



Wetlands provide many opportunities for exploring our water resources.



Natural products such as wild rice grow in wetland areas.

#### Education and Research

Wetlands serve as wonderful outdoor classrooms, providing excellent opportunities for discovery and living examples of nearly all ecological principles. Boardwalks and observation platforms have been constructed in many wetlands across the Great Lakes Basin to facilitate educational activities.

#### A Valuable, Yet Threatened, Resource

Although the functions that wetlands provide make them our most valuable landforms, the United States and Canada have lost alarming amounts of wetland habitats. According to a study by the U.S. Fish and Wildlife Service, the lower 48 states have lost over 53% of their original wetlands. Great Lakes states and the province of Ontario have fared worse – it's estimated that only 30% of the original wetlands remain in the Great Lakes Basin.

There have been no comprehensive studies to document and assess the overall ecosystem impacts of these

significant wetland losses. However, one needs only to consider the increases in flood damage, the degraded or impaired lakes and rivers, the number of threatened and endangered species, and myriad other indicators of poor ecosystem health to get an idea of the impacts.

To this day, wetlands continue to be degraded or converted to other uses. Each year, government agencies receive dredging and filling permit or zoning applications to authorize activities that degrade wetlands in the Great Lakes Basin. The vast majority of these permits or zoning applications are issued. On top of this intense pressure, there are numerous other activities that degrade wetlands with little or no regulatory oversight, including drainage projects, polluting wetlands with contaminated runoff, and land clearing and logging. These continued threats to Great Lakes wetlands underscore the critical importance of citizen involvement in protecting them.

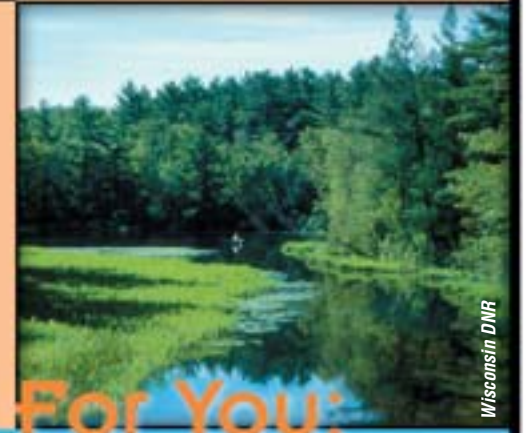
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Wetlands are vibrant ecosystems that protect us from floods, provide fish and wildlife habitat, and protect water quality.



Great Lakes wetlands are wonderful and diverse.



## What Wetlands Do For You: The Value of Great Lakes Basin Wetlands

#### What are Wetlands?

Wetlands are unique and varied ecosystems. An old farm adage, "too thick to drink and too thin to plow," gives a hint both of the nature of wetlands and the lack of value attributed to them in the past. But thanks to the work of scientists and conservationists, we now know how to define wetlands and understand the important functions they provide.

The Great Lakes Basin is fortunate to contain a diversity of wetland types ranging from broad expanses of coastal marsh to small isolated bogs. Although each wetland is unique, they share three interrelated characteristics:

- 1) The presence of water at or near the land surface for a long enough portion of the year to influence the type of vegetation that can grow there;
- 2) The presence of plants adapted to living in soils saturated with water (hydrophytic – or water-loving – vegetation); and

- 3) The presence of distinctive soil types which develop under saturated conditions (hydric soils).

#### Marsh

When people hear the term wetland, they most commonly think of a marsh. Marsh is a term that represents a broad array of wetlands that are dominated by grass-like vegetation such as rushes, sedges, and cattails. They are wet areas that can be periodically covered by standing or slow-moving water and are usually associated with ponds, rivers, streams, inland lakes, and the Great Lakes.

#### Swamp

Swamps provide very important habitat for a wide array of wildlife throughout the year. Swamp is simply the technical term for a wooded wetland. The soils in swamps are usually rich in nutrients and are generally saturated periodically at some point during the growing season.



