

Wetlands and Watersheds

"When I would recreate myself, I seek the darkest wood, the thickest and most impenetrable and to the citizen, most dismal, swamp. I enter a swamp as a sacred place, a sanctum sanctorum."

- Henry David Thoreau. *Walking*. 1862

Wetlands 101

Wetlands are considered some of the most important habitats on the planet for plant and wildlife conservation. There are many different types of wetlands, including marshes, swamps, bogs, and fens, and almost as many different systems for classifying wetlands. The essential features of all wetlands are summed up in EPA's definition:

"A wetland is an area that is regularly saturated by surface water or groundwater and is characterized by a prevalence of vegetation that is adapted for life in saturated soil conditions"

According to this definition, wetlands don't have to be wet all the time. Yet, most have standing water or wet soils at least some part of the growing season. The soggy nature of wetlands and perception of them as mosquito habitats with no real value resulted in their large-scale drainage in the 1700s and into the 1900s for agriculture, mosquito control, water diversion projects and urbanization. Wetland loss has been significant in the US:

- In the early 1600s, the lower 48 US states had an estimated 221 million acres of wetlands. By the mid-1980s, 53% of these wetlands had been lost.
- During the 1780s to the mid 1980s, 6 states lost more than 85% of their wetland coverage, while an additional 16 states lost 50% or more.

Today, wetlands are still vulnerable to loss or inadvertent destruction related to land development and other activities. The Clean Water Act requires land developers to take all necessary steps to avoid impacting wetlands, and requires that created wetlands be constructed to replace any wetlands that are destroyed if these impacts are unavoidable.

However, being regulated under the Act does not necessarily mean a wetland will never be filled and developed. Also, the Act does not apply to all wetlands, it only regulates certain activities, and there have also been documented problems with created wetlands. This leaves a lot of opportunity for wetland loss and destruction to continue.

The Wetlands and Watersheds Connection

Wetlands are important to the watersheds we all live in because they are part of the natural system that provides clean water, stores and slows down floodwaters, and protects coastal shorelines from erosion and property damage. Wetlands are also habitats for wildlife that simultaneously provide opportunities for human recreation, such as birdwatching, hunting, fishing, and hiking. Scientists have begun to assign economic values to the important roles of wetlands:

- Constanza (1997) estimated the global value of wetland ecosystems at \$14.9 trillion
- In a recent study *Valuing New Jersey's Natural Capital: An Assessment of the Economic Value of the State's Natural Resources*, wetland services were valued at \$9.4 billion per year for freshwater wetlands and \$1.2 billion per year for saltwater wetlands.

At the Center, we believe that the watershed is the ideal scale for managing wetlands and other natural areas. Municipalities can regulate land development activities in their watersheds through zoning and local ordinances that influence whether polluted runoff can be directed into wetlands, and can even fill the gaps in state or local protection. The watershed approach allows communities to make better choices on preserving the highest quality wetlands, protecting the most fragile ones, addressing their water resource problems, and allocating lands to their most appropriate uses. Learn more about wetlands and watersheds using the Center resources below.

Resources

The Wetlands & Watersheds article series is available on our [Free Downloads](#) page:

- Article 1: Direct and Indirect Impacts of Land Development on Wetland Quality. This article reviews the direct and indirect impacts of urbanization on wetlands, and describes the benefits

wetlands provide at the watershed scale.

- Article 2: Using Local Watershed Plans to Protect Wetlands. This article presents detailed methods for integrating wetland management into the local watershed planning process.
- Article 3: Adapting Watershed Tools to Protect Wetlands. This article describes 37 techniques for protecting wetlands through local programs and ordinances.
- Article 4: A Local Ordinance to Protect Wetland Functions. This article outlines the key elements of an effective ordinance to protect wetlands from the indirect impacts of land development, and provides adaptable model ordinance language.
- Article 5: The Next Generation of Stormwater Wetlands. This article revisits the design of stormwater wetland systems based on lessons learned from the field, and presents new concepts and design objectives for stormwater wetlands.
- Article 6: The Importance of Protecting Vulnerable Streams and Wetlands at the Local Level. This article makes the case for expanded local protection of vulnerable streams and wetlands that may not be fully protected by state or federal law due to their perceived isolation from perennial or navigable waters. This article summarizes state and local approaches to closing this gap.

[The Wetlands-At-Risk Protection Tool \(WARPT\)](#) - The WARPT is a process for local governments that acknowledges the role of wetlands as an important part of their community infrastructure, and is used to develop a plan for protecting at-risk wetlands and their functions. The basic steps of the process include quantifying the extent of at-risk wetlands, documenting the benefits they provide at various scales, and using the results to select the most effective protection mechanisms.

For the most up to date information about wetlands, check out these other resources:

- The [Association of State Wetland Managers](#)
- Subscribe to ASWM's newsletter [Wetland Breaking News](#)
- [EPA Wetlands](#)
- Subscribe to the Environmental Law Institute's [National Wetlands Newsletter](#)
- Society of Wetland Scientists Journal [Wetlands](#)