that serve as natural filters to prevent flooding in low-lying communities. This property is located in the Mid-island Bluebelt section. Three principal stream channels run through the wetland: the Main Channel which originates in Last Chance Pond Park; the West Branch which originates in Boundary Avenue Park; and the East Branch which originates at Dongon Hills Avenue. Hilly terrain and steep slopes throughout the watershed result in high stream velocities and difficult conditions for stormwater conveyance and treatment.*

Several projects are taking place in the area:

Bluebelt: NYC DEP proposes to amend the drainage plans for three watersheds within the Mid-Island (South Shore) area of Staten Island. The proposed project covers the Oakwood Beach, New Creek, and South Beach watersheds located in Staten Island Community Boards 2 and 3, an area approximately 5,000 acres in size. Each of these watersheds has surface water features such as streams, ponds and wetlands that would be utilized with the objective of protecting and enhancing these resources through the preservation and improvement of existing streams and wetlands.

The objective of the proposed project is to provide comprehensive stormwater management and address chronic flooding of streets and properties in Mid-Island while preserving and enhancing existing wetlands. BMPs would be included to provide improved stormwater conveyance, attenuation of stormwater velocities, management and control of stormwater volumes and pollutant removal to reduce flooding of private properties and public streets. In addition, three new proposed outfalls would convey stormwater runoff to Lower Bay. Also, the proposed project includes designs for additional and upgraded sanitary sewers for wastewater conveyance to the Oakwood Beach Wastewater Treatment Plant (WWTP).

USACE SSSI: The study area is located along the south shore of Staten Island, New York City, New York. The study area covers about 13 miles of coast on Staten Island, extending along lower New York Bay and Raritan Bay from Fort Wadsworth to Tottenville at the mouth of Arthur Kill. The area has a long history of storm damage. The shoreline experienced major erosion and storm damage from the Northeaster of December 1992 and the March 1993 storm. These storms caused evacuations in several communities, damage to hundreds of structures from flooding, and loss of 30 structures from erosion. The loss of beachfront now leaves the area increasingly vulnerable to severe damages even from moderate storms. The feasibility study was initiated in August 2000, and is looking to develop structural and non-structural plans of improvement for the study area problems. The feasibility study had been delayed the last few years due to a lack of Federal and non-Federal funding. The study is now back underway and currently includes the optimization and selection of line of protection and interior drainage improvement plans, which are both necessary to provide hurricane and storm damage reduction to the project area. USACE plan of action links to bluebelt (above).

Current Land Use: Open space.

Available Habitat: Wetland.

Proposed Project: *NYCDEP plans to include removal of phragmites, construction of stilling basins— depressed areas in channels that slow down water flow, and constructed stormwater wetlands.*

Projected/Estimated Costs: *The city has committed \$60 million to the Staten Island Bluebelt program, with another \$200 million planned for the next 10 years.*

Project Status:

Partners: *NYC DEP*

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Support to NYC DEP and others to restore freshwater wetlands, remove invasive species, restore streams, and tide gate construction. Assess feasibility of constructing a stilling basin in the channels and expanding wetland to increase stormwater retention.

Coastal and Maritime Forests – Support to NYC DEP and NYC Parks to restore dune structure and vegetation, and upland forested area.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access – Support to ongoing efforts to improve recreation opportunities.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

**Work in progress*

REFERENCES:

Mid-island Bluebelt Draft Scope of Work-

http://www.nyc.gov/html/dep/html/environmental_reviews/midisland_bluebelt_drainage_plan.shtml



CRP SITE 13. SOUTH BEACH WETLANDS, NORTHERN SECTION

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Quintard Street to Sand Lane between Father Capodanno Boulevard and Olympia Boulevard, Richmond County, Staten Island NY.

Watershed: New York Harbor

Size: 70 acres

Ownership: Private

Site Description: *The area is marshy, surrounded by patchy emergent forest and scrub-shrub wetlands in sandy upland. 4.79 acres of undeveloped wilderness and wetlands have been permanently protected.*

Several projects are taking place in the area:

Bluebelt: NYC DEP proposes to amend the drainage plans for three watersheds within the Mid-Island (South Shore) area of Staten Island. The proposed project covers the Oakwood Beach, New Creek, and South Beach watersheds located in Staten Island Community Boards 2 and 3, an area approximately 5,000 acres in size. Each of these watersheds has surface water features such as streams, ponds and wetlands that would be utilized with the objective of protecting and enhancing these resources through the preservation and improvement of existing streams and wetlands.

The objective of the proposed project is to provide comprehensive stormwater management and address chronic flooding of streets and properties in Mid-Island while preserving and enhancing existing wetlands. BMPs would be included to provide improved stormwater conveyance, attenuation of stormwater velocities, management and control of stormwater volumes and pollutant removal to reduce flooding of private properties and public streets. In addition, three new proposed outfalls would convey stormwater runoff to Lower Bay. Also, the proposed project includes designs for additional and upgraded sanitary sewers for wastewater conveyance to the Oakwood Beach Wastewater Treatment Plant (WWTP).

USACE SSSI: The study area is located along the south shore of Staten Island, New York City, New York. The study area covers about 13 miles of coast on Staten Island, extending along lower New York Bay and Raritan Bay from Fort Wadsworth to Tottenville at the mouth of Arthur Kill. The area has a long history of storm damage. The shoreline experienced major erosion and storm damage from the Northeaster of December 1992 and the March 1993 storm. These storms caused evacuations in several communities, damage to hundreds of structures from flooding, and loss of 30 structures from erosion. The loss of beachfront now leaves the area increasingly vulnerable to severe damages even from moderate storms. The feasibility study was initiated in August 2000, and is looking to develop structural and non-structural plans of improvement for the study area problems. The feasibility study had been delayed the last few years due to a lack of Federal and non-Federal funding. The study is now back underway and currently includes the optimization and selection of line of protection and interior drainage improvement plans, which are both necessary to provide hurricane and storm damage reduction to the project area. USACE plan of action links to bluebelt (above).

Current Land Use:

Available Habitat: *Trees and shrubs in the area include the black willow (*Salix nigra*), eastern cottonwood (*Populus deltoides*), black locust (*Robinia pseudoacacia*), gray birch (*Betula populifolia*), northern bayberry (*Myrica pensylvanica*), winged sumac (*Rhus copallina*), and pussy willow (*Salix discolor*). Among the herbs and smaller plants to be found are the bushy goldenrod (*Euthamia tenuifolia*), gerardia (*Agalinis tenuifolia*), Swamp milkweed (*Asclepias incarnata*), indian-hemp (*Apocynum cannabinum*), Sprianthes cemua (an orchid), boneset (*Eupatorium perfoliatum*),*

scouring rush (Equisetum hymenale), weeping lovegrass (Eragrostis curvula), the indomitable intruder phragmites, and globe flatsedge (Cyperus echinata).

Proposed Project: Land acquisition for addition to Ocean Breeze Park, threatened with development.

Projected/Estimated Costs:

Project Status: \$175,000 provided by PANYNJ to purchase the 4.79 acre property. Land acquisition necessary for addition to Ocean Breeze Park which is threatened with development.

Partners: TPL, PANYNJ, NYCDEP, NYSDEC.

Project Contact: Catherine Greene-Manzi, Coalition for S. Beach Pond Park Preserve

Phone: 718-815-7173

Website: www.siprotectors.org

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Support to NYC DEP and others to acquire and/or restore freshwater wetlands, remove invasive species, restore streams, and tide gate construction.

Coastal and Maritime Forests – Support to NYC DEP and NYC Parks to restore dune structure and vegetation, and upland forested area.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access – Support to ongoing efforts to improve recreation opportunities.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

NYC Parks- <http://www.nycgovparks.org/parks/R147/>

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed. http://library.fws.gov/pubs5/web_link/text/rb_form.htm



CRP SITE 579. FORT WADSWORTH BEACH

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.25 miles north of I-278, located on the shores of the Upper Bay, Richmond County, NY.

Watershed:

Size: 2 acres

Ownership: NPS, NYC DPR

Site Description: This beach on the northeastern shore of Staten Island is characterized as having degraded, eroded shoreline containing construction debris and fill. A portion of the beach and land underwater between North Road and Seagate Road is Von Briesen Park, regulated by NYC Parks.

Current Land Use:

Available Habitat:

Proposed Project:

Projected/Estimated Costs:

Project Status:

Partners: NPS

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal and Maritime Forests – Assess upland forested area for potential improvements to erosion control and invasive species.

Shorelines and Shallows – Assessment of beach for debris removal and erosion control.

Public Access – Support ongoing NPS and NYC DPR efforts to improve passive recreation.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:



CRP SITE 597. VERRAZANO-NARROWS

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Shallow area offshore of Staten Island between Midland and South Beach, Richmond County, NY.

Watershed:

Size: 1 acre

Ownership: NYS

Site Description: The Verrazano Narrows site is an open water area that is exposed to the hydrodynamic forces of the Lower Bay Complex. The site encompasses the shallow water area of the West Bank Shoal as well as the deep-water areas of the Hoffman-Swinburne South borrow pit.

Current Land Use: Open water

Available Habitat:

Proposed Project: Artificial reef construction. In a 2001 report, M. Ludwig (NMFS) offers design guidance for potential reefs at these sites, based on the experimental Dutch Harbor reefs. Suggested rock size ranges are 3 to 20 cm, and 20 to 40 cm, to accommodate juvenile and larger sized American lobsters, a Federally managed species. NMFS suggests that each reef consist of abutting sections of the two size classes. The USACE (1999a) calculated that the construction of a 1-acre estuarine reef with 3 ft of relief would require approximately 5,000 cu yd of bedrock. The study concludes that sediments at this location may be able to support the weight of rock reef structures. Lobsters presently occur, and were historically abundant along the lower Staten Island shoreline, suggesting that food and shelter requirements are present.

Projected/Estimated Costs:

Project Status:

Partners: NYSDEC

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Habitat for Fish, Crab and Lobsters – Construct artificial reef (e.g. rock, rubble mound or reef balls) to increase availability of structural refuge habitat and prey for juvenile and adult finfish and crustaceans, including Essential Fish Habitat species and endangered species, that is currently lacking in Gravesend Bay and similar

habitats throughout the Harbor. Navigational and habitat exchange concerns will need to be addressed.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

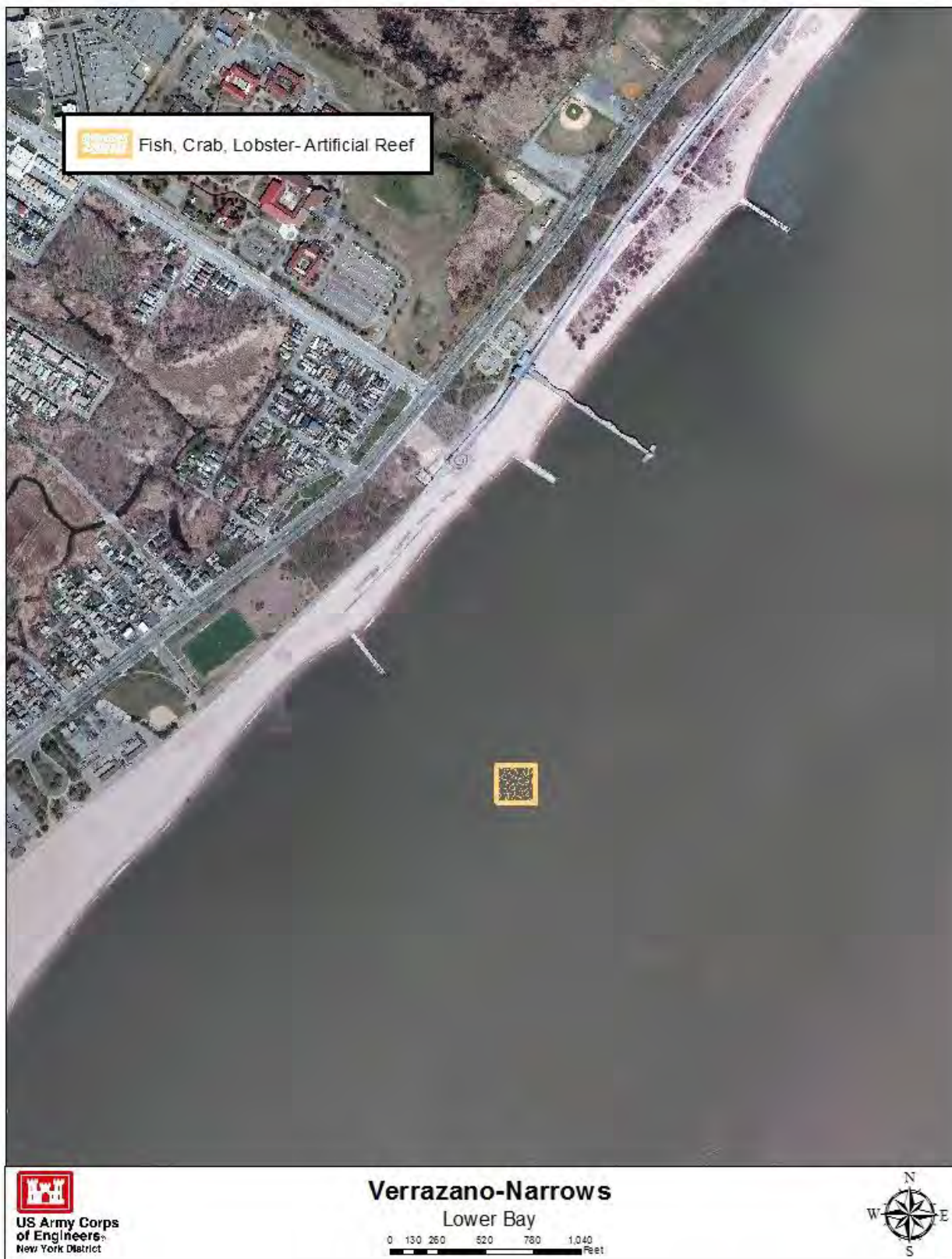
I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

USACE- Joel Banslaben, Jack C. Cox, and Robert J. Will. July 2003. *Dredging Operations Technical Support Program - Beneficial Use of Dredged Bedrock in the New York/New Jersey Harbor.*



CRP SITE 598. HOFFMAN-SWINBURNE ISLANDS

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Northwest Lower Bay 2 miles south, south east from the Intersection of I-278 and New York Avenue, Richmond County, NY.

