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University of Nebraska

Center for Grassland Studies Newsletter

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From the Director

We have seen and heard much discussion recently about expenditures, taxes and investments. One may have different viewpoints on all these subjects depending on how you are affected. There is one fact, however, on which we can all agree: to sustain life, food in some form is required.

Demographers estimate there will be 8.3 billion people on the earth by 2025. To meet the future world demands for food, feed and fiber, we need significant advancements in research and production technology. Therefore, our investments in agricultural research and technology, human nutrition and the conservation and wise use of our natural resources must be markedly increased.

In that context, a broad-based coalition of food, agriculture, nutrition, conservation and natural resource organizations with more than 60 members to date has formed to work toward greatly enhancing the funds going into research in these broad subject matter areas. The group, known as National C-FAR (National Coalition on Food and Agriculture Research), is a non-profit, nonpartisan stakeholder-driven group.

Much of the success of American agriculture can be traced directly to institutions established well over 100 years ago by far-sighted legislators and supported during the interim. The land-grant colleges starting with the Morrill Act of 1862, the Hatch Act of 1887, and formation of the Agricultural Research Service, the Forest Service, the National Resources Conservation Service, and the Economic Research Service all of the U.S. Department of Agriculture contributed in an important way to our agricultural bounty of today. One would be hard pressed to name other businesses or industries that have made as much progress or advanced as rapidly as agriculture during the time since these institutions were established. The quality, quantity and availability of our food have increased substantially while the real price of food has declined.

During the past 25 years or so, public research funding for U.S. agriculture has declined while private sector agricultural research funding has increased. Information and products produced from public sector research have historically been generally available to the public; however, in part because of a shortage of funds for public research, some scientists and institutions in the public sector have begun to form proprietary relationships with industry, giving them first rights to the products or information springing from the research. This disparity between private and public funding for agricultural research must be reversed if we are to continue to serve the public as they expect. Growing populations and insufficient resources to purchase food have added to food insecurity worldwide. There must be continuing breakthroughs to produce the food needed to meet the nutritional needs of the world's population while protecting our environment.

With a little reflection on the future, it soon becomes apparent why we need to substantially increase funding for research in agriculture, food and natural resources. It is not accidental that we are able to produce food, feed and fiber for our own U.S. citizens, and export over 50 billion dollars of these commodities annually. These are the results of investments made years ago in research, education and infrastructure supporting agriculture, food and natural resource systems. We can do no less today.

Windrow Grazing and Baled-Hay Feeding Strategies for Wintering Calves

by Jerry Volesky, Don Adams, and Richard Clark
West Central Research and Extension Center, UNL

Introduction

As with any business operation, lowering production costs using efficient management practices is of interest to ranch enterprises. Using strategies that extend the normal grazing season is one approach that can reduce costs. This has included use of complementary grazing of seeded forages (Lodge 1970), grazing of stockpiled forages (Ocumpaugh and Matches 1977), or any approach that places greater reliance on the grazing animal rather than machines for harvesting forages (D'Souza et al. 1990). Another strategy to potentially lower harvest and feeding costs is the direct grazing of windrows or swaths in lieu of baling. The objective of this strategy is to produce windrow-stored forage that will match the nutrient requirements of a certain class of livestock. McCaughey (1997) reported that additional benefits include reduced machinery use for handling manure and that livestock are provided with exercise and a clean environment.

We initiated a two-year study in 1997 to evaluate windrow grazing of meadow forage with weaned calves as an alternative to the conventional feeding of baled hay. Our approach was unique in that we harvested regrowth meadow hay in an attempt to provide forage that would meet the nutrient requirements of a weaned calf. The objectives were: 1) to quantify calf performance, feed intake, and waste under windrow grazing and baled-hay feeding management strategies; 2) to quantify hay quality changes as affected by storage method and time; 3) to determine the effects of windrow coverage on subsequent wet meadow herbage yield and composition; and 4) to compare costs and returns associated with windrow grazing and baled-hay feeding strategies.

