Center for Grassland Studies

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Integrated Turfgrass Management Is Useful for the Control of Rough Bluegrass

By Cole Thompson, Department of Agronomy and Horticulture, UNL

Integrated turfgrass management does not rely on a single management strategy to achieve a goal. Rather, integrated management should be considered as the practice of using multiple strategies to achieve a common goal: maintaining desired utility (or quality) level of a turf sward. Ideally, integrated management should also be input-limited, and only expend resources such as water, fertilizer, pesticides, fuel, etc. to prevent the utility of a turf sward from falling below a predetermined level that may vary based on the site, budget, or expectations of consumers. When needed, resources should be applied precisely – without waste through over- or misapplication, e.g., water running down the storm drain during lawn irrigation or fertilization at the wrong time of year. Furthermore, the efficacy of resource expenditures should be subsequently evaluated to determine if a turf response was observed. If not, it is crucial to reconsider if the resource expenditures were necessary, or if the decrease in turf utility was incorrectly attributed to an assumption about a resource deficiency. Integrated turfgrass management doesn't have to be difficult, but it does take follow-through and attention to detail. It can be as simple as waiting for a home lawn to show signs of wilt before irrigating, rather than irrigating on a regular schedule, or withholding irrigation even when wilt is observed because rain is forecasted. Irrigating only when necessary in this way is a simple form of integrated management because we are manipulating a single resource to ensure physiological turf health, and also decrease the likelihood of biotic stresses such as weed competition or disease infection. It is important to consider all possible effects of resource use before expenditure, and then decide whether to proceed after determining the net change in anticipated turf (and/or pest) response. These considerations will, of course, vary depending on desired species, pest pressure, resource availability, and expected utility level.

Figure 1. Rough bluegrass (left) and annual bluegrass (*Poa annua* L.) (right).

Let's now consider how integrated turf management can improve control of rough bluegrass (*Poa trivialis* L.). Rough bluegrass is a common, problematic cool-season grass that can be mistaken for other bluegrasses without close inspection (Fig. 1). During decline in summer because of susceptibility to heat, drought, and disease stresses, it often disrupts the uniformity of other managed cool-season grasses in the north central U.S. (Fig. 2). Rough bluegrass has been naturalized after supposed contamination in cool-season grasses brought to the U.S. from Europe. However, the species has also been shown a problematic contaminant in creeping bentgrass (*Agrostis stolonifera* L.) seed production, and may also be a component of "other crop" seed in seed lots of other species. So, inadvertent planting is possible during establishment of desirable species from seed. Furthermore, stolons (i.e., lateral, above-ground stems) of the species can be spread vegetatively during cultivation practices. Because of the multiple avenues for rough bluegrass dispersal, and the few herbicides available for effective control, especially in home lawns, an integrated approach is absolutely necessary to mitigate the encroachment of this weed.

There are currently no selective herbicides registered for postemergence rough bluegrass control in cool-season home

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Note: Opinions expressed in this newsletter are those of the authors and do not necessarily represent the policy of the Center for Grassland Studies, the Institute of Agriculture and Natural Resources or the University of Nebraska.

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From the Director

Nebraska is a transition state located in the Great Plains region between the Corn Belt and the Rocky Mountains. It hosts a large livestock industry—predominately beef cattle. Forages, especially grasses, constitute an important component of this major industry and its economic impact. Under normal production practices in Nebraska, forages overall comprise approximately 80 percent of the feed costs of beef animals. The least expensive way to harvest and utilize this feed source is by grazing.

One of the major challenges facing livestock producers is the uneven distribution of forage production throughout the grazing season. A way to overcome or lessen this challenge is to use a combination of cool-season and warm-season grasses and/or legumes. Cool-season grasses have their greatest growth in the spring and early summer months. Growth of these grasses normally slows, and they become semi-dormant during the hot summer months; however, they usually resume their growth during the cooler fall months. On the other hand, warm-season grasses begin their growth later in the spring, and reach their prime growth during the warm summer and early fall period.

