

Friends of the Monmouth County Park System, Inc.

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August 15, 2014

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RE: NEIWPC/NY-NJ HEP 2013-2014 Stewardship Project Final Grant Report

Project Title: *Estuarine Stewardship Program for 5th Graders in Monmouth County, NJ*

Project Period: June 10, 2013 to August 15, 2014

NEIWPC Funds employed: \$2,100.00 / Non-federal, in-kind matching funds: \$1,160.00

Project Goals: The motivation for this grant project was from the devastation caused by Super-storm Sandy in fall 2012 to eight small municipalities in the downstream portion of the New York – New Jersey Harbor & Estuary. Each small town along Raritan Bay, Sandy Hook Bay and the Shrewsbury River had their own unique scenario of destruction. For example, in the Borough of Union Beach, Super-storm Sandy flooded more than 85 percent of the homes including 30 homes washed away by tides, and in the Borough of Highlands, up to 1,500 homes or 75 percent were flooded. In Sea Bright and Monmouth Beach (both barrier beach communities), the storm buried the towns in 4 feet of sand and destroyed over 400 homes and nearly 100 percent of businesses by rising flood waters of the Shrewsbury River.

After the initial recovery from the devastation caused by Super-storm Sandy to coastal communities in the NY-NJ Harbor & Estuary, Friends of Monmouth County Park System, Inc and its grant partner, the all-volunteer Bayshore Regional Watershed Council, believed it was essential to implement a vision of sustainability, restoring a better, greener, and bluer coast to local students. The main goal for this grant project was to help carry out Goal 5 of the HEP Action Plan by helping to improve environmental education and promote stewardship of the Harbor Estuary, specifically by serving the environmental educational needs of 5th grade students from eight small school districts (municipalities with four square miles or less of land area) damaged by Super-storm Sandy and located in the HEP core area of Monmouth County. The project provided a series of free field trips during the 2013-2014 school year to the Bayshore Waterfront Park, a county park located along Sandy Hook Bay and downstream from New York City. The field trip experience provided a way for students to expand their geographic and ecological familiarity of the urban-suburban estuary in New York Harbor, and to expand knowledge on ways to create a more resilient estuary.

Project Summary: The grant project was designed to enhance stewardship of the New York-New Jersey Harbor & Estuary to 5th grade students and teachers from eight small-scale school districts within northern Monmouth County, NJ. Friends of the Parks carried out the goal of the project with grant funds by having participating students attend a free outdoor day trip to the Bayshore Waterfront Park, a 227 acre county park which contains a thriving coastal landscape on Sandy Hook Bay with maritime shrublands,

tidal creeks, salt marshes, dunes, and a mile of beach and scenic views across the water from New York City. The project expanded learning beyond the classroom with hands-on, estuarine and environmental education activities using a field trip experience, where students learned by seeing and doing out of the classroom environment. Each student rotated through five (5) hands-on activities including seining, plankton collection and identification, shellfish collection and identification, water testing, and stewardship activities. The field trip portion of the grant project was followed with an in-school visit by the project leader to each participating 5th grade class. Time was spent to facilitate student learning by reinforcing important vocabulary and concepts about HEP, and ways to get involved in local stewardship activities with local organizations including Friends of the Parks, NY-NJ Baykeeper, Clean Ocean Action, and the Bayshore Regional Watershed Council.