Materials and Methods

The study was conducted from 1997 to 1999 at the University of Nebraska Gudmundsen Sandhills Laboratory five miles northeast of Whitman, Nebraska. Experimental pastures (8 ac) were established on a subirrigated range site of a wet meadow that had primarily been used for hay production. Vegetation of the study pastures was dominated by cool-season species including smooth bromegrass, redtop bent, timothy, slender wheatgrass, Kentucky bluegrass, and several species of sedges, rushes, and spikerushes.

Each of three pastures was grazed by mature cows with calves at 39 animal-unit-days (AUD) ac^{-1} during the last two

weeks of May in 1997 and 1998. This stocking rate resulted in heavy utilization with nearly all of the available forage being removed. Pasture forage was then allowed to grow until harvesting in September of each year. Cut forage was raked into windrows that were approximately 3 feet width and 33 feet apart. Alternate windrows were then baled (1000 lbs round), and bales removed. Remaining windrows were left in place.

The grazing and feeding trial began in mid-November and continued through January of each year. Forty-eight steer calves were randomly allocated into three replicate groups (8 head each) for the windrow grazing (windrow) treatment and three replicate groups for the bale-fed (bale) treatment. Calves had an initial weight of 447 lbs. Bale-fed calves were kept in dry-lot pens and fed hay packaged from the alternate windrows in the corresponding pastures.

Forage intake was measured for both windrow grazing and hay-fed calves. In the windrow grazing treatment, forage waste was determined from pre- and post-grazing weights of 6-foot sections of windrow. Under the hay-fed treatment, the amount of hay wasted was determined by collecting hay that was discarded and trampled in an area around the round-bale feeder. After the trial was ended in late January, cows were placed in the windrow grazing pastures for additional grazing of the windrows and regrowth forage. Pre- and post-grazing measurements of windrows were also made.

To evaluate the effect of time and method of storage on forage quality, samples of windrow, baled, and standing (not cut in September) forage were collected at the time of harvest and each month through February. Windrows left on the meadow until they are grazed during the winter may have an effect on the vegetation directly underneath. Such effects were evaluated by sampling during the following July of each year. In each meadow pasture, quadrats were clipped in areas that were and were not covered by windrows. Clipped vegetation was sorted into grass, sedge, legume, and other forb components and then dried and weighed.

Partial budgeting techniques were used to compare the windrow grazing and bale feeding strategies. Some costs common to both strategies were included to determine whether either strategy could be profitable over a range of calf prices. For purposes of comparison, a 100-acre field, typical of ranch-scale operations, was assumed.

Results and Discussion

Calf Weight Gain and Forage Intake

There was a year by treatment interaction effect for calf weight gain ($P < 0.05$; Table 1). During the first year of the trial, windrow calves gained 81 lbs compared to 59 lbs for bale calves. There was no difference in weight gain between treatments during the second year of the trial ($P > 0.05$). The greater weight gain for windrow calves during

1997-98 was likely due to the presence of high quality regrowth that occurred after haying. The fall of 1997 was relatively mild and our hay harvest
date was three weeks earlier compared to 1998. Diet samples collected from esophageal-fistulated cows on 8 December 1997 contained 14.6% CP compared to 10.4% CP for hand-collected samples of windrows. Some of the regrowth in the windrow
pastures was observed to remain green as late as 20 December 1997.

Table 1. Body weights and gains of calves grazing windrows or fed baled meadow hay.

		Treatment		
Trial year	Item	Windrow grazing	Bale-fed	SEM[1]
1997-98	Initial weight, lbs	449	447	4.19
	Final weight, lbs	531[a]	507[b]	4.49
	Total gain, lbs	81a	59[b]	2.88
	Daily gain, lbs day^{-1}	1.16[a]	0.86[b]	0.04
1998-99	Initial weight, lbs	443	449	3.96
	Final weight, lbs	485	487	3.33
	Total gain, lbs	42	38	3.17
	Daily gain, lbs day^{-1}	0.57	0.52	0.04

[1] Standard error of the mean, N = 6.

