ROADMAP FOR EXPANDING REGENERATIVE GRAZING IN ILLINOIS 2021-2025

Photo Credit: Elisabeth Spratt

Guiding Illinois to achieve healthy soils, profitable farms, and resilient communities through grass-based beef systems

A project of the Illinois Statewide Regenerative Grazing Working Group

FEATURES

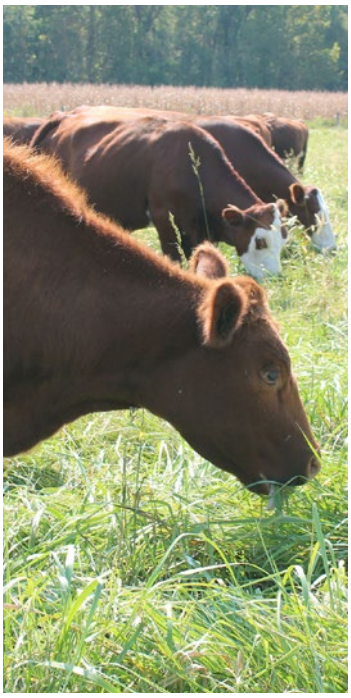


Photo Credit: Paige Buck

ACKNOWLEDGMENTS

This roadmap was developed by the Illinois Statewide Regenerative Grazing Working Group, a diverse group of Illinois agriculture and grazing experts that was facilitated by the Wallace Center's Pasture Project. To ensure the accuracy and validity of its contents, this document was reviewed by an additional group of external experts who provided feedback. The Working Group and the Pasture Project would like to thank all of those who contributed to this document.

ILLINOIS STATEWIDE REGENERATIVE GRAZING WORKING GROUP

Dave Bishop, PrairiErth Farm
Matt Bunger, Natural Resources Conservation Service (USDA)
Eliot Clay, Illinois Environmental Council
Doug Gucker, University of Illinois Extension
Pete Huff, Pasture Project and Wallace Center
Scott Jones, Regenerative Farming Practices
Ted Krauskopf, Hickory Flat Cattle Company
Mallory Krieger, Pasture Project and Terra Elossa LLC
Rick & Kathy Kaesebier, Kaesebier Farms
Jennifer Paulson, Food Works
Cliff Schuette, Schuette Seeds
Lauren Spaniol, Coles County SWCD
James Theuri, University of Illinois Extension
Kelsey Vergin, Pasture Project and Wallace Center

DOCUMENT REVIEWERS

Ed Ballard, University of Illinois Extension (retired)
Mike Chandler, Illinois DNR
Adam Davis, University of Illinois Crop Sciences
Jack Erisman, grazier
Kim Erndt-Pitcher, Prairie Rivers Network
Erin Gundy, Champaign County SWCD
April Ann Opatik, Illinois Sustainable Ag Partnership
Richard Ritter, Flanagan State Bank
Liz Rupel, Illinois Stewardship Alliance
Trevor Toland, grazier

ROADMAP TARGET

Convert 40,000 acres of Illinois farmland to regenerative grazing management by 2025

CALCULATING THE TARGET GOAL

The target goal of **"40,000 acres under Regenerative Grazing management by 2025"** represents the acreage necessary to supply the 5-year projected increase in demand in Illinois for grass-finished beef products supplied with beef raised within Illinois.

This metric is a product of a 2019 study, "The State of Grass-Fed Value Chains in Illinois," completed by the Pasture Project and Delta Institute.[39] This study aimed to calculate future demand for grass-finished beef products in the state of Illinois. They analyzed a data provider that tracks markets. This analysis projected that Illinois will see an increase in sales of 8% each year for the next five years.

To meet this demand, Illinois graziers will need to raise an additional 2,100 grass-finished beeves, based on 2020 sales price per carcass. A 2010 Iowa State University study of Upper Midwestern beef production strategies calculated that each grass-finished beef animal requires an average 19 acres to support it from birth to slaughter.[40] Using the estimate of 19 acres per animal, the total acres under regenerative grazing management needed to meet Illinois demand for grass-finished beef comes to 40,000 acres. It should be noted that the Illinois producers involved in the authoring and review of this Roadmap reported that their regenerative grazing systems require fewer acres per animal, potentially lowering the number of acres needed to produce 2,100 grass-finished beeves.

Photo Credit: Elisabeth Spratt

INTRODUCTION

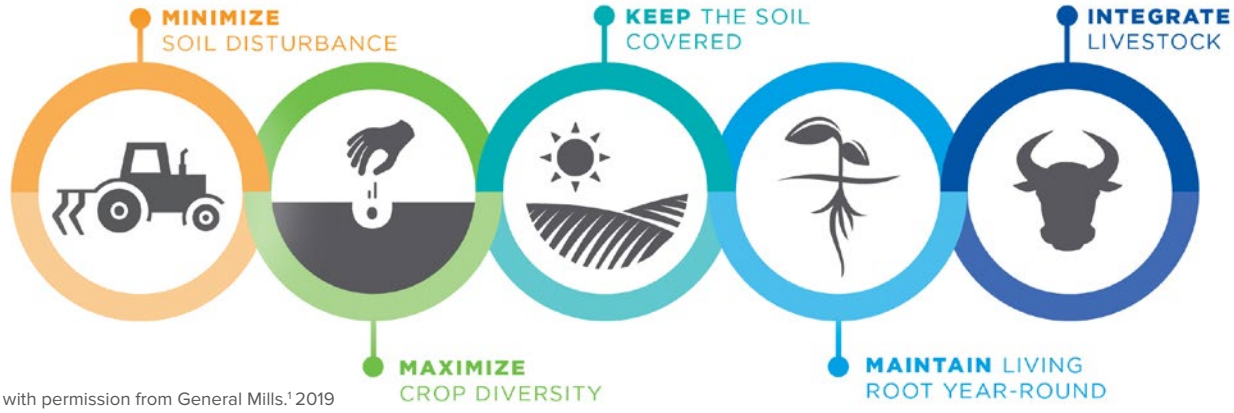
This roadmap captures a shared vision and strategy created by Illinoisans for Illinoisans to increase and sustain regenerative livestock grazing – specifically for beef production – in the state between 2021 - 2025. While grazing of other livestock species can and should be done regeneratively, beef cattle have significant potential for positive outcomes through regenerative management and are well suited to access existing and emerging markets. This roadmap was developed by the Illinois Statewide Regenerative Grazing Working Group over a 12-month period. The Working Group was convened by the Pasture Project, an initiative of the Wallace Center at Winrock International. The Working Group is comprised of Illinois farmers, graziers, extension educators, non-profit staff, and experts on the topic of regenerative grazing and Illinois agriculture.

