

New Hosts of the Buffalograss Chinch Bug, *Blissus occiduus*

by Thomas Eickhoff and Frederick Baxendale, Department of Entomology, UNL

There are growing environmental concerns today regarding the use of insecticides, fungicides, herbicides, fertilizers and other inputs on home lawns. One approach for reducing these inputs involves planting low-maintenance turfgrasses. Buffalograss, *Buchloe dactyloides* (Nutt.) Engelm, is a perennial, low-mowing warm-season grass that provides a viable reduced-input species for the turfgrass industry. Native to the subhumid and semi-arid regions of the North American Great Plains, buffalograss spreads by both seed and stolon, and is considered a low-maintenance, drought-tolerant turfgrass.

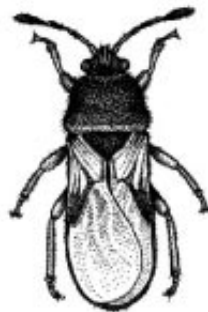
Historically, buffalograss has been considered relatively free of arthropod pests, and only a few were thought to cause serious damage. Among the arthropods that have been reported as pests are grasshoppers, mealybugs, an eriophyid mite, the buffalograss webworm, white grubs, and most recently the "buffalograss" chinch bug, *Blissus occiduus*. Over the past decade, this chinch bug has emerged as a serious pest of buffalograss grown for turf, sod and seed.

Testimonial evidence from the 1920s through the early 1950s suggested that *B. occiduus* has an extensive plant host range including corn, wheat, barley, and other grass species. However, insufficient information accompanied most of these observations to confirm their validity. Frequently, chinch bugs were simply collected from a given host with little information provided

regarding its biology or potential to damage the plant. In 2000, several reports of *B. occiduus* damage to zoysiagrass in Nebraska underscored the need to further explore and confirm the host range of this chinch bug.

In response to the emerging threat of "buffalograss" chinch bugs, the Turfgrass Entomology Laboratory in collaboration with the Turfgrass Science Team at UNL initiated an aggressive and comprehensive research program to better understand the biology and ecology of this important turfgrass pest, and identify effective, sustainable and environmentally responsible management approaches. One component of this research involved investigating potential alternative hosts of *B. occiduus*.

Initial experiments were conducted in the greenhouse. Selected turfgrass, weed, and crop species were screened to evaluate their potential as *B. occiduus* hosts. In feeding studies, 30 late instar chinch bug nymphs were placed on selected grasses and chinch bug feeding damage was recorded 21 days after infestation. Results of this study identified buffalograss, yellow foxtail, green foxtail, Kentucky bluegrass and brome grass as highly susceptible to chinch bug feeding, zoysiagrass, bermudagrass, large crabgrass, rye, perennial rye, barley, fine fescue, sorghum, wheat, bentgrass and tall fescue as moderately susceptible, and corn, fall panicum, and St. Augustinegrass as slightly to not susceptible to chinch bug feeding.



B. occiduus



(continued on page 3)



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The Center for Grassland Studies is a unit within the University of Nebraska-Lincoln Institute of Agriculture and Natural Resources. It receives guidance from a Policy Advisory Committee and a 50-member Citizens Advisory Council. This newsletter is published quarterly.

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.

Martin A. Massengale CGS Director
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FROM THE DIRECTOR

Many notable events have occurred since our last newsletter, and I thought a few of those should be highlighted in this issue.

Undoubtedly, the most significant among those events were the terrorist attacks on September 11. Never before have Americans seen such attacks on the mainland of their country. Our lives will be changed forever, and perhaps made more difficult. We must accept what has happened, recover, and move forward with life's responsibilities in as near normal a manner as possible under the circumstances. We must resolve more than ever to see justice overcome evil. On behalf of the staff and associates of the Center for Grassland Studies, our thoughts, prayers and condolences go out to those affected by these tragic events.

Although small in comparison to the terrorist attacks, we do want to comment on the first Nebraska Grazing Conference held in Kearney on August 13-14. From our viewpoint and the evaluation sheets we received, the conference was highly successful. We had 230 participants coming from many different backgrounds and occupations. There were many excellent speakers on timely topics. This conference had a significant number of interested sponsors, which may have accounted in part for the strong attendance. The prevailing opinion was that we should have a similar conference next year. A committee will be formed in the near future to start planning the 2002 conference. If anyone has suggestions for the next conference, please share them with us, and we shall pass them along to the planning committee.

