Seven Mile Island Innovation Lab

Scotch Bonnet Marsh Enhancement FAQs

Project Purpose

1) What is the purpose of this project?

The Scotch Bonnet Island project will enhance tidal marshes that are falling behind relative sea level rise rates by adding a supplemental sediment source. Clean NJ Intracoastal Waterway (NJIWW) dredged sediments will be used to increase the elevation of low marsh areas that have fallen below the ranges for healthy marsh to reestablish suitable levels of tidal flooding to allow the marsh to flourish for decades to come.

2) Who are the project partners and what are their roles?

New Jersey Fish and Wildlife owns and manages the project site in Cape May Coastal Wetlands Wildlife Management Area. Coordination with trusted project partners to carry out habitat restorations on New Jersey's wildlife management area system assists New Jersey Fish and Wildlife in its agency goal to maintain New Jersey's rich variety of fish and wildlife species at stable, healthy levels and to protect and enhance the many habitats on which they depend.

U.S. Army Corps of Engineers (USACE) maintains federal navigation channels across the nation, including the 117-mile New Jersey Intracoastal Waterway. With this mission, USACE surveys and dredges channels to enable safe and reliable maritime navigation. After Hurricane Sandy, USACE received significant funding to clear the channel, but had limited places to put the sediment. Additionally, USACE understands the significant ecological and societal benefits of sediment. When sediment is clean, USACE looks for opportunities to use it beneficially. In recent years, USACE has worked extensively with the State of New Jersey and The Wetlands Institute to launch the Seven Mile Island Innovation Lab (SMIIL) and advance practices associated with the beneficial use of dredged sediment. Both the USACE Philadelphia District (surveys, project, contract, and construction management) and the U.S. Army Engineer Research and Development Center (ERDC - research and development/monitoring) are involved with SMIIL efforts.

The Wetlands Institute is located within the Seven Mile Island Innovation Lab and has decades of data on marshes and wildlife within the region that are important resources for restoration planning. Our scientists provide crucial information on marsh health and dynamics, wildlife usage and analysis and assessments of project need. Wetlands Institute scientists work with project partners on site identification, project concepts, and construction monitoring and provide field support to project partners. Before, during and after project construction, Wetlands Institute scientists often collect data and conduct analyses that support adaptive management of projects and relative research led by other

project collaborators at universities and the Engineering Research and Development Center, a research and development arm of USACE.

3) Why is this project necessary? How do you know?
Research scientists at The Wetlands Institute have done site assessments of the marsh area called Scotch Bonnet Island. Our analysis using historical photographs shows that since 1941, the 86-acre marsh area has lost more than 1/3 of the marsh acreage through conversion to mudflats and pools. Working with scientists at the University of Pennsylvania, project partners modeled future marsh loss under moderate sea level rise forecasts. These forecasts predict that this area will lose another 1/3 of the marsh acreage by 2050 without intervention. Thus, the data indicate that the 86-acre marsh area will only be 30 acres by 2050. For more information on this analysis see https://wetlandsinstitute.org/wp-content/uploads/2024/06/Marsh-Restoration-FINAL-for-digital-2-23-24.pdf

4) What would happen to the marsh if the project was not done?
Without the addition of sediment to increase the elevation of the marsh, the marsh will continue to convert from a grassy marsh plain to mudflats and pools. The pools are expanding and connecting to tidal creeks that are removing more sediment from the marsh system accelerating the lowering of the marsh elevation. This negative feedback loop is resulting in more and more marsh loss. The marsh at Scotch Bonnet Island, like most salt marshes, provides numerous benefits to wildlife and people. Marshes provide essential food, refuge, and nursey habitat for more than 75% of fish and shellfish, and foraging habitat for a variety of birds. They filter water and remove contaminants thereby improving water quality in the bays. They also absorb wave energy and reduce storm surge to protect our coastal communities. In fact, each year coastal marshes reduce flood damage to our communities by more than 15% and during Hurricane Sandy reduced damages by 20-30%. When we lose marshes, we lose these important services.

Dredging Operations

1) How long will dredging operations last?
The dredging project is expected to last 6-8 weeks.

2) Where is the dredged material coming from? Or what areas will be dredged?
For this project, the contractor will be dredging from Marker 419 to 427 of the New Jersey Intracoastal Waterway. This is an area near Nummy Island west of the southern portion of Stone Harbor.
The material will be hydraulically pumped to the Scotch Bonnet Island project site and is not being sourced from Scotch Bonnet Channel.

3) Can the contractor dredge my area of the channel'?
It's important to point out that USACE maintains the New Jersey Intracoastal Waterway, a 117-mile federal channel that stretches from the Manasquan Inlet to Cape May Inlet and cuts through the back bays of New Jersey. This, along with Manasquan Inlet, Barnegat Inlet, Absecon Inlet, and Cold Spring Inlet, are the federal channels in the region that can be likened to federal highways. USACE is only able to dredge these federal channels for navigation purposes. The State also maintains channels (akin to state highways) and there are local channels and private marinas as well. Private individuals may want to contact their municipal engineer regarding the dredging of other areas.

4) What contractor/vessel will be doing the work?
USACE awarded a contract to Barnegat Bay Dredging Company of Harvey Cedars, N.J. to complete the work. They will be using the Dredge Fullerton, a 14-inch hydraulic pipeline dredge for this project.

5) How far is the sediment pumped?
The dredged sediment is fluidized and is typically a combination of 80% water and 20% sediment before it is hydraulically pumped approximately 2 miles.

6) Can you use materials that are dredged from my lagoon or dock area?
The federal project being conducted by USACE in partnership with the State of NJ cannot use materials from non-federal lagoon or dock areas.

