
Photo by Elisabeth Spratt

RECOMMENDED INTERVENTIONS FOR GRASS-FED BEEF PRODUCTION

MARCH 2021

delta institute

Pasture Project
AT THE WALLACE CENTER

Introduction

In 2019, the Wallace Center – through its Pasture Project, part of the Resilient Agriculture & Ecosystems initiative of the Wallace Center at Winrock International – and Delta Institute conducted a preliminary analysis on Illinois grass-fed/finished beef supply and demand.[1] The intent of this analysis was to determine the market pull that could be used to increase regenerative grazing in the state, generating both environmental and economic positive returns. This analysis resulted in a target goal of adding and sustaining 40,000 additional acres of grazing lands in the state to meet grass-fed/finished beef demand in Chicago markets. To support this goal, the project team conducted a review of the watersheds in closest proximity to Chicago to determine which watershed had the strongest value proposition (i.e., benefit) for increased grazing and grass-fed/finished beef production.

The intent was to find a suitable watershed to develop a place-based blueprint for building regenerative grazing through grass-fed/finished value chains. Doing so would provide a proof of concept for similar efforts throughout the region, driving forward positive economic, environmental, and social returns through regenerative grazing while building strong markets for locally produced grass-fed/finished beef. In 2020, the Kishwaukee and Upper Fox watersheds were selected based on geospatial environmental and economic data relevant to agricultural production, consideration of the proximity to Chicago's major metropolitan food markets, and interviews with key stakeholders. The process used to select Kishwaukee, and Upper Fox watersheds is documented in the "Priority Watershed Selection for Regenerative Grazing Outreach" memo. An analysis on the impacts of increasing regenerative grazing in the Kishwaukee and Upper Fox watersheds was also created to help connect the statewide acreage goal with the acreage conversion potential in the watersheds. This additional analysis is documented in the "Regenerative Grazing Transition Analysis" memo.

After the watersheds were identified, targeted research and stakeholder engagement was undertaken to establish a more detailed understanding of the current and potential grazing, grass-fed/finished production, and associated value-chains in the Upper Fox and Kishwaukee watersheds. The purpose of this memo is to describe the discovery process for relevant stakeholders and information, as well as the outcomes of preliminary engagement and analysis. The memo concludes with short and long-term recommendations for addressing current challenges to expanding regenerative grazing in the watersheds and opportunities to building grass-fed/finished value chains that will sustain these increased grazing lands in the watershed through the production of healthy proteins demanded by local markets. The project team also concurrently researched opportunities for institutional procurement of grass-fed/finished beef in Chicago. These higher volume markets represent important opportunities to rapidly increase regenerative grazing and associated value chains in the watersheds. While they take time to identify and develop, institutional buyers can play critical roles in scaling up regenerative practices. The "Grass-Fed Beef Institutional Procurement Memo" describes this research and complements this memo.

[1] https://pastureproject.org/publications/the-state-of-grass-fed-value-chains-in-illinois-story-map/