The North Hoffman-Swinburne Pit is located approximately 0.6 miles east of Staten Island and approximately 0.6 miles west of the Ambrose Channel in the Lower Bay.

The South Hoffman-Swinburne Pit is located approximately 0.3 miles east of Staten Island and approximately 1.9 miles west of Ambrose Channel in the Lower Bay.

Watershed:

Size: *Hoffman Island is approximately 11.2 acres and Swinburne Island is approximately 2.7 acres*

Ownership: NPS

Site Description: *The Hoffman-Swinburne Island Complex consists of two small man-made islands. Hoffman Island is 11.2 acres, much of which is also covered with concrete and rubble, in addition to an Ailanthus forest. Swinburne Island, directly to the south, is approximately 2.7 acres in size and is mostly covered with concrete and derelict structures. The only structures are two brick buildings on Swinburne and a few piers on the western shores of Hoffman Island, all in disrepair. This site currently supports little vegetation, native or otherwise. The complex is undergoing rapid succession to deciduous forest, with tall shrubs encroaching on the few remaining open grassy areas. The habitat consists primarily of thick vegetation surrounded by rocky shoreline. This extremely suitable habitat has seen an explosion in its wading bird population in the last three years (2000-2003).*

Both islands are off-limits to the general public, to protect the islands' avian residents. Hoffman Island hosts a large number of nesting wading birds, including great egret, snowy egret, black-crowned night heron, and glossy ibis. Double-crested Cormorants dominate Swinburne, and great black-backed gulls nest on both islands. Beginning in 2001, harbor seals have been seen wintering around the islands.

Current Land Use: Gateway National Recreation Area

Available Habitat:

Proposed Project: Improve waterbird habitat, restoration of borrow pits and creation of artificial reefs.

Artificial reef construction. In a 2001 report, M. Ludwig (NMFS) offers design guidance for potential reefs at these sites, based on the experimental Dutch Harbor reefs. Suggested rock size ranges are 3 to 20 cm, and 20 to 40 cm, to accommodate juvenile and larger sized American lobsters, a Federally managed species. NMFS suggests that each reef consist of abutting sections of the two size classes. The USACE (1999a) calculated that the construction of a 1-acre estuarine reef with 3 ft of relief would require approximately 5,000 cu yd of bedrock. The study concludes that sediments at this location may be able to support the weight of rock reef structures. Lobsters presently occur, and were historically abundant along the lower Staten Island shoreline, suggesting that food and shelter requirements are present.

Projected/Estimated Costs:

Project Status:

Partners: NOAA, NPS, USACE.

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Islands for Waterbirds - Portions of both islands could be regraded to intertidal elevation and beach created using sandy dredged material. Dredged material substrate could be deposited on both islands and planted with native trees and shrubs to create nesting habitat for herons and egrets. Suggestions have been made to remove the invasive ailanthus (*Ailanthus altissima*) and black locust (*Robinia pseudoacacia*) trees, and to plant gray birch and black cherry trees to provide good nesting areas.

Habitat for Fish, Crab and Lobsters – Habitat restoration at degraded borrow pits and other

recontouring. Construct artificial reef (e.g. rock, rubble mound or reef balls) to increase availability of structural refuge habitat and prey for juvenile and adult finfish and crustaceans, including Essential Fish Habitat species and endangered species, that is currently lacking throughout the Harbor. NMFS study has indicated a large area of suitable habitat. Navigational and habitat exchange concerns will need to be addressed.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

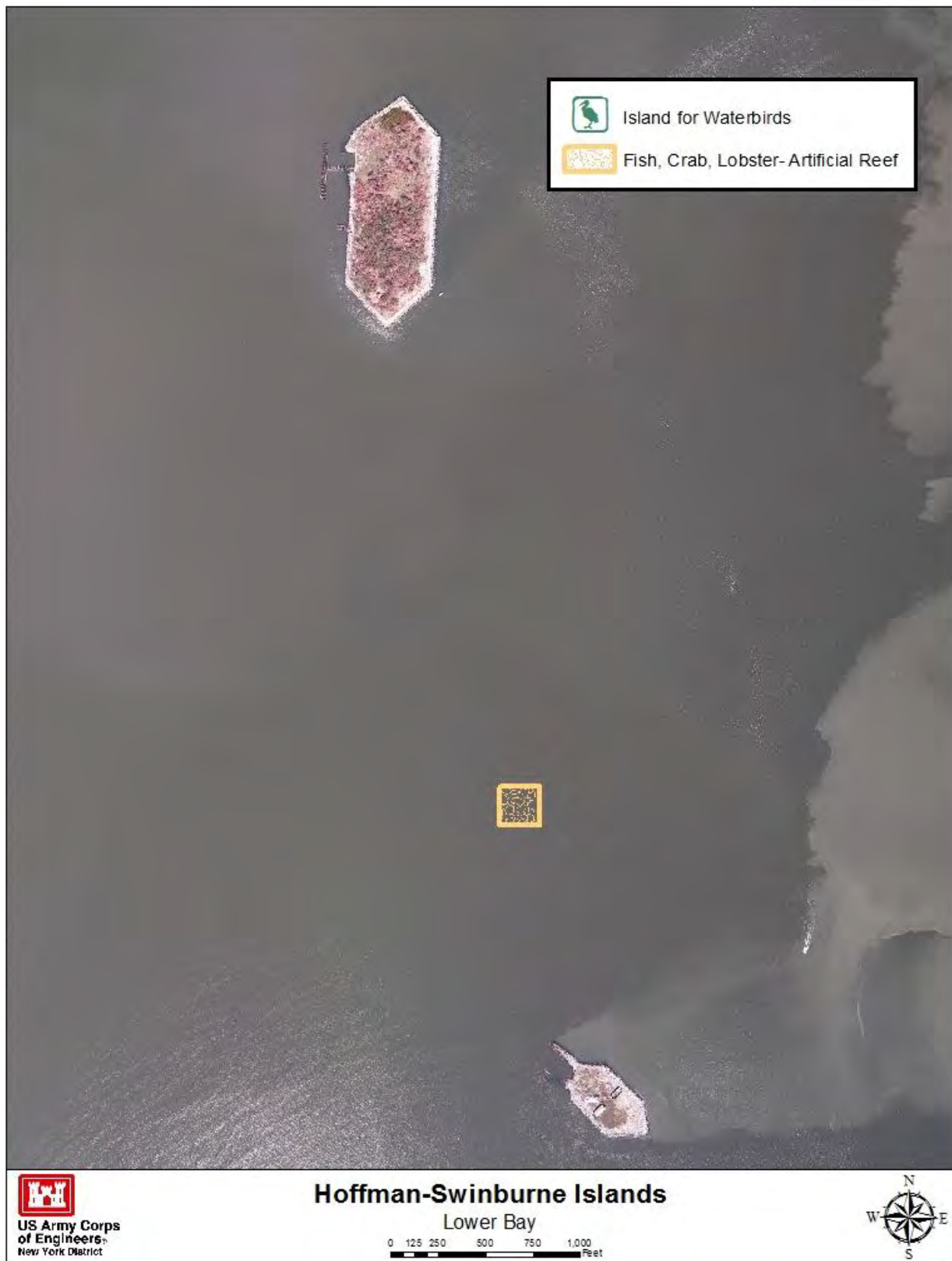
REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

USACE- Joel Banslaben, Jack C. Cox, and Robert J. Will. July 2003. *Dredging Operations Technical Support Program - Beneficial Use of Dredged Bedrock in the New York/New Jersey Harbor.*

Audubon- <http://iba.audubon.org/iba/viewSiteProfile.do?siteId=2797&navSite=state>

Wikipedia- http://en.wikipedia.org/wiki/Hoffman_Island



CRP SITE 599. GRAVESEND BAY

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Located in the northeast Lower Bay 0.5 miles south of the Shore Parkway, Kings County, NY.

Watershed:

Size: 1 acre

Ownership: NYS

Site Description: Shallow, dredged, unvegetated bay. Shoreline is nearly all riprap, landward border is the Belt Parkway.

Current Land Use: Open water

Available Habitat:

Proposed Project: Artificial reef construction (Ludwig 2001, NMFS). NMFS offers design guidance for potential reefs at these sites, based on the experimental Dutch Harbor reefs. Suggested rock size ranges are 3 to 20 cm, and 20 to 40 cm, to accommodate juvenile and larger sized American lobsters, a Federally managed species. NMFS suggests that each reef consist of abutting sections of the two size classes. The USACE (1999a) calculated that the construction of a 1-acre estuarine reef with 3 ft of relief would require approximately 5,000 cu yd of bedrock. The study concludes that sediments at this location may be able to support the weight of rock reef structures. Lobsters presently occur, and were historically abundant along the lower Staten Island shoreline, suggesting that food and shelter requirements are present. Inshore rocky habitats in Gravesend Bay may be attractive habitat for lobster, and creating artificial lobster reefs in Gravesend Bay may replicate this habitat.

Projected/Estimated Costs:

Project Status:

Partners: NOAA, USACE

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Habitat for Fish, Crab and Lobsters – Construct artificial reef (e.g. rock, rubble mound or reef balls) to increase availability of structural refuge habitat and prey for juvenile and adult finfish and crustaceans, including Essential Fish Habitat species and endangered species, that is currently lacking in Gravesend Bay and similar

habitats throughout the Harbor. Navigational and habitat exchange concerns will need to be addressed.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

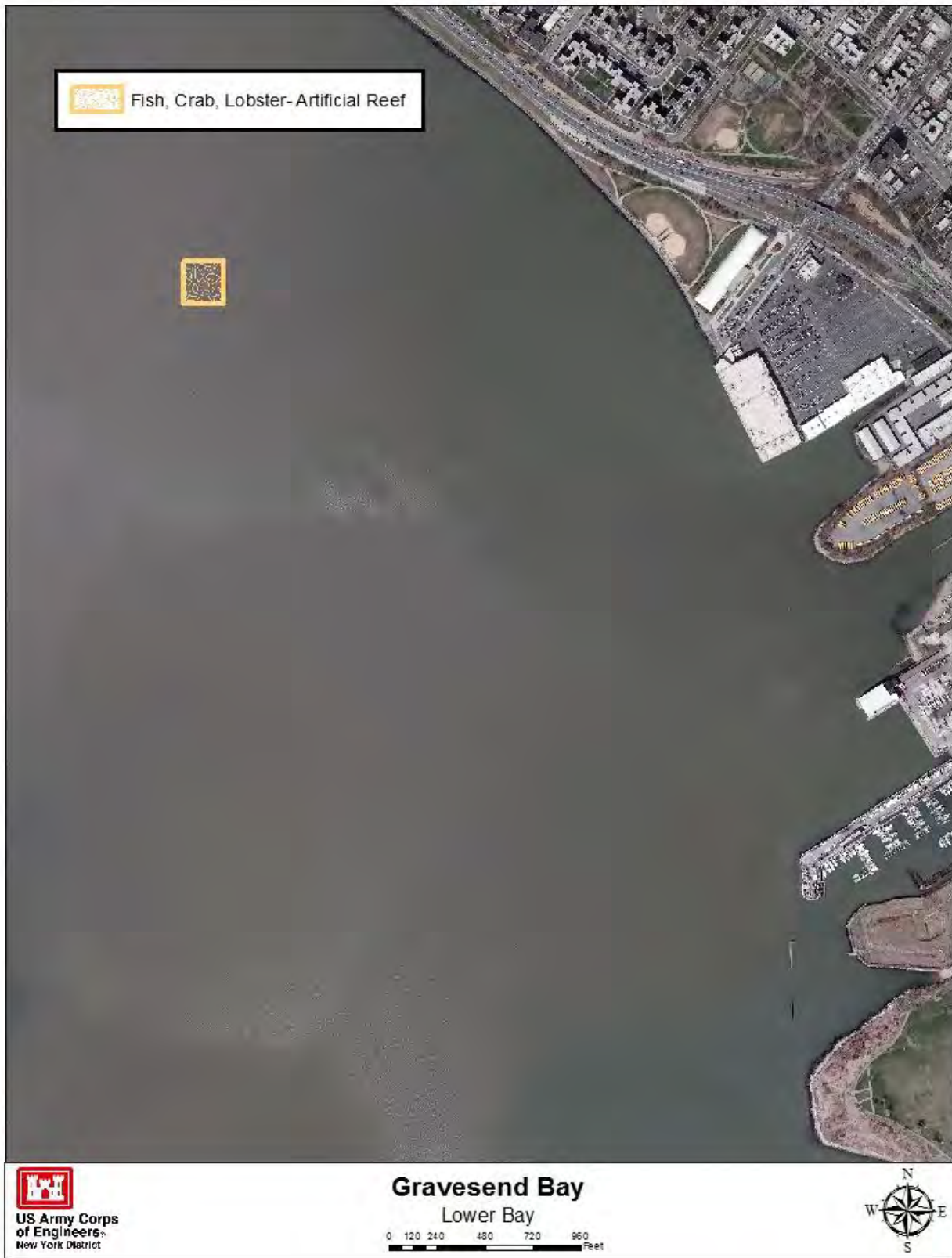
I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

USACE- Joel Banslaben, Jack C. Cox, and Robert J. Will. July 2003. *Dredging Operations Technical Support Program - Beneficial Use of Dredged Bedrock in the New York/New Jersey Harbor.*



CRP SITE 155. DREIER-OFFERMAN

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location:

Watershed: New York Harbor

Size: 4 acres

Ownership:

Site Description: Salt marsh and beach on the north shore of Coney Island Creek, at Dreier Offerman Park. Salt marsh restoration included excavation and planting the upland with grasses and restoration of spawning habitat for horseshoe crabs.

