



# Holistic Resource Management of Texas, Inc. Newsletter

Volume 18, Number 1

Spring 2003

## The Water Cycle: Research on hydrological effects under intensive rotational grazing

by **Richard Teague**, *Texas Agricultural Experiment Station, Box 1658, Vernon TX 76384*

The hydrologic condition of rangelands is the result of complex interrelationships of soil, vegetation, topography and climate. Maintenance or improvements of hydrological condition and soil formation or retention are critical determinants of ecosystem function and sustained production. In this article I summarize results from research conducted to determine the effect of grazing by livestock on rangeland hydrology and discuss observations I have made in my travels round Texas, the US and other parts of the world relating to the effects of different management on factors effecting rangeland hydrology.

Healthy soil requires a groundcover of plants and plant litter that buffers temperatures, enhances infiltration and decreases evaporation so the soil remains moist for longer after precipitation. Soil structure is provided by gums and polysaccharides produced by soil microbes. These sticky substances glue together soil particles and minerals into small aggregates that are glued together into larger aggregates called peds. When soil is well aggregated, the pores (spaces) between the aggregates allow the soil to breathe and absorb moisture quickly when it rains.° An ongoing supply of energy in the form of carbohydrates from actively growing plant roots and decomposing litter is required so soil organisms can flourish and maintain or build soil structure.° Friable, porous topsoil makes it easier for plants roots to grow and for soil organisms to prosper, reinforcing the soil building process. Such soils retain moisture longer, which enhances the microbial activity that determines nutrient availability for plants and reduces erosion.

Aggregation alone is not a guarantee of high infiltration rate. The other key factor that must be considered is the stability of the aggregates. Aggregate stability is the collective measure of the degree to which soil particles are bound together and the stability of those bonds when wetted. The aggregates creating the soil pore structure must maintain their structural integrity when wet if infiltration through those pores is to occur. If the aggregate bonds are

structure of associated cover, and consequently the infiltration rate differs among vegetation types (Figure 1). The amount of cover, and hence the rate of infiltration, is usually greatest under trees and shrubs followed in decreasing order by bunchgrass, shortgrass, and bare ground. Infiltration rates also vary seasonally because of variation in growth dynamics. Cover on sites dominated by annual species is generally highly variable over time because the amount of cover rapidly increases during warm, moist periods that favor growth but rapidly declines during dormant seasons. The result is that the soil surface is poorly covered during some portions of the year and well covered at others. This is in contrast to the cover dynamics of perennial shrubs and grasses in that the amount of cover provided by these species fluctuates much less between seasons.

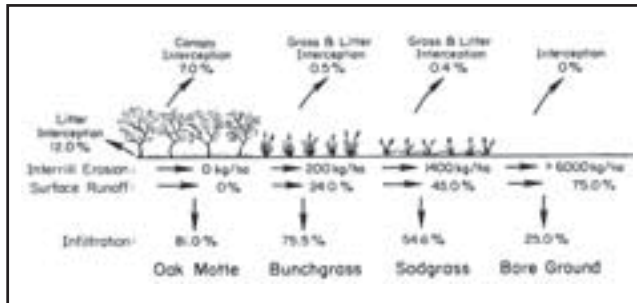


Figure 1. Water budgets and amounts of interception, runoff and erosion from oak, bunchgrass, sodgrass and bare ground in the Edwards Plateau, Texas based on 4 inches of rainfall in 30 minutes (from Thurow 1991).

unstable when wetted, the clay particles disperse so the aggregate cluster begins to break into smaller pieces (slaking). These particles are then carried by the water and lodge in the remaining pores, making them smaller or sealing them completely, reducing infiltration rate by as much as 90%. This is one way in which soil crusts are formed. Aggregate bonds may be broken by the kinetic energy of raindrops striking the soil. Cover intercepts and dissipates raindrop energy before it strikes the soil, thereby protecting aggregate structure.

Vegetation type affects the amount and

Another important difference between vegetation types relative to their affect on infiltration rate is related to the amount of litter. Bunchgrasses and shrubs tend to produce greater amounts of foliage than annuals and short grasses. The fallen foliage accumulates as litter that leads to greater amounts of solid organic matter. Litter also creates a more consistent temperature and moisture microenvironment that favors microorganism activity. These factors enhance formation of stable soil aggregates that aid infiltration.

The principle objectives of most livestock grazing systems are to maintain or improve forage production and/or to improve forage harvesting efficiency. Maintenance or improvement of forage production is directly related to

see Hydrology, page 4

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# A Note from the President

by Forrest Armke

Fellow members, we need your help. Most members pay membership fees while attending the annual meeting in early spring.

With no meeting in the spring of 2003, many members didn't remember to pay their annual dues. Please help us and do so now.