Photo Credit: Elisabeth Spratt

As a roadmap, this document is action-oriented. The contents and recommendations draw from decades of efforts to achieve an environmentally and economically thriving agriculture sector in Illinois. As climate change continues to challenge the conditions for food production through changes in seasonal temperature norms, flooding, and drought, the need for conventional agriculture to surpass sustainable and achieve more regenerative outcomes is paramount. This must be accomplished in a time of economic uncertainty, as once predictable markets shift dramatically in response to the COVID-19 crisis. This roadmap is timely in proposing solutions to the ways this crisis is particularly affecting local and national beef and markets. The Working Group asks that organizations, businesses, and individuals throughout Illinois use this Roadmap to identify ways they can engage to help promote regenerative grazing.

Regenerative grazing is a component of regenerative agriculture, which aims to rejuvenate agricultural landscapes and communities, not degrade or simply sustain them. Regenerative agriculture is not a new, innovative idea. Rather, it draws on management practices that were happening long before this term was coined. Regenerative agriculture is founded on the five core principles of soil health. The fifth principle—integrating livestock—is an important strategy for achieving optimal soil health. Healthy soil supports productive, diverse forage, which in turn supports healthy cattle. The interaction between healthy cattle and diverse forage creates a self-reinforcing cycle of positive interactive effects that leads to a highly functional agro-ecosystem. These practices directly mitigate many of the environmental challenges resulting from commodity grain production practices.

5 Core Principles of Soil Health



Used with permission from General Mills.[1] 2019

What is Regenerative Grazing?

Regenerative Grazing is a principle-driven farming practice of building soil health naturally through pasturing animals on perennial and annual forages and grasses with low or no synthetic inputs, and in a way that supports human and ecosystem health, farm profitability, and community and food system resilience.

"When you look around, you see what a lot of people would consider junk land—a lot of flood plain, a lot of white timber soil, and only about 65 acres of really good farmland. But we made it work, mainly because of cattle. You can grow good grass on pretty poor land, and if it's properly managed, you can make it work by treating your cattle right and treating your grazing right."

- Trevor Toland, River Oak Ranch, Macomb, IL

HISTORY OF ILLINOIS GRAZING

Grazing ruminants on grassland ecosystems were a critical part of Illinois's landscape in the not-so-distant past. The "Prairie State" moniker refers to a time when nearly two-thirds of the landscape was grass-dominated. These prairies were maintained by regular disturbances like fire and grazing impact. Indigenous stewardship of these prairies included prescribed fire and hunting of migratory bison herds, both of which shaped the landscape for thousands of years.[3] During European colonization, state-sanctioned efforts to control and eliminate Native communities included the near complete eradication of the American bison, clearing the way for European settler colonists and their domesticated livestock.

Excerpt from the Armour Food Source Map, 1960[2]

By the early 1900s, Illinois agriculture was characterized by diversified farms raising livestock predominantly on pasture.[4] A national map produced by Armour & Company in 1922 highlights this diversity, showing cattle, swine, poultry and dairy amid corn, wheat, barley, oats, rye, and grapes. The Armour map was refreshed in 1960, representing similar diversity. This map was accompanied by text which read in part: "Our Great Grass Crop: Grass isn't shown on the map because we don't eat grass. Yet grass is a very important source of human food because it helps feed the animals which give us meat and milk."[5]

Yet, by the 1950s, agriculture in Illinois was transforming in the post-war boom. Agronomist Norman Borlaug and the Green Revolution began to shift agriculture toward high-yielding cereal crop varieties underpinned by chemical inputs, mechanization, and commodification. This resulted in the steady erosion of the knowledge and infrastructure for pasture-based livestock management as farming shifted to corn and soybean production over the following decades. This trend accelerated in the 1970s under Secretary of Agriculture Earl Butz' "Get Big or Get Out" policy which encouraged further removal of livestock fencing as farmers increased acreage production and their reliance on machinery. The 1980s farm crisis further exacerbated the decline in diversified farm systems as farmland ownership was consolidated.

In response to the loss of pasture-based livestock production and subsequent benefits, efforts emerged in the 1990s to

Photo Credit: Elisabeth Spratt

return livestock to the Illinois landscape. In 1996, the Illinois Grazing Land Conservation Initiative (GLCI) was created in collaboration with USDA NRCS and other national partners to address the lack of technical assistance for grazing in the state. GLCI made strong progress partnering with University of Illinois Extension and NRCS to engage farmers to expand grazing. GLCI and others continued to support grazing in the state, including hosting the first Heart of America Grazing Conference in Illinois in 2001.

However, the emergence of crop insurance and the ethanol industry, as well as high commodity prices of the 2000s caused a backslide in grazing with more hay, pasture, and grassland acres[6] being converted to cropland to take advantage of these opportunities. Since 2005, Illinois hay and grassland acres have declined by 11%.[7] The 2000s also brought a decline of support for grazing from University of Illinois Extension and NRCS due to system-wide budget reductions. Further, the state's farming population has progressively aged and diminished over the decades. Mechanization and synthetic inputs have made up this labor shortfall, further suppressing farmer willingness to reintegrate livestock grazing into their operations, despite the economic and environmental benefits.

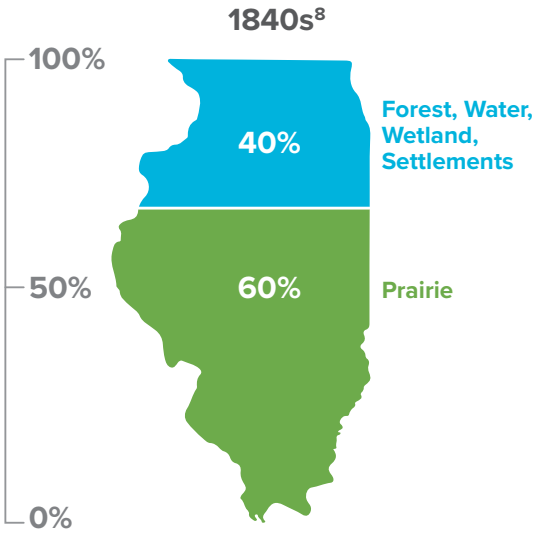
A severe drought in 2012 was a turning point for the adoption of conservation agriculture practices. Coinciding with low commodity prices, the drought added momentum to the no-till movement and encouraged the adoption of cover crops. The development of the Illinois Nutrient Loss Reduction Strategy in 2013 solidified numerous initiatives to move Illinois agriculture beyond sustainable to regenerative. However, the potential of livestock benefits to support soil health and water quality were not captured by the strategy.

Since 2018, renewed efforts to develop interest and momentum for grazing – specifically regenerative grazing using adaptive, multi-paddock rotations – in Illinois have been initiated by the Pasture Project at the Wallace Center. They hosted two statewide strategy sessions attended by representatives from university, non-profit, government, and industry sectors in 2018 and 2019. These sessions resulted in the statewide working group responsible for transforming the outputs of these gatherings – as was as the decade of experience held by Illinois agriculture leaders – into this roadmap.

