



Green Lake Watershed Social Science Assessment

FARMER SURVEY REPORT

Survey Invitation Letter

We're asking for your help! A group in your community – the Green Lake Management Planning (LMP) Team – is working hard to protect the health of Big Green Lake. The multi-organization team works around Green Lake's shorelines, urban and agricultural areas in their effort to improve lake water quality. As highlighted in green in the map shown here, this lake is part of an agricultural landscape, which means that problem solving help from the farming community is critical to the success of community efforts.



We want your input on the priorities of those who know the land best: agricultural producers and landowners in the Green Lake watershed. We are asking you to complete this survey, which should take about 20 minutes of your time. The survey is being conducted by the UW-Extension Center for Land Use Education at UW-Stevens Point that assists communities in understanding the priorities of key stakeholders. Please contribute to this effort by completing the survey and returning it in the enclosed postage paid envelope.

Here are a few important notes about this study:

- All results will be kept confidential; we're just looking for your important perspective about how to better manage Green Lake and the surrounding watershed.
- All responses will be treated as anonymous and records used to contact respondents containing identifying information will be destroyed prior to the research team reviewing data.
- Please skip any questions that make you feel uncomfortable or that you don't know how to answer.
- We do not anticipate any potential for risk or harm due to participation in this study; however, if you have any complaints about your treatment as a participant in this study please contact Dr. Debbie Palmer, IRB Chair at (715) 346-3953, e-mail at irbchair@uwsp.edu, or mail at University of Wisconsin-Stevens Point, Science Building D240, Stevens Point Wisconsin 54481.

While your participation is voluntary your input can help bring local voices into these important efforts to benefit Green Lake! If you have any questions or comments about this project you may contact me using the information provided below.

Thank you for your time and we're looking forward to hearing from you!

Dr. Aaron Thompson, Associate Professor
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GREEN LAKE SOCIAL SCIENCE ASSESSMENT

Factors Motivating Conservation Agriculture

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I would also like to thank many individuals who were involved in the development of the Green Lake Farmer Survey. First and foremost this project was initiated and funded by the Green Lake Association and without the support of Stephanie Prellwitz and her team it would not be possible to do this type of community driven research. Additionally, thank you to Karen Blaha who managed the data collection process and provided administrative support throughout the data collection process. Finally, the purpose of this research effort is to help stakeholders in the Green Lake watershed share their voice and opinions to inform the watershed protection and restoration efforts – this work is not possible without those individuals who took the time to complete the survey and a big thank you is well deserved for the agricultural landowners and producers who contributed their time to share their views!

SUGGESTED CITATION

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Factors Motivating Conservation Agriculture



PROBLEM STATEMENT

The goal of protecting water quality in our lakes, rivers, and streams drives significant investment of time, money, and other resources in rural Wisconsin. The challenge of carrying out this work in an agriculturally dominated landscape, like the Green Lake watershed, requires an understanding that this is a multi-functional place that means different things to different groups of people. Those working to protect lakes and streams must also consider the goals of those earning a living from the land, because these are critical partners necessary for the success of their efforts. This relationship is critical and often the needs of the agricultural community are not well understood. This report is designed to answer some of these questions and support relationship building between stakeholders in the Green Lake watershed by sharing the results of a confidential survey of agricultural landowners designed to support the development of strategies to improve participation in conservation agriculture initiatives.

PROJECT DESCRIPTION

This research has been led by Dr. Aaron Thompson to support efforts cited in the Green Lake Management Plan to improve agricultural operations performance with NR151 by focusing on understanding the needs and priorities of this community. Using data collected from an attempted census of agricultural landowners, a stakeholder profile has been developed to provide a better understanding of their current behaviors (i.e. adoption of conservation practices), attitudinal factors motivating support or opposition to watershed management, and informs discussion of governance alternatives (i.e. support for farmer-led initiatives) for decision-making about conservation efforts on agricultural lands. This report begins by examining who responded to the survey and comparing this with information about agricultural landowners and producers in the region to evaluate the potential for bias in the survey results. Once this basic level of demographic analysis is completed, the process uses attitude information measured by the survey questionnaire to differentiate amongst producers based on their goals and priorities. These groups are then analyzed to determine their preference for different application variables, such as experience and interest in conservation practices, perceived barriers to participation, and trusted partners working within the watershed. Finally, the report summarized what is known about landowners in 7 unique areas within the watershed to support the development of landscape strategies that are responsive to the needs of those who live and work the land in these areas.

PROJECT OVERVIEW



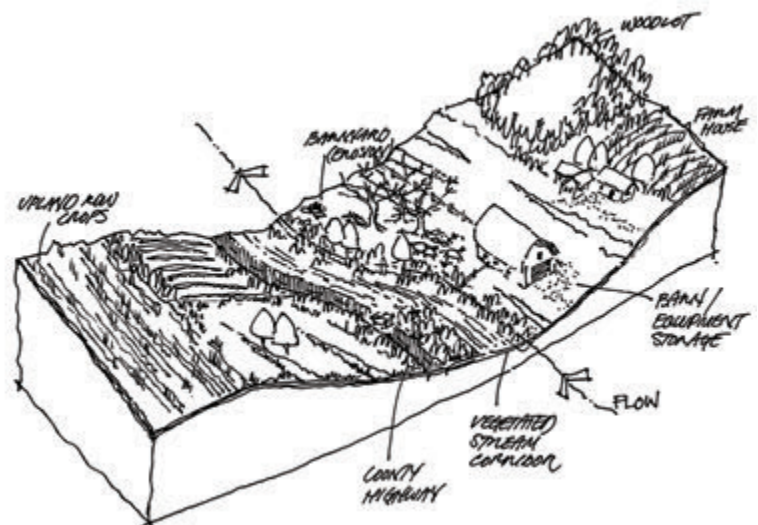
PROJECT TIMELINE

A goal of this work is to provide community-driven research that will enhance the ability of local partners to work together on complex challenges, such as meeting water quality goals in the Green Lake watershed. Beginning in early 2015 conversations with Green Lake Association staff generated the idea of conducting this survey of agricultural producers to address specific outreach needs. Since approval of the WDNR grant in early 2016 the key steps in the survey research process are provided below:

