



# THE UPPER WHITE RIVER REVIEW

*The Newsletter of the South Missouri Water Quality Project, a USDA-NRCS Water Quality Office  
Providing Conservation Solutions To Non-Point Source Water Pollution.*

## Clear...Concise...and to the Non-Point

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## Stewardship Compass by Steve Hefner



Steve Hefner, South Missouri Water Quality Project Team Leader

I am convinced better management of soils would improve most of the world's environmental problems today. When you really think about it, soil is amazing. It provides the means for plants to yield food and fiber. It serves as habitat for creatures large and small that help cycle nutrients. It supports structures that humans build, and filters artificial and natural toxins before they reach the water table.

Under foot, an entire world of fragile biological activity is present in soil and the by-products of this activity

improve two key soil properties - organic matter and structure. It is unreasonable for anyone to expect soils to function well if we pulverize it with tillage equipment, compact it when it is wet, leave the ground bare during some part of the year, or always remove (without returning any) biomass.

For all of our modern advancements in agricultural technology, we still need to educate citizens on simple and proven soil quality techniques. These including growing something year round to prevent erosion and maximize organic matter production, adding diversity to your production system, and minimizing soil disturbance activities. Given time, these techniques will reduce erosion and keep sediment out of waterways, capture and store carbon in the soils, and improve productivity for consumption – critical issues that our society faces today. Contact your local USDA Service Center or Soil and Water Conservation District to learn more.

## Rainfall Simulators Incorporated into Biosolids Project

The Missouri Department of Natural Resources estimates that only 30% of the biosolids generated in the state are land applied. A biosolids land-application program, like the one utilized by the City of Springfield, allows nutrient recycling and cuts carbon dioxide emissions from incineration.

For the last 18 months, a cooperative area project has evaluated the agronomic and environmental fate of land

-applied biosolids to cool season grass at a demonstration site located in rural Lawrence County, Missouri. The biosolids study is scheduled to conclude in 2011.

Dr. Mike Burton, with Missouri State University, recently incorporated the use of rainfall simulators and micro-plots to study bacteria and nutrient characteristics in runoff.

"The use of the rainfall simulators allows us to precisely control and rep-

licate the amount of precipitation that is applied following the application of soil amendments," said Burton. "Data collection for this season concluded



MSU student, Cody Wallace, prepares a rainfall simulator for data collection.

in October and the results are still preliminary."

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## NRCS Provides Forest Rehabilitation Assistance



*A stand of timber in Texas County severely damaged from a derecho wind storm.*

On May 8, 2009 a major windstorm that weather experts refer to as a derecho (deh-RAY-cho) passed over Missouri leveling thousands of acres of forest across the eastern Ozarks. The fast moving front that produced straight line winds and spun off numerous tornadoes, created a path of destruction that was approximately 90-miles wide starting in Texas County and moving eastward over Dent, Shannon, Reynolds, Iron, Madison, and Bollinger Counties.

Estimates from Missouri Department of Conservation and the Missouri Forest Products Association estimated the damage to be approximately 204 million board feet at a value of \$12 million, or 1/3<sup>rd</sup> of Missouri's annual timber harvest. This damage occurred on both private and public acres. Unfortunately, this storm coincided with a low demand for forest products, low timber prices, and no mills taking logs.

To encourage salvaging of damaged timber, the Natural Resources Conservation Service (NRCS) offered assistance through the Farm Bill's Environmental Quality Incentives Program (EQIP), providing funds to private landowners in the hardest hit counties. Funds assisted landowners to recover some of the costs of establishing landing areas, pulling damaged/downed timber out of the forest, and stacking it for future sale when the markets turn around. NRCS foresters around the state were detailed to the storm area for two weeks to assist landowners in the application process and

survey their damage. Robert DeMoss, forester with the South Missouri Water Quality Project, assisted 58 applicants in Texas and Dent counties during this process of which 95% were located within the Upper White River Watershed.

Much of the downed timber (hardwood) will be saleable if retrieved within 12 to 18 months. It is important that the timber be salvaged to reduce the risk for catastrophic wildfires that could result from the heavy fuel loads. Some sites are now well on their way to recovery with most damaged merchantable wood being salvaged. However, there are still thousands of acres needing attention and many of the salvaged areas will need subse-

quent Forest Stand Improvement (FSI) management.

FSI treatments will stimulate regeneration and remove pre-commercial damaged trees. Landowners who have suffered losses from this storm or from other recent events are encouraged to contact and work with a forester to rehabilitate their forests, returning them to healthy and productive sites.

NRCS offers cost assistance to eligible landowners willing to implement forest management practices on their property. Forest landowners are encouraged to contact their local NRCS field office for more information.



*Logs salvaged from the spring wind storm are stacked and awaiting transport to a saw mill.*



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## WHIP Gets Land Closer to Nature

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*Ozark County residents Hosea and Debbie Lawrence stand on land being restored to native vegetation.*

### By **CHARLIE RAHM**

When Hosea and Debbie Lawrence started clearing cedar trees from their 275 forested acres near Theodosia in Ozark County, the neighbors wondered what was going on.

"They said we were mining the countryside," Hosea says.