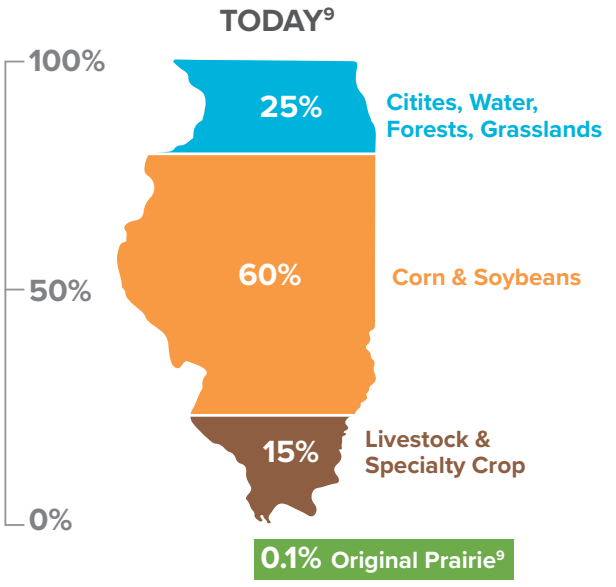
ILLINOIS AGRICULTURE TODAY

Illinois, once covered in vast acres of dense grasslands, earned the nickname "Prairie State." That prairie ecology has given way to 16.2M acres of corn and soybean production, earning Illinois the second place ranking as a top agriculture commodity producer.

While Illinois farmers have been successful in increasing the number of bushels of corn and soybeans they can produce per acre each year, this has come at a cost. Limited crop rotation, use of synthetic fertilizers, pesticides, and herbicides, and bare unprotected soils over the winter are all hallmarks of modern commodity grain production that is typified in Illinois. These practices and lack of perennial cover are associated with increased nutrient loss to waterways, reduced biodiversity above and below ground, and reduced soil functionality contributing to increased flood risk.[12] Many Illinois farmers have joined the conservation agriculture movement by implementing practices to mitigate damaging effects which includes cover crops, reduced tillage, and riparian buffers, exemplifying a culture of land stewardship.



Commodity grain production and livestock confinement systems are closely coupled.[17] As acreage has converted to grain production, the aggregation of livestock into confinement facilities has grown. Such confinement operations break the relationship between livestock and soil, producing low-cost protein at a high environmental impact. Water quality, antibiotic resistance, greenhouse gas emissions and quality of life concerns are associated with confinement operations.[18]

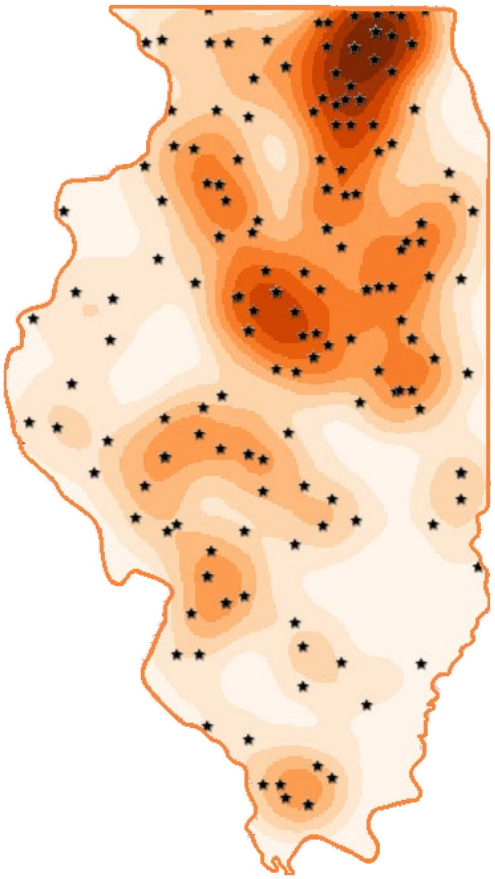


Commodity grain margins have long been tight, and in many years are negative. Illinois net farm revenue per acre in 2020 is projected to be $-17.00 for corn and $-58.00 for soybeans.[19] As profitability of corn and soybean production has decreased, farm

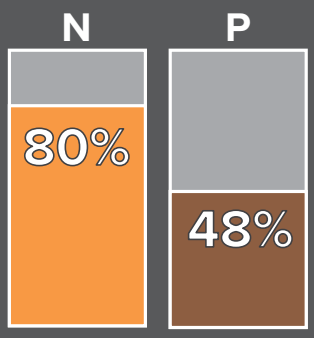
consolidation has increased, and farm debt has skyrocketed to compensate for lack of positive revenue.[20] Economic difficulties in the commodity grain sector have been exacerbated in recent years by trade disputes and global market volatility.

Yet, livestock managed on pasture is still part of Illinois profile, carried forward by an established generation of graziers and boosted by a new generation integrating livestock into annual and perennial landscapes. All cattle are raised on grass in their first half of their lives (cow-calf and stocker phases) with many moving to grain finishing to bring them to a slaughter weight. Some Illinois grazers – located throughout the state – choose to grass-finish their cattle, many at small scale and for direct-to-consumer sales. The current value of grass-finished beef in Illinois is estimated at $15-27.5M in 2019.[21] More data is needed to better quantify current grass-finished operations in the state and to understand grazing practices and production volumes.

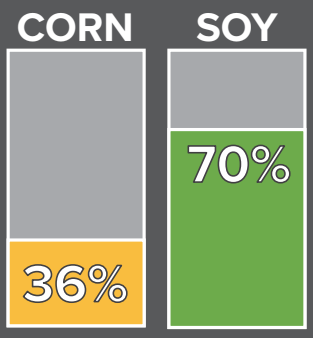
Distribution of known grass-finished beef operations[25]



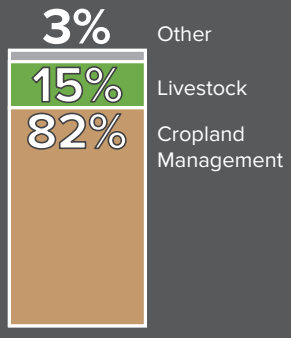
Illinois Agriculture by the Numbers



Excess nutrients in the Mississippi River from Illinois ag sources[13]



Harvests turned into animal feed for confinement operations[14,15]

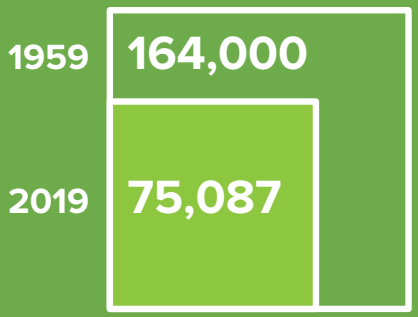


Types of green-house gas emissions from agricultural sources[16]

Nationally, grass-fed beef sales are increasing – growing by 10% from 2018-2019 – but the sector is still relatively small, representing just 4% of the total beef industry in the U.S. Nationally, 81% of grass-fed cattle are sold through branded grass-fed programs. However, much of the volume sold through branded programs may be produced in other countries: 75-80% of total U.S. grass-fed beef sales by value are imported and labeled as U.S. product due to loopholes in meat labeling laws.[22]

"When you harvest forage mechanically, it takes fuel and equipment that depreciates and has to be maintained. When I have the cattle do it, it eliminates that part of it. It also eliminates having to haul manure. On top of that, I get the benefit of the improvement in soil health."

