

Public-Private Prairie Partnership

A BioBlitz Highlights the Role Livestock Farmers Can Play in Habitat Improvement

By Brian DeVore

It's the kind of overcast day in June that leaves one wondering if the sun decided to take an extended summer holiday. But as heavy thunderstorms threaten this part of Big Stone County in western Minnesota, some 130-people break



Insect identification was part of the 2019 BioBlitz. Volunteers found significantly more insects in a prairie reconstructed from cropland when compared to a neighboring habitat parcel dominated by smooth brome grass. (LSP Photo)

up into teams and fan out onto various parcels of prairie habitat, looking to illuminate bright signs of a healthy landscape. Soon after starting out across a native prairie that's never been plowed, a birding group hears the characteristic *witchity-witchity-witchity-witch* call of a common yellow-throat warbler, and the avian tally begins: yellow-headed and red-winged blackbirds, eastern kingbirds, pelicans, a bobolink, a willow flycatcher, tree swallows, song sparrows, a horned lark doing its "skylarking" routine (hovering high in the air while calling out), and a mallard conducting a fly over.

The aquatic species team, decked out in chest waders, is tabulating signs of life in a pair of small prairie pothole lakes: Iowa darters, crawfish, fathead minnows, and zooplankton. A diversity of plants, as yet another team walking in a different part of the grassland discovers, is also present: purple coneflower, thimble weed, pasque flower, and wood sorrel. An insect census in a prairie reclaimed from a former crop field reveals damsel flies, jumping spiders,

mayflies, dragonflies, and a miner bee hauling around plump saddle bags full of bright yellow pollen.

The teams, which are made up of a mix of trained naturalists, local residents, and prairie enthusiasts from across Minnesota, dutifully record their findings, helping the U.S. Fish and Wildlife Service and the Minnesota Department of Natural Resources monitor important prairie resources. Taken together, the results of this "BioBlitz" provide an overall picture of how successful natural resource agencies have been at not only preserving untouched prairie, but reconstructing natural grassland habitat. These "nature walks" are key for another important reason—the prairies are being managed with grazing in cooperation with local farmers, and regular monitoring helps determine the impacts of blending wild habitat with domesticated livestock.

Puzzle Pieces

Over the past few years, the Land Stewardship Project has worked with other groups to put on BioBlitz events at various locations in western Minnesota. A BioBlitz is an intense period of biological surveying that attempts to record as many living species possible in a designated area. Groups of scientists, naturalists, and volunteers conduct the survey over a specific period of time, usually a day. Participants can catalog their findings on the citizen science website iNaturalist.org.

The focus of this year's event was the 3,000-acre prairie complex near Big Stone Lake, a long body of water that lies on the border between Minnesota and South Dakota. Besides LSP, sponsors of this year's event were Clean Up the River Environment, the U.S. Fish and Wildlife Service's Morris Wetland District, and the Minnesota Department of Natural Resources.

The 2019 BioBlitz carried an important message for its

participants: to have prairie habitat in a place like western Minnesota requires more than supporting the specific acres contained within the borders of public lands—it also means paying attention to land management outside those boundaries. And in this case, that means farmland.

"One thing we want you to get out of this day is that it takes land and people working together to support habitat like that," said LSP organizer Robin Moore during a lunchtime panel discussion held during the BioBlitz. "That means not just managing public lands well, but caring about the farming community that surrounds those lands and everything from the state of our rural towns to whether farmers are able to be financially viable. It's about understanding how these pieces fit together."

And all those local pieces fitting together can have wide scale impacts, something that's particularly relevant in an area like Big Stone Lake, the source of the Minnesota River which, in turn, empties into the Mississippi 330 miles downstream.

"What is happening here on this farmland is affecting water quality all the way down to the Mississippi," added Moore.

Please Do Disturb

J.B. Bright, a wildlife refuge specialist with the Fish and Wildlife Service, told BioBlitz participants he relies heavily on managed rotational grazing to help establish and maintain good grassland habitat. His district includes 250 waterfowl production areas, totaling roughly 54,000 acres. Bright annually works with over two dozen livestock farmers, who pay a fee to graze around 4,000 acres of refuge lands. He said some sort of periodic disturbance, either in the form of grazing or burning, is needed to keep grasslands from evolving into wooded

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Amphibians such as leopard frogs are extremely sensitive to land use changes that modify aquatic and grassland habitat. (LSP Photo)

habitat, much of which can be full of invasive species such as red cedar, buckthorn, and Siberian elm. Even some forms of grass can be an invasive. Smooth brome grass, for example, can take over a diverse grassland, creating a monocultural cover and crowding out the heterogeneous habitat grassland songbirds, waterfowl, and pollinators require.

