There it was – the unmistakable, melodious whistle. Cathy Irvine and I were walking across the Hilltop Planting, 8.5-acres planted last May. In mid-April, less than a year after planting, the prairie didn’t look like much. Oats stubble, a few corn stalks, a decent stand of dried prairie grasses (side oats, dropseed, big bluestem, switchgrass) and a few timid rosettes of yellow coneflower and black-eyed Susans peeking out of the cold ground. No matter how preliminary and tentative this prairie looked to us, the meadowlark approved. Once a common songbird nesting in the pastures and hayfields, meadowlarks disappeared in this rural neighborhood in the 1970s according to Cathy Irvine. As farmers sold their cattle, took out the fences and planted more soybeans, the pastures and hayfields were no longer there to supply nesting habitat. Red-winged blackbirds, with that familiar, exuberant screech, took the place of meadowlarks in the farming landscape. But now, on Irvine Prairie, the meadowlark song could be heard once again.

We will watch to see if he establishes a territory and finds a mate, or is just passing through.

Irvine Prairie-in-Progress
Planting. This spring (year 2) we are planting another 19 acres. Our 5.5-foot wide Truax drill will help things go a little faster than last year. Justin Meissen designed four seed mixes to match soil drainage conditions: hillslope, poor drainage, wet depression, and toeslope. This seed was purchased from Allendan Seed, Shooting Star, Backyard Designs, and Prairie Moon. With few exceptions the seed is Iowa-source material, meaning direct descendants of plants growing in remnant prairies. We are planting two acres of bulk-harvested seed, grown by Jon Judson’s Diversity Farms near Jefferson, Iowa. This seed also originated from remnant prairies but is grown and harvested in mixtures.

Transplants. There are two areas in last year’s planting that had poor seedling establishment due to water movement or saturated soils. Laura Walter will replant these areas with species adapted to wet soils, using greenhouse-grown plugs or divisions of plants from retired seed production plots. Thanks to a germination study undertaken this winter by UNI students Kate Sinnott and Jon Nzombo, we have healthy transplants of several different species of sedges available for this purpose. We will transplant wetland shrubs (white meadowsweet and false indigo bush) and rhizome cuttings of Canada anemone, a wildflower which is difficult to establish from seed, along the margins of these wet areas. We hope to have many hands from Green Iowa AmeriCorps to help get these plants in the ground before summer.

A new discovery. Last summer we discovered a very small population of bunchflower (Veratrum virginicum) in the road ditch just west of Irvine Prairie. To say we were excited is an understatement. Only two state biological preserves in Iowa contain this species, and it is considered rare or threatened in neighboring states.

The mission of Irvine Prairie is to restore and maintain an ecologically diverse tallgrass prairie that engages current and future generations of students and community members in learning about Iowa’s prairie heritage and appreciating the benefits provided by prairie.
Its proximity to the Irvine project suggests it may once have been native to prairies in this neighborhood, so we were inspired to try to reestablish it. Last fall Cathy collected some seed from these roadside plants. UNI biology major Jon Nzombo cleaned them and put them in cold, moist stratification for 45 days, after which almost 95% germinated. He and Laura Walter transplanted the seedlings into flats in the greenhouse, where they are growing very slowly (they only put out one true leaf in their first year). We plan to harvest the small bulbs this fall and transplant them in spring 2020.

Management. In addition to seeding, this year’s land management tasks include supplemental broadcast seeding, scouting for invasive grasses, establishment mowing with a 15-foot John Deere stalk chopper (3 times on new planting; 1 time on 2018 planting) and herbicide application on invasive grasses in the fall. This coming fall, some problem areas may be re-seeded. A portable restroom will be installed to facilitate visitor use.

Visiting Irvine Prairie
Irvine Prairie is free and open to the public during daylight hours. Facilities are limited at the moment, but we encourage and welcome visitors to explore the planted areas. No hunting or motor vehicles are permitted.

To find us, navigate to 1173 55th Street, Dysart, Iowa. The driveway on the north is a private drive; please do not use. Park on the south side of the road in the grass, near the stone marker.

Please visit our website, https://tallgrassprairiecenter.org/irvine-prairie, for more detailed information on the history of the Irvine Farm, planting plans through 2022 and vegetation monitoring reports.

In Memoriam: John Miller, a long time Friend of the Tallgrass Prairie Center, passed away on January 21. We will remember John's passion for farming, and his love for the prairie. His family's story was featured in the film, “America’s Lost Landscape: the Tallgrass Prairie.”

