

Spring 2015

Tallgrass Prairie Center News, Spring 2015

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TALLGRASS PRAIRIE CENTER NEWS

The Tallgrass Prairie Center restores native vegetation for the benefit of society and environment through research, education, and technology.



SPRING 2015



hold membership meetings. IPN is celebrating its 25th anniversary and will provide grants to student participants to encourage their participation in the workday and the conference.

Activities are scheduled on July 15th prior to the conference. The Iowa Natural Heritage Foundation and the Iowa Chapter of the Nature Conservancy are coordinating a workday at Cedar Hills Sand Prairie about 11 miles NW of Cedar Falls. In addition, the State Preserves Advisory Board will meet in the afternoon of the 15th at the Tallgrass Prairie Center.



2015 Iowa Prairie Conference: Working Prairies

Daryl Smith, Advocate - daryl.smith@uni.edu

It doesn't get any better than this, 3-4 days of immersion in talking, thinking and visiting Iowa prairies. Plan to attend to renew old prairie acquaintances and make new prairie friends.

The 2015 Iowa Prairie Conference will be held at the University of Northern Iowa July 16-18. The Iowa Prairie Conference, initiated more than 30 years ago, is held on alternate years opposite the North American Prairie Conference. A Google Search for "2015 Iowa Prairie Conference" will take you to the Tallgrass Prairie Center's website where information is available. A call for poster and oral papers has been issued and registration materials is now available on-line.

The 3-day conference will feature plenary speakers Doug Ladd, Land Stewardship Director of the Missouri Chapter of The Nature Conservancy and Lisa Schulte-Moore, Associate Professor of Natural Resource Ecology and Management at Iowa State University. Three symposia are in the works: Writing the Tallgrass Prairie chaired by John Price, Iowa Roadsides chaired by Kristine Nemec, and Forty Years of Prairie Preservation and Restoration (commemorating Daryl Smith's retirement) chaired by Pauline Drobney and Laura Jackson. The barbeque on Friday night will offer burgers, brats, beer and prairie conversation. Three field trip options are planned: (1) Cedar River Natural Resource Area, 50-acre research site for the Tallgrass Prairie Center's Prairie Power Project; (2) Cedar Bend Savanna restoration site and Cedar Hills Sand Prairie; and (3) Rowley Fen and the Quigley-Slattery Heritage Prairie in Buchanan Co. The Iowa Prairie Network and the Iowa Native Plant Society will

2015 Iowa Prairie Conference: Working Prairies - July 16-18. University of Northern Iowa

High Diversity = High Performance

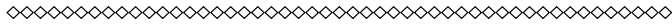
Laura Jackson, Director - laura.jackson@uni.edu

Prairies with high diversity perform a large number of ecological functions, so we say that "high diversity = high performance." This year the Tallgrass Prairie Center begins working with a diversity of new organizations and friends. As this newsletter goes out, we are planting prairie in two row crop fields in Eastern Iowa, with the support of the Iowa Nutrient Reduction Center and the Natural Resources Conservation Service. Both sites will demonstrate contrasting seed mix and management practices so visitors can learn what works and what doesn't. The Leopold Center for Sustainable Agriculture (LCSA) is helping us start a working group for technical service providers who plan or plant prairie for conservation purposes. LCSA is also funding us to develop and test a new on-line seed mix calculator. Soon to follow are workshops and field days, technical guides tailored to agricultural sites, and more support for those who aim to plant prairie for conservation purposes. These prairies will not only reduce soil and nutrient run-off starting this summer, but they will also support pollinators and monarch butterflies as soon as they begin to flower in 2016.

Our demonstration sites are located at the Northeast Iowa Research Farm in Nashua, and the Miller Creek Watershed, a tributary of the

Cedar River. But this project will have widespread impact. New York Community Foundation has funded a trio of collaborative projects in Iowa, Minnesota and Wisconsin. Collectively, these sites will all attract visitors--both walking and flying--and demonstrate practical methods for pollinator and monarch habitat creation on farmland. Collaborations with Monarch Joint Venture and Xerces Society for Invertebrate Conservation will result in new NRCS technical specifications for pollinator plantings that will shape prairie reconstruction practices across the upper Midwest.

