

Fall 2011

Tallgrass Prairie Center Newsletter, Fall 2011

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Tallgrass Prairie

CENTER

Restoring a National Treasure



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

OCT 2011

Iowa Wrote the Book on IRVM

The term Integrated Roadside Vegetation Management, now adopted by many state DOT's, actually originated in Iowa. With such leadership comes the responsibility to document what we've been doing. The new IRVM Technical Manual, written to provide technical support for new and existing Iowa county roadside programs, is a leaner, more efficient source of information than the two earlier editions. It is really a completely new publication and one that should receive some attention outside the state.

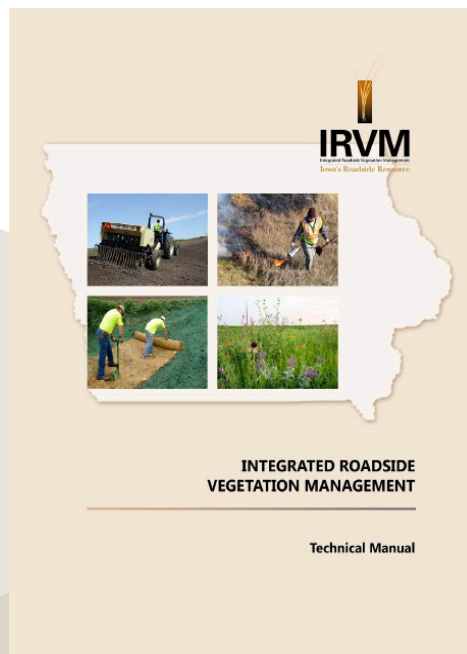
Organized in six chapters – Implementing IRVM at the County Level, Native Seed, Seeding, Erosion Control, Weed Control and Prescribed Burning, the manual will be a valuable resource for future county roadside managers. It will also stand as a tribute to all who helped pioneer Iowa's IRVM program. IRVM began in Iowa and we have had many outstanding individuals working as county roadside managers over the years. In essence they wrote the book...with their talents, the backgrounds they brought and the knowledge they acquired.

Hard copies of the manual are being distributed to all county secondary road departments and conservation boards in the state. There is also a pdf

version that can be viewed at www.uni.edu/irvm. Maria Urice, who served as editor for the multi-

author project, plans to continually update the pdf version. A comments section is included at the end of each chapter in part to allow space for additional information. According to Urice, "Every time I spoke to one of these county guys I picked up another piece of information. The term *manual-worthy* developed in the process. The pdf version allows us to include these insights." The result is a more living/breathing document and greater ownership on the part of the roadside managers. It's their manual.

Funding for the manual came from an appropriation the Tallgrass Prairie Center received through USDA Natural Resources Conservation Service and from Iowa DOT's Living Roadway Trust Fund. The collaboration goes well beyond the names listed inside the cover. The result truly represents what is going on statewide.



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Center Extreme MakeOver: New Research Lab, Seed Cooler, Shop and Equipment Storage Space

Recently, a year-long project to renovate the Tallgrass Prairie Center was completed. Renovations include a new laboratory, seed storage room, upgraded workspace for graduate students, expanded shop, dust collection system, and an equipment storage building. Funding was provided by a transportation enhancement grant from the Federal Highway Administration. The Center hosted an Open House on October 12th to provide an opportunity for UNI faculty, staff and students, local residents and prairie enthusiasts to view the various renovations and learn more



Roadside managers tour new graduate laboratory at the Center
Photo by David O'Shields

about the activities of the Center. Tours were provided for visitors to become familiar with the facilities and equipment used by the Center. Open House guests had an opportunity to visit with staff and students about ongoing programs and peruse recent publications: *The Tallgrass Prairie Center Guide to Prairie Restoration in the Upper Midwest*, *The Tallgrass Prairie Center Guide to Seedling Identification*, *Integrated Roadside Vegetation Management Technical Manual* and *Tallgrass Prairie Center Native Seed Production Manual*. Graduate student Molly Schlumbohm commented, "It reflects well on the Tallgrass Prairie Center when people visit and see what a well-organized and productive establishment we are."

The Center's mission is to restore native vegetation for the benefit of society and environment through research, education and technology. Currently, Center activities focus on the following: Assisting and supporting counties in implementing and maintaining an Integrated Roadside Vegetation Management (IRVM) program; providing

Iowa Source-Identified seed in sufficient quantities at an economically competitive price for prairie reconstructions and roadside plantings through the Natural Selections Program; conducting an applied research project to determine an optimal mixture of prairie species for maximum biomass production for use in electrical generation, and providing consultation on prairie reconstruction and management.