Two prairie walks were hosted by Iowa Prairie Network Region 3, the Cedar Prairie Group of the Sierra Club, and the Friends group:

- Wolter’s Prairie, a wet mesic prairie located in Butler County, was our destination on May 18. Shooting star, prairie smoke, and yellow stargrass contributed to the beauty of the day.
- Bennington Township Cemetery, a mesic prairie remnant with a wide variety of native plants, was the site of a prairie walk on June 22.

Our thanks to Daryl Smith and Bruce Stiles for leading these walks and providing a great experience for all who participated.

To become a Friend of the TPC or renew your membership, go to tallgrassprairiecenter.org/friends.
Conservation Organizations Partner on Prairie Demo Site
Showcasing native vegetation on working lands and inspiring landowners to convert marginal or unproductive land to permanent perennial grasslands is central to the Prairie On Farms program and other organizations. This premise was the driving force behind a unique partnership between Pheasants Forever, Fayette County Conservation, and the Tallgrass Prairie Center.

In 2017, the three organizations began work to establish a demonstration site in Northeast Iowa. At the demonstration site, common or “off the shelf,” seed mixes would be displayed alongside custom, site-specific seed mixes. Project leaders determined the best location was one where multiple stakeholders could utilize the same retired farmland as a research and demonstration site, which would answer ag-oriented perennial vegetation questions. Fayette County landowner John Kleitsch agreed to provide 54 acres of farmland adjacent to the Wapsipinicon River for the project.

Tallgrass Prairie Center program managers Justin Meissen and Ashley Kittle planted 3 acres of the demonstration site with the objective to compare establishment and cost effectiveness for different seed mixes, which differ in soil type customization on dry marginal soils. Two seed mixes were planted in November 2017: 1) medium soil (mesic soil) ($365/ac, 46 species), and 2) dry soil ($368/ac, 49 species). One of the three acres was planted with a diversity mix (70+ site-specific species). In the first year, only half of the diversity planting was mowed. This will demonstrate the importance of first year establishment mowing and the impact it has on the success of the planting.

In addition to the 3 acres that were planted for the Tallgrass Prairie Center’s research, the Fayette County NRCS and Pheasants Forever used several pre-mixed, commercially available seed mixes in remaining areas of the demonstration site. One mix is composed of more short grass species, one does not have switchgrass, one is a wet/mesic mix, one has 50% native grass and 50% native wildflowers, and the other has 75% native grass and 25% wildflowers. Most of these different seed mix plots are side by side for easy comparison and monitoring. These different plots will be used as anecdotal suggestions and conversation starters: What happens over time with differing amounts of grass seed in a mix? How do short vs tall grasses hold up? Which mix expresses more flowers? Does a mix without switchgrass allow more wildflowers and other species of grasses to prevail? A variety of management practices are planned in the form of prescribed burning and in alternating burn units over two to three years.

A June 17 field day provided attendees with an occasion to walk through the different seed mix plantings and ask questions of conservation experts. This location offers a great area for future field days, gives landowners and farmers an opportunity to learn by seeing, and definitely provides great diversity of habitat!

While research is on-going, current project highlights include:

- Key prairie species establish well even in dry conditions. Native warm and cool season grasses establish well in marginal dry soil, along with important summer and fall flowering forbs;
- Seed mixes customized for dry soils result in more ecological functionality at similar price. Dry-adapted forb species established better than their medium to wet counterparts, resulting in more functional groups present;
- Cost-effectiveness of native perennial vegetation is comparable in productive vs. marginal soils.

Conservation professionals, science educators, and prairie enthusiasts have found our prairie root banners useful in their outreach activities. These life-size banners are a great way to reinforce the message of the ecological benefits that prairie roots provide. We also provide free lesson plans for K5-8 science teachers.

If you are interested in purchasing a banner for your prairie education toolbox, please contact staci.mueller@uni.edu.

A limited number of the actual root specimens are available for sale. If you are interested, please contact laura.l.jackson@uni.edu.

Photo courtesy of Mississippi National River and Recreation Area
County Seed Pick-Up

Kristine Nemec, Roadside Program Manager
kristine.nemec@uni.edu

Roadside managers and technicians from 36 counties came to the Tallgrass Prairie Center to pick up native seed on June 12-13. This native seed distribution is made possible by funding through a Transportation Alternatives grant, administered by the Federal Highway Administration. Thank you to UNI students Darien Gordon, AJ Richard, Natalie Ross, Cathy Rottinghaus, Tam Schnock, Leon Shears, and our summer teacher externs Logan Mork and Paul Mugan for their help organizing and distributing the seed.

