

SOILS

Drilling mud application seminar educates landowners

by Eddie Funderburg / erfunderburg@noble.org



Oil and gas drilling and production are extremely important to the Oklahoma economy. According to a 2012 report by Dr. Russell Evans, economist at

Oklahoma City University, this industry accounts for about one-third of the state's economic output. The report further states that 71,224 jobs in Oklahoma are directly involved in oil and gas drilling and production, and 228,115 jobs are indirectly supported by the oil and gas industry. Dr. Evans' report estimates that oil and gas drilling and production account for \$14 billion in labor income in Oklahoma.

While it is obvious that oil and gas drilling and production are vital to the economy of the state, these activities create by-products that must be handled in a safe and environmentally friendly manner. One of these products is drilling fluid (drilling mud). According to an American Petroleum Institute report from 2000, about 1.2 barrels of drilling waste are produced per foot of well depth. One way to handle drilling fluids is application onto agricultural land.

There are many items a landowner should consider when making the decision about whether to allow drill-



ing mud to be applied onto his/her land. To help educate landowners on these factors, the Noble Foundation will host a seminar titled Application of Drilling Mud to Agricultural Land from 6:30 p.m. to 8:45 p.m. on Thurs., May 23, 2013, at the Ardmore Convention Center in Ardmore, Okla.

The seminar will consist of three speakers who are experts in their respective areas. Sam Feagley, Ph.D., a soil chemist with Texas A&M University, will discuss the composition of drilling mud and the potential benefits and hazards of applying drilling mud onto agricultural land. ►

Mike Moore, a hydrologist with the Oklahoma Corporation Commission, will discuss allowable application methods and the regulations concerning eligible lands, and the rates of drilling mud that can be applied onto land. Trae Gray, an attorney from Coalgate, Okla., will discuss the items that landowners should detail in the lease if they decide to allow drilling mud to be applied onto their land. A question and answer session with all speakers will be held at the end of the last presentation.

The purpose of this seminar is to educate landowners on the benefits and drawbacks of applying drilling mud on agricultural land so they can make informed decisions about the application of drilling mud on their property. It will be a fair and unbiased look at the practice and is not intended to give a definite yes or no answer to whether landowners should allow drilling mud to be applied on their agricultural land.

This seminar is open to the public and offered at no charge, but preregistration is required. For more information or to register, please visit www.noble.org/agevents or contact Jackie Kelley at 580.224.6360. ■

Grazing event provides opportunity

by Chad Ellis / crellis@noble.org



Agricultural producers often express an interest in increasing their management effectiveness, and many are looking for opportunities to support the industry. Both of these goals can be fulfilled through involvement in producer-led organizations that match the participant's views and interests.

One such group is the Grazing Lands Conservation Initiative (GLCI). GLCI is a nationwide, collaborative affiliation of agricultural producers and organizations working to maintain and improve the management and health of the nation's grazing lands. The organization is a producer-initiated effort carried out through local coalitions supported by livestock producer organizations, scientific and professional grazing resource organizations, conservation and environmental groups, state and federal agencies, and other interested parties. This initiative facilitates coordination among government, educational institutions and producer organizations, and agencies specializing in conservation, scientific research, watershed benefits and soil health. It is designed to complement and enhance existing conservation programs for technical assistance, education and research. GLCI was developed to identify priority issues, find solutions and effect change on private grazing land.

The first-ever Texas Grazing Land Conference is set for July 16 and 17, 2013, in Fort Worth. It will focus on helping producers find solutions to maintain healthy and profitable ranches. The conference is sponsored by the Texas Grazing Lands Conservation Initiative, a group dedicated to increasing awareness of the economic and environmental benefits of private grazing lands among producers, landowners and the public.

A key attraction of this unique learning opportunity is a producer forum with 16 Texas and Oklahoma ranchers who will share their knowledge, insight and experience in both the cow-calf and stocker cattle sectors. The forum will have four breakout sessions representing distinct management emphasis areas:

1. Profitable grazing management.
2. Marketing strategies.
3. Risk management.
4. Managing livestock with wildlife.

Temple Grandin, noted animal behavior expert, author and professor, will begin the conference, speaking about strategies to improve animal welfare. Kit Pharo will conclude the conference by sharing his philosophy on moving from a production mentality to one of sustainable profitability in beef production. Scheduled social mixers and lunches will give ranchers the opportunity to interact – and there is no better way to learn than rancher to rancher.