- Ted Krauskopf, Hickory Flat Cattle Company, Highland, IL



Farm Operators in Illinois[23]

Illinois Ranks Second in the Nation for Corn[10] & Soybeans[11]

Illinois Farms with Beef Cattle[26]

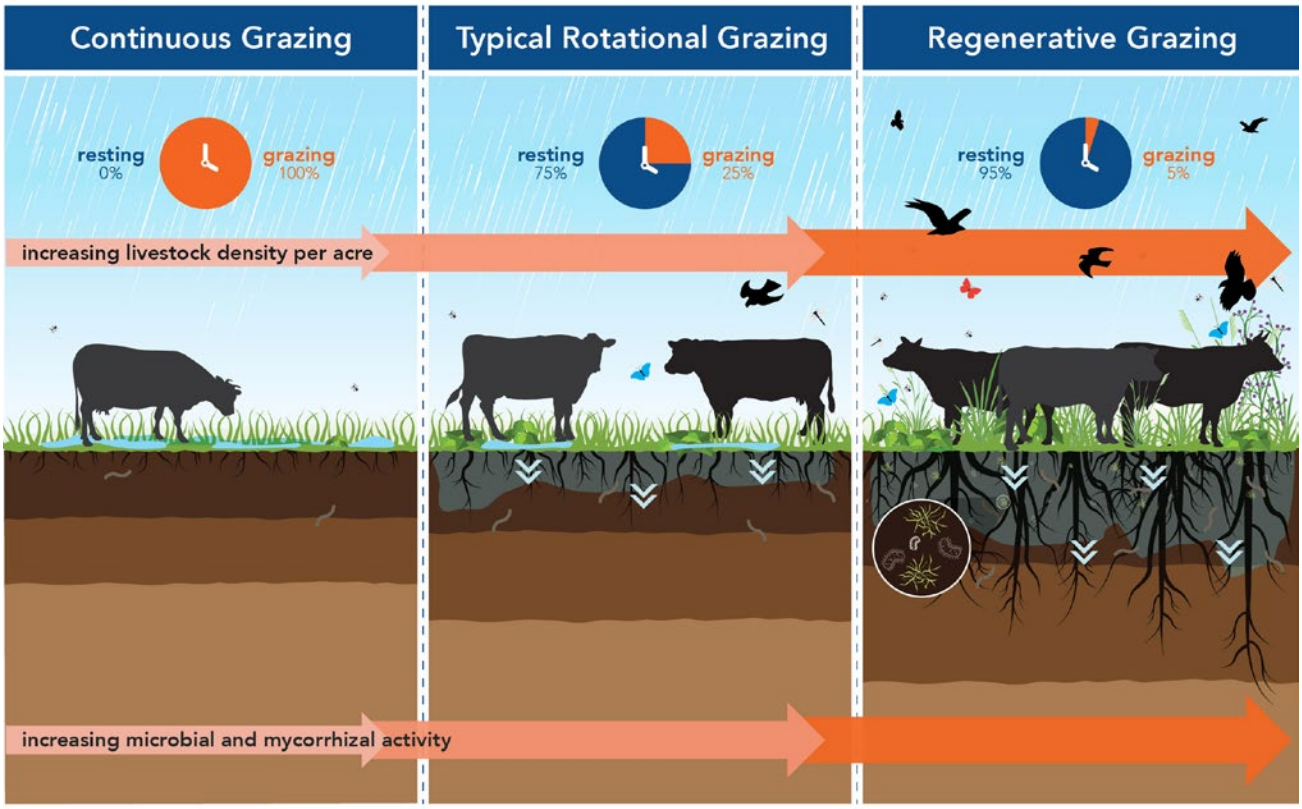
Cattle Operations in Illinois[24]

Grass-Finished Producers[27] in Illinois

All Graphics Based on 2019 Data

REGENERATIVE GRAZING SOLUTION

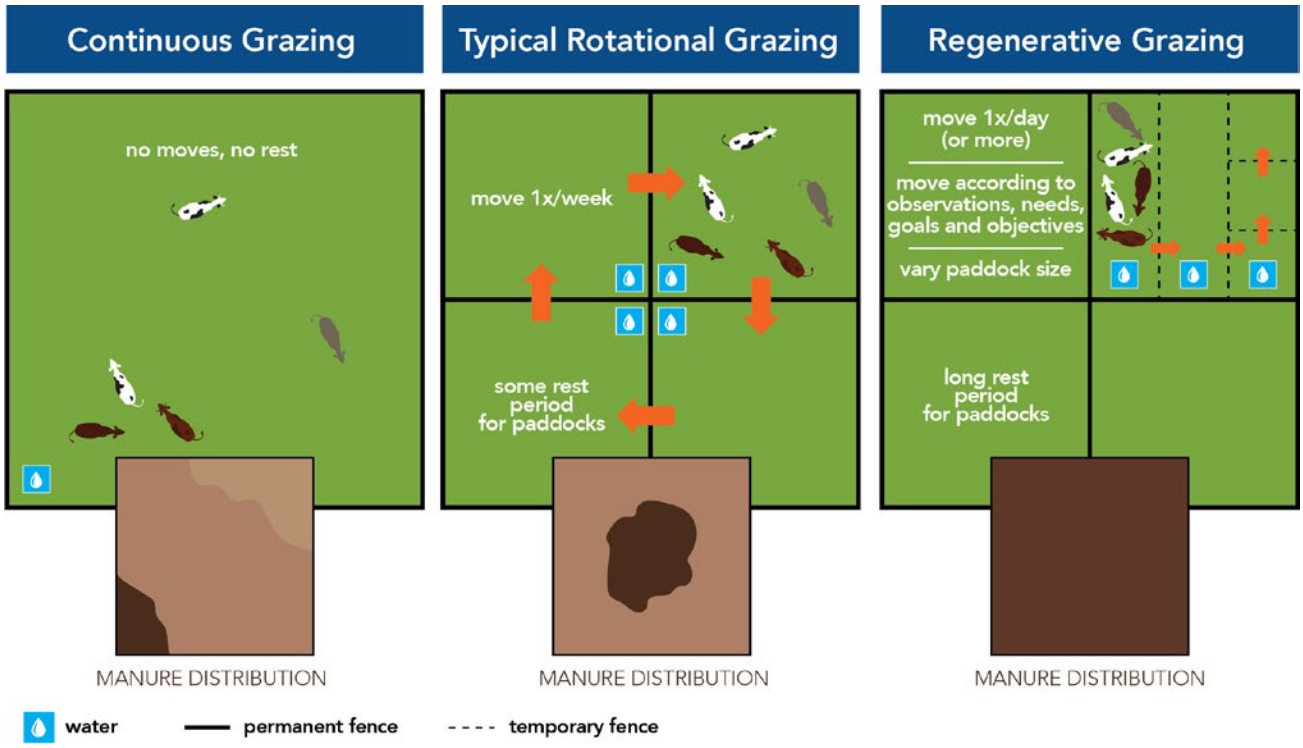
Regenerative grazing – also referred to as adaptive, multi-paddock, or managed rotational grazing – is a livestock production system that places environmental impacts and farm profitability at the forefront of decision-making. There is no standard formula or recipe for implementing regenerative grazing because each farm is individual and unique. Rather, it selects practices based on observation and adaptive management in response to real-time conditions. These practices are chosen with the aim to build soil health in a way that supports human and ecosystem health, farm profitability, and community and food system resilience. Regenerative grazing can utilize both annual (i.e. cover crops, crop residue) and perennial forages (i.e. grasses, legumes, forbs).