Student Research

In its third year, the Pollinator Habitat Evaluation Project is going strong. Six undergraduates and two masters students are surveying for prairie plants, bees and butterflies on farms near Cedar Falls. Since 2017, we have collected data on over 40 farms. The 2019 Summer Undergraduate Research Program (SURP) students are Kate Sinnott, Allison Egan, Pryce Johnson, Emma Simpson and Ervina Tabakovic. Former SURP students are Alyssa Burgert, Corinne Myers and Kate Madsen. The research this year is funded by UNI Biology and the USDA Farm Service Agency. Professor Ai Wen, the UNI Biology department's newest faculty hire, is coordinating this effort. Professors Mark Myers, Mark Sherrard, Laura Jackson and Kenneth Elgersma advise individual students and help move the group forward with data analysis.

Alec Glidden completed an honor’s thesis in December 2018 entitled: Seed Mix Design and First-year Management Influence Ecological Outcomes in Prairie Reconstruction. Beginning in August 2019 he will begin working on his Masters research with Justin Meissen and Prof. Mark Sherrard, funded by the Iowa Nutrient Research Center and UNI Biology Department.

UNI Biology majors Kate Sinnott and Jon Nzombo conducted a research project to determine whether the Carex (sedge) species stored in our seed cooler for up to eight years, was still viable. The students set up replicate trays of seeds in our temperature- and light-controlled germination chamber, and tracked seed germination over time. Their results were well received at the annual meeting of the Midwest-Great Lakes Chapter of the Society for Ecological Restoration, in Pella, Iowa in April.
LAURA WALTER
Cedar Falls, IA
B.A. Biology, 1991
and M.S. Biology, 1995,
Kansas State University

*Plant Materials Program Manager*

The Plant Materials Program (formerly Natural Selections, a.k.a Iowa Ecotype Project) has a new manager, Laura Fischer Walter. In addition to producing source-identified foundation seed, and working to facilitate communication among native seed stakeholders, Laura brings her background as an educator to community outreach and education events such as the Cedar Valley STEM Festival and Irvine Prairie.

ESTHER EDGERTON
TPC Summer Assistant
Grundy Center, Iowa
Majoring in Biology with Art Minor

Esther Edgerton is no stranger to the TPC! During Summer 2017, Esther was part of the Biology Department's Summer Undergraduate Research Program. She worked with several other students and faculty to measure wildflowers, bees and butterflies in fields enrolled in the Conservation Reserve Program (CRP). Since that time, Esther has worked on several projects, including the new wall display featuring TPC programs and the prairie root facility. When asked what she has enjoyed most about working at the TPC, Esther stated that learning to identify various prairie plants using different techniques ranks at the top of her list.

ZACH FULLER
Zach Fuller joined the Tallgrass Prairie Center in May as a summer Americorps Land & Water Steward working with the Prairie on Farms Program and the Integrated Roadside Vegetation Management Program. He is pursuing his undergraduate in Geography with an emphasis in Planning and Development, as well as a certificate in Geographic Information Systems. Zach spent time working with the TPC in the summer of 2018 as an Americorps member through the Center for Energy and Environmental Education, which sparked his interest in prairie restoration.

D.J. BROOKS
D.J. Brooks is an AmeriCorps member serving his second term with the Land and Water Stewards. This summer he is working in conjunction with Ashley Kittle, the Prairie on Farms program manager, and Kristine Nemec, the Integrated Roadside Vegetation Management program manager, at the Tallgrass Prairie Center. D.J. is a senior Biology student at the University of Northern Iowa, and hopes to attend graduate school to study Invasive Species and Agricultural Pest Management.

GREEN IOWA AMERICORPS
LAND & WATER STEWARDS

Kristine Nemec, Roadside Program Manager
kristine.nemec@uni.edu
LAURA WALTER
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Laura Fischer Walter is the new manager of the Plant Materials Program (formerly Natural Selections, a.k.a Iowa Ecotype Project). In addition to producing source-identified foundation seed, and working to facilitate communication among native seed stakeholders, Laura brings her background as an educator to community outreach and education events such as the Cedar Valley STEM Festival and Irvine Prairie.
IOWA’S NOXIOUS WEED LAW UPDATED & IMPROVED

Not all thistles are outlaws, and cemetery prairies are safer!

Kristine Nemec, Roadside Program Manager
kristine.nemec@uni.edu

Iowa’s noxious weed law is intended to protect landowners from having their land invaded by noxious weeds that may damage resources such as crops or other plants, fish or wildlife, or public health. It lists noxious weed species and outlines the responsibilities of landowners and state and county government officials in controlling or eradicating noxious weeds.