Current Land Use:

Available Habitat: Wetland

Proposed Project:

Projected/Estimated Costs: \$3,264,957

Project Status: ~~Plans complete.~~ [Project went into construction in 2011.](#)

Partners:

Project Contact: Michael Feller, NYC Parks/NRG

Phone: (212) 360-1424

Website: www.nycgovparks.org/sub_about/parks_divisions/nrg/

Project Funding Source: NY/NJ Harbor Oil Spill Trustees. NYS CW/CA; NYC Mayoral Consent Order, AB

HEP Ratification Date: 12/11/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION- TBD

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands -

Islands for Waterbirds -

Coastal and Maritime Forests -

Oyster Reefs -

Eelgrass Beds -

Shorelines and Shallows -

Habitat for Fish, Crab and Lobsters -

Tributary Connections -

Enclosed and Confined Waters -

Sediment Contamination -

Public Access -

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS: Alderson and Bowers 2012.

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans: Alderson and Bowers 2012.

***Work in progress**

REFERENCES:

U.S. Army Corp of Engineers New York District. June 2004. Hudson Raritan Estuary Environmental Restoration Feasibility Study Lower Bay Study Area Report.

Alderson, Carl and Justin Bowers. 2012. Reaching for the Past in Pursuit of the future: how can our present and past efforts inform the Hudson-Raritan Estuary Comprehensive Restoration Plan and the direction of habitat restoration going forward. A project for the New York-New Jersey Harbor & Estuary Program and New England Interstate Water Pollution Control Commission.

**TBD- Plans complete. Contact Ellen Hartig at Parks for update.*

CRP SITE 593. SANDY HOOK (SHELLFISH RESTORATION)

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.2 miles west from the intersection of Atlantic Drive and Hartshorne Drive, Monmouth County, NJ.

Watershed:

Size: 2 acres

Ownership: NPS

Site Description: Shallow intertidal and subtidal sand flats along the western shore of the Sandy Hook peninsula. Historically, this area supported productive soft clam fishery, but is currently experiencing erosion.

Current Land Use:

Available Habitat:

Proposed Project: *Use clean sand to replenish formerly productive clam beds which have been lost to erosion.*

Projected/Estimated Costs:

Project Status: *In 2010 the NJ DEP forced Baykeeper to remove and destroy 30,000 oysters from the bay because New Jersey was not complying with patrol requirements to make sure no shellfish were being harvested from contaminated waters. This project will be on hold until regulations are reversed.*

Partners: NOAA

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION- TBD

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands -

Islands for Waterbirds -

Coastal and Maritime Forests -

Oyster Reefs -

Eelgrass Beds -

Shorelines and Shallows -

Habitat for Fish, Crab and Lobsters -

Tributary Connections -

Enclosed and Confined Waters -

Sediment Contamination -

Public Access -

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

**TBD- HOLD*

CRP SITE 594. RARITAN BAY (OYSTER BED RESTORATION)

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Raritan Bay northwest of Keyport Harbor and approximately 1.0 km off the Seidler Beach, Monmouth County, NJ.

Watershed:

Size: 1,300 acres

Ownership: New Jersey

Site Description: *Shallow sub tidal areas offshore of Monmouth County, NJ. Historically, this area supported productive oyster and clam beds, and inshore fin fisheries. Site is semi-sheltered and moderately exposed to the hydrodynamic forces of the Lower Bay Complex where the tidal currents are somewhat weak but with good tidal circulation along the shoals.*

Current Land Use: *Open water.*

Available Habitat:

Proposed Project: *Re-establishment of historic oyster beds. The main component of this benthic habitat restoration project will consist of reef restoration. Reef restoration will create and enhance the important benthic habitat for living aquatic resources including Essential Fish Habitat and endangered species, create biodiversity, and be self-replicating and sustainable. The reef supports keystone species which provide food and shelter for countless estuarine species, as well as Federally managed species such as the American lobster.*

Projected/Estimated Costs:

Project Status: *In 2010 the NJ state Department of Environmental Protection forced Baykeeper to remove and destroy 30,000 oysters from the bay because New Jersey was not complying with patrol requirements to make sure no shellfish were being harvested from contaminated waters. This project will be on hold till regulations are reversed.*

Partners: NOAA, NYNJ Baykeeper, Raritan Bay Baymen's Association, Rutgers University, the Gaia Institute.

Project Contact:

Phone:

Website:

Project Funding Source: *\$1 million in funding for the Benthic Habitat Restoration project is being provided under a civil settlement between Chevron U.S.A., Inc. and the New Jersey Department of Law and Public Safety. The settlement arose from a February 2006 oil spill in the Arthur Kill, the strait separating Staten Island from New Jersey.*

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION- TBD

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands -

Islands for Waterbirds -

Coastal and Maritime Forests -

Oyster Reefs -

Eelgrass Beds -

Shorelines and Shallows -

Habitat for Fish, Crab and Lobsters -

Tributary Connections -

Enclosed and Confined Waters -

Sediment Contamination -

Public Access -

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

NYNJ Conservation Exchange- <http://www.njconservationexchange.org/benthic-habitat-restoration-in-raritan-bay>

***TBD- HOLD**

CRP SITE 118. SHREWSBURY RIVER WATERSHED (MULTIPLE SITES)

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.3 miles west northwest from the intersection of Meadow Avenue and Highland Avenue, Monmouth County, NJ.

Watershed: Navesink-Shrewsbury

Size:

Ownership:

Site Description: The shoreline of the Shrewsbury River is low-lying and is almost entirely developed with single-family houses. Most of the shoreline properties are lined with bulkheads. Some properties have wetland buffer strips on their bulkheads. Anecdotal reports indicate that remnant eelgrass (*Zostera marina*) beds may be present in these rivers.

USACE New York District - Shrewsbury River, NJ Flood Damage Reduction Study: Shrewsbury River is a tidal estuary with wide bay like waterways protected by the Sandy Hook peninsula and nearby barrier beaches. The river system ultimately drains into the Raritan Bay and Sandy Hook Bay. Frequent flooding occurs along the Shrewsbury River and tributaries in Monmouth County, New Jersey. The flooding is primarily due to high water from storms producing high tides, which flood extensively developed land areas. Local efforts to improve drainage into the river system have been futile as the river flows overland into the low-lying communities. The State supports the assistance of the Federal Government in efforts to alleviate the flooding and attend to environmental concerns.

USACE New York District Maintenance Dredging- Currently USACE conducts maintenance dredging at the following channels in the Shrewsbury River:

- a. A channel about 2.2 miles long, 12 feet deep mlw and 300 feet wide, following the westerly shore from deep water in Sandy Hook Bay to approximately the Route 36 bridge. This is connected to:*
- b. A channel (South Branch) about 6.8 miles long, 9 feet deep MLW and 150 feet wide, widened at bends, ending at Branchport Ave in Branchport.*
- c. A tributary channel (North Branch) is connected to the South Branch channel at Normandie, which extends up the Navesink River approximately 6.1 miles to Red Bank. This channel has a depth of 6 feet MLW and width of 150 feet.*

Current Land Use:

Available Habitat: Riparian, freshwater and saltwater marshes, woody swamps, upland, and riparian forests

Proposed Project: Stormwater impact reduction; riparian habitat enhancement. *Fish passage for the low-head dams on the Shrewsbury River would allow for upstream movement of the American eel.*

Projected/Estimated Costs:

Project Status: *Shrewsbury island salt marsh restoration was implemented in 2008 by the American Littoral Society in Seabright, NJ.*

Partners:

Project Contact: John Sacco, NJ DEP

Phone: (609) 292-2938

Website: www.nj.gov/dep/nrr/

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION- TBD

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands -

Islands for Waterbirds -

Coastal and Maritime Forests -

Oyster Reefs -

Eelgrass Beds -

Shorelines and Shallows -

Habitat for Fish, Crab and Lobsters -

Tributary Connections -

Enclosed and Confined Waters -

Sediment Contamination -

Public Access -

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS: Alderson and Bowers 2012

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans: Alderson and Bowers 2012

***Work in progress**

REFERENCES:

USACE Shrewsbury River Fact Sheet- www.nan.usace.army.mil/project/newjers/factsh/pdf/ShRivOM.pdf

Shrewsbury River, NJ Flood Damage Reduction Study-
www.nan.usace.army.mil/project/newjers/factsh/pdf/shrewsbu.pdf

Alderson, Carl and Justin Bowers. 2012. Reaching for the Past in Pursuit of the future: how can our present and past efforts inform the Hudson-Raritan Estuary Comprehensive Restoration Plan and the direction of habitat restoration going forward. A project for the New York-New Jersey Harbor & Estuary Program and New England Interstate Water Pollution Control Commission.

**TBD- NO SPECIFIC SITE*

CRP SITE 591. SHREWSBURY/NAVESINK RIVERS

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.2 miles south from the intersection of River Road and Bellevue Avenue, Monmouth County, NJ.

Watershed:

Size: 10,000 acres

Ownership: State of New Jersey; various private owners.

Site Description: *The Shrewsbury and Navesink estuaries represent the southern boundary of the proposed study area. Anecdotal reports indicate that remnant eelgrass (*Zostera marina*) beds may be present in these rivers. Some salt marshes in the area contain stands of *Phragmites*, although not to the extent observed in the more degraded tributaries of NY/NJ Harbor. The shoreline of these rivers is relatively undisturbed (i.e. not extensively straightened or bulkheaded). An experimental oyster reef was constructed in 2003 in the Navesink River next to the Route 35 Bridge and Oyster Point Hotel, in Red Bank NJ. until the summer of 2008 when its permit was not renewed by the NJDEP. This site also provides breeding habitat for the state-endangered Bald Eagle and the state-threatened Osprey. These waters are especially significant for thousands of winter waterfowl.*

These sites lie within the Sandy Hook Bay Complex, a significant habitat complex of the New York Bight Watershed designated by the US Fish and Wildlife Service. Included are the wide tidal Navesink and Shrewsbury Rivers, a few dredged material and salt marsh islands at their confluence and the Swimming River and Reservoir. The site is almost entirely surrounded by residential development.

Current Land Use: *Open water and riparian habitat.*

Available Habitat: Salt water estuaries (some *Phragmites*); shoreline relatively undisturbed.

Proposed Project:

Projected/Estimated Costs:

Project Status:

Partners: USACE, NOAA

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION- TBD

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands -

Islands for Waterbirds -

Coastal and Maritime Forests -

Oyster Reefs -

Eelgrass Beds -

Shorelines and Shallows -

Habitat for Fish, Crab and Lobsters -

Tributary Connections -

Enclosed and Confined Waters -

Sediment Contamination -

Public Access -

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

NJ AUDUBON- <http://www.njaudubon.org/SectionIBBA/IBBASiteGuide.aspx?sk=3124>

***TBD-NO SPECIFIC SITE**

CRP SITE 117. SHADOW LAKE DAM

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Upstream of Nut Swamp Road, River Plaza, Monmouth County, NJ.

Watershed: Navesink-Shrewsbury

Size: *At normal levels it has a surface area of 83 acres.*

Ownership: Monmouth County

Site Description: *Built in 1931, the Shadow Lake Dam is an earthen construction gravity dam which impounds Shadow Lake on Quioley Creek. Its height is 16 feet with a length of 600 feet. Maximum discharge is 1,916 cubic feet per second. Normal storage is 310 acre feet. It drains an area of 7 square miles.* The Shadow Lake dam is the first blockage met when traveling upstream the Shadow Lake branch of the Navesink River; there are no known blockages to fish passage downstream of this point. The dam is located in the southeast corner of the lake.

Current Land Use: *Dam, light recreation.*

Available Habitat: Estuarine - tidal waterways; lacustrine - open water.

Proposed Project: Fish Ladder: Shadow lake has a fish ladder designed for it however the project has not been implemented for several years. Currently, a local group, "River Herring Rescue", monitors the spillway catching and measuring herring and lifting them over the dam through spawning season.

