



# WILDLIFE

New Jersey Beach Magazine

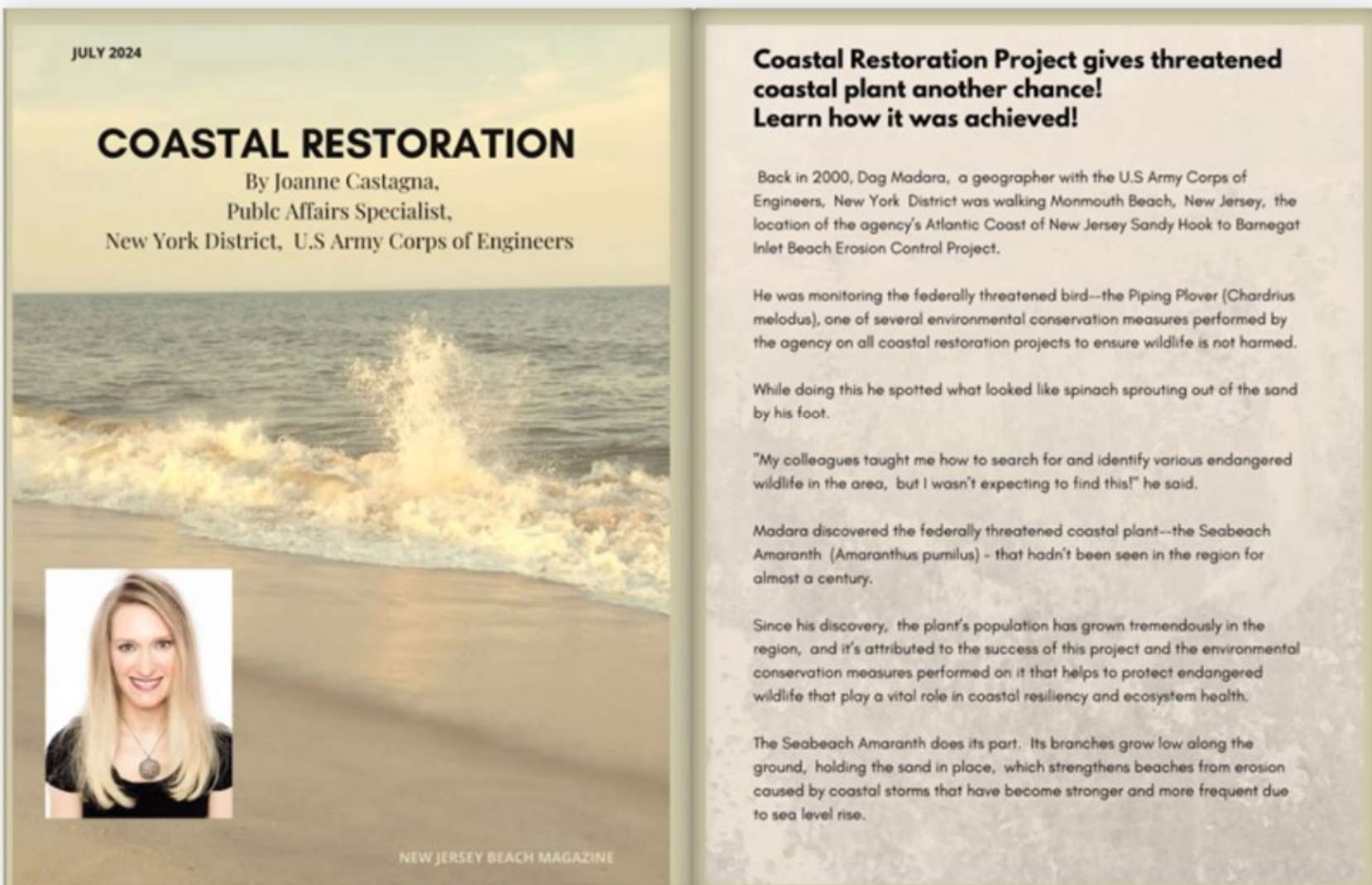


WELCOME TO

## THE WILD

New Jersey Beach Magazine featuring The Best of the Best!

Photo by Anthony Pitale



JULY 2024

# COASTAL RESTORATION

By Joanne Castagna,  
Public Affairs Specialist,  
New York District, U.S Army Corps of Engineers



NEW JERSEY BEACH MAGAZINE

## Coastal Restoration Project gives threatened coastal plant another chance! Learn how it was achieved!

Back in 2000, Dag Madara, a geographer with the U.S Army Corps of Engineers, New York District was walking Monmouth Beach, New Jersey, the location of the agency's Atlantic Coast of New Jersey Sandy Hook to Barnegat Inlet Beach Erosion Control Project.