In the fall of 2017, the Iowa Department of Agriculture and Land Stewardship (IDALS) initiated a review of the law’s effectiveness and areas for improvement. They held meetings with representatives from stakeholder groups such as farm associations, federal, state, and county government agencies, Iowa State University, and the University of Northern Iowa Tallgrass Prairie Center. IDALS incorporated recommendations into the law that were approved by state legislators, and the updated law went into effect last year. Key changes include:

- IDALS may now make changes to the noxious weed list through an administrative rule (policy set by the agency), rather than through a legislative code revision that must be approved by the state legislature. This allows for a quicker response to emerging noxious weed problems.
- IDALS can create a list of priority noxious weeds that are available on the administrative rules portion of their website and may update the list annually.

There are currently eight species or groups of species on this priority list:

- Class A species for eradication (a noxious weed determined by IDALS to be the highest priority for eradication of existing infestations and prevention of new infestations): palmer amaranth (Amaranthus palmeri).
- Class B noxious weeds for control (noxious weeds determined by IDALS to be a priority for preventing new infestations and stopping the spread of species):
  - Canada thistle (Cirsium arvense)
  - Teasel (Dipsacus spp.)
  - Leafy spurge (Euphorbia esula)
  - Bull thistle (Cirsium vulgare)
  - Multiflora rose (Rosa multiflora)
  - European morning glory or field bindweed (Convolvulus arvensis)
  - All other species of thistles belonging in the genus of Cirsium.

Note: Native thistles belonging to the Cirsium genus are not on the list.

- The update repealed language stating that the weed commissioner “shall control the weeds growing in abandoned cemeteries in the county as needed,” reducing the potential for confusion about the difference between weeds and remnant prairie plants in cemeteries.
- Allows for permits to be issued to private individuals for the burning, mowing, and spraying of roadides as long as these are consistent with the county integrated roadside vegetation management (IRVM) plan if the county has one.

The entire noxious weed law is found in Chapter 317 of the Iowa Code. Provisions related to roadside weed control are found in Chapter 314, although these weren’t part of the updates. If you have questions about noxious weed control in your area, contact information for county weed Commissioners is on the Iowa Weed Commissioners’ Association webpage at: https://iowaweedcommissioners.org.

SAVE THE DATE

33rd Annual Roadside Conference
September 11-13, 2019
Graham Center at Central College
Pella, Iowa
Tallgrass Prairie Center was awarded the Champions of Character Environmental Steward of Character Award for 2019. We were nominated by Steven Eilers, Urban Agriculture Specialist, Black Hawk County Extension.

The Rusty Patched Bumble Bee, a federally endangered species, was found foraging in our native seed production plots last Fall. We feel this is quite an honor – the recently listed bee has declined 80% across its range in just a few years. It requires very diverse habitat such as trees, brush, and nectar resources from April until October. The UNI campus and TPC grounds evidently have what it takes!

Justin Meissen’s paper (along with co-authors Mark Sherrard, Alec Glidden and Laura Jackson) submitted to the journal Restoration Ecology, has been accepted with minor revisions. The paper summarizes the three years of findings on how native seed mix design and first year mowing influence native and weed stem density, and floral resources.

In mid-February, TPC staff headed a short drive south to the Traer Public Library for a discussion of “Caring for Older Prairie Plantings.” The event attracted an enthusiastic group of over twenty landowners to talk about their challenges with fire, invasive weeds and other issues.

Alec Glidden completed an honor’s thesis in December 2018 entitled: Seed Mix Design and First-year Management Influence Ecological Outcomes in Prairie Reconstruction. Beginning in August 2019 he will begin working on his Masters research with Justin Meissen and Prof. Mark Sherrard, funded by the Iowa Nutrient Research Center and UNI Biology Department.

Kate Sinnott and Jon Nzombo presented their research on Carex germination at the Great Lakes – Midwest Chapter of the Society for Ecological Restoration. The poster session was well attended and several people said they would use the results of their research. This was both Jon and Kate’s first experience with research. Jon also completed a study of germination in Bunchflower, *Veratrum virginicum*. Seeds of this unusual species were collected from a small population in the road ditch near Irvine Prairie. Jon hopes to go on to medical school next year, and Kate is thinking about graduate school in ecology.

Terry Tempest Williams, author of many well-known books including *Refuge: an Unnatural History of Family and Place*, gave a keynote lecture on the UNI campus on April 22, and later toured the Tallgrass Prairie Center with her old friends, UNI Provost Jim Wohlpart and wife Sasha. Ms. Williams especially enjoyed the prairie roots.

