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Update: Our Missouri Waters Lower Missouri-Moreau Watershed Summer 2015 newsletter

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Lower Missouri-Moreau Summer 2015 Newsletter

Inside this Issue

The Lower Missouri-Moreau - Did you know?

Missouri River Water Trail website

New Water Trail at Finger Lakes State Park

University of Missouri - Columbia Center for Watershed

The Lower Missouri-Moreau – Did you Know?

The Lower Missouri-Moreau River watershed is located in central Missouri and includes Boonville, Columbia, Jefferson City, Fulton, and their surrounding communities. This watershed includes the tributaries that flow into the Missouri River and the tributaries to the Moreau River. The Moreau River flows into the Missouri River just east of Jefferson City.

The estimated population of the Lower Missouri-Moreau River watershed was 289,254 people in the year 2000 and was 329,758 people in the year 2010. It is estimated that from the year 2000 to the year 2030, 11 of the 13 counties of the watershed will experience growth in population, with the most

Management and Water Quality hosts inaugural symposium

Cover Crop Corner - Missouri is a now a member of the Midwest Cover Crops Council

Cover Crop Corner - Radish Cover Crop Overseeded into Soybean

Land and Water Education Resources booklet available

Upcoming Events

Soil Health Advocate Jay Fuhrer will be in Concordia July 13 and in Mexico July 14, 2015, 9:30 to 3 pm, no registration required

Now Taking Requests for Project WET workshop locations for 2015 or 2016

Contact Mary Culler at 660-385-8000 for more information

Questions and Answers

Please send your questions about the watershed or the Our Missouri Waters effort to the Northeast Regional Watershed Coordinator Mary Culler at Mary.Culler@dnr.mo.gov

Funding Opportunities

Nonpoint Source 319 Grant to Address Nonpoint Water Pollution.

Nonprofit Group Scrap Tire Cost Reimbursement

Wastewater Engineering Grants for Small Communities

growth occurring in Boone County, with a projected increase of 51%.

There are 43 community public water systems within the watershed. Thirty-one of these systems treat groundwater, six systems purchase treated groundwater, three systems treat surface water, and three systems purchase treated surface water. Surface water sources in the watershed, including the Missouri River at Boonville and at Jefferson City and Fayette Lake #3 provide drinking water supply. Surface water sources outside the watershed including Mark Twain Lake and Long Branch Lake also provide drinking water to people in this watershed.



Lower Missouri-Moreau watershed includes parts of Saline, Howard, Randolph, Boone, Audrain, Callaway, Montgomery, Osage, Cole, Miller, Moniteau, Morgan, and Cooper counties

Missouri River Water Trail website provides information to explore the river

The Missouri River Water Trail website at <http://missouririverwatertrail.org/> provides information for people interested in boating or paddling the Missouri River within the state of Missouri. The website includes a water trail map that shows the locations of access areas on the Missouri River. If you click on an access point, you can then click a link to go to Google Maps to identify services in the nearby area. The website also provides safety and navigation tips, links to current river levels, water temperatures, weather forecasts, history of the Missouri River and Louis and Clark expedition, downloadable GPS information, additional maps, links to

5 Star Grants Program

Soil and Water Conservation Program

Contact the Northeast Regional Watershed Coordinator Mary Culler at 660-385-8000 to find out more about these funding sources.

[Learn More](#)



To learn more about the **Our Missouri Waters** effort, visit the department's website at www.dnr.mo.gov/omwi.htm.

Contact the Local Watershed Coordinator

Lower Missouri-Moreau Watershed

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Submit an Article for the

Next Issue

places to stay along the river, and links to relevant books and other water trail websites.

After viewing this website, you may want to start planning a Missouri River paddling trip.

Speaking of Water Trails...check out the new water trail at Finger Lakes State Park

Finger Lakes State Park is located north of Columbia off of Hwy 63. The park gets its name from the slender lakes formed when former coal mining pits were dammed and filled with water. Peabody Lake is the largest lake and now has a 4.5-mile water trail. The water trail is divided into two loops, one marked with red bouys (2.3 miles) and one marked with blue bouys (2.2 miles), and there is a .40-mile trail connecting the two loops that is marked with white bouys. Bouys are placed every .10 of a mile on the path of the trail. The park rents kayaks and canoes for visitors who don't have their own.

