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## Gudmundsen Sandhills Laboratory Open House

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Gudmundsen Sandhills Laboratory Open House  
August 25, 2004  
John Owens  
NU Vice Chancellor and IANR Harlan Vice Chancellor

What a pleasure it is to be here with you today at the Gudmundsen Sandhills Laboratory Open House. I grew up a country boy in Texas, and any day I get to spend in rangeland is a good day to me.

In fact, being here today reminds me of a story I heard once. It's about an old rancher whose prize bull one day was missing from the section of his land the railroad passed through.

The rancher was a fair man, and all he wanted from the railroad was fair compensation for the loss of his bull. When that didn't seem to be happening he finally filed suit against the railroad, seeking that fair payment. The day the suit was to go to court a big-city lawyer arrived in the rancher's small town to represent the railroad in the case. The lawyer quickly cornered the old rancher and began pressuring him to settle out of court.

"I don't think you want to do that," the rancher said, his

words slow and measured, for he was a man who thought carefully about everything he said. The lawyer, whose words came thick and fast, assured him he did. He did. He really did. The lawyer continued to pour all his high-powered persuasive skills into convincing the rancher to do just that.

After some time of listening and not being able to get a word in edgewise, the rancher nodded and said he'd take half of what he'd originally asked for in his suit, if the lawyer really did want to settle that way. Before they shook hands on it the rancher looked the lawyer straight in the eye and said, "Now, you're sure you want to do this. Because we could go ahead with this hearing, and I could say what I came here to say."

The lawyer was sure. He was very sure. His left foot tapped excitedly as he assured the rancher just how sure he was.

After the rancher signed the release and took the check, the lawyer couldn't resist gloating a bit over his success. "You know, I hate to tell you this, old fellow," the lawyer said, "but I put one over on you there. I couldn't have won this case. The engineer

was asleep and the fireman was in the caboose when the train went through your ranch that day. I didn't have one witness to put on the stand. I bluffed you!"

The old rancher carefully folded the check, put it in his wallet, then stuck the wallet back into his pocket before he replied, "Well, you know, young feller, I was a little worried about winning that case myself, seeing as what I came to court to say today is that durned old bull wandered home early this morning!"

There's all kind of knowledge in this world. Knowledge of people, and of when to speak up and when to keep still are, I think, important pieces of knowledge for everyone!

In my time with you today I'm going to speak about some "other-kinds" of knowledge - knowledge that comes from the wide-ranging and diverse research, teaching, and extension-education programs occurring in the Institute of Agriculture and Natural Resources. There's no way I can talk about everything we do, so I'm going to talk about just a few examples of our many programs I think will be of interest to you.

I'd like to begin with a \$1.8 million grant the National Science Foundation awarded the University of Nebraska-Lincoln last September to fund a four-year, comprehensive, interdisciplinary-study of Nebraska's unique Sandhills. As you would expect, our Institute of Agriculture and Natural Resources scientists are heavily involved in this work. It builds on years of Sandhills research by our team members and other UNL scientists.

We expect this research will increase our knowledge of this 20,000 square-mile Sandhills region, which is home to half of Nebraska's range and pastureland and so very important to our state. We also think it could help expand our understanding of the broader potential impacts of global climate change.

This large-scale study focuses on the links between Sandhills grass cover, wetlands, groundwater, and regional climate. We hope to discover new knowledge to help us all better understand how climate and environment interact to create and maintain this fragile and very special ecosystem.

Both Gudmundsen and the Barta Brothers Ranch near Rose are "sites" for this study.

That's just one of our ongoing research projects. Others include work on developing decision-support tools for grazing-management; drought and defoliation "impacts" on key rangeland forage species; seeded irrigated and dryland forages; grazing system "effects" on plant communities; wet meadow management, and much, much more.

"Then there's the knowledge on drought management the Institute has been disseminating in a variety of ways in the past few years – through Cooperative Extension education-meetings, through media, via the Web, and one-on-one, as drought gripped parts of Nebraska and held tight, while for others, "fortunately," the rains have come. Drought information is information we wish we never had to use, because drought means "hard-times," as well as hard-decisions. Yet it's so very important that we have unbiased, research-based knowledge available to us in times of drought, to provide information "necessary" for good decision-

making. Our researchers have “worked-hard” over the years, as they continue to work hard today, to provide this important knowledge.