Another activity with which the Center has been involved is the University of Nebraska Alumni Association Golf Course and Conference Facility. The Center staff and a number of Center associates have been working with the golf course architect, the planners and alumni association officials in assisting with the selection and later evaluation of grasses, shrubs, forbs, trees and research areas for the course. This is to be a championship course with 27 holes in a prairie-type setting. It is located in north Lincoln and will be named Nebraska National. The course and associated facilities are expected to be opened in the spring of 2004.

Progress continues to be made on the Professional Golf Management Program that I mentioned in the last newsletter. Dr. Terry Riordan, a professor in the Department of Agronomy and Horticulture and an associate of the Center, has been asked to serve as Interim Director of this program. Preliminary encouragement for the program has been received from the Professional Golf Association of America. We are highly optimistic about the potential for this program.

M. A. Massengale

Grazing Livestock Systems Major Enters Third Year

The Grazing Livestock Systems (GLS) major, which began its third year this fall, now has 12 students in the program. The GLS curriculum integrates courses from different disciplines and provides a balanced education focusing on the interrelationships of ruminant livestock production, grazing land ecology and management, forages, and economic decision making. Students learn through traditional courses, seminars, capstone experiences, and a planned internship. Students will graduate with the skills to manage ruminant livestock production operations, consult with and educate grazing land managers in the public or private sector, work in the agricultural industry associated with ruminant livestock, or enter a graduate program in an associated field. Effective management of grazing lands and associated grazing animals is essential for maintaining the environmental health of Nebraska's land resources and keeping the beef cattle industry strong. Nebraska has a cadre of producers, advisers, educators, and research scientists working together in the development of a relevant and dynamic grazing program for the state. The GLS major is becoming recognized as an integral part of the state's grazing program because of the role it plays in educating future grazing land managers and identifying grazing livestock systems as a major integrative discipline in production agriculture.

The internship, which must run at least 13 weeks, is a key component of the GLS curriculum. This summer five students completed their internship experiences in a variety of positions and locations throughout the state. **Kelly Brink** worked with Harry Younkin at the Rex Ranch near Ashby

where he was exposed to many aspects of ranch management, including breeding, grazing systems, hay management, livestock water management, and the factors involved in making various economic decisions. **Erik Burken** from Blue Hill says working at the Eater Ranch north of Thedford allowed him to see an operation in another part of the state and the changes in management relative to ranch location. Under the supervision of Lon Larsen at the Circle 5 Ranch near Brewster, **Tom Erxleben** got involved in calving, treatment of sick calves, fencing, and planning and implementing an intensive grazing system for two herds of cattle. Pairing up with Brent Plugge, Extension Educator at Thedford, taught **Casey Johnson** how the integration of the GLS major's three disciplines—agronomy, animal science and agricultural economics—fits well with extension education and its prerequisite for a broad agricultural education. According to supervisors Mary Reece and Kim Stine, **Kristin Nollette** "brought excellent knowledge, training, practical experience and maturity to the job" that she had at the NRCS office in North Platte.

The Center for Grassland Studies is the administrative home of the Grazing Livestock Systems major. The major is guided by a Faculty Coordinating Committee with representatives from the three disciplines. Scholarships are awarded to GLS students on a competitive basis.

For more information, see the Web site, gls.unl.edu, or contact the CGS. Also, a 10-12 minute recruitment video has just been completed and is available from the CGS.

Source: *The Blade*, Fall 2001, Center for Grassland Studies, UNL.

New Hosts of the Buffalograss Chinch Bug, *Blissus occiduus* (continued from page 1)

In a second series of experiments, *B. occiduus* preference to eleven of the previously screened grasses was examined. This experiment was carried out by randomly placing the eleven grasses around the outside of a circular arena. Fifty adult chinch bugs were released into the center of the arena and allowed to choose a preferred host(s). Host preferences of *B. occiduus* were evaluated by counting the number of chinch bugs on each grass 24, 48 and 72 hours after introduction. Results of this study indicated that buffalograss and zoysiagrass are highly preferred to the other grasses. Kentucky bluegrass, bermudagrass, rye and sorghum were able to sustain chinch bugs, but were much less preferred than

buffalograss or zoysiagrass. St. Augustinegrass, tall fescue, wheat, perennial rye, and green foxtail were the least preferred of the grasses tested.

