What Are Wetlands?

Natural wetlands are lands which, due to geological or ecological factors, have a natural supply of water—either from tidal flows, flooding rivers, connections with groundwater, or because they are perched above aquifers or potholes. Wetlands are covered or soaked for at least a part, and often all, of the year. This makes wetlands intermediaries between terrestrial and aquatic ecosystems. They are neither one or the other, and yet they are both.

The term "wetlands" encompasses a wide variety of aquatic habitats including swamps, marshes, bogs, prairie potholes, flood plains, and fen. Three characteristics that all wetlands have in common are:

- Water: In order for an area to be classified as a wetland the top 12 inches of soil must be saturated with water for at least 15 days during the growing season.

- Hydric Soils: Wetland soils are different than the soils found in dry lands. Wetland soils are called hydric soils because the spaces between each grain of soil is filled with water. Wetland soils are ***anaerobic***. Anaerobic means that the soil lacks oxygen. The color of wetland soils is usually dark brown to black due to the presence of mineral or organic matter. Wetland soils may also have a rotten egg smell due to the presence of sulfur.

- Hydrophytic vegetation: Wetland plants have adaptations that allow them to live in an area that is saturated with water at various times in the year. Saltwater wetland plants have special adaptations that allow them to tolerate varying degrees of salt. Wetland plants are called ***hydrophytes***.

Types of Wetlands

Marsh

A freshwater marsh is an inland area inundated with 1–6 feet (33–200 cm) of water, containing a variety of perennials (mostly grasses), forbs (flowers), and bushes, rather than trees, as in swamps.

Marshes have an interesting mix of plant and animal life, one that effectively demonstrates the interconnectedness of living things. They are home to yellow-headed and red-winged blackbirds, herons, egrets, rails, bitterns, moorhens, ducks and geese. Most migratory species, in fact, rely on a network of wetlands to get from their southern habitats to nest sites further north.

Muskrats are central to many marshes, keeping aggressive plants in check and crafting bird protection by carving out habitat. Minks and otters frequent wetlands. Raccoons, opossums, even moose can be found foraging around marshes, particularly when water levels drop. Marshes also host frogs, turtles and snakes, salamanders, and an immense variety of insects, including aquatic, flying, and grazing insects.

In Pennsylvania vegetated wetlands have been divided into 3 main classifications; emergent wetlands, shrub wetlands, and forested wetlands. A marsh is an emergent wetland.

A **Marsh** is usually found near a river, lake or tidal waters. Marshes are subject to periodic flooding, and the water level can change drastically in a short amount of time. The boundaries of a marsh are not well defined, and in draught, a marsh can completely dry up. Marshes are overgrown with coarse grasses, sedges and rushes.

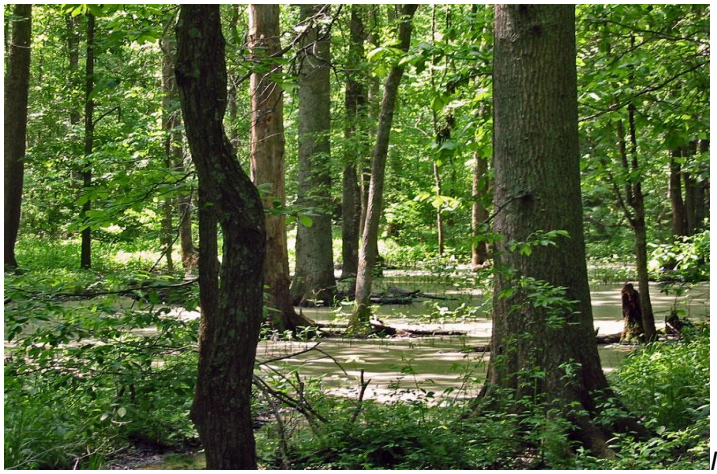
Riparian Marsh

Marshes that occur along rivers are called riparian marshes. These marshes serve two ecological roles: to absorb excess water when river levels are high and to release water when river levels are low. These balancing forces help prevent floods and droughts.

However, for the past 100 years mankind has straightened and deepened rivers in order to make them more accessible for commerce. The unfortunate side effect is the loss of riparian marshes. Today, very few riparian marshes are left. Some scientists believe that the great Mississippi River flood of 1993 was worsened, in part, by the loss of these wetlands.

Swamp

Swamps are slow moving streams, rivers or isolated depressions that host trees and some shrubs.



In Pennsylvania, swamps are either shrub wetlands (dominated by low, woody plants such as willow and viburnum), or forested wetlands that are dominated by large trees over 20 ft tall. These trees include red maple, swamp white oak, and black spruce.

A **swamp** is essentially a wooded marsh. Unlike marshes, swamps can support trees, tall shrubs, herbs and mosses. Swamps are covered with still or gently flowing water during wet seasons. Swamps have trees (for example, cypress trees in freshwater and mangrove trees in salty water) and woody shrubs rather than grasses and herbs. Swamps are found in low-lying areas near rivers or coastal areas. Examples include the Everglades in Florida.

Bog

A bog is a peat-accumulating wetland. Some shrubs and evergreens grow in bogs, as do mosses. Most water comes from precipitation. There is usually no direct inflow or outflow of water.