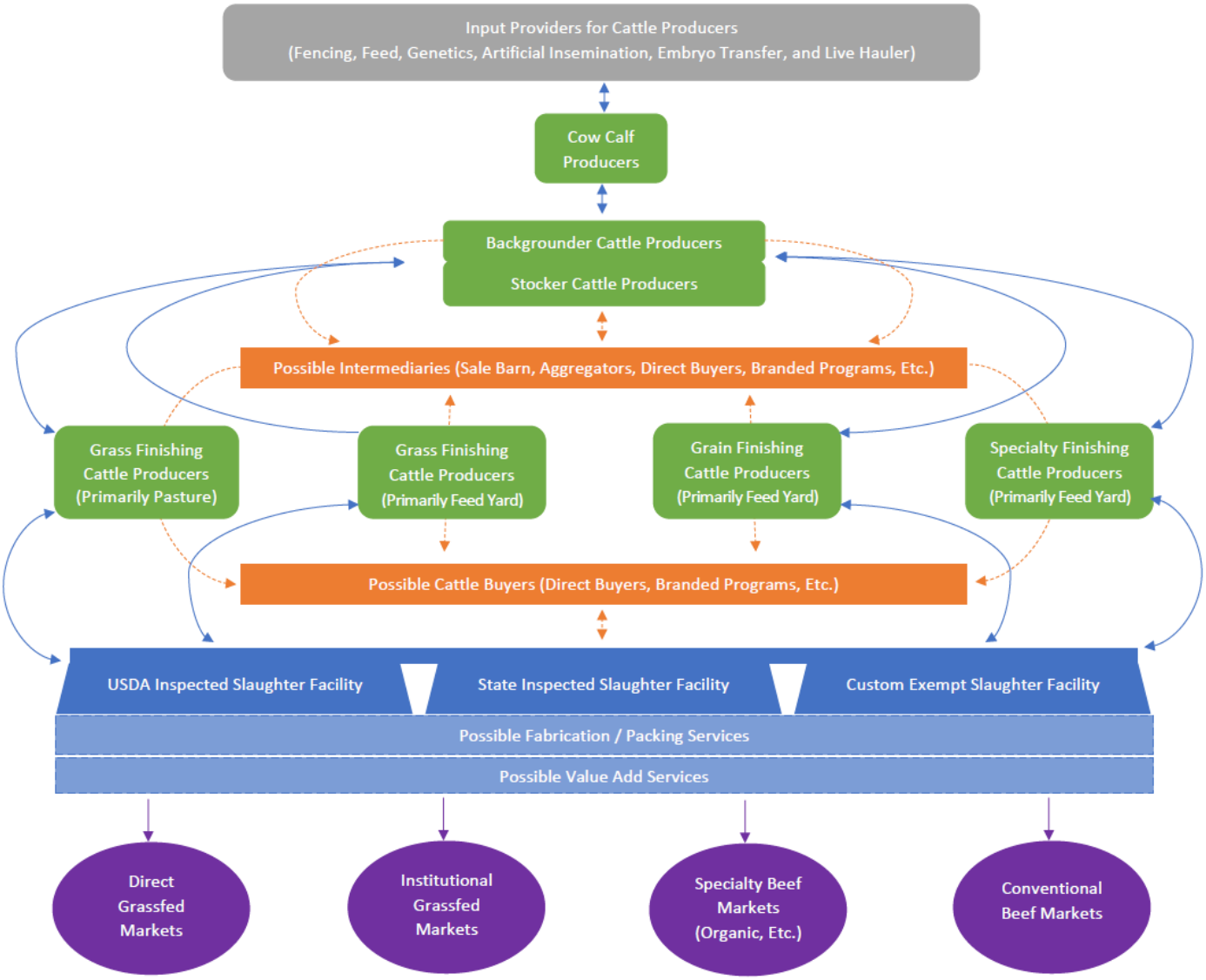
Stakeholder Identification

A combination of desktop research and direct outreach was used, with the latter following a snowball approach to identify relevant contacts. This was conducted remotely due to the COVID-19 pandemic. However, this stakeholder identification process is a strong starting point for deeper relationship building, research and action over time.

Additional Research

The project team's research explored businesses that corresponded with a general beef system structure. Grass-fed beef value chains can be complex and overlap with the conventional beef supply chains in multiple ways.

Figure 1. Representation of the Grass-fed Beef Value Chain in Illinois



The way that an individual animal moves through either grass-fed or conventional systems depends on multiple factors including producer preference, available infrastructure, and end market. In general, beef cattle production follows three major stages: cow-calf (birth until 6-8 months), stocker (until 9-15 months), and finishing (18-24 months). "Backgrounding" is a possible additional step between the cow-calf and stocker phase when underweight calves are improved before moving on to stocker producers. Prior to the finishing phase, beef cattle are largely fed on pastures or supplemental forage. When cattle move to the finishing stage, they either continue pasture-based forage (i.e., grass-finished), forage fed in feed yards, or transition to a mixture of predominantly corn and other grains, supplemented by other forages, soybeans, cottonseed meal, and other food byproducts.

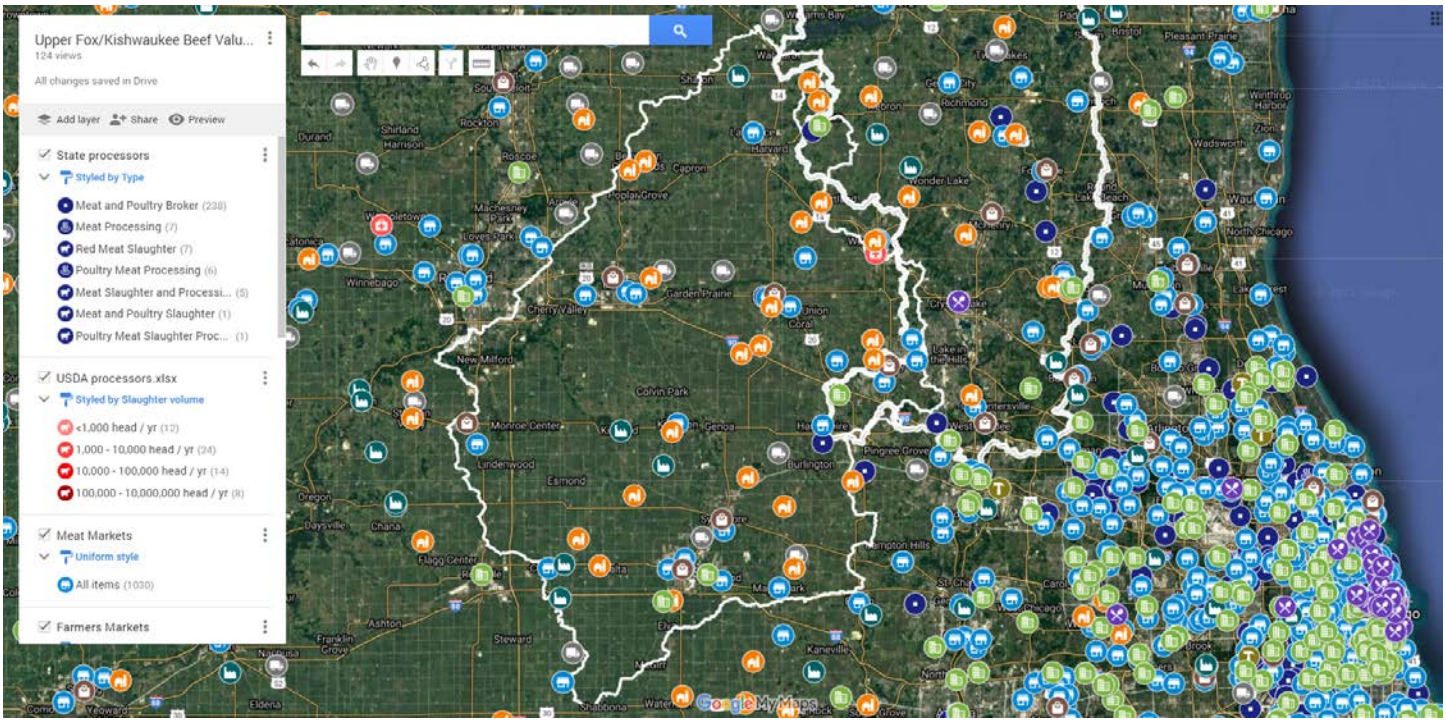
Often, producers play specialized roles in beef production, producing a particular stage of cattle. Intermediaries often move animals between farms at different stages, including aggregating cattle to move them to different slaughter facilities and on to end markets. However, some producers play multiple or all roles. This is particularly true for grass-fed beef producers selling their products directly to the consumer. Some grass-finished product does end up in conventional beef markets. This is often due to quality concerns or limited access to direct-to-consumer markets willing to pay a premium for grass-fed/grass-finished.