The Texas GLCI Conference will provide educational opportunities to improve your land and business. The cost for the conference is \$100 per person (\$50 for students). Limited space is available, so don't wait to register. Registration is available online until June 28, 2013, at www.regonline.com/txgrazland2013. For more information, contact Jeff Goodwin (jeff.goodwin@tx.usda.gov) or me. ■

New animal identification rules aid disease traceability

by Robert Wells / rswells@noble.org



On March 11, 2013, the United States Department of Agriculture (USDA) initiated the Animal Disease Traceability Program (ADTP) to track interstate

livestock movement. According to the USDA, "Animal disease traceability, or knowing where diseased or at-risk animals are, where they have been and when, is very important to ensuring a rapid response when animal disease events take place. This will reduce the number of animal owners impacted by an animal disease event and reduce the economic strain on owners and affected communities." The new rule replaces the previous unpopular version of the National Animal Identification System (NAIS) and pertains to all livestock, including cattle, horses, sheep and goats.

The new rules will minimally change official identification requirements for animals that are shipped interstate, yet it will improve animal disease traceability. The ADTP will require livestock that move interstate to be accompanied by an Interstate Certificate of Veterinary Inspection (ICVI), owner-shipper statement or a brand certificate. The owner-shipper statement and brand certificate must be approved by officials in both the state of origin and the receiving state. Animals moved intrastate will be under the jurisdiction of the state's regulations.

For cattle, the following are deemed officially accepted forms of identification:

- Metal ear tags (brucellosis "orange" tag or National Uniform Eartagging System (NUES) "Brite" tag).

- Plastic ear tags (with or without RFID, but must have a unique 15-digit code with 840 as the first three digits, the U.S. shield and manufacturer's logo or trademark).
- Group or lot identification when applicable.
- Brands, when recognized by a brand inspection authority, accompanied by an official brand inspection certificate and allowed by the receiving state.
- Ear tattoos acceptable to breed registries when accompanied by a breed registration certificate or back tags when cattle are moved directly to slaughter.



Federal rules require the following animals to be officially identified:

- All sexually intact dairy cattle.
- All rodeo, exhibition or event cattle and horses.
- Sexually intact beef cattle over the age of 18 months.
- Equines that move interstate.
- Existing sheep and goat scrapie regulations apply.

The metal ear tags will be provided at no cost to producers from the USDA as long as funds are available. Exempt cattle are those that are moved directly to a livestock slaughter facility or to an approved livestock tagging facility with an owner-shipper statement; moved from farm of origin to a veterinary medical facility and then returned to the farm of origin, directly from one state through another state and back to the original state; or moved as a commuter herd with a copy of the commuter herd agreement.

Ordinarily there is no requirement for a producer to maintain a copy of the movement document,

but it is highly recommended that records be kept. However, if an animal loses an official ear tag, a replacement may be used. If this occurs, then records that include the new identification number, the date it was implemented and the old number, if known, must be maintained for five years.

This situation could apply if mature breeding beef cattle are purchased and shipped between states. As the drought eases and producers restock, they will need to make sure that cattle have compliant identification and maintain those records necessary for USDA compliance. ■

Rainfall and forage data guide stocking decisions

by Hugh Aljoe / hdaljoe@noble.org



The adage “you cannot manage what you do not measure” has many applications, including stocking rate or, more accurately, carrying capacity.

However, in the management of beef cattle operations, carrying capacity has traditionally received little attention. There are several factors for this: the development of fertilizer-efficient introduced grasses, cheap fertilizer, cheap hay and several decades of good rainfall beginning in the early 1980s. Fertilizer and hay are now much more expensive. Rainfall has become less dependable with drought reminiscent of the 1950s being experienced in 2011 and 2012. In spite of changing conditions, most producers were reluctant to adjust stocking rate

until forced to do so by the drought, and, even then, few have begun monitoring (much less managing) carrying capacity. Now is the time to begin active management of carrying capacity and, thus, your stocking rate.

