



Stream Team Academy Fact Sheet Series:

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# WETLANDS

An Educational Series For Stream Teams To Learn and Collect

by Ange Corson, MDC Stream Biologist

## FAST FACTS

- ◆ Missouri had approximately 4.2 million acres of wetlands during pre-settlement times; Missouri now has an estimated 643,000 acres of wetlands, which is 1.4% of the state's area. This means that over 87% of Missouri's original wetlands have been destroyed.
- ◆ Wetlands are vital to help reduce flooding; specialized wetland plants can store up to 18 times their weight in water!
- ◆ Most of Missouri's wetlands have been lost to agricultural conversions, urban development, and flood control measures.
- ◆ Missouri's wetlands are critical for waterfowl wintering areas and other birds including the bald eagle. Migratory bird hunting alone brings in \$66 million\* to the state's economy every year.

Where would we be without wetlands? We would be in a world of trouble! Wetlands serve many critical functions to humans and critters alike. They help regulate ground water levels, improve water quality, reduce floods and storm damage, provide fish and wildlife habitat, moderate global climate conditions, and provide hunting and fishing recreational opportunities.

Nevertheless, until recently, wetlands were viewed as disease-ridden swamplands

that were a nuisance and held very little monetary value. Due to that opinion and the desire to populate rural areas, the United States began an effort to drain and fill wetlands across the country. Unfortunately, Missouri was no exception.

What exactly are wetlands? The classification of wetlands into groups helps us to define them.

- ◆ **Marine:** Open ocean and its associated coastline.
- ◆ **Estuarine:** Tidal waters of coastal rivers and embayments, salty tidal marshes, mangrove swamps, and tidal flats.
- ◆ **Riverine:** Rivers and streams.
- ◆ **Lacustrine:** Lakes, reservoirs, and large ponds.
- ◆ **Palustrine:** Marshes, wet meadows, fens, playas, potholes, pocosins, bogs, swamps, and small shallow ponds.

(Classification according to the United States Environmental Protection Agency)

**Palustrine** wetlands are what most people think of when they hear the term "wetland" in Missouri. Since Missouri is not coastal, we only use the last three categories for classification. Inland wetlands are not protected by current



Wetlands serve many critical functions and are areas we must strive to protect.

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regulations as well as coastal wetlands. Therefore, they are more vulnerable to destruction.

Let's consider wetlands as Mother Nature's filtration system. These areas store runoff from uplands and pull out sediments, excess nutrients, and other pollutants from the water before releasing the water into

groundwater, streams, and lakes. Due to their potential to store water, they can reduce flooding by slowing and decreasing the amount of water going directly into streams, which likewise reduces erosion.

This same slow-release function helps streams maintain base flows during dry summer months when aquatic habitats and water supplies would otherwise dry up.

Wetlands help control climatic conditions by tying up carbon and storing it within their plant communities and soil. This non-metal element would otherwise be released into the atmosphere as carbon dioxide. The state's economic gain due to money spent on wetland-related recreational activities (migratory bird hunting and fishing) is estimated at \$1.6 billion\* and that does not include bird watching. Missouri is a major flyway for waterfowl species due to its remaining wetlands along major river systems. Even small wetlands less than 0.25 acre in size are important for waterfowl because they are the first areas to thaw during a warm up, making them important to other species as well.

Habitat can make or break a species; approximately 1/3 of the country's

threatened and endangered species are dwindling because they rely on wetlands for habitat.

"No net loss" has been the stance of the government concerning most wetlands since 1988. This requires that if wetlands are lost in one area, there must be replacement or restoration of wetlands in another area. Although this keeps our total wetland acreages stable, it does not forbid the destruction or loss of wetlands completely. Even though this is a strong and enviable goal, the realities of artificially constructed wetlands used for mitigation purposes are not as great as they may seem. Wetlands naturally occur in places where they can perform and sustain key wetland functions. The location and functions of artificial or enhanced wetlands can rarely provide the same functions of natural wetlands that were lost.

Government regulations and incentive programs developed to curb the destruction of wetlands include, but are not limited to, Section 404 of the Clean Water Act and the Wetland Reserve Program. Groups such as the Natural Resource Conservation Service and Ducks Unlimited assist landowners with their own wetland protection or restoration efforts through conservation easements and Wetland Reserve Program enrollments. However, the best way to save wetland resources is public involvement in education efforts and public pressure on law and policy makers to create and enforce regulations that reduce or prohibit wetland destruction.

\*Based on 2001 survey, the total economic effect from those forms of recreation (Source: The 2001 Economic Benefits of Hunting, Fishing and Wildlife Watching in Missouri. 2003. Southwick Associates, Inc. Fernandina Beach, FL)

### **FAST FACTS**

*"The bottomland hardwood-riparian wetlands along the Mississippi River once stored at least 60 days of floodwater. Now they store only 12 days because most have been filled or drained."*

*—U.S. Environmental Protection Agency*

### **FAST FACTS**

#### **Threats to wetlands include:**

- ◆ *Draining and filling*
- ◆ *Construction and development*
- ◆ *Levees*
- ◆ *Agricultural tilling and grazing*
- ◆ *Stream channelization*
- ◆ *Improper sand or gravel mining*
- ◆ *Pollution*
- ◆ *Logging*



### **Sources:**

[http://water.usgs.gov/nwsum/WSP2425/state\\_highlights\\_summary.html](http://water.usgs.gov/nwsum/WSP2425/state_highlights_summary.html)  
<http://water.usgs.gov/nwsum/WSP2425/definitions.html>  
<http://www.conservation.state.mo.us/landown/wetland/wetmng/2.htm>  
[http://www.illinois.sierraclub.org/take\\_action/inhs.pdf](http://www.illinois.sierraclub.org/take_action/inhs.pdf)  
<http://water.usgs.gov/nwsum/wsp2425/legislation.html>  
<http://www.ers.usda.gov/features/farmbill/titles/title11conservation.htm#watershed>  
<http://www.ducks.org>  
<http://water.usgs.gov/nwsum/WSP2425/legislation.html>