Spring 2010

Tallgrass Prairie Center Newsletter, Spring 2010

University of Northern Iowa. Tallgrass Prairie Center.

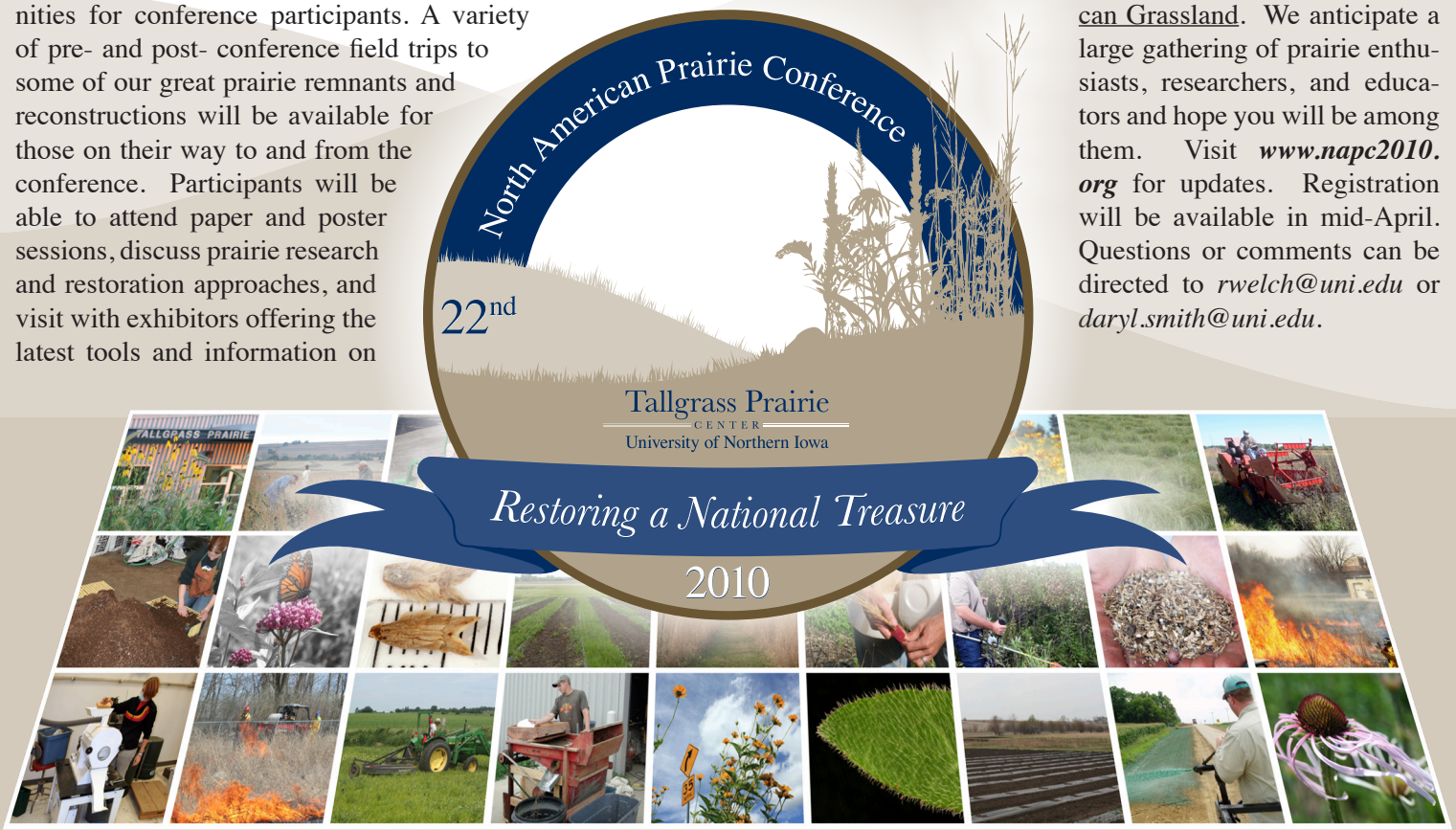
Tallgrass Prairie
CENTER
Restoring a National Treasure

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.