Where does a producer begin? A good place to start is monitoring monthly rainfall on the ranch using a “water year” table and comparing numbers to the long-term monthly average (Table 1). The water year rainfall table for an operation allows a producer to determine the percentage above or below the long-term average that the actual precipitation is at the end of each month, thus indicating approximately how much to adjust the stocking rate during the growing season (assuming the producer is stocked for an average year).

The second variable to measure is actual forage production. There

are several methods to assess forage production. Depending on the type of management employed, the best method will vary. Estimates of forage production need to be determined at critical dates in the operational plan. A few suggested dates for estimating forage production for the Southern Great Plains region are June 1, July 1, Sept. 1 and at frost when, respectively, about 30 percent, 65 percent, 90 percent and 100 percent of annual perennial warm-season grass production is expected to be produced.

A forage assessment form is the tool needed to estimate forage production. There are many different ways to construct a forage assessment form. In Table 2, a reserve herd day approach is used in the assessment, which is often easier when practicing managed rotational grazing. Initial critical information

Table 1.
Water Year Rainfall for South-central Oklahoma (updated 3/1/2013)

Month	Local long-term monthly rainfall			2011-2012 water year monthly rainfall				2012-2013 water year monthly rainfall			
	30-year average	cumulative total	% 30-year average	2011-2012	cumulative total	% 30-year average	variance from average	2012-2013	cumulative total	% 30-year average	variance from average
	inches	inches	percent	inches	inches	percent	average	inches	inches	percent	average
October	4.12	4.12	10	2.07	2.07	5	-5	1.54	1.54	4	-7
November	2.89	7.01	18	6.74	8.81	22	5	0.54	2.08	5	-12
December	2.44	9.45	24	2.05	10.86	27	4	1.72	3.80	10	-14
January	1.84	11.29	28	4.26	15.12	38	10	1.84	5.64	14	-14
February	2.20	13.49	34	1.27	16.39	41	7	2.49	8.13	21	-14
March	3.40	16.89	43	5.79	22.18	56	13	1.70	9.83	25	-18
April	3.61	20.50	52	2.77	24.95	63	11				
May	5.47	25.97	65	2.12	27.07	68	3				
June	4.47	30.44	77	3.30	30.37	77	0				
July	2.45	32.89	83	0.70	31.07	78	-5				
August	2.52	35.41	89	2.13	33.20	84	-6				
September	4.24	39.65	100	2.27	35.47	89	-11				
	39.65			35.47							

FORAGE

Table 2. Example of a Critical Date Forage Assessment Form using the reserve herd day approach

Forage assessment form using reserve herd days (RHDs)

Assessment date 6/1/2013

Annual estimate of livestock demand

Cattle	Qty	Weight	Annual livestock demand		
			Per day	Days/year	Per year
Cows	84	1,200	2,621	365	956,592
2-year old cows	12	1,000	312	365	113,880
Yearling heifers	15	800	312	365	113,880
Bulls	5	1,600	208	365	75,920
Weaned steers	45	600	702	90	63,180
Weaned heifers	45	600	702	90	63,180
			4,857		1,386,632

Grazing demand to date

Grazing demand			Livestock demand			Total grazing demand
Cattle	Qty	Weight	Per day	Per month	Months grazed	
Cows	84	1,200	2,621	78,624	2	157,248
2-year old cows	12	1,100	343	10,296	2	20,592
Yearling heifers	15	900	351	10,530	2	21,060
Bulls	5	1,600	208	6,240	2	12,480
Weaned steers	n/a					
Weaned heifers	n/a					
			3,523	105,690		211,380

Forage production to date

Graze+RHDs	% Annual
Grazed	211,380
RHDs	100,386
Hay	88,000
Total	399,766
% of Annual=	29

Critical dates and expected production

Date	% Annual	Total lbs
Jun 1	30	415,990
Jul 1	65	901,311
Aug 1	90	1,247,969
Nov 1	100	1,386,632

includes identification of critical assessment dates; an estimate of forage demand at critical date assessment and anticipated for the year; an estimate of the total amount of production anticipated for the grazing period (normally a year for cow-calf operations); and an estimate of the amount of forage produced (on-hand, grazed and hayed) at the time of assessment. All forms will include pasture inventory information such as pasture identification, forage type and estimated production.

