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Executive Summary

Project Overview

Understanding Minnesota's Wool Economy was a Collaboration between Get Bentz Farm, Three Rivers Fibershed, and the University of Minnesota Regional Sustainable Development Partnerships (RSDPs).

Understanding Minnesota's Wool Economy aimed to study the 'who,' 'what,' 'where,' and 'why' of wool and meat production in Minnesota's sheep farming industry. With a focus on sustainability, this project also sought to understand the motives behind shepherds' use of regenerative and conservation farming practices.

A graduate student researcher worked closely with Three Rivers Fibershed, Get Bentz Farm, and the U of MN RSDPs program over the course of the Fall 2021-2022 academic semester. Project methods included interviews with shepherds, informational surveys, printed and virtual informational products for public distribution, a written report, and a prepared presentation.

Key Facts

- Minnesota has the 12th largest sheep population in the United States (Agweek, 2014).
- Sheep production is a sustainable practice when certain methods are employed (Caroprese, 2015).
    - Sustainable methods include compost application, silvopasture, managed rotational grazing, no till/minimum tillage, over seeding, pollinator habitat plantings, reduction of artificial and synthetic chemicals, and more.
- Each breed of sheep has a unique set of fiber properties which include luster, durability, color, dyeability, crimp, fineness, staple length, and elasticity (Three Rivers Fibershed, n.d.).

- The Rambouillet sheep is the most common breed in the United States (Hagen, 2016), however our data found that Icelandic Sheep are the most commonly raised by this project's respondents.

Study Highlights

The Understanding Minnesota's Wool Economy project gained recognition and generated excitement among Minnesota shepherds and wool product producers.

"Thanks for initiating this study! Look forward to learning more about MN wool producers and processors." -Survey Respondent

"I'm interested in understanding the wool supply chain." -Survey Respondent

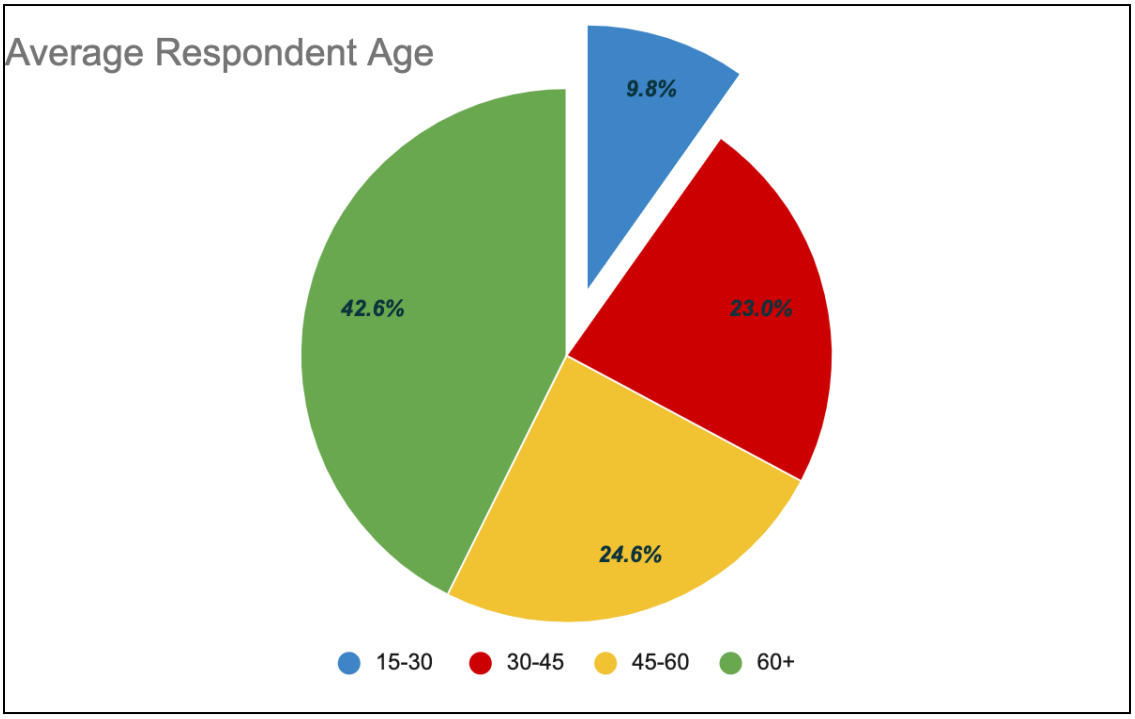
"Good of you to do this."-Survey Respondent

"nicely done survey" -Survey Respondent

"Now that I know my wool has some value, I'd like to know how to better manage my ewes to improve the quality of our wool -- nutrition, pasture management, lambing/weaning management" -Survey Respondent

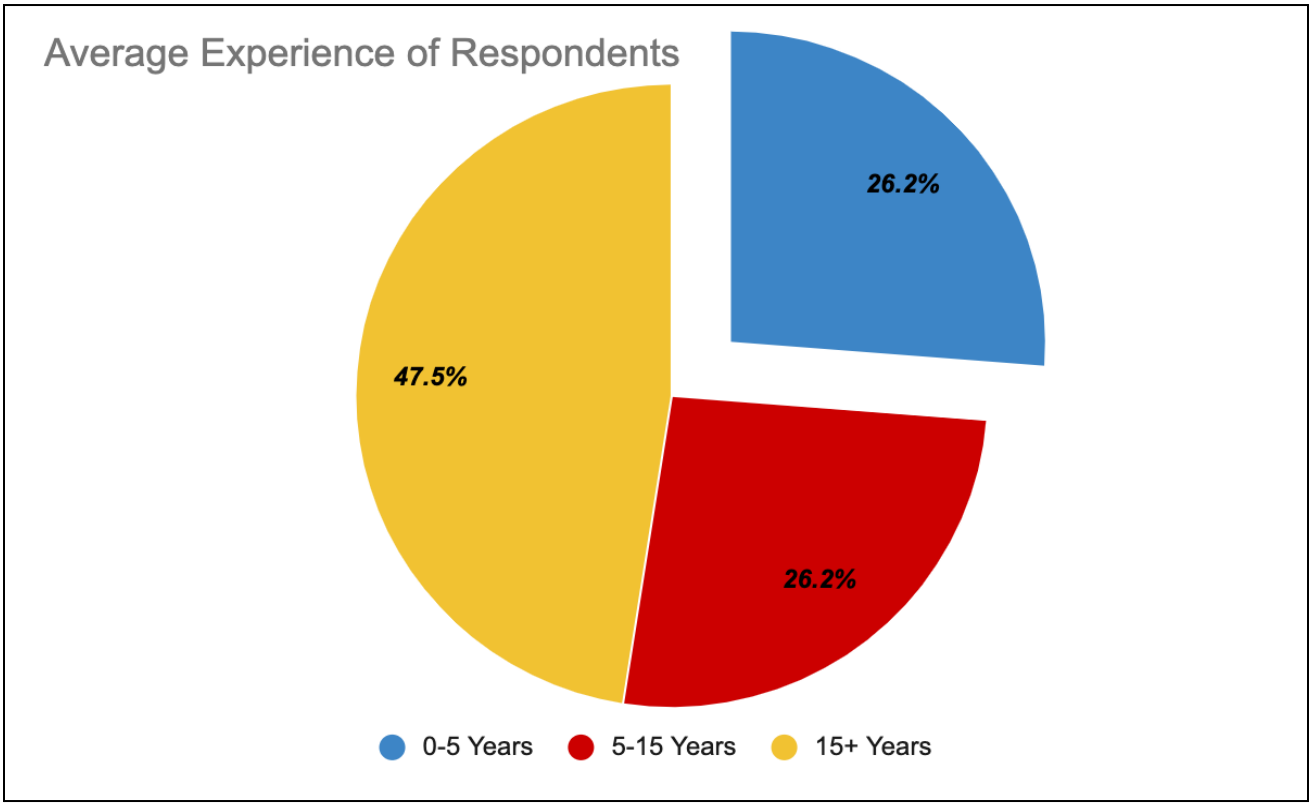
There were a total of 61 respondents, many of whom were willing to participate in further applicable studies. The respondents varied in age and experience level, and many producers sold both wool and meat products from their farming practice. A variety of demographic charts are highlighted in this section.

Average Age of Respondents



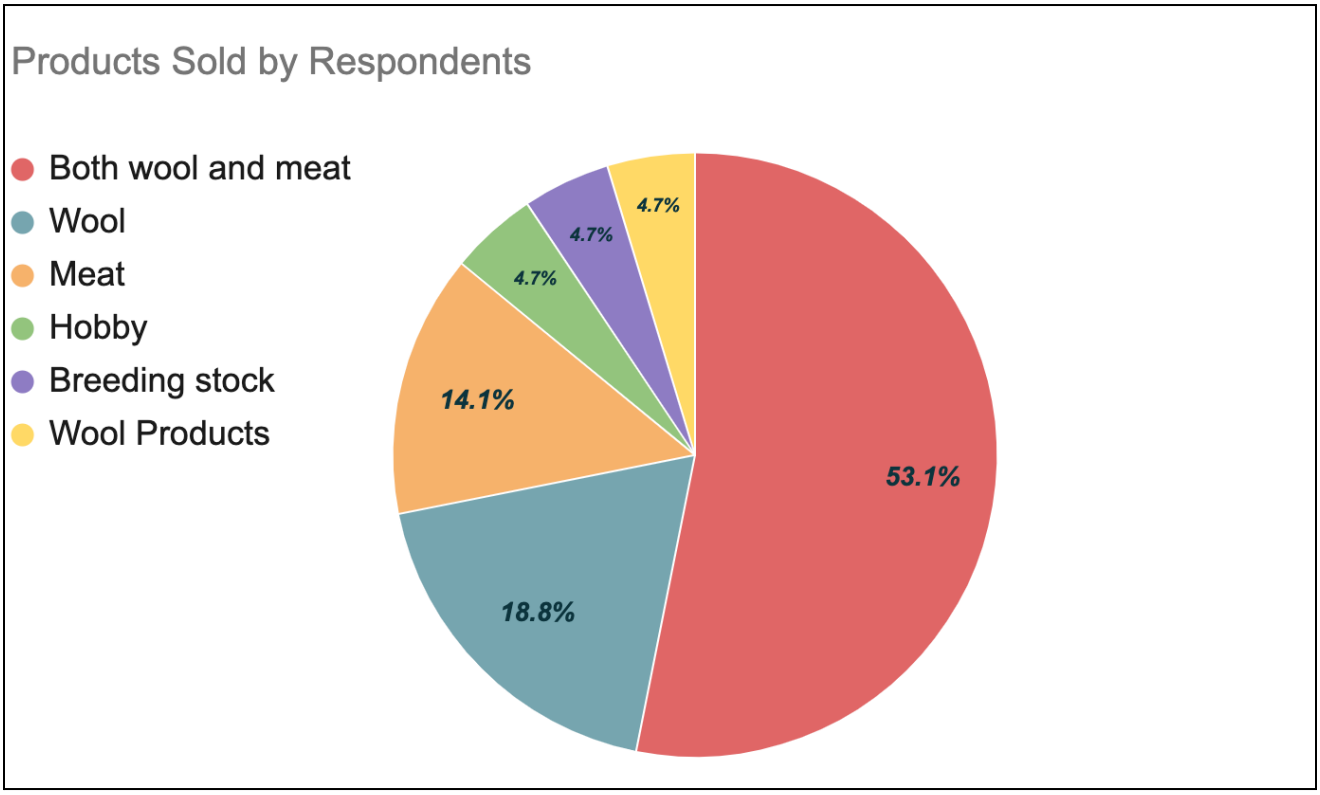
Nearly half of respondents were aged 60 years or older. Approximately a quarter of respondents were aged between 45-60 years of age, with another near-quarter aged between 30-45 years old. Just below ten percent of respondents were between the ages of 15-30 years of age.