- April 2016: Coordination meeting with local agricultural specialists, including representatives from local, state and federal agencies.
- Fall 2017: National political campaign closed window for survey data collection.
- March - April 2017: Development of final survey instrument and Human Subject Protection (IRB) approval (UWSP Protocol #16-17.051).
- April - June 2017: Data collection phase of the project.
- July-September 2017: Initial review of survey results with GLA board and survey analysis.
- October 2017: Development of survey report.

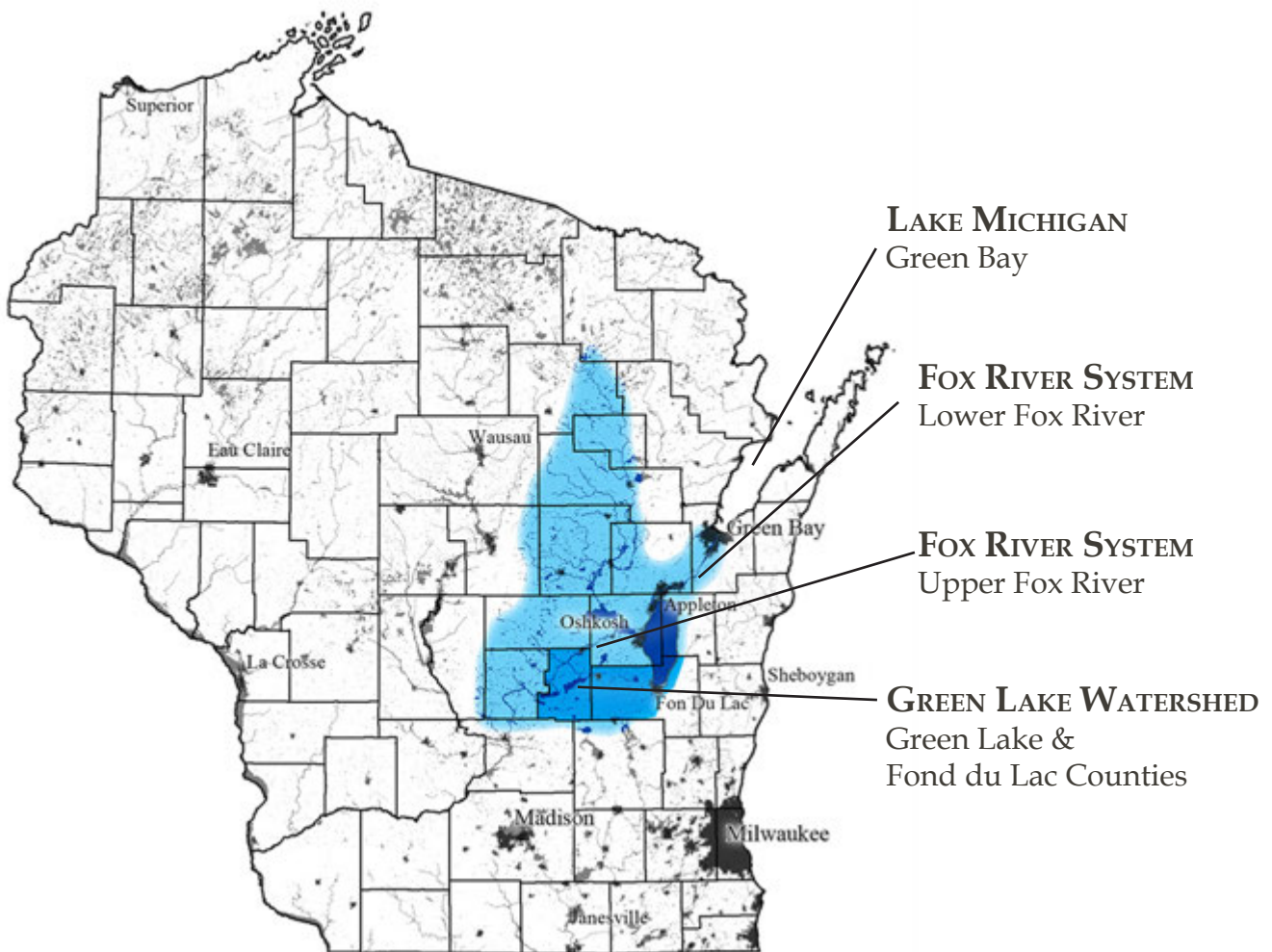
CONSERVATION AGRICULTURE

The sub-title for this report addresses the need to identify factors motivating “conservation agriculture”. This terminology was selected as it broadly frames the challenge while suggesting the desire to support a multi-functional landscape. The intent is simply that both conservation initiatives (especially those designed to support the protection of water quality) and agriculture can both thrive when a community works together toward a common strategy for their landscape (Cornell University, 2017).