He was monitoring the federally threatened bird--the Piping Plover (*Chordeiles melodus*), one of several environmental conservation measures performed by the agency on all coastal restoration projects to ensure wildlife is not harmed.

While doing this he spotted what looked like spinach sprouting out of the sand by his foot.

"My colleagues taught me how to search for and identify various endangered wildlife in the area, but I wasn't expecting to find this!" he said.

Madara discovered the federally threatened coastal plant--the Seabeach Amaranth (*Amaranthus pumilus*) - that hadn't been seen in the region for almost a century.

Since his discovery, the plant's population has grown tremendously in the region, and it's attributed to the success of this project and the environmental conservation measures performed on it that helps to protect endangered wildlife that play a vital role in coastal resiliency and ecosystem health.

The Seabeach Amaranth does its part. Its branches grow low along the ground, holding the sand in place, which strengthens beaches from erosion caused by coastal storms that have become stronger and more frequent due to sea level rise.

This annual flowering plant has red stems and thick, waxy, greenish-red leaves that are somewhat reminiscent of spinach.

The plant is native to the beaches along the Atlantic coast of the United States— from South Carolina north to Massachusetts.

However, over the years, the species has vanished in most of these states, including the State of New Jersey.

In 2000 when Madara spotted the plant, the last time it was seen in the area was in 1913.

Its population decline has been attributed to several factors including coastal development, beach driving and foot traffic, competition with other plant species, beach stabilization projects without best management practices, sea-level rise, and natural disasters such as tropical storms and nor'easters that can inundate or wash away plants from beaches before, they can set seeds.

The plant's return to this region of New Jersey is being attributed to the successful Atlantic Coast of New Jersey Sandy Hook to Barnegat Inlet Beach Erosion Control Project that began in 1994. The project increased the size of the habitat for the plant, as well as performed environmental conservation measures to protect it.

The project encompasses 21-miles of the Monmouth County, New Jersey shoreline that extends from the Township of Sea Bright down the shore to the Manasquan Inlet.

The highly populated stretch of coast has experienced extensive erosion or sand loss, due to old hard structures, including a seawall, and frequent storms including most recently Superstorm Sandy in 2012. An eroded coast puts the shoreline community at risk for flooding from storms, so the Army Corps has been replenishing eroded sand and increasing the size of the beach to help protect the community.

The Army Corps is working on this project in cooperation with its non-federal sponsor, the New Jersey Department of Environmental Protection and with the U.S. Fish and Wildlife Service since the plant is protected under the Federal Endangered Species Act.

To replenish the lost sand and increase the height and width of the beach berm, sand was dredged from the ocean and pumped onto the shore and distributed around. A berm is the flat area of the beach between the landward shore and the ocean where beachgoers typically sunbathe.

An enlarged beach acts as a buffer, protecting the structures and infrastructure behind the beach from the storm surges and flood damages.

In 2012, 18 miles of the 21-mile project was completed. It was at this time that Superstorm Sandy devastated the region, removing 5 million cubic yards of sand from the shore, enough sand to fill New Jersey's MetLife Stadium.

#### Coastal Restoration Project



Monmouth Beach, New Jersey  
July 31, 2000

U.S.

The following year, the Army Corps received funding from the Hurricane Sandy Disaster Relief Appropriation Act of 2013, or what is referred to as the "Sandy Bill" to not only replenish the sand this project lost during Sandy, but to restore it to its original design profile.

With this funding, the Army Corps replenished 8 million cubic yards of sand to 18 miles of the project and completed the remaining 3-miles.

Since then, the agency has been performing periodic sand replenishment to ensure that the beach provides continued protection from storms and hurricanes.

"This continued nourishment will help protect local communities, prevent damages from hurricanes and nor'easters, and benefit the economy," said Jason Shea, project manager, New York District, U.S. Army Corps of Engineers, who is talking about the world's biggest beach-fill project in terms of sand volume.

The project also included the notching of several existing groins. These are structures that extend out perpendicular from shore into the water and interrupts water flow and limits the movement of sand, to prevent beach erosion. Notching the groins, helps to facilitate the movement of the sand and water.



In addition, 10 existing storm water outfall pipe extensions were lengthened. These pipes carry storm water from land to the ocean.

Recently, the Army Corps started a study to re-assess the project and to see if additional measures can be done to make the project even stronger and more resilient.

**On this project, as well as with all Army Corps coastal restoration projects, the agency performs environmental conservation measures to protect and minimize impacts to rare, threatened, and endangered species that play an important role in coastal resiliency and ecosystem health.**

Measures on this project, are helping to protect not just the Seabeach Amaranth, but also migratory birds including the Piping Plover, the State endangered Least Tern (*Sterna antillarum*), and the State Special Concern Species the American oystercatcher (*Haematopus palliatus*).

Environmental conservation measures used to help protect these species include monitoring, public education, following environmental windows, and constructing symbolic (post & string) beach fencing.