Average Experience of Respondents



Approximately one half of respondents had 15 or more years of shepherding experience, with approximately one quarter of respondents having 0-5 and 5-15 years of shepherding experience.

Most Commonly Sold Products



Just over half of respondents sold both wool and meat from their sheep. The other half of responses were split between 5 other categories: wool, meat, hobby, breeding stock, and wool products. Wool comprised nearly 20 percent of responses, and nearly 15 percent of responses were meat. Hobby, Breeding Stock, and Wool Products respectively comprised nearly 5 percent each.

Hobby refers to sheep kept for no product or capital-related reason. Breeding Stock refers to keeping sheep for the purpose of breeding more sheep. Wool Products refer to items made by the seller with wool such as yarn and fleece. Respondents were allowed to select more than one option for this question.

Literature Review

Minnesota is a popular area to raise sheep, and has been noted as a top state for lambs marketed per ewe for decades (Hagen, 2016), ranked the twelfth largest sheep population in the United States (Agweek, 2014). According to an University of Minnesota interview with Randy Kinney, president of the Minnesota Lamb and Wool Producers, raising sheep and byproducts is generally a simple addition for many farms, with many farmers utilizing sheep farming as a secondary enterprise or as a hobby (UMN Extension, 2018). Despite the popularity of sheep farming in the state, a recent decrease in related numbers has been noted. As of January of 2020, the Minnesota sheep and lamb inventory totaled 115,000 sheep. This was lower than 2019 by eight percent while total breeding stock was down ten percent from 2019. Total wool production in Minnesota was down three percent from 2019 at 620,000 pounds produced in 2020 (Lofthus, 2020). Though Minnesota is a popular place for sheep farming, wool has historically not been worth the cost of shearing (Agweek, 2014). Though wool has recently declined in popularity, sheep raised for meat is seeing an increase with a demand increase of 1.7% per year between 1983 and 2013 which is projected to continue as the global population grows (Amaral et al, 2016).

Wool production is a sustainable practice and renewable resource, as shearing does not harm the animal and wool grows back each year (UMN Extension, 2018). Sheep harvesting for meat can also be a sustainable practice when certain methods are employed (i.e. managed rotational grazing and reduction of artificial and synthetic chemicals), however on a global scale sheep farming is not always a sustainable practice: “Ruminant livestock produce about 80 million tons of methane (CH4) accounting for about 28 % of anthropomorphic emissions each year” (Caroprese, 2015). Sheep specifically produce 16.3 grams per kg of ingested organic matter, equating to 5.1% of gross energy is produced into methane in the average sheep (Amaral et al, 2016). Begging the question noted as a Woolcompany article title, “Can we still roast lamb without frying the planet?” (Woolcompany, 2021).

Sustainable development is often split into three categories: environmental, social, and economic sustainability. These categories encompass the need to preserve and protect the natural environment while meeting human requirements in the present and in the future (Caroprese, 2015). Sustainable development is relevant to both sheep farming for meat and for wool. Wool

is a sustainable product in part because the wool on a sheep's body grows persistently. Shearing generally takes place in the spring of the year to remove excess heat on bodies in preparation for summer warmth. A single pound of sheep wool creates up to 10 miles of yarn (Minnesota Zoo, n.d.).

Shepherds can provide consumers with food and fiber that is sustainable economically and environmentally. The public has an increasing desire to understand the production cycle of animal food products and where their food and products they use come from. This concern also includes social sustainability which encompasses culture, politics, tradition, social institutions, ethics, and civil society (Caroprese, 2015). This responsibility is generally simple to accomplish within the sheep and wool industry because sheep and byproducts are usually produced by family-owned small and mid-sized farms (Hagen, 2016).

Each breed of sheep has a unique set of fiber properties which include luster, durability, color, dyeability, crimp, fineness, staple length, and elasticity (Three Rivers Fibershed, n.d.). With an estimated number of 1,400 breeds of sheep globally, each geographic region of the world meets living requirements for different breeds (Three Rivers Fibershed, n.d.).

The Rambouillet sheep is the most common breed in the United States and is concentrated primarily in the Western U.S. where the majority of sheep in the country are produced (Hagen, 2016). Similar to Rambouillet sheep are Merino sheep, which both fall into the fine wool category and demand the highest wool price. Long wool breeds such as Lincoln, Romney, and Border Leicester sheep are popular among crafters and handspinners due to long staple length and also are profitable breeds in terms of wool value (SDSU Extension, 2021). Very unique wool sheep, known as hair breeds, include Dorper and Katahdin. Heavy fleece breeds are also recognized as valuable and include Columbia, Corriedale, and Targhee sheep. Breeds such as Clun Forest, Jacob, and Shetland are popular on hobby farms and products such as meat, wool, and milk meet demands of niche markets, but are not commonly produced commercially (SDSU Extension, 2021). Suffolks, Hampshires, Southdowns, and Cheviot breeds are aesthetically diverse, but are all commonly identified as meat or ram breeds due to muscle shape, carcass composition, and size. Some sheep are classified as dual purpose, which produce quality wool, meat, and byproducts (qualities of both ram and ewe breeds) which include many breeds such as the Finnsheep, East Friesian, and Icelandic sheep breeds (SDSU Extension, 2021); Icelandic

sheep are popular in Minnesota for their ability to produce quality meat and wool (Johnson, 2022). Shetland sheep are also a common choice among Minnesota shepherds (Johnson, 2022) due to their unique markings and colors, with 11 common Shetland colors and a variety of 30 unique markings that can vary between sheep. Shetland wool often does not require the dyeing process because of its unique aesthetic as well as strength and softness (Minnesota Zoo, n.d.).

Wool can be used for many purposes, all which begin with the process of turning raw fiber to yarn or felt. This process is a lengthy, labor-intensive process that can take many days (Wacker, n.d.). Industry connections between farmers, shearers, crafts-people, and other professionals are extremely important to the wool industry. To aid in connecting these parties, a fibershed such as Three Rivers Fibershed can be utilized. The idea of a fibershed was created in 2010 by Rebecca Burgess with the additional goal of protecting soil and ecosystems, called a ‘soil-to-soil perspective. A soil-to-soil system works to reconnect our textile systems to sustainable, regional land stewardship that sequesters carbon and creates climate-positive textile goods. Every step in textile manufacturing from growing fiber to textile care and disposal is considered in a soil-to-soil system. Soil-to-soil systems such as Three Rivers Fibershed establish a boost to local economies for those within the network (Three Rivers Fibershed, n.d.). The Three Rivers Fibershed was started as an affiliate of the Northern California Fibershed in 2016 and other fibersheds have now arisen throughout the globe.

Introduction to Survey Results

Overall Response

Surveys

The Understanding Minnesota's Wool Economy general survey was distributed beginning on October 12th, 2021 and closed on December 15th, 2021. The survey was received with public excitement; the survey was shared virtually by many third-parties including the Minnesota Department of Agriculture, Renewing the Countryside, the University of Minnesota Sustainable Agriculture program, and others. A total of 61 responses were recorded with many respondents sharing their email addresses for the purpose of further engagement with this project in later iterations. The second survey regarding participant location was sent out on November 22nd, 2021 and closed on December 15th, 2021. This location survey was also distributed by third parties. Both surveys were also shared on social media accounts with the social media materials created for the Understanding Minnesota's Wool Economy project.

In-Person Events

The graduate researcher (Lily Johnson) attended the Harvest Hill Fiber Festival while Three Rivers Fibershed and Get Bentz Farm attended each of the others listed below. These events are dated and listed as follows:

Wisconsin Sheep and Wool Festival
September 10th and 11th
sylvanmeadowsfarm@gmail.com

Farm to Fiber Festival
September 11th, 2021
http://www.farmtofiberfestival.com/

Keepsake Fiber Festival
September 19th, 2021
https://www.mncider.com/

Harvest Hill Fiber Festival
October 2nd and 3rd

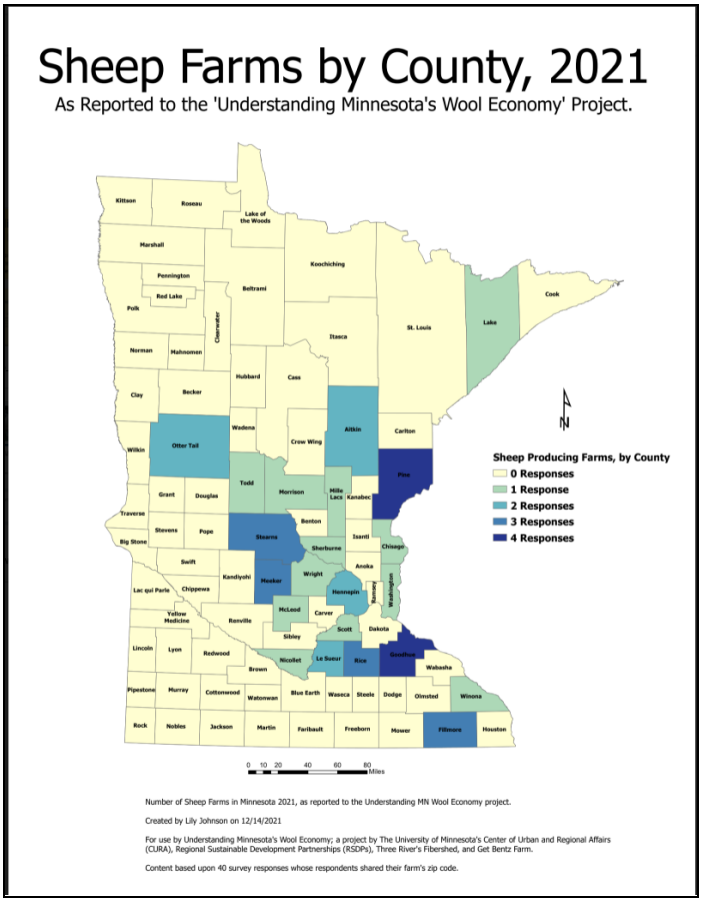
MN Fiber Festival
October 16th, 2021

https://www.minnesotafiberfestival.com/

Fall Fiber Festival
November 7th, 2021

Flyers regarding Understanding Minnesota's Wool Economy were handed out to event visitors at these events with the purpose of spreading awareness of the project and to increase participation.