Factors Motivating Conservation Agriculture

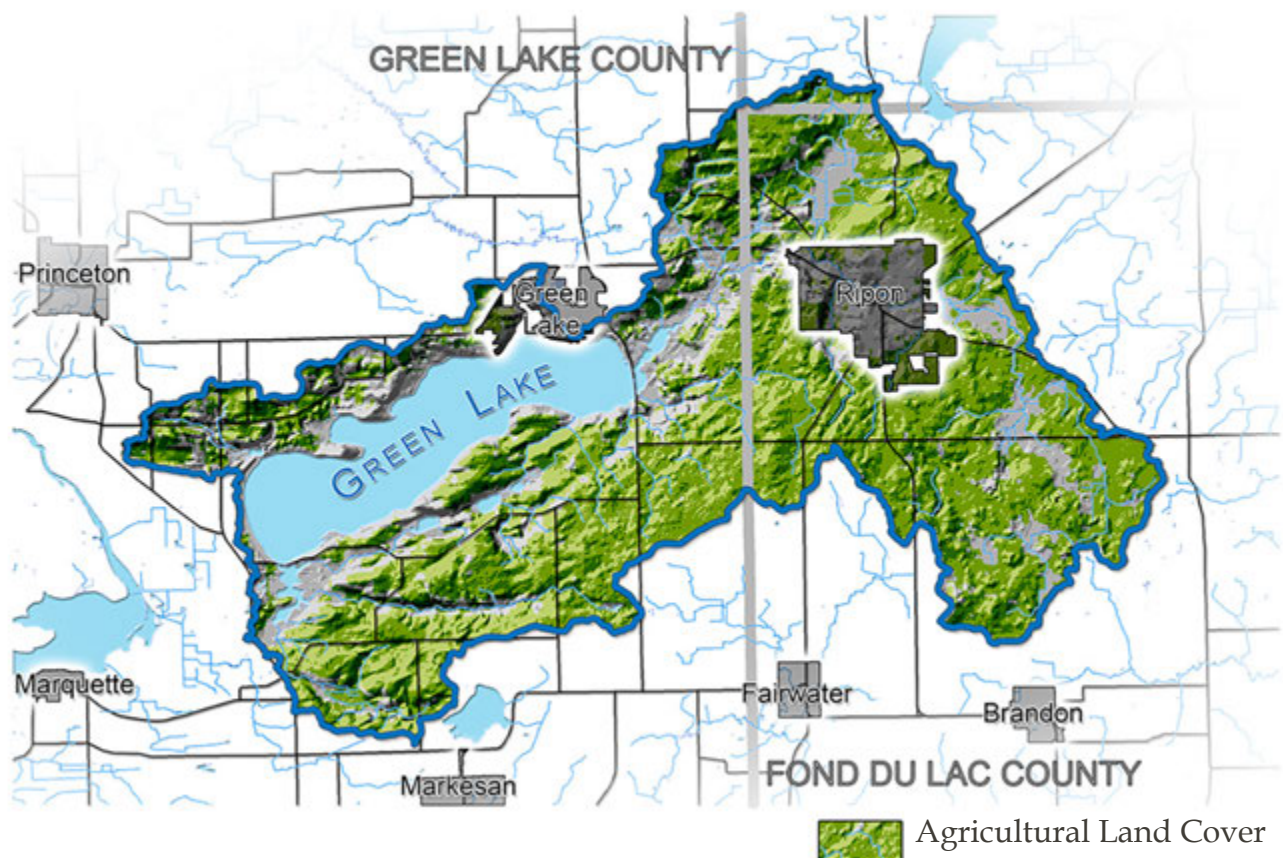
PROJECT LOCATION



The Social Science Assessment project is focused on the Big Green Lake (‘Green Lake’) watershed located in portions of Fond du Lac and Green Lake Counties. Green Lake is a large drainage lake (7,346 acres) and is the deepest natural inland lake in Wisconsin, reaching a maximum depth of 236 feet and an average depth of 100 feet. Green Lake stratifies and maintains a two-story fishery (Sesing, 2013).

GREEN LAKE WATERSHED LAND COVER

The Green Lake watershed (68,676 acres) is dominated by agriculture with only 3% developed land use. In 2014, Green Lake was listed as impaired for low DO caused by TP loading (Sesing, 2013). In response, the Lake Management Planning team for Green Lake has been aggressively implementing agricultural BMPs in the watershed. The social science assessment is intended to support these efforts and enhance approaches to build lasting relationships with agricultural producers in the region.



Study notes:

The map above highlights the areas of agricultural land cover in green, which have been overlaid on top of the topographic information to highlight elevation changes. Of particular interest is the limited area of agricultural land cover directly north of Green Lake that is within the watershed. However, the overall trend is that agricultural land use clearly dominates the landscape.

Factors Motivating Conservation Agriculture



SAMPLE DEVELOPMENT

The survey “sample” is the list of individuals recruited to participate in the study. The intent was to collect data from all households owning more than 40 acres of agricultural land within the watershed, or in close proximity to its boundary. Additionally, the list was screened to remove any non-agricultural landowners (such as forest landowners with less than 50 percent agricultural landcover). As shown in the Table on the next page a total of 459 valid addresses were identified along with their ownership type -- individual, business, or trusts.

Study notes:

All agricultural landowners within 1 mile of the HUC 10 watershed boundary were included in the survey. The purpose of extending this boundary was to ensure that those individuals who live outside the watershed and either own or rent land inside the boundary were eligible to participate.

SURVEY PROCESS

Data was collected using an 8-page mail questionnaire that was administered using a 5-contact process, adapted from Dillman’s Tailored Design Method (2000). Agricultural landowners were recruited to participate in the voluntary survey using the following contacts:

- Introductory Letter
- Survey Packet #1
- Reminder Postcard #1
- Survey Packet #2
- Reminder Postcard #2

The multiple contact approach is intended primarily to raise awareness and recruit participation with prompts and reminders; as the quality of the final dataset is dependent upon participation from a large enough group of agricultural landowners to represent the diversity of views held by this community.