University of Missouri–Columbia's Center for Watershed Management and Water Quality hosts its inaugural symposium

Last year, the College of Agriculture, Food and Natural Resources (CAFNR) at the University of Missouri-Columbia formed the Center for Watershed Management and Water Quality. On April 16, 2015, the Center hosted its inaugural symposium at the Bond Life Sciences Center. The symposium, entitled "Water for Agriculture: Challenges for this Century" was organized by Dr. Jason Hubbart and Dr. Keith Goynes, director and associate director of the CAFNR Water Center. The symposium included a number of distinguished speakers from the University of Missouri-Columbia, University of Minnesota-Duluth, and state and federal agencies. The presentations from the symposium are available at http://watercenter.missouri.edu/index_files/Events.htm.

The mission of the CAFNR Center for Watershed Management and Water Quality is to develop, through discovery and information dissemination, sustainable solutions to contemporary watershed management, water quantity and

Would you like to submit an article for the next newsletter?

Please let me know.

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water quality problems to attain maximum benefit of Missouri's waters and enhance the environmental, social and economic status of the State and populace. The objective of CWMWQ will be to strategically increase research, education, and outreach related to sustaining and enhancing Missouri's water resources.

Cover Crop Corner:

Missouri is now a member of the Midwest Cover Crops Council

Missouri is now a member of the Midwest Cover Crops Council. Their website, <http://www.mccc.msu.edu/> has a wealth of information, including information about cover crop species, a cover crop decision tool, innovator profiles of farmers that have used cover crops on their farms, extension materials and publications, links to videos, and a calendar of events.

The Cover Crop Decision Tools on the website are an initiative of the Midwest Cover Crop Council to consolidate cover crop information by state to help farmers make cover crop selections at the county level. Information for each state/province is developed by a team of cover crop experts including university researchers, Extension educators, NRCS personnel, agriculture department personnel, crop advisors, seed suppliers and farmers, to help you select cover crops for your situation. For your location, information is given for considerations for using that cover crop, including planting, termination, performance and roles, cultural traits, potential advantages and disadvantages, and information resources about the cover crop. Check out their website, you will find a wealth of cover crop information.

Radish Cover Crop Overseeded into Soybean

Kelly Nelson, Research Agronomist and Professor, University of Missouri Greenley Research Center at Novelty, and Dana Harder, Superintendent, University of Missouri Greenley Research Center at Novelty

There are a lot of benefits of cover crops, but successful establishment is important to realize their full potential. Intercropping systems usually involve overlapping the growth period of two crops. Intercropping radish with soybean could

allow earlier radish cover crop establishment while having minimal effects on soybean yield. Radish cover crops have been promoted throughout the Midwest, but have been unsuccessful following soybean in northern Missouri. This is due to a short growing period following harvest, and freezing conditions usually occur around the first week of December in northern Missouri and terminate the radish cover crop. From 2012 to 2014 we evaluated the effect of radish overseeding planting date in the presence and absence of N fertilizer on soybean yield, radish biomass, and corn yield the following year. Overseeding radish in the presence or absence of 30 lbs N/acre had no effect on soybean yield. Precipitation following overseeding of radishes in early September along with an open soybean canopy in 2012 provided good conditions for successful radish establishment (Figure 1).