An adequate number of plant species, both warm- and cool-season grasses and legumes, are available today in Nebraska that will produce high quality forage throughout the entire length of the grazing season. Additionally, annual forage plants can be grown to bridge any short-term gaps or to lengthen the grazing season. However, accomplishing this goal of high yields of quality forage requires an elevated level of management.

Cool-season grasses are more prevalent among cultivated forages, but warm-season grasses have the potential to provide a large quantity of quality forages during the warm and frequently dry summer months. Most of our warm-season grasses do not tolerate heavy and frequent defoliation as effectively as cool-season grasses, since they evolved under a system of periodic burning and grazing. Warm-season grasses may also be lower in nutritive value than cool-season grasses of comparable maturity because they have a higher fiber and lower protein content along with a lower leaf-to-stem ratio. Also, it has not been the custom to interseed legumes with warm-season grasses because the legumes are difficult to establish in existing swards and initiate growth earlier than the grasses, which makes the pastures harder to manage. However, when both grasses and legumes are contained in the forage, the yield and protein content are increased.

Cool- and warm-season grasses both have a relatively high requirement for nitrogen if they are going to produce high yields of quality forage. If legumes can be maintained in a mixed sward, they can provide nitrogen for the grasses, thus improving protein content and forage quality, and possibly extend the grazing season.

The primary advantage of using a mixture of plant species for grazing is the increased production of high quality forage especially during the summer months, thus resulting in increased growth and weight gain of the livestock. Studies in Nebraska by UNL Professor Emeritus Terry Klopfenstein and animal science colleagues have shown that the average daily gain of steers was over 30 percent greater when grazed on a mixture of cool- and warm-season grasses versus grazing only on cool-season grasses throughout the season. The improved gains were from a threefold increase in daily gain during the summer period when the steers were grazing the warm-season grasses.

M. A. Massengale

The Ethanol Industry and the Cattle Industry

By Terry Klopfenstein, Professor Emeritus, Department of Animal Science, UNL

In the early 1970s there was interest in building an ethanol plant near McCook to ferment "cheap" wheat. We were asked to develop a proposal to evaluate the resulting distillers grains, which we did. The plant was not built and we had a proposal. We took the proposal to the Distillers Feed Research Council (beverage distillers) and they funded it. That started our research on distillers grains. About that time Nebraska State Senator Loren Schmidt and others promoted the idea of ethanol from corn as a fuel (gasohol). We worked with a couple of small plants; the idea was for on-farm plants.

We researched distillers grains as a protein source. It is an excellent protein source for cattle because the corn protein is highly "bypassed." We also began research with corn gluten feed produced by the wet milling industry. We obtained byproduct from Minnesota Corn Processors (MCP) in Marshal, MN. Our contact was Paul Imm, a Columbus, NE, native. When MCP decided to develop a plant in Columbus, Paul asked if we would help encourage use of the byproduct, wet corn gluten feed.

For about 30 years we taught that the energy in corn was the starch and that protein (soybean meal) cost about 2.5 times the price of corn, so one would never overfeed protein. So MCP was taking the starch out of the corn, and we needed to convince producers that the byproduct without starch could be used to finish cattle. Our initial research showed the wet corn gluten feed had energy equal to corn. That took some convincing of producers. Feedlot nutritional consultant Bill Dicke and other consultants believed the research and convinced feeders to try the wet corn gluten feed. They liked it, and that started the acceptance of byproducts as a source of energy in feedlot diets.

Chief Ethanol in Hastings began producing fuel ethanol in the 1980s. Todd Sneller from the Ethanol Board approached us about the idea of an ethanol plant at a feedyard so wet distillers could be fed directly to the cattle. The question was whether to feed it as a protein source or at a higher level in the diet as both protein and energy. Fortunately, we had a small experimental ethanol plant at the Agricultural Research and Development Center near Mead. It ran for two years with the purpose of producing wet distillers grains for our feeding trials. Fellow animal scientist Rick Stock and I designed trials to test the wet distillers as a protein source, and then fed it at 40% of the ration dry matter to test it as an energy source. We conducted four experiments over the two years. The results were so good from the first experiment that we didn't discuss it openly, but the second experiment provided even better results. We then started to believe the results. We removed the starch and the resulting byproduct had more energy per pound than corn.

