U.S. Fish & Wildlife Service

Coastal Program at Delaware Bay Estuary

Delaware Bay Estuary Project Office: Delaware: **Contact:** Brian Marsh

Office Overview The Delaware Bay Estuary Project Office works through partnerships with private individuals, non-government organizations, states, municipalities, and other federal agencies to pursue conservation and restoration related to coastal resources. We provide funding, planning, technical, and on-the-ground assistance. We can work throughout the Delaware River watershed that encompasses portions of Delaware, New Jersey, New York, and Pennsylvania and we work along the Atlantic coast of Delaware and New Jersey. We have one geographic focus area for our office that encompasses the bayshores and coastlines of Delaware and New Jersey (north to the Manasquan River). Our work and partnerships for our three primary office priorities are concentrated in this one area.

Delaware and New Jersey Coastal Focus

During the next five years we plan to focus our work near the coastline of Delaware and New Jersey out to subtidal waters and up to approximately one mile inland of the head of tide. Coastal and federal trust resources related to our following top three priorities are concentrated in this area.

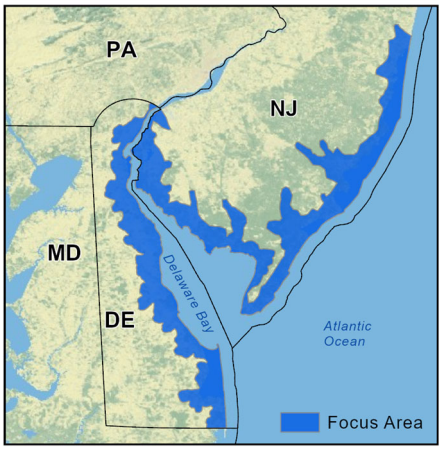
Delaware Bay shorebirds We will monitor the delicate balance between the second largest concentration of spring migrating shorebirds in North America and the food source they rely on, the eggs of the largest spawning population of horseshoe crabs in the world. Data collected on these species will be applied to ongoing conservation and restoration of shorebird foraging and roosting habitats.

We monitor the nearly 80% of the population of rufa red knot that rely on foraging habitat in Delaware Bay each spring. Photo credit: Greg Breese, USFWS

Coastal resilience and shoreline habitats We will restore and monitor shoreline habitats relied on by fish, wildlife, and coastal communities. We will partner to facilitate and promote ecologically-responsible solutions to shoreline erosion and beach degradation to enhance resilience to storms, sea level rise, and navigational impacts. Restoration projects will focus on living shorelines, strategic beach renourishment, and similar techniques.

We partner in Delaware and New Jersey to implement and assess living shoreline techniques. Photo credit: Danielle McCulloch, USFWS

Salt marsh and tidal marsh birds We will conserve, restore, and monitor the vulnerable salt marshes of Delaware and New Jersey to protect and improve the habitat of the unique and threatened variety of fish and wildlife relying on them, including at-risk saltmarsh sparrow and federally threatened black rail. DBEP staff will implement novel restoration and monitoring strategies that address the conservation of salt marsh habitat.



Target species: ***Saltmarsh sparrow, Black Rail, Black Skimmer, Ruddy Turnstone, Piping Plover, Black Duck, American Oystercatcher, Least Tern, Rufa Red Knot, Sanderling, and Willet.***

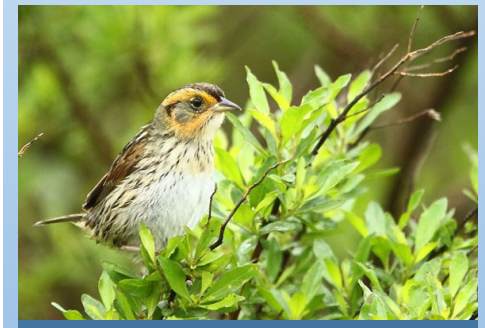
We find solutions for restoring degraded salt marsh that limit disturbance and cost. Photo credit: Kaity Ripple, USFWS

2022-2016 Conservation Targets	Upland Acres Restored	Wetland Acres Restored	Shoreline Miles Restored
	50	200	10

Upcoming Actions

Implementing low-cost methods of salt marsh restoration.