Projected/Estimated Costs:

Project Status:

Partners: Baykeeper

Project Contact: Greg Remaud, NY/NJ Baykeeper

Phone: (732) 291-0176

Website: www.nynjbaykeeper.org

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):
Tributary Connections – Installation of a fish ladder.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm



CRP SITE 44. MANY MIND CREEK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Block 119 Lot 1 (Atlantic Highlands) and stream corridor from Lenape Woods to Sandy Hook Bay, Monmouth County, NJ. *Site is located between the Borough of Atlantic Highlands and Middletown Township.*

Watershed: Raritan Bay

Size: 6.5 acres (mouth of creek parcel has been acquired).

Ownership: Atlantic Highlands, private.

Site Description: *Many Mind Creek is a natural waterway which begins in the western section of Lenape Woods Nature Preserve. It receives rain water that drains from a large land area of Atlantic Highlands and parts of neighboring Middletown. The creek drains 1 ¾ mile into Sandy Hook Bay at the sandy beach between Avenue A and First Avenue. It is part of the Sandy Hook Bay Watershed Area. Over the years, the stream has been subject to channelization, contamination from coal-tar and its byproducts, siltation, runoff, and erosion. Many Mind Creek is also the recipient of the majority of the Borough of Atlantic Highland's stormwater.*

Current Land Use:

Available Habitat: *The parcel contains a sandy beach, spartina marsh, and adjacent uplands. It constitutes a centerpiece of a greenway along Many Mind Creek.*

Proposed Project: *With matching grant funds that the Borough recently received from NJ DEP, the Atlantic Highlands Environmental Commission will soon begin planning studies and community, business, government dialogue on the concept of a greenway along Many Mind Creek. The project will develop proposals for stream protection and preservation and for creating a buffer of natural land with public access and numerous other benefits.*

Projected/Estimated Costs: \$1,000,000

Project Status: *Acquisition: A 6.5 acre tract at the mouth of Many Mind Creek has been acquired by the community of Atlantic Highlands. Some parcels along the stream corridor remain in private ownership.*

In the areas between Route 36 and Highlands Avenue, NJ Natural Gas (in cooperation with NJDEP) participated in a cleanup of environmental damage stemming from the operation of a coal gas plant in the borough in the early to mid-20th century. This included the extensive removal of contaminated soil. Additional plans included remediation and improvements to South Avenue Park and additional wetland restoration in the former railroad right-of-way.

Partners: *Borough of Atlantic Highlands, Monmouth County Planning Board, NJ DEP, Rutgers University.*

Project Contact: NY-NJ Baykeeper

Phone: (732) 888-9870

Website: www.harborestuary.org

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Creation of wetland and detention basins to aid in stormwater management. To include re-grading, removal of invasives and plantings.

Coastal and Maritime Forests- Assessment of the beach and dune area for potential improvement of any dune habitat and associated vegetation.

Tributary Connections – Stream corridor restoration, may include debris removal and increased riparian buffer width and vegetation.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access – Support to ongoing efforts to increase public access along in South and Creek Bend Parks.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS: Alderson and Bowers 2012

B. Site History and Land Use: BRWC

C. Biological Studies/ Fauna: BRWC

D. Biological Studies/ General Environment: BRWC

E. Geotechnical:

F. Hydraulics and Hydrology: Rutgers modeling 2005.

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:
Alderson and Bowers 2012

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

Rutgers University Studies- <http://www.water.rutgers.edu/Projects/ManyMind/ManyMind.htm>

Stormwater Modeling in the Many Mind Watershed - Presented to the Many Mind Creek Regional Stormwater Management Plan (RSWMP) Committee, Atlantic Highlands, NJ - April 19, 2005

Stormwater Modeling in the Many Mind Watershed - Presented to the Many Mind Creek Regional Stormwater Management Plan (RSWMP) Committee, Atlantic Highlands, NJ - January 18, 2005

BRWC- <http://www.bayshorewatershed.org/bw/Our%20Watershed/Many%20Mind%20Creek/>

Many Minds Creek Watershed Restoration and Protection Plan. 2008. prepared by Weston Solutions, Inc. for Atlantic Highlands Environmental Commission.

Monmouth County GIS- <http://maps.co.monmouth.nj.us/gis/parcelviewer/>

Alderson, Carl and Justin Bowers. 2012. Reaching for the Past in Pursuit of the future: how can our present and past efforts inform the Hudson-Raritan Estuary Comprehensive Restoration Plan and the direction of habitat restoration going forward. A project for the New York-New Jersey Harbor & Estuary Program and New England Interstate Water Pollution Control Commission.



CRP SITE 20. LEONARDO (MIDDLETOWN TOWNSHIP)

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing acquisition, restoration, preservation, and/or mitigation site.

Location: *The Leonardo site is located in Raritan Bay, between Earle Naval Pier and Leonardo State Marina in the Township of Middletown, Monmouth County, NJ.*

Watershed: Raritan Bay

Size: 33 acres

Ownership: *Multiple: Middletown Township, NJ, private, corporation.*

Site Description: *Currently contains a sandy beach, low and high marsh area grading up into upland wooded habitat. A small tidal creek traverses the undeveloped area into Raritan Bay, the creek runs along the border of the Earle Naval Weapons Station to the west then meanders behind a narrow sand spit prior to entering Raritan Bay. The site is a former tidal wetland that was filled with dredged material, partially from the municipal boat basin. Phragmites dominates the salt marsh. Portions of the site are not vegetated while other areas include some sand dune vegetation. The site has received fill and experienced other hydrologic modifications.*

The New York District is conducting a Hurricane and Storm Damage Reduction Feasibility Study for the town of Leonardo up gradient of the ecosystem restoration site.

Current Land Use: *The creek's watershed includes residential, commercial, and undeveloped areas.*

Available Habitat: *The site contains estuarine tidal waterways, tidal ponds and intertidal flats and is a known breeding area for horseshoe crabs and wading birds. The site also hosts the savannah sparrow (NJ threatened) in migration.*

Proposed Project: Wetland, upland wooded and dune restoration.

Projected/Estimated Costs:

Project Status: Wetland, upland and dune acquisition and restoration. *All restoration work is pending acquisition, conservation easement, or agreement with owner.*

Partners: HEP, Baykeeper, NJDEP

Project Contact: Renee Jones, Green Acres; Greg Remaud, Baykeeper

Phone: (732) 291-0176

Website: www.state.nj.us/dep/greenacres/

Project Funding Source: NJ Blue Acres Bond Act. PARTIAL HN, Green Acres Program funded purchase

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands - Remove fill and invasive species and restore intertidal salt marsh. Replant area with native salt marsh vegetation (*Spartina* spp.). Regrade the marsh and extend and recontour the tidal channel to improve tidal hydrology.

Coastal and Maritime Forests - Revegetation of the dunes would expand existing breeding grounds for black

skimmer (NJ endangered), least tern (NJ endangered), and American oystercatcher, which breed nearby.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

U.S. Army Corp of Engineers New York District. June 2004. Hudson Raritan Estuary Environmental Restoration Feasibility Study Lower Bay Study Area Report.

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed. http://library.fws.gov/pubs5/web_link/text/rb_form.htm

USACE- Hurricane and Storm Damage Reduction Fact Sheet- <http://www.nan.usace.army.mil/project/newjers/factsh/pdf/leonard.pdf>

Monmouth County GIS- <http://maps.co.monmouth.nj.us/gis/parcelviewer/>



CRP SITE 21. WARE CREEK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: *Located in the north portion of Middletown Township, Monmouth County, NJ.*

Watershed: Raritan Bay

Size:

Ownership: *Majority of the site is owned by the County of Monmouth and the US Navy.*

Site Description: *Ware Creek is a tidal waterway that empties to the Sandy Hook Bay. The site contains a sandy beach, low and high marsh area grading up into upland wooded habitat and borders a private airstrip (to the west). The Mouth of Ware Creek is protected by a conservation easement held by Monmouth County.*

Current Land Use: *Open space*

Available Habitat: Wetland, wooded upland and riparian habitat.

Proposed Project:

Projected/Estimated Costs:

Project Status: Permanent protection of stream corridor.

Partners:

Project Contact: Greg Remaud, Baykeeper.

Phone: (732) 888-9870

Website: www.nynjbaykeeper.org

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Assessment of wetland for potential fill removal, invasive species and restoration of intertidal salt marsh. May include replanting the area with native salt marsh vegetation (*Spartina* spp.), regrading the marsh and tidal channel to improve tidal hydrology.

Tributary Connections – Assessment of culverts at road crossing at Route 36.

Coastal and Maritime Forests - Revegetation of the dunes would expand existing breeding grounds for black skimmer (NJ endangered), least tern (NJ endangered), and American oystercatcher, which breed nearby.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

Monmouth County GIS- <http://maps.co.monmouth.nj.us/gis/parcelviewer/>

New York New Jersey Harbor Estuary Program Habitat Workgroup 2001 Status Report.



CRP SITE 22. COMPTON CREEK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: *Located in the wooded area north of St. Mary's High School in the Belford/New Monmouth section of Middletown about 1.5 miles south of the Bay Monmouth County NJ.*

Watershed: Raritan Bay

Size:

Ownership: *County of Monmouth, Town of Middleton, private.*

Site Description: *Compton Creek is a tidal waterway located in the north portion of Middletown Township, Monmouth County, NJ that empties to the Sandy Hook Bay. Compton Creek originates at the confluence of Mill Brook and Town Brook. Compton Creek proper receives flow from Mill Brook, Town Brook, and several unnamed tributaries comprising a sub-watershed of approximately 8.75 square miles. The southern, upstream reaches of Compton Creek are comprised of a 10-30 feet wide channel routed through phragmites-dominated floodplain. The Creek is crossed by Route 36, the Henry Hudson Trail (old Central Railroad right-of-way), Campbell Avenue, Broadway, and Church Street. North of Broadway, Compton Creek enters a 2,000-foot wide Salt Hay Grass-dominated floodplain criss-crossed by tens of drainage and mosquito ditches excavated prior to the 1940s. The majority of Compton Creek from Main Street to the terminus at Sandy Hook Bay has been bulkheaded with improved docks for the fishing fleet and the former menhaden fish processing plant that was located just west of the Creek's inlet. A rock groin acts as a breakwater for boats leaving and entering the Creek. The Compton Creek fishing port is currently home to dozens of fishing boats, the Belford Fisherman's Cooperative, two fish markets and a restaurant (BRWC).*

This site contains the Shoal Harbor and Compton Creek Federal Navigation channel, which is 12 feet deep at MLW, extending from deep water in Sandy Hook Bay to the first bend in Compton Creek with a width of 150 feet in the bay and 75 feet inside the mouth of the creek and 8 feet deep and 75 feet wide to a point 1,000 feet upstream from the former Main Street Bridge, with widening at bends. Length is approximately 2 miles. Currently the USACE is coordinating monitoring and environmental alternatives for possible future maintenance dredging.

Current Land Use: *Open space*

Available Habitat: Riparian

Proposed Project: Permanent protection of stream corridor

Projected/Estimated Costs:

Project Status:

Partners:

Project Contact: Greg Remaud, Baykeeper

Phone: (732) 888-9870

Website: www.nynjbaykeeper.org

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Assessment of wetland for potential fill removal, invasive species and restoration of intertidal salt marsh. May include replanting the area with native salt marsh vegetation (*Spartina* spp.), regrading the marsh and tidal channel to improve tidal hydrology.

Coastal and Maritime Forests – Restoration of the upland wooded buffer and riparian forest may include widening and plantings.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Bayshore Regional Watershed Council (BRWC)- <http://www.bayshorewatershed.org>

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed. http://library.fws.gov/pubs5/web_link/text/rb_form.htm

USACE- www.nan.usace.army.mil/project/newjers/factsh/pdf/SHCCOM.pdf

Monmouth County GIS- <http://maps.co.monmouth.nj.us/gis/parcelviewer/>



CRP SITE 23. NATCO LAKE/THORNS CREEK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: *Natco Lake is located on the border of Hazlet Township and Union Beach 0.3 miles west from the intersection of Central Avenue and Eleventh Street, Monmouth County, NJ.*

Watershed: Raritan Bay

Size: 260 acres

Ownership: *International Flavors and Fragrances, Union Beach Borough and Hazlet Township.*

Site Description: *The National Fireproofing Company (Natco) mined clay here for bricks in the 1930's. Eventually the mining equipment hit underground springs and the lake filled in. A ditch was dug in an attempt to drain off the water into a nearby tidal creek. The ditching brought in salt water and made the lake brackish, as it remains today. On the southern border of the lake are unmarked trails that lead to Thorns Creeks, small wetlands, and tributaries to neighboring East Creek. A majority of the area surrounding the lake is freshwater wetlands along with areas of streams, marshes and bogs.*

This site has been designated by the NJ Audubon Society as valuable migratory bird habitat, especially with its largely wooded shoreline. NJ Audubon also stated that there is a known heronry with Black- and Yellow-crowned night herons. The lake itself supports a diverse amount of wildlife including different types of crabs, snakes, fish, egrets, ospreys, kingfishers, ducks, and gulls. The wooded open space supports a wide amount of plants and animals, including Great Horned Owls, extensive stands of mountain laurel and skunk cabbage, box turtles, pitch pine, toads, salamanders, and many different types of frogs.