In those early trials we did not have equipment to condense the distillers solubles, so the diets were very wet. I am sure this confirmed to some feeders and nutritionists that Stock and I were a little "unrealistic" (to put it mildly). At that time rations were corn, alfalfa and corn silage with no more than 18 to 20% moisture. Some of our diets were over 50% moisture. Some producers and nutritionists believed the cattle would not "eat" that much moisture... but they did – and performed very well.

The positive results from our research encouraged Dicke and other nutritionists to recommend to feeders that they try wet distillers grains. Chief Ethanol and other plants that were being built started supplying wet byproduct. Some plants did not include any drying capability in their construction, believing the wet distillers could be sold directly to feedlots. There is a cost to drying distillers grains, including the fuel and equipment.

We continued conducting research with wet and dry distillers grains, primarily with support from the Nebraska Corn Board. Numerous ethanol plants and the Ethanol Board were very supportive. Several plants began partially drying their distillers grains, producing a modified product. Over the past few years we (UNL animal scientist Galen Erickson and students) have summarized our research; the summary shows that drying the distillers grains reduces the energy value for feedlot cattle. It does not change the value for cattle fed high-forage rations. The energy value of wet distillers grains is 30 to 40% greater than corn, while modified distillers grains is 15-20% better. Dry distillers is only 10-15% better than corn as an energy source. Erickson says "wetter is better." The protein value is an added benefit. The energy value of wet, modified and dry distillers grains is at least 30% greater than corn in forage-based rations, and the protein is of great value.

Once cattle feeders began using distillers grains, they really liked it. One leader in the industry told me his results confirmed our research (it is always good to hear that our research results actually work in the "real world"). But that feeder told me to not tell the ethanol industry. The ethanol industry priced wet distillers relatively low compared to corn price in order to move the product. With good feeding experiences, demand increased. Basic economics worked for the ethanol industry, so as demand increased, price increased as well. I understand economists call that "price discovery." But in the "good old days" we had cheap wet distillers grains of high feeding value – great for cattle feeders in Nebraska. The ethanol industry may have caused more changes to the cattle industry than any other factor during the last 50 years. Good or bad, it increased the demand for corn and solved much of the "farm problem" of too much corn. However, it increased the price of corn for feedlots. The really good news was the supply of distillers grains. Just maybe, this is a reason Nebraska has become the number 1 cattle feeding state. We are the most competitive state in terms of feed costs. This indirectly affects the cow/calf sector in Nebraska by increasing demand for feeders.

Ethanol production has increased the demand for corn, which increased the price, and then supply increased at the expense of grasslands. However, the supply of corn residue has increased. The moisture of wet byproducts adds palpability to corn residue diets, and the protein and energy of the byproducts complement the corn residue. This adds to the competitive advantage in Nebraska of having corn residue in unlimited quantity and numerous ethanol plants.

What is the future for byproducts? We know they are changing. Export demand was high and the price of distillers relative to corn increased in 2012 and 2013. That has changed and byproducts are currently very competitive. The ethanol industry is interested in extracting higher value nutrients from the

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Integrated Turfgrass Management Is Useful for the Control of Rough Bluegrass *(continued from page 1)*

lawns. As such, nonselective herbicidal control followed by reestablishment is currently the only reasonable option. Even though treating rough bluegrass with a nonselective herbicide in late summer aligns well with recommended fall seeding for cool-season grasses, spring applications seem to offer the best control. Over three studies near Mead, NE and in Manhattan, KS from 2011 to 2013, the most consistent control of rough bluegrass was observed with spring-applied glyphosate (69 to 99% control), whereas glyphosate applied in mid- or late summer controlled rough bluegrass 42 to 94% or 14 to 91%, respectively. Apply glyphosate in spring for optimum rough bluegrass control, followed by spot seeding, if desired. If a nonselective preemergence herbicide is used in spring, skip the areas that will be renovated to ensure the establishment of spot-seeded desirable species.