Adequate rainfall covers up many poor management practices and allows producers to ignore the management of stocking rate. It often

takes extreme circumstances – like an extended drought – before stocking rates are adjusted. Unfortunately, adjustment is usually made after the land (forage) resource has been misused to the point that it will take multiple years to recover – if recovery is even possible. However, astute managers can distinguish themselves during periods of extended drought by managing stocking rates to match carrying capacity through the use of tools to monitor rainfall and forage production. The key to sustaining forage resources for long-term optimization of carrying capacity (regardless of rainfall) is active management of stocking rates. ■

Forage Inventory to date (Grazed + RHDs)

Grazing RHDs					
Pasture	Forage	Total acres	Reserve days	Cattle	Estimated forage reserve
1,4,5,8	Bg	80	21	Cows	55,037
2,6	Bahia	40	20	2-yr	6,864
3	Bg	20	30	Yrlg hfr	10,530
7	Bg	20	7	Cows	18,346
9	Bahia	20	2	Cows	5,242
10	Annuals	20	21	Bulls	4,368
Lbs forage grazing					100,386
Reserve grazing days					28
Reserve grazing months					0.9

Hay	(Acres)	(Qty/ac)	Bales	Weight	Reserve
Hayfield	25	1	25	1,200	30,000
Ryegrass hay			58	1,000	58,000
Lbs hay					88,000
Reserve hay days					25
Reserve hay months					0.8

Does fertilizer still pay for stocker operations?

by Job Springer / jdspringer@noble.org



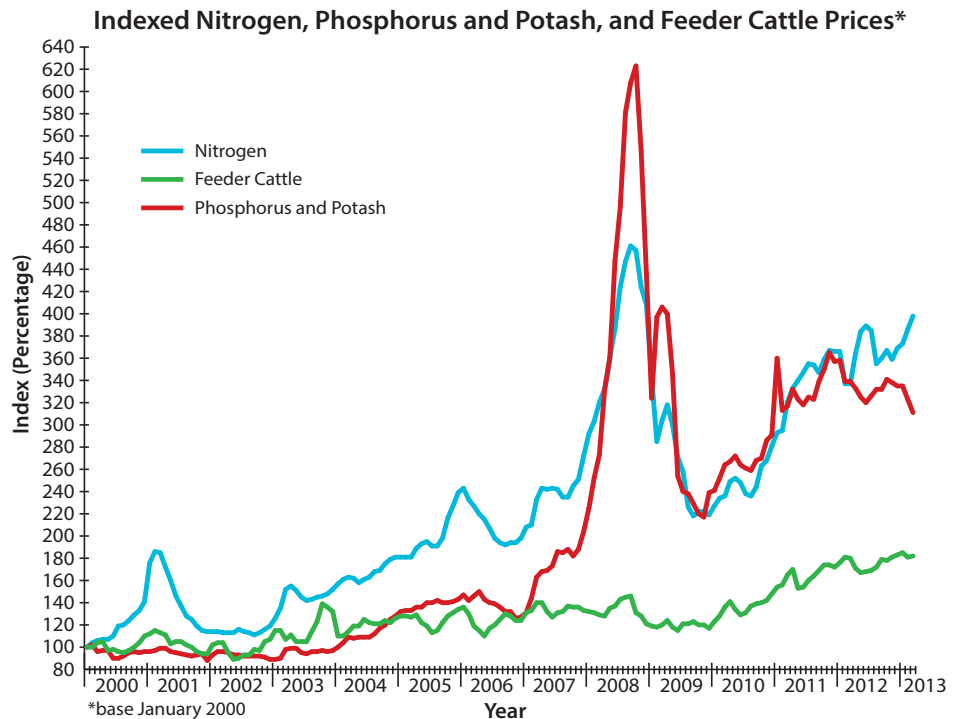
Cattle operations across the Southern Great Plains are on the cusp of making an important financial decision. Managers need to determine how much, if

any, fertilizer should be applied to warm-season perennial pastures. The price of fertilizer has been on the rise, and old rules of thumb can no longer be used with today's high fertilizer and cattle prices.