As we reach out to new audiences and collaborators, the Tallgrass Prairie Center becomes better able to carry out its mission, to restore prairie for the benefit of society and the environment. High diversity = high performance.



IRVM Updates

Kristine Nemec, IRVM Program Manager

- *kristine.nemec@uni.edu*

In March roadside managers and engineers from 45 counties picked up enough seed to plant 1,380 acres of county roadsides across Iowa. The seed mixes included important nectar plants for pollinators, including 525 lbs. of swamp milkweed seed and 169 lbs. of butterfly milkweed seed. Maria Urice did a great job shepherding through the seed order for this spring while serving as interim IRVM program manager.

We welcome two new counties that are starting IRVM programs this year, Bremer County and Dickinson County. David Lehman began as Roadside Manager in Bremer County in February. He earned a BS in Biology from McPherson College and an MS in Forestry from the University of Minnesota. "My years working at a wholesale plant nursery and at a landscape company helped prepare me for the challenges along the county roadsides." David and his wife raised their two children and currently live in Plainfield, Iowa. Aric Ping began in May as the Vegetation Specialist for Dickinson County. Born and raised in Northwest Iowa, he has been around prairie all his life. He is a graduate of the University of Nebraska at Omaha and has worked for conservation groups and government agencies throughout the Midwest and Great Plains conserving grasslands. "I am very excited to be back home in the tallgrass and for the great opportunity to establish the Dickinson County IRVM program."

This year's roadside conference will be hosted by Johnson County IRVM at the Coralville Marriott September 23-25, 2015. A range of topics will be covered including roadside habitat for bee diversity, the Minnesota IRVM program, and demonstrations of skid steer mowers.



Prairie Power Project Eric Giddens, Prairie Energy Coordinator - *eric.giddens@uni.edu*

The Tallgrass Prairie Center is currently in the final phase of its seven-year study entitled the "Prairie Power Project" which has the following goals: 1) to determine the maximum production of biomass by mixtures of prairie species and the effect on wildlife habitat, 2) to determine effects of frequency of harvesting on biomass production and patterns of harvesting on wildlife, 3) to determine energy production and stack by-products from combustion of prairie biomass in Cedar Falls Utilities' power plant, and 4) to measure the amount of carbon sequestered by different mixes of prairie species over five years. The Tallgrass Prairie Center hired Eric Giddens (see bio elsewhere in this newsletter) in December of 2014 to work on the third goal of the project. The following is a brief summary of results from this portion of the project:

The experimental plots in the Prairie Power Project which are located in the Cedar River Natural Resource Area near Washburn, Iowa, produced a sufficient quantity and quality of prairie biomass to generate electricity in Cedar Falls Utilities' power plant during a substantial test burn. The biomass was densified into ¼" pellets and then the material was used as the sole feedstock in their stoker boiler to generate an average of 5 megawatts of electricity throughout the 6 hour test burn. Cedar Falls Utilities has indicated that the material performed well during the test burn in a number of ways. These include: 1) the energy density of the material is sufficient enough to consider prairie biomass a suitable alternative energy feedstock to coal; 2) the pelletized material handled well during the process of loading it into the stoker boiler; 3) the ash content of the material was low (which is preferable) and the physical characteristics of the ash after combustion were near ideal for function of the



Cedar Falls Utility employees monitor a test burn of pelletized prairie biomass from the Prairie Power Project site.

boiler and its bag house air filtration system and; 4) all regulated emissions were significantly lower for the prairie biomass material than they are for coal.

The Prairie Power Project, which has been funded by the Iowa Power Fund, will conclude in July of this year. To build on the positive results obtained from this project, the Tallgrass Prairie Center is now pursuing various avenues to promote the development of a market for prairie biomass as an alternative energy feedstock.





