



2013 Broadkill Watershed Wetland Health Report Card

About the Watershed

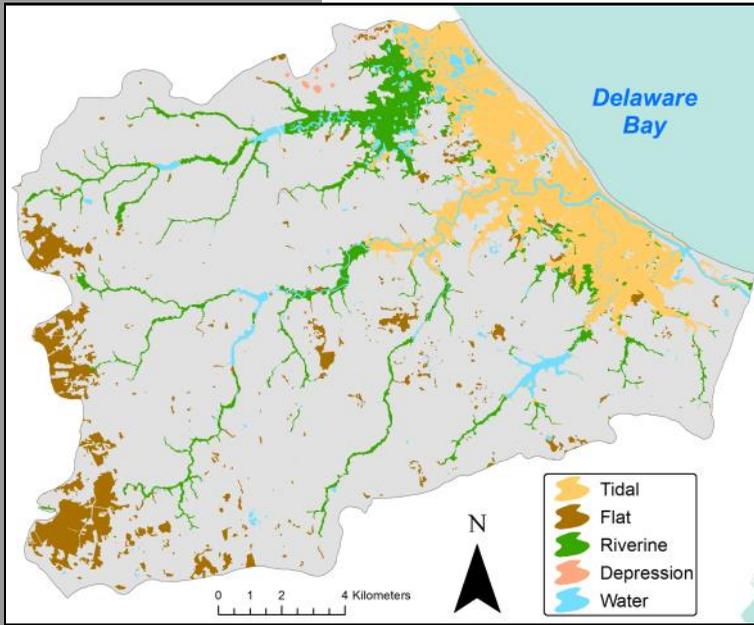
Located in Sussex County, Delaware, the Broadkill watershed encompasses 68,500 acres within the Delaware Bay and Estuary Basin and is primarily comprised of agricultural land with urban development and a wildlife refuge. The Broadkill River headwaters originate near the Town of Milton and flow 25 miles eastward towards Broadkill Beach where it outlets to the Delaware Bay through the Roosevelt Inlet.

Twenty percent of the watershed is covered in wetlands. Flat wetlands, usually forested, form the headwaters of the Broadkill River in the western portion of the watershed. Riverine wetlands follow tributaries and streams throughout the central portion of the watershed, and expansive tidal wetlands run along the Broadkill River until it reaches the Delaware Bay. Pockets of depressions, including rare Coastal Plain ponds, are scattered throughout the watershed.



A crayfish burrow found in a riverine wetland in the Broadkill watershed.

How Are Wetlands Graded?



There are many different types of wetlands in Delaware, and to accurately grade their health, they are broken into two categories based on how they receive their water supply: tidal wetlands and non-tidal wetlands.

Tidal wetlands have water moving in and out of them in cycles based on the moon's gravitational pull (the tides), and the Mid-Atlantic Tidal Wetland Rapid Assessment Method (MidTRAM) is used to grade them. The tidal wetlands that are assessed are called estuarine, or saltwater wetlands. Non-tidal wetlands are all freshwater and include riverine, flat and depression wetlands. They receive their water from rain, snow and underground springs. The Delaware Rapid Assessment Procedure (DERAP) is used to grade them.

In both methods, biologists look for and tally living and non-living stressors (also called environmental indicators) that keep a wetland from functioning properly. Throughout the Broadkill River watershed, a total of 94 sites were assessed and graded in 2010.

Environmental Indicators of Wetland Health



Clear cutting of trees.

Wetland Habitat

Habitat indicators that cause a wetland's grade to decline include: forest harvesting, mowing, farming or grazing of the land, invasive species, and roads through the wetland.

The most common stressors to habitat in this watershed were the presence of invasive plant species and forestry activity, which includes the clear cutting and selective cutting of trees.



Ditching of a tidal wetland.

Wetland Hydrology

Changes to water movement can cause a wetland's grade to decline. Indicators include: ditching, stream alterations, dams, stormwater inputs, and filling or excavation.

The most common stressors to hydrology in this watershed were the excavation, filling, and ditching of wetlands to remove water.



A road in the buffer of the wetland assessment area.