Graph 1 shows the indexed prices of nitrogen, phosphorus and potash fertilizers. These are the three most common fertilizers applied to warm-season perennial pastures in the Southern Great Plains. Prices of all three inputs have steadily increased since 2000, suggesting that fertilizer has become less profitable to use. However, we live in a dynamic marketplace where both input and output prices fluctuate. While fertilizer prices have risen, so have beef cattle prices. Graph 1 also shows how feeder cattle prices have changed over the same time period.

So are fertilizer prices too high for stocker cattle operations? To help answer this, we need to set some framework. To start, let's assume a situation where the soil is adequate in both phosphorus and potassium, and we want to analyze taking a 500-pound calf to 650 pounds on bermudagrass starting on May 15 and ending on Aug. 30 – a gain of 1.5 pounds per day. Let's also assume that the ranch is already at full carrying capacity, but the carrying capacity could be expanded by applying additional nitrogen.

Research has shown that, on average, 1 actual pound of fertil-



izer will generate 30 pounds of dry matter bermudagrass. At current urea prices of 65 cents per pound of actual nitrogen, the additional bermudagrass would cost 2.17 cents per pound. If this stocker calf starts out at 500 pounds and ends at 650 pounds, its average weight during this time is 575 pounds. To gain 1.5 pounds a day, the stocker calf will need to eat 3 percent of its body weight a day (this takes into account waste associated with a calf grazing pasture). This equals an average consumption of 17.25 pounds per day of bermudagrass. Taking the cost of 2.17 cents per pound of bermudagrass and multiplying by 17.25 pounds of grass equals 37 cents per day. Since the calf is gaining 1.5 pounds per day, the cost per pound of gain is 25 cents.

From the value of gain standpoint, the 500-pound stocker calf on May 15 is projected to be worth \$162 per hundredweight or \$810 per head.

On Aug. 30, the 650-pound stocker calf is projected to be worth \$154 per hundredweight or \$1,001 per head. Value of gain is calculated by taking the difference in price per head and dividing by the weight gain. This equates to \$1.27 per pound of gain $[(\$1001 - \$891) \div 150]$.

In this scenario, each additional pound the stocker calf puts on costs the producer only 25 cents, but is valued by the market at \$1.27. In this case, the producer can expect to receive a net income of \$1.02 for each pound of gain, so it would be economical to apply fertilizer. From this net return, the expense of applying the fertilizer should be subtracted. It can be seen that in many situations there would be enough margin available after covering nitrogen and application costs to also cover the additional expense to fertilize less fertile ground that requires phosphorus and/or potassium. ■

Conserving roost sites helps maintain Rio Grande turkey

by Mike Porter / mdporter@noble.org



Fall and winter

roost habitat may be the most critical and limited Rio Grande turkey habitat.

Wild turkeys roost in relatively tall, mature trees with

large crowns, spreading horizontal branches, and relatively few woody plants and tall herbaceous plants under their canopies. Open understories under roost trees allow turkeys to easily fly into and out of roosts, and allow turkeys to watch for predators on the way to and from roosts.

Rio Grande turkeys, the predominant turkey subspecies in most of Oklahoma and Texas, usually gather in relatively large flocks during fall and winter. These flocks typically include a few dozen to several hundred turkeys. Rio Grande turkey flocks tend to consistently use only a few roost sites during fall and winter. These roost sites are usually located in mature, wooded bottomlands, often along a river or perennial creek. Tree species commonly used as roosts include oaks, hackberries, elms, cottonwoods, pecan, sycamore, black willow and western soapberry, but species is probably less important than size and shape. In arid areas without bottomlands, Rio Grande turkeys roost in the tallest trees available or on other structures such as power lines, windmills, buildings or oil tanks.

