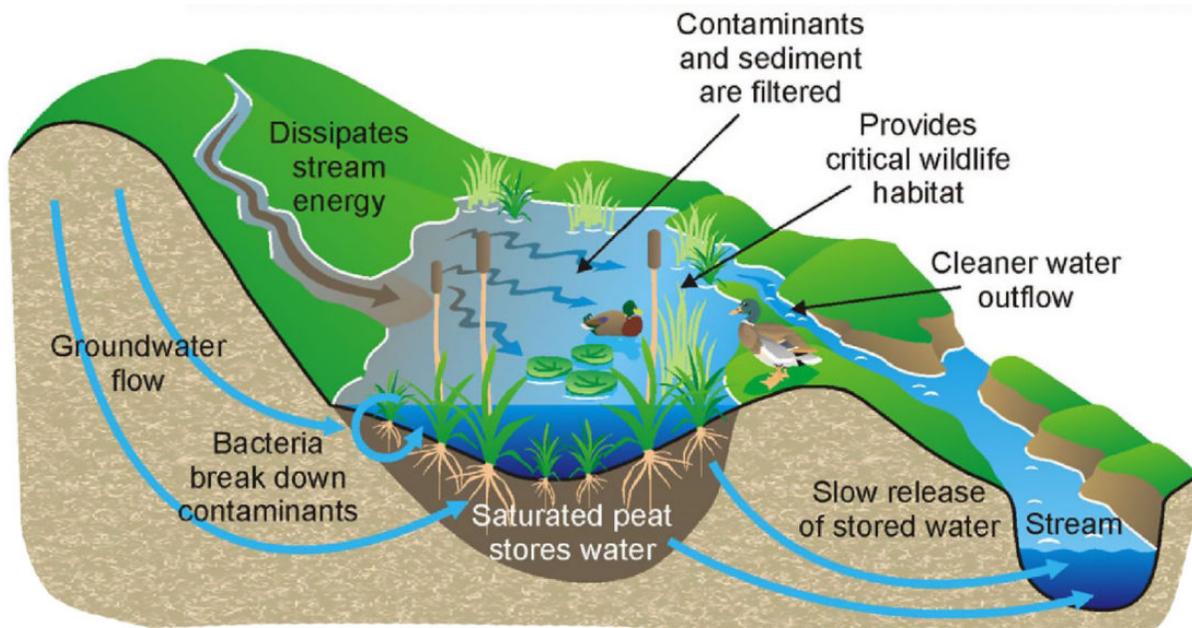


More About Wetlands

DID YOU KNOW... *Wetlands play such a huge role in maintaining water quality that they are often referred to as “nature’s kidney”?* Wetlands have the extraordinary ability to filter water by removing sediments, toxins, and other pollutants from surface water. In turn, wetlands protect other waterways (rivers, streams, lakes, etc.) from contamination and excess nutrients.



Graphic by [Fontenelle Forest](#)

What exactly is a Wetland?

A **wetland** is a distinct type of ecosystem that is defined by the presence of water (think “wet land”). In wetlands, water is near or above the soil level for at least part of the year, and sometimes all year long. This **ecosystem** is unique because it combines two habitat elements—land and water—in a way that sustains an extremely diverse range of organisms. **Wetlands are considered one of the most biologically diverse and productive habitats in the world.** From migratory birds and amphibians, to beavers and bugs, wetlands are responsible for supporting so many unique creatures. And wetlands do all this while operating as a giant water filter!

We categorize different types of wetlands by their **hydrology** (water distribution and movement), soil and water chemistry. The most common types of wetlands are **bogs**, **marshes**, **fens**, and **swamps**.

BOGS



Photo by [Joshua G. Cohen](#)

- ★ Dominated by **sphagnum moss**. The moss is responsible for acidifying the surrounding water (as low as pH 3.0).
- ★ Water is acquired through rainfall only.
- ★ Characterized by dense, low oxygen and nutrient poor soils.
- ★ Support carnivorous plants as well as important food crops like cranberries.

MARSHES



Photo by [Matthew J. Lewis, Michigan Aerospace Corporation](#)

- ★ Dominated by **grasses, sedges and forbs**.
- ★ Regular inflow of water, or seasonal flooding during high water periods.
- ★ Marshes typically serve as a transitional zone between drier uplands and other aquatic systems like streams, lakes, and ponds.

FENS



Photo by [Joshua G. Cohen](#)

- ★ Dominated by sedges, grasses, forbs (broadleaf flowering plants), and some trees and shrubs.
- ★ Water is acquired from groundwater that seeps through the bedrock.
- ★ Characterized by the accumulation of **peat** (decomposed organic matter) over calcareous, dolomitic soils, or bedrock, that influence the pH.

