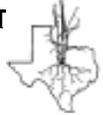


Grass Roots



PUBLISHED BY THE TEXAS SECTION SOCIETY FOR RANGE MANAGEMENT

*Providing Leadership for the Stewardship of Rangelands
Based on Sound Ecological Principles*



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President's Notes



Paul Loeffler
President, TSSRM

Greetings from the TSSRM Board of Directors and Officers! Hopefully, 2007 is off to an excellent start for you. As you make and revise your plans for 2007, I sincerely hope that being active in the Texas Section SRM is and remains on your agenda. The whole (section) is made up of the sum of its parts (members). Without each of the parts (you), something is lacking from the whole and what it can accomplish.

The BOD met recently and spent much of the day formulating plans and goals for both 2007 and the future. Some of these are continuations and expansions of ongoing ventures that have enjoyed success in the past and others are new ideas that hold promise of expanding the work of the TSSRM.

A project initiated in 2006 under the leadership of Charles Anderson was one to increase the visibility and voice of both Texas rangelands and the TSSRM. What started as an idea from a BOD strategic planning session, moved to a panel discussion of an appropriate media campaign and evolved to a coalition of partners interested in rangeland stewardship and public education of its importance is rapidly taking form. Bearing the name "Texas Native Lands Alliance", it is made up of partners (groups) who, no matter what their individual names are, share a common interest in the rangeland resource and its proper stewardship. Currently made up of a small group of entities, its potential for growth is outstanding. Designed to allow each partner group to maintain its own unique structure while striving towards a common goal, it will be a true alliance. With a mission statement of *to focus our collective efforts to more effectively promote awareness of the benefits that managed native lands provide to all Texans*, expect great things to come out of this new alliance.

As you are all aware, the TSSRM functions primarily through its committees. This is where the rubber meets the road and the works get done. The BOD approved two committee-related items recently that should increase involvement and efficiency. A new committee, called Young Professionals, was approved. Designed to involve our younger members who are just starting in the range management profession, this committee should open doors to additional activities and input. Committee guidelines are in the formulation stage and any ideas regarding structure and activities should be forwarded to either Rob Cook as Chair or Cody Scott as Board Liaison.

A second committee-related change approved is the term of the committee chairs. In an effort to provide better continuity, a person selected as a chair will serve on that respective committee for not less than two years and ultimately for three years. As an example, Jeff White is the current chair of the Awards Committee. George Peacock is the chair-elect. Under the new structure, Jeff will serve as 'senior' co-chair for 2007 and remain an 'ex-officio' member in 2008. George will serve as 'junior' co-chair (2007), 'senior' co-chair (2008) and 'ex-officio' in 2009. Melony Sikes, Second Vice President, will appoint an incoming 'junior' co-chair for 2008. While it may sound confusing at first, it should be quite efficient and simple as we move forward. Please contact any of the officers or current committee chairs if you are interested in serving on a committee.

With regards to committees, you should have received an email "Member

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Address inquiries to Jeff Goodwin, Editor.

TSSRM New Members

LET US WELCOME OUR NEW MEMBERS TO THE SECTION.
THANK YOU FOR YOUR CONTINUED SUPPORT
FOR RANGELAND STEWARDSHIP.

- MATTHEW C. BAACK** LUBBOCK, TX
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BRADY M. PFEIL, JR. SNOOK, TX
BRIAN D. VANDELIST CENTERVILLE, TX
DEAN W. WIEMERS CORPUS CHRISTI, TX

Bulletin” just recently asking your assistance in providing nominations for SRM Parent Society Awards. This is a chance to provide recognition to TSSRM members for their accomplishments in rangeland stewardship, research and management. Contact Jeff White for more details or to suggest potential nominees.

A few other items to look for in 2007 include revisions to the TSSRM website and newsletter. A committee has drafted a new look for the website and is currently in search of an entity to both host the webpage and accomplish timely updates. As you can tell from this issue, the Grass Roots sports a new format and additional color. The change to electronic distribution has allowed these changes and has been well received by our members. Contact Jeff Goodwin, Newsletter Editor, for more information on how you can be involved in the newsletter.

