

AGRICULTURAL DIVISION RESTRUCTURING

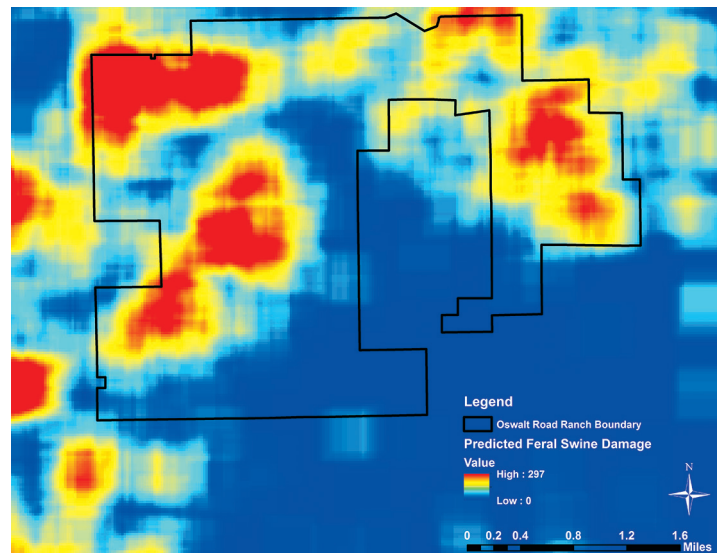
New center fosters collaborations for land stewardship

by Chad Ellis / crellis@noble.org



Land stewardship is the process of bringing proper land management principles together in a balanced approach for the enhancement and health of the land over a long period of time. Land stewardship is central to the mission of the Noble Foundation and to producers in the Southern Great Plains. For this reason, the Center for Land Stewardship (CLS) became one of the four centers of excellence developed from the Ag Division's restructuring process.

Efforts of CLS are focused around collaboration and research with the purpose of building leaders, expanding knowledge, and developing tools to be used by producers to make informed decisions about land stewardship. Collaboration is central to the CLS's work to inform, engage and enable individuals to become better stewards and improve healthy ecosystem processes socially, environmentally and economically. A major collaboration that the CLS is involved with is the Center for Private Land Stewardship (CPLS), which was established in February 2015 by the Noble Foundation, East Foundation and the Institute of Renewable Natural Resources at Texas A&M University. The CPLS supports stewardship of private lands through critical research, timely education, and innovative programs grounded in reliable science, practical economics, and sensible public policies. As part of the collaboration, the CLS offers three one-week courses to the Natural Resources Conservation Service (NRCS); will host the first class of Texas A&M students pursuing graduate certificates in private land stewardship and policy, a certificate program endorsed by the CPLS; and is developing a private land stewardship symposium. The symposium will be focus-based on emerging topics to facilitate discussion among diverse stakeholders. The CLS



An example of mapping feral swine damage



Feral swine control to reduce damage using BoarBuster™

is involved with other collaborations, including some that extend to the national level such as the U.S. Roundtable for Sustainable Beef. ▶

The CLS conducts research on the ever-evolving uses for land and how these uses affect long-term production goals as they relate to agriculture, ranching or wildlife. As part of the research program, the CLS seeks to develop tools and information for producers to make the most informed decisions related to the use of their land. Spatial analysis techniques are used on Noble Foundation research farms to better understand the interactions of vegetation, wildlife and livestock, as well as the effects of various management practices. Key to this is using a geographic information system (GIS) to store, manage, analyze and visualize the data to make informed management decisions. Current research by the CLS focuses on wildlife conservation and risk factors, including damage to land caused by feral swine and the risk of disease transmission from feral swine to livestock.

By studying these components as a whole, we have a better understanding of the ecosystem and can provide valuable science-based information to land managers making land use decisions. Depending on the land manager's goals, we can use the information to help them identify areas to manage for wildlife, graze livestock or farm, as well as evaluate the trade-offs of various uses. Through the CLS's research on the Noble Foundation farms and collaborations with other organizations, the CLS will add to our understanding of the land and find practical solutions that empower land managers to make wise use of their resources. ■

Buying known bull genetics adds value

by Steve Swigert / jsswigert@noble.org



One of the most important management decisions for a cattle operation is what bull to buy. When cattle producers make bull purchases, several

factors should be considered: number of bulls, type, acquisition time, age, source, quality and cost.

