



Fish & Wildlife *News*



SPOTLIGHT: ENVIRONMENTAL JUSTICE

Students Find Inspiration
at Conservation Camp / 24

Bringing Some Green to
Southwest Philly / 28

A River Runs Through Me / 32

comeback

Coastal
restoration
project gives
threatened
coastal plant
another
chance.

By DR. JOANNE
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Back in 2000, Dag Madara, a geographer with the U.S. Army Corps of Engineers, New York District, was walking on Monmouth Beach in 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 piping plover as one of several environmental conservation measures performed by the Army Corps on all coastal restoration projects to help protect and minimize impacts to at-risk wildlife.

While there, 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 says.

Madara had rediscovered the federally threatened coastal plant seaside amaranth, which hadn't been seen in the region for almost a century.

Since his discovery, the plant's population has grown tremendously in the region. The return of seaside amaranth is attributed to the success of the Army Corps project and its conservation measures.

As we often do, we have partnered with the Army Corps on the New Jersey project.

At-risk wildlife, such as seaside amaranth, can play a vital role in coastal resiliency and ecosystem health.

Seaside amaranth's branches grow along the ground, holding the sand in place, which makes the coast more resistant to coastal storms.

(Previous page) Several years ago, when the project was experiencing the successful return of the American oystercatcher, a monitor associated this in part to the crew's bird knowledge.

(PHOTO BY GARRY TUCKER/USFWS)

This annual flowering plant has red stems and thick, waxy, greenish-red leaves that are somewhat reminiscent of spinach. It's native to beaches along the Atlantic Coast of the United States—from South Carolina to Massachusetts. However, over the years, the species has vanished in most of these states, including New Jersey.

Before Madara spotted the plant in 2000, 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.

World's Biggest Beach-Fill Project

The Army Corps' successful Atlantic Coast of New Jersey Sandy Hook to Barnegat Inlet Beach Erosion Control Project began in 1994. Among other things, it increased habitat and provided protection for seaside amaranth.

The project encompasses 21 miles of the Monmouth County, New Jersey, shoreline. The highly populated stretch of coast has experienced extensive erosion due to old hard structures, including a seawall, and frequent storms including Superstorm Sandy in 2012.

An eroded coast puts the shoreline community at risk for flooding from storms, so replenishing eroded sand and increasing the size of the beach helps protect the community.

To replenish the lost sand and increase the height and width of the beach berm, >>

A U.S. Army Corps of Engineers project is credited with bringing seaside amaranth back to Monmouth Beach in New Jersey. (PHOTO BY DALE SUITER/USFWS)



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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 beach goers typically sunbathe.

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

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

With funding from the Hurricane Sandy Disaster Relief Appropriation Act of 2013, the Army Corps replenished 8 million cubic yards of sand to the 18 miles of the project and completed the remaining three miles.

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

“This continued renourishment will help protect local communities, prevent damages from hurricanes and nor'easters, and benefit the economy,” Jason Shea, project manager, New York District, U.S. Army Corps of Engineers, says of the project, the world's biggest beach-fill project in terms of sand volume.

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

The work on this project is helping to protect not just seabeach amaranth but also migratory birds including the piping plover, the state endangered least tern, and the state special concern species the American oystercatcher.



Offshore measures benefit marine species including sea turtles and whales.

The Army Corps protects these species with monitoring, public education, environmental windows, and symbolic beach fencing. >>

Dag Madara rediscovered the federally threatened coastal plant seabeach amaranth, which hadn't been seen in the region for almost a century. (PHOTO

COURTESY DAG MADARA)

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Monitoring

If Madara hadn't been monitoring the beach in 2000, seabeach amaranth wouldn't have been rediscovered. Monitors also observed the return of the American oystercatcher.

Offshore monitoring ensures endangered sea turtles, as well as whales, dolphins, and seals, are not harmed during the sand dredging and placement process.

Public Education

Using beach signs to educate the public on ways they can avoid or 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.

