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RESTORING WETLANDS

Turning back the clock for nature

Restoring western Kentucky's wetlands is a journey back in time. Many years ago, these wetlands formed an intact floodplain along the Mississippi River. During floods, the high water flowed into the surrounding wetlands, where it was stored before slowly draining back to the river. As the flood waters meandered back to the Mississippi, these wetlands captured sediments and other pollution, providing cleaner water and a healthier Mississippi River.

HUMAN IMPACTS ON WETLANDS

When this part of Kentucky was settled and cleared for farmland and development, many of these wetlands and their associated benefits were lost. Trees were cut down. Ditches and levees were installed. Streams were straightened, deepened, and widened.

This new "plumbing" resulted in water running off the land quickly, taking pollution and sediment along with it. The cumulative result throughout the Mississippi River Basin has been degraded water quality in both local streams and large rivers, and ultimately the formation of a large "dead zone" in the Gulf of Mexico.

Wetland restoration involves the use of voluntary programs to take frequently flooded cropland out of production, re-plant trees, and change the way the water moves across the land to restore natural wetland systems. Trees are se-

lected based on the soil type and flooding frequency of the wetland, and are usually mast-producing trees planted at 435 seedlings per acre. It takes a decade or more to establish a young forest after these plantings.

Restoring the hydrology of the area may include plugging ditches that were previously installed to drain the land. Occasionally a water control structure is installed. In either case, the result is that water stays on the land longer. When the land is capable of absorbing and holding water longer, it is able to remove nutrient pollution, which leads to improved water quality in local streams, the Mississippi River, and the Gulf of Mexico.

PART OF A MUCH LARGER EFFORT

The Nature Conservancy works in all 50 states and in more than 72 countries. When the Kentucky chapter restores wetlands in the western part of the state,

we are not working alone. In the United States, 18 state chapters and other Conservancy programs are working together on the Mississippi River Basin Project, an initiative to reduce nutrient pollution going into the river 20 percent by 2025, helping to dramatically reduce the size of the dead zone in the Gulf of Mexico.

When we work together, we can have much bigger impacts than when we work alone. Since 2011, we have worked with the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) to promote and implement a federal wetland conservation and restoration program that has enrolled more than 7,300 acres in our project area. Our five-year wetland restoration monitoring project (see pg. 2) will provide valuable information that conservationists around the world can use to make their own projects more successful.



LEFT TO RIGHT: DRAINAGE DITCH; MEANDERING STREAM; THE MISSISSIPPI RIVER MEETS OBION CREEK. © MIKE WILKINSON

FIVE-YEAR WETLAND RESTORATION MONITORING STUDY

The Nature Conservancy is partnering with the Natural Resources Conservation Service (NRCS) and three universities on a five-year study into the effects of wetland restoration in western Kentucky and Tennessee.

The study seeks to quantify the effects of wetland restoration on reducing sediments and nutrient runoff into the Mississippi River. Nitrogen and phosphorous can be carried into the river from agricultural land, especially in areas where there is no vegetative buffer to filter the water before it enters a ditch or stream.

When we restore these frequently flooded lands back to wetlands, however, nutrients and sediments going into the river should be reduced. The study will measure the impact of these restoration efforts in terms of reducing nutrient

transport into the Mississippi River. It will also measure the restoration work's benefits to wildlife.

Three area universities are conducting the monitoring work—Murray State University, Tennessee Tech University, and the University of Missouri. Instrumentation that measures water and soil quality has been installed throughout the study area, and a variety of students and faculty will be involved throughout the project.

Results of the study will help conservationists understand, refine, and improve wetland restoration work.

7,300

acres enrolled in wetland restoration programs since 2011.

1.3 million

trees planted as part of these wetland restoration efforts.

1975

the year the Conservancy opened a chapter in Kentucky.

55,000

acres conserved across Kentucky.



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Mantle Rock Nature Preserve

Western Kentucky is home to The Nature Conservancy's Mantle Rock Nature Preserve, a breathtaking natural area and historic landmark in Livingston County that the Conservancy protected in 1988. Visitors to the preserve will encounter an unusual area with rare geological features and a landscape that is more typical of the Shawnee Hills of southern Illinois than western Kentucky.

Mantle Rock's premier feature is a 30-foot high, 188-foot long arch, the largest freestanding arch east of the Mississippi River. Visitors will enjoy honeycomb rock formations, rock shelters, enormous boulders, and the clear-flowing water of McGilligan's Creek. The north side of the preserve's 2.75-mile loop trail joins with a segment of the Trail of Tears, where over 1,000 Cherokee were forced to camp during the winter of 1838-9 while waiting for the Ohio River to thaw and become passable before continuing their forced march west.