[ab] Within rows, treatment means with unlike superscripts differ (P< 0.05).

In vivo organic matter digestibility of baled hay and windrow forage, as determined from steers that were individually
fed and subject to total fecal collection, averaged 67.3% and was not affected by year or treatment (P > 0.05). Dry matter in
vivo digestibility was 60.4%, which was similar to the in vivo dry matter digestibility (60.8%) reported by Villalobos et al.
(1997), who fed a comparable regrowth meadow hay harvested in late August. Forage intake of individually fed steers was
also similar between years and treatments and averaged 11.2 lbs organic matter head^{-1} day^{-1}.

Forage Waste

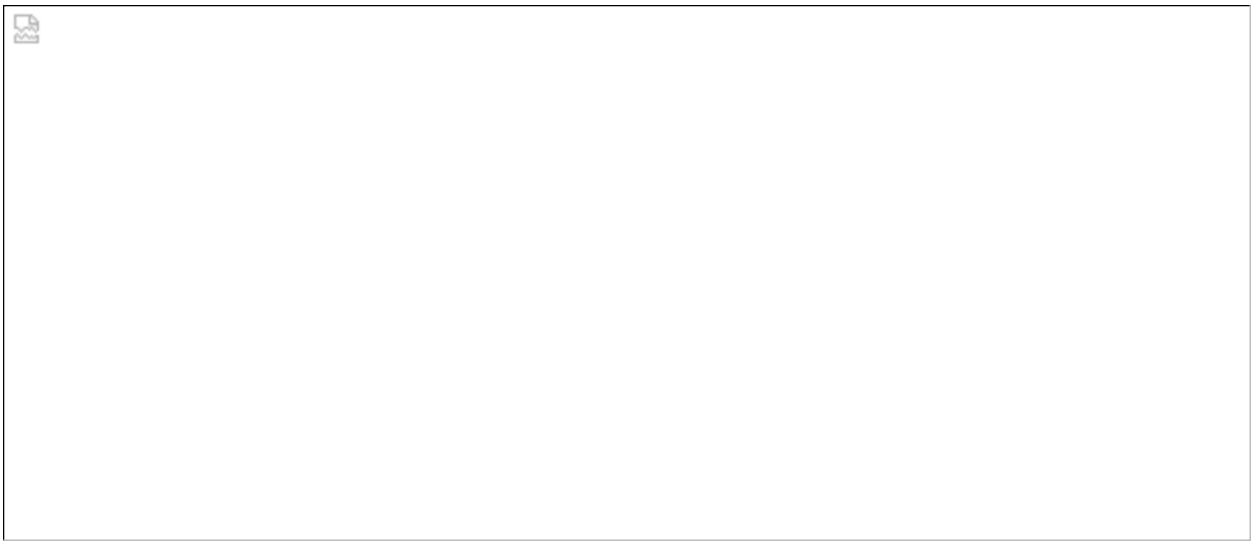
Pre-grazing weight of windrow-stored forage averaged 2.8 lbs linear ft^{-1} and pre-feeding weight of bales was 990 lbs.
Under our grazing management, forage waste (refusal) by windrow calves averaged 29% and was higher than waste by bale
calves (12.5%, P < 0.05). We allowed cows to graze in the windrow pastures after the calf-grazing period ended. This resulted in an additional 23% utilization of the windrow forage during the first year of the trial and an additional 75% utilization during the second year. Forage waste after the combined calf and cow grazing periods averaged 18% and 4% during the first and second
year of the trial, respectively. The difference between years was largely due to the cow stocking rates that were applied.

