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Improving Iowa Grasslands with Managed Grazing: 5 Case Studies

Leopold Center Grass-based Livestock Working Group

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Improving Iowa Grasslands with Managed Grazing: 5 Case Studies

Abstract

This is a summary of five case studies conducted by the Grass-based Livestock Working Group to show how managed grazing can improve Iowa grasslands. The studies covered short rotations, grazing the prairie, CRP in rotation, grass banks and goats.

Disciplines

Agriculture | Animal Sciences

Improving Iowa Grasslands with Managed Grazing: 5 Case Studies



Short Rotations



Grazing the Prairie



CRP in Rotation



Grassbanks



Goats Clean Up

Funds for this project have been provided to the Grass-Based Livestock Working Group by the Leopold Center for Sustainable Agriculture.



Sharing Information to Promote Sustainable Grasslands in Iowa— A Leopold Center Project

The five case studies in this brief publication are being highlighted by the Grass-Based Livestock Working Group to help share sound grazing ideas among livestock producers, owners of grasslands, and conservation professionals in Iowa.

The GBLWG was formed in July of 2008. An initiative of the Leopold Center for Sustainable Agriculture, the group was formed because of the potential for grass farming to provide both ecological benefits and economic returns, as well as the growing demand for grass-based livestock products.

The Leopold Center is committed to funding the working group through 2010, with goals of promoting more perennial cover on the landscape and reinstating grass as a major component in Iowa agriculture.

Andy Larson, an Iowa State University Extension specialist in Small Farm Sustainability, is the group coordinator.

“We’re trying to support grass-based farming for both farm and food business people,” Larson says. “The group is creating better communications within the grass-based livestock industry, from pasture to plate.

We’re trying to create and share information on economic returns from intensive pasture management, for instance, and we’re sharing information on how grazing animals and native prairie wildlife species can both thrive in the same pasture,” he says. “And, we discuss such things as the important considerations in specialty meat marketing,” he says.

The grass group is promoting innovation, conservation and information-sharing among those in livestock and conservation. The group meets quarterly to talk about the most pressing issues facing the grass-based livestock industry, and to encourage research and get results to grass-based farmers.

Participants learn from one another in four major areas:

- Profitable grazing management
- Grazing, wildlife, and the environment
- Grass-based branding and supply chains
- Grazing policy and education

The working group funds annual research and demonstration grants in those four areas, and shares information on cost-effective grazing systems. It is also developing a support network for grass-based livestock producers. That includes working on how to brand grass-based livestock products to set them apart as specialty products.

To support the many ecological reasons for pursuing grass-based farming, such as soil conservation, wildlife conservation, and water quality benefits, the group will network graziers with conservation service providers.

The group will build educational teams and form stakeholder coalitions to promote agricultural policies that reward grass-based livestock producers for their contributions to the environment.

“We’re encouraging anyone who believes in the potential of grass-based agriculture and wants to optimize their grazing management to get involved,” Larson says. “We want to overcome the obstacles facing people with common interests in what can be a sound, sustainable way to farm.”

To get on the mailing list for more information, contact Andy Larson by email at allarso1@iastate.edu or phone (515) 294-5875.

For more information, including full case studies on grass-based livestock examples in Iowa, go on the Web at:

www.valuechains.org/livestock



Grass farmer manages for profits and bird habitat

Dan Specht is concerned about stocking rates, forage nutrition value, rate of gain, and other details for profitable grass-fed beef. But he also hesitates to drive his pickup in a pasture at the time bobolinks are nesting in the spring and early summer because he might destroy a nest.



Dan Specht

he can manage his pastures in a way that maximizes profit and still offers good habitat for birds and other wildlife.

It's important to Specht that his brome, orchard, fescue, bluegrass, quackgrass and clover pastures and hayland give ground nesting birds a safe place to build nests and raise their broods.