Buffer

A buffer is a zone of land just outside of the wetland that has the ability to protect a wetland from disturbances occurring in the surrounding upland landscape.

The most common stressors in the buffer area in this watershed were human related, and included the presence of development, agriculture, and roads.



Grade by Wetland Type



Habitat



Hydrology



Buffer

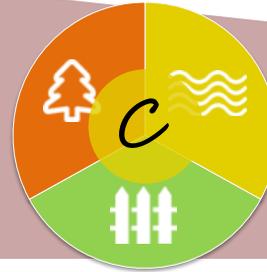
Wetland Health Scale:



Tidal Wetlands - Brackish or Saltwater

Tidal wetlands are regularly flooded by the tides, and are some of the most productive ecosystems on earth, supplying habitat for important fisheries. They provide protection for coastal populations by reducing flooding and storm damage.

Common Problems: *Invasive plants, low plant cover, and ditching*



Riverine Wetlands

Riverine wetlands occur along streams or rivers and provide storage for floodwaters and groundwater. The water that moves into these wetlands is cleaned before it moves downstream. They form corridors of valuable wildlife habitat.

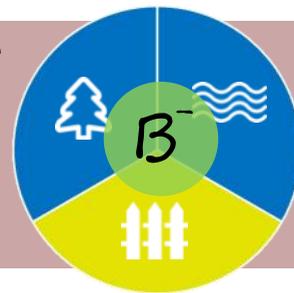
Common Problems: *Invasive plants, forestry, stream channelization, and agriculture and development in the buffer*



Flat Wetlands

Flat wetlands are typically located at the upper reaches of the watershed. They are seasonally wet and often appear dry on the surface. They absorb precipitation and filter water slowly into streams and groundwaters.

Common Problems: *Invasive plants, forestry, fill, ditching, and agriculture and development in the buffer*



Depression Wetlands

Depressions are isolated shallow pools of water that occur in low lying areas. They are seasonally wet and provide critical habitat for amphibians. *Depression wetlands made up less than 1% of all wetland types in this watershed. Therefore, we did not have enough information to assign them a grade for this watershed.*



Did You Know?

In general, no matter where you stand in Delaware you are about a mile away from a wetland. Wetlands make up one quarter of Delaware's land area, but we have lost over half of them since the early 1700s.

The Broadkill Watershed's Wetlands Need Your Help!

Consider supporting Delaware's valuable natural resources by..

Managing invasive species on your property by removing and replacing them with Delaware natives. Allow native plants to grow and thrive alongside wetlands, rivers and streams for cleaner water and erosion protection. For a list of Delaware's invasive plant species please visit: delawareinvasives.net

Adding nature-based landscaping designs and green infrastructure on your property to control erosion and water runoff and improve water quality. Consider installing rain gardens or rain barrels in your yard, living shorelines in tidal areas, or planting trees in open areas. For more information on these practices and possible funding sources, please visit de.gov/greeninfrastructureprimer.

Protecting and maintaining buffers around your wetlands. Buffers are natural planted strips along wetlands that can help wetlands stay in good health. They trap sediments and excess nutrients and filter pollutants before they reach wetlands. For more information about buffers, please visit de.gov/buffers.

Preserving or restoring wetlands on your land. Over half of the wetlands in this watershed are privately owned. This means we need your help in maintaining and improving our wetlands and the natural benefits they provide. To find out about your restoration options, please visit de.gov/wetlandrestoration.

Supporting better wetland protection by contacting your local decision makers. Activities in non-tidal wetlands are not regulated by the State of Delaware, and every additional wetland filled or destroyed leads to less clean water, fewer wildlife habitats, and less flood protection for us all. de.gov/wetlandprotectionguidebook



More Information

Please visit de.gov/delawarewetlands to view the entire report and learn more about the assessment methods.

**Delaware Department of Natural Resources and
Environmental Control
Division of Watershed Stewardship
302-739-9939**

This project has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement CD-96312201-0 to Delaware Department of Natural Resources and Environmental Control. The contents of this document do not necessarily reflect the views and policies of the Environmental Protection Agency, nor does the EPA endorse trade names or recommend the use of commercial products mentioned in this document.

Delaware Wetlands