Effect of Time and Method of Storage on Forage Quality

Year did not affect crude protein (CP) content, acid detergent fiber (ADF), or neutral detergent fiber (NDF)

of windrow, baled, or standing (stockpiled) forage ($P > 0.05$). A treatment by month interaction was detected for CP content ($P < 0.05$). Crude protein content under windrow, baled, and standing storage treatments was similar in September (10.6%), but CP of standing forage declined to 5.7% by February (Fig. 1). Crude protein content of windrow- and baled-stored forage was similar over all sampling months ($P > 0.05$). Streeter et al. (1966), in a study using upland Sandhills hay (primarily warm-season), reported no differences in the winter crude protein content of hay that was either baled (small round), windrow-stored, or bunched in piles and stored. Crude protein content of forage that was left standing, however, declined by nearly 50% from summer to winter.

Figure 1. Effect of time and method of storage on crude protein content of wet meadow hay (organic matter basis), 1997-98 and 1998-99.



Effect of Windrow Coverage on Subsequent Vegetation Production and Composition

In July of the growing seasons following windrow grazing, composition of wet meadow herbage averaged 63% grasses, 30% sedges and rushes, 6% legumes, and 1% forbs. Total herbage yield was 20% less in the area directly covered by windrows compared to the control ($P < 0.05$; Table 2). This difference was due to 1,140 lbs ac-1 less grass yield under the windrow-covered treatment compared to the control. There were no treatment effects on yield of the sedge/rush, legume, and forb plant groups. Although our data indicate a 20% reduction in total herbage yield in the area covered by windrows, only about 9% of the total area of a pasture is affected by windrow-coverage when 3-feet-wide windrows are created 33 feet apart. Applying this percentage to our data shows that for the entire pasture, the net effect due to windrow coverage would be about 90 lbs ac^{-1}, or 1.5% less yield.

Table 2. Effect of windrow coverage on subsequent wet meadow herbage yield and composition, July, 1998 and 1999.

	Treatment		
Plant group	Windrow covered	Control	SEM[1]
	------- lbs ac^{-1} -------		
Grasses	2,590[a]	3,730[b]	416
Sedges / rushes	1,800	1,780	387
Legumes	330	310	91
Forbs	200	80	47
Total	4,920[a]	5,900[b]	272

[1] Standard error of the mean, N = 9.

[ab] Within plant group, treatments means with unlike superscripts differ ($P < 0.05$).

Economics

Estimated costs for producing and harvesting hay were about \$25 ac^{-1} (37%) higher for the bale-feeding strategy compared to windrow grazing due to baling and bale moving costs (Table 3). The cost of feeding bales is a major addition to the bale-fed strategy and is \$11 ton^{-1}, or about 33% of the cost of harvesting hay. Additional costs for windrow grazing are for fencing materials and labor to install the fence and move the temporary fence while grazing windrows. The resulting strategy feed costs totaled \$0.16 $head^{-1}$ day^{-1} for windrow grazing compared to \$0.30 $head^{-1}$ day^{-1} for the bale-fed.

During the 1997-1998 trial year, net returns for windrow grazing were \$72.26 $head^{-1}$ compared to \$52.31 $head^{-1}$ for the bale-fed strategy. This difference reflects both the lower costs and the fact that animals gained better under windrow grazing that year. Net returns during 1998-1999 were \$62.96 $head^{-1}$ for windrow grazing and \$49.34 $head^{-1}$ for bale-fed, with the difference primarily due to strategy costs since animal gains were similar. These returns do not include costs for land, management, or overhead.

In an analysis that projected strategy net returns for the years 1992 through 1999, gain from the windrow grazing averaged \$29.04 $head^{-1}$ compared to \$19.86 $head^{-1}$ for bale-fed. This analysis was based on 1998 costs and steer calf prices during the given years. Animal gains were held constant at 0.5 lb day^{-1}, so the year-to-year differences reflect only price changes. Net returns for bale-fed were more variable compared to the mean, as reflected by a coefficient of variation of 125% compared to 84% for windrow grazing.