In the coming months, look for a new marketing effort regarding our Rangeland Stewardship video, spearheaded by Second Vice President Melony Sikes. A revision, reformat and reprinting of the very successful Small Acreage Landowners Brochure is in the works for 2007. Expanded TSSRM involvement in area field days and range tours is a priority for this year. If you have an event scheduled in your area, please contact Jerry Payne and Bill Pinchak regarding sponsorship. Remember to mark October 10-12 on your calendars for an outstanding TSSRM Annual Meeting in Lubbock.

In closing, I feel very privileged to serve as your President for 2007. On behalf of the BOD and other officers, I thank you for your past support and look forward to working for and with you in the coming year. Please make a conscious effort to continue your involvement and get others involved in TSSRM.

Looking forward to seeing you “Out on the range.”

Paul V. Loeffler

Important Dates

- February 9-16
60th ANNUAL MEETING
Reno-Sparks, Nevada
- February 20-21
Big Country Farm, Ranch and Wildlife Expo
Taylor County Expo Center- Abilene, Texas
- July 23-27
Red Buffalo Prescribed Burn School
to be held in Mason or Kerr Counties
http://www.myredbuffalo.com/burn_schools.htm

Oct. 10-12
TSSRM ANNUAL MEETING
Lubbock, TX
Dates TBD

Oct. 2008
TSSRM ANNUAL MEETING
Nacogdoches
Dates TBD



Is Rotation Grazing Good Range Management?

By Stan Reinke

Since the birth of the profession of range management, many range professionals have recommended some type of grazing system that incorporates rest and rotation. The basis of these original recommendations has been field observations and historical accounts of how bison grazed and moved from place to place. After all, how could ten million bison be wrong?

If we allow “common sense” or “logic” to prevail in our thinking, the world is flat, man cannot fly (if God had wanted him to, He would have given him wings), and women would not have suffrage (because they are incapable of voting wisely). The aforementioned are called paradigms and were the prevailing wisdom of their day.

Grazing systems that are properly stocked which incorporate grazing and rest can improve ecological condition, increase forage production, and provide a positive range trend and rangeland health. Research has shown, however, that continuous grazing at proper utilization rates can do the same thing. In fact, research (some quite long term) has shown that continuous stocking coupled with proper utilization rates (< 50%) is as good as rotation grazing in terms of overall range trend and superior to rotation grazing in terms of average calf crop, calf weaning weight, and net returns per acre. I believe the key here is ascertaining correct stocking rates that allow for proper utilization of forage in the pasture. I suspect that most of us have not often seen properly stocked pastures.

So we are all on the same page, I quote from research from *Rangelands* 20(5), October, 1998. Van Poolen and Lacey “found that forage production was on average about 13% higher under rotation schemes. However, a much greater increase (35%) occurred when heavy stocking was reduced to a moderate rate. Generally, rotation systems were most advantageous in terms of improving vegetation composition and forage production in the more humid prairie ecosystems. However, they had limited or no benefit in the more arid range types.”

On the Santa Rita range in south-central Arizona “it was found that perennial grass cover was higher on year-long than seasonally grazed pastures. Perennial grass production was closely associated with degree of grazing use, and was highest where percent grazing use was lowest. In this study, winter-spring grazing with summer-fall rest was inferior to yearlong grazing from the standpoint of productivity and density of desirable perennial grasses.”

In a 20 year study done in Vale, Oregon “There was no evidence that rotational grazing schemes had any advantage over season long grazing in terms of improving range condition or forage production.” “Several recent studies reviewed by Holechek et al. (1998), have indicated that stocking rate reductions have more potential to improve rangeland botanical composition than rotation grazing systems.”

Rangelands 21(2) states “Across all studies forage production was 7% higher under rotation compared to continuous grazing. In the semi-arid and desert range types, rotation grazing systems generally showed no advantage over continuous or season-long grazing.”

Rangelands 22(1) indicates that In southeastern Wyoming “They compared season-long, deferred-rotation and short-duration grazing at 3 stocking rates. Over a 13-year period, changes in bare ground and vegetation composition were primarily a function of stocking rate rather than grazing system. During this study, deferred-rotation, time controlled (short-duration) and season long grazing did not differ in their effects on either forage production or plant succession.”