Specht is proud that his grass farming system doesn't add chemicals to the groundwater, or sediment to surface waters. He farms 700 acres of rolling to steep land in Clayton County. Only 40 acres of that is corn or soybeans—the rest is pasture, hay, woodland or small grains.

Specht has grassland birds nesting in the pastures he's grazing. "But you can't graze it short during nesting season or the birds will move on you," he says.

After he and a group of neighbors met with master graziers in New Zealand, Specht decided on a rotational grazing system that keeps cattle in each paddock for 3 days. Giving each paddock a month's rest between grazing meant he needed 10 paddocks.

"So the cattle make the circuit in a month. I match the stocking rate



"I wouldn't see these bobolinks if my ridgetops were in corn," Specht says.

to that, making sure they will have enough to eat for those three days without overgrazing," he says.

"A longer return interval is ok, too, maybe up to 6 weeks before they return to the first pasture if there is plenty of feed."

That interval favors legumes, Specht says. "In organic systems, we don't use nitrogen fertilizer, so le-

KEY POINTS

Rotational Grazing:

- helps Dan Specht manage his pastures to maximize profits *and* offer habitat to birds and other wildlife
- can allow grassland birds to nest in pastures with proper grazing and resting techniques
- produces healthy cattle that bring premium prices in a grass-fed, organic system
- requires adjustment from year to year, and can be as much art as it is science

gumes are our source of nitrogen and we have some lush pastures. It can take a good dose of cattle."

While he'll mow areas that have too many thistles, Specht doesn't clip pastures or make hay in bird nesting and brood rearing season when birds are most vulnerable, and he's especially careful to leave grass longer in late spring and early summer when most birds need it. "But birds nest at different times," he notes.

"The main thing is to have more good grasslands to attract the birds, and then manage the grasses as best you can."



Grazing Generates Diversity at Iowa's Largest Prairie

Broken Kettle Grassland Preserve, Iowa's largest prairie, is being grazed for ecological reasons.

"We're grazing for diversity," says Scott Moats, manager of the 4,000-



Scott Moats

acre preserve in the Loess Hills of northwest Iowa. "Natives thrive on disturbance. We use fire in the spring and fall, but cows or bison moving around the prairie and selecting the plants they want to eat at the time will give you even more diversity."

Moats is grazing 330 cow-calf pairs on 2400 acres at the preserve, and 28 adult bison and 9 calves on 500 acres.

While the prairie supports more than 200 species of plants and 150 different bird species, the preserve's owner, The Nature Conservancy, wants to increase that biodiversity.

The prairie has a mix of about 40 percent cool season grasses and 60 percent native grasses and forbs. "I'd

like to reduce the competition from the cool season grasses, set them back to give the natives an advantage," Moats says. "I think grazing bison will help do that—they will give us more long-term pressure on the cool season grasses, which will give us year round grazing."

The prairie has about 25 percent tree cover, Moats says, but he'd like that to be reduced to 15 percent. He wants a mosaic of grassland. "Some birds and mammals need short grassland, some need heavy cover, and some are in between. The way you graze depends on whether you're managing for rattlesnakes, grassland birds, or fuel loading for fire. It's difficult, but we're trying to support all that biodiversity."

Grazing good for the prairie

"Grazing is always good for the prairie if you have the appropriate stocking rate and don't overgraze," Moats says. "When we first acquired most of the parcels of land, they had been grazed pretty heavily. So we grazed lightly to begin with to bring plant vigor back," Moats says. "Now, we'll shoot for 10 acres for a cow-calf pair. But some of our land is down to three and a half acres, depending on our purpose.