Current Land Use: *Open space*

Available Habitat: Riparian; estuarine - marshes tidal waterways, intertidal flats; lacustrine - open water.

Proposed Project: *Permanent protection and possible stream/lake enhancement has been indicated in both the USACE Storm Management and Ecosystem Restoration studies and the Union Beach Stormwater Management Plan.*

Projected/Estimated Costs:

Project Status:

Partners: Baykeeper, NJ Audubon.

Project Contact: Greg Remaud, Baykeeper

Phone: (732) 888-9870

Website: www.nynjbaykeeper.org

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Assessment of wetland for potential fill removal, invasive species and restoration of intertidal salt marsh. May include replanting the area with native salt marsh vegetation (*Spartina* spp.), regrading the marsh and tidal channel to improve tidal hydrology. Assessment for stormwater BMP's.

Tributary Connections – Potential streambank stabilization and enhancements to the lake.

Coastal and Maritime Forests – Restoration of the upland wooded buffer and riparian forest may include widening and plantings.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use: Union Beach Stormwater Management Plan 2005.

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment: Union Beach Stormwater Management Plan 2005.

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment: Union Beach Stormwater Management Plan 2005.

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed. http://library.fws.gov/pubs5/web_link/text/rb_form.htm

Bayshore Regional Watershed Council (BRWC)- <http://www.bayshorewatershed.org>

NJ Audubon- <http://www.njaudubon.org/SectionCenters/SectionSHBO/CloseFocusonNatcoLake.aspx>

Borough of Union Beach Planning Board by T&M Associates. Borough of Union Beach, Monmouth County, NJ. 2005. Municipal Stormwater Management Plan Borough of Union Beach, County of Monmouth Amended February 2007. http://www.unionbeach.net/publicworks/File_UBCH%20Amended%20Stormwater%20Management%20Plan.pdf



CRP SITE 24. EAST CREEK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Monmouth County NJ.

Watershed: Raritan Bay

Size:

Ownership: *International Flavors and Fragrances, Union Beach Borough and Hazlet Township, Private.*

Site Description:

Current Land Use:

Available Habitat: Riparian

Proposed Project: *Permanent protection and possible stream enhancement has been indicated in both the USACE Storm Management and Ecosystem Restoration studies and the Union Beach Stormwater Management Plan.*

Projected/Estimated Costs:

Project Status:

Partners:

Project Contact: Greg Remaud, Baykeeper

Phone: (732) 888-9870

Website: www.nynjbaykeeper.org

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics)

Coastal Wetlands – Assessment of wetland for potential fill removal, invasive species and restoration of intertidal salt marsh. May include replanting the area with native salt marsh vegetation (*Spartina* spp.), regrading the marsh and tidal channel to improve tidal hydrology. Assessment for stormwater BMP's.

Tributary Connections – Assessment of culverts at road crossings.

Coastal and Maritime Forests – Restoration of the upland wooded buffer and riparian forest may include widening and plantings.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

Borough of Union Beach Planning Board by T&M Associates. Borough of Union Beach, Monmouth County, NJ. 2005.
Municipal Stormwater Management Plan Borough of Union Beach, County of Monmouth Amended February 2007.



CRP SITE 25. FLAT CREEK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Monmouth County, NJ. *Flat Creek runs in a northerly direction from Holmdel Township through Hazlet Township and the Borough of Union Beach, ultimately discharging into the Raritan Bay.*

Watershed: Raritan Bay

Size: *Flat Creek is approximately 5 miles in overall length.*

Ownership: *Union Beach Borough, Private.*

Site Description: *The uplands, large tracts of bayshore wetlands and tidal Flat Creek are all part of the bayshore complex which is critical for migratory and resident birds and fish. Stream bank vegetation is thin and disturbed. Persistent sedimentation and erosion have left the substrate composition and overall integrity of the stream banks compromised. As a result, Flat Creek is unable to handle a high volume of storm water which results in flooding, loss of private property, and stormwater infrastructure failure.*

Several discharge points throughout the length of the creek are contributing to degraded condition. The discharge points include drain pipes associated with private residential sites and municipal stormwater management infrastructure.

Based on the biological monitoring results, the benthic macroinvertebrate community and Flat Creek Subwatershed are both classified as severely impaired.

Current Land Use:

Available Habitat: Riparian

Proposed Project: *Permanent protection and possible stream enhancement has been indicated in both the USACE Storm Management and Ecosystem Restoration studies and the Union Beach Stormwater Management Plan.*

Projected/Estimated Costs:

Project Status:

Partners:

Project Contact: Greg Remaud, Baykeeper

Phone: (732) 888-9870

Website: www.nynjbaykeeper.org

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Assessment of wetland for potential fill removal, invasive species and restoration of intertidal salt marsh. May include replanting the area with native salt marsh vegetation (*Spartina* spp.), regrading the marsh and tidal channel to improve tidal hydrology. Assessment for stormwater BMP's.

Tributary Connections – Assessment of culverts at road crossings. Stabilization of stream bank to control erosion and improve stream integrity.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Coastal and Maritime Forests – Restoration of the upland wooded buffer and riparian forest may include widening and plantings.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna: Macroinvertebrate community sampling at the Ambient Biological Monitoring Station AN0459 conducted by NJDEP BFBM 2004, 1994, 1999 and Rutgers 2006.

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment: Macroinvertebrate community sampling at the Ambient Biological Monitoring Station AN0459 conducted by NJDEP BFBM 2004, 1994, 1999 and Rutgers 2006.

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Bayshore Regional Watershed Council (BRWC)- <http://www.bayshorewatershed.org>

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed. http://library.fws.gov/pubs5/web_link/text/rb_form.htm

Borough of Union Beach Planning Board by T&M Associates. Borough of Union Beach, Monmouth County, NJ. 2005. Municipal Stormwater Management Plan Borough of Union Beach, County of Monmouth Amended February 2007.



CRP SITE 26. CONASKONK POINT

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Promontory at mouth of Chingarora Creek, Monmouth County, NJ.

Watershed: Raritan Bay

Size: 200 acres

Ownership: *Recently acquired*

Site Description: *Large tracts of salt marsh at Conaskonk Point stretch from Flat Creek to Thorn's Creek, and it is the largest remaining salt marsh on the Raritan Point. The land is low, marshy, and subject to partial tidal inundation. The beach is narrow, about 8,000 feet long, and is littered with driftwood and other debris. There are no sand dunes or shrub or forest communities, and the water appears to carry some pollution. These marshes are critical for large numbers of nesting and migrating bird species.*

Current Land Use: Open space, passive recreation.

Available Habitat: High and low salt marsh, sandy beach, woody fringe areas. Much of the marshland has been ditched, but it remains significant habitat. *The salt marsh at Conaskonk Point provides breeding areas for green heron, clapper rail, willet, American oystercatcher, marsh wren, seaside sparrow, and saltmarsh sharp-tailed sparrow, as well as feeding areas for herons, egrets, common tern, least tern, and black skimmer. In late May and early June, sanderlings, ruddy turnstones, semipalmated sandpipers, and red knots feed on horseshoe crab eggs near the mouth of Chingarora Creek. Diamondback terrapin also feed in the marshes and creeks in this area.*

Proposed Project: Acquisition and preservation.

Projected/Estimated Costs: *Federal- \$210,875 State- \$118,125 Partners- \$8,500*

Project Status: Acquisition completed in 2000. *The New Jersey Department of Environmental Protection, in cooperation with Monmouth County, the Monmouth Conservation Foundation, the Baykeeper American Littoral Society, Hi-Mar Stripers Club, the Atlantic Coast Anglers and other partners, acquired 200 acres on Raritan Bay, a top acquisition priority for the State's Harbor Estuary Program. Conaskonk Point provides one of the best opportunities in the Raritan Bayshore, and the entire New York/New Jersey Estuary, to protect an intact salt marsh.*

U.S. Fish & Wildlife Service News releases are also available at - <http://news.fws.gov>

Partners:

Project Contact: Sharon Burnham, Monmouth Conservation Foundation

Phone: (732) 671-7000

Website: www.monmouthconservation.org

Project Funding Source: USFWS CWG

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Assessment of wetland for potential fill removal, invasive species and restoration of intertidal salt marsh. May include replanting the area with native salt marsh vegetation (*Spartina* spp.), regrading the marsh and tidal channel to improve tidal hydrology. Assessment for stormwater BMP's. Remove driftwood and other debris.

Coastal and Maritime Forests – Plantings in the upland zone will increase habitat value.

Shorelines and Shallows –Improve/expand beach and create a dune area.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

NPS- http://www.nps.gov/history/history/online_books/rec_area_survey/atlantic-gulf/nj.htm

National Audubon Society 2010. Important Bird Areas in the US-
<http://iba.audubon.org/iba/profileReport.do?siteId=3149&navSite=search&pagerOffset=0&page=1>

Borough of Union Beach Planning Board by T&M Associates. Borough of Union Beach, Monmouth County, NJ. 2005.
Municipal Stormwater Management Plan Borough of Union Beach, County of Monmouth Amended February 2007.



CRP SITE 27. MATAWAN CREEK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Monmouth County, NJ.

Watershed: Raritan Bay

Size:

Ownership:

Site Description: *Matawan Creek watershed flows into Lake Lefferts and Lake Matawan. The creek between Ravine Drive and Keyport harbor mouth is characterized by extensive Phragmites dominated tidal marsh. The marsh has been observed to have significant pockets and channels of tidal marsh losses and stream bank erosion.*

Current Land Use:

Available Habitat: Estuarine - marshes, tidal waterway, intertidal flats.

Proposed Project: Permanent protection of stream corridor. *Bayshore Dredged Material Management Plan suggests use of clean dredged material for creation of marsh habitat in Matawan Creek.*

Projected/Estimated Costs:

Project Status:

Partners:

Project Contact: Greg Remaud, Baykeeper

Phone: (732) 888-9870

Website: www.nynjbaykeeper.org

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands - Assessment of wetland for potential fill removal, invasive species and restoration of intertidal salt marsh. May include replanting the area with native salt marsh vegetation (*Spartina* spp.), regrading the marsh and tidal channel to improve tidal hydrology, and creation of additional marsh habitat. Assessment for stormwater BMP's.

Coastal and Maritime Forests – Restoration of the upland wooded buffer and riparian forest may include widening and plantings.

Tributary Connections – Assess for fish passage restoration opportunity at Lake Lefferts. From Durkas, 1991- A large, semicircular spillway leads water under a roadway and into a stream with about 100 feet of concrete bulkheading. The creek bottom is rocky and tidal up to the spillway. Past reports have concluded that there is potential for establishing an anadromous spawning run at this site [Byrne, 1986].

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

I Boat NJDEP. 2009. Bayshore Dredged Material Management Plan, Raritan & Sandy Hook Bays, Monmouth County, NJ.

Durkas, Susan. 1991. Impediments to the Spawning of Anadromous Fish in the Tributaries of the NY/NJ Harbor Watershed.



CRP SITE 802. MATAWAN CREEK/ KEYPORT HARBOR

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.3 miles west southwest from the intersection of Therese Street and Provost Avenue, Monmouth County, NJ.

Watershed:

Size: 175 acres

Ownership: Multiple

Site Description: Historically, the site of a prosperous oyster fishery characterized by extensive *Spartina alterniflora* marshes; in recent years *Phragmites* has invaded much of the area, especially in the upper reaches, where tidal flow may be restricted by Rt. 35 and other impediments.

Current Land Use:

Available Habitat: Estuarine - marshes, tidal waterway, intertidal flats, shellfish reefs.

Proposed Project: Marsh restoration could be achieved by removing tidal restrictions (e.g. installation of wider culverts under roads) in Keyport Creek, and excavation of *Phragmites* stands. *Bayshore Dredged Material Management Plan suggests use of clean dredged material for creation of marsh habitat in Matawan Creek.*

Projected/Estimated Costs:

Project Status:

Partners: Baykeeper, USACE

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands - Assessment of wetland for potential fill removal, invasive species and restoration of intertidal salt marsh. May include creation of additional marsh habitat, replanting the area with native salt marsh vegetation (*Spartina* spp.), regrading the marsh and tidal channel to improve tidal hydrology. Assessment for stormwater BMP's.

Coastal and Maritime Forests – Restoration of the upland wooded buffer and riparian forest may include widening and plantings.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

U.S. Army Corp of Engineers New York District. 2004. Hudson Raritan Estuary Environmental Restoration Feasibility Study Lower Bay Study Area Report.

I Boat NJDEP. 2009. Bayshore Dredged Material Management Plan, Raritan & Sandy Hook Bays, Monmouth County, NJ.



CRP SITE 116. MATAWAN CREEK/ KEYPORT HARBOR MOUTH

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.1 mile north from the intersection of West Front Street and Main Street, Monmouth County, NJ.