It is important to note that the diagram presented is generic. Not all entities within the structure are present within a given area. Equally, the connections between entities are dynamic, frequently changing, and difficult to track. Many times, one individual serves multiple roles and evolves their business in response to different factors such as upturns and downturns in markets. However, this structure is helpful when researching all the entities that influence cattle - specifically conventional and grass-fed/finished beef - production.

To understand the overall "ecosystem" of current beef production in the watersheds, the project team mapped relevant businesses. This included a multi-stage process that pulled publicly available data from multiple sources. Relevant data points have been included on the Upper Fox/Kishwaukee Beef Value Chain Businesses[2] map (Figure 2). This is a fully interactive map that allows for different business types and type segments to be spatially visualized with relevant information. A screenshot of this map is included for this report, but the linked map provides full functionality.

[2] https://www.google.com/maps/d/u/0/viewer?mid=16htVTdf3j33AUWrpdm8ho8XQ-bwUL3EM&ll=42.15381483367788%2C-88.65801814770711&z=9

Figure 2. Upper Fox/Kishwaukee Beef Value Chain Businesses



Input Providers

Input providers for beef value chain businesses were identified and mapped, by relevance, using NAICS and/or SIC Codes. The Standard Industrial Classification (SIC) codes and the North American Industry Classification System (NAICS) were each developed to support the collection, analysis, and publication of data relevant to the U.S. economy by government agencies. They are both standardized, self-designated, and searchable systems that include codes relevant for beef production. Though NAICS was designed to replace SIC, businesses are still classified with both codes, and for some agricultural industries, SIC codes are more specific. SIC and NAICS Codes were used to identify businesses in the following input categories and filtered for relevance: fencing and supplies; feed suppliers; genetics, artificial insemination, embryo transfer; and livestock haulers.

It should be noted that SIC Codes for livestock veterinary services were also reviewed. These were not mapped because they did not reveal any livestock veterinarians in the region. Instead, the project team did open internet searches for these businesses and found 4 large animal veterinarians in the area. Through this process, the project team found that input suppliers in each category – while limited – were available within or within range for beef producers in the Upper Fox and Kishwaukee watersheds. There are 18 fencing businesses though additional analysis is needed to determine which of these businesses service agricultural customers. There are 5 feed suppliers and 5 businesses providing genetics and embryo services. This limited availability does indicate that there are likely fewer large livestock operations in the watersheds. These operations tend to support more numerous and larger input suppliers, particularly dedicated large animal veterinarian services. Larger operations encourage small and medium size operations by increasing the

availability of inputs and animals in an area. Listed livestock haulers are readily available in the watersheds or within accessible distances, signaling the opportunity for livestock aggregation within and beyond the watersheds. A total of 162 livestock hauler businesses are in or near the watersheds. Further analysis is needed to understand how many of the identified input suppliers are still in operation and serve beef producers.

Known Grass-Fed/Finished Beef Producers: Cow Calf, Backgrounder, Stocker, Finishing

To identify known grass-fed/finished beef producers, the project team combined multiple directories that included Perennial Map[3], USDA Organic Database[4], EatWild[5], Local Harvest[6], Buy Fresh Buy Local IL[7], Crate Free IL[8], American Grassfed Association[9], and USDA Natural Resources Conservation Service case studies[10]. While these directories are limited by being voluntary, skewing toward direct-market enterprises, and potentially outdated, they do provide a baseline for preliminary stakeholder analysis and engagement that can be improved over time. Through this process, 33 known grass-fed/finished beef operations were identified in the watersheds, with 30 of these operations located in Illinois. An additional 14 operations were located just outside the watersheds. These should be considered as producer outreach continues as these operations have the potential to influence grass-fed/finished beef production in the region overall, by adding to. By comparison, USDA National Agricultural Statistics Service (NASS) estimates 210 rotational or management intensive grazing operations in Boone, Cook, DeKalb, Kane, Lake and McHenry counties – which make up a significant portion of the Kishwaukee and Upper Fox Watersheds – as of their 2017 Census of Agriculture. While rotational and management intensive grazing operations are not necessarily grass-fed/finished beef producers – many may produce or supply conventionally produced beef, produce other animal products, or be horse farms – it is reasonable to assume that a small percentage of these farms are current or potential grass-fed/finished beef producers. However, NASS data provides limited visibility into the finished products of the 210 listed operations and no identifying information that will allow for confirmation. The 2017 data is also potentially outdated.