Table 3. Costs of forage production and grazing or feeding for windrow grazing and bale-fed strategies.[1]

Item	Windrow grazing	Bale-fed
Forage production	---------- $ ac^{-1} ----------	
Fertilizer and application	32.35	32.35
Mow and rake	10.00	10.00
Bale (large round)	- -	19.30
Move bales	- -	6.13
Total	42.35	67.78
Grazing or feeding[2]	--- $ ac^{-1} ---	-- $ ton^{-1} --
Hay cost	42.35	33.88
Feeding cost		
Labor	- -	1.60
Bale feeder (depreciation, interest, repair)	- -	5.06
Tractor (depreciation, interest, repair, fuel)	- -	4.35
Fence	3.52	- -
Labor	1.68	- -
Total costs ac^{-1} or ton^{-1}	$47.55 ac^{-1}	$44.89 ton^{-1}
Feed cost head^{-1}	$11.60	$21.24
Feed cost head^{-1} day^{-1}	$0.16	$0.30

[1] Based on 100 acres meadow, 410 calves (500 lb) and a 72-day windrow grazing or bale feeding period.
[2] Costs for windrow grazing are dollars ac^{-1} and costs for the bale-fed strategy are dollars ton^{-1}.

Conclusions

Windrow grazing of meadow forage was an effective and feasible management strategy for wintering calves. The calves readily adapted to the strategy; however, winter grazing period conditions were mild during the two years of the study. Quality of windrow-stored forage remained relatively constant through the fall and into the winter months and resulted in adequate calf gains. Forage waste or refusal under windrow grazing is closely associated with grazing management. Strip grazing techniques that balance the supply and demand for one- or two-day periods may be more effective, but increase labor requirements. Our management practice of having cows graze at the end of the calf grazing period was also effective in reducing waste and resulted in additional savings in feed costs. We found that windrow coverage of the perennial vegetation reduced total herbage yield the following growing season. However, for the entire pasture, the net effect of reduced yield because of windrow

coverage was minimal. Costs for windrow grazing were substantially less than those associated with the bale-fed strategy.
Correspondingly, net returns per head and acre were greater for windrow grazing compared to the bale-fed strategy.

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Nebraska Grazing Conference August 13-14

Make money grazing. Use non-traditional crops. Overcome production slumps. Identify the best animals. Beat the weather. Enhance the environment for wildlife.

The Nebraska Grazing Conference can teach you how to do this-and more! The conference features livestock grazing experts from five states as well as experienced Nebraska graziers who will help even the most advanced producer find ways to squeeze more profits from grazinglands without excessive risk, unreasonable labor demands, or confusing technology.

The conference will be held at the Holiday Inn in Kearney, Nebraska on August 13 and 14, 2001.
Co-sponsored by more than a dozen organizations and agencies, this conference is sure to provide new ideas and options for all ranchers, farmers, wildlife managers, and advisers who want to make grazing a profitable enterprise.

Need to identify the cattle production factors that most affect your bottom line? Come hear Barry Dunn from South Dakota dissect the beef business to discover what is and what is not important.

Choosing the right production system and right animals got you confused? Don Adams and his panel of Nebraska producers will describe what to look for as you work *with* instead of *against* nature. And while you're at it, make sure you have the best type of cow for your resources using the guidelines of Kit Pharo from Colorado.

Stockers interest you but also make you frustrated? Gordon Hazard from Mississippi will share the buying, selling, and management strategies he has developed in more than 40 years in the stocker business.

Have trouble adjusting production strategies due to rainfall flucuations? Listen to three Nebraskans provide a double-barreled approach. First, Pat Reece helps you make drought a manageable event. Then, Bob Scriven

and Jerry Volesky eliminate your rainfall worries using profitable irrigated pastures.

Maybe you want a balance between pasture for your cattle and habitat for wildlife. Lynne Sherrod from Colorado will present innovative strategies using easements that let you have your habitat and eat it, too. She will be joined by a panel of Nebraska ranchers for this part of the program.

