

June 2010

Pasture News

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Next Pasture Walk to be Held at Ray Yoder's Farm:

When: Thursday, July 8th @ 1:00

Where: 0900 W 1075 N; Middlebury, IN

Topic: Maintaining Quality Pasture in Summer



June 17, 2010

As we drove up to Cook's Bison Ranch two guides below five years old, Lucy Cook and Aleah Corkins, awaited us and patiently guided our truck to its proper destination. This Pasture Walk (later referred to as the *Walk*) was already unique; not only did we have 30 people in attendance for the Walk on a beautiful blue-skied sunny day, but we were joined by well over 100 people from all around the country who were visiting Cook's ranch for the summer conference of the National Bison Association (NBA). On that perfect summer day the non-native Indiana folk were in for a treat—for once it wasn't raining in Indiana and it was so nice and sunny, that many people had difficulty standing in the heat and were thankful for the light breeze cooling us off.

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Some of the conference attendees were inside, engulfed in a NBA board meeting. Others were outside gathering around displays of bison-related products. Available for purchase was a wide array of jewelry, handbags, and other bison leather accessories. Some people wandered in to Cook's Bison Ranch Store, which has everything from bison playing cards to actual bison meat that you can take home and eat. The store has a little something for everyone!

We were thankful for all of these distractions as the best part was coming and our bellies were eagerly anticipating lunch. Erica Cook, Peter's wife, served all the guests a delicious meal of a bison burger, bison brat, chips, fruit salad and pasta salad for only \$5.00 (which would normally hold at least a \$12.00 value). Julie Diehm made one of her famous salads consisting of wild edibles and homemade raspberry vinaigrette dressing.



Once everyone was finished eating, the 30 Walk attendees and most of the NBA conference participants piled in to wagons to be guided by tractors through Cook's pastures. While we were waiting for everyone, Martin Franke began introductions and announcements. Martin welcomed and thanked everyone for coming and introduced himself, LaGrange County Soil and Water Conservation District Educator and Technician. Because the Walks were foreign to a large number of people present, Martin described the gist of the Walks, explaining that these events have essentially anything and everything to do with grazing. Honeyville Seed had an announcement for an annual seed which is a natural and oil-based no-fly repellent. Also, a man from Crystal Creek was at the Walk to answer anyone's questions about his company's products and services. Jerry Perkins, NRCS Grazing Specialist, got down to business. He explained that today's Walk is special because we will have the opportunity to see the contrast of bison versus other grazing animals and the necessary differences between forages, fencing, and animal nutrition. Martin Franke then introduced other employees and district staff—Fay Earnhart who is currently acting District Conservationist; Dennis Wolheter who used to be in Martin Franke's position and is still a very good knowledge resource and friend; Annie Sprague who works in the district office; and Dona Hunter, District Coordinator. Also, Martin introduced our host Peter Cook, who happens to be one out of five LaGrange Co. SWCD Board Members.

Peter then took the floor (or the field) by first stating that his grandfather purchased the ranch back in 1939. His grandfather grew up in a farm just south of the ranch and when he got married, he purchased the house situated on 87 acres. On the property is a private lake and Cook's property wraps half a mile or so around it. Back in 1939 Peter's grandfather paid only \$5,000 and he saved the cash to purchase the property by raising popcorn and selling it to Yoder's Popcorn. Peter's great-grandfather advised his grandfather against spending so much money on such an endeavor. It worked out in his favor however, and Peter believes that those oddities of work choices must skip a generation as Peter himself likes to do the odd-job in order to make a living, while having fun in the meantime.

Besides raising bison, Cooks also farm 820 acres of hay and row crops. About 150 acres are dedicated to rotational grazing. On the ranch are 50 cows and 4 bulls. Peter has found that sometimes it's cheaper to buy calves and sometimes it's cheaper to raise them—right now he raises calves. The ranch also has about 90 acres of hay, with lots of winter grazing managed by about 55 acres of corn field and corn fodder. Up the street, the Cooks have about 25 acres of prairie grass. Peter makes a cutting of hay off the prairie grass once a year around the 4th of July. As far as the corn fields, the bison start with the corn stalks and then dig for grass until spring.