Watershed: Raritan Bay

Size: 3 acres

Ownership: Multiple

Site Description: *Keyport Harbor is located at the mouth of Matawan Creek in Monmouth County, NJ. The shallow offshore waters just beyond the harbor, within approximately two miles of the New Jersey coastline have historically been significant oyster bed locations. Over harvesting, dragging, sedimentation, and decreased water quality all contributed to the severe degradation of this habitat. Studies of water quality in the HREs indicate that the waters in the area offshore of Keyport Harbor have become suitable for oyster habitat and an oyster reef was established at Keyport Harbor during the summer of 2001. The restoration was the result of efforts by the NY/NJ Baykeeper and NOAA's Restoration Center. The reef was established by placing approximately 10,000 bushels of oyster shells in the vicinity of a historic oyster reef near Keyport Harbor in Raritan Bay. Community volunteers raised the oysters used to seed the reef. Monitoring efforts are the result of collaboration between the NMFS laboratory at Sandy Hook, Brooklyn College, and the NY/NJ BayKeeper. Although the shellfish inhabiting the reef are not for human consumption, public involvement and interest in the program has been extremely high. Additional plans are now underway for establishment of a similar reef in the Navesink River, Monmouth County, NJ.*

Current Land Use: Open Water

Available Habitat: Aquatic

Proposed Project: Keyport Harbor oyster reef.

Projected/Estimated Costs:

Project Status: *NY/NJ Baykeeper along with Rutgers University was conducting research on oyster restoration methods in Keyport Harbor. The Keyport Oyster Reef was located in an area within Raritan Bay—slightly south of Connaskonk Point. In 2010, the NJ state Department of Environmental Protection forced Baykeeper to remove and destroy 30,000 oysters from the bay because New Jersey was not complying with patrol requirements to make sure no shellfish were being harvested from contaminated waters. This project will be on hold till regulations are reversed.*

Partners: Baykeeper, USACE

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION- TBD

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands -

Islands for Waterbirds -

Coastal and Maritime Forests -

Oyster Reefs -

Eelgrass Beds -

Shorelines and Shallows -

Habitat for Fish, Crab and Lobsters -

Tributary Connections -

Enclosed and Confined Waters -

Sediment Contamination -

Public Access -

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS: Alderson and Bowers 2012

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans: Alderson and Bowers 2012

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

NY/NJ Baykeeper- <http://nynjbaykeeper.org>

Alderson, Carl and Justin Bowers. 2012. Reaching for the Past in Pursuit of the future: how can our present and past efforts inform the Hudson-Raritan Estuary Comprehensive Restoration Plan and the direction of habitat restoration going forward. A project for the New York-New Jersey Harbor & Estuary Program and New England Interstate Water Pollution Control Commission.

***TBD- HOLD**

CRP SITE 28. TREASURE LAKE

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.1 miles east from the intersection of Greenwood Avenue and Lakeview Way, Monmouth County, NJ.

Watershed: Raritan Bay

Size: 17 acres

Ownership: *Aberdeen Township, private.*

Site Description: *A small freshwater Lake and marsh fringe behind the dune cliffs in Aberdeen Township, NJ. The Lake serves as important waterfowl feeding area. Forested uplands, privately owned by local residents, surround the lake. Site is adjacent to a brackish marsh and the Raritan Bay. The location of this lake, fresh and saline marsh, and open water habitat is extremely rare in New Jersey.*

Current Land Use:

Available Habitat: *Riparian. In winter, the pond is used by waterfowl including Pied-billed Grebe, Wood Duck, Gadwall, and Hooded Merganser. The bay characteristics may be good habitat for Common and Red-throated Loons, Horned Grebe, and waterfowl. During migration, wading birds and passerines can be found around the lake.*

Proposed Project: Permanent protection; freshwater lake enhancement; acquisition of forested upland and surrounding lake. *Acquisition will protect the existing dune and forested buffer.*

Projected/Estimated Costs:

Project Status: Preliminary plans.

Partners: Baykeeper

Project Contact: Greg Remaud, Baykeeper

Phone: (732) 888-9870

Website: www.nynjbaykeeper.org

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands - Assessment of wetland for potential fill removal, invasive species and marsh restoration. May include replanting the area with native vegetation and assessment for stormwater BMP's.

Coastal and Maritime Forests – Preservation and restoration of forested upland and dune habitat.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access – Support to Township of Aberdeen parks improvements.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna: NJ Audubon monitors the site for long term waterfowl/waterbird use.

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

New York New Jersey Harbor Estuary Program Habitat Workgroup 2001 Status Report.

NJ Audubon- <http://www.njaudubon.org/>

CRP SITE 29. WHALE CREEK/LONG NECK CREEK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Located 0.5 miles from Cliffwood Beach, Monmouth County, NJ.

Watershed: Raritan Bay

Size:

Ownership: *Aberdeen Township, private.*

Site Description: *The Whale Creek property, is comprised of wetland and woodland areas that provide habitat to a variety of species. The parcel serves as a foraging ground for shorebirds and waterbirds, nesting and foraging habitat for terrapins and a migratory and wintering stopover habitat for songbirds and raptors.*

Current Land Use:

Available Habitat: Riparian

Proposed Project: Permanent protection of stream corridor.

Projected/Estimated Costs:

Project Status: *The Trust for Public Land (TPL), Aberdeen Township, and the New Jersey Department of Environmental Protection purchased 15 acres near Whale Creek in 2006. The property was one of the few developable sites remaining in the area, and its preservation will help protect the water quality of the Whale Creek and Raritan Bay. Funding for the \$1,250,000 purchase was provided by Aberdeen Township and a variety of state funding sources including a Department of Environmental Protection Green Acres Program grant to Aberdeen Township, Natural Resource Damages funds and state acquisition funds. The State will co-own the property with the town, which will manage the site.*

Partners:

Project Contact: Mike Stringer, Baykeeper

Phone: (732) 888-9870

Website: www.nynjbaykeeper.org

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Tributary Connections – Assessment of flow and culvert capacity at Route 35 crossing. Assessment of stream for bank stabilization, erosion issues and potential for increasing stormwater capacity.

Coastal Wetlands - Assessment of wetland for potential fill removal, invasive species and marsh restoration. May include replanting the area with native vegetation and assessment for stormwater BMP's.

Coastal and Maritime Forests – Preservation and restoration of forested upland and assessment of the beach and dune area for potential improvement of any dune habitat and associated vegetation.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access – Support to Township of Aberdeen parks improvements.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

Trust for Public Land- <http://www.tpl.org/news/press-releases/whale-creek-property-on-raritan.html>

CRP SITE 30. MARQUIS CREEK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Lower Raritan Bay, 0.2 miles east *southeast* from the Corner of Bayview Drive and Madison Avenue, Middlesex County, NJ.

Watershed: Raritan Bay

Size: 50 acres

Ownership: Old Bridge Township, NJ; Private.

Site Description: The Marquis Creek site (aka. Margaret's Creek) is comprised of areas of salt marsh degraded by dumping and filling as well as a narrow tidal creek, beach, and upland areas. *The wetlands of Margaret's Creek are a mixture of unconsolidated shore with organic soil and emergent wetlands that are vegetated and partially flooded.* Both the wetland and upland areas are used extensively by migratory and shore birds.

Marquis Creek is part of a newly designated Superfund site (Raritan Bay Slag Superfund Site- 2009) where lead-contaminated slag was used to build a seawall and jetties. In September 1972, the New Jersey Department of Environmental Protection (NJDEP) was advised by a local government official that lead-bearing waste material was being disposed of along the Laurence Harbor beachfront on Raritan Bay. NL Industries, Inc. acknowledged that metallic slag waste from blast furnace and blast furnace rubble was disposed of at their property in Old Bridge Township. Analytical results from sampling in 2007 found lead at concentrations as high as 142,000 parts per million at the Margaret's Creek site. Slag was also observed in the Margaret's Creek area, an undeveloped, 47-acre wetland located southeast of the seawall. This site is currently listed on the NPL site list.

Middlesex County is currently in the process of creating public access points along the Creek and surrounding areas.

Current Land Use:

Available Habitat: Riparian

Proposed Project: Permanent protection and wetland/upland restoration *pending acquisition*. Coordinated plans for recreation and restoration of fill portions. *Conservation easement, or agreement with owner.*

Projected/Estimated Costs:

Project Status: *A remedial investigation and feasibility study was initiated in August 2009. EPA completed the Remedial Investigation/Feasibility Study and developed a cleanup plan for public review in September 2012. The proposed alternative suggests Margaret's Creek wetland sediments would not require restoration, but certified clean material/fill/sands would be placed as appropriate in excavated Margaret's Creek upland areas.*

Partners: HEP, EPA, NJDEP

Project Contact: Greg Remaud, Baykeeper

Phone: (732) 888-9870

Website: www.nynjbaykeeper.org

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Sediment Contamination – Site is within the Raritan Bay Slag Superfund Site. Any habitat restoration concepts should not be explored until sediment and water qualities are improved, potentially through contaminated sediment/fill removal and capping.

Tributary Connections – Assessment of flow and culvert capacity at Route 35 crossing.

Coastal Wetlands – Wetland restoration opportunities could be coupled with potential Superfund capping

activities. Additional activities may include re-grading, removal of invasive species and replanting with appropriate wetland vegetation.

Coastal and Maritime Forests – Preservation and restoration of forested upland. Assessment of the beach and dune area for potential improvements to any dune habitat and associated vegetation.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS: EPA 2012

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical: EPA 2012

F. Hydraulics and Hydrology: EPA 2012

G. Water and Sediment: EPA 2012

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans: EPA 2012

***Work in progress**

REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed. http://library.fws.gov/pubs5/web_link/text/rb_form.htm

EPA Region 2 Superfund- <http://www.epa.gov/region2/superfund/npl/raritanbayslag/additionaldocs.html>

CDM Smith for U.S. Environmental Protection Agency. 2012. Revised Final Feasibility Study Report Raritan Bay Slag Superfund Site Old Bridge and Sayreville, NJ.

U.S. Environmental Protection Agency. 2012. Superfund Program Proposed Plan for Raritan Bay Slag Superfund Site



CRP SITE 571. LAURENCE HARBOR

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.2 miles from the intersection of Summerfield Avenue and Shoreline Avenue Sayreville, Middlesex County, NJ.

Watershed:

Size:

Ownership: Multiple

Site Description: *Laurence Harbor is part of a newly designated Superfund site (Raritan Bay Slag Superfund Site- 2009) where lead-contaminated slag was used to build a seawall and jetties. The site is approximately 1.5 miles in length and consists of the waterfront area between Margaret's Creek and the area just beyond the western jetty at the Cheesequake Creek Inlet. The portion of the site in Laurence Harbor is part of Old Bridge Waterfront Park. The park includes walking paths, a playground area, several public beaches, and three jetties. EPA officials cited enormous levels of lead in the affected area. The Laurence Harbor seawall, which makes up part of the site, was reported to have had metal slag from blast furnace bottoms deposited along the beachfront in the late 1960s and early 1970s. Approximately 2,500 feet of the seawall have been contaminated. Elevated levels of lead, antimony, arsenic and copper have been identified by the NJDEP along the seawall near the area where the processing by-products were deposited.*

Current Land Use:

Available Habitat:

Proposed Project:

Projected/Estimated Costs:

Project Status: *A remedial investigation and feasibility study was initiated in August 2009. EPA completed the Remedial Investigation/Feasibility Study and developed a cleanup plan for public review in September 2012.*

EPA's preferred remedy to address contamination at the site is removal of slag, battery casings/associated wastes, soil/sediment above remediation cleanup levels, and monitoring.

Partners: Baykeeper, EPA, NJDEP.

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Sediment Contamination – Site is within the Raritan Bay Slag Superfund Site. Any habitat restoration concepts should not be explored until sediment and water qualities are improved, potentially through contaminated sediment/fill removal and capping.

Coastal and Maritime Forests – Preservation and restoration of forested upland and potential for improvement of any dune habitat and associated vegetation.

Coastal Wetlands – Wetland restoration opportunities could be coupled with potential Superfund capping

activities. Additional activities may include re-grading, removal of invasive species and replanting with appropriate wetland vegetation.

Shorelines and Shallows- Restoration of intertidal and shallow water habitat should be coupled with potential Superfund removal and capping actions.

Public Access- Support city and county improvements to public access.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS: EPA 2012

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical: EPA 2012

F. Hydraulics and Hydrology: EPA 2012

G. Water and Sediment: EPA 2012

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans: EPA 2012

*Work in progress

REFERENCES:

EPA Region 2 Superfund- <http://www.epa.gov/region2/superfund/npl/raritanbayslag/additionaldocs.html>

CDM Smith for U.S. Environmental Protection Agency. 2012. Revised Final Feasibility Study Report Raritan Bay Slag Superfund Site Old Bridge and Sayreville, NJ.

U.S. Environmental Protection Agency. 2012. Superfund Program Proposed Plan for Raritan Bay Slag Superfund Site



CRP SITE 807. CHEESEQUAKE STATE PARK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.1 miles northwest of the intersection of Gordon Road and Museum Road, Old Bridge Township, Middlesex County, NJ.

Watershed: Raritan Bay

Size: 1,569 acres.

Ownership: NJDEP, under the supervision of the state Division of Parks and Forestry.

Site Description: *Cheesequake State Park is situated in the middle of the urban north and the suburban south, it lies in a transitional zone between two different ecosystems, adding to the birding diversity. Open fields, saltwater and freshwater marshes, a white cedar swamp, pine barrens, and a northeastern hardwood forest are the main characteristics of the park. The park brings a range of easily accessible habitat with hiking trails and highly visible osprey nests. The wetlands have been channelized to maximize drainage by early attempts to reduce mosquito infestations.*

Current Land Use: *Open space, passive recreation, state park.*

Available Habitat: This site is natural and undeveloped containing open waterways, floodplains and swamp bogs. It does contain a culvert, correcting stream flow.