Spring 2010

22nd North American Prairie Conference: Restoring a National Treasure

The Tallgrass Prairie Center at the University of Northern Iowa is hosting the 22nd North American Prairie Conference from August 1-5, 2010. We invite you to experience the Iowa prairies, the Cedar Falls metro area, the University of Northern Iowa and the Tallgrass Prairie Center. An opportunity is provided for prairie enthusiasts including conservationists, teachers, farmers, biologists, artists, writers, agency personnel, native seed growers, and business people to assemble and learn more about prairie. In keeping with the conference theme, "Restoring a National Treasure," we are offering 10 different full day and 4 half-day field trip opportunities for conference participants. A variety of pre- and post- conference field trips to some of our great prairie remnants and reconstructions will be available for those on their way to and from the conference. Participants will be able to attend paper and poster sessions, discuss prairie research and restoration approaches, and visit with exhibitors offering the latest tools and information on natural resource management. Submissions for presentations are now being accepted through the website: ***www.napc2010.org***, with a submission deadline of May 14, 2010. Keynote speakers include Reed Noss, Director of the Science and Planning in Conservation Lab at the University of Central Florida and President of the Conservation Planning Institute. Dr. Ross is currently writing a book on southern prairies; Mark Ackelson, president of the Iowa Natural Heritage Foundation; and John T. Price, renowned author of such books as Man Killed by Pheasant, and Not Just Any Land: A Personal and Literary Journal Into the American Grassland. We anticipate a large gathering of prairie enthusiasts, researchers, and educators and hope you will be among them. Visit ***www.napc2010.org*** for updates. Registration will be available in mid-April. Questions or comments can be directed to *rwelch@uni.edu* or *daryl.smith@uni.edu*.



Fewer Grass Seeds Increases Wildflowers

Creating a lush stand of prairie grasses is an easy thing to do. Sow 40 seeds/ft^2 of big bluestem, little bluestem, side-oats grama, Indian grass and switchgrass in the spring, cultipack after seeding, mow 3-4 times in the first growing season and 2-3 years later a lush stand of prairie grasses will result. However, creating a diverse stand of prairie grasses and forbs is a much more difficult task. Including forbs in a native grass seed mix doesn't necessarily guarantee that the forbs will be present in the stand. The lack of forb establishment can be due to seed dormancy, seed granivory, seed lost by wind, water, and soil erosion, improper planting depth, and/or inadequate seeding rate. Recent research has found yet another reason for the lack of forb establishment - sowing too many seeds of some native grasses. Specifically, big bluestem, Indian grass, and switchgrass seeded at rates of 9.0 seeds/ft^2 (2.5 lbs./ac), 6.0 seeds/ft^2 (1.4 lbs./ac), and 1.0 seeds/ft^2 (0.2 lbs./ac), respectively, will significantly reduce forb establishment, growth, and species richness (Dickson et al. 2009, Prairie Moon 2009). Forb establishment, growth, and species richness improved significantly when these grass species were seeded at half these rates, and was maximized when the forbs were seeded without the grasses at all (Dickson et al. 2009). This begs the question - Should grasses be left out of the seed mix to maximize forb establishment? My personal experience has been that seeding the forbs without the grasses is a bad idea for many reasons. First, if the goal is to reconstruct a prairie that attempts to mimic a native prairie in plant composition and function, then the grasses must be included in the planting. I've never run across a prairie remnant without native grasses. Second, forbs will grow abnormally large in a planting without the grasses. Grasses compete with forbs for light, space, nutrients and water. It is a constant tug-of-war between these groups for those resources. I planted only wildflowers in my yard and every year I get 7' tall showy goldenrod. It's 2-3' tall in prairie remnants! Third, prairie grasses in a reconstructed prairie appear to be a major component that contributes to increased water interception/infiltration (Benedict 2010). Again, this goes back to reason #1 for including the grasses. Fourth, grasses provide structure and food resources critical to wildlife. I've walked through many reconstructed prairies and found birds nesting in the grass. Finally, prairie grasses provide the fuel matrix that facilitates prescribed burning. Grass stems provide fine, continuous fuels that burn easily and carry a fire, whereas forb stems are coarse and are less likely to burn. So the bottom line is, when developing a seed mix for a prairie reconstruction, include both grasses and forbs but reduce the seeding rate of the grasses to give the forbs a fighting chance at establishment.

Canada wild rye, Elymus canadensis seed germinating

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

Literature Cited

Dickson, T. and W. Busby 2009. Forb species establishment increases with decreased grass seeding density and with increased forb seeding density in a northeast Kansas, U.S.A., experimental prairie restoration. Restoration Ecology 17(5): 597-605 pp.

Benedict, Sarah. Personal communication. 2010. Graduate Research Assistant, University of Northern Iowa – Tallgrass Prairie Center. Cedar Falls, Iowa.

Prairie Moon Nursery. 2009. Catalog and cultural guide; native plants and seeds for wetland, prairie, savanna and woodland. Winona, MN. 55987. http://prairiemoon.com.