Martin Franke pointed out that about 75% of Pasture Walks revolve around dairy cattle, which inspired a discussion on the eating preferences of the bison and how vastly different it is compared to dairy cattle. Peter stated that the bison eat mostly cool season grasses and some clover.

Peter, in reference to the home farm, stated that it was originally in a Conservation Reserve Program but now it manages itself. There's a mixture of grass, alfalfa, and clover. The warm season grasses consist of some big blue stem, some little blue stem, switch grass, Indian grass, and more. The bison even eat wildflowers. The food preference of the bison is certainly reflected in the content of the meat. Bison are very efficient with their feed and eat only about 1 bale for every 2 of beef cows through the winter.

The wagons then went to the first field. The cows were only on their second grazing of this field and their first was 5 weeks ago. The grasses were tall and lush and the bison seemed to find it delicious. Peter finds that if he doesn't over-graze and just clips the heads, the grasses will grow back faster.

As far as bugs go, Peter doesn't really have a problem with flies this year. He uses oilers and some cows take to it and some don't. Ticks don't seem to be a problem either, as Peter has some guinea fowl, which love to feed on ticks.

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Peter grazes his bison for a week or less and makes his grazing paddocks larger partially because of the cost of fencing. He used to use single-strand fencing but the bison just pushed right through it. He split it in to six pastures so he uses an approximate six-week rotation. As far as warm season grasses go, he only grazes those in winter.

Bison are seldom blessed with twin calves and in the last twelve years, Peter's bison have only had 3 sets of twins. The calves were so cute and it was hard to imagine them growing up in to a huge wild animal, but Peter pointed out that they are indeed wild animals so it is not advisable to walk around the pasture with them. Peter's first stock originated from Custer, Tennessee. Since then, he has purchased cows from at least ten different backgrounds and bulls from Thursleson's Ranch. Peter has found that all of his bulls breed well and that when they don't, in most cases, it is probably an "operator error" (e.g. Once they weren't breeding and Peter realized they needed a de-worming and used Safeguard and an injectible Ivomec to conquer that problem).

Jerry Perkins studied the kinesiology of the bison and noted that their method of grazing is similar to dairy animals. Peter said the cows use their tongue and pull in the grass to snip off with their bottom teeth, as their top mandible is merely that, like sheep mouths. Peter stated that the bison will only top graze unless you force them to go further down, which is advantageous because parasites do not like traveling that far up the grass stalk.

Peter's bulls don't really fight but there is a dominant bull. He has an inkling that the reason is because the bulls are used to each other as they hang out by themselves all winter (no cows to impress). Peter separates the cows and bulls during the winter because that way, he knows the calves will only come in April, May, or June.

Bison aren't very picky with what they'll eat. Peter's friend Doc Ken told him it's quantity with bison, not quality. As long as it's not moldy and dry, they like it! Tall stems tend to be an issue with dairy and beef as they poke the animal in the eye and cause pink-eye infection. This can also be a problem with bison which is why Peter likes to clip the seedheads in the pasture and get the bison grazing on it sooner. Peter clips the pasture with a hay disc mower and sometimes a batwing mower at no less than 6 inches. That method tends to take care of the weeds but leaves the good stuff.

The attendees were then brought up the road to check out the native prairie grasses. Nearby lakes just so happened to be lakes Adam and Eve. Dennis Wolheter's farm is next door and you can actually see most of it on Peter's pasture map. Peter said, "It's always nice to have good neighbors".

Called "Boots field 2" on the map, the native prairie grass fields consisted of 28 acres, 25 of which are fenced. The front half was previously crops and the back half hay. The growth was diverse and lush—Peter said it's the fourth summer since it's been

planted. The first year he didn't make a cutting at all; the second, he made one late cutting; last year, he cut about 6 or 7 round bales per acre.