SURVEY SAMPLE

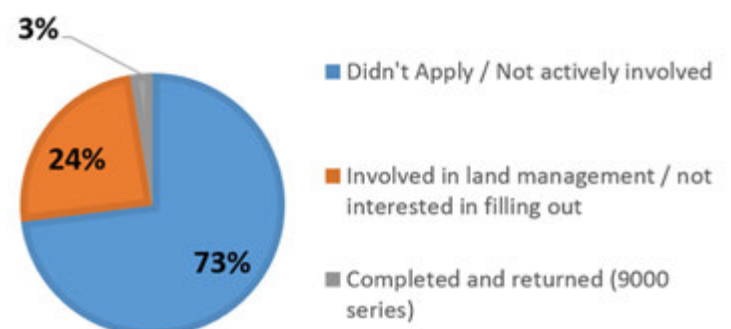
RESPONSE RATE

- As shown in the table below out of more than 450 agricultural landowners slightly more than 40 percent of those invited to participate completed survey.
- Based on comparing reports of land ownership from survey participants with total available agricultural lands approximately 50 to 60 percent of all agricultural land in the study area is represented by survey responses.
- There is strong representation from different ownership types (individual, business, or trusts); however, the higher participation of trusts is likely responsible for the slightly elevated participation in the survey by non-farming households (landlords).

Response Rate			
Valid Responses	Valid Addresses		
184	459	Total	40.09%
141	358	1000 series	38.83% Individual Landowners
10	33	3000 series	30.30% Business addresses, LLCs
33	68	5000 series	48.53% Trusts (Living & Revocable)
Refusal Rate		Total	4.36%
(Refusal / Total Addresses)			
Non-Response Participation		Total	14.18%
Valid Responses	Sent		
39	275		
Total involvement:			
Valid Responses	Valid Addresses	Total	48.58%
223	459		

NON-RESPONSE CHECK

Following the survey collection phase all non-participating households were mailed a 1-page questionnaire asking why they didn't participate. The demographics of this group are similar to those of that completed the survey, except that a higher rate of females (39 percent) completed the non-response form. Additionally, as the chart shows primary reason is that they aren't actively involved in farm management decisions.



Green Lake Watershed

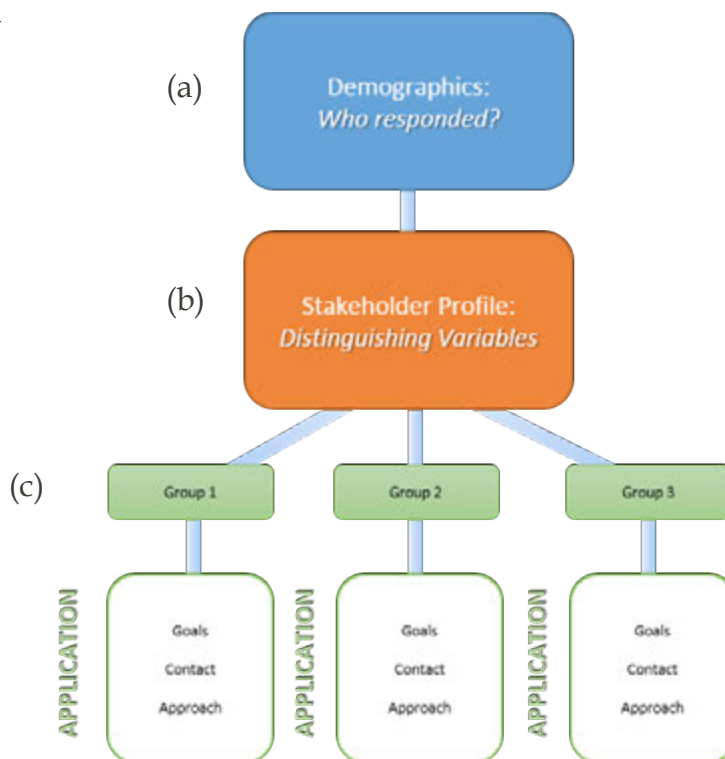
SAMPLE ANALYSIS

	Wisconsin	Fon du Lac	Green Lake	Survey
# Farms	69754	1399	608	185
Land in Farms	14568926	315553	154595	46741
Average Farm Size	209	226	254	241
Percent farms >=50 acres	67.8%	68.1%	73.0%	70.3%
# Farms >=50 acres	47326	953	444	130
Percent farms >=500 acres	8.8%	10.7%	13.2%	11.4%
# Farms >=500 acres	6136	149	80	21
Percent of farm sales <\$100000	75.4%	62.2%	73.5%	60.2%
Percent of farms sales >=\$100,000	24.6%	37.8%	26.5%	39.8%
Percent of farms: primary occupation	49.8%	59.0%	48.4%	36.2%
Percent of farms: Milk cows	16.5%	20.7%	15.3%	15.2%
Percent of farms: Corn for Grain	39.9%	49.7%	52.6%	58.2%
*Note "do not farm, hobby" excluded from milk / corn				
Percent of farms sales < \$50,000	66.3%	52.4%	59.4%	69.7%
Percent of farms sales \$50,000- \$99,999	9.1%	9.8%	14.6%	10.3%
Percent of farms sales >=\$100,000	24.6%	37.8%	26.5%	20.0%
*Note "do not farm" included in <\$50,000				

While the non-response check didn't reveal any significant issues with the survey data, it is always important to determine the similarities and differences between those that responded and the rest of the community the results are intended to represent. Using U.S. Census of Agriculture (2012) data the table above compares the demographic characteristics of survey participants to state and county trends. These results demonstrate that the survey performed extremely well in terms of capturing a representative group of agricultural landowners. However, as noted previously the slightly elevated participation of non-farming households (landlords) is also evident here by a smaller percentage who reported pursuing farming as their primary occupation.