The high stock densities and frequent rotation of animals throughout the paddock encourages the herd to eat a wider range of available forage by offering them limited selection and increased competition. These moves also spread manure deposits more evenly over the pasture and allow the forage to recover over long rest periods between grazing. These practices result in healthier, more diverse, and more evenly fertilized pastures. The frequency and timing of these moves is based on in-field observations, which ensures that the forage is not over-grazed: graze 50%, trample 50%, move.

Regenerative grazing can result in improved water quality and flood mitigation both on the farm and downstream.[28] Continuous, dense forage and extensive underground root systems help protect soil from erosion and sediment loss. Increased living roots and soil organic matter

improve water infiltration, allowing more water to be absorbed, stored, and percolate through the soil as opposed to pooling on top and running off into surface waterways.[28] Further, living forage remaining after grazing provides shade and protection for soil, lowering soil temperature and increasing soil moisture providing drought protection to plants. Regenerative grazing can also enhance the biodiversity of the landscape by providing habitat for numerous species of insects and ground-nesting birds.[30, 31]



The benefits of regenerative grazing can be incorporated into commodity grain crop rotations by grazing cover crops between cash crop plantings. Using cover crops reduces phosphorus pollution by 50% and nitrogen delivery by 31%.[32] By using regenerative livestock grazing, farmers can transition less productive acres from annual row crop production to more profitable perennial pastures,[33] eliminating the need for tillage and dramatically reducing the need for synthetic inputs. These changes help build soil organic matter and carbon, replenishing depleted soils and – along with their flooding and drought resiliency – help farms mitigate the effects of climate change.[34] Practitioners of regenerative grazing value providing a positive environmental impact, economic investment in rural communities, and bringing the next generation onto the farm with improved land. In doing so, they are producing an Illinois product that Illinois consumers can be proud to use.

"We've seen a lot of benefits since we started grazing. Our vet bill has been cut by about 80%. The cows are healthier. They live longer. We get more calves out of them, which we can in turn sell as replacements and generate another income from that."

- Ashley Osborne, Rocky Road Brown Swiss Dairy, Mulberry Grove, IL

Economically, regenerative grazing brings many benefits to farmers and local communities. Transitioning from continuous grazing to regenerative grazing can increase farm net revenue by $100/acre.[35] Graziers see financial benefits because they spend less on: hay (purchased or produced on-farm); fertilizer, pesticides, herbicide, and other artificial chemical inputs; manure management; and infrastructure (for new operations). Grazing systems focused on grass-finished production are most profitable and impactful on highly-erodible soils,[36] found largely in southern and western Illinois.

Converting row crop farms to grass-fed beef farms is financially feasible, especially on highly erodible and sloping soils. A 2020 study of 15 Wisconsin grass-fed beef farms showed that the average annual return was $135/acre, which was within 10% of row crop averages for the study area. The range in return per acre was wide, with the top third earning $220/ac and the bottom third earning $60/ac. The study also found that grass-finished beef received a 40% price premium over conventional grain-finished beef.[37] A three-year study of farms in Minnesota and Iowa found that grazing cover crops, particularly diverse mixes combined with adaptive high stock density grazing, had returns of $123/ac.[38]

"Farmers that are grazing regeneratively feel they have more control of the decisions on their farms. This is the happiest I have been farming."

- Kathy Kaesebier, Kaesebier Farms

Regenerative Grazing can be implemented in various ways, but is often characterized by:

- High stock densities, frequent rotation, and long recovery periods for paddocks
- Low to no synthetic inputs or tillage
- Increased diversity of plant, animal, and microbial life
- Generating revenue to build viable farm businesses and fairly compensate labor

Statewide Value Chains

Robust grass-finished beef value chains are critical for the transition to regenerative agriculture. Such value chains provide current and prospective livestock producers with access to affordable processing and profitable end-markets. Processing and distribution links aligned for smooth and reliable access by graziers is fundamental to developing a robust market for regeneratively grazed beef products. These markets demonstrate that raising and finishing more cattle on grass is economically and environmentally beneficial. Grass-finished value chains must be grounded in consistent regenerative grazing practices on-farm to generate benefits for soils and ecosystems while producing healthy protein for consumers. Developing a robust statewide value chain is the responsibility of many actors and cannot be left only to graziers to navigate and invest.

CHALLENGES TO IMPLEMENTATION

Despite its current and potential benefits, regenerative grazing faces challenges in Illinois that must be addressed if production, processing, and demand is to expand:

1

Lack of grazing infrastructure and skills

While perimeter fencing and stockmanship were more common on the diversified farms of Illinois' past, much of this infrastructure and knowledge has been lost in the transition to highly mechanized corn and soybean production. Reinstalling perimeter fence and other grazing infrastructure can come at a high price. With net revenue for commodity production low, these financial barriers can seem insurmountable and many farmers are resistant to change.

2

Land access and tenure

Each year, more Illinois agricultural land is leased from non-operating landowners that often live outside of the county or state, 50% of acres in 2014.[41] These landowners often view their properties as an investment strategy and are disconnected from the impact of conventional agriculture practices on the land. This creates an incentive to overemphasize short term cash rents. Stable land tenure is necessary to implement the regenerative practices that build soil health progressively over long periods.

3

Limited grazing technical assistance

As Illinois has transitioned to predominantly corn and soybean production, the technical assistance support from county, state (including universities), and federal sources have also transitioned to focus on commodity grain production. Illinois graziers, therefore, have fewer options for information and support. This is particularly noticeable in the lack of certified grazing planners available to help graziers access federal EQIP cost-share.

4

Processing capacity and cost

While most parts of Illinois have access to a small meat processing plant that is state or USDA inspected, many of these facilities have limited availability and capacity. Many processors experience a seasonal "boom and bust" cycle creating difficulty to find and retain the necessary skilled labor or make capital investments in upgraded equipment to meet increased demand.

5

Competing against "Big Ag" money & resources

Many of the world's largest agribusinesses operate in Illinois and rely on the continuation of conventional commodity grain and confinement livestock production in the state. Increasingly, their vertical integration and data-driven efficiencies allow them to maximize their profit margins. This allows them to reinforce conventional practices regardless of farm profitability and to staff technical experts to fill the gaps in farmer advising left by governments and universities. Further, federal programs reinforce this status quo and are perpetuated by the influence of agribusiness through lobbying.