Response Composition Mapped



The majority of survey responses came from Pine and Goodhue counties. A moderate quantity of responses came from Stearns, Meeker, Rice, and Fillmore counties. Some responses came from Aitkin, Otter Tail, Hennepin, and Le Sueur counties. More came from Lake, Todd, Morrison, Mille Lacs, Sherburne, Chisago, Wright, Washington, McLeod, Scott, Nicollet, and Winona counties.

A larger copy of the map can be found in the appendix and via the link in this section's title. A comparison map of all of the sheep farms and wool producing farms in the state can also be found in the appendix or via the link above.

Interview

Only one interview was secured during the extent of the Understanding Minnesota's Wool Economy project. The interview's duration was approximately 45 minutes and a total of 10 questions were asked. The interviewee was Wayne Martin, The Extension Educator of

Alternative Livestock Systems for the University of Minnesota Extension Service.

The questions asked of Wayne were formulated by the Understanding Minnesota's Wool Economy project team. The questions were made to surround the themes of demographics of Minnesota sheep farms, barriers and needs of Minnesota sheep farms, and if co-ops, wool pooling systems, or tool sharing systems would be beneficial to shepherds in Minnesota.

Wayne shared that he served primarily the shepherds of the outer metro area of the Twin Cities in Minnesota, which include south central, southeast, north and east of the Twin Cities through Saint Cloud and Albany. Wayne often worked with the UMN Extension Small Ruminant Team to

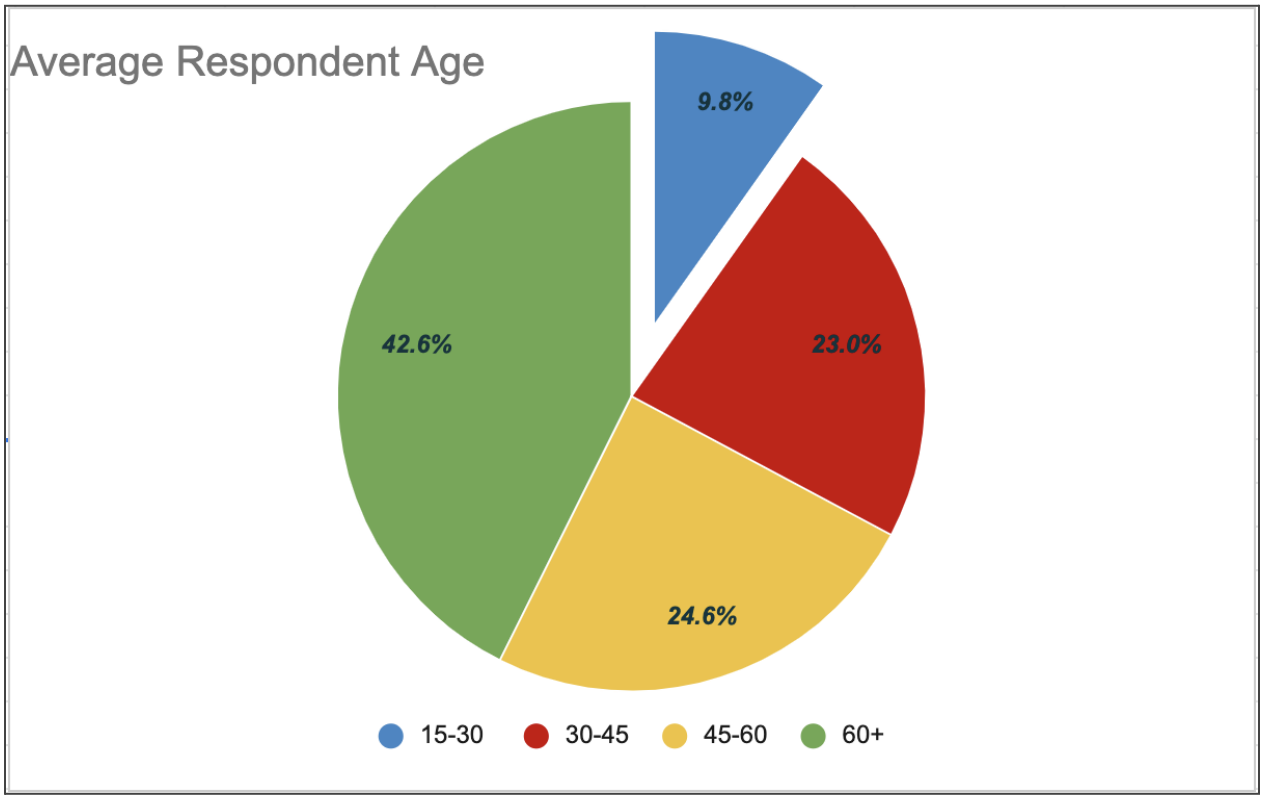
organize in-person and virtual workshops to help shepherds with various topics; the virtual workshop options sometimes reached shepherds in countries around the world.

Wayne offered that Sheep production is scattered across the state of Minnesota, and said that of approximately 2,300 sheep farms in Minnesota, approximately 2,000 of them have 100 or less ewes and often the reality is that a farm will have 50 or less ewes at one time. As is seen on the appended map, sheep farms are scattered throughout the southern half of Minnesota. Wayne's experience was that farmers in the outer metro area often required supplemental income in the form of extra employment, vegetable farming, or other additional programming; sometimes additional employment could be necessary to obtain health insurance. Selling wool was noted as a side-hobby of farms because the cost of shearing could be too high to justify the production and selling of wool.

Regarding co-ops, wool shares, and tool sharing, Wayne was not aware of local programs or interest that would justify such programs, though that might develop over time.

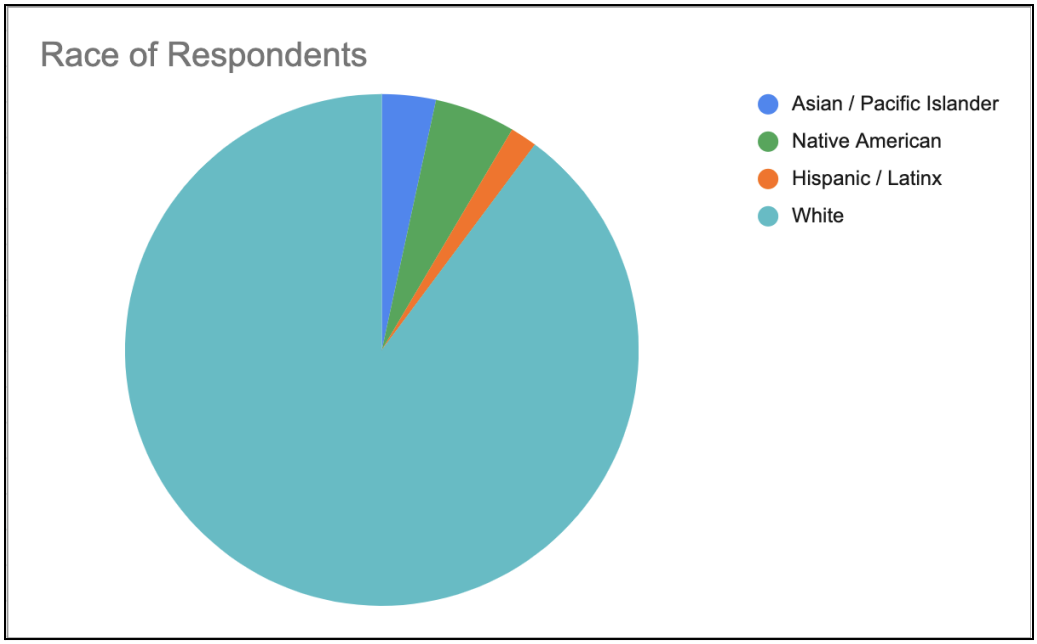
Demographics

Age



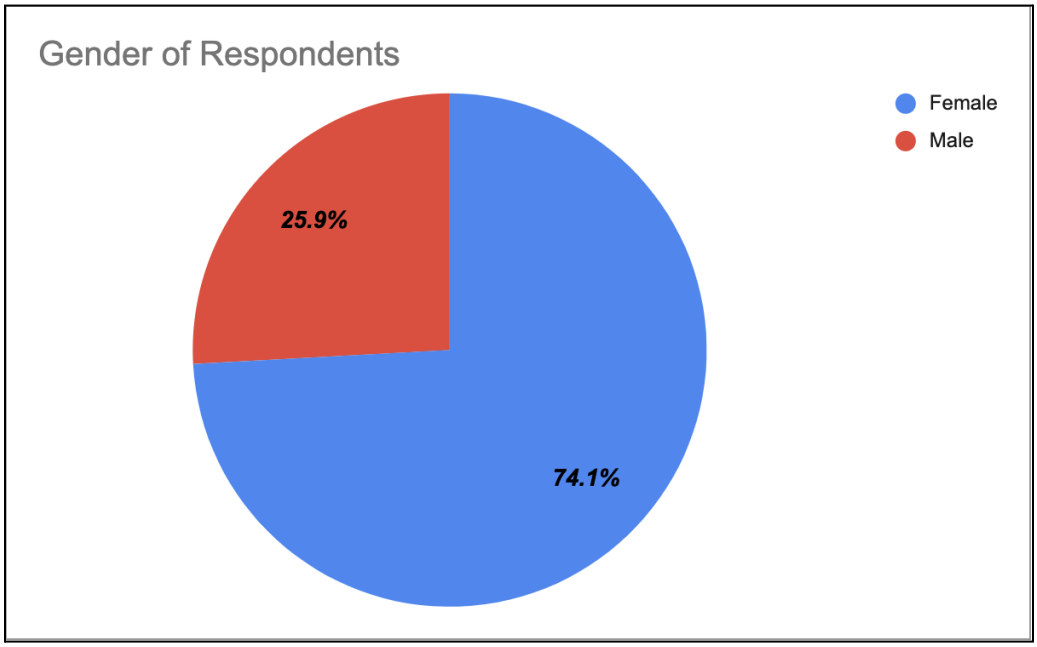
The average respondent, 42.6%, was aged 60 years or older. Nearly one quarter of respondents fit into the cargeories of 30-45 years old and 45-60 years old. Just under 10% of respondents were 15-30 years old.