[3] https://www.perennialmap.org/
[4] https://organic.ams.usda.gov/integrity/
[5] http://www.eatwild.com/products/index.html
[6] https://www.localharvest.org/birmingham-mi
[7] https://www.buyfreshbuylocalcentralillinois.org/
[8] https://cratefreeusa.org/
[9] https://www.americangrassfed.org/aga-membership/producer-members/
[10] https://www.nrcs.usda.gov/wps/portal/nrcs/detail/il/technical/landuse/pasture/?cid=nrcseprd1310059

Livestock Buyers

Livestock wholesalers are available within and immediate to the watersheds. There are 14 such businesses in the watersheds and over 180 in the accessible area. These businesses typically buy cattle from other farms at different points of the animal lifecycle and can support pooling cattle based on production practices, such as grass-finishing. However, there is no easy point of information on which of these businesses support differentiated categories for grass-fed/finished, etc. These businesses can also standardize the animal genetics and performance they are interested in purchasing, raising the overall quality of the livestock in each area and allowing for specialization and differentiation. Again, verification of these businesses is needed.

Animal Slaughter and Meat Processing

Both USDA and State of Illinois data sets on animal slaughter and meat processing were used to map this critical link in the beef value chain. Prior to COVID-19, these businesses were a known bottleneck for expanding grass-fed beef production – both in their limited brick-and-mortar presence and, when present, their capacity to support producers through available appointments and product services (i.e., packaging, value add, custom meat cutting, etc.) The pandemic further strained these businesses as demand boomed while virus outbreaks limited labor availability and required retrofitting work environments to improve health and safety. The available federal and state data is not current enough to reflect the impact the pandemic has had on these facilities and additional confirmation is needed to know which businesses are still in operation.

It should also be noted that USDA inspected slaughter facilities included in this analysis and subsequently mapped were limited to smaller-scale facilities. This is because grass-fed operations – individual producers or those aggregating animals from other producers – tend to be smaller and cannot access larger slaughter facilities that have minimum quantity and consistency requirements for appointments to be made. Smaller slaughter businesses often offer more custom services to meet the needs of producers or aggregators who are selling direct-to-consumer.

USDA inspected slaughter and processing facilities – which offer producers or aggregators the ability to move their finished products across state lines – are present in or immediate to the watershed. There are 2 such facilities within the watersheds, both in Wisconsin and processing between 1,000 – 10,000 head (animals) per year. Beyond the watersheds but well within the driving distance many producers are willing to accept to access available appointments and services, there are 14 additional USDA inspected facilities that each process 100,000 or fewer head (animals) per year.

Aggregating animals into larger hauling loads can make it more cost effective for producers to access slaughter and processing facilities further away. This means that slaughter and processing bottlenecks can be addressed indirectly through the ability to aggregate semi-loads of animals and developing effective working relations with the best livestock haulers. Hauling longer distances to get to larger, better equipped, and cheaper (even after transportation costs) slaughter and processing options is a prevalent and important solution across the US. Larger beef brands design their producer outreach and subsequent aggregation program based on the clustering of key

operations, often centered around preferred processors with essential volume capacity and services.

State inspected slaughter and processing facilities – which only permit resulting products to be sold within their given state – are typically smaller in scale due to their geographic limitations. There is only one state inspected red meat slaughter facility in the watersheds, located in the Kishwaukee watershed. However, there are 4 similar facilities located in the greater Chicago area and more within the driving range of producers. However, the geographic limitations of state inspected facilities prevents access to Wisconsin facilities. Illinois does not participate in the USDA Food Safety and Inspection Service (FSIS) Cooperative Interstate Shipment (CIS) of State Inspected Meats program which allows meat from participating state inspected slaughter and processing facilities to participate in interstate and international commerce. While Wisconsin does participate in this program, there are no participating state plants within or immediate to the Kishwaukee or Upper Fox Watersheds.

However, there are at least three Wisconsin facilities within reasonable driving distance from the watersheds that do participate in the CIS program. Meats from animals slaughtered and processed at these plants could be sold back into Illinois. It should be noted that interest the CIS program will have likely grown as a result of COVID-19 and the subsequent temporary shutdowns of larger slaughter and processing facilities. State facilities participating in the program likely experienced a surge in demand due to long wait times at other facilities and were able to provide more options for customers conducting interstate business. This needs to be more fully examined to help understand the degree that producers will do business with state facilities registered in the CIS program and how much effort should be made to increase participation in the program by individual facilities, as well as individual states - such as Illinois.