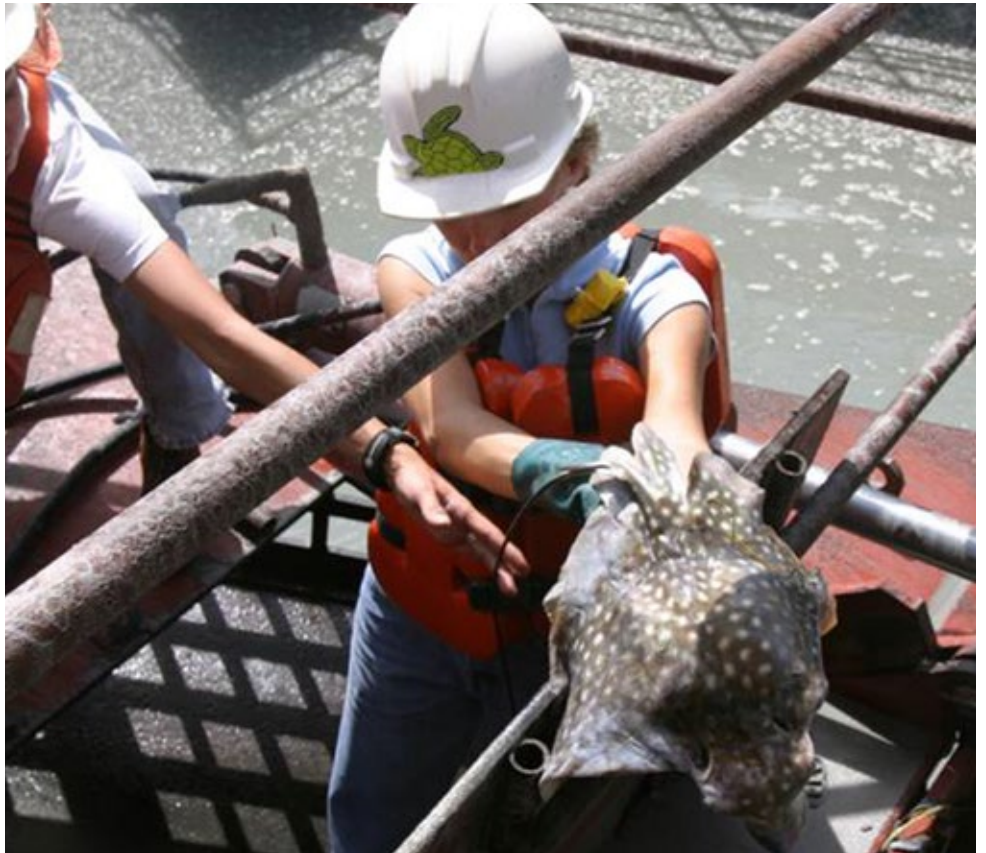
Such signs can also engage the crew.

On this project, the crew purchased binoculars and bird books after their interest was sparked in the American oystercatcher. They also made notes about their bird observations that they provided to the monitors.

Environmental Windows

Environmental windows are months out of the year when construction on a project is halted to protect at-risk species.

Piping plovers nest on the shore between March 15 and August 15, so sand placement may occur during this time only in portions of the project where piping plovers are determined not to be nesting.



Offshore monitoring ensures endangered sea turtles, as well as whales, dolphins, seals, and other wildlife, are not harmed during the sand dredging and placement process. (PHOTO BY ERDC)

Symbolic Beach Fencing

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

According to Katherine Pijanowski, biologist with 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 burying it."

Fencing provides multiple benefits, adds Peter Wepler, chief of the Environmental Analysis Branch, Planning Division, New York District, U.S. Army Corps of Engineers. "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."

Fencing installed on a beach in Long Beach Township, New Jersey, for example, resulted in a 300% increase in seabeach amaranth.

Success

Pijanowski says building beaches back provides ample space and opportunities for plants to grow and for birds to rest, forage, and nest.

Before building up the beach in New Jersey, there was barely a habitat for plants and other wildlife to thrive.

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.

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

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. □

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