Thanks,



In February, the advisory board and the board of Directors met in San Angelo. the 2003 activity schedula is outstanding. The Valley Conference was well attended. Four planned learning on the land events look very promising.

The Septemner rendezvous is going to be great. Pat Richardson is pulling 6 sub-committees toward a fantastic International Celebration of Holistic Management. Thanks, Pat.

Our booth at the TSCRA annual meeting has never been so busy. As a group, we are fulfilling our goal of sharing with others the benefits of HM.

I am proud to be a part of such a great group of people.



## HRM OF TEXAS MISSION STATEMENT

To provide encouragement and support of holistic management in Texas

### THREE-PART GOAL

Quality of Life - We value a healthy ecosystem capable of supporting the people in it, strong family units, financial sustainability, a land ethic, and personal growth and development; while enjoying life and the fellowship of a professionally proactive organization.

Forms of Production / Activities - Practicing holistic management, self-sustaining forms of revenue, facilitating training and education, creating public awareness and forming collaborative partnerships.

Future Resource Base - High biodiversity, a healthy water cycle, a healthy mineral cycle, efficient capture of solar energy, and a harmonious interdependence between urban and rural communities through an understanding of ecological processes; an active membership with respect for diversity, long term productive relationships with public agencies and endowment groups, and proactive networking with other groups that manage holistically.

## Holistic Resource Management of Texas, Inc.

# Newsletter

is published quarterly by HRM of TX, Inc., a non-profit organization. News articles, area updates and photos are gratefully accepted and will be published as space allows. We welcome letters to the editor related to HRM principles or activities. Advertising is available. Direct newsletter correspondence to:

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# Events/Announcements

## **May 3 - Field Day at the Manahans** - by Deb Manahan

The Manahan's 5 M Farm is now a very diverse operation. Due to the drought of 1996 it changed from a cow/calf and performance horse operation to a few token cows, the horses, and a herd of about 50 goats. In 1999, the first ball clover seed was planted, hot wire fences were built dividing pastures into grazing cells and a few sheep were added to the mix. Now, there are about 500 head of goats & sheep, a few horses, an ever changing number of cattle (depending on the amount of forage), a moving hen house for the laying hens and chicken tractors in the apple orchard to clean up under the trees and fertilize. Every day Mother Nature teaches us something new about intensive grazing. Come see us on May 3, as Holistic Management® Certified Educator Christina Allday-Bondy enlightens us on holistic practices, followed by a tour of the farm. Also, on the schedule for the day is Mr. Jay Mertz of Rabbit Hill Farms to talk to us about some natural salts and minerals and Mr. H. J. Cannon, long time Border Collie trainer, will give a demonstration.

The address is 299 County Road 1171, Fairfield, TX 75840. To get to the 5 M Farm you go north on the IH 45 service road in front of Luv's Truck Stop that is located on the corner of IH 45 and Hwy 27. Go 3 miles to County Road 1171 and turn left. We are the first house on the right. The entrance is red brick columns and white fence. If you are coming from the east or west on Hwy 84 go North on the service road on the west side of the interstate and the next intersection will be beside Luv's. We look forward to having you on the farm for a fun filled educational day that will start at 10:00 a.m. and last until around 4:00.

Cost for this field day is \$15 singles/\$25 couples and includes lunch. Please RSVP with Peggy Jones (e-mail: [hrmoftx@earthlink.net](mailto:hrmoftx@earthlink.net) or phone: 512-858-2761) or Deb Manahan (903-388-5326).

## **May 20 - HRM of TX Board of Directors meeting at the Ford Ranch**

Board meetings are open to the membership. Come get involved. RSVP with Peggy Jones.

## **May 21 - Improving Rangeland Economics & Health, Ford Ranch, Brady**

Here is your opportunity to see what makes the Ford Ranch so successful, as well as learn from respected experts in their fields- see story, page 7. Fees are \$15 per person if registered by May 9, \$25 if after May 9. Please register ASAP with Peggy Jones at the HRM office.

## **June 14 -David West Station for Holistic Management** -by Peggy Maddox

Joe and Peggy Maddox, along with HRM of Texas, invite you to a field day at the David West Station of The Center for Holistic Management on June 14. Field day participants will participate in activities on plant identification with Steve Nelle, TPW wildlife biologist and Burr Williams, Education Director of Sibley Nature Center. Bud Williams, famed expert on low-stress livestock handling, will share his ideas on building handling facilities that are stress free for humans and animals. Certified Educator, Peggy Sechrist, will talk about the principles of holistic management decision making.