## COASTAL RESTORATION PROJECT

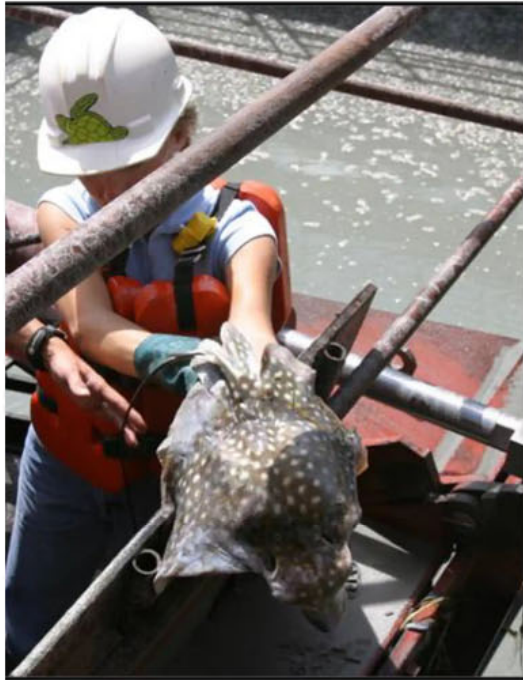


Monitoring

surveying a beach to identify rare, threatened, and endangered wildlife is one of several tasks monitors perform. In the beginning of a project, they create a monitoring plan in cooperation with the project team and during the project they monitor and document

wildlife behavior, movement, and potential threats on and near the project site.

Besides this plant, monitors on this project have also observed the return of the American Oystercatcher.



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Monitoring also occurs offshore. This project has a successful sea turtle monitoring program where trained, certified monitors accompany the project team on hopper dredges to make sure endangered sea turtles, as well as whales, dolphins, and seals, are



not harmed during the offshore sand dredging and placement process. This is done with the help of turtle excluder devices that are placed at the drag head of the dredge to prevent turtles and other wildlife from being entrained in the hopper dredges.



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By JoAnne Castagna, Ed.D.

## Coastal Restoration Project

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### Public Education

Using beach signs to educate the public on ways that can avoid and minimize potential impacts to wildlife and ecological communities on the project site is good for the plants and animals. It's also good for the project. For example, an educated beach visitor may be more tolerant of any inconveniences, such as temporary beach closings, that are associated with protected beach areas. A tolerant on-site crew is also desirable, which can also be done through education. Several years ago, when the project was experiencing the successful return of the American Oystercatcher, a monitor at the time associated this in part to an educated crew.

Educating the crew, sparked their interest in the bird, which helped to contribute to the bird's return to the area. The crew purchased binoculars and bird books and made notes about their bird observations that they provided to the monitors.

### Follow Environmental Windows

Environmental windows are months out of the year where construction on a project is halted to protect endangered species.

For Example, on this project, sand is not placed on the shore between March 15th and August 15th because this is the time of the year that the Piping Plover nests on the shore. During this time, sand placement may still occur only in portions of the project where Piping Plovers were determined not to be nesting.

Symbolic (post & string) beach fencing on a beach delineates areas used by wildlife and alerts the public to the presence of a protected area.

According to Katherine Pijanowski, biologist, New York District, U.S Army Corps of Engineers, "In the case with plants, placing fencing around protected species also prevents the project crew from inadvertently running over or bury it. If the project is unable to avoid impacting the species, the Army Corps works with the USFWS to either move the plant, stockpile the seedbank, or other recommended action."

Fencing can provide multiple benefits added Peter Wepler, Chief of the Environmental Analysis Branch, Planning Division, New York District, U.S Army Corps of Engineers. He said, "For example, when you fence off an area for breeding migratory birds, this also provides a protected habitat for Seabeach Amaranth and other rare coastal plants they co-habitat with. It's a win-win for multiple species."

## COASTAL RESTORATION PROJECT

According to the USFWS, fencing can create successful results. For example, fencing installed on a beach in Long Beach Township, New Jersey resulted in a 300% increase in the Seabeach Amaranth plant.

Besides these environmental conservation measures, the successful work performed on this coastal restoration project has also contributed to the return of the Seabeach Amaranth and other species.

Prior to building up the beach, there was barely a habitat for plants and other wildlife to thrive.

Pijanowski said "building the beaches back has provided ample space and opportunities for plants to grow, and for birds to rest, forage and nest."

A larger beach also draws more people to the shore. To balance the needs of the public, tourism, local communities, and imperiled species, the Army Corps funded the development of Beach Management Plans.

Protecting coastal wildlife also helps increase the protective resiliency of the shore. For example, the Seabeach Amaranth has branches that provide natural binding properties that make the coast more erosion resistant to storms.