Factors Motivating Conservation Agriculture

ANALYSIS PLAN



A social science assessment is simply another tool that can be used to understand how best to work with the community in a given context. For the purposes of the Green Lake Farmer survey this analysis begins with understanding the demographic characteristics (a) of agricultural landowners. Next, by developing a stakeholder profile (b) to identify different groups based on attitudes toward key ‘distinguishing’ variables it becomes possible to better understand where agricultural landowners agree and where they don’t. In order to support this type of differentiation, social science has developed methods for combining survey responses to identify different ‘groups’ of stakeholders who share a key attitude or belief relevant to conservation decision making. To better understand agricultural landowners in the Green Lake watershed this study uses a 2-step typology approach using the following distinguishing variables:

- Typology 1: Distinguishing Variable -- Farmers Views of the Environment
- Typology 2: Distinguishing Variable -- Role of Government in Land Management

The results of the measures of each of the distinguishing variables is then combined with a measure of farm operation type focusing the comparison on active farmers versus non-farming landlords and used to develop strategies to apply this information (c) to support implementation of the watershed plan. The overarching goal is that by learning about agricultural landowners efforts can be better designed to meet landowners where they’re at by responding to them, which includes understanding influences on conservation practice adoption (goals), determining who they wish to work with and who they don’t (contact), and how they’d like to be included in decisions (approach).

SURVEY RESULTS

Green Lake Watershed

**Demographics:
Who responded?**

Please answer the following questions about yourself, the **information will be used for classification purposes only.**

What is your gender? Male Female

In what year were you born?

What is your highest level of formal education?

- Some high school
- High school graduate or GED
- Some college
- 2 year degree
- 4 year degree
- Graduate degree
- Other (specify)

In 2016 how many acres of land did you:

a. Own (Total)

b. Rent from others.....

c. Set aside for conservation.....

Please indicate which best describes your farm operation based on **gross farm sales.**

- Less than \$50,000
- \$50,000 - \$100,000
- \$100,000 - \$250,000
- \$250,000 - \$499,999
- More than \$500,000
- Do not farm

Describe your farming operation by marking the response that best describes you.

- Farmer -- primarily row crops
- Farmer -- primarily dairy
- Farmer -- other: not dairy or row crops
- Primarily a landlord -- do not farm
- Hobby farm -- full-time, off-farm job

Which of these responses best describes your retirement plans?

- I will never fully retire from farming (retaining control of management and providing some labor).
- I will semi-retire from farming (providing some management and / or labor).
- I will fully retire from farming (leaving all management and labor to others).

What would you consider to be the most likely outcome for your farm when you decide to quit farming?

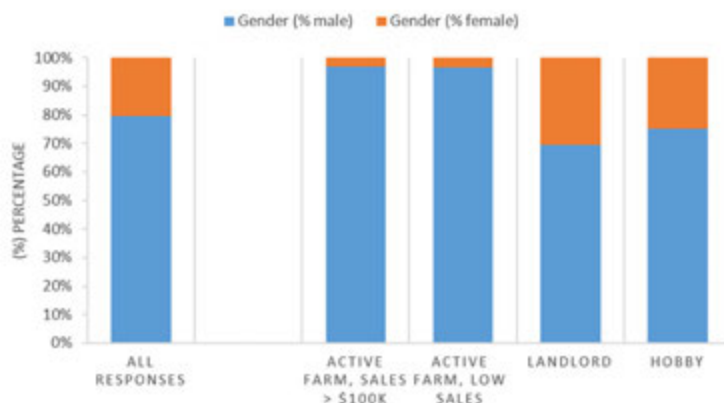
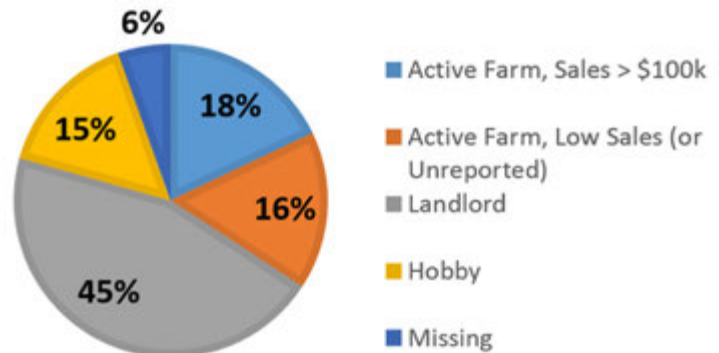
- A family member will continue the farm operation.
- Sell my land to another farmer.
- Sell all or part of the land to a developer.
- Sell all or part of the land for conservation.
- I don't know what options are available for my land.

Check all that apply.

To understand what we can learn from the survey of agricultural landowners we begin by discussing the characteristics of those who responded to the survey. The following demographic information does not in and of itself provide conclusions about how to engage agricultural landowners in watershed planning; rather it assists in understanding who voluntarily contributed to the watershed planning process by participating in the Green Lake Farmer Survey.