There is much more research out there that is not quoted in this article which all range professionals and managers should read. The point is that stocking rate has far greater impact on forage production, plant succession, plant health and vigor, range condition, soil loss, and other range related problems than do rotation schemes. The problem is that most rangelands are overstocked and very few of us have seen what proper stocking and moderate continuous grazing can and will do for our rangelands.

It was stated in a previous article in “*Grass Roots*” that “continuous grazing, even at proper stocking rates, would generally not allow any improvement in plant composition.” That simply is not true and both research and personal observation bears that out.



Rotational Grazing: Is It Necessary for Effective Rangeland Management?

By David Briske, Sam Fuhlendorf and Butch Taylor

Most rangeland professionals have developed various perceptions of grazing management depending upon their backgrounds, experiences, and education. However, things are not always what they seem. A striking example of this axiom occurred 15 years ago in a rangeland ecology short course. The participants were discussing the recent concept that plant carbohydrate reserves were no longer a valid measure of the ability of plants to re-grow following grazing. After several moments of thought Clifford Carter commented, "we have been doing the right things for the wrong reasons". He was describing the fact that effective grazing management promotes rangeland sustainability by maintaining plant leaf area and growing points, rather than by maintaining carbohydrate reserves.

Some rangeland professionals have come to the same conclusion regarding the role of rotational grazing on rangelands. The point is simply that effective grazing management results from a series of sound management decisions within the entire ranch enterprise and not the use of any particular practice or system. This is evidenced by the fact that rotational grazing systems can fail, if managed poorly, and continuous grazing can be sustainable, if managed well. Proper stocking, drought management, animal care, and sound financial decisions all contribute to effective grazing management and no system of grazing will be effective without them. To illustrate this point, seriously consider whether the condition of Texas rangelands would be any different than they are today, if rotational grazing had been implemented on all rangelands in 1975. Rangeland condition would probably still vary widely in response to variable management effectiveness.

The reevaluation of rotational grazing has not resulted from new ecological theory but, rather, from the development of overwhelming experimental evidence that rotational grazing does not produce beneficial vegetation or animal responses compared to continuous grazing on rangelands. This evidence implies that periodic rest or deferment does not always produce the widely assumed beneficial effects in rangeland composition and productivity. This may occur because stocking rate has to be set low enough to provide forage during periods of limited growth and that rest during drought has minimal benefit to vegetation. In other words, rest periods do not necessarily compensate for the greater grazing pressure associated with higher stock density in rotational systems. Even the long rest periods provided by the Merrill 4-pasture system did not contribute to great vegetation improvement compared to continuous grazing on the Sonora Experiment Station. In addition, recent research from Oklahoma has shown that uniform livestock distribution within a growing season is not necessary to maintain livestock production as long as all areas are used in multiple years.

In summary, sound grazing management is a function of effective management decisions and strategic planning within the entire ranch enterprise. In the hands of skilled and motivated managers, rotational grazing can contribute to effective grazing management because it may provide a more organized system for making sound management decisions. However, rotational grazing does not provide a remedy for poor management by enhancing vegetation production and species composition. The rangeland profession needs to support effective grazing management for the right reasons.



Light stocking rate and continuous grazing with some defoliation prior to and following prescribed burning (1990)



Extreme stocking rate and continuous grazing (1920). Continuous grazing received a bad reputation early last century.

Photos courtesy of the Sonora Texas A&M Agricultural Experiment Station

Discontinuous Nibbling

By Steve Nelle

The great conservationist, Aldo Leopold, had considerable interest and knowledge about prairie ecology. He provides some common sense observations about why certain preferred species disappear from grazed areas. From, A Sand County Almanac, 1949.

“Why does Silphium disappear from grazed areas? I once saw a farmer turn his cows into a virgin prairie meadow previously used only sporadically for mowing wild hay. The cows cropped the Silphium to the ground before any other plant was visibly eaten at all. One can imagine that the buffalo once had the same preference for Silphium, but he suffered no fences to confine his nibblings all summer long to one meadow. In short, the buffalo’s pasturing was discontinuous, and therefore tolerable to Silphium.”