Actually, the Lawrences were taking advantage of the Wildlife Habitat Improvement Program (WHIP) to return their land to a more natural condition. Through WHIP, eligible participants develop upland, wetland, riparian, and aquatic habitat areas on their property. The Natural Resources Conservation Service (NRCS) provides technical assistance and up to 75 percent of the restoration costs. The program is available throughout Missouri.

"Landowners are using WHIP to restore areas that were once open, but have grown up in cedars," says Robert DeMoss, NRCS forester. "After the cedars are cut and the cleared areas are burned, we're seeing the land return to the way it was in pre-settlement times."

DeMoss says four species of

native, warm-season grasses and more than 40 species of wildflowers have returned to the Lawrences' woods.

"We're just opening up the canopy to encourage native species," he says. "We have not had to do any seeding. It was just a matter of getting some light on the ground to spur generation."

DeMoss says the forest land in the area changed when settlers began suppressing natural wildfires. Those fires controlled the proliferation of hardwood trees and cedars, and allowed the native pine trees, which are more fire tolerant, to thrive. Without the wildfires, the hardwoods and cedars thrived, especially after most of the mature pines were harvested by loggers in the early 1900s. Pine seedlings then could not establish in the shade of the hardwoods and cedars, which also invaded the glades.

DeMoss says NRCS has been working with the Lawrences for the past four years to restore glades and manage open woodlands. More recently, they have begun working on forest stand improvement. They have replanted short-leaf pines on one area, and util-

ized WHIP to establish a wildlife watering facility. The overall results of the Lawrences' work to restore and manage declining habitat, combined with similar work by other landowners in Ozark County, have included a resurgence in populations of turkey, deer, quail, collared lizards and a variety of pollinators.

The Lawrences, who reside at Springfield, say they enjoy the new view of their land in Ozark County.

"I love to come down here and sit on one of those hills and watch deer or turkeys or squirrels, or whatever," Hosea says.

"I like the flowers," Debbie adds. "I like the wildlife, too, but I REALLY like the flowers."

The Lawrences say they are thankful for the WHIP funds that allowed them to do the restoration. But they also credit DeMoss, who developed the forest management plan, NRCS District Conservationist April Wilson, who has managed the WHIP contracts, and Nancy Bates, a Missouri Department of Conservation Private Land Specialist who worked with the controlled-burn plans.

"Anything they said they were going to do, they have done," Hosea says. "And it has been so helpful when they have come out and gone through the woods with me to point things out."

DeMoss says the Lawrences have been good students.

"I've been excited to just watch their progress," he says. "They've gone from relying totally on us to the point where they have a good understanding of the natural process."

For more information about WHIP and other NRCS programs and assistance, contact your local NRCS office. Local office contact information is available at: <http://offices.sc.egov.usda.gov/locator/app?state=MO>. Local offices also are listed in telephone directories under "U.S. Government, Department of Agriculture."

*Rahm is the USDA-NRCS Public Affairs Officer in Columbia.*

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## West Plains Establishes Storm Water Program

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The City of West Plains recently established a storm water utility program that will help to address soil and water concerns in this growing community. The purpose of this storm water utility is to help fund technical services for the implementation of a sediment and erosion control program as well as the establishment of storm water development and design standards.

The initiative to establish a storm water utility began two years ago when the City of West Plains received a Missouri Department of Natural Resources

Nonpoint Source Pollution Mini-Grant. With assistance provided by the South Missouri Water Quality Project, a voluntary citizen task

force was created to learn about storm water impacts and to research and recommend proactive measures and conservation practices for deterring such impacts.

This program is being administered through the Department of Public Works under the supervision of Wes Parks and Trent Courtney. The South Missouri Water Quality Project continues to provide technical assistance to the City of West Plains and values its cooperative spirit in protecting the soil and water resources within the Upper White River Basin.



*Sediment run-off following a rain event in West Plains.*

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## Missouri NRCS Publishes Second Early Childhood Book

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*Author, Amanda Robertson*

Amanda Robertson wrote *The Trash in Chigger County* in 2007 while a student in a children's literature class at Ozarks Technical Community College. She participated in a partnership project through the SMWQ Project which provided the opportunity for students to develop and present water quality lessons to young children.

Currently scheduled to graduate in December 2009 with an education degree from Missouri State University, Amanda was elated to hear her book was published this past fall and is now available to educators for use in Missouri classrooms.

The book provides an age-appropriate and entertaining explanation of why pollution exists and introduces personal stewardship. It targets children between the ages of three years and third grade.

The whimsical illustrations in the book are the work of high school senior, Kelsey Anderson. Kelsey entered a NRCS state-wide competition in January 2009 and was selected as the artist for the book. She completed the illustrations for the book during the spring semester of 2009.

*The Trash in Chigger County* is the second book in a series of three selected for publication. *The Little Acorn* was published in 2008, and *Skeeter's Awesome Adventure*, a book about the water cycle, is awaiting publication.

*The Trash in Chigger County* is available through the Missouri NRCS Public Affairs Office at 573-876-0911, or by contacting Charlie Rahm at [charlie.rahm@mo.usda.gov](mailto:charlie.rahm@mo.usda.gov).



*Children in a kindergarten class in Rolla are excited to have Kelsey Anderson, Illustrator of "The Trash in Chigger County," read the book in their class.*

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