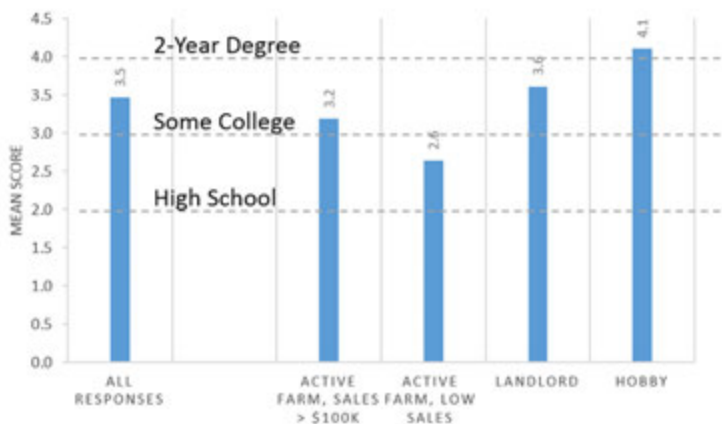
FARM OPERATION TYPE

Combining the responses to the bottom two demographic questions shown on the previous page (gross farm sales and farming operation) allowed for constructing an overall profile of our sample of agricultural landowners. The chart shows that respondents are about 40 percent active farmers, 45 percent landlords, and 15 percent hobby farms.



GENDER

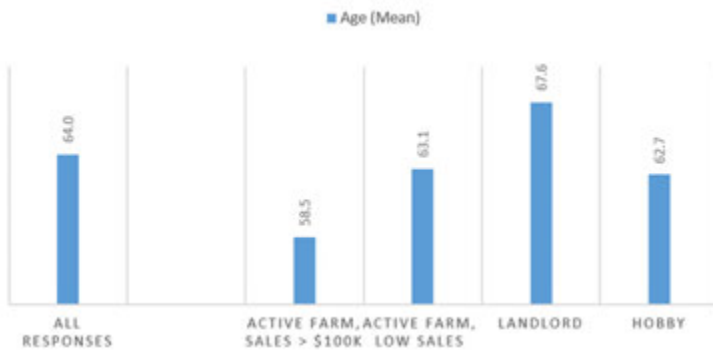
Nearly 80 percent of all respondents are male, which is consistent with other surveys conducted in Wisconsin of those who make farm management decisions. It is important to note that between active farms and landlords there is a significant difference in gender distribution, with significantly more women reporting their involvement as landlords (non-farming) than active farming situations.



EDUCATION

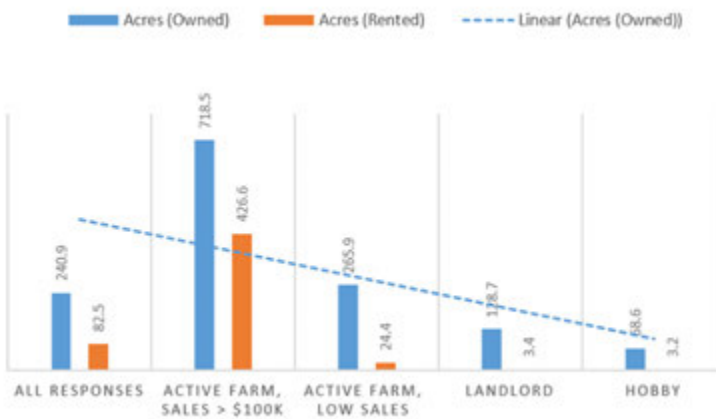
Overall education levels are very similar with the average respondent having “some college” training.

Green Lake Watershed



AGE

The average age of all respondents is 64 years. There is a small degree of variation, which suggests paying attention to the trend of landlords being the oldest population on average and the active farms with sales over \$100,000 / year being somewhat younger.



LAND OWN & RENT

The takeaway on land ownership is that farm size is directly related to the type of farming operation. Active farms with sales over \$100,000 / year are the largest and hobby farms are the smallest on average with other types falling in between. However, it should be noted that with an average farm size of nearly 130 acres landlords still control a sizable area of the agricultural land in the watershed.



RETIREMENT PLANS

Another difference between active farms (of all sales levels) and landlords emerges related to retirement plans as 70 percent of landlords are looking to fully retire, while around 90 percent those managing active farms intend to stay engaged in farm management in some capacity for the rest of their lives.



FUTURE PLANS

Continuing the trend active farms and landlords also have different plans for the future of their land. Around 70 percent of active farms intend to pass the land along with in their family, while that number is half that rate for landlords. Also of note is that nearly 1 in 4 landlords don't know what they will do with their land in the future.

Demographics:
Who responded?