There is only one state inspected processing facility (not offering slaughter) in the Kishwaukee watershed but there are six such facilities closer to Chicago. These processing facilities are important because they can take carcasses from facilities operating slaughter services, which is the limiting factor for available producer appointments.

Meat Brokers, Wholesalers, and Markets

Both meat wholesalers and smaller meat markets (typically supplied by wholesalers) are also present in the watersheds, as identified by NAICS and SIC codes. There are over 80 such businesses within the watersheds. Both these business types are very abundant in Chicago and all would be easily accessible to producers and businesses operating out of the Upper Fox and Kishwaukee watersheds. Finally, there are 11 meat and poultry brokers in the watersheds. These are businesses that move – but do not process – products from a slaughter or processing facility to another business, such another processor, wholesaler, meat market or customer. Comparatively, there are 227 brokers operating in the Chicago area outside of the watersheds. It should be noted the research on where these brokers do business was not conducted. These businesses may be based on the Chicago metro due to convenience but may do business in a much larger geography. This means they may not be providing services to local beef producers or other value-chain businesses.

Farmers Markets and Restaurants with Grass-Fed Beef Options

Tracking the destination of grass-fed/finished beef products can be exceptionally difficult. A significant amount of grass-fed/finished beef enters the conventional beef market without being marketed as such. This is because of quality concerns, limited access to specialized markets, or limited producer interest in specialized marketing. Grass-fed/finishing operations in the U.S. are typically small scale and their marketed products are sold direct to consumers (including food service and restaurants). There are not standardized datasets that capture where different beef products are sold, creating a heavy reliance on gathering this data from individual producers, intermediaries, and buyers.

Farmers markets are typical market channels for grass-fed/finished beef, though their vendor list can change from season to season. Further, many markets were also suspended for the 2020 growing season and may no longer be in operation. When reviewing data from the National Farmers Market Directory maintained by USDA's Agricultural Marketing Service (AMS) and the Illinois Farmers Market Association, there are 13 farmers markets that were identified in the Illinois portion of the Upper Fox and Kishwaukee watersheds. Additional Wisconsin markets are also present within the watersheds but were not mapped by this project.

Because their frozen products can be easily moved and stored, grass-fed beef producers are likely accessing farmers markets in a larger catchment. There are 30 Illinois farmers markets outside the watershed that are easily accessible, including multiple large markets in both Chicago and Milwaukee. Confirmation of grass-fed/finished vendors for each of these markets is needed but was limited and heavily influenced by COVID-19 market cancellations.

Similarly, restaurants featuring grass-fed/finished options were also identified by the project team. A total of 35 were identified in the broader Chicago area, with just one in the Upper Fox watershed. These businesses are regularly changing menu items and were heavily impacted by the pandemic. They are relevant stakeholders that are heavily in flux and difficult to track. There are likely more of such restaurants, but a full inventory will take time to develop and must be regularly maintained to remain accurate.

Direct Stakeholder Identification

Along with desktop research, the project team also worked to identify key stakeholders with awareness of grazing and beef production in the watershed. Through previous project work and professional connections, as well as cold calling, the team progressively built a short-list of key stakeholders that included:

- Nathan Aaberg, Liberty Prairie Foundation
- Mike Bivers, Terra Vitae Farms
- Emy Brawley, The Conservation Fund
- Spring Duffey, McHenry-Lake County Soil and Water Conservation District
- Janice Hill, Kane County Farmland Protection and Local Foods Program
- Walker Kehrer, Thousand Hills Lifetime Grazed
- Ray Krones, Strauss Brands
- Cliff McConville, All Grass Farms
- Kate McMahon, NRCS – Boone County
- Rod Ofte, Wisconsin Meadows Grass-Fed Beef Cooperative
- Adam Olsen, NRCS – McHenry, Lake, DuPage, and Kane County
- Levi Powers, Alden Hills Organic Farm
- Randy Reams, Ream's Meat Market
- Trent Sanderson, Pasture Grazed

Informal phone or email conversations were conducted with all the identified stakeholders, except for Mike Bivers and Trent Sanderson who were not available during our interview period. Additionally, the project team hosted a virtual stakeholder engagement session on February 5, 2021 to gather more detailed information. Attendees were Cliff McConville, Levi Powers, Kate McMahon, Nathan Aaberg, Janice Hill, and project team members. This included discussing the current state of grazing and grass-fed/finished production in the Upper Fox and Kishwaukee watersheds, as well as establishing a working set of assumptions about the future of both regenerative grazing and grass-fed/finished production in the watersheds.

The discussion on the current state of grazing and grass-fed/finished production also included a review and improvement of the Upper Fox/Kishwaukee Beef Value Chain Businesses[11] map, including marking businesses most actively engaged in relevant activities. Based on the established baseline of current activities and assumptions about future activities, the stakeholder session concluded by brainstorming opportunities to expand regenerative grazing and grass-fed/finished production in the watershed in measurable ways. The outcomes of all stakeholder feedback – informal phone interviews and the virtual engagement session – are summarized in the following section.