During spring and summer, Rio Grande turkeys disperse and use many roost sites, typically tall trees. Wild turkeys commonly range over a few thousand acres throughout the course of a year, but only a few acres of fall and winter roost sites may dictate whether the whole area

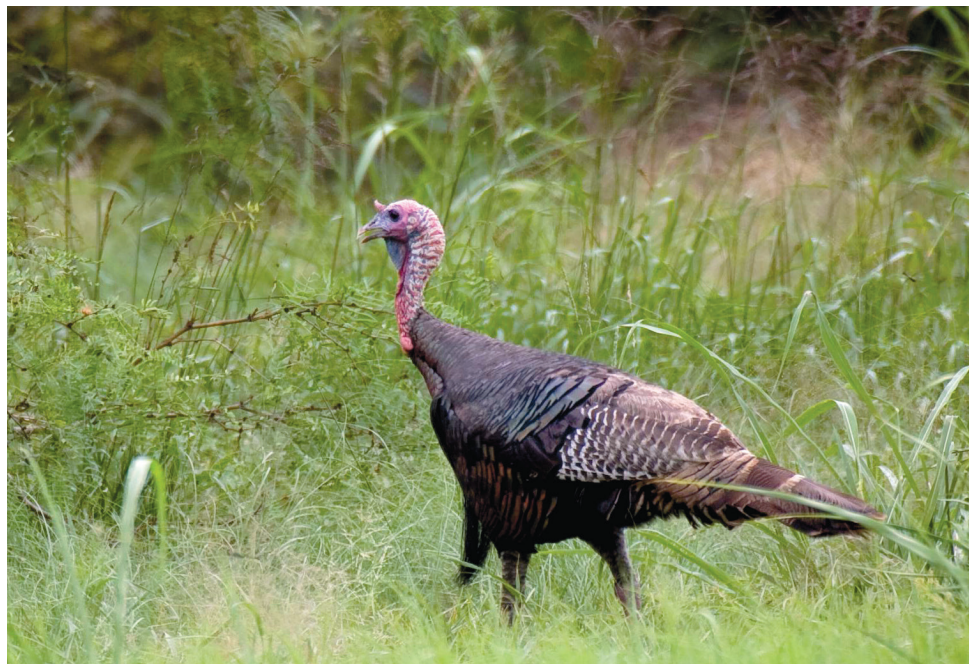
has Rio Grande turkeys or not. Disturbances at fall and winter roost sites can cause the species to abandon much or all of their home range. Such disturbances include clearing roost trees, excessive human activity in or near roosts, allowing thick brush to grow under roosts, and shooting turkeys while on their roosts.

Land managers who like wild turkeys and have fall and winter roosts on their property should recognize the importance of this critical aspect of turkey habitat and conserve it. Some upkeep may be necessary to maintain or improve roost sites. Reduction of woody plants under roosts, especially species such as Eastern red-cedar, salt cedar and yaupon, in bottomland hardwoods can enhance roost sites. Work in roost areas is best performed during summer or late spring daytime hours while turkeys are typically away from roost sites.

Burning in roost sites should be carefully considered. Fire can

be beneficial or harmful to roosts depending on how it is applied. Bottomland tree species tend to be less tolerant of fire than some upland tree species such as post oak. An intense fire, especially during the growing season, can top-kill many trees in a roost site. However, the absence of fire can allow undesirable species such as Eastern red-cedar to invade and become too thick under roosts. When a roost does not have problems with excessive shrub and small tree establishment under the tree canopies, it might be best to protect the roost from fire. When excessive Eastern red-cedar or other woody plant establishment exists under a roost, it might be best to rake or blow leaves and debris away from most primary roost trees, and conduct a low to moderate intensity burn.

In summary, it is important to identify and conserve roost sites to maintain Rio Grande turkeys in an area. ■



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EVENTS

Pond Management Workshop

Time: 1 p.m.-7:30 p.m.

Date: May 14, 2013

Location: Noble Foundation Pavilion

Registration Fee: \$20, includes dinner

Application of Drilling Mud to Agricultural Land Seminar

Time: 6:30 p.m.-8:45 p.m.

Date: May 23, 2013

Location: Ardmore Convention Center

No Registration Fee

Basic AG Raise and Wean Healthy Calves

Time: 1 p.m.-5 p.m.

Date: May 30, 2013

Location: Noble Foundation Kruse Auditorium

No Registration Fee

For more information or to register, please visit www.noble.org/agevents/ or call Jackie Kelley at 580.224.6360. Preregistration is requested.

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FOUNDATION
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