



Tallgrass Prairie

CENTER

Restoring a National Treasure



Mission: The Tallgrass Prairie Center develops research, techniques, education and source identified seed for restoration and preservation of prairie vegetation in rights-of-way and other lands.

Fall 2010

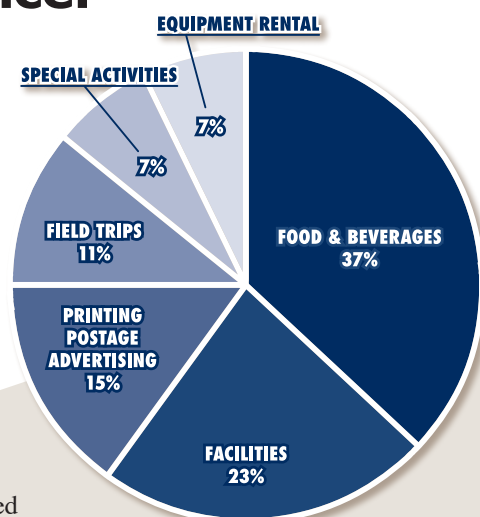
22nd North American Prairie Conference: Wrapping Up a National Treasure

The week of August 1-5 was “prairie central” at the University of Northern Iowa in Cedar Falls. Five hundred and sixty prairie enthusiasts gathered to discuss prairie preservation, restoration, reconstruction and management and catch up on some of the latest research. There were 95 oral and 33 poster presentations related to the educational and cultural aspects of the prairie. Reed Noss discussed “Southern Grasslands” and Mark Ackelson presented “Iowa Prairie Projects” in the plenary session. John Price shared readings of his “Personal and Literary Journey into Prairie” at the banquet. The conference was closed with the “Importance of Prairie” by Rich Leopold and “Restoring a National Treasure” by Daryl Smith.

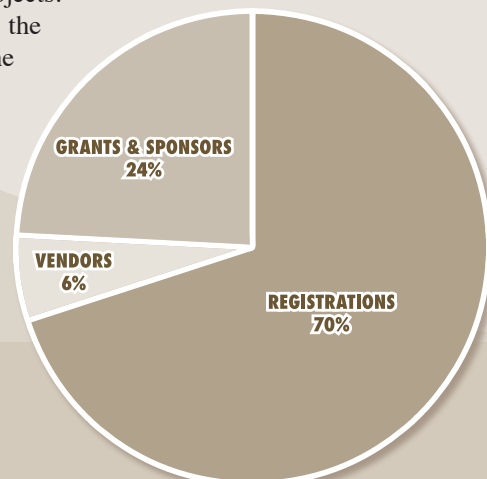
Five hundred sixty participants attended representing 22 states, 2 Canadian provinces, Great Britain and Germany. Volunteers from UNI, Cedar Falls-Waterloo community, and other Iowa locations all contributed to the success of the conference. Thirty-one exhibitors provided displays, materials, merchandise, and information. The Iowa Prairie Network celebrated its 20th birthday with “Enchanted by Prairie” by Bill Witt. Despite the hot, humid weather, field trips ranged across northeast and central Iowa to learn about prairie remnants and restorations projects. Mesquakie dancers and the appearance of a funnel cloud ten miles south of town enlivened the barbeque. A tour of the Tallgrass Prairie Center was held concurrently with a reception by the University of Iowa Press to kick-off the release of the Center’s Guide to Prairie Restoration in the Upper Midwest and Seed and Seedling Identification Guide in the Upper Midwest.

Sponsors and grant supporters of the conference were Natural Resource Conservation Service (NRCS), Living Roadway Trust Fund, Cedar Falls Tourism and Visitors Bureau, Max & Helen Guernsey Charitable Foundation, Truax Manufacturing, Bravo Printing Co., University of Iowa Press, Prairie Moon Nursery, Savanna Oak Foundation, Inc., Allendan Seed Company, Shooting Star Native Seeds, The Nature Conservancy, Dow AgroSciences, The Prairie Enthusiasts and Minnesota Native Wildflower/Grass Producers Assoc.

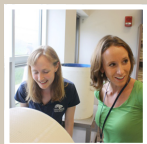
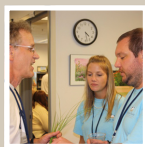
Publishing of the Conference Proceedings is being funded by conference receipts and grants from the Living Roadway Trust Fund and the Carver Foundation.