6

Marketing challenges

The current grass-finished beef market is being filled by imported products with imports accounting for 75-80% of total U.S. sales. The USDA does not have clear labeling laws preventing these imports from being labeled as a domestic product.[42]

OPPORTUNITIES IN ILLINOIS

In balance to the challenges faced by regenerative grazing in Illinois, there are many opportunities that can and should be leveraged to grow production, processing, and demand:

1

Demand for local and grass-finished products

The major markets of Chicago and St. Louis are opportunities for Illinois graziers throughout the state to expand sales to multiple market channels, particularly as the demand for locally produced, grass-finished products are increasing within the state and nationally.[43] Further, many consumers are willing to pay higher prices for regenerative products which helps grow production and subsequently expands access for people who cannot afford to pay a premium.

2

Increased focus on supporting small and medium meat processing

Due to the impact of COVID-19 on very large meat processing plants, the demand for very small to medium facilities to absorb additional cattle into their schedule has dramatically increased. This is an opportunity to solve long-standing bottlenecks these processors face—labor and infrastructure—and to help them be financially sustainable long-term. This will help increase access to local processing for more grass-finished producers while also creating jobs in rural communities. Unfortunately in the short-term, this increased demand meant that many livestock producers were not able to get slots with processors, negatively impacting their businesses.

3

Potential for forage production

Illinois was once predominantly prairie and this diverse ecology created rich, productive soil, as demonstrated by its ability to grow tremendous amounts of corn each year. These factors indicate that forage production in the state could be significant and support a robust grass-finished sector. Re-establishing perennial cover, particularly on highly erodible lands, also affords an opportunity to improve water quality.

4

Momentum for Illinois local food movement

After decades in the making, the local food movement in Illinois is robust and leveraging technology to increase consumer demand and market access. This includes well-structured efforts to build direct markets through farmers markets, CSAs, and online sales, as well as higher volume institutional procurement and retail markets. Meeting the demand for local protein through regenerative grazing could bring economic, environmental and social benefits to rural Illinois.

5

Increase in cover crop adoption

As economic and environmental forces change prices for grain and cattle, less profitable acres and operations will need to change their production to remain viable. For grain, these acres are often the most vulnerable to erosion. Incorporating grazing into row-crop rotations through the use of annual cover crops as forage adds an additional revenue stream to cash strapped operations. Providing a grass-finished market could help transition more acres and operations to regenerative grazing, helping secure better farm profitability through lower overhead and better prices.

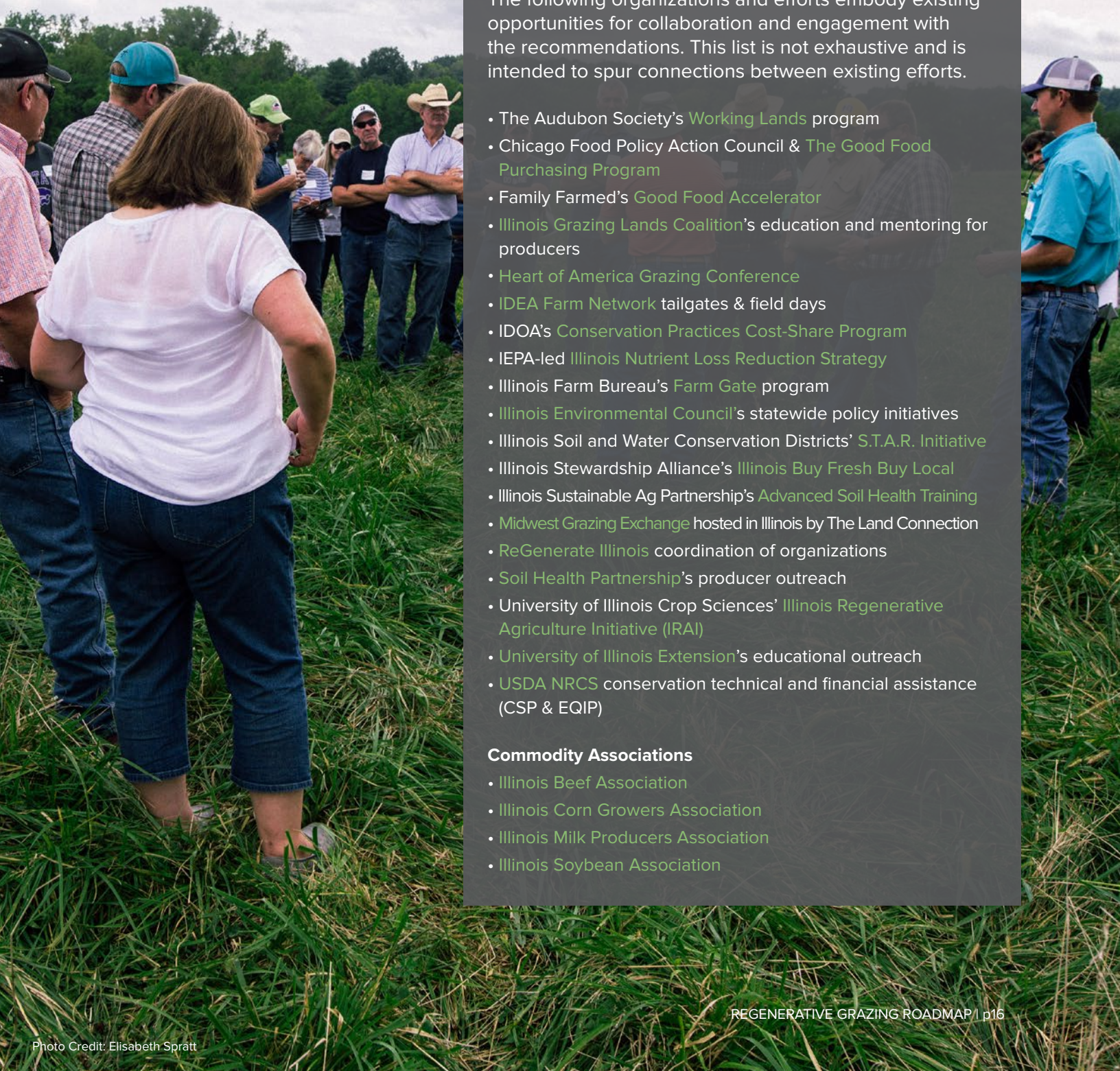
6

Technological advancements

While perimeter fence costs present potential barriers, temporary electric fence and mobile watering options are now widely available. Digital marketplaces are increasing connections between producers and buyers and grazers with available acres. The Midwest Grazing Exchange launched with the aim of connecting graziers to acres, including those in cover[12] crops.

CONNECTING TO CURRENT EFFORTS

The Working Group has identified nine recommendations that, if fully implemented, will substantially contribute to achieving the target goal of this roadmap: 40,000 acres under regenerative grazing management by 2025. Many existing efforts in Illinois can be engaged to act on these recommendations and meet the target goal.