7) Who is paying for the dredging and associated Scotch Bonnet Enhancement project?
The NJIWW and Adjacent Waterways contract is 100% federally funded under USACE Operations and Maintenance. While USACE funds and collects much of the data, there are also research funds involved from ERDC, academia, and donations to The Wetlands Institute to better understand the project and its benefits.

8) How was the contractor selected?
The NJIWW and Adjacent Waterways contract solicitation was advertised as an Invitation for Bids and Barnegat Bay Dredging Company was awarded the contract through the low-bid process.

Safety & Access

1) Why is there a fence up?
This is an active construction site, and the public is not allowed to access due to safety concerns. The dredged material is not safe to walk on during and for a time after placement.

2) Are there alternate locations to access the marsh (for crabbing, birding, etc.)
Cape May Coastal Wetlands Wildlife Management Area is the fourth largest wildlife management area in the State of New Jersey. Its 17,842 acres is almost entirely comprised of salt marsh habitat, providing space for a variety of recreational opportunities. Please visit the New Jersey Wildlife Management Area Explorer to view an interactive map of the New Jersey Wildlife Management Area System and the access and opportunities it has to offer.

Flora and Fauna

1) Will the marsh vegetation be disturbed/destroyed during this operation? Will it be replanted?
The placement of dredged sand and mud on the marsh surface will smother the existing marsh grasses. Our experience on similar projects indicates that the muddy surface takes about one year to stabilize and then the new surface will begin to recover. This new surface is designed to be at appropriate elevations for new marsh grass colonization. We have found that it is typically in the second growing season when new grasses begin to grow. These grasses come from the natural seedbank. We have found that planting does not accelerate the recovery time of the placement areas and that allowing natural recovery is often

the best approach.

2) What are the temporary impacts to birds, fish and other fauna that rely on the marsh?
Dredging and beneficial use placement projects are timed to occur at a time when the marsh has the lowest wildlife use to help minimize any impacts.

Wildlife will tend to avoid the area of disturbance during placement but fauna that is resident in the marsh or pools may be negatively impacted. Wildlife that are able to leave the area will leave. Though wildlife that are unable to leave the area can be impacted by the placement, the short-term impacts are likely to be low relative to the long-term benefits of the project especially in light of the ongoing marsh loss that is also negatively impacting this wildlife. During the time when the marsh is recovering, wildlife usage of the area will be different than prior to the project due to the disturbance and changes to the marsh. Following sediment placement on the marsh, the enhanced elevation can provide benefits because the project is replacing lost habitat at elevations that are higher than is available in the surrounding marshes. We have found the newly elevated marsh immediately provides refuge to a variety of wildlife during storm tides that otherwise flood the marsh and after recovery may ultimately provide the full benefits of a resilient and less flood-prone marsh. Over the longer term, the enhanced elevation of the marsh may result in changes to the wildlife that use the marsh.

3) How long will it take for the marsh vegetation to come back?
Our experience at other projects has shown that the marsh grass begins to regrow on the site during the second growing season with excellent marsh grass recovery by the fourth year.

4) How does the marsh function while it is recovering?
Salt marshes perform numerous functions which will be improved or impacted to varying degrees during marsh recovery following placement. The functions that are related to coastal resilience, such as flood resistance, will be enhanced immediately upon achievement of elevation gains and will continue to improve as the site becomes vegetated. The functions of carbon burial and water filtration from roadway runoff will slow during the recovery period but then increase as vegetation recovers. Other functions including vegetation cover and nesting and foraging habitat for marsh-dependent birds will be reduced or eliminated until the marsh recovery is more complete. Scientists will be monitoring the marsh function and wildlife usage of the project area to help inform recovery of the area and future projects so that we can minimize the risk to wildlife and limit impacts to marsh services while enhancing long-term ecosystem resilience.

Monitoring

1) What happens after the construction is complete? How is the area monitored?
USACE will conduct post-placement surveys of the dredging and placement areas. Additional data will be collected by USACE ERDC and their project partners such as the US Naval Academy and The Wetlands Institute.

Information Availability

1) How can I learn more about the project?
The project partners have developed websites with information about the project that will be updated throughout the project.

They can be found at:

https://wetlandsinstitute.org/scotchbonnet /

https://dep.nj.gov/njfw/conservation/cape-may-coastal-wetlands-wma-scotch-bonnet-island-project/

https://www.nap.usace.army.mil/Missions/Civil-Works/Coastal-Dredging-Beneficial-Use/Scotch-Bonnet-Project/

The Wetlands Institute also has project handouts and information and signage along the Salt Marsh Trail. Check the website for information about public information sessions and tours.

2) Will I be able to tour the project site?
Due to the hazardous, unstable marsh platform conditions present during and immediately after the placement of clean dredge sediment, New Jersey Fish and Wildlife will temporarily close the project site to public access and all regulated activities. The closure will be lifted once sediment has stabilized and no longer presents a hazard to public safety. The closure area can be viewed on the New Jersey Wildlife Management Area Explorer.

3) Are there places where I can safely view the project site?
The Wetlands Institute is located a safe distance from the project site and viewing will be available during normal business hours (daily 9:30-4:30) from the Salt Marsh Trail. The public is welcome to view the project from these areas.

Note: The Wetlands Institute is a natural conservation area where outside animals would be a disturbance to local wildlife that inhabits this area. Because of this, pets are not allowed inside Institute buildings or outside on Institute property, including the Salt Marsh Trail, elevated walkway, and dock. Service dogs are welcome as they have been trained to not react to other animals.

4) Will there be public information sessions about the project?
There will be numerous public information sessions about the project. Please check the project websites and sign up for Wetlands Institute social media for schedule information. The next public information session will be Thursday, August 22, 2024 from 5:30 – 6:30 at The Wetlands Institute, 1075 Stone Harbor Blvd, Stone Harbor, 08247.