During the next five years, DBEP is working to develop and implement relatively low-cost, low-tech, and low-disturbance approaches to restoring salt marshes of Delaware and New Jersey with a variety of partners. These salt marshes have been impacted by salt hay farming, grid-ditching, tidal restriction, edge erosion, and other factors. Techniques to be implemented may include runnelling, ditch remediation, ghost forest management or other marsh migration facilitation, marsh terracing, mudflat edge stabilization, and enhancing sediment capture in mudflats.



We will work to prevent the extinction of salt marsh species highly vulnerable to habitat degradation and sea level rise such as salt-marsh sparrow Photo credit: Peter Paton, USFWS

Successful salt marsh restoration that is sustainable, replicable, and scalable requires rigorous site assessments and post-restoration data collection on vegetation, hydrologic conditions, marsh elevations,

We will monitor potential salt marsh restoration sites that are eroding on their edges, degrading on their platforms, and restricted by a lack of imigration corridors. Photo credit Kaity Ripple, USFWS

and faunal communities. We work closely with partners on these projects and share data to generate support for our restoration techniques with the regulatory conservation communities. Salt marsh restoration increases coastal resilience, improves water quality, sequesters carbon, benefits numerous fish and wildlife species, and contributes to the recovery of species of particular conservation concern such as saltmarsh sparrow and black rail.

Partnering on coastal resilience projects.

During the next five years, DBEP will implement and collect data from projects that enhance and protect shoreline habitats in Delaware and New Jersey. This work will inform how we and our partners invest in strategies to combat habitat degradation due to sea level rise, storms, and coastal alterations that cause rapid transgression of our shorelines. For example, in New Jersey approximately 70% of salt

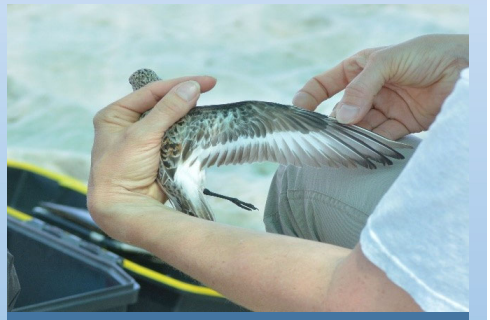
We will partner with American Littoral Society and others to build reefs and similar structures along the Delaware Bayshore. Photo credit: Danielle McCulloch, USFWS

marsh loss is due to marsh edge erosion resulting in loss of habitat for fish and wildlife and loss of the coastal protection provided by the marshes. Additionally, beaches are becoming narrower or ineffectively transgressing into degraded salt marsh, causing a loss of beach habitat for species, such as sanderling, and further degradation of marsh habitat.

Nature-based solutions to shoreline protection, including living shoreline and sediment enhancement tactics, improve coastal resilience and habitat value more effectively than bulkheads, revetments, and other traditional coastal armoring tactics.

Our work will inform how we and our strong network of partners invest in strategies to combat habitat degradation due to sea level rise, storms, and coastal alterations that cause rapid transgression of our shorelines.

Understanding and supporting shorebird use of Delaware Bay



We will monitor the condition of shorebirds in the Atlantic Flyway that rely on Delaware Bay beaches during their migrations. Photo credit: Kaity Ripple, USFWS

During the next five years, DBEP will continue to monitor the health and habitat use of Delaware Bay's shorebirds. For example, DBEP will be providing field and technical support to the State-led Delaware Shorebird Project. Through our tagging and resighting and collection of morphometric, flock, and site survey data, we obtain information on migration routes and timing, habitat use, stopover duration, and other important aspects of shorebird ecology that informs recovery efforts for the federally-listed rufa red knot and the at-risk ruddy turnstone. Our shorebird data are also used to manage the population of horseshoe crabs, the eggs of which are a primary food source to the birds and so many other fish and wildlife species in Delaware Bay.