Ryan Hagerthy/USFWS



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Marshes are the most biologically productive ecosystem in the Great Lakes Basin.



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Bogs form in lake basins that are isolated from sources of ground water.

### Bogs and Fens

Although different in their water chemistry and source, bogs and fens are often grouped into a broad category called northern peatlands. Bogs are isolated from ground and surface water and contain acidic waters. Fens receive water that has passed through mineral soils rich in limestone and therefore contain somewhat alkaline waters. Both bogs and fens contain plants that are uniquely adapted to their water chemistry and occur as thick peat deposits in old lake basins or as blankets of peat across the landscape.

### Why are Wetlands Important?

Historically, wetlands were seen as areas that were better drained or filled. In a classic example of “you don’t know what you’ve got ‘til it’s gone,” we have come to understand wetlands as ecologically important and complex systems only after many wetlands have been lost. Billions of dollars are spent each year in the Great Lakes Basin on hunting, fishing, birdwatching, hiking, and camping activities that rely directly on the creatures that call wetlands home.

### Wetlands Provide Fish and Wildlife Habitat

Wetlands provide critical habitat for fish and wildlife. Nearly all fish in the Great Lakes Basin directly rely on wetlands for spawning, feeding, or taking cover. Waterfowl and other birds, and a wide range of mammals forage, reproduce, and find shelter in wetlands. More than one-third of all threatened or endangered animal species in North America depend on wetland areas.

### Wetlands Protect Water Quality

Wetlands act as living filters that remove pollutants, nutrients, and sediments from surface water and ground water. By protecting water quality, wetlands keep our lakes, streams, and ground water healthy and support the wide range of uses that rely on clean water.

### Wetlands Contribute to our Water Supply

Wetlands are usually found where the ground water table reaches or is close to the land surface. They are often sites of springs or seeps where ground water is discharged and are very important for providing high quality water for our lakes and streams. Because wetlands store water and release it slowly, they play an important role in maintaining flow in streams. In

Fish and wildlife such as these sandhill cranes utilize wetland habitats.



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Wetlands provide many recreational opportunities for all ages.



Wyman Meinzer/USFWS



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addition, some wetlands are found where water seeps back into the earth and recharges ground water, providing a source of clean drinking water. The water recharge potential of a wetland varies according to a variety of factors, including wetland type, geographic location, subsurface geology, soil type, and amount of precipitation.

### Wetlands Protect Shorelines and Control Erosion

In their natural condition, wetlands associated with rivers and lakes function as a barrier to erosion. The root systems of wetland plants stabilize soil at the water’s edge and enhance soil accumulation at the shoreline. Wetland vegetation along shorelines reduces erosion by dampening wave action and slowing the speed of water currents. When wetland and shoreline vegetation is removed, efforts to control erosion and sedimentation can be expensive and usually result in further degradation of fish and wildlife habitat.

### Wetlands Protect Us from Floods

Wetlands act as sponges, temporarily storing flood waters and releasing them slowly, thus reducing flood

peaks and protecting downstream property owners from flood damage. Wetlands and adjacent floodplains often form natural floodways that convey flood waters from upland to downstream points. These functions become increasingly important in urban areas where development has increased the rate and volume of stormwater runoff. Each year, many communities that have suffered extensive wetland loss experience severe flooding.

### Wetlands Contribute to Food and Fiber Production

In addition to the revenue generated from wetlands by hunting, fishing, and trapping wildlife, wetlands provide a variety of natural products including blueberries, cranberries, and wild rice. Wetland grasses are hayed in many places for winter livestock feed. Forested wetlands, such as cedar swamps, can provide sustainable yields of valuable timber if harvested with careful management and planning. However, commercial activities, such as peat mining, logging, livestock grazing, and cranberry cultivation can severely degrade wetlands and a majority of their functions if not conducted on a small scale with the utmost of care.