Depending on the situation, grasslands require a major disturbance at least every five to 10 years, something bison and wildfires provided in days gone by. More recently, natural resource experts have purposely burned off grasslands to keep woody invasives at bay and recharge green growth. But managing a burn can be expensive and it requires optimal weather conditions.

Studies in numerous states show that rotational grazing can as much as double plant diversity in an area—it not only prevents overgrazing but the cattle’s manure and urine helps recharge the soil’s biology.

Livestock grazing may be used to directly control invasive species as well as to prepare land for a planting of native prairie by disturbing the soil and setting back non-native species. Animals are also being used to thin out cattails and reed-canary grass around wetlands, providing the open areas many waterfowl prefer when keeping a lookout for predators.

But, Bright made clear, it is critical *how* the grazing is carried out. He works closely with farmers and ranchers to develop grazing plans and stocking rates that benefit the habitat, first and foremost.

“The timing and the stocking rate will all affect the plant community,” he said. “We use a lot of rest between grazings and it’s a very conservative approach compared to the intensity livestock producers might use on their own land.”

Cross-Border Benefits

Jim Nelson, who has been grazing on Fish and Wildlife Service land in the Big Stone Lake area since 1985, said that even though he can’t graze as intensively on public lands as he can on his own acres, he benefits greatly from the arrangement production-wise. For example, when Bright needs Nelson’s cattle on a unit to help control brome grass in the spring, it allows the farmer to rest his own pastures early in the year, giving them a good start to the season. That not only increases feed value, but makes for pastures that are more resilient, have healthier soil, and can produce their own habitat for wildlife.

“I find it to be kind of a win-win,” said Nelson. “It’s proved to me the value of rotational grazing, which is what I do on my own land now. It’s just great to see the ecology and animals benefit.”

Jeff and Mary Klages have been grazing their beef herd on public lands in the area for about a dozen years. Like Nelson, they find that utilizing the natural habitat as a source of forage gives their own pastures a needed rest during certain times of the year. Bright pointed out that he emphasizes to livestock producers that public grazing should be used as a source of supplemental forage, not as a tool for expanding herd size.

Mary Klages said grazing public lands produces benefits that go beyond a low-cost source of forage. She’s a master naturalist, and has had the opportunity to see firsthand the ecological benefits of grazing on waterfowl production areas. One day she was checking a fence line and found small white lady’s slippers growing; the rare orchid is a “special concern species” in Minnesota because of declining numbers. “I’m convinced it was a result of having the cattle out there,” she said. Bright agreed.

Jeff Klages spotted a pair of burrowing owls on public land they were grazing, and Mary has observed ground nesting birds



A panel during the BioBlitz featured a discussion about the role livestock farmers can play in maintaining healthy grassland habitat. “It’s always about taking care of the land,” said farmer Mary Klages. (LSP Photo)

hatching eggs successfully in pastured areas.

And since they are able to increase the resiliency of their home pastures by giving them a rest, such ecological benefits reveal themselves on their own farm as well. Mary



Grassland songbird populations have struggled as a result of loss of perennial habitat such as native prairie and pastures. (LSP Photo)

Klages said that not only spreads the benefits of good land management across public and private boundaries, but sends an important message to the public that working agriculture can benefit wildlife, water, and the general environment.

“It’s always about taking care of the land,” she said. “You take care of it, it takes care of you.” □



During the BioBlitz, aquatic insects and other indicators of water quality were monitored in small pothole lakes that are located in prairie habitat. (LSP Photo)

Give it a Listen

On episode 228 of LSP’s *Ear to the Ground* podcast, Mary and Jeff Klages, J.B. Bright, and Robin Moore talk about how conservation grazing on public lands can generate economic and ecological benefits throughout a community: www.landstewardshipproject.org/posts/podcast/1213.