Cost of the field day is \$25 for one or \$40 for couples. The fee includes all the activities and a catered noon meal. The day begins at 9:00am and concludes at 3:00pm. To attend, RSVP by June 7, by contacting the Maddoxes at 915-393-2292 or email [westgift@earthlink.net](mailto:westgift@earthlink.net) or Peggy Jones at the HRM of TX. office at 512-858-2761 or email [hrmoftx@earthlink.net](mailto:hrmoftx@earthlink.net). Make reservations early to reserve your spot.

Directions to the ranch are: From I-10 at Ozona, take 163 south toward Comstock for about 15 miles. Turn right on RR1973 and go 16.3 miles. Turn left at the Cole Fresh Water Station sign. Go 1 mile and turn right and go .5 mile to a cattle guard. When you cross the cattle guard you have entered the David West Station. Follow the signs on to the ranch headquarters. Signs will be at each place where you need to make a turn.

## **June 17-21 Independent Cattlemen's Assn. Convention, Waco**

Look for HRM of TX at booth 40 during the convention's tradeshow at the Waco Convention Center. Contact Rebecca Aultman at 512-620-0162 or e-mail at [aultman@io.com](mailto:aultman@io.com) for information.

## **July 11-13 NPAT Conference, Austin**

The Native Prairies Association of Texas will hold its Second Biennial Texas Prairies and Savannahs Conference, titled "From Soil to Seeds," on July 11-13 at the Lady Bird Johnson Wildflower Center in Austin. HRM of Texas is co-sponsoring this event. As in the past, this conference will have a "How-To" focus for landowners, farmers and ranchers, and prairie enthusiasts with workshops, oral presentations, and field trips. For more information and registration forms please mail to NPAT a/c Georgia Prakash at 1905 William Brewster, Irving, TX 75061 or e-mail to [prakash2@airmail.net](mailto:prakash2@airmail.net), or visit [www.txprairie.org](http://www.txprairie.org).

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# Hydrology, from page 1

water infiltration rates. Therefore, the long-term success of a grazing system depends on how well increased livestock harvest efficiency, which reduces cover and biomass, is balanced with the need to maintain aggregate stability, which is improved by increased cover and soil organic matter.

The terminal infiltration rate is sensitive to the type of grazing management used on the site and the extent to which livestock grazing affects these variables is largely dependent upon grazing intensity as illustrated by an experiment conducted in the Edwards Plateau in Texas (Figure 2). It is clear from this and other research that increasing stocking rate is a major factor decreasing infiltration rate. At the heavier stocking rate the SDG treatment resulted in much better infiltration than the continuous grazing treatment even though it was not really managed with the goal of improving hydrological condition. It would have been very interesting to measure the effect of SDG management at the moderate stocking rate with flexible management aimed at providing the best improvement in hydrological condition.

While this experiment in the Edwards Plateau was not managed using planned grazing goals or protocols it does illustrate a number of important points. The soil compaction (i.e., bulk density) increases in proportion to the number of animals grazing an area. Thus in a rotational grazing system, the concentration of animals in one paddock of the whole grazing unit increases the soil bulk density markedly as a result of the larger number of animals present. Of course, once the animals move on to another pasture, this animal grazing impact is no longer a factor and the soil bulk density slowly decreases with time. This animal concentration thus has at least 2 important effects on hydrological properties. The increased soil bulk density and reduction of forage amount both reduce infiltration rate. When managing using intensive rotational grazing, special care must be planned to minimize these negative effects. Research has not been conducted to determine how long it takes before soil bulk density returns to pre-grazing conditions in intensive rotationally grazed situations.

Density of herbaceous perennials is an especially important indicator of hydrologic condition in many regions because their decline is usually associated with increased runoff. As grazing intensity in a mixed grassland increases, the vegetation composition shifts from midgrass to shortgrass dominance, with the most severe changes being associated with heavy stocking. Heavy stocking that results in extended periods of close grazing and decreases midgrasses while increasing shortgrasses and bare ground is not

hydrologically desirable. Moderate use of vegetation combined with adequate time for recovery should likewise be planned so that there is little negative effect on bunchgrass cover and thus on infiltration rate.

The degree to which grazing reduces cover, reduces litter, and changes the species composition of cover is dependent upon the frequency and intensity of grazing. This physical removal of vegetation by herbivores is superimposed on fluctuations of vegetation cover resulting from seasonal variation in growth dynamics as influenced by climatic factors. The combined effects of climate and livestock grazing intensity strongly influences seasonal fluctuations of cover that in turn contributes to seasonal fluctuations of infil-