Another Semester of Successful Seminars at the TPC

The Center is just concluding the 6th series of Natural Resource Research and Management seminars. Word is getting out, seminars were well attended, and the room was filled to capacity. Presenters this spring included Jennifer Leigh Hopwood, Xerces Society, discussing the critical importance of native plants in roadsides to pollinators; Dr. William Clark, Iowa State University, share information on genetics and behaviors of bobcat populations in Iowa; Chris Barber, UNI Tallgrass Prairie Center graduate student, presented preliminary research on effects of treating seeds with mycorrhizae and micronutrients on seedling establishment in a prairie reconstruction; and Dr. Matt Helmers, Iowa State University, presented the use of perennial vegetation to reduce nutrient and sediment loss in surface runoff. All seminars are held at the Tallgrass Prairie Center on Wednesdays at 4 p.m. Come for the cowboy cookies, stay for the edification. For more information on upcoming events or to share ideas for future seminars, please contact Ryan Welch, or become a fan on *Facebook*.

Chris Barber, UNI Tallgrass Prairie Center graduate student, presents his research to a crowd of people at the Center.

For more information contact:
Ryan Welch at 319.273.3828,
rwelch@uni.edu.

Tallgrass Prairie
CENTER

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Greg Houseal, Editor
Brent Butler, Layout Design

For additional information or subscription to an electronic version of the newsletter, contact:

Greg Houseal
gregory.houseal@uni.edu
319-273-3005

Wetland Plant Materials Development Meeting

Wetland specialists, resource managers, botanists, and native seed growers from various agencies and organizations were invited to the Center on March 5 to participate in wetland plant materials development. The primary purpose for the meeting was to identify and prioritize species for collection and seed increase for commercial development for wetland restoration. A wide range of issues were discussed, including market demand, seed bidding policies, general availability, and using species appropriately in terms of their natural occurrence in the state (biogeographic distribution). Participants included Jennifer Anderson-Cruz, Biologist, Natural Resources Conservation Services (NRCS)– Iowa; Marc Solberg and Bill Pusateri, Iowa Dept. of Transportation (DOT)-Office of Location and Environment; Eileen Wuebker, Assistant Director, Iowa Crop Improvement Association (ICIA); Bill Johnson- Biologist, Prairie Resource Center, Iowa DNR; Eric Lindstrom, Regional Biologist, Ducks Unlimited (DU)-Iowa; Doug Helmers, State Coordinator, Partners for Fish and Wildlife, US Fish and Wildlife Service (USFWS); Tom Rosberg, Associate Professor and Chair of Biology, Drake University; Loren Lown, Natural Resources Specialist Polk County Conservation Board; Dan Allen, Allendan Seed; Roger Schwery, Custom Seed Services; Bill Buman, Backyard Designs; Carroll Hoksbergen, Hoksey Seed; Howard Bright, Ion Exchange; Bill Carter, Prairie Moon Nursery, and Center staff, Daryl Smith, Director; Greg Houseal, Program Manager, Natural Selections Seed; and Ryan Welch, Outreach Coordinator.

Photos: Various wetland plantings. Font design: Brent Butler

Many agencies, including Ducks Unlimited (Iowa), Partners for Fish and Wildlife (USFWS), and Iowa DNR Private Lands Program utilize Iowa NRCS wetland mixes because of their sound ecological approach. Because many wetland species are small seeded (astronomically high seed count per pound) NRCS mixes and species are calculated on a cost per seed basis instead of cost per pound. More species appropriate for wetland seeding can be included in mixes because they can be shown to be economically competitive and affordable to seed. Iowa DOT is also interested in expanding the availability of wetland plant material for wetland reconstructions.

The group reviewed a list of species commonly specified in wetland mixes by state and federal agencies and assessed existing commercial availability of seed sources. A focal point was the ecological potential of sedges (species of *Carex*) for sedge meadow and wet prairie restoration, and some of the challenges with identification, propagation, and seed production. The Center has been developing several Carex species as foundation seed over the past three years, and information was presented on collection methods, production, harvesting, cleaning, and seed yields for several species in production. The group also identified a need for more riverine, submergent and aquatic vegetation (SAV) to be available to meet the needs of restoration for these types of wetlands.

The Center will continue to work with these agencies and organizations and others to refine a priority list of species for foundation seed increase, as well as to facilitate partnerships that will promote the development of appropriate wetland plant materials for the greater benefit of future wetland restorations in Iowa and beyond.

For more information contact:
Greg Houseal at 319.273.3005,
gregory.houseal@uni.edu

Recent Publications about Center programs and projects:

Upland Sedge (*Carex* spp.) Propagation for Seed Increase. Proceedings 21st North American Prairie Conference, Winona, MN. Pp. 132-138. Houseal, G. and D.D. Smith.

The Effects of Annual Rye on Native Plant Establishment When Seeded As a Nurse Crop in a Prairie Reconstruction. Proceedings 21st North American Prairie Conference, Winona, MN. Pp. 14-21. Williams, D.W.

Plasticulture for Seed Production of Wetland (*Carex*) Species. Native Plants Journal, Spring 2010, University of Indiana Press. 11:1. Pp 58-64. Houseal, G.A. 2010.