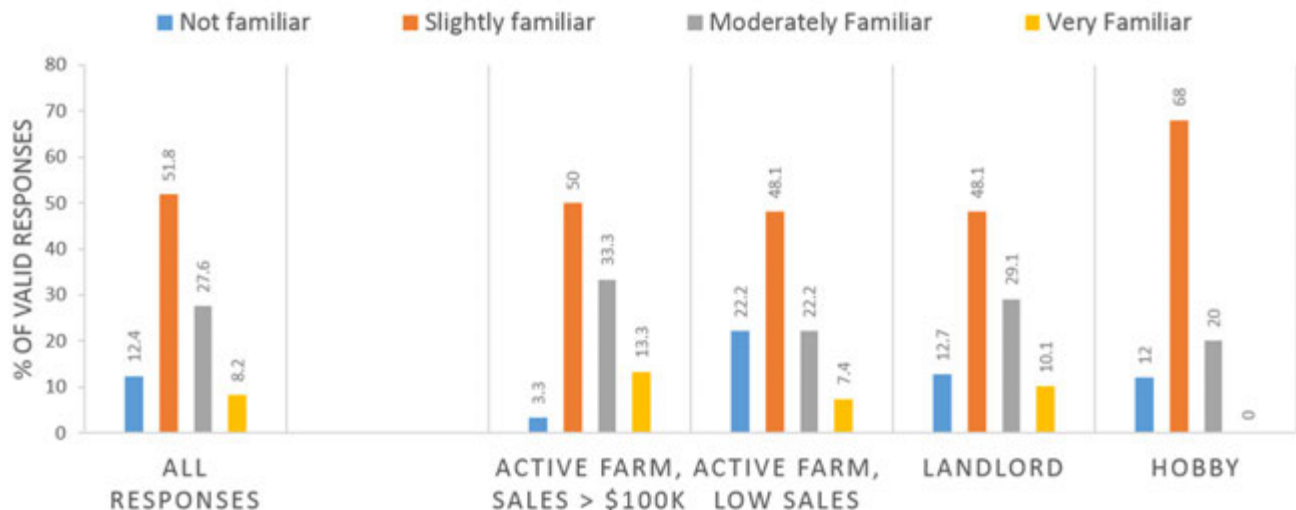
AWARENESS OF GLA

Familiarity with the work of the Green Lake Association is extremely limited, with more than half of all farmers (regardless of farm operation type) reporting that they don't know much about the work or purpose of the organization.

Green Lake Association

Have you heard about Green Lake Association's efforts? They work to promote the conservation of Green Lake by addressing negative water quality trends before they become a critical issue that will affect this lake over the long term. Please select the response that best describes your familiarity.

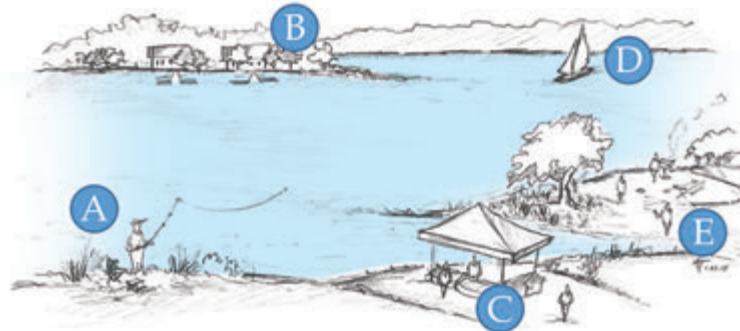
Never heard about these efforts
 Heard of them, but don't know much about them
 Heard of them and know what they are doing
 I've attended meetings or events in the past



Green Lake Watershed

Demographics:
Who responded?

BENEFITS OF GREEN LAKE



BENEFITS OF GREEN LAKE

The following series of questions asks about possible community benefits of Green Lake. Please indicate your level of agreement with the following statements, which begin with “I personally benefit from ...”

- I personally benefit from ... access to fishing or hunting opportunities on Big Green Lake.
- ... local tax dollars generated by shoreline development on Green Lake.
- ... access to customers for local products, such as Farmers Markets, who are attracted to the area by amenities around Green Lake.
- ... opportunities for water-based recreation, such as boating or swimming, on Green Lake.
- ... places for friends, family, or other groups to gather and enjoy leisure time together around Green Lake.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't Know
	SD	D	N	A	SA	DK
I personally benefit from ... access to fishing or hunting opportunities on Big Green Lake.	-2	-1	0	1	2	<input type="checkbox"/>
... local tax dollars generated by shoreline development on Green Lake.	-2	-1	0	1	2	<input type="checkbox"/>
... access to customers for local products, such as Farmers Markets, who are attracted to the area by amenities around Green Lake.	-2	-1	0	1	2	<input type="checkbox"/>
... opportunities for water-based recreation, such as boating or swimming, on Green Lake.	-2	-1	0	1	2	<input type="checkbox"/>
... places for friends, family, or other groups to gather and enjoy leisure time together around Green Lake.	-2	-1	0	1	2	<input type="checkbox"/>



In general, the most likely time to find agricultural landowners benefiting directly from Green Lake is when they are spending time at family and social gatherings. They also report not benefiting directly from local tax dollars generated by shoreline development or access to customers.

Stakeholder Profile:
Distinguishing Variables

FARMERS VIEWS OF THE ENVIRONMENT (FVE)

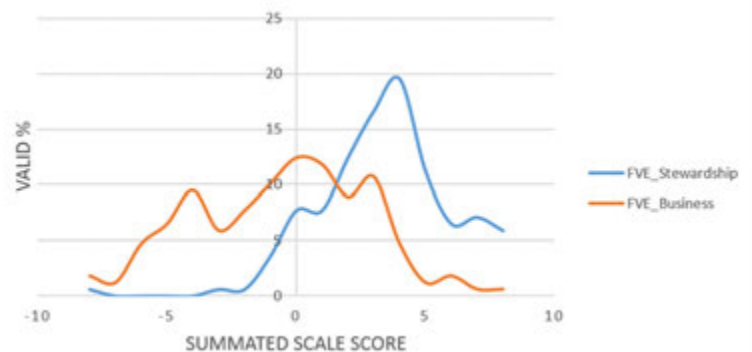
To develop this measure the items below are grouped into 2 separate scales with one group of 4 items representing pro-business views of farming and the other set representing pro-stewardship. These sets of items are analyzed to ensure compatibility and then combined into 2 summated scales, each with a possible score range from -8 to +8 (adapted from Thompson, 2015).