For this analysis, it is assumed the purchaser can do a good job of analyzing a bull's phenotype (physical characteristics) prior to purchase. If a producer does not have the necessary skills to visually evaluate the bull, the producer should either ask for help or purchase from operations or sales with breeding soundness or bull health guarantees.

How many bulls should be purchased is directly related to cow herd size. The typical bull-to-cow ratio is one bull to 25 or 30 cows but can vary by pasture size, property roughness and bull age. Producers with small cow herds are challenged to keep bull cost down while making sure all cows get bred. Having only one bull increases the risk of open cows for small herds because the bull might have or develop a breeding problem. With high value calves, an operation cannot generally afford to have open cows.

When selecting the type of bull to purchase, bull genotype (genetic makeup) should be selected to complement a cow herd to produce desirable calves. Knowing the genetic potential of the calves helps a producer determine whether to retain ownership past weaning. Uniform calves (both type and color) command higher prices than

non-uniform calves at sale time.

Planning ahead usually results in a better selection of bulls with better genetics. Buying earlier gives the bull time to acclimate to the region, the ranch and the handling procedures of the operation. Also, buying early allows for additional growth of 12- to 18-month old bulls, which is the typical age of many bulls in today's market. For spring-calving cow herds, this would mean purchasing bulls in the fall when the number of bulls needed is not yet fully determined. When bulls test infertile during a breeding soundness exam prior to the breeding season or are injured during the breeding season, replacement bulls that match the existing bull battery must be obtained as soon as possible.

In determining where to buy bulls, a cow/calf producer should look for seedstock producers with good reputations, the breed needed, quality genetics and the documentation necessary to validate genetic quality, such as actual performance and expected progeny differences (EPDs).

The bull's quality and cost are commonly linked; a bull that can sire heavier calves should be worth more. The best way to determine a bull's value is potential revenues returned to the operation in the form of calf weight.

Once analyzing the numbers, visually inspect the bulls and rank according to priority. Then decide how much the bulls are worth. Three bull investment scenarios are provided in Tables 1 and 2: Bull 1 is a typical bull purchased out of a sale barn to just get the cows pregnant; Bull 2 is purchased from a neighbor or friend and could be of known parent-

ECONOMICS

age with individual animal performance available; Bull 3 is purchased from a reputable breeder with known genetics, and individual performance information and EPDs are available.

Table 1 shows the total annual economic bull costs per cow for each bull, assuming each performs for five years. From the analysis, the difference between Bull 1 and Bull 2 is \$12.69 per cow, which for a 550-pound calf is **\$2.30 per hundred weight**. There is a \$31.09 per cow difference between Bull 1 and Bull 3, which on a 550-pound calf is **\$5.65 per hundred weight**. Table 2 shows examples of how these investments could affect an operation. Tables 1 and 2 demonstrate the performance differences in subsequent calf crops and potential incomes related to purchasing bulls based on EPDs and pedigrees.

It usually pays to purchase good genetics. While every operation might not receive an increase in performance as projected above, there are operations that have seen greater increases. With a high value of gain, relatively small differences in marginal cost relate to significant differences in marginal return. When considering performance differences, bulls that increase calf growth performance are worth a lot more than average bulls and typically do not cost as much as they are worth. ■

Table 1: Economic costs and assumptions

	Bull 1	Bull 2	Bull 3
Purchase price for bull	\$2,500	\$4,000	\$6,000
Average cows per bull	25	25	25
Total calves sired per bull	125	125	125
Years of expected use	5	5	5
Salvage weight of bull	1,850 pounds	2,000 pounds	2,000 pounds
Salvage value of bull	\$2,015	\$2,178	\$2,178
Total annual maintenance costs per bull* (e.g., feed and vet)	\$290	\$290	\$290
Total annual ownership costs per bull. (e.g. depreciation)	\$97	\$364	\$764
Total annual financial costs per bull	\$392	\$659	\$1,059
Total annual economic costs per bull**	\$586	\$903	\$1,363
Total annual economic bull costs per cow	\$23.45	\$36.14	\$54.54

*These assumptions hold the annual carrying cost (i.e., feed, vet, etc.) constant for all three bulls.
 **This includes opportunity costs on land and equity capital.

Table 2. Performance and income differences between bulls.