Proposed Project: Permanently protected site, surrounding land usage is residential with possible impacts from paved roads and single unit housing. HEP acquisition site.

NJDEP states that the management objective for Cheesequake State Park includes preservation of habitat diversity including hardwood forest, cedar swamp, mature white pine stand, freshwater swamp, Pine Barren outlier and salt marsh, and rare species habitat- administered through Division of Parks and Forestry, through Cheesequake State Park.

Projected/Estimated Costs:

Project Status:

Partners: Baykeeper

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics)

Coastal Wetlands- Preservation of saltwater and freshwater marsh habitat. Assessment of wetland for potential fill removal, invasive species and replanting the area with native vegetation, regrading the marsh and tidal channel to improve tidal hydrology. Assessment for stormwater BMP's and reduction of impacts of non-point source pollutants from surrounding residential community.

Coastal and Maritime Forests – Preservation and restoration of Pine Barrens and Northeast Hardwood forest.

Tributary Connections – Assessment of culverts at Garden State Parkway crossing.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access - Support ongoing State Park public access efforts.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

State Parks- <http://www.stateparks.com/cheesequake.html>

NYNJ Botany- <http://www.nynjctbotany.org/njipto/c/cheeseq.html>

CRP SITE 119. CHEESEQUAKE STATE PARK (ATLANTIC WHITE CEDAR FOREST)

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Monmouth County, NJ

Watershed: Raritan Bay

Size:

Ownership: NJDEP, under the supervision of the state Division of Parks and Forestry.

Site Description: *Cheesequake State Park contains a diverse mix of hardwood forest, Atlantic white cedar swamp, and pineland. In New Jersey, Atlantic White Cedar is the only obligate wetland tree species. It is found mainly in the Pine Barrens, but also occurs in isolated locations in the northern part of the state. At Cheesequake State Park a boardwalk traverses the cedar swamp.*

Current Land Use: *Open Space, passive recreation, state park.*

Available Habitat: *Forested*

Proposed Project: White cedar forest and stream restoration.

Projected/Estimated Costs:

Project Status:

Partners:

Project Contact: Greg Remaud, NY/NJ Baykeeper

Phone: (732) 291-0176

Website: www.nynjbaykeeper.org

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal and Maritime Forests – Support to State Park Atlantic White Cedar Swamp preservation.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.

http://library.fws.gov/pubs5/web_link/text/rb_form.htm

NYNJ Botany- <http://www.nynjctbotany.org/njiptofof/cheeseq.html>



CRP SITE 120. CHEESEQUAKE STATE PARK (HOOK LAKE)

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Monmouth County, NJ.

Watershed: Raritan Bay

Size: *Surface area of the lake is approximately 10.6 acres.*

Ownership: NJDEP, under the supervision of the state Division of Parks and Forestry.

Site Description: *Hook's Creek Lake is within Cheesequake State Park in Middlesex County. The park is adjacent to the Hook's Creek tidal marsh area, but the lake was isolated from tidal influence in 1984 via the placement of an embankment dam across the channel. Periodically however, during particularly high tides, the lake may become inundated with brackish water. The lakeshed itself is in Old Bridge Township, and is 75% deciduous forest. The 15% of urban landuse is restricted to recreational activities such as camping areas, hiking trails, picnic areas, etc., but impervious cover does exist in the form of covered areas and outbuildings.*

The lake is stocked every spring with brook and rainbow trout, and often in fall again with channel catfish. A resident fishery also includes largemouth bass, perch, and sunfish. Small boats, limited to either self-propelled or with electric motors, can be launched fall through spring, but not during the traditional summer months between Labor Day and Memorial Day. The roughly oblong-shaped lake also has a designated swimming area, adjacent to which is a concession facility and bathhouse.

Current Land Use: *Open space, active and passive recreation, state park.*

Available Habitat:

Proposed Project:

Projected/Estimated Costs:

Project Status:

Partners:

Project Contact: Greg Remaud, NY/NJ Baykeeper

Phone: (732) 291-0176

Website: www.nynjbaykeeper.org

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Tributary Connections – Assessment for potential fish passage project. Historically, this is a confirmed spawning site (Durkas 1991).

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access – Support ongoing State Park public access efforts.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS: NJDEP 2003

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment: Durkas 1991, NYNJ Botany.

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment: NJDEP 2003.

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans: Water quality- NJDEP 2003.

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed. http://library.fws.gov/pubs5/web_link/text/rb_form.htm

New Jersey Department of Environmental Protection Division of Watershed Management. 2003 Total Maximum Daily Loads for Phosphorus to Address 9 Eutrophic Lakes in the Atlantic Coastal Water Region – Deal Lake, Dennisville Lake, Franklin Lake, Hammonton Lake, Hook’s Creek Lake, Lake Absegami, Lily Lake, Lake Pohatcong and New Brooklyn Lake. www.epa.gov/waters/tmdl/docs/10581_Atlantic%20Lakes.PDF.

NYNJ Botany- <http://www.nynjctbotany.org/njptofc/cheeseq.html>

Durkas, Susan J. for American Littoral Society Durkas. 1991. Impediments to the spawning Success of Anadromous Fish in Tributaries of the RY/HJ Barbor watershed.



CRP SITE 31. CHEESEQUAKE MARSH

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Western Bay Shore, Middlesex County, NJ.

Watershed: Raritan Bay

Size: 299 acres, 20 acres (USACE 2001).

Ownership:

Site Description: This site is unprotected on many sides where a portion of marsh and upland buffer are being developed, resulting in runoff of sediment and pollutants into the protected portions of the property. High marsh is dominated by Phragmites.

The wetlands have been channelized to maximize drainage by early attempts to reduce mosquito infestations. Causeways for both Highway 35 and the Garden State Parkway cross the Cheesequake wetlands have also changed the natural tidal current circulation in the wetlands.

Current Land Use: Open space, state park.

Available Habitat: Freshwater marsh, saltwater marsh, and a tidal estuary. *Site may contain Atlantic White Cedar Swamp.*

Proposed Project: Permanent protection, adjacent development threatens integrity. *Excavation of Phragmites in high-elevation areas; Improvement of tidal hydrodynamics; re-grading and planting of Spartina spp.*

Projected/Estimated Costs:

Project Status: Development threat.

Partners: Baykeeper

Project Contact: Greg Remaud, Baykeeper; Renee Jones, Green Acres

Phone: (732) 888-9870

Website: www.nynjbaykeeper.org

Project Funding Source: Green Acres funded

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Preservation of marsh habitat. Assessment of wetland for potential fill removal, invasive species and restoration of intertidal salt marsh. May include replanting the area with native salt marsh vegetation (*Spartina* spp.), regrading the marsh and tidal channel to improve tidal hydrology. Assessment for stormwater BMP's and reduction of non-point source pollutants from adjacent property.

Coastal and Maritime Forests – Preservation and restoration of the upland wooded buffer, riparian and deciduous forest may include widening, planting and removal of invasives. Site should be assessed for presence of Atlantic White Cedar with preservation as appropriate.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

CRP SITE 32. OLD MORGAN LANDFILL/RARITAN BAY WATERFRONT PARK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 1 mile south of the corner of Bordentown Avenue and North Broadway, Middlesex County, NJ.

Watershed: Raritan Bay

Size: 136 acres

Ownership: Middlesex County

Site Description: *Raritan Bay Waterfront Park, formerly a landfill, consists of 136-acres of waterfront park in Sayreville and South Amboy. The park was developed under a joint project of Middlesex County and the municipalities of Sayreville and South Amboy and opened in 1998. The park contains ball fields; a pavilion; a riverfront walkway; grassland, woodland and wildlife habitat and reserve areas; a comfort station and a paved parking area. Site contain diverse habitats include waters of Raritan Bay, open beach and dune, mudflats, tidal creeks, salt marsh, freshwater wetlands and pond, pitch pine woods, red maple-tupelo swamp, and oak forest. Site supports a diverse bird population. Site is contiguous with CRP Site 33. South Amboy.*

Current Land Use: *Open space, active and passive recreation, county park.*

Available Habitat: *Estuarine wetland and upland habitat.*

Proposed Project: Upland habitat preservation.

Projected/Estimated Costs:

Project Status: *MCIA completed the county-guaranteed bond issue for financing the project.*

Partners: *Middlesex County, municipalities of Sayreville and South Amboy, NJDEP.*

Project Contact: Steve Jandoli, NJ DEP Green Acres

Phone: (609) 984-0499

Website: www.state.nj.us/dep/greenacres/

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Preservation and restoration of wetland. Assessment for potential fill removal, and invasive species.

Coastal and Maritime Forests – Preservation and restoration of the upland wooded buffer zones.

Shorelines and Shallows- Assessment of beach for debris removal, erosion, dune and potential to improve intertidal habitat.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Public Access- Support to Middlesex County for public access efforts.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna: NJ Audubon

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

NJ Audubon- <http://www.njaudubon.org/SectionCenters/SectionSHBO/SouthAmboy.aspx>

New York New Jersey Harbor Estuary Program Habitat Workgroup 2001 Status Report.



CRP SITE 33. SOUTH AMBOY

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.5 miles southeast from the intersection of Bordentown Avenue and South Stevens Avenue, Middlesex County, NJ.

Watershed: Raritan Bay

Size:

Ownership:

Site Description: Industrial area situated between NJ Transit railroad tracks and an access road. The freshwater marsh is threatened by surface water runoff carrying non-point source pollutants. *Site contain diverse habitats include waters of Raritan Bay, open beach and dune, mudflats, tidal creeks, salt marsh, freshwater wetlands and pond, pitch pine woods, red maple-tupelo swamp, and oak forest. Site supports a diverse bird population. Site is contiguous with CRP Site 32. Old Morgan Landfill/Raritan County Park.*

Current Land Use:

Available Habitat: Area includes sandy beach, fill, salt marsh, forested uplands, and freshwater marsh.

Proposed Project: Permanent protection; wetland, forest and upland restoration.

Projected/Estimated Costs:

Project Status:

Partners:

Project Contact: Greg Remaud, Baykeeper

Phone: (732) 888-9870

Website: www.nynjbaykeeper.org

Project Funding Source:

HEP Ratification Date: 7/1/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Coastal Wetlands – Preservation and restoration of freshwater wetland. Assessment for potential fill removal and invasive species. Assessment of origin of non-point source pollutants and potential implementation of BMPs to control run-off into protected habitat.

Coastal and Maritime Forests – Preservation and restoration of the forested upland.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna: NJ Audubon

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

Fish and Wildlife Services. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed.
http://library.fws.gov/pubs5/web_link/text/rb_form.htm

New York New Jersey Harbor Estuary Program Habitat Workgroup 2001 Status Report.



CRP SITE 568. GLOBAL LANDFILL

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Located approximately one mile west of the Garden State Parkway, 0.2 miles south from the corner of Taczack Court and Overhill Drive, Middlesex County, NJ.

Watershed:

Size: 60 acres

Ownership:

Site Description: Global Landfill began operating in 1968. For many years it accepted municipal, commercial and industrial wastes – including asbestos -- as well as septic sludge in accordance with its state license. The landfill was closed in 1984. Subsequent testing revealed that volatile organic compounds were seeping from the landfill into the wetlands. DEP also discovered 63 drums containing hazardous wastes buried on the site. Due to the presence of contaminated leachate and buried drums, the U.S. Environmental Protection Agency (EPA) added Global Landfill to the National Priorities List of Superfund sites in 1989. The Global Superfund site, borders Cheesequake tidal marsh on three sides. After heavy rain in 1984 two consecutive high tides occurred in the wetlands, and a portion of the southern side of the landfill collapsed and slid into the adjoining wetlands.

Underlying the site is the most productive aquifer in the Raritan Formation, the Old Bridge Sand Aquifer, which is overlain by the Amboy Stoneware Clay. This layer of clay, which ranges from 0-30 feet thick, is absent in the northwest corner of the landfill, thus permitting contaminants from the landfill to reach the Old Bridge Sand Aquifer.

Since the 1990s, DEP has been conducting pollution containment activity, as well as soil and water monitoring, at the landfill. In 1991, after conducting a closure study of Global, DEP and EPA signed a Record of Decision (ROD) that required stabilization of the landfill slopes and installation of a hazardous waste cap with landfill gas and leachate controls. Studies conducted by DEP have shown that shallow ground water at Global is contaminated with volatile and semi-volatile organic compounds, pesticides and metals, but that these contaminants have not created a significant ecological impact on neighboring wetlands. Studies have also revealed that the deeper aquifer is contaminated with volatile and semi-volatile organic compounds and metals at one monitoring well location.

Current Land Use: Superfund site and inactive landfill currently undergoing remediation.

Available Habitat:

Proposed Project: EPA has required long-term monitoring of the shallow and deep aquifers, excavation of approximately 5,000 cubic yards of contaminated wetland sediments (with placement of the sediments under the landfill cap), and ecological monitoring of the wetlands.

Projected/Estimated Costs: Under terms of the Amended Consent Decree, the 31 settling parties must pay the State \$1.1 million in past costs incurred for containment and oversight activity at Global, and another \$745,000 for Natural Resource Damages. In addition, the settling parties are responsible for putting up any additional money needed to remediate the Global site if funds already set aside are insufficient.