The information gained from this research indicates that *B. occiduus* has an extensive host range, and has the potential to damage many turfgrasses and crops (e.g., buffalograss, zoysiagrass, Kentucky bluegrass, sorghum, rye, brome grass, perennial rye, barley, fine fescue, wheat and tall fescue) grown in Nebraska. Additional studies are needed to further explore the host preferences of *B. occiduus*, and identify buffalograss and zoysiagrass germplasm with resistance to this important chinch bug pest.

Grassland Opportunities in the New Farm Bill

by Craig Derickson, Natural Resources Conservation Service, USDA

For many years, farmers and ranchers have been asking for conservation programs that provide them opportunities and voluntary incentives on grasslands for carrying out activities that benefit the nation and help to achieve clean air, clean water, and plentiful wildlife and wildlife habitat. Currently, there are several ideas and pieces of legislation being considered for inclusion in the 2002 Farm Bill. At least six legislative drafts have included a grassland reserve or environmental easement component. The table on the facing page, compiled (as of October 11) by Mitch Flanagan, USDA-NRCS, Conservation and Operations Division, Washington DC, provides highlights from draft bills that could impact grazing lands.

Although there are noticeable differences among the proposed bills and their contract provisions or eligibility criteria, there are some apparent common themes. Many of the bills include provisions for variable contract length and/or permanent easements. Most of the bills include a target enrollment of 1-3 million acres, directed at natural grassland areas or environmentally sensitive areas.

When reviewing the chart, it is **very important** to note that on October 5, 2001, the House of Representatives passed its version of the 2002 Farm Bill, H.R. 2646. This bill includes specific language for the establishment of a "Grassland Reserve Program." The proposed legislation specifies that the total number of acres enrolled in the program shall not exceed 2 million acres—made up of 1 million acres of restored grasslands, and 1 million acres of "virgin" (never been cultivated) grasslands. The enrolled areas are to be at least 100 acres in size west of the 90th meridian, and at least 50 acres east of the 90th meridian. The bill also states that the contracts can be for 10-, 15-, 20- or 30-year permanent easements. The Senate is expected to take action on its version of the 2002 Farm Bill soon. The documents are available at www.usda.gov.

Prior to the House passing H.R. 2646, USDA Secretary, Ann Veneman, issued a news release recommending the House defer action on H.R. 2646, "and craft a policy that better strengthens rural America, protects the environment, invests in core infrastructure programs that protects food and agriculture, and aggressively expands markets for our producers." This indicates the Department is not in full support of the Bill as it currently reads.

Secretary Veneman recently provided the department's vision for the future of agriculture in a document she presented to Congress titled: "Food and Agricultural Policy: Taking Stock for the New Century" (see www.usda.gov/news/pubs/farmpolicy01/fpindex.htm). The preface outlines the USDA vision as being: "Our challenge today is twofold: to confront and manage the change immediately before us while at the same time modernizing our farm and food system infrastructure to

ensure continued growth and development for the 21st century."

The USDA report in Chapter V, Conservation and Environment, contains the specifics about the future direction of farming and ranching. The report states: "Farmers, ranchers and forest landowners own and manage two-thirds of the Nation's land and are the primary stewards of our soil, air and water. While the cost of stewardship on the land is borne by land managers, the benefits serve society at large. Meeting society's demands for improved environmental quality requires that we broaden our definition of "output" to include environmental amenities, wildlife habitat, wetlands, and improved water and air quality—along with food, fiber and timber production." This important philosophical concept of the need for conservation on private lands, including private grazing lands, seems to permeate the current proposed legislation both within the circles of independent groups and representatives and within USDA as well.

Conservation programs currently in effect through USDA such as the Conservation Reserve Program (CRP) and the Wetlands Reserve Program (WRP) have been very effective in securing long-term contracts that protect and restore important grasslands and wetlands previously used as cropland. Currently, there are about 36 million acres in CRP and more than 1 million acres in WRP. These programs have been effective tools to mitigate the effects of marginal cropland, environmentally sensitive areas, and the loss of wetlands.

The USDA report gives hope of an easement program for grasslands also. The report states: "Resources not previously eligible for land retirement programs, such as grasslands, could also be targeted. The Nation's grasslands and pastureland declined by 23 million acres from 1982 to 1997. Some of these areas offer significant environmental benefits to the public. If land retirement is carefully used, then areas of native prairie and improved bio-diversity could be established. A new grazing lands reserve program could provide a needed economic incentive for many producers to conserve the agricultural productive capacities of grasslands while providing environmental benefits for the public." These statements support the need for the creation of a new federal program to maintain our Nation's precious grasslands.