The pasture was planted by Pheasants Forever with a no-till drill. They planted 25 acres here and another 50 down the road. The sizes of the bales yielded weigh 800 pounds on average and within 48 hours, they dry down to approximately 12% moisture. Peter said that anything seen in this pasture that isn't a native prairie grass was seeded on its own and Jerry Perkins said the clover has probably sprouted from the seed bank left years back.

Warm season grasses (WSG) will not grow until the soil has reached approximately 74 degrees. Peter said he doesn't have enough residue left after grazing to burn the grasses yet. WSGs have to be scarified, or burned, before reseeding. Peter said, in the future he will let the WSGs rest for a year and then he'll do a burning.

The bison find the switchgrass the most palatable and the fescue the least palatable, that changes if they are eating fescue after winter frost since the frost causes a change in the sugar content. Peter just stockpiles the WSGs, providing great habitat and food for the birds. White clover is a good asset to the pasture; it adds nitrogen to the soil and that's money Peter doesn't have to spend on fertilizer. In four years Peter has applied a type of fertilizer that breaks down with moisture over time. That way, the fertilizer will break down only when it is needed. Thankfully with grazing, 95% of the nutrients that go in also come out—but nitrogen doesn't get replaced.

Jerry Perkins then went over the types of grasses with attendees. The crowd huddled around and some brought different varieties of grasses up to be identified. One grass, Timothy Grass, has about 4 million seeds on one little head so as Jerry said, "A little dab will do ya".

Uphill, the WSGs are thicker because native prairie grasses do not like wet conditions, hence the "prairie" aspect of the name. WSG roots will probe 15-20 feet deep, providing nice soft soil as the earth becomes less compacted.

Peter has a watering spot up by the house that the bison use on occasion. Otherwise they'll just find a water hole on their own. Bison drink less water than beef on an average summer day. They only need about 8-12 gallons a day for a cow-calf pair, whereas beef need 20-25 and dairy 30-50!

Another difference between beef/dairy and bison, as Jerry Perkins pointed out, is that domesticated animals tend to graze off either single species of plants and sometimes double. That's why one can see

a lot of plant diversity close to fence rows but not in the middle of a pasture when grazing with beef or dairy. For the bison, however, Peter has a very diverse pasture that produces what he needs for his bison cows and calves. Jerry continued, pointing out how animals are smart in their diet and will find higher energy grasses if they need it. Peter agreed stating that his cows will not come over to this pasture unless they overload on the other pasture.

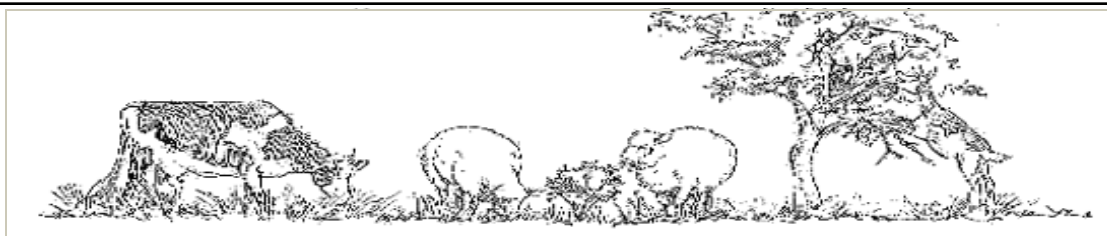
Peter uses all electric exterior fences and so far has only had a problem with it once when about 1/3 of the fence became de-electrified somehow. Peter's house is strategically placed on a hill so he can see most all areas the bison roam. Once, due to operator error, some cows got loose because a battery went dead and in the process of trying to fix it, a gate was left open. Peter caught up with his cows via a 4-Wheeler and got them back inside the gates.