Discovering and providing knowledge is “a part of everything we do in the Institute of Agriculture and Natural Resources. Certainly it’s a “part of our Beef Basics home study courses, with which I hope you are familiar. Our Cooperative Extension Division recently released Beef Basics VI in a “joint-venture” with Cooperative Extension in Wyoming. Beef Basics VI emphasizes an understanding of range plants, drought management, cattle grazing behavior, riparian management, feed intake, supplemental feeding, weed control, and marketing cattle.

Earlier Beef Basics courses – I through V – cover a multitude of other topics: nutrition, economics and forage use, reproduction, genetics and sire selection, health and management of “growing-calves”, financial record keeping and production records, and nutritional-strategies for the beef cow herd.

Each course is designed by our Cooperative Extension educators and specialists, with input from producers and veterinarians. The courses are designed to stand alone, so you needn't take one through five before participating in six. Some people certainly do choose to take more than one, however, to further their understanding with a wide variety of knowledge.

Since Beef Basics began in 1993, there have been more than 4,500 enrollments in the program. Producer evaluations report ideas implemented from the program save an average \$15 per head.

I hope you're also familiar with our Cooperative Extension Division's Ranch Practicum program, which has its field-laboratory activities here at Gudmundsen. The Ranch Practicum teaches an integrated approach to managing cattle, forage, and economics. The last impact information I saw on the Ranch Practicum showed participants estimated the knowledge they gained as worth \$27 per head.



New technology is offering us "new-tools" for research, and our Institute scientists are finding some "intriguing-ways" to use it.

One of our researchers uses leather collars with Global Positioning System units on cows in the Sandhills to track where the cows graze – and where they don't graze. Because cattle are creatures of habit, once they establish their grazing patterns, they very well may "overgraze" some spots while undergrazing others.

Last summer the GPS collars "tracked" cattle movements. Data were collected from the collars and downloaded into computers, then cow locations were "plotted" on topographic/digital elevation maps. Cows' locations also were correlated with such management and environmental factors as temperature, topography, and how far it is to water.

This information has been used as "part" of teaching in a grazing management course on campus. Students study the "relationship" between grazing livestock and the environment, and they "examine" how different factors affect grazing patterns.

The collared-cattle-project continues in a longer-term research-project to identify key-variables that affect cattle-distribution on rangeland. Results will be used to develop management-strategies to improve grazing-distribution.

The College of Agricultural Sciences and Natural Resources is part of the Institute and offers students a terrific-place to study-and-learn, with a wide-variety of majors leading to a-multitude of exciting, productive careers. Whether students are interested in food – growing it, developing new food products, food safety, and the like; in business, where our students go on to careers in agricultural economics, finance, and much more; in science, which is part and parcel of what we do, and in so many <sup>other</sup> areas, the College of Agricultural Sciences and Natural Resources offers an excellent educational springboard for a student's future. So does the College of Education and Human Sciences, where youth, families and communities are important focuses. The research and extension education programs in these areas are part of the Institute.

Our Beef Team is one of the many opportunities in which interested students in the College of Agricultural Sciences and Natural Resources can take part. Beef Team members are trained to educate shoppers about beef selection, cooking, nutrition, and food safety. The team is a partnership between the Institute and Nebraska's beef industry, and was the first of its kind when begun in 1998. Consumers tell us they're prepared to try new beef cuts and dishes thanks to the team's help. And our students learn first-hand the communications, teamwork, and other skills they'll use in their careers.

Our veterinary scientists have designed a calving system to reduce calf scours on Sandhills ranches that has shown exciting results. The system reduces calf exposure to the organisms causing scours by keeping older and younger calves in separate pastures and by moving pregnant cows to new calving areas where calves are born in pastures free of scours-causing organisms. This system significantly reduced calf illness and treatment costs, and eliminated calf deaths from scours in tests on

two Sandhills ranches under different calving schemes. The scours prevention system can be adapted to a variety of calving situations in the Sandhills and beyond.

Another accomplishment of which we're very proud in the Institute is that two of our meat scientists are part of a team that received the 2004 International Meat Secretariat Prize for Meat Science and Technology for their beef-muscle-profiling research.

They analyzed more than 5,500 muscle samples of the beef chuck and round. They found several muscles usually used for ground beef or roasts had potential for use as higher-value products. As a result of this research, we've seen the wholesale value of beef chuck increase by more than 5 percent at a time the value of other cuts didn't change. That's significant. From their research came the new flat-iron-steak, which I hope you've all eaten and enjoyed.