Bogs are found in the northeastern and northwestern corners of Pennsylvania. Plants associated with bogs include sphagnum moss, cranberry, blueberry, pitcher plant, black spruce and tamarack.

A **peat bog** is a poorly drained area that is covered by mats of moss, which slowly decompose in successive layers and eventually form a material called peat. There are 2 types of peat bogs; **bogs** and **fens**. The water of a bog is much more acidic than that of a fen, due to the larger quantities of sphagnum moss and the more advanced process of decomposition. The vegetation of a peat bog is mainly sedges, spruce and low-growing members of the heath family.
Most of the bog's water comes from rain.
A fen is a fresh water peat wetland covered mostly by grasses, sedges, reeds, and wildflowers in high pH (alkaline) ground water. Some species of carnivorous plants are also found in bogs.
There are only a few animals that are found in bogs. These include the endangered bog turtle, red deer, dragonflies, and birds such as grouse and plover.

Prairie Pothole

A prairie pothole is a wetland area found in the northern Great Plains. These shallow or bowl-like depressions have variable wetness. They are often used for breeding by birds. Prairie potholes are not wet year-round.

According to a new report, wetlands in the Prairie Pothole Region declined by an estimated 74,340 acres between 1997 and 2009 – an average annual net loss of 6,200 acres.

Termed America's "duck factory," this formerly glaciated landscape is the most productive area for nesting waterfowl on the continent, perhaps the world. The region also provides stopover habitat for migratory waterfowl, shorebirds, waterbirds and songbirds.

WETLANDS AT WORK

Wetlands give the world a lot of "free services." Here's a look at some of the important functions they perform.

Flood Busters

An easy and cheap way of controlling floods is to leave wetlands in their natural state. That's because wetlands act like giant, shallow bowls. Water flowing into these "bowls" naturally loses velocity as it collects and spreads out. Wetland vegetation helps to slow down fast-moving water too. As a result, flood damage to developed areas near wetlands is often much less than damage to areas located near wetlands that have been drained and filled.

Silt Trappers

When flood waters are slowed by wetlands, the silt and other sediments they carry settle out among the roots and stems of wetland plants. This helps to protect streams, lakes, and other bodies of water downstream, from a build-up of sediment that could otherwise clog aquatic animals' gills and bury their eggs. It also helps protect water supplies from pollutants and other impurities. That's because wetland plants can take up and use nutrients and chemicals that the silt may contain. If it weren't for wetlands, these impurities might eventually contaminate rivers, lakes, groundwater, and other water supplies – some of which are used as sources of drinking water.

Storm Breakers

Farms, forests, and buildings that are located behind wetlands along the seashore and large lakes often fare much better during storms than those that aren't. Wetlands serve as buffers between the winds and waves of storms and the areas beyond. But "taking the punishment" isn't all wetlands do during storms. They also bind soil and help to keep it from eroding. Mangrove swamps are particularly good at this. In fact, certain islands cleared of their mangrove swamps have become so severely eroded that they're no longer visible above the ocean's surface.

WETLANDS AND WILDLIFE

Acre for acre, there is more life in a healthy wetland than there is in almost any other kind of habitat. These productive places can support huge numbers of insects, fish, birds, and other animals. Below is a rundown of some of the ways wildlife uses wetlands.

Migration Vacations

If you visited a wetland in fall or spring, chances are you'd see many kinds of migrant birds. And depending on exactly where you were, you could see hundreds or even thousands of them: ducks and geese, herons and egrets, sandpipers and plovers, maybe even eagles and ospreys. These and other birds converge on wetlands on their way to their winter or summer homes. Here they "refuel" on the rich food supply before continuing on their journeys. (Many birds nest and winter in wetlands too – but the bird population of most wetlands goes way up during migration.)

Natural Nurseries

There's another segment of wetland society for which wetlands are vitally important temporary homes. These are the young of certain fish, crabs, and other creatures that spend their earliest days in wetlands before moving on to open water. The thick vegetation of a wetland is a good place to hide, and the rich food supply gets growing animals off to a healthy start.

Havens for Rare Ones

Wood storks, snail kites, whooping cranes, and American crocodiles are all endangered species – and they all live in wetlands. In fact, about 35 percent of all of the animals and plants listed as threatened or endangered in the United States either live in wetlands or depend on them in some way. That means that more than a third of the nation's rare animals and plants are inseparably linked to areas that, altogether, make up only about five percent of the total land area in the lower 48 states. This fact doesn't seem to leave room for much optimism – especially since wetlands are still being dredged, drained, and filled in for farms, houses, and other developments. But wetlands are getting some protection.

Interesting Wetland Facts

More than one-third of the federally listed species on the Endangered Species Act rely directly or indirectly on wetlands for their survival.

Have you ever eaten cranberry sauce or drank cranberry juice? If you have, you've eaten food that was grown in a bog. Cranberry shrubs are small bushes that grow best in wetland bogs.

Many of the birds that live in wetland areas have long, thin legs. Egrets, herons, and flamingos can all be found in wetlands. These birds' long legs help them wade through the shallow water, looking for fish, frogs, and other prey.

Wetlands are found all over the world. There are wetlands on every continent, except Antarctica. Canada has more wetland areas than any other country in the world.

Two-thirds of all wetlands in the United States are in Alaska.

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