Moats doesn't have a conventional rotation. His grazing season is May 15 to October 15. Stocking rate and time in a pasture varies by the biodi-

KEY POINTS

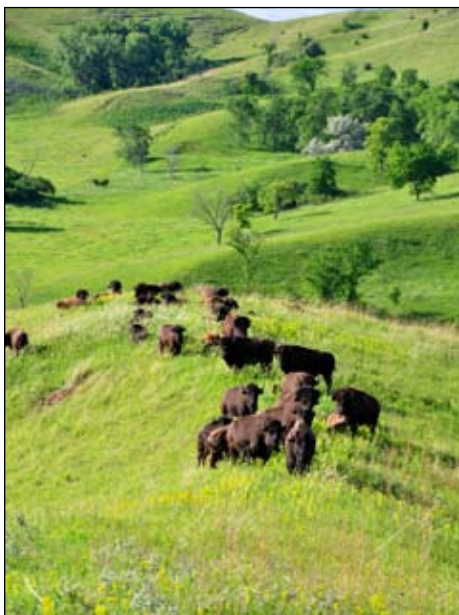
Controlled grazing:

- is bringing more biodiversity to Iowa's largest prairie
- has shown a favorable response from butterflies, grassland birds, and other animal and plant species
- with bison gives different results than grazing with cattle
- is producing good results for both the prairie and local graziers

versity it will create. "We run at about 70 percent utilization of most of our pasture," he says.

There's a written yearly contract that says how long the number of cow-calf pairs can stay on the pasture.

"We're working with five local cattlemen who are amenable to our requirements to move the cattle as needed," Moats says. "They don't have to be botanists, but they do have to work with us. It's not my job to make their cattle fat, but I think we offer a fair market value for rent and believe they've been happy when their cattle come off the pasture."



Bison were brought to Broken Kettle to graze and create biodiversity.



Ed Schoenfelder grazes his cattle on the Broken Kettle Grasslands Preserve.



Broken Kettle is in the Loess Hills region of western Iowa.

Grazing CRP land offers feed, improves habitat

Better wildlife habitat isn't the primary reason Kurt Hall grazes his Conservation Reserve Program land from time to time, but it is a result. He's grazing CRP because



Kurt Hall

he has more cows than he has pasture, and the CRP is available as a kind of insurance grass in years when he doesn't have enough pasture otherwise for his cows. He's been grazing CRP as he needs it for six years, and likes what grazing does for the stand and for his cattle operation. "You build a cow herd over time. Some years you have more grass, but in the years you're short of grass, you might need CRP," the Decatur County farmer says.

"We graze early when the cows are hungry for grass, and then wait until September when there's some new green growth. That fits the CRP grazing rules, and we like the split grazing approach because it gives us better quality forage," Hall says.

As CRP rules require, Hall takes a 25% reduction in his CRP annual payment on the acres he grazes in a particular year, which amounts to \$16 to \$21 an acre.

Graze before interseeding

Hall's CRP is orchard, brome, and fescue. He's interseeded clover into some of his CRP that has the mid-contract management requirement with an option to interseed legumes.

"You have to spray or disk before you interseed, but there's still a lot of material out there. So I grazed it down in the spring before I disked and put clover seed on," Hall says. "I still had to take the reduction in CRP payment for grazing, but grazing it close got it ready for disking and interseeding. The year after interseeding, clover really came on."

"We were looking for a site to demonstrate how managed grazing can improve CRP for wildlife, and we found it here," says Helga Offenburger, DNR private lands biologist. "You've got to have management in CRP. Rotational grazing gives you more plant species diversity, and more diversity in plant height. Birds like that."

KEY POINTS

Rotational CRP Grazing:

- provides an economical source of forage to supplement other pastures as needed. The split grazing option offers timely rest to other pastures
- produces more insects, plant species and plant structure diversity than idle grassland, which helps grassland birds
- helps prepare land for interseeding and other CRP mid-contract management
- improves both food and cover for wildlife species in addition to birds, and improves quality of life

Conservationists and livestock specialists are encouraging hunting and recreational use CRP owners who don't have cattle to pair up with local livestock producers to graze their CRP land as a wildlife management tool.



Hall says grazing CRP benefits more than his cattle. "My family's quality of life is better for having more wildlife around," he says. "Our CRP is close to our house, and it's nice to hear birds singing in the morning."