Whether spot seeding a former rough bluegrass area or seeding a new lawn, it is important to purchase high-quality seed with no "other crop" seed to limit the introduction (or reintroduction) of rough bluegrass into a turf sward. Seeding rate seems to be less important than mowing height for limiting rough bluegrass establishment. A study in Manhattan, KS, from 2011 to 2014 investigated the effects of seeding rates and mowing heights on rough bluegrass incidence in a new tall fescue [*Lolium arundinaceum* (Schreb.) Darbysh.] lawn when rough bluegrass was intentionally included at 1.0% seed by weight. Mowing at 3.0 or 4.5 inches reduced rough bluegrass coverage up to 57% compared to mowing at 1.5 inches after three years (Fig. 3). However, evaluated tall fescue seeding rates (4, 8, or 12 lbs/1,000 ft2) had no effect on rough bluegrass coverage, but the denser tall fescue canopy provided by higher seeding rates have been shown to increase disease incidence in other research. For this reason, seed new areas at not more than 8 lbs/1,000 ft2. Maintain a mowing height at or above 3.0 inches to reduce the likelihood of rough bluegrass establishment in tall fescue, but be prepared to similarly evaluate the effect of mowing height on disease incidence – the scientific literature is conflicted in this regard. It is also important to remember that preferred mowing heights for rough bluegrass mitigation could be different with other lawn species such as Kentucky bluegrass (Poa pratensis L.). Higher mowed turf also generally requires less frequent mowing, and subsequently less fuel to manage, and typically has a more developed root system that can access deeper soil water to avoid drought stress with less supplemental irrigation.

The aforementioned research summary is only one example of integrating several management strategies to achieve a common goal while at the same time ensuring that other aspects of turf utility remain unchanged (or maybe even improve, too). Integrated management reduces heavy reliance on one strategy, and it is easy to see why it is important to consider all possible effects of a management strategy before implementation.

Figure 2. Declining rough bluegrass during summer surrounded by tall fescue that does not appear stressed.

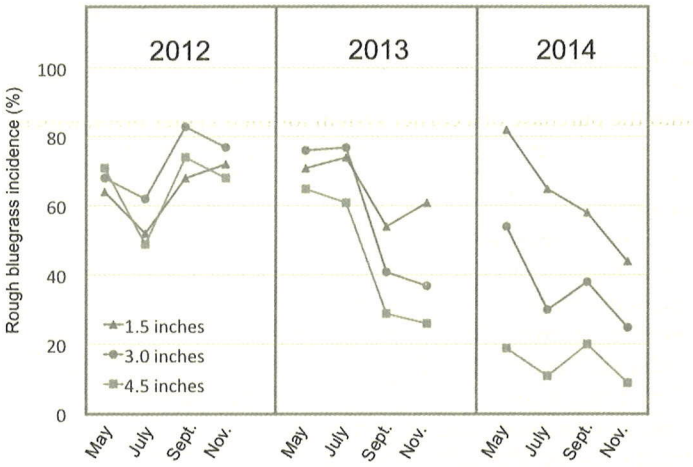

Figure 3. The effect of mowing height on rough bluegrass establishment when seeded with tall fescue at 1.0% contamination by weight. Data were collected four times each year using an assessment grid. All mowing heights were statistically different from one another at each rating in 2014.

Nebraska Invasive Species Program

The Nebraska Invasive Species Council (NISC) was formed in 2012 by the Nebraska Legislature to serve as an advisory council for state invasive species policy and to coordinate management and research efforts across the state focused on preventing, detecting and managing invasive species. The Nebraska Invasive Species Program coordinates the council to: 1) prevent the introduction of invasive species in Nebraska, 2) promote early detection and rapid response to control new infestations, and 3) reduce the impact of invasive species on Nebraska's natural resources.