Project Status: The owner/operator of the landfill, the Global Reclamation Company, agreed to a cash-out settlement with DEP in 1992. In 2008 the State of New Jersey entered into a multi-million dollar settlement agreement that will result in total clean-up of the 60-acre Global Landfill Superfund site in Middlesex County. As of May 2010 a cap for the Global Landfill began construction to provide final containment of the Superfund site. Landfill capping activities include

the construction of approximately 58-acres of engineered landfill cap, construction of leachate collection and holding system, surface water management system, landfill gas management system and other site improvements. Remediation also includes removal of a small area of marsh sediments previously contaminated by leachate seep and restoration of the contaminated area. Wetlands impacted by the cap construction are being mitigated by improvements and existing monitoring in the adjacent marsh will continue to track the environmental improvements that will be achieved by the construction.

Partners:

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Sediment Contamination –Any restoration recommendations should not be explored until all landfill capping and monitoring activities are complete.

Coastal and Maritime Forests – Assess ~x acre site for potential forest, grassland, shrub habitat creation through further plantings of native vegetation.

Public Access – Once remediation and monitoring is complete, site should be assessed for use as potential parkland.

Wetlands – restoration of wetlands following removal of contaminated soils.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS: NJDEP

B. Site History and Land Use: NJDEP

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans: NJDEP

***Work in progress**

REFERENCES:

EPA NPL Site Narrative- <http://www.epa.gov/superfund/sites/npl/nar1174.htm>

NJ Department of Environmental Protection-

<http://www.nj.gov/oag/newsreleases08/pr20080423b.html>

http://www.nj.gov/dep/newsrel/2010/10_0045.htm

<http://www.nj.gov/dep/srp/community/sites/pi/g000003352.pdf>

CRP SITE 595. RARITAN BAY (SUBMERGED ROCK BED)

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 1 mile north, northwest of the intersection of Beachway Avenue and Bellevue Avenue, Monmouth County, NJ.

Watershed:

Size:

Ownership: New Jersey

Site Description: Site is semi-sheltered and moderately exposed to the hydrodynamic forces of the Lower Bay Complex where the tidal currents are somewhat weak but with good tidal circulation along the shoal. The site is deprived of significant structure on the bottom. *Historically, this area supported productive oyster and clam beds, and inshore finfisheries, as well as eelgrass beds in the more sheltered, shallow areas.*

Current Land Use: *Open water*

Available Habitat:

Proposed Project: *Construct an offshore submerged berm from rock or concrete rubble. This structure would provide structural habitat for juvenile and adult fishes, including many species of commercial and recreational importance. The berm could also help create a lower energy environment which would be more amenable to establishment of clam and oyster populations.*

Artificial reef construction (Ludwig 2001, NMFS). NMFS offers design guidance for potential reefs at these sites, based on the experimental Dutch Harbor reefs. Suggested rock size ranges are 3 to 20 cm, and 20 to 40 cm, to accommodate juvenile and larger sized lobsters, a Federally managed species. NMFS suggests that each reef consist of abutting sections of the two size classes. The USACE (1999a) calculated that the construction of a 1-acre estuarine reef with 3 ft of relief would require approximately 5,000 cu yd of bedrock. The study concludes that sediments at this location may be able to support the weight of rock reef structures. Lobsters presently occur, and were historically abundant along the nearby lower Staten Island shoreline, suggesting that food and shelter requirements are present.

Projected/Estimated Costs:

Project Status:

Partners: NOAA

Project Contact:

Phone:

Website:

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Habitat for Fish, Crab and Lobsters – Construct artificial reef (e.g. rock, rubble mound or reef balls) to increase availability of structural refuge habitat and prey for juvenile and adult finfish and crustaceans, including Essential Fish Habitat and endangered species, that is currently lacking in Raritan Bay and similar habitats

Benefits, Cost and Comparative Restoration Ratio:

throughout the Harbor. Navigational and habitat exchange concerns will need to be addressed.

Sediment Contamination - Potential removal/capping of contaminated sediment based on testing.

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS:

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment:

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

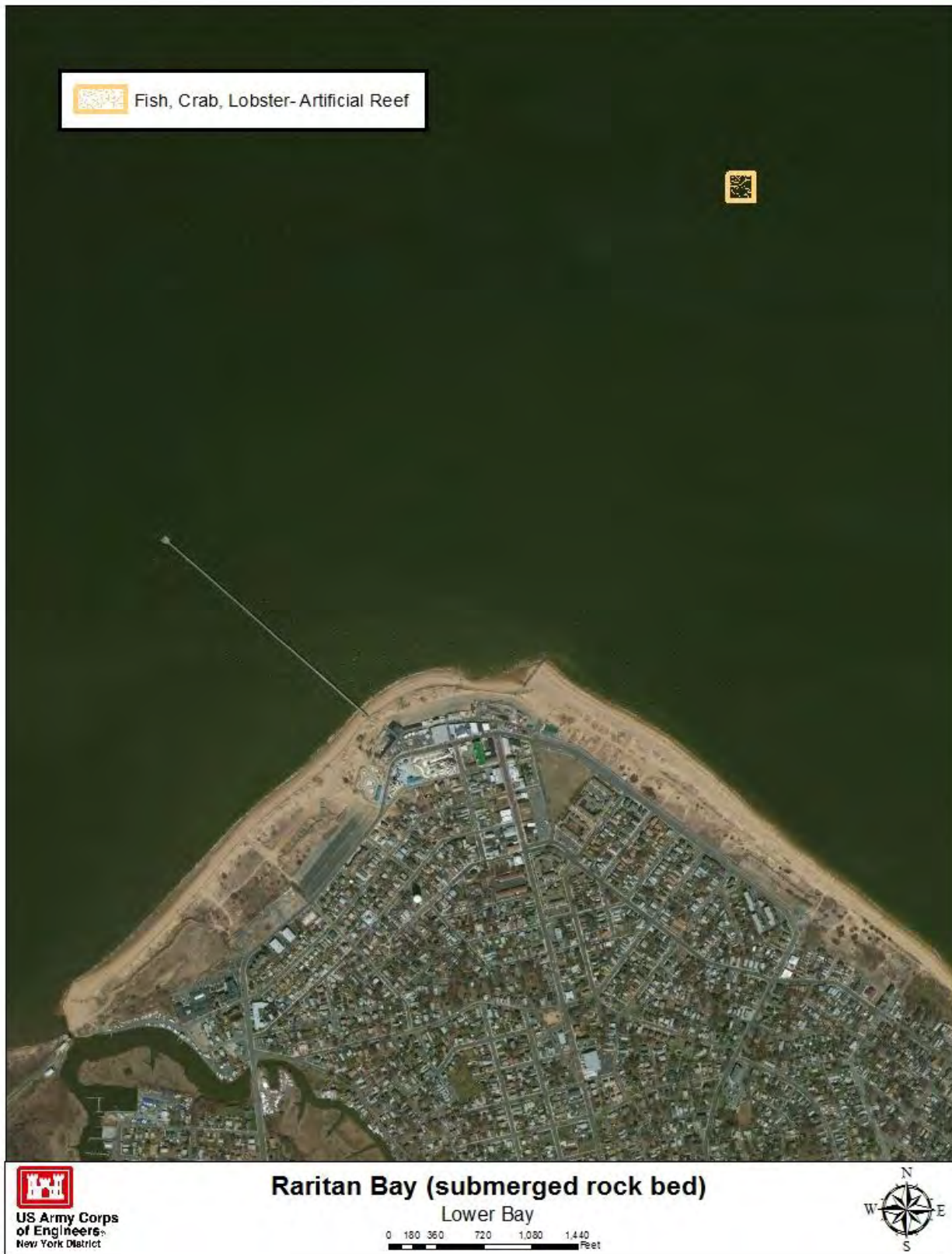
I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

USACE. 2001. "Restoration Opportunities in the Hudson-Raritan Estuary." U.S. Army Corps of Engineers, New York District, New York, NY.

USACE- Joel Banslaben, Jack C. Cox, and Robert J. Will. July 2003. *Dredging Operations Technical Support Program - Beneficial Use of Dredged Bedrock in the New York/New Jersey Harbor.*



CRP SITE 850. MATAWAN CREEK: FRENEAU FIELDS/HAUSER FARM

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Acquisition

Location: Greenwood Road- block 124, lot 2, Municipality of Aberdeen in Monmouth County, NJ.

The property is located approximately 4 miles from the Raritan Bay, 3 miles from existing HEP sites and 1/2 mile west from the Freehold to Aberdeen section of the Henry Hudson Trail.

To the east is a horse farm, currently used for field crops. The Matawan Creek is to the north and across the creek is a monastery, which separates this property from a 100 acre wooded site, also targeted by the Township for preservation. A tributary to the Matawan creek is its western boundary. Next to this is a conventional suburban subdivision which is buffered by a primarily wooded buffer to the tributary. The southern boundary is the property's road frontage on Greenwood Road.

Watershed: Matawan Creek

Size: 21.4 acres

Ownership: Aberdeen Township acquired the property in 2012 from private owners.

Site Description:

The Freneau Woods have been listed by the Monmouth County Conservation Foundation as one of the eight most endangered sites in the New Jersey Bayshore.

There has been an inventory compiled on New Jersey non-indigenous plant species including, multi flora rose, tree-of-heaven, autumn olive and Japanese honeysuckle. The upland fields have a four generation history of agricultural use.

Current Land Use: Site is zoned as vacant lot, agriculture, public access to water. Since acquisition and preservation the site has public access as a passive recreation park.

Available Habitat: Freshwater wetlands, upland, fields, shrub/scrub, forest, shorelines and shallows, tributary connections, riverine. Two small vernal pools were also noted at the site, as well as multiple forested wetland areas, dominated by *Juncus effusus* (CRP- nomination form- June 16, 2011).

The forest areas of the site consists of mature deciduous woodlands; the shrub scrub is composed of old- field succession vegetation and the fields reflect upland areas.

This undeveloped area of the township is a feeding area for migratory birds as well as year round habitat for Cooper's Hawk, Eastern Box Turtle, Fowlers Toad, as well as other reptiles and amphibians.

Proposed Project: The acquisition prevented over 200 units from being built in the headwaters area of the Matawan creek. Long term it will result in improved water quality, habitat and community character. The site provided much needed public open space. The area is in close proximity to an otherwise highly-developed stream corridor, and current or potential habitat for State endangered, threatened, or priority species (forested and emergent wetlands). The area has good potential for protection of the adjacent stream.

Projected/Estimated Costs: The 21.4 acre property was appraised at \$950,000 by the Trust for Public Land. Over the past two years, Aberdeen secured \$850,000 in grants, including \$316,250 from New Jersey Green Acres Funds, \$250,000 from County of Monmouth Open Space Funds, \$130,000 from New Jersey DEP Natural Resource Restoration Fund, \$143,750 from Trust for Public Land Capital Fund, and \$10,000 from the Monmouth Conservation Foundation. New

York-New Jersey Baykeeper assisted in obtaining funds from the NJ Office of Natural Resource Restoration (June 14, 2012- Matawan-Aberdeen Patch).

Project Status: Acquisition completed in 2012.

Partners: Many partners were involved in the acquisition, including Aberdeen Township, Monmouth County, NJDEP's Green Acres program, The Trust for Public Land, the Monmouth Conservation Foundation, and New York-New Jersey Baykeeper.

Project Contact: Cindy Roberts, The Trust for Public Land

Phone: (856) 962-0205

Website: cindy.roberts@tpl.org

Project Funding Source:

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION-*TBD*- SEE HEP NOMINATION FORM.

Restoration Recommendations (Applicable Target Ecosystem Characteristics):

Shorelines and Shallows - Below the steep slopes at the rear of the property is the Matawan creek and a long stretch of shallow shoreline.

Tributary Connections - Protecting the water quality of the tributary to the Matawan creek on western boundary and the creek itself. This project prevented non-point source pollution from runoff that would have resulted from development of the site. Primarily, the preservation

of this site is highly desirable in an otherwise development-dominated area.

Sediment Contamination - Preserving the property has allowed the natural vegetation to stay in place preventing runoff into the stream corridors, resulting in a decrease in sedimentation and the contaminants it carries.

Public Access - Once preserved, public access is guaranteed & could be developed.

Benefits, Cost and Comparative Restoration Ratio:

C. EXISTING SITE SPECIFIC DATA INVENTORY

A. Survey, Maps and GIS: Trust for Public Lands

B. Site History and Land Use:

C. Biological Studies/ Fauna:

D. Biological Studies/ General Environment: A vegetative inventory and site conditions map was completed by Evergreen Environmental, LLC and can be found as an attachment to the CRP nomination form – submitted June 16, 2011.

E. Geotechnical:

F. Hydraulics and Hydrology:

G. Water and Sediment:

H. Historical and Cultural Resources:

I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCE:

Comprehensive Restoration Plan Nomination Form- Submitted on June 16, 2011 by Cindy Roberts, TPL.

Matawan-Aberdeen Patch- Retrieved 7/2/13- <http://matawan-aberdeen.patch.com/groups/politics-and-elections/p/aberdeen-purchases-land-for-passive-recreation-park>

**TBD- New Nomination*