EXPENSES



INCOME



*The Tallgrass Prairie Center
thanks all who contributed to the
success of the conference.*

The Road Less Traveled

What would you do if a 72-acre site was going to be planted to prairie immediately across a gravel road from one of the best examples of a sand prairie remnant in the state? What if the site had to be planted by fall of next year? While this is not a common situation, it did happen here in eastern Iowa. Here is an opportunity to go down a road less traveled.

The planting site was a row cropped field for many years. In 2009, the field was left fallow to determine if any native plants would reappear on the site. Native plants did come up that following year- sedges, frost aster, and great blue lobelia were in evidence, but Canada thistle, Reed canary grass, tall fescue and smooth brome came up too. The combination of natives and non-natives created a quandary. Do you go down the preservation road and save the native plants or spray to kill the non-natives?

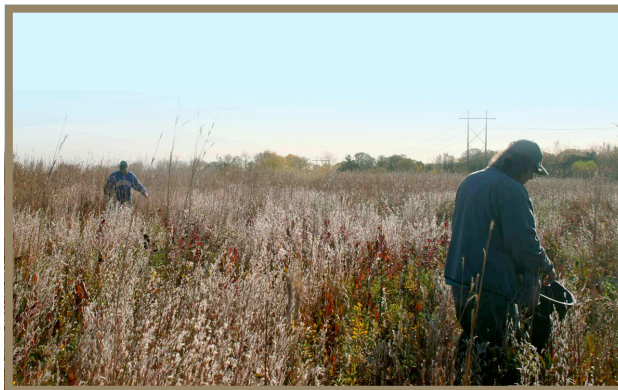
Another concern centered upon where to get the seed for the proposed prairie. Seed from the sand prairie remnant across the road would be a very appropriate source of seed for the planting site because both remnant and planting site have similar soil types and topography. Unfortunately, the sand prairie remnant is only 36 acres and there is not enough seed produced in the remnant to plant 72 acres. Do you go down the road of using only sand prairie remnant seed or could you use native seed derived from other prairie remnants?

After much consultation with resource managers and botanists a plan was developed that most involved could agree upon. Four acres of the planting site adjacent to the road and closest to the

sand prairie remnant will be planted only using seed collected from the remnant. This will provide a buffer zone of 200 feet between the rest of the planting and the remnant. This buffer area will reduce the possibility that wind disseminated prairie seed from the planting will get into the remnant. Likewise, seeds shed from the remnant

prairie plants in the buffer zone can be deposited into the rest of the planting providing unique sand prairie species and genes. Areas of the site that have Canada thistle and reed canary grass will be sprayed with the appropriate herbicides this next spring and planted to oats. The areas of the site that have a high density of native sedges will not be sprayed or planted to oats. Seed for this planting (excluding buffer area) will be source identified 'Iowa Yellow Tag' seed augmented with sand prairie remnant seed left over from the buffer zone planting. The site will be seeded to prairie next fall. We still have one more opportunity to collect seed from the sand prairie remnant for use on this project. Was this the road you would have taken?

For more information contact Dave Williams at 319.273.7957, dave.williams@uni.edu.



Harvesting seed from a sand prairie remnant to be used for a nearby prairie reconstruction.

Seventh Semester of NRRM Seminar, Another Success



Presenting to a group of eager listeners, Mary Cox enlightens the classroom on her restoration efforts at Cedar Bend Savanna.

This was the 7th semester of the popular seminars series Natural Resource Research and Management at the Tallgrass Prairie Center. Topics were 'Restoration of Cedar Bend Savanna', presented by Mary Cox, graduate student in the Professional Science Master's program at UNI and summer intern for Black Hawk County Conservation; 'Invisible Prairie: The world of soil microorganisms and prairie restoration', presented by Elizabeth Bach, a PhD student from Iowa State University; 'Chichaqua Bottoms Greenbelt', with

Loren Lown, Polk County Conservation; and Dr. Johanna Foster and Dr. Kimran Buckholz waxed intellectually about the potential effects of bison wallowing behavior on a restored prairie plant community and soil. Seminars are scheduled on Wednesdays at 4 PM at the Tallgrass Prairie Center. For more information about upcoming seminars contact Ryan Welch, rwelch@uni.edu (319) 273-3828 or become a fan of ours on Facebook.