Course of Action: Joseph Reynolds, project manager and senior park naturalist with the Monmouth County Park System, contacted participating school districts in August and September 2013 to explain the scope of the grant project and to provide help with field trip planning. By early October and continuing into spring 2014, each participating school system was able to enjoy one free field trip to the Bayshore Waterfront Park located along Sandy Hook Bay and within the New York-New Jersey Harbor Estuary. A park brochure and map can be downloaded at this website:

<http://www.monmouthcountyparks.com/page.aspx?Id=2516>

The project expanded learning beyond the classroom with hands-on, estuarine and environmental education activities using a field trip experience. Students rotated through five (5) hands-on activities: 1) seining with a 30-foot long net to examine and release aquatic creatures living or moving through shallow areas of the estuary and to take a look at ways some animals have adapted and navigate through an ever-changing environment, 2) plankton collection using microscopes to view minute life and examine primary productivity within an urban estuary, 3) water quality testing using simple inexpensive tools such as secchi discs to measure turbidity, thermometers to measure water temperature, and test strips to measure pH and nitrates, 4) shellfish identification including all varieties of oysters, clams, mussels, and scallops found living within the harbor and estuary and common issues surrounding their abundance and ecology, and 5) stewardship activities that focus on the causes and effects of Super-storm Sandy and the consequences of nonpoint source pollution, marine debris, climate change & sea level rise to the future strength and health of waterfront and coastal communities. Students also learned about the types, quantities, and sources of marine debris and connected with local volunteers from the Bayshore Watershed Council to learn how sustainable coastal communities can be created, in part, through the protection and enhancement of natural resources including wetlands, floodplains, beach dunes, and oyster reefs.

The project manager also conducted a number of in-school visits to each participating 5th grade class. This exercise made the former field trip experience more memorable and personal by building on it with a classroom room visit. Due to scheduling, some in-school visits were completed before field trip activities, which made the planned field trip experience more meaningful by using artifacts and photos to explain what and how students will learn and what tools they will use. Time was also spent to facilitate student learning by reinforcing important vocabulary and concepts about HEP, and ways to get involved in local stewardship activities with local organizations including Friends of Monmouth County Parks, the NY-NJ Baykeeper, Clean Ocean Action, and the Bayshore Regional Watershed Council.

Accomplishments: Even before Super-storm Sandy occurred, there was a need for outreach. Small school districts in Monmouth County, NJ face economic challenges that arise from restricted budgets. On average, over 55 percent of funds generated by local property taxes finance over 80 percent of local school budgets. This amount can be a financial burden to lower and middle income residents within a

small urban-suburban municipality. This action has resulted in the elimination or constriction of field trip activities to 5th grade classes.

By way of this grant program funded by NEIWPC and NY-NJ HEP there were approximately 368 fifth grade students and 78 teachers/chaperones from seven local urban-suburban schools in northern Monmouth County, NJ educated and informed to become more responsible stewards of the New York-New Jersey Harbor & Estuary.

The schools targeted by this grant project were from small school districts (municipalities with four square miles or less of land area) damaged by Super-storm Sandy and located in the HEP core area of Monmouth County. Seven school districts participated in this grant project: 1) the Borough of Atlantic Highlands, 2) the Borough of Highlands, 3) the Borough of Keyport, 4) the Borough of Monmouth Beach, 5) the Borough of Oceanport, 6) the Borough of Sea Bright, and 7) the Borough of Union Beach.

Of special interest were teachers and students from the boroughs of Sea Bright, Monmouth Beach and Oceanport. Opportunities in the past did not exist for these three communities to directly take part in a HEP/NEIWPC grant project. Teachers and students were being underserved and largely unfamiliar with the ecology of the Harbor Estuary and its importance to the larger environment. Due to the grant project, all three small-scale boroughs were able to participate in a HEP/NEIWPC grant project and are more familiar with ecology of the Harbor Estuary. Teachers and students are better able to identify with the functions or the meaning of an estuary, watershed, wetlands, and how protection of local environmental resources can create sustainable coastal communities to avoid flooding and property damage from future storms.

Project Evaluation: To determine if the main goal of this grant project was achieved, the project was evaluated by pre-and post questionnaires given to students and schoolteachers involved in the project. There was a measurable difference and improvements in participants' knowledge, attitudes, and comprehension towards the local environment. Pre-questionnaires revealed that while today's youth are more environmentally conscience about general global issues, many students and teachers still lacked more than a basic knowledge of their local environment, especially concerning watersheds, water pollution, and the New York-New Jersey Harbor & Estuary.