There is a wealth of information on the program's website, neinvasives.com. There you can see photos and read information by species (aquatic, wildlife, insects, plants, pathogens). The invaders will carry labels such as Known (to exist in Nebraska), Not Known (no reportings in the state yet), and Most Wanted for Reporting. A good example of the last category is the Emerald Ash Borer, which until very recently carried the Not Known label, but after being spotted in Omaha June 6, it now carries the label that indicates officials deem this very significant and want people to be on the lookout and report sitings, which can be done on the website.

Diverse Partnership Turns Good Ideas into Good Habitat — and Good Pasture

A restored wetland in southwestern Hamilton County is the site of an innovative partnership that combines new technology with some old-fashioned common sense. Rainwater Basin Joint Venture (RWBJV) partners, including conservation agencies and agriculture technology and equipment companies, are working with the Marsh family to maximize the value of their Rainwater Basin wetland – in their farm operation and as migratory bird habitat.

Not long ago, the Marsh family was evaluating options to deal with 50-plus acres of flood-prone cropland. They considered the Wetlands Reserve Program (which has since been replaced by the Agriculture Conservation Easement program – Wetlands Reserve Easement option, or WRE), administered by the USDA's Natural Resources Conservation Service. But like many producers in south-central Nebraska, the Marshes were dissuaded by a significant obstacle: the program would limit their ability to cross a pivot irrigation system over the enrolled lands, thereby reducing the system's efficiency. However, in 2011, a Wetlands Reserve Enhancement Program (WREP) was established under which landowners maintained a reserved right to pass their irrigation system over enrolled acres.

The program's flexibility encouraged the Marshes to sign up for WREP. Their wetland was restored through sediment removal and seeding of native plants, and a permanent easement was placed on the acres involved. The family reinvested the easement payment into the purchase of a corner system for their center pivot, which allowed them to irrigate their field corners and thus gain 15 acres of high-quality irrigated cropland to offset 53 acres of previously marginal ground.

The Marshes and the Joint Venture partners wanted to ensure the wetland's long-term value, both to the farm operation and to migratory birds. For that, two things were necessary: an ability to precisely control irrigation inputs, and a method for controlling undesirable invasive species such as reed canary grass. Wetland plant communities can be managed through regular disturbances – such as prescribed fire, haying, or chemical and mechanical treatments. But the method promoted by the RWBJV's Working Lands Initiative – and the one chosen by the Marshes – is grazing, which not only improves wildlife habitat, but produces income.

To facilitate grazing, RWBJV partners provided 85% cost-share assistance to construct wildlife-friendly perimeter fence, as well as a solar livestock well and tanks. Sixteen pivot-crossing ramps will be installed on the fence so that the pivot can cross over and make a complete circuit. The RWBJV is also helping the Marshes develop a grazing plan that will maximize habitat and forage production.

Precise control of irrigation inputs – through retrofitting and enhancement of the existing pivot irrigation system – will protect the wetland by ensuring that it doesn't become too wet and will maximize crop production by applying irrigation inputs to the parts of the field that are in water deficit. A variety of Variable Rate Irrigation technology upgrades were needed. These included modifications to the valves and sprinklers, plus GPS and specialized software at the pivot panel. Together, the upgrades allow producers to control when nozzles are turned on and off, according to their location in the field. Soil moisture probes, along with precision mapping, allow the producer to understand in real time how much moisture is needed, and where.

Funding for the project comes from the Nebraska Environmental Trust, a State Wildlife Grant from the Nebraska Game and Parks Commission, the U.S. Fish and Wildlife Service's Partners for Fish and Wildlife program, and the landowner. Valmont Industries is providing funding for modifications to the pivot system; CropMetrics is providing funding to support the precision mapping and development of irrigation prescriptions. AgSense, LLC is contributing financially to hardware and firmware upgrades.

RWBJV coordinator Andy Bishop says, "We're pleased to join irrigation companies in this project. Like our conservation partners, they recognize that when wetlands become assets in an agriculture operation, we all benefit."