[11] https://www.google.com/maps/d/u/0/viewer?mid=16htVTdf3j33AUWrpdm8ho8XQ-bwUL3EM&ll=42.15381483367788%2C-88.65801814770711&z=9

Stakeholder Feedback on Common Challenges and Key Stakeholders

Based on engagement with stakeholders, the project team has developed an improved understanding of the current state of regenerative grazing and grass-fed/finished beef production in the Upper Fox and Kishwaukee watersheds, as well as possible interventions to expand both in the coming years.

Common Challenges for Grazing and Grass-Fed/Finished Production

- **Land development pressures are significant and complex**: Both watersheds – particularly the Upper Fox – are experiencing significant land development as the greater Chicago metropolitan area expands. While 61,500 acres of agricultural and natural lands were protected in northeastern Illinois between 2001 and 2015, a total of 140,000 acres of agricultural and natural lands were developed - primarily agricultural lands. Particularly problematic is the growth of larger acre residential development ("farmlets") that rapidly spreads into agricultural areas, driving up land prices and land fragmentation while discouraging agricultural practices - such as livestock production which is often considered a "nuisance." This is compounded by the various local government jurisdictions that comprise the two watersheds and myriad of associated rules and regulation related to land use within each jurisdictional set of boundaries.

- These jurisdictions undergo a transformation as they respond to and encourage non-agricultural development, often resulting in an environment less conducive for agriculture. Agricultural land is largely valued for its suitability for conversion for other purposes, with little account for its economic, environmental, and social contributions to rural, peri-urban, and urban communities. This overlay of increasingly complex jurisdictions results in a mosaic of comprehensive planning, zoning, regulatory, and other considerations that farms must navigate to sustain themselves. Such considerations can vary widely between the more rapidly developing eastern edge of the Upper Fox watershed and the more rural western edge of the Kishwaukee watershed.

- **Consumer markets for grass-fed/finished beef in the greater Chicago area are growing, but rapidly evolving:** Demand for grass-fed/finished beef in the Chicago metro surpasses local supply, driving demand for imported products – largely originating from outside the U.S. Consumer education is lacking and this results in a lack of consumer differentiation and preference for locally produced grass-fed/finished beef. The demand for grass-fed/finished beef in recent years has spurred an increase in the number of small-scale producers entering the market to capture additional revenue. This has increased competition for access to slaughter and processing appointments between producers, further exacerbated by slowdowns and closures during the COVID-19 pandemic. This intensified bottleneck has pushed producers to travel further for slaughter and processing services – as far as Indianapolis – to meet the boom in pandemic-driven buying of meat. Along with this boom also came significant shifts in consumer preference for product type and delivery. Online retail and shipping are now expectations that consumers have for local producers, who have had to scramble to develop or improve these aspects of their

businesses while managing increasingly costly and complex logistics. Many grass-fed/finished beef producers in and around the watersheds have struggled to build new markets while also managing loyalties to long-standing clients such as restaurants, food service providers, and institutional buyers that faced pandemic related purchasing slowdowns. Many producers noted that they saw letting go of these existing customers to service new customers presented as a risk to their business diversity and stability. As the pandemic concludes and the "new normal" emerges, the buyer landscape for locally produced grass-fed/finished beef will be different. Producers will need support to calibrate their businesses to include diverse, stable buyers.

- **Grass-fed/finished producers are present in the watersheds but face challenges for growing their operations:** Successful grass-fed/finished producers in the watersheds face land access issues as they attempt to expand their businesses. Competition from development, as well as bolstered commodity corn and soybean production, means that the cost to access land can limit a livestock producer's ability to grow their operation in the same geography. Many of these producers seek larger, lower-cost pieces of land further away (i.e., outside of the watersheds) and move animals to achieve the scale and enterprise differentiation needed to support their markets. Networking among producers with similar production practices is also a common way to address land access limitations and ease the process of moving animals.

  This networking also allows smaller producers to specialize their businesses (i.e., strictly producing high quality weaned calves, focusing on stockers weight-gain, etc.) to support a larger producer or cooperative effort. This presents challenges in remote management, as well as regulatory compliance when moving animals across state lines (Illinois to Wisconsin) and running agriculture operations in different jurisdictions. Beyond land access and regulatory challenges, grass-fed/finished producers seeking to maintain their operations in the watersheds are also limited by access to live animals – namely weaned calves and stocker (i.e., juvenile) cattle with genetics suited for grass-finishing.

  As a result, producers in the watershed have to produce their own calves, purchase local animals with less preferred genetics, or travel further to purchase the animals they need. Regardless of their solution, this can increase the cost of production. When paired with increased costs for land and processing, these additional costs can disincentivize grass-fed/finished beef production for producers operating exclusively in the watershed.

  As the production base in the watersheds increases, diversification to meet current animal needs may occur. This may include investments in cattle genetics suited for grass-finishing that will yield higher quality calves and stocker cattle. It may also result in producers leaving the watersheds to secure suitable land for their operations. However, this critical mass of production has not yet been achieved and the production based remains fragmented, reliant on suboptimal live animal sourcing, and struggling to reduce operational costs. This is not an uncommon reality for grass-fed/finished beef production in the U.S. This lack of a critical mass also keeps grazing and grass-fed/finished beef production at a lower level,

reducing their visibility to the public – including non-operating landowners who set land lease contract periods critical for expanding grazing operations – that may support local regenerative farms and their products. This means there is an opportunity for planning deliberate support for these businesses.