The following organizations and efforts embody existing opportunities for collaboration and engagement with the recommendations. This list is not exhaustive and is intended to spur connections between existing efforts.

- The Audubon Society's Working Lands program
- Chicago Food Policy Action Council & The Good Food Purchasing Program
- Family Farmed's Good Food Accelerator
- Illinois Grazing Lands Coalition's education and mentoring for producers
- Heart of America Grazing Conference
- IDEA Farm Network tailgates & field days
- IDOA's Conservation Practices Cost-Share Program
- IEPA-led Illinois Nutrient Loss Reduction Strategy
- Illinois Farm Bureau's Farm Gate program
- Illinois Environmental Council's statewide policy initiatives
- Illinois Soil and Water Conservation Districts' S.T.A.R. Initiative
- Illinois Stewardship Alliance's Illinois Buy Fresh Buy Local
- Illinois Sustainable Ag Partnership's Advanced Soil Health Training
- Midwest Grazing Exchange hosted in Illinois by The Land Connection
- ReGenerate Illinois coordination of organizations
- Soil Health Partnership's producer outreach
- University of Illinois Crop Sciences' Illinois Regenerative Agriculture Initiative (IRAI)
- University of Illinois Extension's educational outreach
- USDA NRCS conservation technical and financial assistance (CSP & EQIP)

Commodity Associations

- Illinois Beef Association
- Illinois Corn Growers Association
- Illinois Milk Producers Association
- Illinois Soybean Association

Photo Credit: Elisabeth Spratt

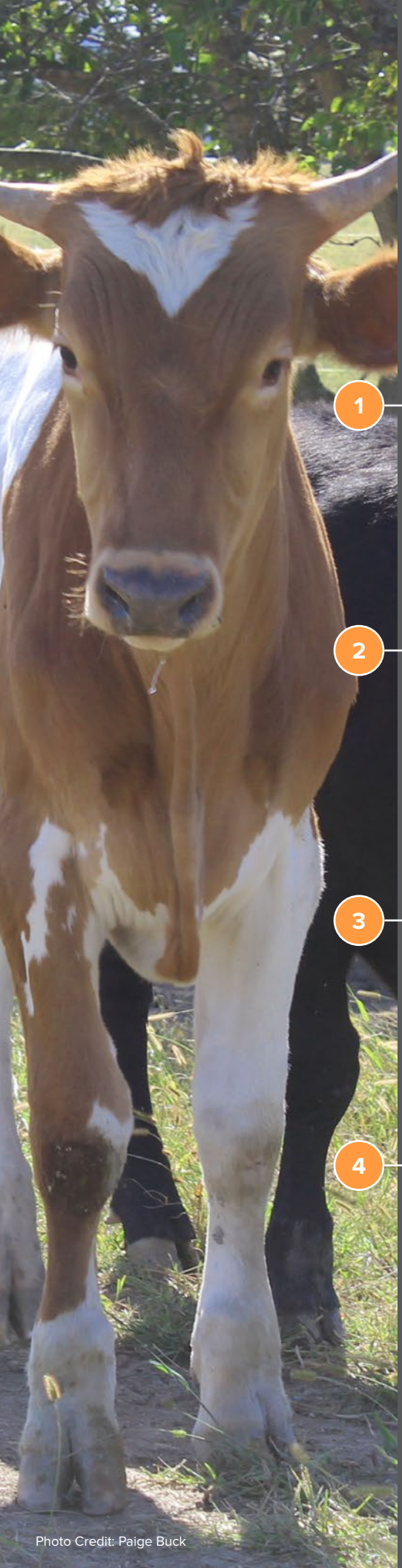


Photo Credit: Paige Buck

RECOMMENDATIONS FOR ACTION AND ANTICIPATED RESULTS

1. **Develop consistent definitions, practices, and quality standards** for grass-based beef that emphasize regenerative practices for healthy soil, clean water, and diverse habitats and their associated ecological and social benefits across the state.

   Anticipated Result
   Producers will be able to define and communicate their practices more clearly and consumers will be able to more clearly discern which product achieves regenerative outcomes.

2. **Develop a formal training program for technical assistance providers** such as NRCS, Extension, SWCDs, NGOs, etc., to support the planning, implementation, and running of grazing operations that prioritize regenerative practices.

   Anticipated Result
   Enhanced access to technical assistance will help producers navigate the unique circumstances in which they farm. It will build trusted relationships that reduce the burden producers currently shoulder self-educate and find resources.

3. **Support more direct farmer education activities** such as field days, mentor matching, farmer to farmer peer learning networks, and online tools focused on regenerative grazing.

   Anticipated Result
   Regenerative grazing will become normalized and more likely adopted when farmers see it in action, ideally in their local context. These interactions build community among farmers and graziers, increasing the likelihood of successful implementation.

4. **Conduct outreach and education for bankers and other financial lenders** to solicit their support for the benefits of regenerative grazing and encourage increased capital lending for such practices particularly during transition periods.

   Anticipated Result
   Commercial lenders will be more inclined to lend to regenerative grazing operations.

Photo Credit: Elisabeth Spratt

5 **Create financial incentives for farmers and landowners** such as an easily accessible loan fund, cost share, or grant program to transition their operations to include regenerative grazing practices.

Anticipated Result

Enhanced access to capital will allow farmers to invest in reestablishing the necessary infrastructure for grazing such as fencing and water systems. This lowers the financial risk for more farmers to participate.

6 **Create financial incentives for very small to medium meat processors** such as an easily accessible loan fund and/or grant program to help them upgrade or expand their facilities and train workers, to support increased in-state processing access.

Anticipated Result

Local meat producers will have more consistent access to local meat processing. Processors will have improved access to trained labor, make strategic infrastructure investments, and serve producers at a sustainable level.

7 **Build a campaign to promote grazing cover crops amongst grain producers** which will provide access to information on economic and soil health benefits, and promote access to the Midwest Grazing Exchange for them to find interested graziers.

Anticipated Result

Row crop farmers will see the benefits and feasibility of incorporating livestock into their crop rotations, have better access to livestock through contracting graziers in their area, and will have more options for integrating livestock themselves.

8 **Build awareness among Illinois consumers and end market buyers** including those interested in higher volume purchases such as institutions and branded programs, of the benefits of purchasing Illinois grass-finished beef.

Anticipated Result

Developing consumer preference for Illinois grass-finished beef will create the necessary local and regional markets required to support increased grass-finished beef production.

9 **Form or select an organization to serve as a long-term, "go-to" champion of regenerative grazing in Illinois.**

Anticipated Result

The momentum created by this roadmap will carry forward beyond its five-year vision by creating and sustaining leadership around regenerative grazing that welcomes diverse audiences and stakeholders and leveraging resources for continued work.