More forbs, legumes, and diversity with rotational grazing

Comparisons on CRP land on the Kurt Hall farm show CRP with no management or disturbance (right) has heavy duff and is almost all fescue. CRP land that has been hayed only (below right) is also primarily fescue. CRP that has been grazed and interseeded (bottom) has much more diversity, with forbs, legumes and native plants, and is more open at the ground level.



Grassbanks “double-win” in grassland improvement

Cattlemen who want to interseed, rest, burn, develop water supplies, and do other things to renovate their pastures usually have a problem—where to put their cattle while they renovate.



Stan Buman

At the same time, native grasslands and cool season grass plantings in Iowa that haven't been disturbed for years and are full of thatch would benefit from controlled grazing.

That's where grassbanks come into the picture. They match a cattleman who wants to renovate his pasture with a public or private landowner who has ungrazed grassland that could be improved with light grazing.

Stan Buman, vice-president and partner of Agren, Inc. in Carroll, says a grassbank agreement can work a lot of ways. It may or may not require a cattleman to make improvements to his pasture while he grazes other land, it may or may not involve a rental charge from the native grassland owner, and it may be from one to several years.

Pilot grassbank on state land

Buman helped develop the multi-year Loess Hills Grassbank on state-owned land in the Loess Hills State Forest in Harrison County.

The grassbank was part of a 3-year pilot study funded by a Conservation Innovation Grant from the USDA Natural Resources Conservation Service.

Brent Olson, an area forester for the Iowa Department of Natural Resources and manager of the Loess



© Stanley Buman

Bird studies showed the variation in grass heights and species in lightly grazed pastures produced as many or more birds and grassland bird species as a nearby grassland that was not grazed.

Hills State Forest, agreed to allow grazing on two areas of open land in the forest at no cost. Marty Loftus grazed the land while he rebuilt dams,

KEY POINTS

Grassbanks:

- offer offsite grazing for producers who are renovating their own pastures
- provide public land managers access to cattle for controlled grazing that improves their grasslands for wildlife
- pleased both the public land manager and the cattleman in a pilot project on the Loess Hills State Forest
- use reduced livestock numbers, usually only a third of the normal stocking rate for grazing

took out cedar trees, and seeded native grass on his own land. He was also able to rest his pasture, and says he'd do it again.

“The combination of burning and grazing set the brome grass back. Now we see more clumps of little and big bluestem, sideoats grama, and other prairie grasses and forbs,” Olson says. “We had a positive experience; I'd provide land again.”

Loftus was one of two cattlemen who trucked their cattle in and left them in the pasture from spring until hunting season in the fall.

Buman cautions prairie owners to base their grazing agreement on a set number of cattle for a set number of days, rather than renting pastures by the acre without specifying cattle numbers.

“You need to be able to control how much grass is left, by controlling the stocking rate,” he says. “The thing to remember is we're grazing to open up a stand of grass, to encourage more diversity in plants and structure. We want to leave a lot of grass in the pasture after grazing.”



MORE PRAIRIE GRASSES AND FORBS: The combination of burning and then grazing with low stocking rates resulted in less brome grass and more prairie plants for Brent Olson on open grasslands at the Loess Hills State Forest.

Graze Goats to Get Rid of Plants You Don't Want

Steve Smith's goats would rather eat thistles than grass. "I move them around to any place I have plants I don't want," the Marshall County farmer says of his small herd of Nubian goats, "and they're pretty



Steve Smith

good at cleaning up tall weeds and brush."

"They'll eat about any tree at any time of year. Their preferences are woody plants first, then taller broadleafs or forbs, then clover,

and grass last."

"They love musk thistle at the right stage, and Canadian thistles at the bloom stage. They also really like multiflora rose, horseweeds, lambs-quarter, ragweed, and burdock."

Goats do very well on weeds, too. Smith says milk production takes a jump when a doe gets to feast on stinging nettles.

