



Flood protection

# WETLANDS

Photo Courtesy of NOAA

## WETLANDS STORE FLOODWATER AND PROTECT COASTS

▶ Wetlands act as natural buffers or sponges that reduce storm surges and store flood waters. In fact, one acre of wetlands can store 1 to 1.5 million gallons of floodwater—roughly  $\frac{3}{4}$  of a football field waist-deep in water.

▶ Wisconsin river basins with at least 40% wetlands and lakes experience streamflow that is as much as 140% lower than basins without wetland storage.

▶ On average, the loss of 2.5 acres of coastal wetlands increases the cost of coastal storm damage by \$33,000.

▶ The protection of 1,500 acres of wetlands along the Charles River in Massachusetts saves the region approximately \$17 million dollars in flood damage costs annually.

## FLOOD DAMAGES COST BILLIONS

“Floods have caused the greatest loss of life and property and have disrupted more families than all other natural hazards combined.”  
Federal Emergency Management Agency Director James Witt, 1995.

Two major floods in the Midwest caused an estimated \$30 billion in damages in 1993 and \$15 billion in 2008. In addition to a 20% increase in the frequency of intense rainfall events in the Midwest over the past 40 years, changes in land use, including the conversion of wetlands to subdivisions and of prairies to farm fields, have left the region less able to absorb the precipitation that can fall during these intense storms. In fact, the Mississippi and Missouri River Basins have lost over 26 million acres of their historic wetlands. Historically, bottomland hardwood-riparian wetlands along the Mississippi River stored at least 60 days of floodwater. Now, the remaining wetlands store only 12 days.

Although often relied upon for flood control, levees and other structural approaches can make matters worse by encouraging development in high risk areas while not sufficiently protecting communities from flood damage (over 20 levees failed in the 2008 Midwest floods). Instead, the restoration of wetlands and natural floodplains may provide more effective protection against flood damage.

## WETLANDS IN A CHANGING CLIMATE

Sea-level rise threatens to drown coastal wetlands by converting vegetated habitat into open water, destroying our natural defenses from hurricanes and storm surge. Some coastal wetlands adjacent to undeveloped lands may be able to naturally move inland, as uplands are converted to wetlands. However, 60% of Atlantic coastline below 1 meter is available for development, potentially blocking this migration. Less than 10% of the Atlantic coastline has been set aside for conservation. By 2080, the world could lose 5-20% of its coastal wetlands from rising seas.

# National Wetlands Awards

*For the past 20 years, the National Wetlands Awards program has honored leaders in wetland conservation, research, and education. These wetland champions personify the concept of “think globally, act locally,” dedicating countless hours and resources to our nation’s wetlands.*

## MAKING AN IMPACT



Photo Courtesy of Larry Smith

1997 Volunteer Leadership recipient Larry J. Smith has effectively fought for the protection of West Tennessee’s 70-mile-long Wolf River, its wetlands, and floodplain. Mr. Smith helped the Wolf River Conservancy purchase over 4,000 acres of wetlands and bottomland along this uniquely urban, suburban and rural river. He is a leader of the U.S. Army Corps of Engineers/Shelby County Wolf River restoration project, an historic effort to restore wetland draining caused by prior river channelization. The effort connects over 2,000 acres of floodplain lands to other public lands, restoring the flood-prevention function of thousands of acres of public and protected floodplain lands upstream. Downstream, several urban parks will be connected with a riverside nine-mile rails-to-trails project to restore riparian corridors and improve floodplain functions.

As an attorney, Mr. Smith provides landowners valuable expertise on the use of conservation easements. As an educator, he leads canoe trips and nature hikes into unique areas of river birch and sycamore bottomland hardwoods and cypress-gum swamp. He teaches about the importance of wetlands in elementary, high school, and university classrooms, transmits environmental news across the mid-South via a Memphis radio station, and appears on a regional public-access television program on the environment.

## YOU CAN MAKE A DIFFERENCE

**LEARN** more about wetland habitats and restoration efforts in your area, at [www.ducks.org](http://www.ducks.org).

**VISIT** us online, check out former National Wetland Awards recipients at [nationalwetlandsawards.org](http://nationalwetlandsawards.org).

**CONTACT** your state wetland program or your local natural heritage program at [www.natureserve.org/visitLocal](http://www.natureserve.org/visitLocal).

**VOLUNTEER** with a local conservation group or floodplain restoration project.

**EDUCATE** friends, family, local reporters, and elected officials about the importance of wetlands.

**PROTECT** wetlands on your own land. Find out how at [www.aswm.org/fwp/consultant/index.htm#guides](http://www.aswm.org/fwp/consultant/index.htm#guides).

*The National Wetlands Awards are administered by the Environmental Law Institute and supported by the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, USDA Natural Resources Conservation Service, USDA Forest Service, Federal Highway Administration, and NOAA Fisheries.*