Race



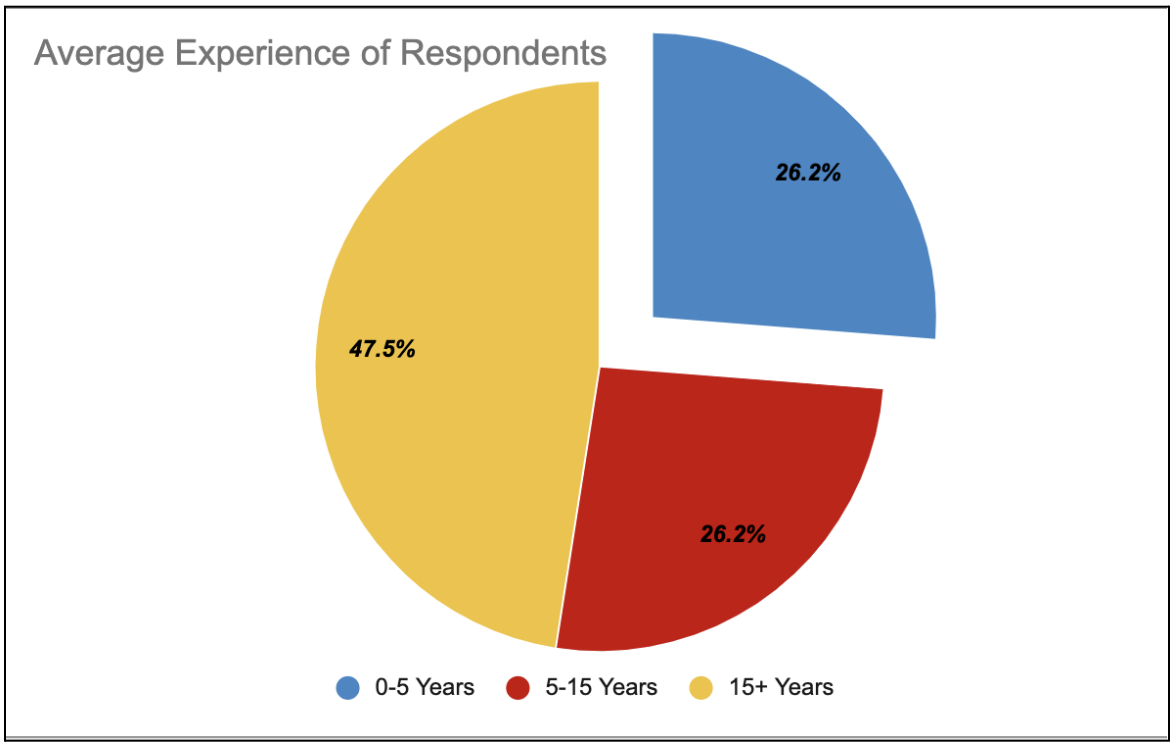
90% of respondents identified as white, while 5% of respondents were Native American, 3% were Asian or Pacific Islander, and under 2% were Hispanic or Latinx.

Gender



Nearly 75% of respondents were female, while just 26% were male.

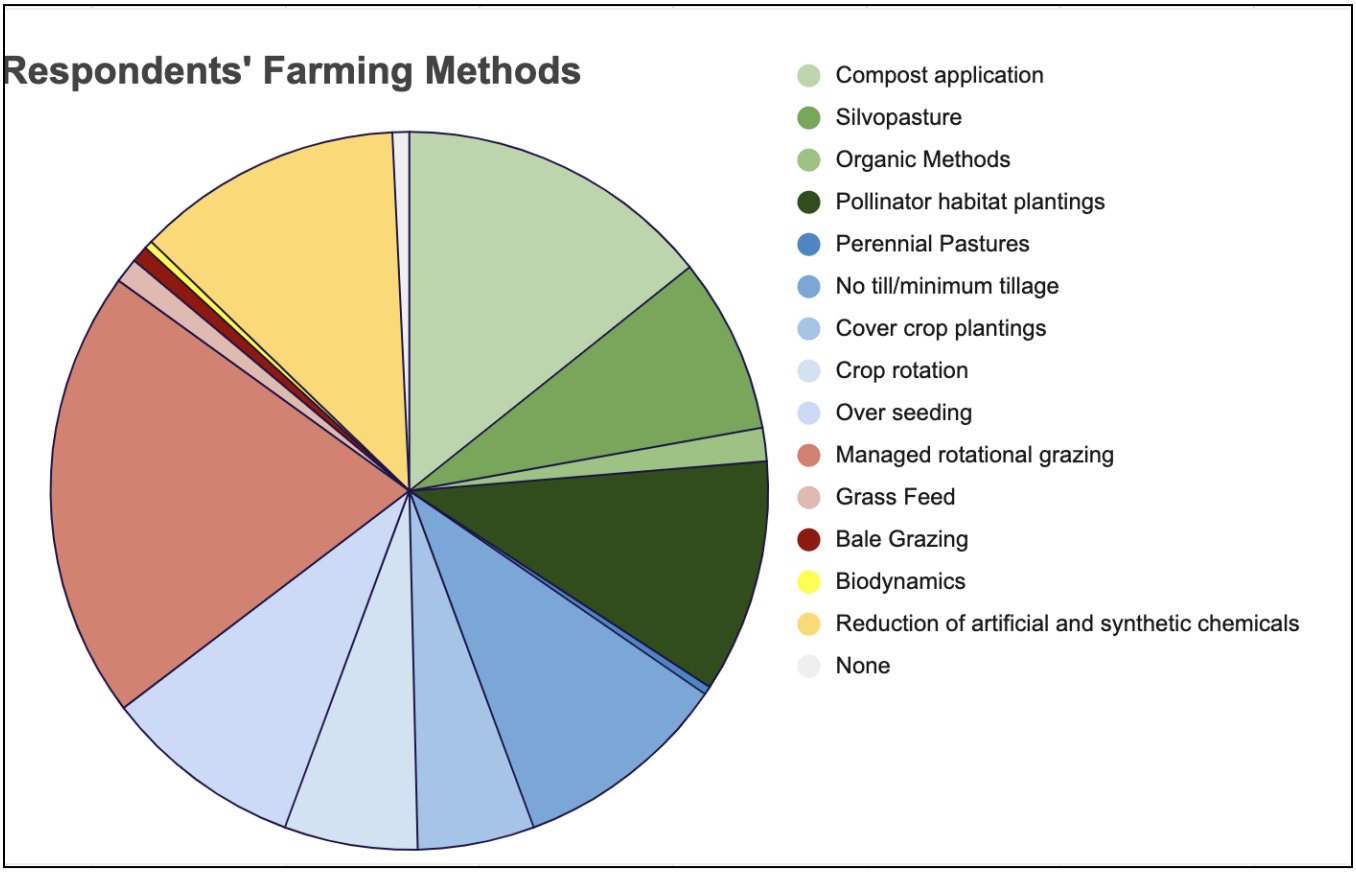
Experience



Almost half of respondents had been in the sheep farming industry for 15 or more years, while approximately one-quarter of respondents had both 0-5 years of experience and 5-15 years of experience respectively.

Practice

Farming practice



Green Hues: Regarding gardening practices.

Blue Hues: Regarding crops.

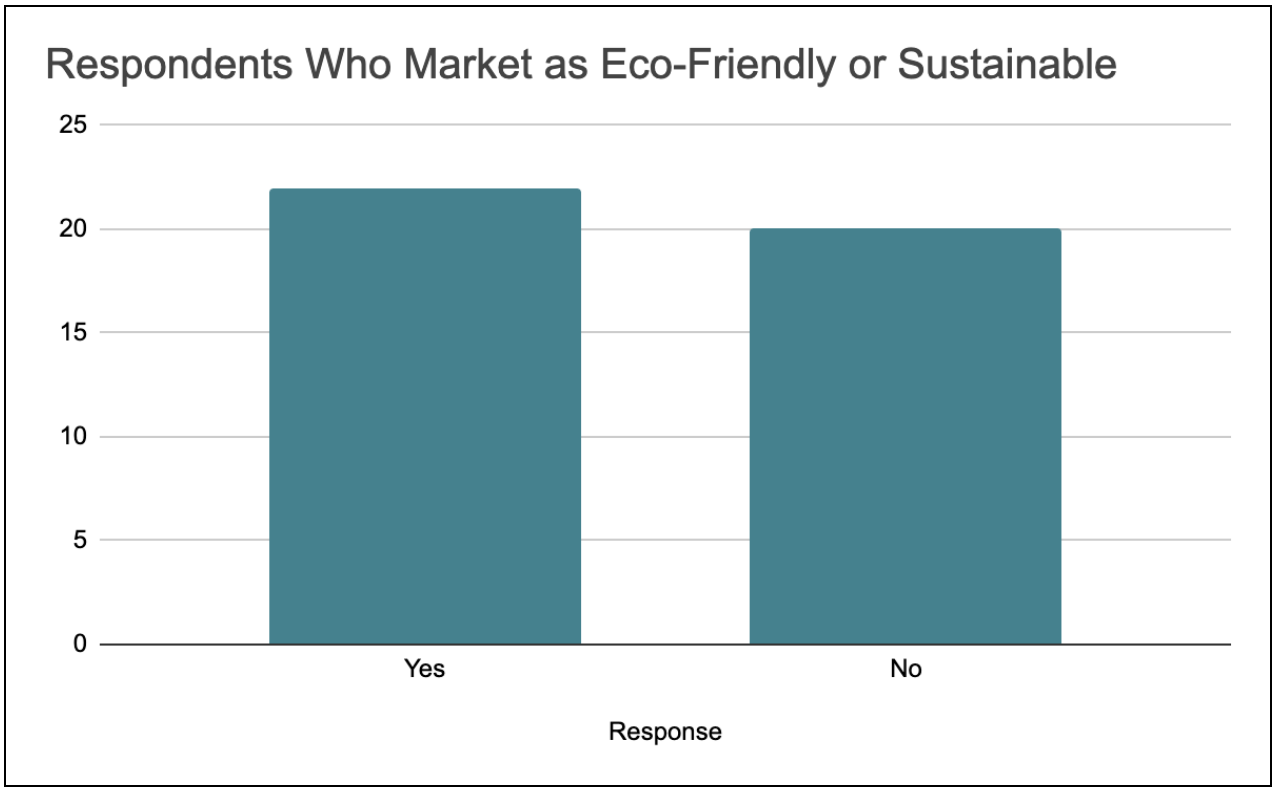
Red Hues: Grazing methods.

Yellow Hues: Regarding chemical reduction.

White: No additional farming methods.

