



2014 *Christina Watershed* Wetland Health Report Card

About the Watershed

The Christina watershed is located in New Castle County, Delaware, and extends north and west into Maryland and Pennsylvania. In Delaware, this watershed includes the cities and towns of Newark, Christiana, Newport, and Wilmington.

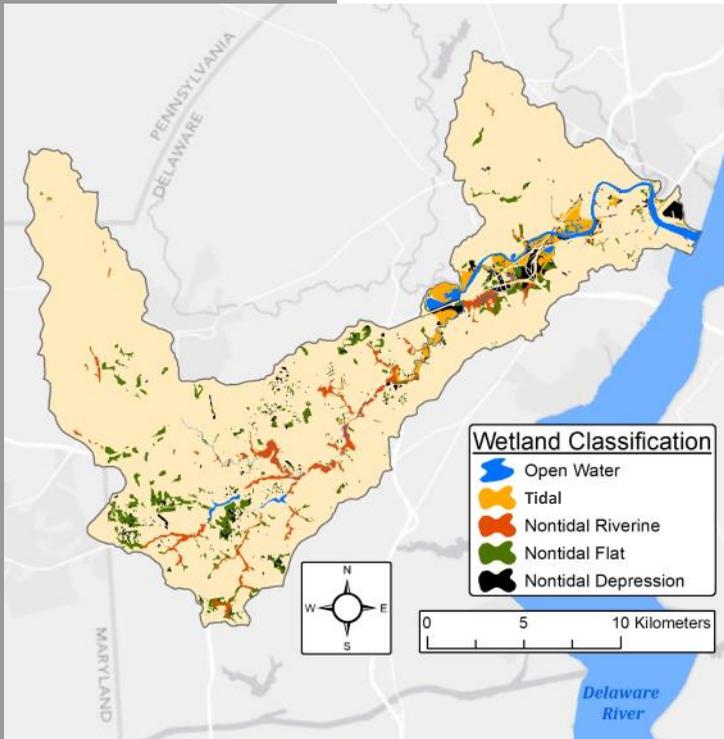
Approximately 46% of the wetlands in the watershed have been filled or otherwise lost since the early 1700s. As populations grew and heavy industries expanded, many wetlands in the eastern half of the watershed were diked, drained, or filled to allow for this development.

Wetlands in this watershed were found to have an overall health grade of D. Although highly impacted, these wetlands are able to provide some natural benefits, but at a reduced rate, such as flood storage, water purification, and educational opportunities.



Wilmington, DE waterfront.

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 prevent a wetland from functioning properly. **Throughout the Christina River watershed, a total of 104 sites were assessed and graded in 2011.**

Environmental Indicators of Wetland Health



The invasive narrowleaf cattail.

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 such as phragmites, purple loosestrife, narrowleaf cattail and mile-a-minute.



A point source discharge.

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 diking, dredge soil piles and point source discharge.



A mowed area 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 the presence of development, impervious surfaces and large mowed areas.



Grade by Wetland Type



Habitat



Hydrology



Buffer

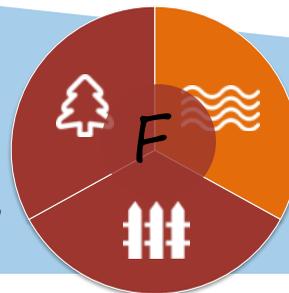
Wetland Health Scale:



Tidal Freshwater Wetlands

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.

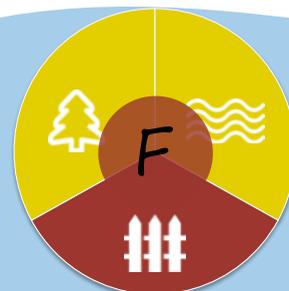
Common Problems: *Invasive plants, diking, roads and commercial development, and barriers to landward migration*



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.

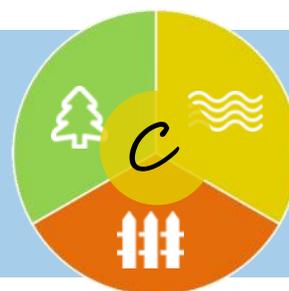
Common Problems: *Invasive plants, stream channelization, spoil piles and yard waste, and development in the buffer*



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, stormwater inputs, 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 a small amount 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?

The State of Delaware only regulates tidal wetlands and freshwater wetlands of 400 acres or more, which leaves the majority of freshwater wetlands unregulated.

The Christina Watershed's Wetlands Need Your Help!

What you can do:

Plant native trees in a wetland buffer on your property or install a rain garden to increase your buffer. For information on rain gardens visit: raingardensforthebays.org

Manage [invasive species](#) on your property by removal and only plant native species. A great place to purchase native plants is at the University of Delaware during their spring and fall native plant sales. For information on dates and times visit: canr.udel.edu/udbg/events-education/annual-plant-sale/

Participate in the annual Christina River Clean Up held by the Partnership for the Delaware Estuary, DNREC, and the Christina Conservancy. For more information visit: www.christinarivercleanup.org

Use a rain barrel to collect rainwater to reuse around your home, helping to reduce runoff into the watershed. For more information on rain barrels contact Sharon.Webb@state.de.us or visit delawarewatersheds.org/.

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.

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Environmental Control**
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302-739-9939

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Delaware Wetlands