	Bull 1	Bull 2	Bull 3
Increased weaning performance	XX	+50 pounds	+100 pounds
Value of increased weaning performance (at \$1.10 per pound value of gain)	XX	\$55 per calf	\$110 per calf
Increased yearling performance (difference in average daily gain)	XX	0.75 pounds	1.0 pound
Increased yearling performance (60 days preconditioned)	XX	45 pounds	60 pounds
Value of increased performance	XX	\$50 per calf	\$66 per calf
Total increased value	XX	\$105 per calf	\$176 per calf
Additional cost per cow	XX	(\$12.69)	(\$31.09)
Marginal return per cow per year	XX	\$92.31	\$144.91
Additional marginal income (for 125 calves over five years)	XX	\$11,538	\$18,113

Proper management promotes fall, winter grazing

by James Rogers, Ph.D. / jkrogers@noble.org



I have always

been fascinated with animal behavior, especially beef cattle on pasture. They are selective grazers always in search for the highest quality

forages. This explains why you see areas of lush pasture go ungrazed in pastures with light stocking rates and high forage availability. Even when we increase stocking rates up to mob grazing levels (1 million pounds of stock per acre), cattle still selectively graze. I've witnessed stocker cattle at a stock density of slightly over a million pounds per acre be turned into a fresh paddock of native range in late June, quickly consume Basketflower flower heads, strip leaves off johnsongrass and tall native grasses, and trample remaining mature forage. Then they look at us begging to go to another paddock. We tested Basketflower flower heads; crude protein (CP) was 17 percent and total digestible nutrient (TDN) level was 72 percent. Samples from the paddock were tested for nutritive value prior to grazing; on average, CP was 8.4 percent and TDN was 54 percent. Fecal samples collected from the cattle during grazing had an average CP of 11 percent and TDN of 65 percent. Obviously, the cattle knew what they were doing. The problem was forage quality availability, and they just could not consume enough of what they wanted to consume to meet intake demands, and consequently protein and energy requirements, for a high daily gain.

This helps illustrate the problem we encounter with fall and winter grazing of perennial forages: forage



quality availability vs. forage availability. If stocking rate is estimated based on a 12 month carrying capacity then, by grazing management and forage deferment, excess forage can accumulate for use after the growing season ends. The problem is that carryover forage from early in the growing season is low in forage nutritive value, but availability may be very good. For example, in December 2014 I tested several paddocks of bermudagrass that consisted of carryover spring growth. Forage availability was excellent, slightly below 5,000 pounds of dry matter per acre, but the average CP value was 5.52 percent and TDN was 57.34 percent. I would expect cows grazing this type of forage to behave very similar to the steers on native range discussed previously. Cattle would quickly select for the highest quality, trample the rest and look for somewhere else to go. It should also be noted that

a supplement would be required to maintain body condition. Quality stockpile forage is fresh fall growth; if stockpiled from fresh, fertilized fall growth, bermudagrass can have crude protein values in excess of 10 percent (Oklahoma Cooperative Extension Service ANSI-3035). If you are in an area where tall fescue grows well, it too can have very good nutritive value well into late fall and early winter (University of Kentucky Cooperative Extension Service AGR-162).

Now, how are you and your cows going to use accumulated forage for fall and winter grazing? Consider how well stockpile forage will resist decomposition through fall and winter to determine order of grazing. Since cattle selectively graze, utilization of stockpiled forages may be lower than what the book values tell you. Keep this in mind as you manage both forage and cow condition. What appears to you as knee-deep

FORAGE

abundant forage may appear to a cow as a pile of pulpwood.

All accumulated or stockpiled forages will lose dry matter following frost and through winter. The rate this occurs varies by species composition. Of the Southern Great Plains forages, a grazing order could be crabgrass, old world bluestems (OWB), native grass, bermudagrass and tall fescue. Take advantage of crabgrass early as it will rapidly deteriorate following a frost and you will not be able to graze it for very long. Old world bluestem is next. Nutritive value will be low and utilization will be low, and don't expect to spend a lot of time on OWB following frost without cattle losing condition. Next is a toss-up between native grass and bermudagrass. Native grass stands well following frost but lower leaves will deteriorate and nutritive value will be low, which is why I try to use it ahead of bermudagrass. Cattle on standing native grass will leave stems

behind or trampled. Native grass that is stockpiled for multiple years in a row will begin to have cool-season grasses develop in the sward over time. These cool-season grasses can be used in late winter and early spring to keep them from competing with native grass spring green-up. For this reason, I tend to recommend using a different area of native range for stockpile each year. Bermudagrass stockpiles well and can have very good quality (greater than 10 percent CP) if fertilized in the fall. Following frost, leaves will become brittle and leaf losses will occur as cattle move through. In areas where it is adapted, tall fescue stockpiles the best of the forages mentioned here. Its waxy leaves maintain quality through the winter, so its use can be delayed until other forages have been used. There will not be major nutritional value losses, though some dry matter losses will occur.