Little Bluestem, A Keystone Species of the Edwards Plateau

By Jake Landers

Once a Keystone species of the Edwards Plateau, Little bluestem may be coming back due to the range management of the current generation. Earlier it was the dominant grass of the shallow limestone soils of the plateau and extended as an important species northward, perhaps most visible today in the Flint Hills of Kansas.

A Keystone species is one that is so important that its damage or demise would cause great changes in the ecosystem. Think of the “Key” stone in an arch. Its removal would cause the structure to come crashing down. Of course it’s more complicated than that in a biological system, and the loss of a Keystone species may result in unpredictable changes as the mixture of plant and animals species respond to the situation. Dramatic changes are occurring, for example, in parts of the plateau where Oak wilt is taking out Liveoak, another Keystone species, and it will be many years before we can figure out how it will recover dominance or be replaced.

Here’s how I think changes have occurred in the past 150 years with the loss of Little bluestem. Before settlement of the region by people of European ancestry, Little bluestem was the dominant grass, adapted to the shallow soils, irregular droughts, periodic fires, and intermittent grazing of the Bison. With barbed wire and continuous grazing of livestock as managed by the early settlers, Little bluestem was diminished and replaced by short grasses and other plants better able to tolerate close grazing. Fires were suppressed that in earlier times coursed through the accumulated dry grass, largely produced by the summer growth of Little bluestem, and burned many of the woody plants to the ground and stimulated the vigor of the grasses.

The reduced competition from the roots of vigorous Little bluestem, the lack of fire, and the effective means of dispersal and establishment of Mesquite, allowed it to become a dominant woody plant over much of the area. Despite attempts to eradicate, control, and manage it, Mesquite remains in abundance, and more recently Cedar is on the increase.

It seems that Little bluestem, however, is making a comeback. With more emphasis on wildlife than livestock, especially cattle and sheep as grazing animals, Little bluestem is spreading back into pastures from highway roadsides and protected areas where it has survived. Prescribed burning is helping. With proper grazing management by the third and fourth generations of ranchers in the Edwards Plateau, Little bluestem may again produce an abundance of summer grazing then dry out in fall as an unpalatable fuel for burning.

Events following the demise of a Keystone species in nature are more complicated and unpredictable than the loss of a “Key” stone in an arch, but both situations would result in shambles.



Red stems of Little bluestem carried over winter on the Forked Lightning Ranch, Menard County, where Mesquite and some Liveoak have been taken out with mechanical clearing and prescribed burning to improve grazing for cattle.



Little bluestem and Fall aster surviving well in the roadside as a seed source for spreading into the adjacent pasture.



Little bluestem establishing again in Kimble Co. rangeland managed for Wildlife where Mesquite has been removed mechanically and Cedar is controlled by prescribed burning.

Riparian Roots Reinforce Riverbanks

By Steve Nelle

One of the primary attributes of good riparian vegetation are the extraordinary root systems of many riparian species. These root systems are what help reinforce banks and floodplains during flood events. Not only must roots help protect against the erosive effects of moving water, but it is also common to have large rocks and logs moving downstream during flooding. Vegetation must be well enough anchored to resist these powerful forces.

We don't have nearly enough good information on the rooting characteristics of most riparian species, but a Mater's Thesis from Arizona State University provides some helpful data that is applicable to Texas.

From a study site in southern Arizona, Caitlin Cornwall provides the following information from her 1998 thesis:

Plant Species	Above Ground Biomass Lbs/Acre	Total Root Biomass Lbs/Acre	Total Root Length Miles per Cubic Foot
Spikerush	6198	27667	22.0
Knotgrass	6198	24527	18.8
Deergrass	23302	65033	7.2
Baltic rush	17758	47276	8.7
Rabbitsfootgrass	1479	8540	0.9

From this study, we find several important things about riparian-wetland plant species. Root biomass is typically 2.5 to 5 times greater than above ground leaf and stem biomass. For species that are considered strong stabilizers such as deergrass and Baltic rush, the root mass (and hence root strength) is the more critical feature. For species that are considered more as colonizers such as spikerush and knotgrass, the primary feature is the phenomenal length of roots in a relatively small volume of soil. Wimpy annuals such as rabbitsfoot grass are better than nothing, but they do not provide adequate root mass nor root length.