SWAMPS



Photo by [Aaron P. Kortenhoven](#)

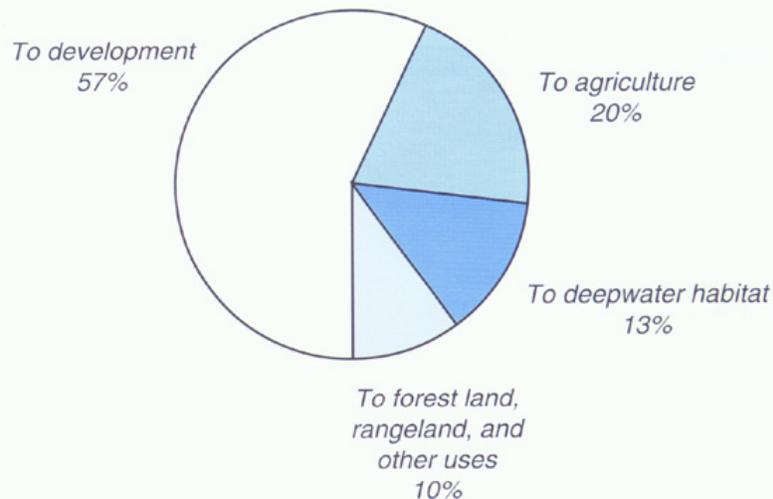
- ★ Trees and shrubs are dominant, and contribute to the high canopy cover (typically over 50%).
- ★ Constant inundation of water or seasonal flooding.
- ★ Poorly drained, mineral soils.
- ★ Swamps are typically located near streams, rivers, or lakes.

Disappearing Wetlands

Before Europeans settled in North America, there were an estimated **220 million acres of wetlands** present throughout the continental United States. However, that number had dwindled down to about 103 million acres by the mid-1980s (about a 54% loss). [More than 80% of West Virginia's wetlands have been lost.](#) That is an incredibly devastating number, especially when you remember how much life these habitats support and the role they play in keeping our waters clean. We also now understand how valuable wetlands are for preventing floods and storing atmospheric carbon.

More than half the wetlands converted to other uses from 1982 to 1992 were taken by development.

Source: USDA Natural Resources Conservation Service, 1992 National Resources Inventory.



Like many other natural resources throughout history, wetlands were being destroyed years before their environmental importance was fully realized. The **Clean Water Act of 1977** was one of the biggest steps towards protecting our water.

[Check out the History of Wetlands Protection in The United States](#)

Support Wetland Ecosystems

Wetlands need your help! There are many ways you can support wetland ecosystems.

- ★ Visit and learn more about wetlands to better understand their diversity and ecosystem services they provide.
- ★ Talk to your neighbors and local community members about monitoring/protecting wetlands in your neighborhood.
- ★ Avoid the use of fertilizers, pesticides, and herbicides near wetlands on your property.
- ★ Reduce pollution that will impact wetlands.
- ★ Make a [rain garden](#), to reduce and filter stormwater, and provide wetland habitat.
- ★ Encourage others to learn more about how to protect the wetlands on their property.
- ★ Get involved in with groups that center their mission around wetland protection and stewardship.

[Watsonville Wetlands Watch](#) has educational content and lesson plans centered around wetlands, their diversity, and stewardship.

[Project WET](#) is an international organization focused on water education, including wetlands, with programs throughout the United States. In West Virginia, Project WET is coordinated through the WV Department of Environmental Protection. Project WET workshops in WV are free to attend.



project **WET**

WATER EDUCATION TODAY

Wetland Habitats in West Virginia

[Cranberry Glades Botanical Area](#) is home to one of the largest wetland areas right here in Pocahontas County, West Virginia. This botanical wonderland features five small bogs! It is a part of the **Monongahela National Forest**. Visit this national natural landmark and check out the extraordinary life that this habitat supports.