Prairie on Farms

Ashley Kittle, Prairie on Farms Coordinator
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Prairie on Farms Project goals are to increase the use of diverse native prairie vegetation on working farms for water quality improvement and pollinator habitat and to increase awareness and improve skills of technical service providers on the mechanics of installing custom seed mixes of perennial vegetation on the landscape. The impetus for this project is in response to increased interest in planting prairie on farms, for conservation efforts, wildlife habitat as well as the pride of our natural heritage. The new technique of planting custom prairie strips in fields that lie roughly on the contour (while fitting with the farming operations) has become increasingly popular. Prairie strips can stop erosion, reduce nutrient loss, improve soil and water quality and support pollinators and wildlife.

This year we will establish two demonstration sites (one on a farm near Dysart and one at the ISU Northeast Iowa Research Station in Nashua) with side-by-side comparison of three different prairie seed mixes; hold four demonstration workshops (two in June and two in the fall) focusing on practical uses of prairie on working farms, topics will include site assessment and preparation, proper seeding methods, stand evaluation and first year maintenance; additionally we will foster and support a working group of technical service providers, landowners and decision makers; and plant an additional 12 acres of prairie on two working farms in the Middle Cedar Watershed.



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Prairie on Farms Demonstration Workshops

Two workshops offered in June. Attend the one that fits your schedule!
 Learn how to improve water quality and pollinator habitat on a working farm!



Prairie on Farms: Demonstration Workshops

Tallgrass Prairie Center



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Partners: The Leopold Center for Sustainable Agriculture, Black Hawk SWCD, NRCS, Monarch Joint Venture, People's Company, Xerces Society, Iowa State University, The Luze Family Corporation, Cedar River Watershed Coalition, Practical Farmers of Iowa

June 2: Dysart Farm
 5718 12th Avenue, Dysart, 52224
 9:00-12:30 Check in starts at 8:30

June 4: ISU Research and Demonstration Farm
 Borlaug Learning Center 3327 290th St, Nashua, IA 50658
 9:00-12:30 Check in starts at 8:30

Topic: Prairie Installations on Working Farms:
 Water Quality Improvement and Pollinator Habitat

Focus: Practical uses of prairie for *water quality improvement efforts and pollinator habitat*, site assessment and preparation, side-by-side comparison of three different prairie seed mixes planted in mid-spring and how to determine an appropriate location for prairie plantings on a working farm

Who should attend: Technical service providers, producers, Soil and Water Conservation Districts, seed companies, decision makers, anyone interested in learning more about the benefits of prairie on a working farm

This will be the first in a series of demonstration workshops at these locations. Additional workshops will be held in the fall (date TBD) looking at stand evaluation and first year maintenance.

To learn more or to register by May 25th contact Ashley Kittle at Ashley.kittle@uni.edu or (319) 273-3828



Milkweeds: Monarch Immigration Reform

Greg Houseal, Natural Selections Seed
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Historically, common milkweed (*Asclepias syriaca*) was a serious agricultural weed in Iowa, and posed an especially serious problem before the advent of herbicides. Cultivation of fields essentially propagated this species inadvertently via root cuttings. The abundant adventitious buds that occur on rhizomes meant that this species was not only prone to re-sprout from severed pieces of root but also increasingly distributed throughout the field by cultivation. In a perhaps eerie foreshadowing, showy milkweed (*A. speciosa*) was a



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CENTER
NEWSLETTER

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similarly pesky weed a hundred years ago, particularly in northwest Iowa (Pammel and King 1926), but is now a state threatened species.

Deserved or otherwise, there remains a persistent view of common milkweed as a nuisance species in agricultural and developed land. The adoption and widespread use of glyphosate-ready crops (circa 85% of annual production) has eliminated common milkweed from row crop fields over tens of millions of acres throughout the midwest. Common milkweed is no longer a threat to row crops, especially relative to the advancing front of glyphosate-resistant super weeds, like Palmer's amaranth, already in 5 Iowa counties. Common milkweed's **absence** from the landscape, however, is an acknowledged threat to monarchs and their epic mid-continent migration from Mexico to Canada and back.