Above-ground biomass is also important, as this is what helps to dissipate the energy and velocity of floodwaters which allows some sediment to drop. The plants then stabilize those newly deposited sediment and gravel helping to build bigger and more effective floodplains. The water storage capacity of these enlarged floodplains is also enhanced, which in turn helps sustain baseflow.

Spikerush (*Elyocharis sp*) is found in most riparian systems across the state. Knotgrass (*Paspalum distichum*) is common in many areas and is noted for having fast-growing stolons that root at the nodes for a quick, mat-forming cover. Deergrass, (*Muhlenbergia rigens*) is a large riparian bunchgrass found in the Trans Pecos and may have a similar rooting characteristic as switchgrass. Baltic rush (*Juncus balticus*) is not common in the state, however, there are many other species of *Juncus* that may have similar type roots.

Next time you walk across a riparian area, try to visualize the amazing root mass and the length of roots that lie below ground.

New Website All About Plants

Temple, Texas — When drought, noxious weeds, wildfire, or human-made disturbances negatively impact the landscape, the USDA Natural Resources Conservation Service sets out to find solutions through plants.

The NRCS plant materials program provides native plants that can help solve natural resource problems.

“Once a problem is identified, it is our job to seek out plants that show promise for meeting the conservation need,” said Rob Ziehr, NRCS plant materials specialist in Temple, Texas. “We then test the plant’s performance and, once proven, we release it to the private sector for commercial production.”

Historically, NRCS employees across the country have collected various plant species for scientists at plant materials centers to work with. But the agency is expanding its approach to plant collection and inviting the public to be a part of the process.

“We have developed a website that will serve as a source of information regarding plant materials in Texas,” Ziehr said. “But more importantly, we have included detailed information on how to collect plants we can use in our research.”

The website address is <http://www.tx.nrcs.usda.gov/technical/pmc>. Ziehr said that detailed instructions on plant collection and documentation forms can be found on the website.

Of the 27 plant materials centers in the country, three are located in Texas at Kingsville, Knox City, and Nacogdoches. With more than 550 active studies on real-world conservation issues nationwide, the plant materials program offers immediate practical application.

For more information, contact Rob Ziehr at 254-742-9888 or robert.ziehr@tx.usda.gov.

Salt Kill Revegetation Field Day

A field day to show the results of a salt kill revegetation project was held in Young County on November 1st. Approximately 40 people were on hand to see the final results of this project which was conducted on the J.W. Guinn place southwest of Olney, Texas.

Grant funds were applied for and received last fall through the 319 demonstration project program. These are funds set aside by the Environmental Protection Agency (EPA) and funneled through the Texas State Soil and Water Conservation Board, partnered with a local sponsor. In this case the sponsor was the Young Soil and Water Conservation District. Other sponsors included the Natural Resources Conservation Service, Young County Extension Service, and Turner Seed Company.

There are many salt scarred areas, occurring naturally or from oil field activity, in North Central Texas that are not only an eyesore but are unproductive. The loss of vegetation causes water quality degradation and sedimentation downstream.

“Our intention was to do a turn-key job on trying to reclaim 10 acres of land gullied from saltwater, in this case caused by old oilfield activity,” said John Paclik, District Conservationist with the Natural Resources Conservation Service. Last winter, this area was shaped, fertilized, and disked a couple times and then seeded to a mixture of 14 different species of plants to see which would be the most adaptive to the saline soils. A layer of switchgrass hay was applied as a mulch to provide protection from intensive rainfall and to keep the soil shaded and moist to allow for better germination of the seeds.

Mr. Gunn explained his objective was to reclaim the area and eventually get a cover of vegetation. Lee Munz, Texas State Board Project Manager, discussed the 319 projects funds available through EPA. Gerald Voss, conservation technician, talked about the shaping and smoothing process that changed an extensive gullied area to a tillable area that a seedbed could be prepared. Soils information and the amount of salt in the soils were discussed by Soil Scientist Sidney Paulson and Byron Lorenz.

Troy Reinke, Range Management Specialist, gave an overview of the 14 different species of seeds planted and conducted a walking tour of the plants growing on the site. Agronomist Andy Spence followed up with possible alternatives that work on different levels of salt damage. District Conservationist concluded with a summary of costs to complete the project.