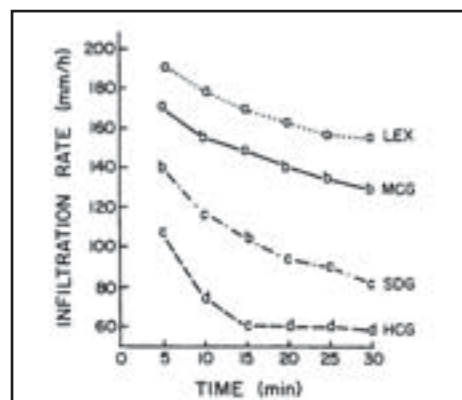


Figure 2. Mean infiltration rates for four grazing treatments on the Edwards Plateau, Texas six years after they were initiated. LEX = livestock exclusion; MCG = continuously grazed at moderate stocking; SDG = short duration rotation (14-pasture, 1-herd; 4 days on 50 days rest) stocked 1.75 times the moderate intensity; HCG = continuously grazed at 1.75 times the moderate intensity. Means within a time period with different letters are significantly different at  $P < 0.05$  (after Thurow 1991).

tration rate. The impacts of grazing and the magnitude of hydrologic response differ from region to region depending upon the interrelationships associated with the particular mix of these parameters.

Grazing animals also reduce infiltration by breaking the soil aggregate structure due to the force applied by hooves. Research conducted to date does not support the hypothesis that a hydrologic benefit accrues by increasing the magnitude of trampling. Studies aimed at determining the impacts of livestock trampling in the absence of concomitant removal of vegetation have generally shown that trampling increases soil bulk density; mechanically disrupts soil aggregates; reduces aggregate stability; and destroys cover provided by algae, moss and lichens. In addition, these studies have shown the

magnitude of negative impacts from trampling increases as stocking intensity increases, decreasing aggregate stability and increasing bulk density that in turn, reduces infiltration rates and increases surface runoff and interrill erosion. Trampling dry soil does churn the soil surface but this "hoof action" reduces the size of naturally occurring soil aggregates and increases the bulk density of the surface soil layer. Trampling moist soils destroyed existing soil aggregates by compacting them into a comparatively impermeable surface layer composed of dense, unstable clods. Both are detrimental to infiltration rate and interrill erosion.

A number of ranch properties that I know well illustrate many of the principles outlined above. Since I know those belonging to members of the Red River Graziers grazing club best, I will mention them but acknowledge that there are many others in Texas and the US that illustrate excellent hydrologic condition. One of the most noticeable things about visiting ranches of long time holistic managers such as John Phelan, Clint Josey and John and Brent Hackley, to name a few, is that they are able to run many more animals and yet always have more forage than neighbors. It is also noticeable that their plant species composition, plant density and litter cover are superior to their neighbors. According to conventional wisdom, having range in better condition, having more grass and also having much higher stocking rates, are mutually exclusive. In addition, these holistic managers cannot fill their tanks except with exceptionally intense rainstorms and have no visible signs of surface erosion. Does the higher stocking rate on these ranches decrease infiltration? It probably does a little but I believe the accumulation of positive influences on the vegetation and soil minimizes this effect and probably allows for more rapid improvement in soil compaction before the area is grazed again.

All these factors tell me that their range is in very good hydrological health. I believe that all of these ranchers have achieved this desirable state of affairs through intelligent planned intensive rotational grazing. The period of extended drought that we have recently lived through has really shown up those managers who manage very well. The long-term success of any grazing management strategy is dependent upon that strategy's ability to maintain or improve the hydrologic condition and soils of the site. To sustain the range resource, it is of paramount importance that management practices minimize bare ground, increase herbaceous perennial plant density, decrease the area of patches dominated by low successional species, and minimize soil compaction. To prevent the deterioration of rangeland, grazing should be planned to leave forage plants so they can re-

see Hydrology, page 7



# **Rendezvous 2003,**

## **A Celebration of Holistic Management**

### **September 26 - 28, 2003**

#### **Clint Josey's L O Ranch**

**(in the Grand Prairie north of Fort Worth Texas)**

**Sponsored by Holistic Resource Management of Texas**

Come spend three days with dynamic creative thinkers providing an exciting, challenging environment in which to participate and learn. Share experiences of how to take one's most precious vision of what life means and requires now and far into the future and make decisions that move toward that goal.

Opening ceremony begins at 11:30am on Friday, September 26<sup>th</sup>. The event will conclude late morning on Sunday, September 28<sup>th</sup>. Enjoy meals prepared and served by a renown Texas caterer. Eat and meet under tents in a prairie pasture. The entire event will be outdoors, so dress for weather and prairie peculiarities.

Enjoy "face time" with Holistic Management founders Allan Savory and Jody Butterfield. Share in our appreciation of the longest enduring Executive Director Shannon Horst and find out how her fresh focus of duties at the Center is going. Meet and get to know the new Executive Director Tim LaSalle. Learn from long time educators, learn from Certified Educators (CEs), learn with training-to-be Certified Educators. Play THE CHICKEN POOPOFF with Board members and Advisory Board members (and other gambling fools).