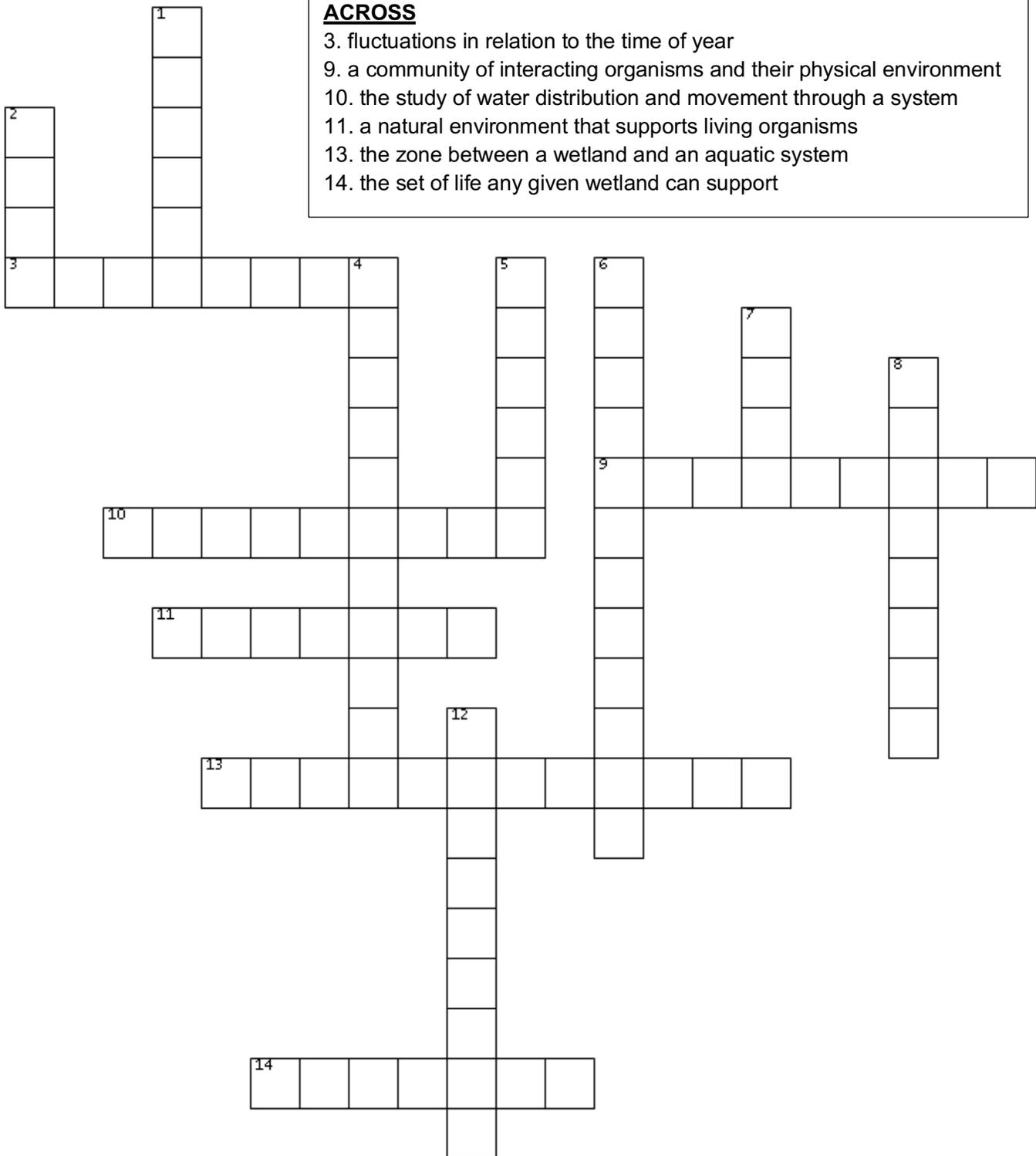


Cranberry Glades Boardwalk; Photo courtesy of USDA

[Canaan Valley](#) is a National Wildlife Refuge in Tucker County, WV that is home to 23 different wetland habitats – including bogs, shrub swamps and wet meadows. Canaan Valley contains the largest complex of wetlands in the state of West Virginia, approximately 9,000 acres in total.



Canaan Valley; Photo courtesy of U.S. Fish & Wildlife Service



ACROSS

- 3. fluctuations in relation to the time of year
- 9. a community of interacting organisms and their physical environment
- 10. the study of water distribution and movement through a system
- 11. a natural environment that supports living organisms
- 13. the zone between a wetland and an aquatic system
- 14. the set of life any given wetland can support

DOWN

- 1. a forested wetland characterized by poorly drained mineral soils and proximity to rivers and streams
- 2. a type of wetland characterized by dense, nutrient poor soils that support carnivorous plants
- 4. laws put into place to protect the dwindling wetlands
- 5. an organ that shares similar capabilities with wetlands in that they can filter out toxins
- 6. efforts made to protect what wetlands we have left
- 7. an open wetland characterized by the accumulation of peat over calcareous, dolomitic soils or bedrock
- 8. a habitat type that marries land and water to supports a diverse ecosystem
- 12. these types of birds relay heavily of wetlands during a critical time of the year

ANSWER KEY

Wetlands - a habitat type that marries land and water to supports a diverse ecosystem

Hydrology - the study of water distribution and movement through a system

Bogs - a type of wetland characterized by dense, nutrient poor soils that support carnivorous plants

Migratory - these types of birds relay heavily of wetlands during a critical time of the year

Habitat - a natural environment that supports living organisms

Swamps - a forested wetland characterized by poorly drained mineral soils and proximity to rivers and streams

Fens - an open wetland characterized by the accumulation of peat over calcareous, dolomitic soils or bedrock

Seasonal - fluctuations in relation to the time of year

Ecosystem - a community of interacting organisms and their physical environment

Conservation - efforts made to protect what wetlands we have left

Diverse – describes the set of life any given wetland can support

Kidney - an organ that shares similar capabilities with wetlands in that they can filter out toxins

Legislation - laws put into place to protect the dwindling wetlands

Transitional – describing the zone between a wetland and an aquatic system

Additional Resources

WV DEP

- [Wetland Resources](#)
- [Common Wetland Plants of WV](#)
- [WV Wetland Program Plan](#)

EPA: [Wetlands Protection and Restoration](#)

US Fish and Wildlife Service: [West Virginia's Wetlands: Uncommon, Valuable Wildlands](#)

USDA: [Wetland Values and Trends](#)

[The Wetlands Initiative](#)