For those less familiar with the Tallgrass Prairie Center, a brief history of the development of the Center may be in order. In FY1999, the University of Northern Iowa received transportation enhancement funds through the Federal Highway Administration to establish a Native Roadside Vegetation Center on campus. The funds were used for major renovation of a portion of Warehouse I (former Wayne Engineering Building) on West 27th St to house the Center. The renovation was completed in 2003 and the Center was dedicated on August 29th. Due to funding limitations, two of the rooms were only partially completed. Funds were received through the United States Department of Agriculture: Natural Resources Conservation Service (USDA-NRCS) for construction of a greenhouse in fall of 2005. Effective Jan. 1, 2006 the name of the Center was changed to the Tallgrass Prairie Center to more fully reflect the nature of its activities. The 2010-11 renovation completes the current facilities needs of the Center.

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Tallgrass Prairie
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NEWSLETTER

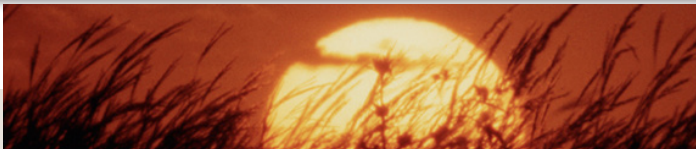
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Tallgrass Prairie Center, 2412 W 27th Street
University of Northern Iowa
Cedar Falls, Iowa 50614-0294

Legacy design courtesy of The Design Butler



Wetland Delineation Course June 11-15, 2012

The Rock Island District Corps of Engineers Regulatory Branch is announcing a Reg 4, Official Wetland Delineation Class, will be taught at the Tallgrass Prairie Center at UNI. Instruction will be provided by Regulatory Staff, EPA Staff and other professionals in the wetland identification field. The class will be field intensive with 3 or 4 half-day field trips. Costs will be determined later this year but will probably be less than \$200. Dorm rooms available for \$20 per night. To reserve a spot or for more information contact - kirk.henderson@uni.edu



Videos Soon to be Available On-Line

Fifteen videos will soon be available for viewing on the Tallgrass Prairie Center website. (http://www.tallgrassprairiecenter.org/media_vid.html). These videos are derived from long format Tallgrass Prairie Center productions and feature center staff members.

1) A Place For Prairie: Private Land, 2) A Place For Prairie: Roadside, 3) A Place For Prairie: Schoolyards and Backyards, 4) Basic Prescribed Fire Techniques/Demo Burn, 5) Conducting A Prescribed Burn, 6) Do No Harm – Prairie Restoration, 7) Planning A Prescribed Burn, 8) Prescribed Fire: Intro and Basic Information, 9) Prescribed Fire: Post Burn Greenup, 10) Prairie Reconstruction, 11) Restoring Prairie Remnants, 12) Prescribed Fire: Demo Burn and Techniques, 13) The Future Of Tallgrass Prairie, 14) What Prairie Means To Us, 15) Writing A Prescribed Burn Plan.

Ten new video shorts for 2012 are currently in pre-production and will be posted as they are completed. They are:

1) Seed Cleaning, 2) Designing a Seed Mix, 3) Site Preparation Overview, 4) Calibrating a Native Seed Drill, 5) Drilling Seed, 6) Basics of Seed Collection, 7) Basics of Seedling ID, 8) Techniques of Prairie Establishment, 9) Overview of Basic Prescribed Fire Equipment 10) Basics of Safe Herbicide Use.

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Natural Selections Seed to be Stored Nationally

The National Center for Genetic Resources Preservation (NCGRP), Fort Collins, CO, has agreed to provide 'black box' storage for small amounts of regional foundation seed (Iowa Ecotype Project/Natural Selections) developed by the Tallgrass Prairie Center at UNI over the past 20 years. This arrangement was facilitated by Mark Widrechner, USDA-ARS Horticulturist at the North Central Regional Plant Introduction Station at Iowa State University in Ames, IA. Recently retired, Widrechner explained that the Center's seed increase program is a "valuable project at the University of Northern Iowa to develop regional, synthetic populations of native, Iowa prairie plants and...to ensure that these regional synthetics get out to the land managers who need them." Black box storage means that while NCGRP will maintain these seed sources in appropriate longterm storage at the National facility, it will remain the Tallgrass Prairie Center's responsibility to regenerate the collection to maintain viability. Approximately 145 regional sources of over 60 native species were included in the 'black box'.