**L O Ranch** is in the tallgrass Grand Prairie. For three decades, farm and dairy pieces of land have been acquired to create the present day 1200 acres of valley, woods, and rolling hill pastures. Witness how grazing management can begin to bring back the diversity and richness of ecosystem processes in this area that has been historically heavily farmed and grazed.

**Workshops:** Your most difficult chore while at the Rendezvous will be to choose which presentations you wish to attend! Workshops will include Multi Species Grazing, The Ins and Outs of Conservation Easements, Animal Handling –Happy Healthy Animals With Less Work, What This Prairie Has Been Since The Ice Ages, Major Holistic Management Education Projects and Sites – What's Happening, Rotational Pasture Walk (Land Language, Carbon Cycle, Soil Life, Learning to See Before Interpreting), Policy Management with Savory, How to Make and Use Seed Balls, Forest Management in Mexico, Organic Beef/Grass Fed Economics, Ranch Hunting and Partnership Enterprises, Holistic Management Personal Experiences.

There will be a **Youth Program** on Saturday for children 6 to 12 years old. If you plan to bring younger children, please provide your own baby-sitter.

**Entertainment:** On Friday night relax and visit around the campfire (or perhaps a wading pool if it's hot). On Saturday night enjoy the stories and songs of writer, poet and performer Andy Wilkinson. Hear him tell tales of the American West, weaving images of people and places from true stories past and present.

**How to get to the ranch:** From IH35 approximately 50 miles north of Dallas/Fort Worth, take exit #487 (Valley View) and go west on FM 922 for 11.5 miles (4.5 miles past Era). Turn left (south) on CR 398 (toward Leo) and drive 6 miles to the ranch Rendezvous entrance gate on the left (signs at gate will indicate L O Ranch and Rendezvous).

**Registration:** Please Register by **September 1<sup>st</sup>**. Late registration will be accepted, but you are not guaranteed the (Saturday Only) three meals or the (All Three Days) six meals.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Phone(s): \_\_\_\_\_

Email: \_\_\_\_\_

Fees include program, food & beverages (cash bar available)

Individual		Number	Total
All Three Days	\$170 x	_____	\$_____
Saturday Only	\$120 x	_____	\$_____

Couple			
All Three Days	\$280 x	_____	\$_____
Saturday Only	\$215 x	_____	\$_____

Children 8 – 16			
All Three Days	\$50 x	_____	\$_____
Saturday Only	\$25 x	_____	\$_____

Camping fee/night \$10 x \_\_\_\_\_ \$\_\_\_\_\_ (See below for details.)

Total Amount Enclosed (US Dollars) \$\_\_\_\_\_

**Crafty Diversity**

**Would You Like to Have a Booth at Rendezvous 2003?** If you have a service or product to sell, a space will cost \$25 and you need to bring your own booth structure. If you have an idea or product that you create or make yourself, a space (we provide tent protection) will cost \$10. This is an opportunity to share your endeavors and tell how they integrate into your holistic goal.

Please contact Judy Reed at [msjudy@reedfamilyranch.com](mailto:msjudy@reedfamilyranch.com) or 903-872-6836 or 2209 Dartmouth Ln, Corsicana, Texas 75110 for details and to reserve a space.

Make checks payable to: HRM of Texas

Send registration to: Rendezvous Registrar (Christina Allday) 2703 Grennock, Austin, TX 78745

**Accommodations:** Primitive camping will be available at the ranch for tents and RVs. There will be no electrical hook ups. There will be a shower (outdoor) and portable toilets. The camping fee is \$10 per night per family or per site or per RV. The campground will open Thursday, September 25<sup>th</sup> at 4pm and close on Sunday, September 28<sup>th</sup> at 2pm.

If you would like to stay on a ranch, but not camp, check out the delightful Richards Ranch Retreat (about 60 miles west of the L O Ranch), long owned by Holistic Management practitioners. See for yourself how they integrate "people ranching" into the working ranch.

[www.richardsranchtexas.com](http://www.richardsranchtexas.com) (phone 940-567-2511)

There are numerous hotels in nearby Denton Texas (30 miles from the ranch). For information, check [www.discoverdenton.com](http://www.discoverdenton.com) and look at Accommodations. If you don't wish to search the web, here are several in the moderate price range to consider:

Holiday Inn	800-465-4329	Super 8	800-800-8000
La Quinta Inn	800-531-5900	Ramada Inn	800-272-6232

**more info on [www.hrm-texas.org](http://www.hrm-texas.org)**



# Improving Ranch Economics and Health: A Field Day

May 21, 2003 at the Ford Ranch near Brady

by Dr. C. Wayne Hanselka

Holistic Resource Management is all about decision-making so that our actions lead toward our Holistic Goal. Uninformed decisions, coupled with an environmental vagaries, in the past has led to a deterioration in our resources and a crisis in ranch economic and health. HRM can reverse the downward spiral in rangeland health and improve economics if proper plans are developed and implemented. The Ford Ranch, Melvin, Texas, will host a field day for rangeland managers and others interested in rangeland resources focusing on these issues.