This shows how people and wildlife that make the coast their home, truly do rely on each other for survival.

So that other coastal restoration projects can experience the same success as this project, Pijanowski suggests that biologists and engineers work together to integrate their expertise in vegetation, wildlife, geomorphology, and coastal engineering to design a project that restores coastal processes and provides habitats for listed species.

She also said "that before construction work begins, a baseline survey should be carried out to note the species present" and she suggests that dredging pipes and equipment be placed in minimally invasive locations.

Last she said that as work continues, monitor the beach for new plant and wildlife growth throughout the duration of the project, and provide a weekly presence or absence assessment of the species.

Coastal Restoration Project gives threatened coastal plant another chance

By Dr. JoAnne Castagna

# COASTAL RESTORATION PROJECT

"If Madara wasn't monitoring the beach in 2000, the Seabeach Amaranth wouldn't have been discovered"



FY22-24 Renourishment locations



### Section I: Sea Bright to Ocean Township Section II: Asbury Park to Manasquan

|                         |  |
|-------------------------|--|
| Congressional Districts | NJ-06 (Pallone), NJ-04 (Smith)   |
| Common Name / Location  | Section I – Sea Bright to Ocean Township<br>Section II – Asbury Park to Manasquan  |
| Project Name            | Sandy Hook to Barnegat Inlet, NJ   |
| Authorization           | Rivers and Harbors Act of 1952; WRDA 1986, 1988, 1992  |
| Scope                   | Initial Fill – 100' Berm @ EL +10MLW + 2' Cap. Advance Fill – 23' Wide for entire project length. Outfall extensions & groin notching. |
| Sponsor                 | NJDEP  |
| CWE (Cost Share)        | \$1.1B (65% Federal, 35% Non-Federal)  |
| NEPA                    | ROD signed in 1989; EA approved with 2014 HSURR.   |



Section I – Deal, NJ - February 2022



**US Army Corps of Engineers Project Website:**  
<http://www.nan.usace.army.mil/Missions/Civil-Works/Projects-in-New-Jersey/Sandy-Hook-to-Barnegat-Inlet/>



If it wasn't for Madara monitoring the beach in 2000, the threatened Seabeach Amaranth would not have been discovered, showing the important role environmental conservation measures play on coastal restoration projects.

Continued use of these measures and a successful coastal restoration project helped the plant to flourish again so that it can perform its natural abilities that contribute to coastal resiliency and ecosystem health.

If Madara took a walk on the beach today, he would be sure to find the plant again by his feet, its branches firmly gripping the sand, strengthening the coast from today's stronger and more frequent storms caused by sea level rise.

For more information about the Seabeach Amaranth, visit the U.S Fish and Wildlife Service website at: <https://www.fws.gov/species/seabeach-amaranth-amaranthus-pumilus>

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# SEABEACH AMARANTH

"If Madara wasn't monitoring the beach in 2000, the Seabeach Amaranth wouldn't have been discovered "

## Seabeach amaranth on the road to recovery.... Back after almost 100 years!

- Seabeach amaranth had not been seen on Monmouth County beaches since 1896, or elsewhere in New Jersey since 1913, but now the plant is back! It was rediscovered in July 2000 in Sea Bright, Monmouth Beach, and Sandy Hook. Biologists are not certain how the species re-colonized Monmouth County beaches. Seeds may have blown or floated over from Long Island, washed up from the Carolinas during a storm, or been long-buried in the off-shore sands used to widen the beach.
- To ensure that populations of seabeach amaranth continue to prosper on New Jersey coastal beaches, the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, New Jersey Department of Environmental Protection, and local governments are working in partnership to manage and maintain beaches in a manner that will protect this threatened species and its habitat.
- To help seabeach amaranth thrive, beachgoers should respect fencing and signs on the beach, avoid trampling any beach vegetation, and encourage coastal municipalities to coordinate with the U.S. Fish and Wildlife Service regarding beach management activities.



Seabeach amaranth (*Amaranthus pumilus*)

The plant is listed as threatened under the federal Endangered Species Act and as endangered by the State of New Jersey.

### Habitat

- Atlantic coastal beaches from New York to South Carolina
- Areas of bare, shifting sand

### Threats

- Beach erosion
- Storm damage
- Seawalls and jetties
- Sand fencing
- Beach raking
- Recreational activities
- Insect pests

### Description

- Leaves are small and dark green with red edges
- Stems are red
- Seeds begin sprouting in May
- Plants grow low and spread out
- Plants are typically 5 inches in diameter; can be up to 3 feet across
- Tiny yellow flowers later turn into seed pods
- Plants can grow until December

Contact the U.S. Fish and Wildlife Service at (609) 646-9310 if you find seabeach amaranth outside a fenced area.

Working together with you to conserve, manage, and protect seabeach amaranth.