An added outcome of the project is that it will serve as one of several test sites in a study to quantify how net farm income is affected by a transition of flood-prone cropland to forage production, and by adoption of VRI technology. The two-year study will be conducted by the Daugherty Water for Food Institute at the University of Nebraska-Lincoln and will be funded by the National Fish and Wildlife Foundation and the Nebraska Natural Legacy Project.

"Variable Rate Irrigation is an option that offers answers to many of the challenges we face in integrating conservation with agriculture," says Bishop. "We hope the results of this project will encourage more producers to explore this option, and will provide them with information to make an informed decision."

Editor's Note: The above article, reprinted with permission, first appeared in the inaugural (Summer 2016) Rainwater Basin Joint Venture Newsletter. The quarterly publication provides updates about the cooperative efforts of RWBJV partners to advance conservation in Nebraska's mixed-grass prairie regions. For more information, see http://rwbjv.org.

To ensure the long-term value of the wetland on their property – both to the farm operation and to migratory birds, the Marsh family of Hamilton County teamed with Rainwater Basin Joint Venture partners to construct a solar livestock well and tanks as well as wildlife-friendly perimeter fencing with pivot-crossing ramps that allow the irrigation system to cross over and make a complete circuit.

August 1 is Pre-registration Deadline for Nebraska Grazing Conference

In early June the promotional brochure for the 16th annual Nebraska Grazing Conference was mailed to past NGC participants, Nebraska Extension Educators, and others. The event will be Aug. 9-10 at the Ramada Kearney. If you did not get a brochure, you can download one from the conference website, or contact the Center for Grassland Studies.

Full registration is $80 if paid by Aug. 1 and $100 afterward. Reduced registration fees apply to full-time high school and college students. One-day registrations are also available.

For more information and to register, visit http://grassland.unl.edu/current-conference. The event is sponsored by several public and private organizations, including the 2016 conference underwriters: Farm Credit Services of America, Nebraska Grazing Lands Coalition and the UNL Center for Grassland Studies.

Below is the conference program.

Learning doesn't stop when participants walk out of the presentation room. UNL animal science professor emeritus Terry Klopfenstein (gesturing) and Extension forage specialist Bruce Anderson (to his left) continue to impart their vast knowledge during lunch at the 2015 Nebraska Grazing Conference.

Tuesday, August 9	
9:00	Registration opens (refreshments in exhibit area)
10:00	Welcome and announcements
10:10	Opening remarks, Don Adams, UNL, Ithaca, NE
10:30	Using cover crops for fall forage, Mary Drewnoski, UNL, Lincoln, NE
11:15	Grazing diversity with annuals and cover crops, Wayne Rasmussen, Plainview, NE
12:00	Lunch
12:45	Heifer Link: A program to help young ranchers get started, Ron Rosati, Nebraska College of Technical Agriculture, University of Nebraska, Curtis, NE
1:30	Giving/getting opportunities to start a grazing operation, Lyle Perman, Lowry, SD; Ryan Sexson, Nenzel, NE
2:45	Break (refreshments in exhibit area)
3:15	Pyric herbivory to promote livestock production and wildlife conservation, Sam Fuhlendorf, Oklahoma State University, Stillwater, OK
4:00	Effect of grazing system type on bird habitats and bird communities in the Nebraska Sandhills, Maggi Sliwinski, UNL, Lincoln, NE
4:45	Management practices of 2015 Leopold Conservation Award winner: Shaw Family, Brian Shaw, Fairfield, NE
5:00	Social (compliments of Kearney Ramada)
6:45	Banquet with speaker, Bob Kinford, cowboy , writer, cattle consultant and humorist, Van Horn, TX