Rangeland health will be discussed by Dr. Kris Havstad. Dr. Havstad directs the huge Jornada Experiment Station near Las Cruces, New Mexico for the USDA Agriculture Research Service. He had been a participant on many committees and task forces concerning rangeland health and will offer unique insights into the concept and how we can improve productivity on the land.

Since rangeland health is based upon proper functioning of the rangeland system the processes of energy flow, water cycling, nutrients, and vegetation dynamics will be covered in some detail. Brad Wilcox and Barron Rector will demonstrate the fate of water on rangelands. Both are with the Dept. of Rangeland Ecology and Management, Texas A&M University. Richard Teague, Rangeland Scientist with the Texas Ag Experiment Station will discuss "Reading Your Landscape" and Allan McGinty, Extension Range Specialist, will follow with monitoring rangeland to see what effects management is having. Charles Anderson, Natural Resource Conservation Service, will discuss the criteria used to evaluate health.

Practices that influence rangeland health—livestock grazing, ripping and reseeded, and brush management will be discussed by Charles Taylor, Darrell Ueckert, and Wayne Hanselka. All are with the Texas A&M University System.

Several practitioners will discuss their operations at various times during the day. Forrest Armke, Ford Ranch Manager, will address management on the Ford Ranch. John Hackley, from the Richards Ranch near Jacksboro, will discuss his experiences, and John Merrill, Crowley, Texas, will address rangeland health and stewardship.

The balance of topics, speakers, and ranch sites should give participants a rounded backdrop to ranch health and economic issues. All interested persons are urged to attend.

To register, contact Peggy Jones at 512-858-2761 or [hrmofTX@earthlink.net](mailto:hrmofTX@earthlink.net). Registration by May 9, \$15 each. After May 9 \$25 each. Register early to help plan for meals.

## The Ford Ranch

The Ford Ranch is 32,000 acres of gentle rolling hills covered with dense low oak brush and diversified forage. 30 miles of permanent electric fence have been added to create 39 conventional pastures. 1200 mother cows plus calves in multiple herds are moved through conventional pastures to harvest forage.

Through planned grazing, plant spacing has improved. Many "good" grasses have returned. The plant diversity is outstanding. The wildlife benefits from this diverse diet. Over 400 wildlife enthusiasts return each year to enjoy this healthy environment. Most come from out of state. At the Ford Ranch, these hunters fulfill their dreams and see the results of HM in action.

The Ford Ranch is about 15 miles from Brady, Texas. Take FM 2028 west 12 miles from the stop light in Brady. Turn left on County Road 122. Headquarters is about 3 miles down that dirt road. About 3 hrs. from Austin / San Antonio, 4 from Ft. Worth.

## Hydrology, from page 1

cover from defoliation as rapidly as possible and provide adequate lengths of time between successive defoliations. Planned rotational grazing is the tool that provides managers with the opportunity to address the root causes of range deterioration. As such, it is a key tool to managing for sustainable use and restoration of rangeland. Successful ranchers have achieved the excellent results mentioned using these guidelines and adjusting animal numbers in accordance with the different amount of forage that grows each season. I believe scientists would learn a lot by studying the long-term effects of excellent management on ranches such as those mentioned.

Reference: 2 Thurow, T.L. (1991). *Hydrology and Erosion*. In: Heitschmidt, R.K., Stuth, J.W. (Eds.), *Grazing management: an ecological perspective*, pp. 141-159. Portland: Timber Press. 259 pp.

## Savory Center has new director

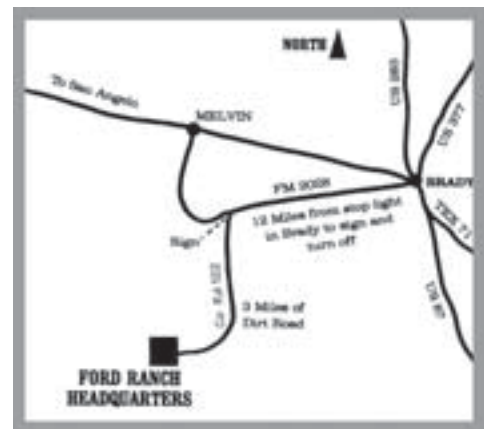
The Savory Center is proud to announce their new Executive Director, Tim LaSalle. LaSalle has led the most dynamic Agricultural Leadership Program in the US for the past 26 years. As President/CEO and Educational Director of the California-based Agriculture Education Foundation, he developed what a colleague called "the gold standard" of such programs in the US and overseas. In the course of his work, he traveled internationally every year with a class of 30 agricultural leaders and has thus developed a broad network of contacts and colleagues around the world.