Another Roadside Infraction

A fairly wise man once said, "If you can do prairie in roadsides, you can do it anywhere." Steep slopes, poor soils, roadsides are a tough neighborhood. And whatever kind of vegetation you try to grow in a roadside, rest assured it will be subjected to disturbance, the ongoing onslaught of roadside insults.

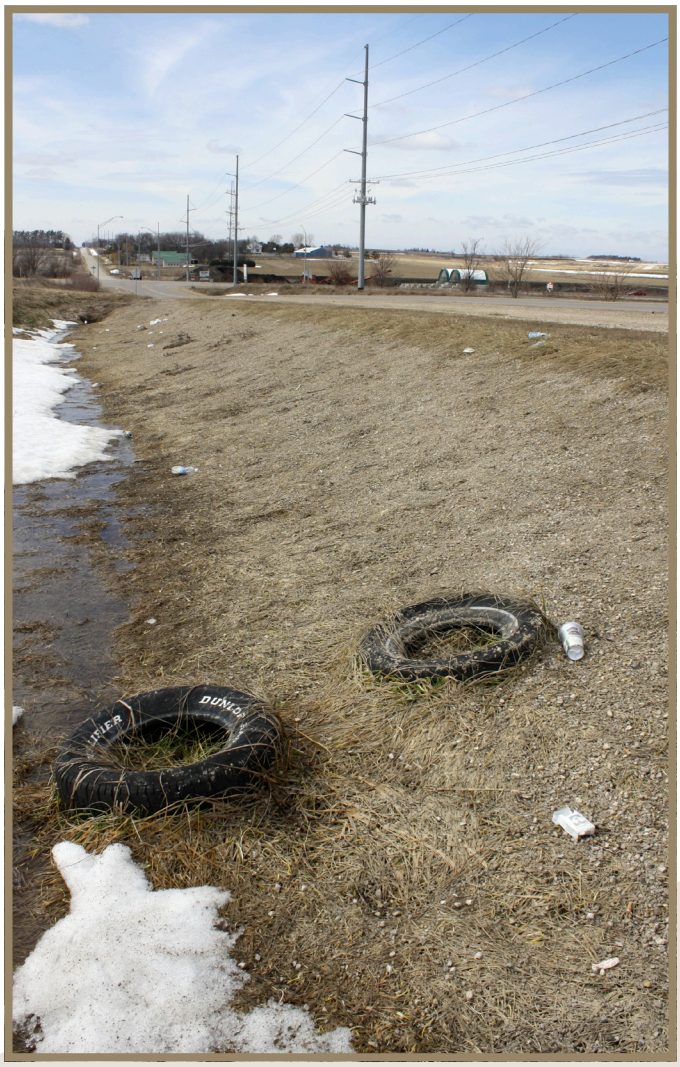
The usual suspects include sedimentation from farm field run-off, row crop overspray - doubly bad since glyphosate-ready, utility cables and pipelines, floodwater debris, and the ever-popular illegal dumping. By comparison the occasional badger hole seems like a molehill.

Alas there is another disturbance, seemingly all the more rude for it's sudden and random appearance. Every March, as we rejoice the melting snow, it lies now exposed atop the snow-smashed grass. It's gravel, the precious material road departments painstakingly maintain along the edge of the road.

For the passed 3 months, winter's greatest heroes, the snowplow drivers, have been clearing our roadways and in the process, relocating gravel to the roadside- the foreslope, the ditch bottom, all the way to the backslope. We don't blame them. Their job is hard. But it's amazing how far that stuff flies. It's also amazing what a nice thick, deposit it makes.

Fortunately a month from now the displaced aggregate is no longer conspicuous. Resilient leaves of grass will mostly find their way around and through. Some will die and there will be weeds. But the key word is resilience. Born of disturbance, our beautiful native vegetation takes this one in stride too. So praise the prairie and pass the semi. But don't forget. It's *Three snows on the robin*.

For more information contact Kirk Henderson at 319.273.2813, kirk.henderson@uni.edu.



As spring nears, the snow melts to reveal gravel deposited along an Iowa roadside.

Student Employee Profiles

Kali Downs

Hometown: Indianola, IA

Degree: BFA, Art Education

Graduation: Dec. 2010

Future plans: To develop a community, culture, and sustainability with argiculture and art.

Christina Boeck

Hometown: Cedar Falls, IA

Degree: BA in Biology

Graduation: Dec. 2010

Future plans: Pursue a Masters in Biology at UNI. Work in the field of Environmental Management/Conservation or Genetics.

Can You Identify this Seedling

Photo credit: Dave Williams

Key characteristics: round stem, leaflike stipules, alternate leaves, compound leaves with 3 leaflets, balloon-shaped leaflets with notched tips, stem and leaflet hair absent. Answer below

White wild indigo
Baptisia alba