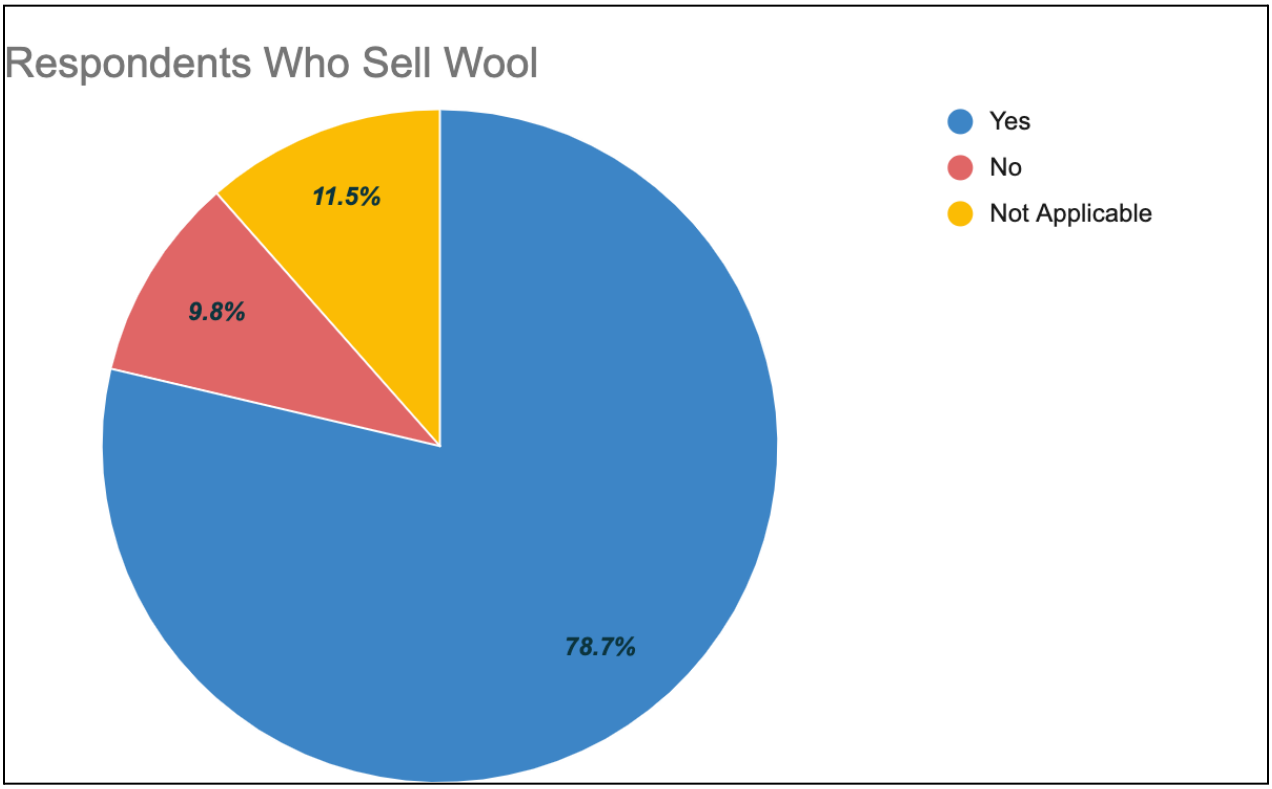
Managed rotational grazing was the most common intentional farming method noted by one quarter of respondents. Other common practices included compost application, reduction of artificial and synthetic chemicals, and pollinator habitat plantings.

Respondents were allowed to write-in additional answers if their concerns were not yet listed. These answers were then sorted and combined appropriately to fit into the above categories.

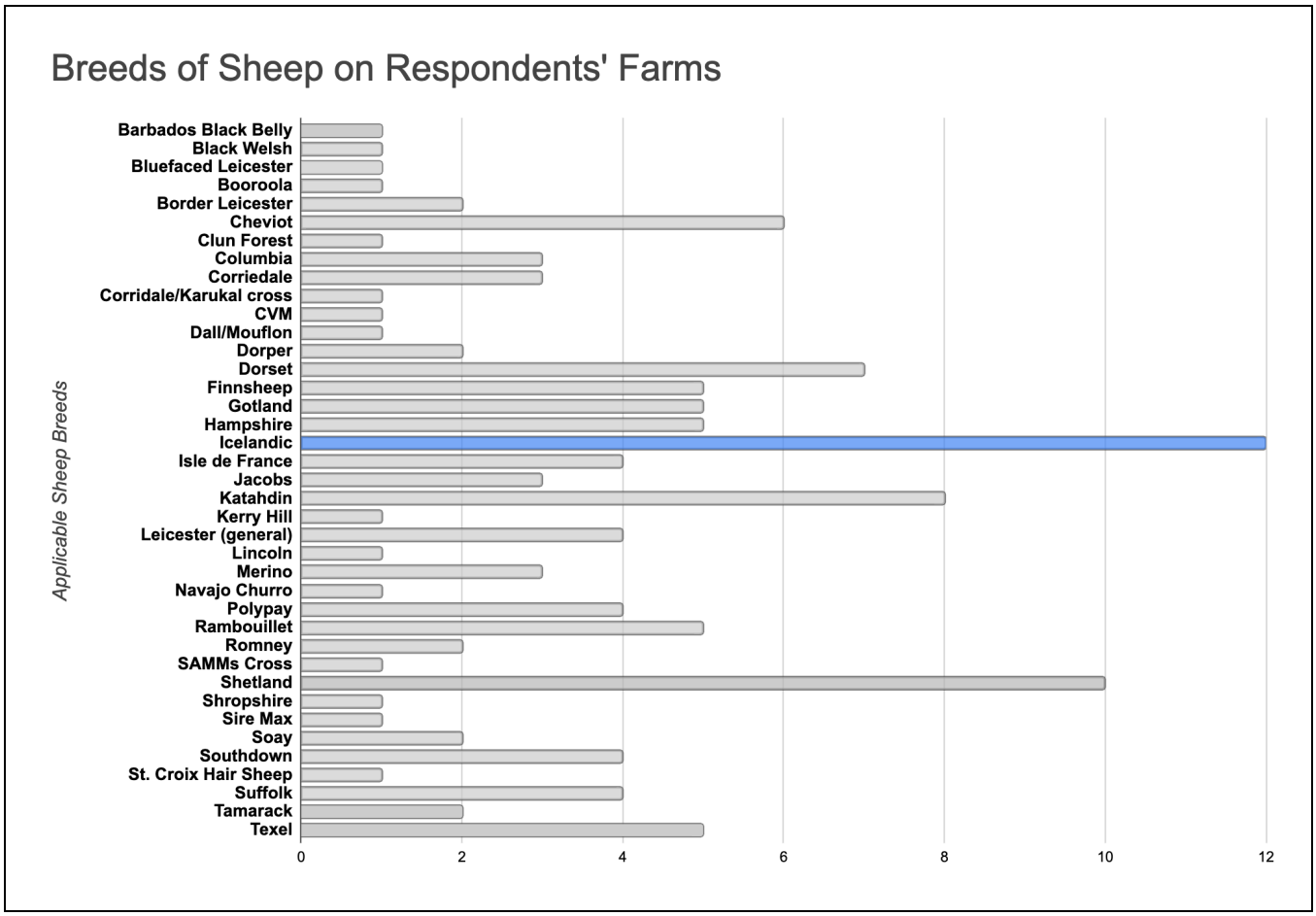


Just over half of respondents market their products specifically as Eco-Friendly or Sustainable. Just under half of respondents do not market this way.

Survey Results

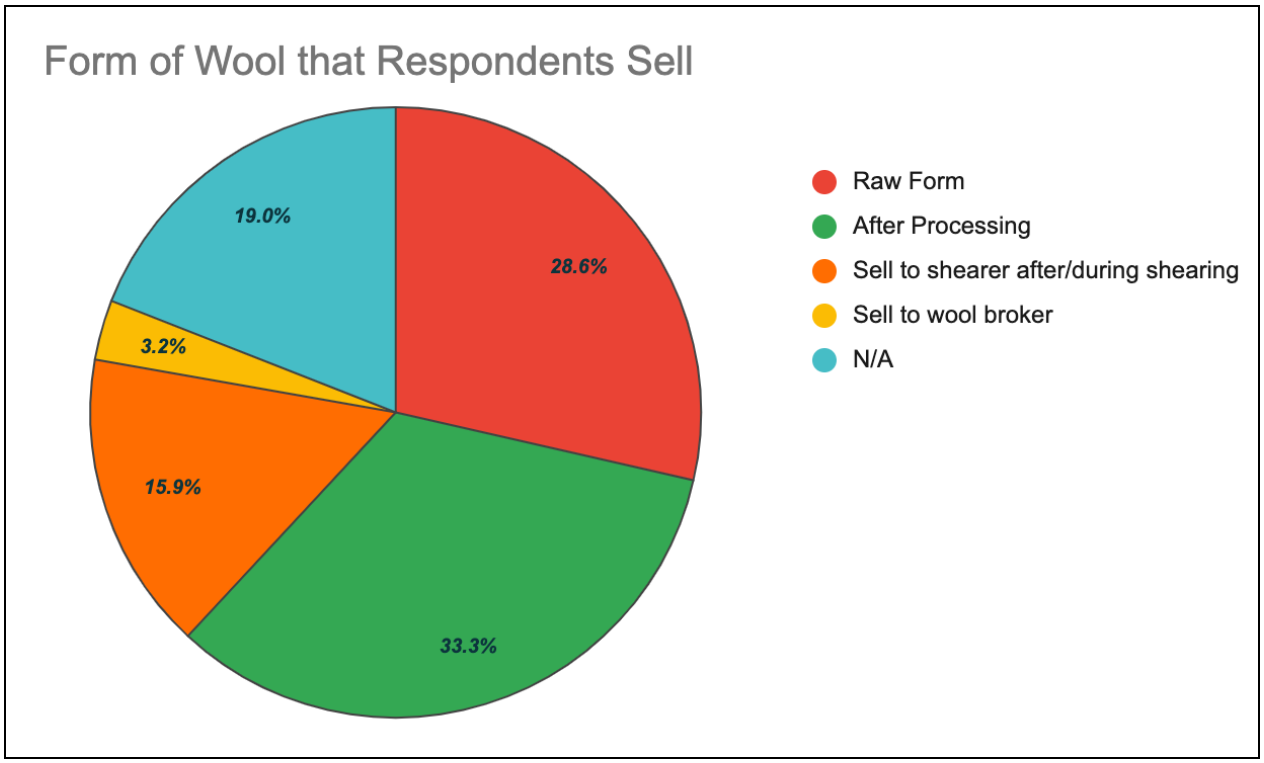


Nearly 80 percent of respondents sold wool from their farms, just under ten percent of respondents did not sell wool, and just over 10 percent marked that selling wool was not applicable to their practice.



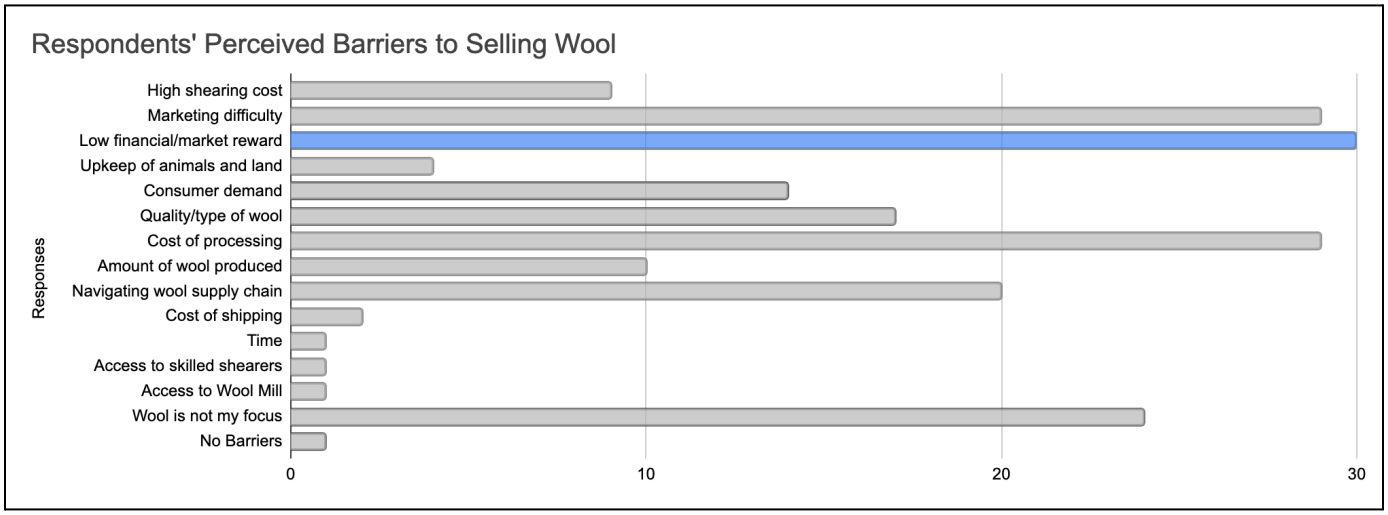
Respondents reported a cumulative 39 breeds of sheep throughout the state of Minnesota. Icelandic sheep were the most common breed of sheep, with twelve separate respondents indicating that they have that breed on their farm.