Fine-tune your grazing manage-

ment by taking an inventory of forage mass and grab samples for forage nutritive value. Expect animal behavior and performance differences between carryover spring forage and true fall stockpile forage. All of these forages will more than likely require some type of supplementation to meet animal nutritive requirements, but these can be based from the grab samples. Monitor cow body condition while on stockpile and make feeding adjustments as necessary. ■

References:

Managing bermudagrass pasture to reduce winter hay feeding in beef cattle operations. Oklahoma Cooperative Extension Fact Sheet ANSI-3035. <http://osufacts.okstate.edu>

Stockpiling for fall and winter pasture, University of Kentucky Cooperative Extension Service. AGR-162. <http://www2.ca.uky.edu/agc/pubs/agr/agr162/agr162.pdf>

Your A picture is worth ...

... yep, a thousand words. It's also worth entering in our 2016 Ranch Management Calendar contest. Now is the time to submit your best agriculture photos. Top photographers will earn prizes!

Download an entry form and find more information at www.noble.org/calendar-contest.

Deadline:
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Photo by Jackie Callaway, Durant, Oklahoma
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Skid-steer loaders can improve ranch efficiency

by Deke Alkire, Ph.D. / doalkire@noble.org



For many ranches, a skid-steer loader is just as vital to the operation as a feed truck or a four wheeler. These machines are extremely versatile. They have a

small footprint for their capacity, and a good operator can make quick work of common tasks. However, there are several things to consider before purchasing a machine.

Skill level

Operating controls can be awkward for new users. It takes time and patience to become a proficient operator.

Test drive

You wouldn't buy a new truck without a test drive. The same should be true for machines. Many dealers will allow serious buyers to "demo" a new machine. Always test drive the brand and size of machine you want to buy before making a purchase, even if you have to rent it. Each brand will have different visibility, control options and weight-to-power ratios.

New or used

New machines will always have the latest upgrades and the shiniest paint. They come without the worries of past abuse but usually cost the most. If you are the kind of person who always buys a brand new truck, this might be the best option for you. However, there are many good, used machines available. Unless you know what to look for, it is best to buy used machines from a dealer. If you don't buy from a dealer, be suspicious of

fresh paint, rust and oil leaks. Always open the inspection panels and raise the cab. Ask for maintenance records and about any repairs. It is buyer beware. Great deals might mean that it's stolen; check the serial number.

Size and power

Decide what operations the machine will perform and buy a machine to fit your needs. The biggest machine is not always the best. Evaluate the lift height and tipping-load specifications relative to what you plan to move. Consider height constraints in pens and buildings, the width of openings, and how often you will haul it on a trailer. Typically, a skid steer is easier to haul than a tractor with the same capacity.

Tracks or tires

Rubber tracks have a larger footprint and tend to be easier on grass. Consider these for use in muddy areas and when use in pastures is common. They provide better traction but cost more to replace than tires. If the primary use will be on concrete, consider solid tires over pneumatic for longer life.

How much is it needed on the operation

Seriously consider what a skid steer is needed for on your operation. If you can think of uses to justify the purchase, it should be an easy decision because you will find many other uses you hadn't considered.

Optional Equipment

Think about what attachments you might need for your operation before

Potential skid-steer loader uses

- Fence building
- Handling hay and feed
- Manure management
- Road maintenance
- Brush clearing
- Water
- Construction
- Animal handling
- More information and other ideas are available online: www.noble.org/livestock/loaders-can-improve-efficiency

buying a machine. Make sure it has auxiliary hydraulics at a flow rate appropriate for any future attachments. Keep in mind that you can rent various attachments that you only need occasionally. Specialty items, like an auger bucket, will have to be purchased. Finally, a cab with heat and air conditioning is nice but the door can make it difficult to get in and out of the cab.