Over 70 species of milkweed (*Asclepias* spp.) are native to the U.S. and Canada, with at least 17 species native to Iowa. As a genus, milkweeds are adapted to a range of conditions, from driest sand and gravel to wet marsh, and from the full sun of open prairie to semi-shade of savanna and open woodland. At least five species have been identified as 'Priority species for habitat restoration' in the Midwest region (Iowa, Missouri, Illinois, Indiana) by the Xerces Society (Borders and Lee-Mader 2014). These five species are swamp (*A. incarnata*), prairie/Sullivant's (*A. sullivantii*), common (*A. syriaca*), butterfly (*A. tuberosa*), and whorled (*A. verticillata*) milkweed. All of these are currently in production at the Tallgrass Prairie Center, and two, swamp and butterfly milkweed, have already been released to native seed producers. Common milkweed should be embraced as just one of several much needed milkweeds, and other pollinator plant species, on our Midwestern landscape.



New Student Employee

Sarah Huebner, Biology: Ecology and Evolution

Sarah is a new lab/field assistant at the Center. She also serves as a STEM Ambassador for the university, promoting awareness of and interest in majors and careers in the fields of Science, Technology, Engineering, and Mathematics via outreach events throughout the state. She also volunteers at the Black Hawk Wildlife Rehabilitation Project, where she helps to care for and eventually release sick and injured wildlife. This summer, Sarah will be working on a research project quantifying the below-ground biomass and carbon sequestration of various prairie species mixtures planted at UNI's biofuel site. This is part of a larger research project investigating the viability of prairie species as biofuel. After graduation, she would like to work with the U.S. Fish and Wildlife Service or Iowa DNR, helping to design and implement recovery plans for endangered species.



New Center Staff

Kristine Nemec, IRVM Program Manager



Kristine Nemec is an ecologist with expertise in the ecosystem services provided by native plant communities, particularly tallgrass prairie restorations. She worked for the U.S. Army Corps of Engineers in Omaha, Nebraska for seven years, where she developed and implemented tallgrass prairie, wetland, and riparian forest ecosystem restoration plans. Most recently she was a postdoctoral research associate with the U.S.D.A. Agricultural Research Service in Brookings, South Dakota where she studied the response of beneficial insects such as pollinators and predatory invertebrates to flowering biofuel oilseed crops.

Kristine received a B.S. in Environmental Studies (1999) and an M.A. in Biology (2003) from the University of Nebraska at Omaha, and a Ph.D. in Natural Resource Sciences from the University of Nebraska-Lincoln (2012).

Ashley Kittle Prairie on Farms: Project Coordinator



Ashley Kittle joined Center staff in February, 2015, to lead the Prairie on Farms Project. Most recently she managed the Dry Run Creek Watershed Improvement Project for Black Hawk County Soil and Water Conservation District. Ashley brings critical experience working with urban and rural landowners on a wide variety of complex water quality projects, as well as public education and outreach. "My passion is prairie and water quality improvement – I am motivated by the opportunity to implement conservation practices that will improve soil health, water quality and aid in pollinator recovery efforts. I am excited about being part of the TPC team and working with agricultural service providers and rural landowners on the installation of on-farm custom prairie restoration."

Eric Giddens Prairie Energy Coordinator



Eric joined the Tallgrass Prairie Center in December of 2014 as Prairie Energy Coordinator to work on the Prairie Power Project. He has a Bachelor's degree from Georgia Tech in Civil/Environmental Engineering, a Master's degree from Illinois State University in Community/Economic Development, and a strong interest in sustainability. Eric has worked professionally in various positions related to engineering and community development including two years as a Peace Corps Volunteer in Lesotho, Africa. Most recently he taught secondary mathematics in Cedar Falls, IA and in Tegucigalpa, Honduras. Eric lives in Cedar Falls with his wife Kendra (music teacher at Southdale Elementary School), son Henry, and the newest member of his family, Alan Posadas, who has come here from Honduras to attend college.