It is also important to note that several of the draft proposals include the concept of land under conservation contract being utilized as "working land" rather than idle or set-aside land. An article in the August 12, 2001 *Lincoln Journal Star* reported: "Unlike set-aside programs that take land out of production, the [proposed] Grassland Reserve Program being considered by lawmakers would pay

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**Farm Bill Legislation
107th Congress
(Bills Impacting Grazing Land)**

Bill #		Bill Name	Program	Administering Agency	Easements	Contract Length	Acreage	Cost/Share	Hay & Graze After Nesting	Criteria	Other	Payments
H.R. 2646	Combest	Agricultural Act of 2001	Grassland Reserve Program	FSA	No	10, 15, or 20 year contracts	2 million total 1 million virgin— 1 million restored-	90% 75%	Yes	Natural grassland or shrubland of significant ecological value	100 ac. minimum west of 90th meridian 50 acres minimum east of 90th meridian.	75% of grazing value
H.R. 2480	Lucas	Conservation Investment Act of 2001	Grassland Reserve Program	FSA	10,15, or 20 yr	—	3 million total 1.5 million virgin— 1.5million restored-	90% 75%	Yes	Natural grassland or shrubland of significant ecological value	100 ac. minimum west of 90th meridian. 50 acres minimum east of 90th meridian.	amount equal to the grazing value
H.R. 1689	Schaffer	FSA 1985/ Grassland Reserve Program	Grassland Reserve Program	NRCS	Permanent & 30 yr.	—	1 million total	Yes	Yes	Natural grassland or shrubland of significant ecological value	100 ac. minimum west of 90th meridian. 50 acres minimum east of 90th meridian.	fair market value of land less the grazing value
H.R. 2375	Kind	Working Lands Stewardship Act of 2001	Sec. 304 Conservation Reserve Program	—	No	10 year contracts	3 million total	—	No	—	prohibits all economic use predominantly native species benefit rare & endangered sp. Promote plants/ benefit wildlife improves water quality	
			Sec. 305 Conservation of Private Grazing Lands	—	No	5, 10, or 20 year contracts	—	—	N/A	—	FA for improving ecological health of grazing lands	FY 2003-2008 \$100 Million annually
			Sec. 306 Grassland Reserve Program	—	Perm- anent	10 year contracts	3 million total	Yes	Yes	Environmentally critical grass-lands, shrublands, and blufflands	At least 50% of acreage in ease-easements	Easements fair market value less value of encumbered by easement
S. 1267	Crapo	Conservation Extension and Enhancement Act of 2001	Title IV Grassland Reserve Program	NRCS	Perma- nent & 30 yr.	30 year rental agree- ment	1 million total	Yes	Yes	Natural grassland or shrubland of significant ecological value	100 ac. minimum west of 90th meridian. 50 acres minimum east of 90th meridian.	fair market value of land less the grazing value (same for rental agreements-30 yr. ease-ment value)
			Title VII Conservation of Private Grazing Lands (Sec. 386 of FAIRA)	NRCS	No	No	None	None	No	N/A	N/A	Technical Assistance
S. 932	Harkin	Conservation Security Program	—	—	No	5-10 yr. contracts	None	No	Yes	Bill includes grassland, rangeland, and pasture land	Technical Assistance	CAPS Tier I \$20,000 Tier II \$35,000 Tier III \$50,000

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Nebraska Grazing Conference Huge Success

“I have gone to agriculture credit conferences for almost 40 years.... This was one of the most informative meetings I have attended... the balance you had of both producers and educators makes this conference stand out... I think the banking industry could take a lesson from this in their agriculture conferences.”

Participant, Thayer County

The above is just one of the many positive comments from the 230 people from nine states who participated in the 2001 Nebraska Grazing Conference held in Kearney August 13-14, and plans are already underway for the next grazing conference.

Topics and speakers included:

Making Money in the Beef Business, Barry Dunn, Range Livestock Specialist, South Dakota State University

Matching Production Systems to Resources, Don Adams, Beef Specialist, UNL and producers Kelly Bruns, Chad Peterson and Burke Teichert

Challenges Evaluating the Economics of Grazing, John Lawrence, Livestock Economist, Iowa State University

Profit Strategies with Stockers, Gordon Hazard, Stocker Grazier/Consultant, Mississippi



Lynne Sherrod's presentation on conservation easements generated several small group discussions with participants who wanted to ask her questions.