Confused about evaluating grazing options for your grazinglands? This challenge will be met head on by John Lawrence from Iowa State University.

Tempted to try an exotic grazing crop? Let three Nebraska graziers, led by Terry Gompert, show you the ins and outs, the bad and the good, and some dos and don'ts about grazing corn, turnips, oats, and other non-traditional pasture plants.

The advance registration fee of $70, due in the CGS office by August 1, covers lunch both days, the evening meal, break refreshments, and materials (including proceedings). For more details and a registration form, contact the CGS office for a brochure, or see the CGS Web site.

Dull Mower Affects Turf in More Ways than Appearance

by Don Steinegger and Bob Shearman, Department of Agronomy and Horticulture,UNL

Most of us know what happens to a turf's appearance once it has been mowed with a dull, rotary mower blade. The shredded leaf tips quickly turn light tan in color, giving the turf a brown or light tan cast. We can quickly remedy this by sharpening the mower blade. But, what happens if the turf is mowed several times with a dull blade?

Research by members of the UNL Turfgrass Science Team demonstrated that disease incidence on susceptible grasses actually increased when mowed with a dull rotary mower blade compared to the same turfs mowed with a sharp blade. Dull mower blades did not impact disease susceptibility of resistant grasses. It was speculated that the dull mower resulted in additional wounding of leaf tissue that allowed pathogens to enter the plant tissue more easily than those turfs cut with a sharp blade, resulting in greater disease incidence.

It has been suggested in the turfgrass literature that turfs mowed with a dull mower would use more water than those mowed with a sharp mower blade. It was speculated that water loss increased due to the shredded leaf tips and the increased area for evaporative water loss. The Nebraska researchers found that turfs mowed with a sharp mower blade used 33% more water than those mowed with the dull mower. Mowing with a dull mower blade actually slowed the growth rate of the turf, resulting in less water use. However, before we start thinking that dull mowing is a benefit, the slowed growth rate, decreased turf quality and increased susceptibility to diseases, like leaf spot, far outweighs the potential benefit of reduced water use.

Mower fuel consumption was greater for the turf mowed with a dull mower blade than that mowed with a sharp one. It required 22% less fuel to mow with a sharp blade than with the dull one. This likely occurred as a result of increased resistance, causing the engine to work less efficiently when the mower blade was dull.

The Nebraska research substantiated the hypothesis that repeated mowing with a dull rotary mower blade reduces turfgrass quality and increases disease incidence on susceptible grasses. However, it refuted the generally accepted premise that dull mower blade injury increases turfgrass water loss.

As we look forward to another season of lawn mowing, it is important to keep the mower sharp and in good operating repair. This will help ensure a quality turf that is less susceptible to disease problems. For those who

are interested in more details regarding the research comparing dull and sharp mower blade effects on turf, the research was published in the *Agronomy Journal* Vol. 75: 479-480, or you may contact Bob Shearman at rshearman1@unl.edu.

''Backyard Farmer'' Available on Internet

Now in its 48th year, "Backyard Farmer," the gardening question-and-answer program that airs 7 p.m. CT on Tuesdays through Aug. 28 on the Nebraska Educational Television Network, is also available on the Internet. The entire program will be video streamed on the "Backyard Farmer" Web site, byf.unl.edu. Episodes will be archived, and viewers can use a word search to get their questions answered. They'll be able to view specific segments that answer a question without watching the entire program.

This year's program will feature a theme each month. Themes are: April, spring garden preparation; May, landscape design; June, water; July, landscaping for wildlife; August, landscaping Nebraska style. Program topics emphasize research being conducted at UNL. CGS Associates involved with the program are: host, John Fech; rotating panelists, Roch Gaussoin, John Watkins and Fred Baxendale.