Respondents were allowed to mark more than one breed or write-in their own answer if their sheep breeds were not yet reflected. These answers were then sorted and combined appropriately.



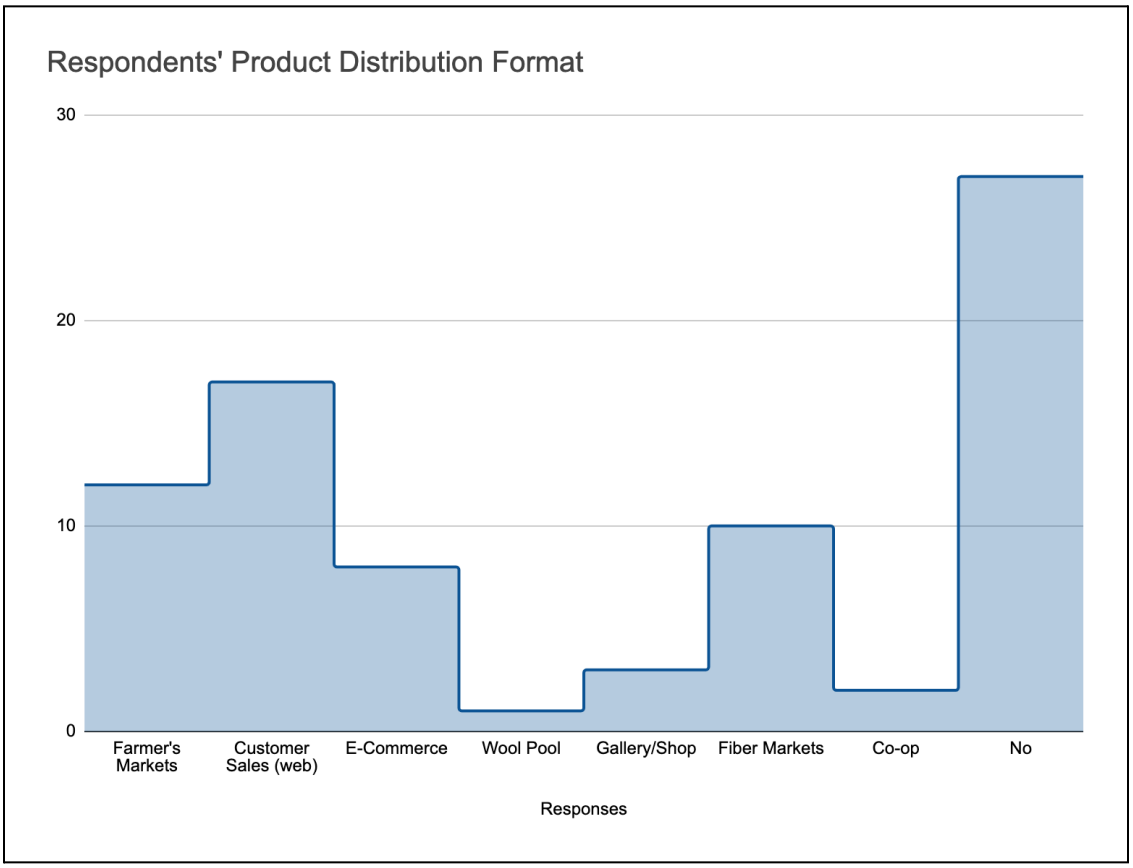
Approximately one third of respondents sold their wool after processing (post-shearing, cleaning, sorting, carding, spinning, weaving, and finishing), one third sold their wool in raw form, and one third was broken into three additional categories: Sell to Shearer After/During Shearing (~15%), Sell to Wool Broker (~4%), or Not Applicable (~20%).

Respondents were allowed to mark more than one answer for this question.



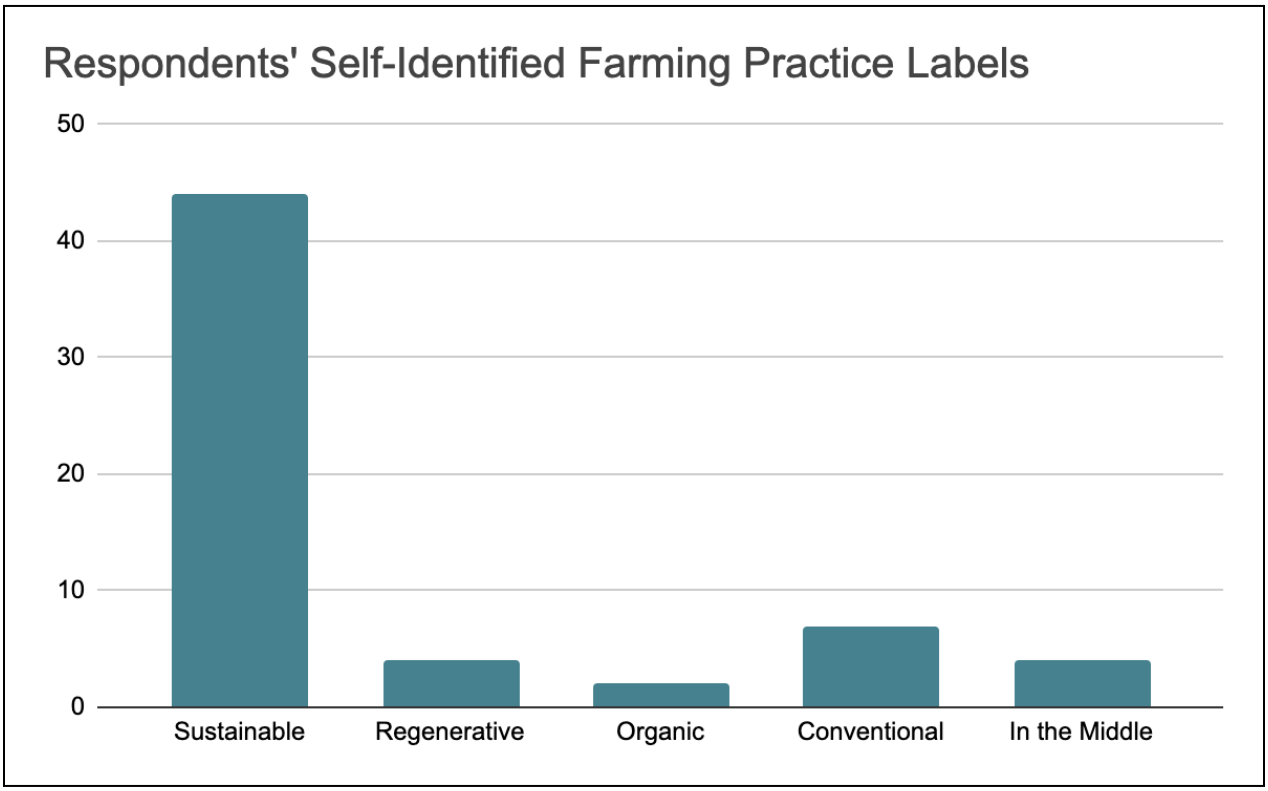
The highest barrier to selling wool listed by respondents was a low Financial/Market Reward with 30 of 61 respondents marking it as a concern. Just behind this concern are Marketing Difficulty and Cost of Processing.

Respondents were allowed to write-in additional answers if their concerns were not yet listed. These answers were then sorted and combined appropriately to fit into the above categories.



This question was formulated to understand if and how shepherds most commonly distribute their products via third party options in Minnesota. Many respondents did not utilize a third party which could indicate that they sell privately on their property or not at all. Third parties were categorized for the purposes of this study as farmer's markets, customer web sales, E-commerce, wool pools, galleries or shops, fiber markets, and co-ops. Web Sales on personal business websites were most popular among respondents that indicated that they did utilize third parties for selling products, followed by Farmers Markets, followed by Fiber Markets, then E-Commerce sites such as Etsy, then via a Gallery or Shop, and finally the least popular categories were selling via a co-op or wool pool.

Respondents were allowed to mark more than one answer for this question.



The majority of respondents of this study identified their farm as a sustainable farming practice. Less than ten respondents identified as the following: regenerative, organic, conventional, or identify somewhere between conventional and sustainable practice.

Methodology

Project methodology included six parts: surveys, interviews, meetings, in-person events, data analysis, and a literature review.

- Surveys - two surveys were distributed via Google Forms, one with general project questions and one with distribution and location questions (see appendix). Surveys were distributed via project affiliates and third parties including Minnesota Grown, Three Rivers Fibershed, Minnesota Department of Agriculture, Sustainable Agriculture listservs, SFA, Minnesota Grown, Get Bentz Farm.
- Team meetings were held virtually each Monday morning with additional meetings conducted as needed.
- One interview was conducted near the conclusion of the project with Wayne Martin, Extension Educator of the Alternative Livestock Systems at the University of Minnesota Extension Service (see appendix).
- In-person events were attended by graduate researcher Lily Johnson, project director Theresa Bentz of Get Bentz Farm, board members of Three Rivers Fibershed, and other members of the University of Minnesota RSDPs to distribute tabling materials (see appendix) and raise awareness of the Understanding Minnesota's Wool Economy project.

Findings

The Understanding Minnesota's Wool Economy project set out to understand the 'who,' 'what,' 'where,' and 'why' of wool and meat production in Minnesota's sheep farming industry. With a focus on sustainability, the project also sought to understand the motives behind shepherds' use of regenerative and conservation practices in their farming. The project succeeded in gathering this information and provides a well-rounded explanation of general practices of Minnesota shepherds.

A variety of 39 breeds of sheep are raised on farms in Minnesota, both for wool and meat. Most shepherds raise sheep for both wool and meat which can be seen in the most popular breeds of this study, Icelandic and Shetland sheep. 52% of respondents noted that they market their wool as “Eco-Friendly” or “Sustainable,” and many shepherds either do not utilize a third party (defined as farmer’s markets, customer web sales, E-commerce, wool pools, galleries or shops, fiber markets, and co-ops) or sell via a personal website.

Minnesota shepherds utilize a variety of sustainable or additional methods to conventional farming. Managed rotational grazing was the most common intentional farming method noted by one quarter of respondents. Other common practices included compost application, reduction of artificial and synthetic chemicals, and pollinator habitat plantings.

A variety of common barriers to selling wool and/or sheep farming in Minnesota were identified through the Understanding Minnesota’s Wool Economy survey. The highest barrier to selling wool listed by respondents was a low Financial/Market Reward with 30 of 61 respondents marking it as a concern. Just behind this concern are Marketing Difficulty and Cost of Processing.