The NCGRP preserves both plant and animal genetic resources. Its mission is to acquire, evaluate, preserve, and provide a national collection of genetic resources to secure the biological diversity that underpins a sustainable U.S. agricultural economy through diligent stewardship, research, and communication. The NCGRP maintains over 700,000 varieties of seed in a 5,000-square-foot, -20 C



NCGRP is located on the Colorado State University campus

deep-freeze vault, as well as thousands of shoots and buds stored cryogenically in liquid nitrogen. The extreme cold is necessary so seeds won't germinate and can stay viable for centuries. Parent seeds of all the modern hybridized crops are stored there, and 40,000 new types of seeds are added every year, including seed of endangered native species collected by the Center for Plant Conservation based in St. Louis, MO.

For more information contact:

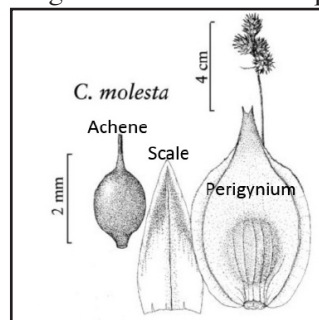
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"The Effect of Perigynia Removal and Stratification on Germination and Emergence of Three Sedge (Carex) Species"

Carex species are an important component of native plant community restoration. Available seed is often limited and costly, so maximizing germination is important.

Perigynia removal has been shown to have a positive effect on germination in other species of Carex (Hoag et al. 2001,

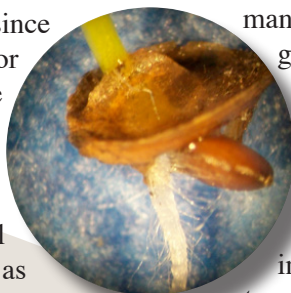


Above: Line drawing illustrating parts of sedge spike Below center: Perigynium naturally ruptured by shoot/root as achene germinates

Sellers & Hoag 1997, Hough-Snee & Cooper 2011). Additionally it is generally accepted that cold wet stratification, along with daily alternating temperatures (15/30 C; 50/70 F), is needed to break dormancy in Carex species (Baskin & Baskin 1998, Kettenring & Galatowitsch 2007; Schütz & Rave 1999).

It is important to look at stored seed as well as fresh, since seed is often stored for a period of time before

planting occurs. This study is designed to test perigynia removal and stratification on germination of stored and fresh seed of selected Carex species (*C. brevior*, *C. molesta*, *C. bicknellii*) under ideal conditions in a laboratory germination chamber, as well as emergence in a field site at the Tallgrass Prairie Center. The species *C. bicknellii* (Bicknell's sedge), *C. brevior* (plains oval or shortbeak sedge) and *C. molesta* (troublesome sedge) were chosen based on their importance in the native Iowa tallgrass prairie plant community and on the availability of the native seed. The study is funded by the NRCS, the Tall-



Christina Boeck with sedge seedlings (indicated by flags) in direct-seeded emergence plots in background

grass Prairie Center, and the University of Northern Iowa.

Preliminary results from the first germination trial showed that stratification was the main factor in increasing total seed germination. However,

in non-stratified stored seed, perigynia removal increased total germination in *C. brevior*, but not *C. molesta*. The management implication of these findings suggests that if *C. brevior* seed was stored at room temperature it would be beneficial to remove the perigynia before planting. Currently germination trial 2 with fresh seed is still in progress and will be completed in November 2011. Final emergence data will be collected in the field in the summer of 2012. (photos courtesy of C. Boeck)

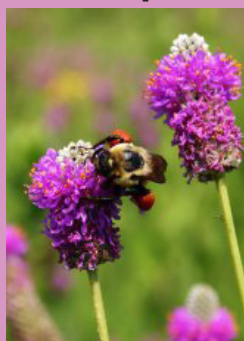
Christina Boeck is a graduate student at UNI. For more information about her research project contact: cboeck@uni.edu

Recent Presentations of Center Programs and Projects

Roadside Conference, Sept. 22-23, 2011, Waterloo, IA
A 25-Year Perspective (IRVM), Kirk Henderson
Hydroseeding Demonstration, Dave Williams
Maximizing Success of a Prairie Restoration, Dave Williams
Planting Sedges: Why We Should Carex, Greg Houseal
Prairie Career Reflections, Daryl Smith

Iowa Association of County Conservation Boards Annual Conference, Sept. 15-17, 2011, Independence, Iowa
Maximizing Success of a Prairie Restoration, Dave Williams

Natural Areas and Ecological Management Seminar presents:



Bulk Seed Harvesting of a Diverse Reconstructed Prairie

Carl Kurtz

Wed., November 9 @ 4PM
 Tallgrass Prairie Center
 2412 W 27th Street/Cedar Falls, IA

This WEDNESDAY!!