"Arbor Links" -- Dream Becomes Reality

Editor's Note: The following article appeared in the Winter 2001 issue of LINKS, published by Landscapes Unlimited, LLC, and is reprinted here with permission. Bill Kubly, president of Landscapes Unlimited, is a member of the CGS Citizens Advisory Council, and Terry Riordan is a CGS Associate.

Five years of thinking, talking and brain storming has given the term "persistence" added meaning. In 1995, Bill Kubly envisioned a golf course facility capable of showing both the golf industry and members of the environmental world that quality, affordable golf and environmental stewardship could work together for the common good of all involved.

Today, the dream of bringing golf and the environmental world together to make a positive difference, is shaping up in the form of the 18-hole "Arbor Links" Golf Course at The Lied Conference Center in Nebraska City, Nebraska.

The team of Landscapes Unlimited, LLC, Palmer Course Design Co., and The National Arbor Day Foundation, has coordinated their design, construction and environmental stewardship strengths to create a golf course/education program capable of helping secure the future of the game for those who play, and those who place a great deal of importance on the use of our land, water, trees, and wildlife.

As the project develops, we hope to provide results that will be beneficial to anyone wanting to share the value of how positive the partnership of golf and the environment can be!!

Sampson Fellowship Award

The Arthur William Sampson Fellowship is awarded to graduate students with a special interest in pasture and/or range management in Nebraska. Finishing his Sampson Fellowship this year is Eric Mousel, who was also this year's recipient of the William Ridgely Chapline Fellowship for excellence and professionalism in range and forage science. Eric is completing an M.S. degree in Range and Forages at UNL, after which he plans to pursue the Ph.D. degree in Range Science. Data from his research project, "Summer Grazing

Strategies Following Early-Season Grazing of Big Bluestem," will be valuable for land managers in developing grazing strategies to efficiently use big bluestem pasture. He is advised by Walter Schacht and Lowell Moser.

The 2001 Sampson Fellowship has been awarded to Justin Morris, an M.S. student in the Department of Agronomy and Horticulture. Justin will research synergistic effects of drought and defoliation on fragile grasslands. He is advised by Pat Reece and Walter Schacht.

UNL Hosts First Day of Issue Ceremony for Great Plains Prairie Stamp

The history, biology and art of the Great Plains were celebrated April 19-21 in the Lincoln area in conjunction with the First Day Issue of the Great Plains Prairie stamp by the U.S. Postal Service at the University of Nebraska State Museum. After UNL was selected as the site for the First Day Issue, a planning committee including CGS Director Martin Massengale and CGS Associates Patricia Freeman and James Stubbendieck organized three days of events, which included a symposium, a Great Plains Prairie Family Day, and a tour of nearby Spring Creek Prairie (see Spring 1999 CGS Newsletter for article on the Prairie). The highlight of the tour was a controlled burn on the Prairie, led by Stubbendieck (see Spring 2000 CGS Newsletter for article on prescribed fires). The events were attended by Governor Mike Johanns, Chancellor Harvey Perlman, U.S. Postal Service officials, and the stamp artist, John Dawson, who lives in Hawaii.

Resources

Turfgrass Management Information Directory (Third Edition). $19.95. CGS Associate Robert Shearman is quoted in the promotional brochure: "...the Directory is ideal for those looking for specific services, organizations, publications and even chemicals. The comprehensive listing of university and industry personnel is especially helpful. This is a resource book that every turfgrass professional should own." Available from Ann Arbor Press, Attn: Skip DeWall, 310 North Main, Chelsea, MI 48118, 800-487-2323, skip@sleepingbearpress.com, www.sleepingbearpress.com/ (type directory in the search window). The brochure notes that all royalties are returned to the Turfgrass Science Division of the Crop Science Society of America to support turfgrass teaching, research and extension activities.

CGS Associates

At the 30th annual Nebraska Water Conference March 12, **Dayle Williamson** received the Pioneer Award from the Nebraska Water Conference Council for his outstanding accomplishments in water resources.