Study Limitations

Through the duration of this project, the COVID-19 pandemic limited the ability to conduct some aspects of data collection such as in-person interviews and attendance at multiple events.

The graduate researcher, Lily Johnson, was located in Minneapolis, MN while the scope of the project was state-wide. Location-based limitations included a lessened ability to form relationships with project partners and difficulty in traveling to related events.

Understanding Minnesota’s Wool Economy was supported with a one-semester funding allotment, which limited the extent of the project. A future study would benefit from more time to establish connections with participants, conduct sufficient interviews, and attend additional networking events. The Understanding Minnesota’s Wool Economy surveys were circulated over

the fall of 2021, resulting in the exclusion of events and individuals active in the spring or summer months.

Surveys were delivered virtually due to material and time restrictions, however a wider audience could have been reached if physical surveys were distributed. A future study would benefit from the collection of email addresses for all respondents versus just for those who choose to provide their email address. This would allow more accurate follow-up with individuals to answer questions or expand on their thoughts.

The verbage selected for the project may have discouraged non-wool producers from participating, thus limiting project reach.

Future of Understanding Minnesota's Wool Economy

Distribution Plan

Send the completed report, factsheets, maps, and the prepared presentation to every respondent who requested project results.

Send the completed report, factsheets, maps, and the prepared presentation to major organizations in the sheep and agriculture industry.

Post the completed report, factsheets, maps, and the prepared presentation to the Three Rivers Fibershed website.

Communicate with the Sustainable Farming Association to secure the inclusion of the completed report, factsheets, maps, and the prepared presentation in a future newsletter.

Second study could easily be accomplished

This study identified current and future needs for additional research for the wool and meat market in Minnesota. We will pursue future funding opportunities to further the research. Some categories that arose from the data include:

- Helping shepherds find value in their wool (including markets).
- Niche market pricing in MN (determining prices within a niche market).

- Shearing and processing costs for wool (as costs have increased, creating realistic estimates for services).
- Lack of USDA butchers in the state (with demand for more lamb, this impacts the potential for Minnesota grown wool).

A need to include terminology that communicates inclusion for hair sheep breeds and meat sheep in future research has become a clear benefit to future studies. Using the word 'wool' can have different meanings depending on what part of the sheep industry a shepherd is part of. This need is an aspect not considered at the beginning of the Understanding Minnesota's Wool Economy project.

Additional Interviews

More interviews with stakeholders throughout MN would help to bring more detail and nuance to the Understanding Minnesota's Wool Economy study. Especially in areas where responses were lower (Northern MN, Western MN etc.).

Helpful Resources

Three Rivers Fibershed

https://www.threeriversfibershed.com/

threeriversfibershed@gmail.com

"Affiliate branch of Fibershed, connecting local fibers, dyes and labor in a 175 mile radius around Minneapolis, MN."

@Threeriversfibershed

GET BENTZ FARM

Get Bentz Farm

Address: 30700 Northfield Blvd, Northfield, MN 55057

(651) 271-5142

@getbentzfarm

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Appendix I.

Surveys

Email Draft Sent to Potential Survey Distributors

[Greeting]

I am a graduate researcher working on a project for the University of Minnesota Regional Sustainable Development Partnerships, Three Rivers Fibershed, and Get Bentz farm. We have partnered to conduct a study researching the 'who,' 'what,' 'where,' and 'why' of sheep product production in Minnesota's sheep farming industry. This project also seeks to understand the motives behind shepherds' use of regenerative and conservation practices.

Below, please find the link to the online research survey for our Understanding MN Wool project. Please fill out this survey and distribute to other shepherds in your community.

[Link to Online Form]

Let us know if you have any questions!

Best regards,

Lily Johnson

Graduate Researcher

Survey Questionnaire

Understanding Minnesota's Wool Economy

A Collaboration between Get Bentz Farm, Three Rivers Fibershed, and the University of Minnesota Regional Sustainable Development Partnerships (RSDPs)

Understanding Minnesota's Wool Economy aims to study the 'who,' 'what,' 'where,' and 'why' of wool and meat production in Minnesota's sheep farming industry. With a focus on sustainability, this project also seeks to understand the motives behind shepherds' use of regenerative and conservation practices.

A graduate student researcher will work closely with Three Rivers Fibershed, Get Bentz Farm, and the U of MN RSDP program over the course of the 2021-2022 academic year. Project methods will include interviews with shepherds, informational surveys, printed and virtual informational products for public distribution, a written report, and a prepared presentation.

https://www.threeriversfibershed.com/

This survey will take approximately 10 minutes to complete. Results will not be shared in an identifiable manner to ensure privacy. We appreciate your time.

Demographic Data

What age category do you fit in?

15-30

30-45

45-60

60+

Which of the following describes your ethnicity? (Select all that apply).

Asian / Pacific Islander

Black or African American

Middle Eastern

Native American

Hispanic / Latinx

White

I prefer not to say

Other

Please indicate your gender (write-in if not included)

Female

Male

Nonbinary

Transgender

Intersex

I prefer not to say

Other

What is the highest degree or level of school you have completed?

None

Some high school, no diploma

High school graduate, diploma

Some college credit, no degree

Associate degree

Bachelor’s degree

Master's degree or higher

How long have you been in the sheep farming industry?

0-5 Years

5-15 Years

15+ Years

Raising Sheep in Minnesota

We want to know about you!

What do you sell from your sheep?

Wool

Meat

Both wool and meat

Other

What breeds of sheep do you raise? (check all that apply)

Barbados Black Belly

Border Leicester

Cheviot

Columbia

Corriedale

CVM

Dorper

Dorset

Finnsheep

Gotland

Hampshire

Icelandic

Jacob

Katahdin

Leicester

Lincoln

Merino

Montadale

Polypay

Rambouillet

Romney

Shetland

Shropshire

Soay

Southdown

Suffolk

Targhee

Texel

Other

Selling Wool in Minnesota

We want to know about your wool!

Do you sell your wool?

Yes

No

N/A

What form do you sell your wool in?

Raw Form

After Processing

Sell to shearer after/during shearing

Sell to wool broker

N/A

Do you market your wool as 'eco-friendly' or 'sustainable'? (Select all that apply).

Yes: Locally made/ local

No: I do not market as 'eco friendly' or 'sustainable'

N/A

Other

<u>Barriers to Selling Wool</u>

We want to understand the struggles you face in the wool industry.

What do you perceive as barriers to selling wool? (Select all that apply).

High shearing cost

Marketing difficulty

Low financial/market reward

Upkeep of animals and land

Consumer demand

Quality/type of wool

Wool is not the focus of my business

Cost of processing

Amount of wool produced

Navigating wool supply chain

Other

Understanding Minnesota's Wool Markets

We want to know about where your wool goes!

Do you distribute your products through a third party? (Select all that apply).

Yes: Sell at fiber markets

Yes: Sell on e-commerce sites such as Etsy

Yes: Sell at farmers markets

Yes: Sell through direct to customer sales (via website)

No: I do not utilize a third partyN/A

Other

Sustainable Practices in Sheep Farming

We want to know if you practice sustainable farming or production methods!

Which farming practice would you use to identify your operation?

Sustainable

Conventional

Other

What additional methods do you use on your farm, or to manage your sheep? (Select all that apply).

Compost application

Silvopasture

Managed rotational grazing

No till/minimum tillage

Cover crop plantings

Crop rotation

Over seeding

Pollinator habitat plantings

Reduction of artificial and synthetic chemicals

None

Other

What methods above would you like to implement on your farm, and what (if any) are the barriers to this?

<u>Comments or questions?</u>

Is there someone else in your network that should take this survey? Please share their name and contact information.

Are you interested in further participation in our study?

Yes

No

Maybe

If you answered "yes" above, please share your email address.

Please share any concluding comments you may have.

Do you have any questions for us?

Appendix II.

Questions Raised by Survey Participants

- Wondering about potential local processing of wool for insulation purposes.
- Are there uses and markets for raw wool being developed, such as for garden or landscape mulch?
- I'd be very interested in expanding operations beyond hobby and gladly accepting resources to find opportunities.
- Will it benefit the target farm only or is the goal to benefit sheep producers locally, state wide, or nationally?
- Do you have suggestions for how to ensure a supply of shearers in each region of the state in the coming generation(s)? Is there a school they go to? Could we band together and offer a scholarship for training and cost of shearing equipment?

Appendix III.

Distribution Survey

Understanding MN Wool: Statewide Representation

Where are sheep producers most prevalent in Minnesota?

What is the zip code of your farm?

What city is your farm in?

If you would like to continue participating in this study, please enter your email here.

Appendix IV.

Interview Questions

1. **Please share about the distribution of shepherds in your area.**
2. **What is the proximity of sheep operations to each other in your area, are they close, spread out etc.?**
3. **What's the average size of livestock farms in your area (including sheep and other animals)?**
4. **What do you think is the most common type of business structure for sheep farms in your area (is it a hobby, part-time, full-time business etc.)?**
5. **What would encourage more farmers to raise sheep in your area?**
6. **What do you think are common aspirations for sheep farms in your area?**
7. **Are shepherds in your area open to pooling their wool together?**
8. **If there was a Minnesota Wool Co-op, how involved do you think most shepherds in your area would want to be? Would they want to send off raw fiber and receive a product back? Would they want to sell their raw fiber to the co-op upfront and not receive a product back?**
9. **Are there equipment sharing programs in your area?**
10. **What's a unique challenge for shepherds in your area?**

Appendix V.

Project Graphic

Appendix VI.

Project Flyer

Understanding Minnesota's Wool Economy

A Collaboration between Get Bentz Farm, Three Rivers Fibershed, and U of MN Regional Sustainable Development Partnerships (RSDP)

Researching MN Wool Farming

- This project aims to study the 'who,' 'what,' 'where,' and 'why' of wool and meat production in the Minnesota sheep farming industry.
- Sustainability is a focus of this study with the motive to understand farmers' choices regarding use of regenerative and conservation practices.
- A graduate student researcher will work closely with Three Rivers Fibershed, Get Bentz Farm, and the U of MN RSDP program over the course of the 2021-2022 academic year.
- Project methods will include interviews with sheep shepherds, informational surveys, printed and virtual informational products for public distribution, a written report, and a prepared presentation.

Regional Sustainable Development Partnerships

UNIVERSITY OF MINNESOTA EXTENSION

FIBERSHED Three Rivers

Get Bentz Farm

A farm and fiber mill dedicated to promoting sustainability in local fiber and meat industries.

(507) 291-3621
getbentzfarm@gmail.com
30700 Northfield Blvd, Northfield, MN 55057
getbentzfarm.com

Three Rivers Fibershed

A fibershed committed to the development of sustainable fiber systems to promote health of soil and biosphere.

threeriversfibershed@gmail.com
175 mile radius of Minneapolis, MN
threeriversfibershed.com

Regional Sustainable Partnerships

A University of Minnesota program created to partner communities with University resources to increase sustainability in agriculture, clean energy, natural resources, and resilient communities across Minnesota.