- **Slaughter and processing facilities, while present, struggle to meet current demand:** Access to suitable slaughter and processing services is a consistent challenge in most parts of the U.S., including the Upper Fox and Kishwaukee watersheds. Often, these businesses are subject to "boom and bust" demand cycles driven by producers finishing animals in the fall to avoid overwintering costs. This drives challenges attracting, training, and retaining consistent and highly skilled labor. Despite these challenges, most producers – including many in the Upper Fox and Kishwaukee – can navigate the available local services to meet their business needs.

  However, the COVID-19 pandemic paired with an increase in very small producers with limited ability to move animals have consumed previously available appointments that established, larger grass-fed/finished producers have relied upon. The handful of available state-inspected and smaller USDA inspected plants – critical for moving products to regional markets – have struggled to meet increased demand. Further, finding a processor who can provide the custom services needed to meet shifting customer preferences (e.g., packaging material type, labeling preferences, Certified Organic, value-added products, etc.) can be challenging and push producers to go further to have their needs met. This includes access to the cold storage that's needed for aging beef and storing finished products. Interest in building new slaughter and processing facilities is tempered by COVID-19 uncertainties and the long lead time for new construction, as well as the challenges of retrofitting older plants.

Critical Grazing Operations, Businesses, and Stakeholders

The engaged stakeholders identified a number for different grazing or cattle operations, as well as value-chain businesses and stakeholders currently in or connected to the watersheds that are relevant to expanding grass-fed/finished production. Some of these entities were previously identified through desktop research, though many were identified only by the engaged stakeholders. All the critical entities are listed below and included in the High Relevance Upper Fox/Kishwaukee Beef Value Chain Businesses[12] map. These are differentiated on the map with stars and are listed alongside other businesses that were identified. They represent a starting point for a broader conversation about expanding grazing and grass-fed/finished production in the watershed such that tangible support activities can be identified, planned, and implemented. Some of these stakeholders are in Wisconsin.

- **Grazing or other cattle operations:** Abiding Acres Farm; Alden Hills Organic Farm; All Grass Farms; Burgin Farms; Creekside Cattle; Dietrich Ranch, LLC; Gardner Farm; Grassway Organics; Grazin Haven Farms; LotFotL Community Farm; Mint Creek Farm; Pasture Grazed; Riemer Family Farm; Schramer's Farm Direct Black Angus; Starry Nights Farm; Terra Vitae Farms; and Timberfeast Farm

- **State and USDA slaughter and processing facilities:** Chenoa Locker, Inc. (USDA); Eickman's Processing Co., Inc. (USDA); Johnson's Processing Plant (USDA) Jones Packing Co (state); Lake Geneva Country Meats, Inc. (USDA); Olague Farms Meat Packing, Inc. (state); Strauss Brands, Inc. (USDA); This Old Farm Meats and Processing (USDA); and TTJ Packing, Inc. (USDA)

- **Meat Wholesalers and Retail:** Double Y Cattle Company; Heritage Prairie Farms; Hometown Meats & Deli; Ream's Meat Market; Rustic Road Farm; Sorg Farm Packing, Inc; Strauss Brands; and Thousand Hills Lifetime Grazed

[12] https://www.google.com/maps/d/u/0/edit?hl=en&mid=1Poola7x4qF35rVN9ulwJ6Y6FS2H4wQM5&ll=42.30313423656999%2C-89.5878346256631&z=9

Assumptions & Recommendations

Expanding grazing and grass-fed/finished production, including the associated value chains, in and connected to the Upper Fox and Kishwaukee watersheds requires a set of well-measured assumptions and recommendations.

Assumptions

Based on preliminary stakeholder engagement, the follow assumptions have been used to form the subsequent recommendations:

- Stronger market signals for grass-fed/finished products mean more incentives for producers to enter and expand grazing if strong, supporting value-chains are available. More pastures grazed to sell more grass-fed/finished products means healthier soil and farms.

- Enterprises that see collaboration as a critical business strategy should be a "keystone" focus of support in building or expanding multi-benefit value-chains. This includes farms, value-chain businesses, and end-market buyers (including institutional procurement).
- There are different ways for producers and businesses to participate in building value chains and their role may change over time. The goal should be to work with people where they are while moving toward regenerative agriculture and value chains.

- Expanding grazing systems and grass-fed/finished value chains in any location faces commonly "known" challenges: lack of technical assistance, land access, financing, infrastructure, processing, etc. Our goal is to understand how these challenges show up in a specific geography so we can design specific solutions that get short-term results.

- The agriculture landscape changes, particularly as land development moves out from metro areas. Stakeholders can help it change to work with, rather than against development. This means regional value-chains that balance higher production in less-dense areas linked with diverse customer contact and sales points in high development and high-density areas.

- COVID has changed the logistics of getting food to people – these needs and preferences are constantly evolving and should be treated as opportunities to support producers to innovate in low-risk, high-support ways.

- Differences between agriculture communities can vary significantly in how agriculture is defined and regulated. Figuring out how to navigate different perspectives and solutions between these communities will be critical. Includes state, county, local jurisdictions that could influence how to support grazing ag in different areas.