Montana grain and fruit farmer/founder of Big Sandy Organics Bob Quinn, and author Liz Carlisle (Lentil Underground; Grain by Grain with Bob Quinn) stopped by April 10, after a talk on sustainable agriculture in the Northern Plains.
Nearly fifty people with interests in native seeds from four states gathered at UNI’s CEEE on March 13, 2019 to discuss ways to improve coordination across the native seed supply chain. Attendees shared their varied perspectives as suppliers, regulators, consumers of native seed, and others who influence native seed use. Our objectives were to better understand the way the native seed market works in order to ensure the availability of quality native seed for restoration.

The Tallgrass Prairie Center convened this meeting partly in response to the extreme spike in demand for native forb seed following the roll-out of the pollinator mix (CP42) for Conservation Reserve Program (CRP) plantings. From 2015-2017, over 230,000 acres of pollinator CRP were planted in Iowa alone. The high demand for nectar plants (forbs) overwhelmed the supply of Iowa-source seed and the impacts were felt across the U.S.

Other large seed purchasers, notably the Iowa DOT, suddenly faced low availability of Iowa-source seed and much higher seed prices. Higher rates of substitutions to seed mix plans over time resulted in some plantings with poor outcomes. Seed mixes containing out-of-state seed brought a new weed species into Iowa, Palmer amaranth, which resulted in greater scrutiny over native seed quality. More restrictive quality control measures on local source-identified seed (yellow tag seed) raised the cost of production for Iowa-source seed, which is passed on to consumers.

Five panelists presented their viewpoints of the successes and challenges resulting from the “pollinator CRP boom” and discussed questions from the audience. In the afternoon, smaller groups met in breakout sessions for discussion around five focus areas: 1) understanding the native seed supply chain, 2) sharing best practices for native seed production, 3) connecting research and practice in seed mix design and planting, 4) improving the seed plan process for CRP, and 5) assuring native seed quality without sacrificing availability and affordability.

Our report on the meeting describes a few key takeaways:
- a model of the native seed supply chain to increase understanding of how its parts interact;
- suggestions for improving coordination among NRCS field office staff/conservation planners, seed suppliers, and landowners; ideas for increasing communication among seed producers so that they can share best practices;
- refined research questions for seed mix design and planting practices; and
- clarification of the issues around seed purity and viability testing.

Participants found value in the communication and open discussion, the convening of people with diverse perspectives, and opportunities for networking, seeing old friends, and making new connections. As a result of this meeting, the TPC Plant Materials Program plans to increase its efforts to facilitate productive communication among stakeholders.

For a copy of the report, please contact Laura.Walter@uni.edu
SAVE THE DATE

IOWA PRAIRIE CONFERENCE
Ensuring the Future of Prairie
August 8-10
Central College, Pella, IA

ISU-STRIPS STAKEHOLDER MEETING
August 28
Dike, IA

IOWA PRAIRIE HERITAGE WEEK
September 8-14
Statewide events will be planned that celebrate our prairie heritage!

33rd ANNUAL ROADSIDE CONFERENCE
Roadsides and Recreation
September 11-13
Central College, Pella, IA

DARYL SMITH PRAIRIE DEDICATION AND PRAIRIE RENDEZVOUS
September 14
UNI Campus Prairie
Cedar Falls, IA

TALLGRASS PRAIRIE CENTER 20th ANNIVERSARY CELEBRATION
September 14
Cedar Falls, IA

ISU STRIPS & PRAIRIE ON FARMS FIELD DAY
October 17
Roadman Farm
Dike, IA

ALDO LEOPOLD DISTINGUISHED LECTURE SERIES
Climate Change from a Unique Perspective – Dr. Katharine Hayhoe
October 24
Cedar Falls, IA

Did you know the Tallgrass Prairie Center was established at the University of Northern Iowa in 1999 as the Native Roadside Vegetation Center? The name was changed January 1, 2006 to more accurately reflect its mission, programs and activities. Our current programs and projects - Roadside Program, Research & Restoration, Plant Materials, Prairie on Farms, and the Roots Project - work to connect people with the resources they need to restore native grasses and wildflowers to the tallgrass prairie region. Join us for our 20th Anniversary Celebration on September 14th. An open house will immediately follow the Daryl Smith Prairie Dedication and Prairie Rendezvous. Watch our Facebook page for more information!

For more information on these and other upcoming events, please visit our Calendar of Events on our website at tallgrassprairiecenter.org/calendar