218-726-7555
rsdp@umn.edu
extension.umn.edu/regional-partnerships

Appendix VII.

Project Poster

Understanding Minnesota's Wool Economy

A Collaboration between Get Bentz Farm, Three Rivers Fibershed, and U of MN Regional Sustainable Development Partnerships (RSDP)

Researching Minnesota Wool

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Regional Sustainable Development Partnerships

University of Minnesota Extension

Fibershed Three Rivers

Appendix VIII.

Social Media Materials

Understanding Minnesota's Wool Economy

A Collaboration Between Get Bentz Farm, Three Rivers Fibershed, and the University of Minnesota Regional Sustainable Development Partnerships (RSDPs)

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Project methods will include interviews with sheep shepherds, informational surveys, printed and virtual informational products for public distribution, a written report, and a prepared presentation.

If you are a sheep farmer and are interested in participating in our study, or know any farmers who would be, please refer to the link below:

https://docs.google.com/forms/d/1OSeikHHHFNn65pXqQ8YOqOHS3blYohmfim_BD7VKu30

Or email us at: understandingmnwool@gmail.com

Regional Sustainable Development Partnerships

University of Minnesota Extension

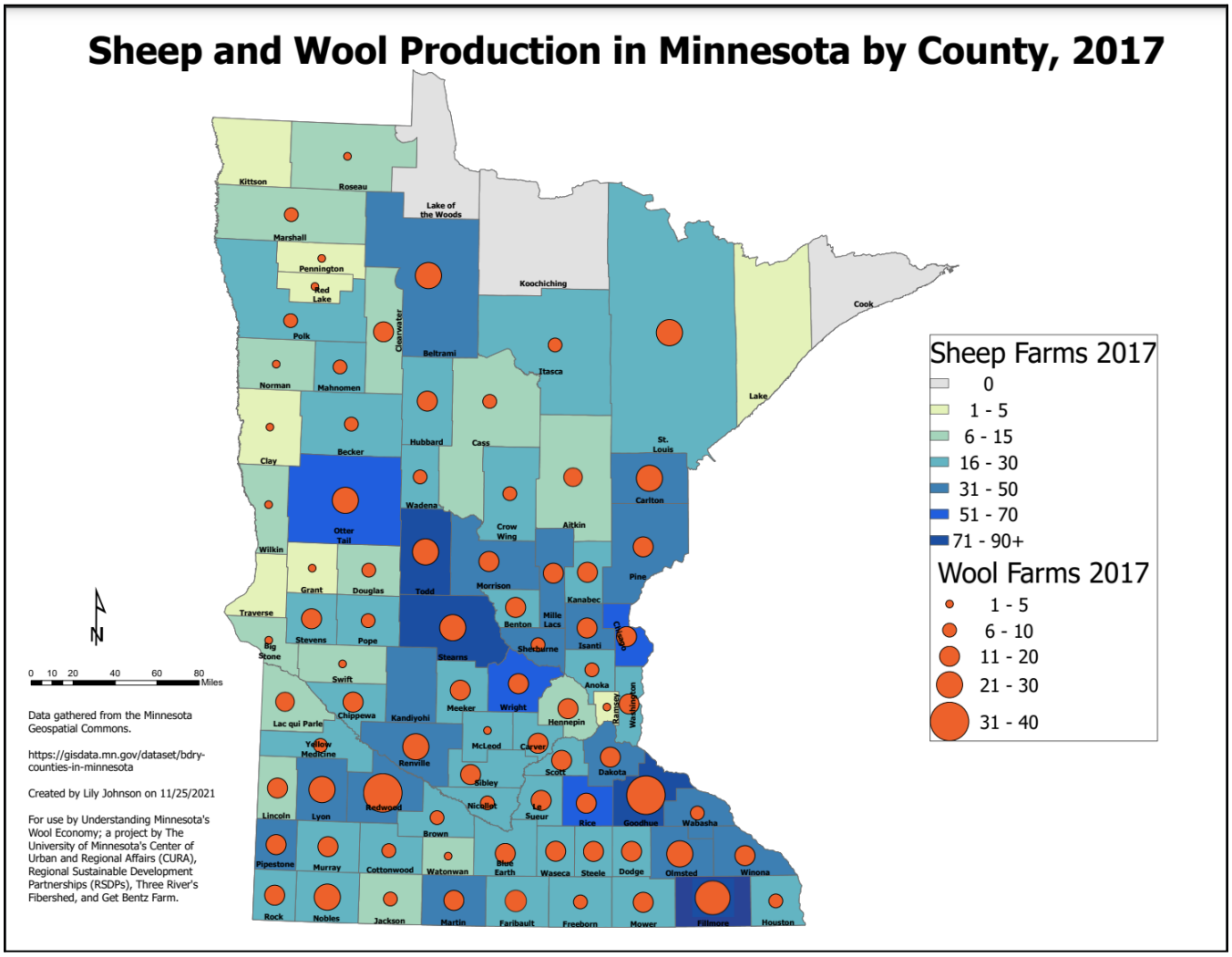
Fibershed Three Rivers

Appendix IX.

Project Logo

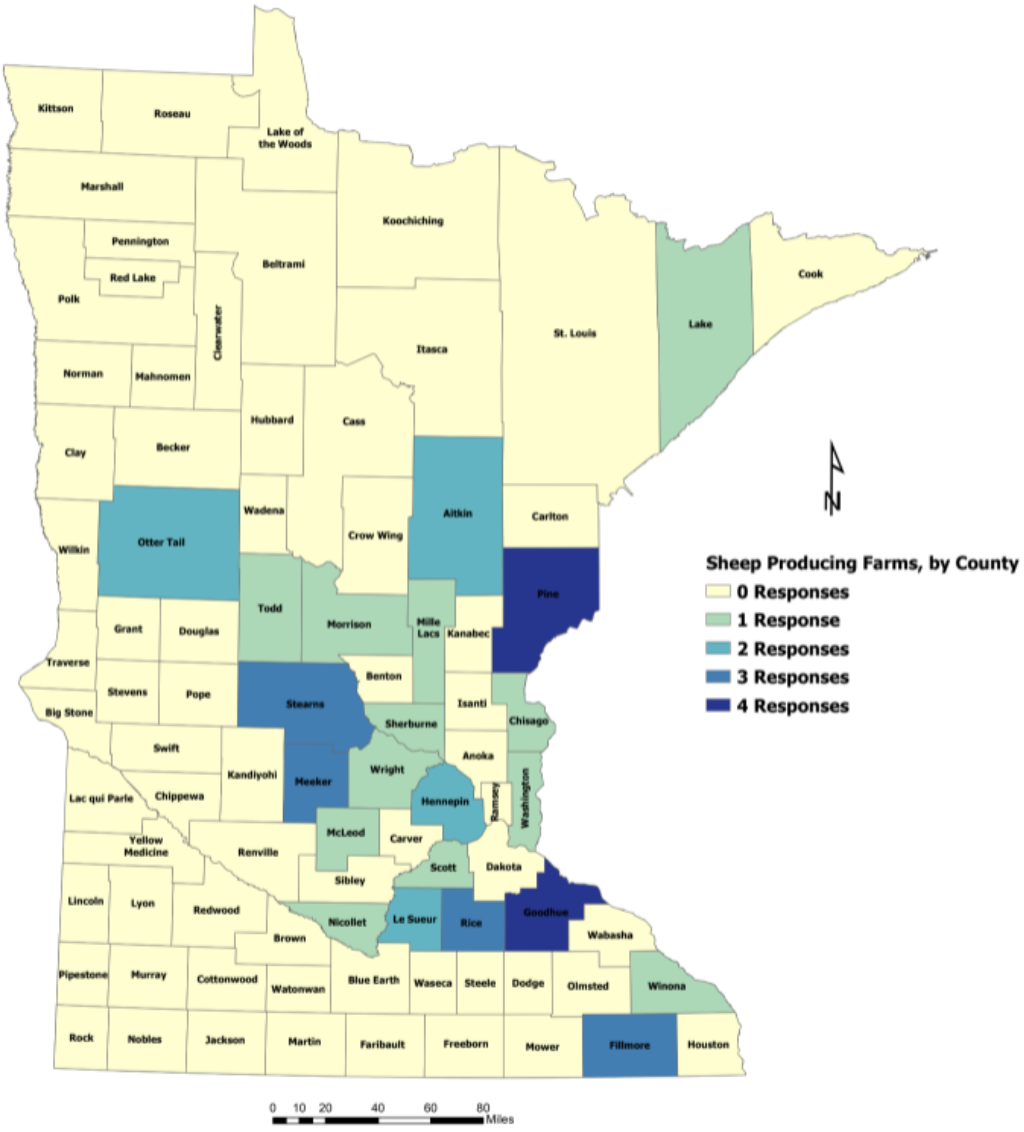
Appendix X.

Project Maps



Sheep Farms by County, 2021

As Reported to the 'Understanding Minnesota's Wool Economy' Project.



Number of Sheep Farms in Minnesota 2021, as reported to the Understanding MN Wool Economy project.

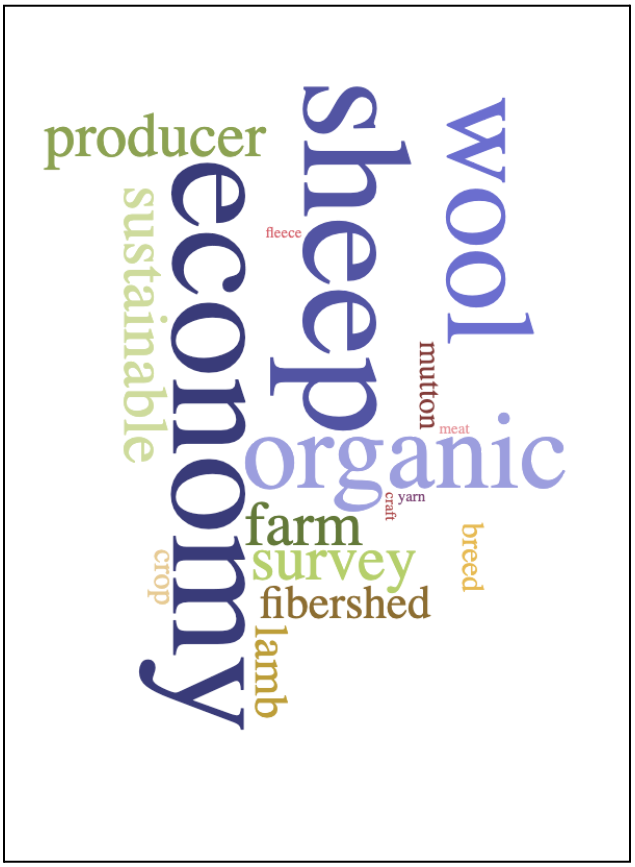
Created by Lily Johnson on 12/14/2021

For use by Understanding Minnesota's Wool Economy; a project by The University of Minnesota's Center of Urban and Regional Affairs (CURA), Regional Sustainable Development Partnerships (RSDPs), Three River's Fibershed, and Get Bentz Farm.

Content based upon 40 survey responses whose respondents shared their farm's zip code.

Appendix XI.

Wordcloud



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