Recommendations

- **Strengthen and expand Kane County's Farmland Protection Program** – specifically its use of temporary and permanent agriculture easements – through a grazing farm pilot to demonstrate the feasibility of supporting grass-fed/finished production throughout the Upper Fox and Kishwaukee watersheds. This includes expanding this program in Kane County, but also into other nearby counties to build regional land access. Black, Indigenous, and People of Color (BIPOC) should be prioritized for land access and business support efforts.

- **Develop a detailed map of grazing suitable lands in the Upper Fox and Kishwaukee watersheds** – including those owned by entities not regularly involved in agriculture discussions (i.e., Catholic diocese, U.S. Department of Energy, etc.) This can and should be built off the preliminary mapping developed for this project. This can and should look at available lands for livestock production outside of beef animals. Poultry and small ruminants may be more suited for smaller plots of land and can be more financially accessible for beginning graziers, specifically BIPOC graziers. These proteins can also be more suited to meet the cultural preferences of different groups in the greater Chicago metro area.

- **Actively support the use of the Midwest Grazing Exchange** in the watersheds to develop contract grazing opportunities with non-operating landowners. This includes working to support agreements between landowners and graziers for the establishment of grazing infrastructure (i.e., perimeter fencing, water, etc.) through long-term contract grazing agreements.

- **Conduct dedicated outreach and analysis to regional slaughter, processing, and cold storage businesses** to assess current capacities and services, including scoping options for plant upgrades and constructing a new USDA inspected plant that is cooperatively run by area producers and can provide a range of services for direct-to-consumer markets.

- **Expand outreach, education, and technical support on direct-to-consumer market opportunities** for current and potential grass-fed/finished producers in the Upper Fox and Kishwaukee watersheds, including mapping the relevant markets, developing go-to-market strategies, and encouraging cooperative marketing that supports increased consumer preference for locally produced products.

- **Map all the relevant government jurisdictions overlaying the Upper Fox and Kishwaukee watersheds**, specifically focusing on trends and drivers of agricultural land development, to develop relationships and advocacy with decision-makers on the benefits of planning for and supporting regenerative grazing and grass-fed/finished beef operations (including associated on-farm retail). This includes improved mapping for critical farmland that could be supported by regenerative grazing, as well as modeling the ecosystem and quality of life services that grazing land preservation can provide municipalities and counties.

- **Continue engagement with regional and national brands** (Strauss Brands, Thousand Hills Lifetime Grazed, Seven Sons, etc.) on sourcing grass-fed/finished cattle from the Upper Fox and Kishwaukee – both calves, stocker cattle, and finished cattle – to create opportunities for producers in the area to invest expanded grazing operations. Includes scoping the development of a local brand to support producers if established regional and national brands are not interested or feasible.

- **Establish a working group of regional distributors, retailers, and institutional buyers** in the greater Chicago area that are interested in sourcing locally produced grass-fed/finished beef to develop estimates for commonly needed products, price points, and opportunities to invest in value-chain improvements through advance contracting. Includes scoping the development of an outreach and education program for registered dieticians, nutritionists, and general consumers in the greater Chicago area on the benefits of locally sourced, grass-finished beef from regenerative farms.

- **Support the establishment and expansion of grazing farms and grass-fed/finished production in lower-development areas of the watersheds** through increased producer and landowner outreach, education, and technical assistance. Includes scoping opportunities for improving grazing infrastructure – namely perimeter fencing – in these areas through public and private sector funders interested in regenerative agriculture, climate change mitigation, local food security/culture, etc. Again, BIPOC producers should be prioritized as this will encourage diversity in participation in existing and new programs to expand grazing.

- **Continue to build a watershed specific working group** to support expanded grazing and grass-fed/finished production, including adding the following stakeholders to the engaged group: Farm Bureau county representatives (Dan Volkers, Steven Arnold); soil and water conservation district staff (Spring Duffey); NRCS (Adam Olson); food hubs and cooperative groceries (McHenry County co-op, Sugar Beet Co-op, Dill Pickle Co-op); public and private ag lenders (Janeen Vogeler, Dennis Mullins, Paul Dietmann). Outreach is needed to connect efforts with BIPOC-led groups supporting BIPOC producers in the Chicago area. This includes groups such as the Black Oaks Center, Chicago Food Policy Action Council, Grow Greater Englewood, and Urban Growers Collective who have long-standing, trusted relationships, and a strong track record on land access equity.

- **Support expanding availability and participation in federal and state support programs for very small and small animal slaughter and meat processing facilities**, such as the USDA FSIS CIS program and the limited Livestock Management Facilities Program. The former - if optioned by Illinois - will give producers operating in the watershed more options for moving products to interstate markets and lessen dependence on USDA inspected facilities; the latter - which was part of the Business Interruption Grants program funded by federal COVID relief legislation - as only open for one month and limited to five million dollars. More support is needed for very small and small slaughter and processing facilities in Illinois, Wisconsin, and all surrounding states. Pending federal legislation for supporting

small slaughter and processing facilities - such as the Strengthening Local Processing (SLP) Act - should be supported as continuations of efforts during the pandemic. The SLP Act would provide food safety planning support, bolster state meat inspection program, expand the CIS program, fund facility improvements, and drive training, education, and technical assistance.