Grazing Strategies Before, During and After Drought, Pat Reece, Range and Forage Specialist, UNL

Irrigated Pastures, Bob Scriven, Extension Educator, UNL and Jerry Volesky, Range Specialist, UNL

Choosing the Right Cow for the Job, Kit Pharo, Pharo Cattle Company, Cheyenne Wells, Colorado

Land Trust – Forever is a Long Time, Lynne Sherrod, Colorado Cattlemen's Agricultural Land Trust

Partnering for Conservation, Mike Kelly, producer

Grazing Corn, Turnips and Small Grains, Terry Gompert, Extension Educator, UNL and producers Marvin Deblauw, Steven Grudzinske and Don Peregrine

The 88-page Proceedings containing the material submitted by the presenters prior to the conference can still be ordered from the CGS for \$10, payable to University of Nebraska (for orders outside the U.S., check with the Center on cost prior to ordering).

If you were not able to attend but would like to be on the mailing list to receive notice of future grazing conferences, simply send your name and address to the CGS. Also, if you are interested in sponsoring or exhibiting at the next conference, contact Bob Scriven, 308-236-1235, rscriven1@unl.edu. As information about the next conference becomes available, it will be put on the CGS Web site.



Kit Pharo of Pharo Cattle Company, Colorado, discusses matching cow size and type to forage resources at the Nebraska Grazing Conference.

“As I looked about me I felt that the grass was the country, as the water is the sea. The red of the grass made all the great prairie the color of wine-stains, or of certain seaweeds when they are first washed up. And there was so much motion in it; the whole country seemed, somehow, to be running.”

Willa Cather
My Antonia, 1918

Great Plains Migrations Symposium

The 26th annual interdisciplinary symposium by the University of Nebraska's Center for Great Plains Studies will be held March 7-9, 2002, at the Cornhusker Hotel in Lincoln. The theme is "Great Plains Migrations." Migration is broadly defined to include prehistoric, historic, and contemporary movements of flora, fauna, and humans to, within, and from the Great Plains. The symposium will be innovative in its interdisciplinary content and approach, bringing together individuals and organizations from the biological sciences, social sciences, and humanities. The goal of the conference is to demonstrate that the human and non-human environments are intricately connected in these migrations, each affecting the other, and that the Great Plains region can only be understood through knowledge of all dimensions of the subject. Subcategories under the Migration of Flora and Fauna category are: Paleontology and Historical Biogeography of Great Plains Flora and Fauna; Ice Age Distributional Patterns in the Great Plains; Bison Migrations; The Central Flyway; Contemporary Great Plains Migrators; Dispersal of Invasive Species in the Great Plains; Climate Change. For more information, contact the Center for Great Plains Studies at (402) 472-3082, or see www.unl.edu/plains/events/futuresymp.html.

"Promoting Prairie" Conference in June 2002

Organizers of the 18th North American Prairie Conference invite you to submit an abstract for an oral or poster presentation. "Promoting Prairie" will be held June 23-27, 2002 in Kirksville, Missouri. Presentations are encouraged on all topics relating to prairie, but especially: prairie biodiversity and its importance to society; prairie restoration and reconstruction; legislative and organizational initiatives to preserve prairie; prairie education and outreach; commercial ventures—backyard prairie and landscaping; prairie as pollution control and environmental improvement. Professionals, academics (including graduate students) and advocates with experience working with the prairie are encouraged to submit abstracts, as well as people in other professions who seek links between their work and the prairie movement, including those working in the field of environmental education, youth conservation, urban redevelopment, economic development and tourism. Abstract review will begin October 31, 2001; submissions will be considered in the order they are received. For more information on the conference, see www.napc2002.org, or contact the CGS.

Info Tufts



A policy resolution adopted at the Western Governors Association meeting in August includes recommendations in five program areas: conservation, markets, safety net for producers, rural development, and nutrition. Nebraska Governor Mike Johanns pointed out that among the conservation proposals, the governors support innovative measures such as a grasslands easement program.



Grassland habitats help Nebraska's economy. In 1996, for example, wildlife watching activities in the state generated nearly \$81 million in revenue. These direct expenditures supported 2,457 jobs statewide and brought \$5.2 million in state tax revenue. That same year 131,000 Nebraska hunters joined 45,000 out-of-state hunters in contributing \$189 million to Nebraska's economy.