Wednesday, August 10	
8:00	Registration opens (refreshments in exhibit area)
8:30	Forage and future U.S. beef production, Derrell Peel, Oklahoma State University, Stillwater, OK
9:15	Factors to consider when making economic decisions in larger grazing operations, Trey Patterson, Padlock Ranch Co, Ranchester, WY
10:00	Break (refreshments in exhibit area)
10:30	Holistic herding and planned grazing, Bob Kinford, Van Horn, TX
11:30	Lunch
12:30	Building rangeland resilience to drought, Tonya Haigh, UNL, Lincoln, NE
1:15	The positive side of drought and drought planning at Daybreak Ranch, Jim Faulstich, Highmore, SD
2:00	Impact of removal of corn residue on grain yield and forage measurements at six cooperator sites, Rick Rasby, UNL, Lincoln, NE
3:00	Closing comments and adjourn

The Ethanol Industry and the Cattle Industry *(continued from page 3)*

distillers grains. Many plants (perhaps even most) are removing some of the oil. The technology is available to remove some of the fiber which is converted to cellulosic ethanol. At this time, we can't be sure what the byproduct will be like in the future, but it may well be different. The cattle industry in Nebraska will need to adjust again. Our job is to conduct the research to enable the industry to maximize use of whatever byproduct is available.

A Year in the Life of a PGA Golf Management Alumnus as His Club Prepares to Host Ryder Cup: Part 2

Editor's Note: Nick Sage from Bloomington, MN, graduated from the UNL PGA Golf Management Program in December 2013. He is now the Assistant Golf Professional at Hazeltine National Golf Club in Chaska, MN, site of the 2016 Ryder Cup matches. We thought it would be fun to follow Nick through the year as Hazeltine prepares to host this prestigious international event. Below is his second installment.

Ryder Cup fever at Hazeltine National was in full swing by the middle of June. Before we know it the Ryder Cup will be here and gone and on to Paris in 2018.

The golf course has been re-routed for the Ryder Cup and the Hazeltine membership has decided to play that routing the entire year. The front nine holes will be holes 1-4, 14-18, and the back nine holes will be 10-13, 5-9. Construction on the pavilions, tents, grandstands, and anything else needing to be built began on June 1st and will continue all the way into September. Several temporary access roads have been built inside the property for the numerous trucks and semis to deliver the materials and for the construction workers to get around without interrupting play of the members.

June and July are the busiest months for me and the other Professionals at Hazeltine. Our entire member event season is condensed into those two months. Typically, we would have several events in August, but in order to accommodate the demands of the world's biggest golf event, they were moved into the front end of the season. Starting August 1, turf mats will be provided to all players, and they will be instructed to use them in the fairway and on the par-three tee boxes. This practice will result in the golf course looking like no one has ever hit a shot on it come the week of the Ryder Cup (Sep. 27-Oct. 2).

My primary responsibilities leading up to the Ryder Cup will be nothing out of the normal: taking care of the members, managing events and corporate outings, assisting the Ryder Cup staff with anything they need, merchandising, and any general golf-related services that need to be taken care of. The Ryder Cup will be gone before we know it. We are all trying to enjoy the ride as the biggest golf event in the world rolls into our backyard. It is a once-in-a-lifetime event for Hazeltine – as well as for me – to be a part of one of the most anticipated Ryder Cup matches in all of golf. Stay tuned for a post Ryder Cup newsletter article!

Artists and Ecologists Talk Art and Conservation

By Katie Nieland, Center for Great Plains Studies, UNL

On April 20, 2016, the Center for Great Plains Studies hosted an art and conservation panel at its downtown Lincoln, Neb., location. The talk was part of the Paul A. Olson seminar series and coincided with two related exhibitions at the Great Plains Art Museum.

The panel was comprised of:

Photographer Sebastian Tsocanos and photographer/poet Robin Walter. Their exhibition, "From This Grass Earth," documented the pair's journey on horseback in northern Wyoming and Central Montana. Their photos and poems document the changing landscape of the northern Great Plains as natural areas are converted into agricultural use.

Photographer Kate Schneider, who photographed the proposed Keystone XL Pipeline route through Nebraska during a three-year period. Her images, paired with letters to President Obama about the pipeline, appeared in an exhibition titled, "We, the Heartland," on display at the Museum until Aug. 27.