It is hard to imagine all the uses for a skid steer around a farm or ranch. This is a partial list of possibilities: removing old fence and building new fences, handling hay and feed, scraping and handling manure, maintaining roads, clearing brush, installing water lines and tanks, preparing fire breaks, correcting grade, and assisting with construction. The ideas are endless with the number and diversity of attachments available. A skid steer will not replace a tractor, especially for PTO-driven implements, but they can increase the efficiency of many ranch operations. ■

Common white-tailed deer misconceptions affect views

by Will Moseley / wamoseley@noble.org



Like most subjects, there is a plethora of misinformation about white-tailed deer biology and management. Most people try to be well informed

about deer because they enjoy observing or hunting them. However, even the most well-intentioned deer enthusiast has trouble finding accurate information about deer on the Internet or TV. Most websites and TV shows are trying to sell a product and can mislead the user about deer "facts." This article addresses a few common deer misconceptions.

Only trophy bucks do the breeding.

There is a common thought that only large adult, or "breeder bucks," do the majority of the breeding in the wild. However, studies have shown that at least 30 percent of the breeding is done by bucks younger than 3.5 years of age. In populations with a high proportion of bucks in lower age classes, breeding by bucks younger than 3.5 years old increases. This is due to the breeding strategy of white-tailed deer. A buck tends a doe for a short period before she comes into estrous then tries to breed her while she is receptive (usually for about 24 hours). Most does come into estrous around the same time, so an individual buck does not have time to breed a significant portion of the does.

Bucks are smarter than does.

This is a common thought among hunters because they see more does

than bucks while hunting. However, bucks are not any smarter than does. With significant doe harvest, most hunters see as many if not more bucks than does. This tells us that this behavior is effected by hunting pressure and not brain power.

Culling improves antler genetics of a free-ranging herd.

Culling is a popular topic among land managers when it comes to managing for trophy deer. However, it is difficult to cull deer that have inferior antler genetics because bucks do not express all the antler genes they carry and does contribute at least 50 percent of the antler genetics. Also, we have no control over breeding pairings of free-ranging deer. Young bucks not old enough to express their genetic potential for antler growth are often the victims of culling attempts. Wild bucks usually grow bigger antlers each year, so you never know what will happen if they grow old enough to express their antler genetics.

Spike bucks indicate poor genetics.

Spike bucks are typically viewed as genetically inferior in trophy management. When there is a high percentage of spikes in a deer herd, it usually indicates other issues besides genetics. Generally, the deer herd is above carrying capacity and the animals are not getting the proper nutrition. It could also indicate a skewed sex ratio with does being bred later, resulting in late-born fawns that are bred late the following year. These fawns can be spike bucks as yearlings but can



develop very nice antlers if allowed to age and have proper nutrition.

Food plots increase antler size.

Food plots are a very common management tool. However, food plots rarely increase the overall level of nutrition enough to note an increase in antler size. The key to managing food for wildlife is to have a diverse landscape of native woody and herbaceous plants. The old adage regarding food plots "when you can grow them you don't need them, and when you need them you can't grow them" is very true. However, food plots can be a useful tool to increase deer visibility for observation or to aid in doe harvest.

These are just a few, among many, misconceptions pertaining to white-tailed deer biology and management. ■

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EVENTS

Deer Management Workshop

Time: 9 a.m. to 4:15 p.m.

Date: Oct. 13, 2015

Location: Noble Foundation Oswalt Road Ranch, Marietta, Oklahoma

Registration Fee: \$20, includes lunch

Basic AG Field Day: Wildlife Management

Time: 9 a.m. to noon

Date: Oct. 23, 2015

Location: Noble Foundation McMillan East Farm, Madill, Oklahoma

No Registration Fee

Deer Processing Workshop

Time: 2-6:30 p.m.

Date: Nov. 3, 2015

Location: Noble Foundation Oswalt Road Ranch, Marietta, Oklahoma

Registration Fee: \$20, includes dinner

For more information or to register, please visit www.noble.org/agevents or call Maggie Scott at 580.224.6375. Preregistration is requested.

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THE SAMUEL ROBERTS
NOBLE
FOUNDATION
2510 Sam Noble Parkway
Ardmore, Oklahoma 73401
Phone: 580.223.5810