“We did not have the best spring and summer rains as we had hoped for to make this a success,” Paclik said. However, part of the project required fencing the area to protect it from grazing, therefore allowing existing plants to get a good root system, as well as allowing more seed to germinate next spring. With time, the area should have a decent plant cover that will eliminate the erosion problem and drastically improve the water quality downstream.



Texas A&M Honors West Texas Men with Regents Fellow Service Awards

By Steve Byrns

COLLEGE STATION - The Texas A&M University System's board of regents honored two West Texas men with Regents Fellow Service Awards this week in College Station. The two are Dr. Charles "Butch" Taylor, long-time superintendent of the Sonora Research Station, and Billy Kniffen, Texas Cooperative Extension agent in Menard County. This award is presented each year by the regents to honor professionals from the system's eight agricultural and engineering agencies.

Taylor serves as project leader for the Texas Agricultural Experiment Station's research program on sustainable management of Edwards Plateau rangelands. Taylor's research emphasizes the innovative management of rangeland vegetation using a combination of fire and livestock, according to Dr. John Walker, resident director of research at the Texas A&M University System Research and Extension Center at San Angelo.

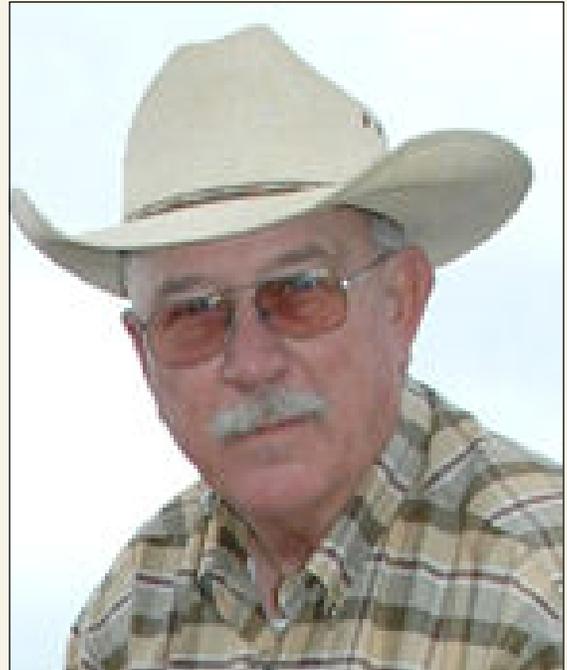
"Butch is very effective in his work with individual producers, producer organizations, Extension and other agency personnel," Walker said. "One of his major accomplishments stemming from this cooperation is the development of the Edwards Plateau Prescribed Burning Association. Through his research and interactions with landowners, he realized that managing cedar with prescribed fire required more skill, manpower and equipment than most individual ranchers had. This realization led him to form the cooperative known as the Edwards Plateau Prescribed Burning Association. The association enables ranchers to share equipment and expertise to safely and effectively use fire as a rangeland improvement tool."

Walker said the cooperative now has 350 active members who have conducted 100 burns on 100,000 acres since 1997. The association's success made it a model for the development of 10 other associations in Texas, Oklahoma, Colorado, South Dakota and Arkansas.

Kniffen has served as an Extension agent in five counties representing diverse geographical areas of the state. Scott Durham, district Extension administrator at San Angelo, said Kniffen is best known for his educational efforts in restoring degraded rangelands and developing water harvesting techniques for rangeland managers and homeowners.

"While an agent in Hays County, Billy helped establish a water conservation district on the Edwards Aquifer, one of the most important and sensitive water resources in Texas," Durham said. "The popularity of rainwater harvesting brought about by Kniffen's educational efforts resulted in property tax incentives for Hays County residents who installed home rainwater harvesting systems. The Texas legislature has now removed all state sales taxes for materials used to build rainwater harvesting systems."

"Most recently, Kniffen has been recognized as a state and national authority on water harvesting. He has authored and co-authored a number of water harvesting publications used in Texas and has been a speaker at state and national conferences on water conservation and water harvesting," Durham said.



Dr. Charles "Butch" Taylor



Billy Kniffen