

AN INTRODUCTION TO WETLANDS

The term “wetland” describes what are more commonly known as marshes, bogs, swamps, wet meadows, and shallow ponds. There are several technical definitions of wetlands. For regulatory and legal purposes, the Commonwealth of Pennsylvania (25 Pa. Code Chapter 105) uses the following:

“Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions....”

The Water Cycle

Water continually circulates in our environment. This cyclic movement of water is called the hydrologic (water) cycle. Water evaporates from the oceans, lakes, streams, and soils to become part of the vapor of the atmosphere where it condenses to form clouds. Rain, snow, and other forms of precipitation return the water to the earth’s surface. Water that reaches the ground collects in natural basins where it is stored. It also flows over the terrain, finding its way to creeks and streams, or it soaks into the soil and joins the groundwater reserve. From the heart of the earth, groundwater can discharge to produce seeps and springs that feed our wetlands. Regardless of its origin, water that collects on a site frequently, or remains there long enough, may create special habitats called wetlands.

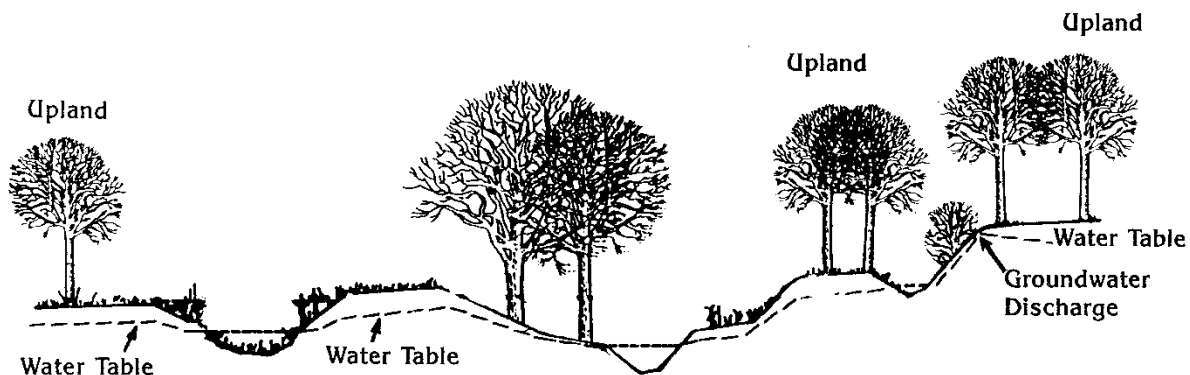
Wetland Values and Functions

Many plant and animal species are entirely dependent upon wetlands for survival. Animals spawn, nest, breed, rest, and raise their young in wetlands. Plants find suitable conditions to germinate, grow and flower there.

Wet environments, together with the proper nutrients, often result in an abundance of vegetation. This mass of plant material traps the sun’s energy and is a driving force in the wetland. Due to their great productivity, wetlands are rich with diverse species, a phenomenon known as biodiversity. The large number of species dwelling in some types of wetlands makes them vast libraries of genetic material.

Wetlands also function to improve water quality, add to a healthy environment and aid humans in a variety of ways. They help control flooding and assist in purifying water.

Schematic Diagram Showing Wetlands and Uplands on the Landscape



Schematic diagram showing wetlands, and uplands on the landscape. Note differences in wetlands due to hydrology and topographic position.

Wetland Identification

Wetlands are identified by unique soils (called *hydric soils*), by plants adapted to life in wet environments (*hydrophytic vegetation*) and by the presence of water (*hydrology*) during the growing season.

The majority of wetlands in Pennsylvania are inland, freshwater areas not subject to tidal influence. However, very significant wetlands occur in portions of Erie, and tidal regions of Delaware, Bucks, and Philadelphia counties. Both coastally and inland in Pennsylvania, wetlands serve areas well beyond their boundaries. [For example, local wetlands act as sponges, absorbing heavy rainfall and preventing downstream flooding.]

Wetland Types

Several types of wetlands have been described by biologists, based on their vegetation. They include:

- **Forested Wetlands** – As the name implies, these are wet habitats where large woody trees (over 20 feet in height), such as silver maple, river birch, black gum, and green ash find a home. Nearly 221,000 acres of the state's wetlands are forested wetlands.
- **Scrub-shrub Wetlands** – These wetlands are inhabited by spicebush, highbush blueberry, winterberry, alder, and willows, to name a few. This type of wetland is also dominated by small trees less than 20 feet in height. Nearly 139,000 acres of Pennsylvania's wetlands are shrub communities.
- **Emergent Wetlands** – Wetlands that are vegetated by grasses, sedges, rushes and other herbaceous plants that emerge from the water or soil surface. Emergent wetlands are only one-third as abundant as forested wetlands and only one-half as common as the scrub-shrub types. About 14 percent of Pennsylvania's wetlands are emergent wetlands.

Pennsylvania Gains

In the past, many acres of wetlands were lost that once functioned for the benefit of the state. Because Pennsylvania values wetlands and, therefore, does not want to continue destroying them, they are protected by both federal and state laws. Since 1990, Pennsylvania has increased its wetland acreage by almost 4,000 acres. The highly successful Partners for Wildlife Program, managed by U.S. Fish and Wildlife Service, and the Wetland Reserve Program, implemented by Natural Resources Conservation Service, have contributed greatly to the commonwealth's wetlands resource. These voluntary landowner assistance programs demonstrate the high level of interest for the restoration of our natural resources.

Initiatives, such as the Growing Greener Grant Program, along with a greater emphasis on watershed management, will undoubtedly enhance the restoration and protection of these valuable resources.

For more information, visit
www.dep.state.pa.us, keyword: Wetlands

or contact:

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