Our experts at the Center for Advanced Land Management Information Technologies, or CALMIT, have developed tools to help state and federal agencies anticipate, manage, and respond

to diseases, natural disasters, and potential bioterrorism. CALMIT is a 'national-leader' in Geographic Information Systems and remote sensing 'research-and-development.' Scientists there 'designed the animal health GIS mapping system for the Nebraska Department of Agriculture and USDA when animal health officials 'sought their help. Developing these new tools is 'part' of a wider initiative to better prepare for potential outbreaks of foreign diseases, such as foot and mouth.

The system should 'help' animal health officials 'protect' Nebraska's livestock and poultry industries, and also protect 'people' from diseases affecting 'both' animals and people.

Some of you here today may be interested in the three new wheatgrass cultivars jointly developed by university and USDA Agricultural Research Service scientists. These new cultivars grow out of 'nearly 20 years of research.

Beefmaker and Haymaker are intermediate wheatgrasses. The third, NU-ARS AC2, is a Fairway-type crested wheatgrass.

Beefmaker is a high-protein pasture grass more digestible

than any other intermediate wheatgrass. Haymaker produces high, stable forage yields for cool-season hay or pastures in low-rainfall areas. NU-ARS AC-2 is the first Fairway-type, crested wheatgrass with yield and forage quality equal to the best standard, crested wheatgrass. It's the highest yielding Fairway-type yet developed.

I'd also like to talk today about a random survey of western Nebraska cow-calf producers that focused on determining changes in selected ~~management practices~~ of those producers due to research conducted in the Nebraska Sandhills. Results of the survey are reported in a research bulletin titled, "*Breeding and Feeding Management, Practices Used by Cow-Calf Producers in Western and North Central Nebraska.*" The survey also asked about management of the forage <sup>which</sup> the cow-calf herd ate.

Here at the Gudmundsen Sandhills Laboratory there has been ongoing research to adjust calving and weaning dates to match range beef cows' and calves' nutrient needs with forage nutrient availability. Other projects have focused on the age at

which calves are weaned, and on meadow and hay management.

One research project “compared” the traditional mid-March calving date with a mid-June calving date. After five years, the research showed the June calving system “reduced” annual feed-forage over 3,000 pounds per cow. Returns for each calf were “about” \$70 greater for June-born than March-born steer calves.

Such programs are invaluable in providing unbiased, research-based knowledge upon which people can make the best management decisions for their own operations. To be able to do that, “however,” the information must be shared. One of the ways we do that is through “open-houses,” like the one here today, and other extension-education programs.

How well does it work? Finding “that” out was the purpose of “that” random-survey I mentioned earlier. Researchers found ranchers who have “knowledge” of our Gudmundsen Sandhills Laboratory-work use practices that “more closely follow recommendations from research and extension education at Gudmundsen ... than those who had no contact.”

Those reporting contact with Gudmundsen calved later and fed less hay. They also weaned earlier, indicating our research and extension education efforts do have an impact, which is as it should be when your land-grant university is at work. Research conducted here at Gudmundsen shows weaning after mid-October has only limited value to calf weaning weight and is detrimental to cows.

Interestingly, this study shows research conducted here at the Gudmundsen Sandhills Laboratory is used more by producers with larger herds than by those with smaller herds. We know there can be many different reasons for that. We also know the importance of the work done here both to the region and to Nebraska's livestock industry. Because we know that, our goal is to continue the needed quality research done here and the QUALITY extension-education-programming that grows out of that research to help provide the knowledge needed for the industry and for ranches of all sizes to survive and thrive.



We were particularly interested – and pleased – to find that familiarity with the work done here at the Gudmundsen Sandhills Laboratory reached much further than those who have <sup>actually</sup> been to the ranch. We see that as confirmation that we in IANR are carrying-out our land-grant university mission of taking the resources of the university – in this instance, new knowledge <sup>“</sup>discovered here at Gudmundsen – to the citizens of our state through our extension-education programs.

As I end my remarks today I’d just like <sup>“</sup>to note for all who might be interested that there’s a Beef Cattle Reproduction Symposium Sept. 1-2 in North Platte <sup>“</sup>focused on new methods and technologies to control and improve reproductive success in beef cattle. It’s sponsored by our Cooperative Extension Division as well as Cooperative Extension in several other states, the North Central Region’s Bovine-Reproductive-Task-Force, and private companies.

I also want to <sup>“</sup>thank each of our speakers, our co-sponsors, and exhibitors here today. A very special <sup>“</sup>thank you to the

Gudmundsen Sandhills Laboratory<sup>" "</sup> crew, whose hard work, time,  
*and commitment*  
~~and~~ effort help make this day successful.

And thank you to you, each of you, who came today to the  
Gudmundsen Sandhills Laboratory Open House. You're the  
reason we're here.

Thank you.