LaSalle grew up on his family's farm in California, received degrees in dairy science and population genetics and is now completing a Ph.D. in Depth Psychology. He managed his own dairy farm for several years until recruited by Cal Poly (San Luis Obispo, California) at the age of 25 to teach in the Dairy Science Department. He had become a full professor in 1986 when the Agriculture Education Foundation lured him away to direct its California Agricultural Leadership Program. During his tenure there, he grew and refined the program to its current status and exceptional educational offering.

### Advertise

in the HRM of TX Newsletter  
Your chance to reach a targeted audience and help with all HRM projects as well as helping the Earth who raised you.

Contact Peggy Jones 512-858-2761 [hrmofTX@earthlink.net](mailto:hrmofTX@earthlink.net)



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# Holistic Water Treatment

## ATTENTION: PRIVATE WELL OWNERS & RANCH/LAND MANAGERS:

A vortex water system works with nature in a homeopathic manner to cure such ills as iron, sulfur, etc. The water produced by the system is energized by an implosion process which restores healing and beneficial properties.

There are many installations throughout the Hill Country, where well owners are enjoying the taste and feel of their water, as well as maintenance-free operation.

- Prevents Iron Stains
- Kills Anaerobic Bacteria
- Conditions Hardness Minerals
- Inhibits Algae Growth

Because the system is installed at the well-head, multiple uses can be supported:

- House
- Barn
- Yard
- Multiple Homes
- Any Use That Will be Served by the Well

For an on-site demonstration of this unique method of water treatment, call  
1-888-460-8306 or 830-796-4872



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**References available upon request.**



"In Harmony With the  
Environment"



## Bunker Sands: 1943-2003

John Bunker Sands, a very dedicated supporter of Holistic Management, died on March 4, 2003 after a yearlong battle with pancreatic cancer. Born on October 16, 1948 in Dallas, Bunker developed a passion for nature that was demonstrated through many works of conservation. Generous with both his time and money, Bunker made numerous financial contributions to HRM of Texas as well as contributing his time to the following: Board of Governors of the Allan Savory Center for Holistic Management; Migratory Wildlife Advisory Board of the Texas Department of Parks and Wildlife; the Dallas Area Advisory Committee for The Nature Conservancy. He also supported the Cesar Kleberg Wildlife Research Institute and the Friends of the Katy Trail.

In 1980 he began developing wetlands on Rosewood Ranches which eventually covered over 2,000 acres on the Texas working cattle ranches. The manmade wetlands include marshes, swamps and hardwood forests and provide essential nesting and wintering areas for migratory birds. In the spring of 1999, Bunker hosted an HRM of Texas field day, taking attendees on a tour of the beautiful wetlands, showing how wetlands and grazing lands can be managed together holistically, and treating all to a crawfish lunch. Bunker was also the first to introduce Brahman cattle to Hana, Maui, Hawaii, where he established a working ranch adjacent to the Hotel Hana Maui, which Rosewood Hotels and Resorts owned and managed at that time.

For his preservation efforts, Bunker received the 1996 National Wetlands Award presented by the Environmental Protection Agency and the Environmental Law Institute; and the Lone Star Land Steward Award, presented that same year by the Texas Department of Parks and Wildlife.

Our thoughts and prayers go to Bunker's wife and children. We will all miss this warm, friendly, dedicated individual who helped to promote the well being of the earth and all inhabitants through holistic management.

## Ecosystem, from back cover

in creating a healthy mineral cycle through biological decay. When functioning well, your landscape thrives and blossoms with the high turnover of nutrients. And the vegetation consumed by your livestock provides to them optimum health benefits. And likewise with the fruits and vegetables you may grow for your own family's consumption.

**ENERGY FLOW** – Without solar energy flow, you're dead, I'm dead, we're all dead. Solar energy is the energy that sustains all life. Sounds to me like a high priority element. Are you capturing and converting the maximum possible? While you're on your walk and looking for signs to help you evaluate your water cycle, community dynamics, and mineral cycle, you'll be accumulating information that will help you evaluate your solar energy flow as well. Good solar energy flow requires the other three processes to be working relatively well. In addition to good vegetative cover, you'll want to begin to look for wide leafed plants that can be more efficient in converting solar energy. You will also want to look for your plant diversity to provide an extended growing season producing more plants into the next season.

