

# Delaware Bay Estuary Project

## *Supporting the conservation and restoration of the salt marshes of Delaware Bay*

People have altered the expansive salt marshes of Delaware Bay for centuries to farm salt hay, try to control mosquitoes, create channels for boats, to increase developable land, and other reasons all resulting in restricted tidal flow, disrupted sediment balances, or increasing erosion. Sea level rise and coastal storms threaten to further negatively impact the integrity of these salt marshes. As we alter or lose the marshes we lose the valuable habitats and ecological services they provide.



DBEP works to support efforts to learn more about the techniques to conserve and restore salt marshes and support the populations of fish and wildlife that rely on them. We support new and ongoing coastal resiliency initiatives and coastal planning as they pertain to habitat restoration and conservation. We are interested in finding effective tools and mechanisms for conserving and restoring salt marsh integrity on a meaningful scale and support efforts that bring partners together to approach this challenge. The scale of the threats to salt marshes and the scale of solutions means that conserving or restoring what we have requires many partners working effectively together.

We work with partners to implement projects addressing the importance of resilient salt marsh as a buffer between wave and storm energy and the coast. Loss of these marshes results in the loss of the salt marsh habitat relied on by so many species but also causes severe erosion and storm damage to upland habitats, infrastructure, and coastal communities. We support living shoreline, land protection, planning for marsh migration, thin layer placement, and other conservation and applied science projects that benefit salt marsh.



Addressing the all-important sediment balance of salt marshes is critical for preserving their resilience. A healthy resilient marsh may be able to keep pace with erosion and sea level rise through sediment accretion and growth of vegetation. However, the delicate sediment balance of salt marshes is often disrupted by barriers to tidal influence and altered drainage onto and off the marsh resulting in sediment starved systems, excessive mudflats, or increased erosion.





saltmarsh sparrow - Scott Heron



saltmeadow cordgrass - Dana Filippini

The saltmarsh sparrow is an example of an “at risk” species relying on salt marsh in Delaware Bay. This species nests on high marsh, an area flooded by only the highest tides and storm surges and often characterized by saltmeadow cordgrass. Very small increases in the height or frequency of tidal influence in these areas can mean unsuccessful nesting. The survival of these species relies on marsh accretion keeping up with increasing sea level rise, marsh migration, or intervention through restoration.

**The Delaware Bay Estuary Project is part of the Coastal Program, a habitat conservation program of the U.S. Fish and Wildlife Service that focuses on conserving the ecological integrity of beaches, bays, estuaries, and coastal watersheds. We work through voluntary partnerships with a variety of public and private entities, such as private landowners, land trusts, municipalities, states, and other federal agencies, to enhance, restore, conserve, study, and monitor habitat for key federal trust wildlife resources in the Delaware River and Delmarva Peninsula ecosystems.**

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DBEP encourages the use of living shorelines to protect shorelines and enhance coastal resilience. Bulkheads and riprap are conventional shoreline armoring techniques that disconnect the land from the water resulting in lost fish and wildlife habitat, disrupted sediment movement and balance, and concentrated wave energy. Conversely, living shorelines can be designed to keep a connection between the land and water, create habitat, dissipate wave energy, and maintain a natural aesthetic.



mummichog - NOAA



marsh periwinkle snail - NOAA

Salt marshes are highly productive intertidal systems and especially productive along their edges with open water. The concentrated populations of forage fish species, such as mummichogs that live on the marsh and Atlantic silversides that lay their eggs at the edge of the marsh, abundant crabs and snails, and high concentrations of plankton and nutrients makes this area a unique and critical link in the food web of both the open water and uplands. This productive system supports recreational and commercial fisheries, long-legged wading birds, diamondback terrapins, and other wildlife.



diamondback terrapin - Robin Baranowski