BROADER VIEW

The work to promote regenerative grazing in Illinois must continue beyond the five-year scope of this roadmap. A long-term, comprehensive strategy for regenerative grazing in Illinois should address these needs:

Photo Credit: Paige Buck

- **Develop** additional technical assistance, scientific research, and data modeling to both demonstrate the economic and environmental benefits of grazing and help farmers transition their businesses to grazing. Target audiences include farmers, non-operating land owners, policy-makers, researchers, and lenders.
- **Increase** the presence, coordination and connection among the "middle" value-chain actors such as sale barns, aggregators, processors, and distributors to increase the in-state aggregation and procurement of Illinois grass-finished beef.
- **Develop** tax-based incentives through policy advocacy for farmers to transition to conservation practices like regenerative grazing at the state level.
- **Create** a transparent label for grass-finished beef born, raised, and slaughtered in the US at the federal level.
- **Cultivate** the next generation of graziers through education and financial incentive programs targeted to beginning and young farmers and encouraging racial, ethnic, and cultural diversity.

CONCLUSION

Organizations, businesses, and individuals across Illinois can come together and bring about a regenerative revolution in Illinois agriculture. Regenerative grazing is a key piece to bringing this about. If implemented, the recommendations of this roadmap can help achieve the goal of bringing 40,000 acres of Illinois farmland under regenerative grazing management by 2025. Doing so will help meet the state's growing demand for grass-finished products and build economic incentives for environmental and social benefits linked to regenerative grazing.

Illinois has a strong and proud legacy of leadership in agriculture. It has a long history of extensive grass production and grazing of ruminant livestock as part of long crop rotations. Its productive soils and favorable rainfall patterns set up Illinois farmers for success in reintroducing cattle to the landscape in a way that builds and maintains healthy soil, farms, and people.

More importantly, Illinois farmers have a deep respect and love of the land. Stewardship of natural resources is a priority of Illinois farmers. As the no-till and soil health movements have taken hold, regenerative grazing can enhance these efforts to achieve truly regenerative outcomes.

There is a deep joy in working with nature and experiencing its power and brilliance each day. It will take direct and consistent action from many people to realize the potential of this roadmap. Together, the Illinois ag community will bring forth an abundant future.

Photo Credit: Elisabeth Spratt

REFERENCES

[1]General Mills Regenerative Agriculture Self-Assessment V2.0
[3]Anderson, R. C. (2006). Evolution and origin of the Central Grassland of North America: Climate, fire, and mammalian grazers. The Journal of the Torrey Botanical Society, 133(4), 626-647.
[4]USDA National Agricultural Statistics Service (NASS). (2017).
[2,5] Armour Food Sources Map. (1960). Cornell University Library Digital Collections
[7]National Land Cover Database (NLCD)
[8]Illinois Department of Natural Resources. Illinois Prairies.
[9,23,24,26]Illinois Department of Agriculture. (2019). Facts about Illinois Agriculture.
[10,11]USDA National Agricultural Statistics Service. (2020). Crop Production 2019 Summary.
[12]Atwell, R. C., Schulte, L. A., & Westphal, L. M. (2010). How to build multifunctional agricultural landscapes in the U.S. Corn Belt: Add perennials and partnerships. Land Use Policy, 27(4), 1082-1090.
[13]Illinois Environmental Protection Agency. (2015) Illinois Nutrient Loss Reduction Strategy. Illinois Department of Agriculture. Pg. 6.1.
[14]USDA (2015). Coexistence Factsheets: Soybeans.
[15]Foley, Jonathan (2013). It's time to rethink America's Corn System. Scientific American.
[16]EPA Data. (2014).
[17,18,20]Pasture Project. (2019). Expanding Regenerative Grazing.
[19]Lattz, D. and G. Schnitkey. IFES 2019: Illinois Farm Income: 2019 Projections and Outlook for 2020
Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, December 31, 2019.
[21,25,27,39,43]Delta Institute, Pasture Project. (2019). The State of Grass-Fed Value Chains in Illinois.
[22]Cheung, R., McMahon, P. (2017). Back to Grass: The Market Potential for U.S. Grassfed Beef.
[28]Park, J., et al. (2017). Evaluating the ranch and watershed scale impacts of using traditional and adaptive multipaddock grazing on runoff, sediment and nutrient losses in North Texas, USA. J of Agriculture, Ecosystems and Environment, 240: 32-44.
[29] Rawls, W. J., et al. (2003). Effect of soil organic carbon on soil water retention. Geoderma, 116(1-2): 61–76.
[30]Goosey, H.B., et al. (2019). Ground-Dwelling Arthropod Community Response to Livestock Grazing: Implications for Avian Conservation. Environmental Entomology, 48(4): 856-866.
[31]Lwiwski, T.C., et al. (2015). Stocking Rates and Vegetation Structure, Heterogeneity, and Community in a Northern Mixed-Grass Prairie. Rangeland Ecology and Management, 68(4): 322-331.
[32]Iowa Department of Agriculture and Land Stewardship. (2016). Iowa Nutrient Reduction Strategy.
[33]Winstein, J., et al. (2020). Expanding the Adoption of Regenerative Grazing in the Upper Midwest: Why and How. (Pre-publication): 2-3.
[34]Ahlering, M., et al. (2016). Potential carbon dioxide emission reductions from avoided grassland conversion in the northern Great Plains. Ecosphere, 7(12): e01625.
[35]Mariola, M.J., et al. (2005). The Social Implications of Management Intensive Grazing: A Bibliography. Center for Integrated Agricultural Systems University of Wisconsin-Madison.
[36,37]Munsch, J. (2020). An Investigation into Profitability of Grass-fed Beef Production in the Driftless Area of the Mississippi River Valley. Munsch Consulting LLC.
[38]Williams, A., et al. Benefits of Planting and Grazing Diverse Cover Crops. Pasture Project.
[40,42]Pelletier, N., Pirog, R., & Rasmussen, R. (2010). Comparative life cycle environmental impacts of three beef production strategies in the Upper Midwestern United States. Agricultural Systems, 103(6), 380-389.
[41]Bigelow, D., et al. (2016) U.S. Farmland Ownership, Tenure, and Transfer. USDA.

SUGGESTED READING

Expanding Regenerative Grazing Story Map
Assessing Grazing Potential in Illinois and Indiana Watersheds Story Map
The State of Grass Fed Value Chains in Illinois Story Map
Accelerating regenerative grazing to tackle farm, environmental, and societal challenges in the upper Midwest
Illinois Grazing White Paper
IL Grazier Case Studies
Livestock on the Land
"The Art & Science of Grazing" by Sarah Flack (book)
"Grass Productivity" by Andre Voisin (book)
"Dirt to Soil" by Gabe Brown (book)
"Comeback Farms: Rejuvenating Soils, Pastures, and Profits with Livestock Grazing Management" by Greg Judy (book)

Pasture Project
AT THE WALLACE CENTER

For more information about this roadmap and the Illinois Regenerative Grazing Working Group, contact Pasture Project at:
PastureProject@winrock.org

This project was completed with funding support from the Walton Family Foundation and McKnight Foundation.