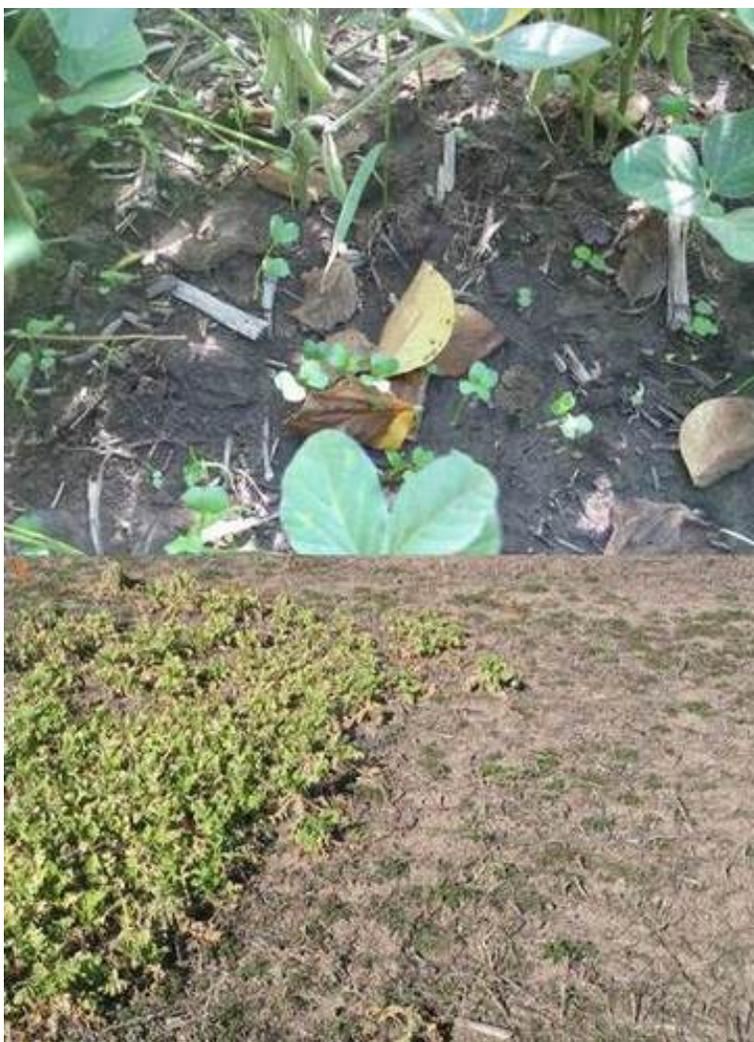


Figure 1. Radish seedlings on September 5, 2012 six days after overseeding (top) and the same plots on December 4, 2012 (bottom left) compared to a later seeding date (bottom right).

Dry conditions following overseeding of radish in 2013 and 2014 along with a dense soybean canopy in 2014 resulted in poor establishment of an overseeded radish cover crop (Figure 2).



Figure 2. Radish seedlings in soybean residue following harvest on October 22, 2014.

Based on this and other research at the Greenley Research Center, radish should be seeded before September 1 in northern Missouri. We have observed that an early establishment of radish suppressed winter annual weeds 40 to 90% the following spring (Figure 3).



Figure 3. Henbit suppression on March 12, 2012 with radish drill seeded on September 1, 2011 (top left) and September 26, 2011 (top right). No-till corn was planted in the same areas on May 1, 2012.

Farmers should take note of their residual herbicide program and any effects it may have on the establishment of a cover crop. Radish is sensitive to several residual herbicides used for weed control in soybean. Corn yield following radish overseeded into soybean was not affected in 2013 or 2014. Radish growth was maximized when overseeded prior to September 1 when there was an open soybean canopy and rainfall followed the overseeding event. If you are planning a cover crop blend, radish could be included if it was seeded prior to September 1 in northern Missouri. More details on this and other cover crop research at the Greenley Research Center is available at: <http://greenley.cafnr.org/cover-crops-abstracts/>.

**Land and Water Education Resources
booklet available for Northeast
Missouri educators**

A new resource booklet is now available for educators in Northeast Missouri. The booklet, entitled Land and Water Education Resources for Northeast Missouri, provides a list of the curriculum, activity guides, field science and discovery programs, items available for loan, soil health resources, and displays available for guest presentations (pending staff scheduling and availability) in Northeast Missouri. The booklet is available on-line at

<http://dnr.mo.gov/education/resources.htm>.

The booklet is a living document, so if you know of additional resources that should be added to the booklet, please contact Mary Culler at Mary.Culler@dnr.mo.gov. Please share this resource with educators in your area.

Promoting, Protecting and Enjoying our Natural Resources.
Learn more at dnr.mo.gov.

Our Missouri Waters -- is a Missouri Department of Natural Resources statewide effort that will streamline watershed planning efforts while increasing public engagement, better targeting and utilizing resources and providing greater benefit in protecting Missouri water resources.



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