He says his goats can kill multiflora rose in a season if he's patient. "The strategy is to move the goats into the weedy or brushy area for a few days, and let them eat all the leaves and small branches off the plants.

Then take them out, to let the trees, bushes or weeds recover enough to put new leaves back on, using the plant's energy to do that. Then you move the goats in again. When you do this several times, you weaken the plant and it will die," Smith says. "It will die over the winter if not during the season."

Goats can be picky eaters

"If you want them to eat all the plants in an area, you need to concentrate them in a small area," he says.

Smith does that with portable Premier electric net fencing and a solar-powered fencer. "You have to have a good fence—you can't keep goats in with one strand of electric fence," he says."

Switched to sustainable farming

Smith quit farming large-scale corn and beans and bought a rough 40-acre farm where he could experiment with sustainable farming methods. "I started reading about goats for rent in western states, where they're used to clean up brush and weeds and restore native pastures," he says.

While his goats are cleaning up his rough farm, that's not the reason he's building the herd.

"I'm trying to build toward a

KEY POINTS

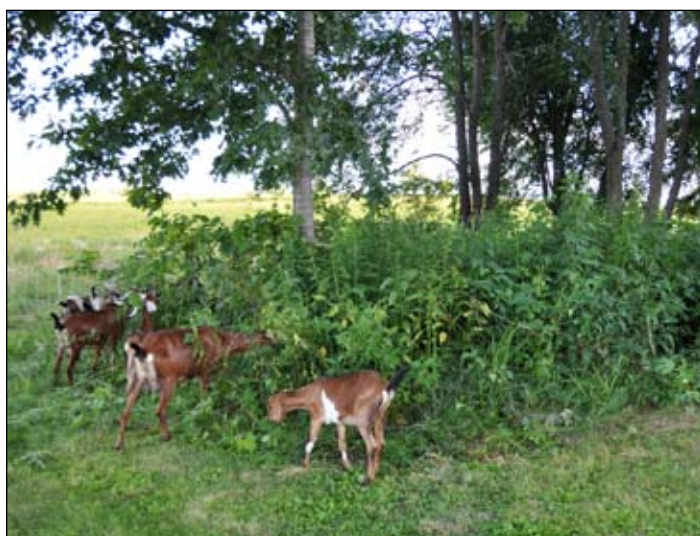
Goats:

- eat trees, brush, weeds and other unwanted plants
- quickly knock down tall weeds and brush when crowded into a small space
- eat up and high, while cattle eat low and down
- require good fences

Grade B dairy and cheese operation," he says. "Goats sell well around here, and goat cheese sells for a premium. We milk only enough now for our own use, but we're moving towards commercial," he says. He's convinced he can make a good living on 40 acres with a small goat dairy herd, a few grass-fed beef cows and some sheep.

The perception among many farmers is that goats are not easy to manage, Smith says, but he's never had trouble with his Nubians.

"They're easy to take care of, they bond well with humans, and they're part of a system of organic farming.



CLEARING OUT THE UNDERSTORY: Within a few days of confining his Nubian goats in this old farmstead area, Steve Smith says the weeds and brush were gone.



WEAKEN WEEDS: Smith hits weedy patches with his goats several times, stripping leaves and forcing the plant to use its energy to put on new growth until it is so weakened it dies.

Short takes on Other Grazing Experiences

Greater Prairie Chickens nest in grazed pastures at Kellerton

The Iowa Department of Natural Resources has been using limited grazing to diversify vegetation for the past 5 years on 800 acres of grasslands in the Kellerton Grasslands Bird Conservation Area.

Wildlife biologist Chad Paup says tenants move cattle in for about 5 months at a light stocking rate. Grazing has helped get some openness at ground level while keeping overhead cover, essential for prairie chickens, quail, pheasants, and other ground nesting birds.

The DNR released prairie chickens at Kellerton in the 1980's and 1990's, after native populations had become non-existent. The population has now stabilized at about 50 birds.