Tallgrass Prairie CENTER

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Two New Tallgrass Prairie Center Publications

The Tallgrass Prairie Center and the University of Iowa Press are proud to announce the release of two new publications – The Tallgrass Prairie Center Guide to Prairie Restoration in the Upper Midwest and The Tallgrass Prairie Center Guide to Seed and Seedling Identification in the Upper Midwest.

The prairie restoration guide, written by Center director Daryl Smith and program managers Dave Williams, Greg Houseal and Kirk Henderson, is a comprehensive resource for those involved in planning, developing, and maintaining prairie restorations in Iowa, northern Illinois, northwestern Indiana, southwestern Wisconsin, southwestern Minnesota, eastern South Dakota, eastern Nebraska, northwestern Missouri, and northeastern Kansas.

According to Robert H. Mohlenbrock, distinguished professor emeritus professor of botany, Southern Illinois University, “This manual, by four of the most knowledgeable prairie restorationists in the Upper Midwest, brings together absolutely everything that anyone, regardless of background, needs to know for proper tallgrass prairie restoration. In addition to chapters on everything from planning to implementing to managing a prairie, chapters on native seed production and restoring prairies in public spaces and along roadsides cover all that is necessary for successful prairie restorations. This book is an absolute must for anyone in the business of prairie restoration as well as a great read for any prairie enthusiast.”

The seed and seedling identification guide was also written by

Dave Williams and illustrated by staff graphic artist Brent Butler. This brilliantly crafted and beautifully illustrated guide will enable anyone - from the backyard gardening novice to the grassland managing expert - to properly identify and germinate seventy-two species of tallgrass wildflowers and grasses.

Thomas Rosburg, professor of biology, Drake University is sold on the approach taken by Williams and Butler. “Seedling identification presents many difficult challenges, but help is now available if you are working with midwestern prairie species. The Tallgrass

Prairie Center Guide to Seed and Seedling Identification in the Upper Midwest utilizes color photographs and line drawings to illustrate and highlight key characteristics of the seedlings of seventy-two different forbs and grasses often used in prairie reconstructions. Each species is presented on a full page with several illustrations that provide both an overview and a close-up examination of identifying features. The guide excels in helping users visualize the subtleties of morphology that help distinguish species from one another. This in itself makes the guide a valuable resource; add in its descriptions of seed germination biology and habitat information, and you have an indispensable resource for prairie reconstructionists. While seedling identification of most species is never going to be a simple task, this guide should, at

the very least, help simplify the problem and increase the accuracy of your seedling identification.”



The Tallgrass Prairie Center Guide to Prairie Restoration in the Upper Midwest and The Tallgrass Prairie Center Guide to Seed and Seedling Identification in the Upper Midwest are available at bookstores across the Midwest and may be purchased directly from University of Iowa Press at www.uiowapress.org or the Tallgrass Prairie Center.



Interested in planting a prairie?

Or perhaps you're restoring a remnant savanna, prairie or wetland?

Let www.plantiowanatives.com help you find the information, resources, and service providers to make it happen. From backyard landscaping to landowner habitat restoration programs, whether starting from scratch or restoring remnants, it's a great place to start. Links to information on native plants, where to buy seeds and plants, tips on landscaping, and incentive programs for landowners. Also find links to educational resources and organizations. Perhaps best of all, find professional service providers for everything from site preparation and seeding/installation to restoration and management, including prescribed (Rx) fire! Check it out. And Plant Iowa Natives!

Roadside Mowing Law Cuts One

By: Kirk Henderson

This year the Iowa legislature passed House File 2458, a law prohibiting roadside mowing before July 15. The legislation, which applies to state and county roads, delays mowing to allow for pheasant nesting. To a lot of habitat people, roadsides are valuable as cover undisturbed during nesting season. The final bill includes nine exceptions, a couple of which provide a lot of leeway. Mowing is prohibited except as follows:

1. Within 200 yards of an inhabited dwelling
2. On rights-of-way within one mile of the corporate limits of a city
3. To promote native species of vegetation or other long-lived and adaptable vegetation
4. To establish control of damaging insect populations, noxious weeds and invasive plant species
5. For visibility and safety reasons
6. Within rest areas, weigh stations and roadside parks
7. Within fifty feet of a drainage tile or tile intake
8. For access to a mailbox or for other accessibility purposes
9. On rights-of-way adjacent to agricultural demonstration or research plots.

The people sponsoring the bill had good intentions. With all the built-in exceptions, are mowing practices likely to change? That question led to a survey of county roadside managers and county engineers.