Prairie Plains Resource Institute Executive Director William Whitney. His goal with PPRI is to restore parcels of land to native prairies and to make them accessible to the public for science, education, and recreation. More than 10,000 acres are now under protection through PPRI.

The panelists discussed how their work interplays with conservation issues facing the Great Plains' grasslands.

Walter says when she photographs the Great Plains, she wants viewers to be changed by the images – which can lead to a conservation mindset.

"I think it's sometimes so common in conservation to talk about the way we've affected the land," she said. "But I think a big part that is missing is the way the land affects us."

Whitney, whose prairie restoration projects can be considered artforms themselves, says the people who live on the Great Plains know it's beautiful, but they don't always tell others. In that way, promoting conservation in the area can be difficult, he said.

"[The Plains are] such a big part of the American character," he said. "All of it can be conserved if we want to."

Schneider said her work can take an activism approach to convince viewers to preserve the resources we have -- especially the sandhills and the Ogllala Aquifer.

"We hope our work contributes to larger conversations about the environment," she said. "There are so many environmental issues across the world."

Spending time either in the environment or with images of the environment can forge personal connections with the landscape and individual species, Walter said.

"When you learn the name of a plant, you care about it a little bit more," she said. And the same goes for the people who live and work in the grasslands. "When you spend time in a place, getting to know those individuals, you care about them."

An audio file of the "Conserving the Great Plains" panel discussion can be downloaded at http://www.unl.edu/plains/seminars/media/centerpodcasts.shtml.

Great Plains Art Museum Curator Melynda Seaton moderates the art and conservation panel comprised of (from left) Robin Walter, Sebastian Tsocanos, Kate Schneider and William Whitney.

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National Park Service Celebrates Centennial

This year the National Park Service celebrates a century of protecting America's cherished landscapes. In 1916 President Woodrow Wilson signed the Organic Act, which created and funded the Park Service. Today approximately 20,000 National Park Service employees safeguard 59 national parks and 352 monuments, historical sites, seashores and recreation areas – encompassing some 84 million acres. In Nebraska these include:

National Monument: Agate Fossil Beds (Harrison, NE). During the 1890s, scientists rediscovered what the Lakota Sioux already knew—bones preserved in one of the world's most significant Miocene Epoch mammal sites. Yet, this place called "Agate" is a landscape that reflects many influences—from early animals roaming the valleys and hills, to tribal nations calling the High Plains home, to explorers passing through or settling in the American West.

National Monument of America: Homestead (Beatrice, NE). With the promise of Free Land, the Homestead Act of 1862 enticed millions to cultivate the frontier. Families, immigrants, women, and freed slaves flooded 10 percent of the nation's land to chase their American Dream. American Indian cultures and natural environments gave way to diverse settlement, agricultural success, and industrial advancement—building our nation and changing the land forever.

National Scenic River: Niobrara (Valentine, NE). The Niobrara National Scenic River is not just the premier recreation river in Nebraska. It is a unique crossroads where many species of plants and animals coexist unlike anywhere else. High water quality and the relatively free-flowing nature of the Niobrara support diverse life while unique fossil-filled sandstone cliffs host over 200 waterfalls.

National Monument: Scotts Bluff (Gering, NE). Towering 800 feet above the North Platte River, Scotts Bluff has served as a landmark for peoples from Native Americans to emigrants on the Oregon, California and Mormon Trails to modern travelers. Rich with geological and paleontological history as well as human history, there is much to discover while exploring the 3,000 acres of Scotts Bluff National Monument.

Our neighboring state of Kansas is host to the only tallgrass prairie in the national park system. The 10,894-acre Tallgrass Prairie National Preserve was established in 1996 as a public-private partnership. In 2005, The Nature Conservancy became the primary owner, which it now co-manages with the National Park Service.

Sources: *Nature Conservancy Magazine*, June/July 2016; www.nps.gov/state/ne/index.htm