The tenants are able to reduce stocking rates on their own land as well, and are happy with the grazing arrangements on hunting areas, Paup says. He also believes grazing has helped the habitat.

"We find nests in our grazed land, so I don't think grazing is hurting at all," Paup says. "You could conclude that we're helping habitat with grazing by reducing the thick thatch so that young birds can find insects and stay dry on wet, heavy dew mornings."

Contact Chad Paup at (641) 464-2220. Email chad.paup@dnr.iowa.gov

Hunting ground landowners losing habitat by not grazing

Recreational landowners who buy pastureland and take the cattle off may think they're doing the best thing for wildlife habitat. But if they leave the grass undisturbed for long, the quality of habitat for upland birds will decrease, says Matt Dollison, a wildlife biologist with DNR in southern Iowa.

"Typically, the first thing a recreational landowner does is get all the cattle off the pasture to let the grass grow back," says Dollison. "But the

problem with that is quail and turkeys like disturbed areas. Quail nest in disturbed stands, and turkeys strut in them."

Dollison thinks a rest-rotation grazing system that offers a cattleman heavy grazing on a pasture—or better yet, a third or half a pasture separated with cross fences—for one season and then is rested the next is a win for the recreational landowner and a win for the cattleman.

He and ISU livestock specialist Joe Sellers would welcome a call from recreational landowners whose wildlife land can benefit from rotational grazing. They offer to help find graziers who want to graze on a rotational basis who recognize wildlife habitat goals.

Contact Matt Dollison at (712) 243-2913 Ext 211. Email matt.dollison@dnr.iowa.gov

or Joe Sellers at (641) 774-2016. Email sellers@iastate.edu

Bison and elk grazing a key process for reconstructing prairie

"We don't know if we're doing everything correctly, but we do know grazing is a key part of the process of reconstructing the prairie," says Karen Viste-Sparkman of the U.S. Fish and Wildlife Service.

Viste-Sparkman oversees grazing of 56 adult and 17 bison calves, along with 18 adult and 4 elk calves on 700 acres at the Neal Smith National Wildlife Refuge.

"Grazing is necessary for plant diversity and for wildlife," she says. She's helped with bird counts on the reconstructed prairie, and says that just driving through the land, she's noticed more birds of some species.

"I know grasshopper sparrows are much more prevalent in our grazed land than in nearby ungrazed land," she says. "And there are just as many bobolinks if not more in the grazed areas."

The refuge has used bison since 1996, along with fire, to manage grasslands. They began patch burn grazing three years ago, burning then grazing smaller areas of the prairie in the spring, summer, and fall. "Bison are attracted to the fresh green growth in those areas. It's part of our attempt to recreate the whole prairie ecosystem, where both fire and grazing played a key role on natural grasslands," says Viste-Sparkman.

Contact Karen Viste-Sparkman at (515) 994-3400. Email Karen_Vistesparkman@fws.gov

Waterman Prairie uses a Grassbank to graze for plant diversity

The Waterman Prairie offered some of its 1,800 acres of pristine prairie and riparian habitat in O'Brien County into a grassbank the last two seasons. A grassbank matches a public landowner like DNR that wants to improve land by grazing with a cattleman who needs a place to put cattle while his pasture is being renovated.

The land was grazed in May for plant diversity and invasive species management. DNR researchers will soon have wildlife and plant species monitoring results available.

Contact Kathy Koskovich at (712)276-2774. Email Katherine.Koskovich@dnr.iowa.gov

For more information, contact Andy Larson, Iowa State University Extension specialist in Small Farm Sustainability, at (515) 294-5875 or email allarso1@iastate.edu

Electronic files of the one page case study summaries, more detailed four-page case studies, and a powerpoint presentation are available from the GBLWG on the web at:

www.valuechains.org/livestock

Written, photographed and designed by Lynn Betts with funding from the Leopold Center grant.