After a participant's field trip experience to the Bayshore Waterfront Park, post questionnaires illustrated an increase in a person's knowledge of the estuarine habitat of Sandy Hook Bay, Raritan Bay, and Lower New York Bay; their confidence increased on understanding real-world problems about the Harbor & Estuary, including water quality and habitat loss; and knowledge of conservation issues and environmental quality improvement actions, including increased recycling and restoration efforts of ecosystems.

According to teacher evaluations, the field trip experience was considered successful in educating the students, as well as fun for everyone involved. The teachers stated the program was well organized, included content that was relevant to their class curriculum, and the overall grant project was positive and beneficial. Teachers also stated they used information and materials in use during the field trip to help their students learn about science and local nature. Teachers most enjoyed the hands-on experiences of seining, shelling, water testing, and plankton identification, which are difficult activities to conduct in their schools without proper equipment and knowledge. A majority of students, according to their teachers, were interested in gaining additional information about the Harbor Estuary and many of the teachers indicated the field trip was important to a child' education, and believed that the most effective field trips are aligned with the school curriculum to further benefit learning. All of the teachers were satisfied regarding their overall experience, and would be willing to participate in similar grant project in the future.

From student evaluations about the field trip, the learning objectives developed for this grant project were achieved. The large majority of students who took part in the field trip experience were able to recall information about local fish, crabs, and other natural resources they had seen or had hands-on experiences, and were able to evoke particular steward activities to help protect or restore the estuary. For example, a majority of students were able to remember to “ditch the disposable lifestyle” and to make a point to use reusable bags, beverage cups, and food containers, and reuse or recycle them whenever possible; and to participate in beach or waterway clean ups to help stop the flow of trash into the estuary. Students who participated in the field trip experience were better able to think critically about their local environment and were more likely to be interested in restoring and protecting the estuary to make it more sustainable than in the past. The field trip provided a unique and memorable time. It was infused with educational elements, which were aimed to positively influence young minds as they make choices that will impact their local environment.

Lessons Learned: The most significant obstacle faced during the grant project was securing the Borough of Keansburg school district to participate in the field trip portion of the grant project. While the project manager was able to make an in-school visit during the school year to students and teachers, the school district was unable to participate in field trip activities. A turnover in fifth grade teacher staff this school-year and challenges in scheduling with colleagues and administration in setting up field trips for their students provided too many complications for existing first-year teachers to manage and take part in the grant project. The school administration and principal, however, did express hope that the generous offer of the grant project will be reciprocated in the near future.

This project was funded by an agreement awarded by the Environmental Protection Agency to the New England Interstate Water Pollution Control Commission in partnership with the New York-New Jersey Harbor & Estuary Program.

Although the information in this document has been funded wholly or in part by the United States Environmental Protection agency under agreement CE98272003 to NEIWPCC, it has not undergone the Agency’s publications review process and therefore, may not necessarily reflect the views of the Agency, and no official endorsement should be inferred. The viewpoints expressed here do not necessarily represent those of the New York-New Jersey Harbor & Estuary Program, NEIWPCC, or U.S. EPA, nor does mention of trade names, commercial products, or causes constitute endorsement or recommendation for use.



New York - New Jersey
Harbor & Estuary Program
www.harborestuary.org



Photos: Located below. All attached photos have clearance/authorization to show or post these images for public view.



(Students from Sea Bright & Oceanport School district acquiring plankton sample with park staff on a fishing pier along Sandy Hook Bay)





(Students from Sea Bright & Oceanport School district picking up juvenile or small fish and crabs that travel along the edge of Sandy Hook Bay from a 20-foot seine net)\



(A student looking through a microscope at a plankton sample recently caught in Sandy Hook Bay)



(Students learning about local shellfish)