Gerry Steinauer was part of a Nebraska Game and Parks Commission team that conducted a survey of landowners with the western prairie fringed orchid on their property. Gerry says the results show that landowners have a more postive attitude towards Threatened & Endangered species on their property than some might have led us to believe. For a copy of the survey results, contact Gerry at gstein@hamilton.net.

Roch Gaussoin and **Don Steinegger** were recently recognized by the Nebraska Professional Lawn Care Association. Don received the *Keith Weidler Memorial Lifetime Achievement Award* for his education of plant care practitioners during his career. Roch was recognized as the *Educator of the Year* for educational programs directed toward lawn care professionals.

Ken Vogel's work with switchgrass is featured in the February 2001 *Agricultural Research* magazine article

titled "Depositing Carbon in the Bank: The Soil Bank, That Is," available at www.ars.usda.gov/is/AR/archive/feb01/bank0201.htm. He estimates switchgrass can yield almost twice as much ethanol as corn.

The 2001 recipient of the *Allen G. Blezek Friend of LEAD Award* is **Martin Massengale.**

Info Tufts

Grass and trees from acreage under the Conservation Reserve Program will be burned for electricity under four pilot projects announced March 21 by USDA. One of the projects, located in southern Iowa, is a cooperative effort to develop warm- and cool-season grasses such as switchgrass as a source of renewable energy. The press release is at www.fsa.usda.gov/pas/news/releases/index.htm.

Using a model called CQESTR, USDA scientists and collaborators have developed the first national estimate of how much carbon U.S. farm and grazing land soils are currently storing: 20 million metric tons of carbon a year. With improved management, farms and rangelands have the potential to store an additional 180 million metric tons annually, for a total of 200 million metric tons a year. The model uses user-defined tillage practices and time periods to compute how much organic matter would be stored in, or lost from, the soil under certain conditions. Using the model, farmers could determine what impact changing management practices would have on carbon storage. To learn more, see "Depositing Carbon in the Bank: The Soil Bank, That Is," in the February 2001 issue of *Agricultural Research* magazine published by USDA-ARS, available at www.ars.usda.gov/is/AR/archive/feb01/bank0201.htm.

According to USDA-NRCS, the federal government would need to spend $4.8 billion (in 1996 dollars) to share the cost of conservation today if it were to match the 1937 level. Instead, projected spending for conservation assistance on private land each year over the seven years covered by the 1996 Farm Bill amounts to $2.2 billion - less that half the annual commitment made more than 60 years ago.

A half million sandhill cranes, millions of waterfowl, and endangered whooping cranes use an 80-mile portion of the Platte River near Grand Island, Nebraska during spring migration.

On April 17, Governor Mike Johanns signed a proclamation designating April 16-22 Wildlife Week in Nebraska.

Calendar

Contact the CGS for more information on these upcoming events:

2001

June 6-7: Grazing Retreat, Kearney, NE

June 11-13: Grazing Retreat, Madison, NE

June 23: Festival of Color Landscape Design Workshops, Lincoln or Mead, NE

June 27-29: Grazing Retreat, Center NE

July 10-12: International Occasional Symposium on Organic Grassland Farming, Witzenhausen, Germany,

www.wiz.uni-kassel.de/egf2001/start0.html

July 10: Irrigated Grass Tour, south central NE

July 11: Irrigated Grass Tour, north central NE

July 24-28: American Society of Animal Science Annual Meeting, Indianapolis, IN

Aug. 6: Turf Field Day, Mead, NE

Aug. 13-14: Nebraska Grazing Conference, Kearney, NE

Aug. 29-30: Grazing Retreat, Franklin, NE

Oct. 13: Festival of Color Landscape Design Workshops, Lincoln or Mead, NE

Oct. 21-25: ASA-CSSA-SSSA (Agronomy) Annual Meetings, Charlotte, NC

Nov. 6-7: Fourth National Conference on *The Practice of Restoring Native Ecosystems*, in Nebraska City, NE, www.arborday.org/programs/callRneNatConf.html

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