During winter, Peter gives his bison limited corn silage and supplements. Peter said that this field is technically 86 acres because of the corn. Many people are baling cornstalks now to feed bison in the winter. Bison graze at about one Animal Unit (A.U. = 1000#) per acre.

This area all used to be woodlands, marshes and lakes. Most of the cool season grasses were introduced to the area. This day proved to us that What You Manage, You'll End Up With—even if it's bison and native prairie grasses in an area that was once woods and wetland.

The attendees then loaded up in the trailers and headed back to the house. On the way back, Peter pointed out that he uses the part of the field we were trudging through with our tractors and wagons for horse pasture. Upon our arrival at the house, we enjoyed cookies, soda, lemonade, tea, and donuts and had fun talking with the NBA members, comparing thoughts about grazing bison forage pastures.

We'd like to extend a thank you to Cook's Bison Ranch for providing such a great Walk, great food, and an incredible comparison to the animals more traditionally grazed with in this area.



Cows prefer grass; sheep prefer forbes; goats prefer trees and shrubs. Nevertheless, there is a regular crossover among the three types of feeders. Illustration by Elayne Sears. Reproduced from *Small-scale Livestock Farming* by Carol Ekarius, published by Story Communications and retrieved 6/21/2010 from website: <http://attra.ncat.org/attra-pub/multispecies.html>.

Yes, we know...But what about

Bison?

Bison Grazing Increases Biodiversity In Grasslands

Grazing by herbivorous mammals like bison increases biodiversity in North American grasslands, says National Science Foundation (NSF) ecologist Scott Collins, even during periods of frequent burning and other stresses. In fact, loss of species diversity in these grasslands due to frequent burning was reversed by bison grazing, according to Collins. "Thus, reestablishing grazing in grasslands stressed by human activities enhances biodiversity," says the scientist. Collins' research results are published in this week's issue of the journal *Science*. His work was conducted at NSF's Konza Prairie Long-Term Ecological Research (LTER) site in northeastern Kansas, one of a network of 20 such NSF sites in North America and Antarctica.

Species diversity has declined in ecosystems worldwide due to habitat fragmentation, eutrophication, and land-use changes, scientists believe.

Collins and his colleagues conducted two long-term field experiments in native grasslands to assess effects of fire, addition of nitrogen, and grazing on plant species diversity. In one experiment, species richness declined on burned and fertilized areas, whereas grazing maintained diversity under these conditions. In a second experiment, loss of species diversity due to frequent burning was reversed by bison, animals that Collins calls keystone herbivores in North American grasslands.

In North American tallgrass prairies, diversity and productivity are controlled to a large extent

by nitrogen availability, Collins explains. Historically, nitrogen availability in prairies was driven by interactions between frequency of fires and grazing by large herbivores. In general, spring fires enhance growth of certain grasses, and herbivores such as bison preferentially graze these grasses, keeping a system of checks and balances working properly, and allowing many plant species to flourish.

"Extirpation of native grazers, habitat fragmentation, increased nitrogen deposition from the atmosphere, and altered fire frequency have disrupted grassland ecosystems worldwide," adds Collins. "Although burning is essential to maintaining tallgrass prairies, fire alone is not a sufficient management solution for restoring prairie diversity, as some have proposed." Whereas fire is used as a conservation tool throughout much of the tallgrass region, the use of grazing by bison or cattle as a management tool for maintaining species diversity is less common. Yet herbivores such as bison historically served as keystone species in tallgrass ecosystems.

"This research indicates that by adding or maintaining grazing," states Collins, "at least in ecosystems like grasslands that were impacted historically by these herbivores, diversity in native vegetation can be retained under conditions that would otherwise lead to a decline in species richness."

National Science Foundation (1998, May 6). *Bison Grazing Increases Biodiversity In Grasslands*. *ScienceDaily*. Retrieved June 21, 2010, from <http://www.sciencedaily.com/releases/1998/05/980506080021.htm>