The survey began with a harmless, warm up question. "Do you welcome these changes designed to protect nesting habitat?" Bam! 26 of 51 respondents said "No". Most of the engineers who took the survey did not appreciate this legislation at all. This unexpected response kind of superseded the rest of the survey.

Now the question is- what raw nerve was struck by this legislation? Fortunately many respondents were moved to elaborate. The hand-written objections fell into three categories. The law:

1. Usurps local authority.
2. Makes managing roadsides more difficult.
3. Disrespects their efforts to build and maintain safe roads.

The actual responses were more strongly worded, a lot more. This reaction comes from thoughtful professionals who obviously feel someone entered their turf and altered the landscape without offering a single heads up.

There has always been some tension over IRVM's promotion of roadsides as habitat. Even among engineers who support the use of native vegetation there is discomfort on this point. For the most part we have co-existed, let sleeping dogs lie and gone about our work. Along comes this legislation.

Counties will soon realize that, with the safety and weed control exceptions, they can mow wherever and whenever they want. But it's the thought that counts. Someone messed with them and they are riled. IRVM did not lobby for this legislation but could sustain collateral damage if it results in any less native planting.

From an IRVM perspective, county roadside mowing was not much of a problem. Maintenance personnel seldom mow beyond the shoulder. Landowners sometimes mow roadside wildflowers at peak bloom. A few might now delay their mowing. But the survey also showed not one respondent expects their county will enforce the law. So on the county level, at least, it appears little was gained for nesting cover. Hopefully nothing has been lost.

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Graduate Student Research Projects



Anna Abney

"The Effect of Burn Timing on Grasshopper and Ground Beetle Assemblages in the Early Stage of a Reconstructed Tallgrass Prairie"

Prescribed burning is a common management practice in prairie reconstructions but many entomologists are concerned about the impact of burning on insect populations. The effect of fire on insects has been studied on remnant prairies and other grasslands, but little research has been done on reconstructed prairies, especially in the first few years after planting when insects are colonizing the site. My study examines how spring and fall prescribed burns affect the species composition of grasshoppers and ground beetles in a recent prairie planting. The study area, located at the Cedar River Natural Resource Area in Black Hawk County, was formerly row cropped and was seeded to 16 native grasses and forbs in fall 2008. My research site was divided into a randomized two-block plot design with 18 plots. The experiment includes a fall 2009 burn, spring 2010 burn and a no-burn control. In fall 2009 I conducted preliminary sampling of the site to assess insect activity and sampling procedures. My hypotheses are as follows: 1) Insect species richness will increase over time on all plots; 2) Insect species richness will increase more on burned plots, with plots burned in the spring having the highest richness; 3) Abundance of ground beetles will increase post-fire; 4) Abundance of grasshoppers will decrease post-fire; 5) Abundance of both groups will be similar on both control and burned plots after 1 year post-fire. The plots will be sampled during the summers of 2010 and 2011, and preliminary results from 2010 sampling will be presented.



Molly Schlumbohm

"The Effect of Tallgrass Prairie Species Composition on Above-Ground Biomass Production"

Despite growing demand for alternative fuels, little research has focused on the potential utilization of mixed stands of tallgrass prairie species for energy production. A recent study by Tilman (et al. 2006) suggests that increasing species diversity of the stand increases above ground biomass. However, Tilman's research involved small plots, random species selection, high seeding rates, and the removal of the top 15 cm of soil. In 2008, the Tallgrass Prairie Center at the University of Northern Iowa initiated a research project to determine if Tilman's results could be applied at a field level scale, with selected species and without fertilizer or soil modification. In spring 2009, 98 acres within the Cedar River Natural Resource Area in Black Hawk County, Iowa were reseeded with 4 seed mixes: a monoculture of switchgrass (*Panicum virgatum*), a mix of 5 warm-season grasses (including switchgrass), a biomass mix of 16 species (including previous 5 species) and a 32 species prairie mix (including previous 16 species). Treatments were replicated across 3 different soil groups: a well-drained clay loam, and excessively drained sandy loam and a poorly drained clay loam. I hypothesize that when established, the most diverse plantings will produce the greatest above-ground biomass. Vegetative sampling was conducted in September 2009 to assess initial establishment and productivity. Initial analysis indicates that above ground native plant biomass was significantly ($p < .001$) lower in the excessively drained sandy loam soils than the other soil groups, but not significantly ($p < 0.05$) different among seed treatments.