Dept. of Roads Hosts CGS Council

The Fall 2001 meeting of the CGS Citizens Advisory Council was held at the Nebraska Department of Roads (DOR). Director John Craig provided an overview of DOR activities, Dick Gray discussed the history of grass plantings by DOR, and Cindy Veys described some of the many environmental issues with which DOR deals. Gray pointed out how their evaluations of different plantings over the years have led to the use of more native species in today's seeding mixtures. Veys described the Wetland Mitigation Banking program, which is the development of large wetland areas to replace small, isolated (and less functional) wetlands destroyed by highway construction projects. This is done by acquiring land for the bank sites through permanent easement or out-right purchase. Nebraska is divided into 16 Physiographic Regions within which DOR is attempting to develop banks. The actual number of banks will grow as credits are used up from the fully developed ones. There are currently 17 bank sites in various stages of development and approval, four of which are fully certified. For more information, contact Veys at 402-479-4418, cveys@dor.state.ne.us

CGS Associates

Steve Baenziger gave the commencement address at the UNL Graduation ceremony in August.

At the annual Nebraska Agricultural Youth Institute in July, the NAYI Award of Merit went to **Ivan Rush** for his commitment to youth and dedication to the betterment of the agriculture industry.

Grassland Opportunities in the New Farm Bill (*continued from page 5*)

ranchers and other landowners who work land, recognizing that survival of prairie ecosystems depends on the age-old cycle of burning, growth and cattle grazing.”

The importance of maintaining our agricultural lands as working lands is also supported by the National Governors Association (NGA). In an August 2001 publication titled “Private Lands, Public Benefits: Principles for Advancing Working Lands Conservation” (see www.nga.org), the NGA proposed that working lands—the nation’s farms, ranches and forestlands—can and do produce much more than the commodities farmers, ranchers, and forest landowners sell at market. Beyond commodities such as corn, soybeans, meat, and timber, owners of the nation’s working lands preserve the rural heritages of communities and provide “environmental goods” including cleaner air and water, fish and wildlife habitat, migratory corridors, and opportunities for carbon sequestration. The report proposes that “these agricultural amenities (clean air, water and wildlife) do much to contribute to the overall quality of life for all citizens. Yet, most Americans do not realize the environmental importance of working lands; nor do they appreciate the enormous cost of providing such benefits. It makes sense that all those who benefit from environmental goods produced by working lands conservation should help to pay for it. Government programs to assist landowners help distribute that cost.”

There seems to be sufficient agreement among lawmakers and agricultural interests that the optimum way to ensure future success in federal farm bills and conservation program activities is to integrate environmental activities with profitable farming and ranching operations. Farmers and ranchers need information to facilitate the adoption of environmental improvements. Technical assistance is needed to provide data on soil quality, water quality, best management systems and wildlife habitat, as well as to disseminate information on how to apply the technology to the landscape. The need for sound technical assistance could escalate as

landowners attempt to comply with regulatory requirements such as the development of complete conservation plans and nutrient management plans.

Finally, well-designed federal programs can play a critical role in offsetting the costs to educate and train technical specialists to assist landowners. Industry and non-profit groups, including land-grant universities, their agricultural extension programs and other units such as the Center for Grassland Studies, can be used to satisfy part of the demand. Training and certification programs for federal agency personnel, extension agents, and technical consultants could help build the needed capacity and provide quality assurance. The continued role of state and local government partners in meeting the future needs of agriculture must be supported.

Author’s Note: This article was written while Congress was moving rather quickly on the Farm Bill. By the time the publication goes to press, many changes could have taken place.

Calendar

Contact CGS for more information on these upcoming events:

2002

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|--------------------|--|
| Feb. 13-19: | Society for Range Management Annual Meeting, Kansas City, MO, www.oznet.ksu.edu/srm2002 |
| Mar. 7-9: | Great Plains Migrations, 26th annual symposium by UNL Center for Great Plains Studies, Lincoln, NE, www.unl.edu/plains/events/futuresymp.html |
| Apr. 23-27: | Landscapes in Transition: Cultural Drivers and Natural Constraints, 17 th Annual Symposium, International Association for Landscape Ecology - United States Regional Association, Lincoln, NE, www.calmit.unl.edu/usiale2002 |
| June 23-27: | Promoting Prairie, 18th North American Prairie Conference, Kirksville, MO, www.napc2002.org |

If you have articles, events, resources, CGS Associate News, or other items you would like to submit for inclusion in future issues of this newsletter, please contact the editor, Pam Murray, at the CGS office.

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