Nature has a pretty effective life support system already designed. Look around while walking across your land. Learn to observe the processes at work and ask yourself, "What can I do to help?"

## Working to provide encouragement and support of holistic management in Texas

*Holistic Resource Management of Texas, Inc. is a non-profit organization made up of ranchers, farmers, public land managers, educators, conservationists, and others who are interested in finding economically and ecologically sound ways to manage land.*

Categories of membership: \$35—Basic \*\$100—Active \*\$250—Sustaining \*\$1,000—Lifetime

\*Includes the textbook, *Holistic Management*, by Allan Savory

*Annual membership dues entitle you to:*

- *Subscription to the quarterly HRM of Texas, Inc. Newsletter*
- *Membership directory*
- *The privilege to vote for and serve as director of HRM of Texas, Inc.*
- *The opportunity to be notified of and participate in management clubs, field days, practitioner panels and other educational opportunities to assist with the application of Holistic Resource Management.*



Please complete, detach and return the form below with a check for your dues.

Name: \_\_\_\_\_

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Occupation: \_\_\_\_\_ email: \_\_\_\_\_

Committee preference: \_\_\_\_\_ Membership Category: \_\_\_\_\_

*Please make check for desired membership category payable to Holistic Resource Management of Texas, Inc.*

*and send to: HRM of TX c/o John Heaton, 341 Compton School Road, Crawford, Texas 76638*

*For more info contact: Peggy Jones (512-858-2761), John Heaton (254-848-4207) or Forrest Armke (325-286-4572)*

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Dripping Springs, TX 78620



Holistic Resource Management of Texas, Inc.

# Newsletter

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## Ecosystem Processes—Go with the flow

By Peggy Sechrist, Rancher and Certified Educator in Holistic Management

Warm, spring days virtually compel us to go outside to enjoy the sun, the air, the new green, and the emerging wildflowers. It is the perfect time to achieve two objectives simultaneously: enjoying the warm spring day and making observations about your land. More specifically, it's a perfect time to conduct some evaluations about how effective your ecosystem processes are functioning.

You do remember your ecosystem processes don't you? If the term brings to mind a hazy recollection of something that was discussed in your Holistic Management training course, it may be more appropriate to read Section IV in the *Holistic Management* textbook. The contents of Section IV reveal to the reader the pinnacle of wonders—how mother earth sustains us and all other living beings! On a more practical level, the reader gains understanding about four processes that are actually one and when managed holistically, may make all your dreams come true.

Now, have I provided reason enough to spend some time getting up close and personal with your ecosystem processes? Hopefully so. Let's begin with a refresher. You'll want to know if your land is effectively capturing rainfall and storing it in a moisture bank (usually

composed of soil organic matter) for slow release to plants and springs. Do you have enough biological diversity to balance species populations? Is your soil alive enough to provide the energy needed for nutrient cycling? And finally, are you capturing sufficient solar energy to effectively power your landscape and by extension your own life along with your family's? All of the answers to these questions will also relate to the Future Landscape Description in your holistic goal—assuming that you have one.

**WATER CYCLE**—As you walk, you can look for patches of bare ground, capped soil surface, and signs of erosion. These are things that you don't want to find! Healthy vegetative cover on your land—even weeds!—is better than bare soil. Growing vegetation provides a soft cushion for rainfall to fall upon and channels to guide the raindrops into the soil. Living as well as dead root material provides the organic matter needed to hold excess moisture for slow release over a long period of time. If you do find bare ground, now would be a good time to review the tools available to prepare the ground for rainfall capture. Don't forget that mulching can be an effective tool both to help capture rainfall and to protect and cool the soil surface against the blazing summer sun sure to come. But don't bother to mulch capped soil. Before you do that, you better re-read your text

book.

**COMMUNITY DYNAMICS**—Considered the most vital and perhaps the most complex to understand, the general rule to follow for community dynamics is more diversity is better than less. Along with that, one needs to remember that a community of living beings is always dynamic and you must always expect changes to occur. During your walks are you noticing more species than you did in the past? Can you see a difference from season to season and from year to year? While climate patterns can make significant impacts on community dynamics, in general, a more diverse community helps to provide some degree of stability and reduces instances of an overpopulation of one weed or insect.

**MINERAL CYCLE**—Minerals are critical for life to continue. Perhaps the most understated nutrient for all living beings, mineral deficiencies are slowly destroying our soils and human health along with it. So how do we enhance it? Basically, apply the principles of the two previous processes and you'll be well on your way. Healthy, diverse vegetative cover on your soils provides the plant and root material needed to promote good mineral cycling. Diverse populations of animals, insects, fungi, and mysterious soil microorganisms also play a role

see Ecosystem, page 9