FARMERS AND THE ENVIRONMENT

The next series of questions ask about trade-offs farmers must make between production and conservation considerations. **Please indicate whether you agree or disagree with each of the following statements:**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't Know
	SD	D	N	A	SA	DK
Good farming requires using all available acreage as efficiently as possible to maximize yields. Business	-2	-1	0	1	2	
To protect the rural landscape, farmers must move away from conventional agricultural practices to approaches that more closely mimic natural processes. Stewardship	-2	-1	0	1	2	
Modifications to my farm that increase production, such as the removal of grasslands, fence rows, or grass field buffers have little impact on the environment. Business	-2	-1	0	1	2	
Programs to protect soil and water resources should emphasize approaches that primarily benefit agricultural production. Stewardship	-2	-1	0	1	2	
As a result of modern agricultural practices, farmers must exert more effort now to protect the environment than was necessary in the past. Stewardship	-2	-1	0	1	2	
The primary role of farms is the production of food and related agricultural products; the protection of the environment is separate from this purpose. Business	-2	-1	0	1	2	
Good farming results from placing equal importance on the management of both the agricultural and natural areas of my farm. Business	-2	-1	0	1	2	
A successful farmer is someone who continuously evaluates the environmental impact of their farm and adopts new approaches to protect the environment. Stewardship	-2	-1	0	1	2	

The results, shown in the chart, reveal that there is a strong sense of stewardship that is part of the identity of agricultural landowners in the Green Lake watershed. Most responses to the Stewardship Scale (FVE_Stewardship) are above neutral (score of 0), while the Business Scale (FVE_Busines) is more diverse as some land owners are strongly agree with these views and others do not.



CLUSTER ANALYSIS

Once the responses to the FVE (farmers views of the environment) scales are calculated a statistical procedure called cluster analysis is used to separate respondents into groups based on the pattern of responses in the data. Agricultural landowners in the Green Lake watershed separated into three distinct groups reflecting different perspectives on the role of business and stewardship. The mean scores of the three groups are shown in the graph and can be characterized as:

(G1) Positive Stewardship, Negative Business

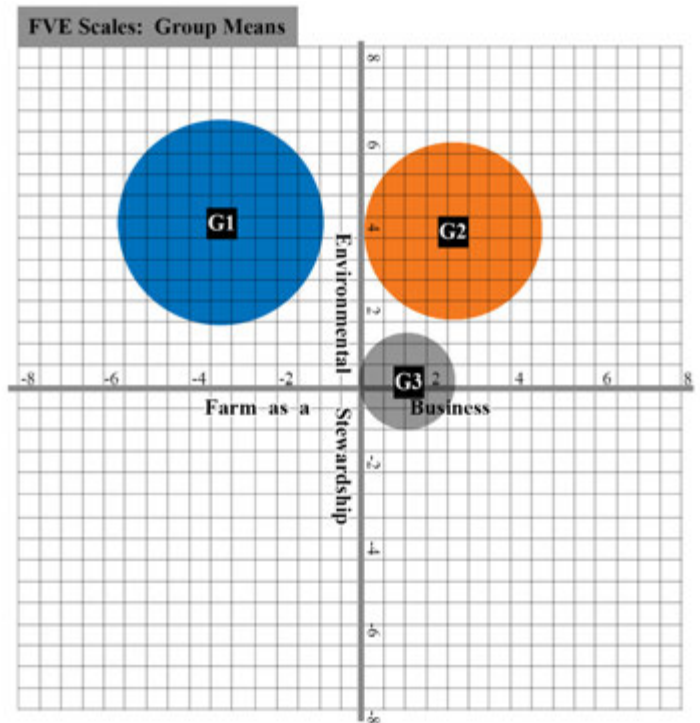
- These individuals view conservation as a primary goal for their land, while holding negative views of actions that maximize production at the expense of the land.

(G2) Positive Stewardship, Positive Business

- These individuals hold views that balance both conservation and business goals. This reflects a set of dual-interests that can influence conservation decisions depending on specific circumstances.

(G3) Negative Stewardship, Positive Business

- These individuals view farming as a business, while being neutral (or more negative than other members of their community) toward conservation goals.



	Age (Mean)	Gender (% female)	Acres (Owned)	Acres (Rented)
Positive Stewardship, Negative Business	61.8	30.6%	132.2	41.1
Positive Stewardship, Positive Business	65.0	13.1%	284.9	142.4
Negative Stewardship, Positive Business	64.0	11.8%	470.1	95.3

(G1) Positive Stewardship, Negative Business

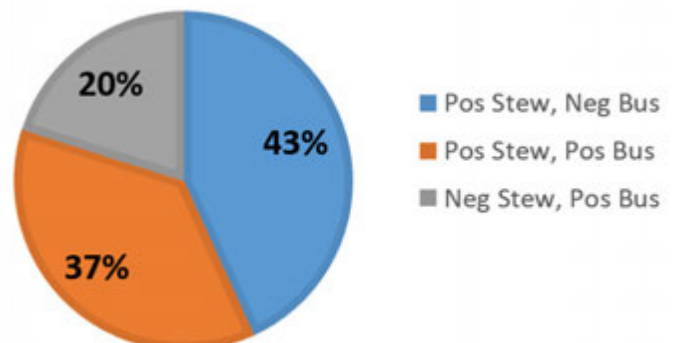
- 43 percent of survey responses
- Higher % female owned, smaller farms

(G2) Positive Stewardship, Positive Business

- 37 percent of survey responses
- Mid-size farms, more rental acres

(G3) Negative Stewardship, Positive Business

- 20 percent of survey responses
- Largest farms (average acres owned)



TYPOLGY 1: FVE X FARM TYPE

To develop the final groups for Typology 1 the results of the FVE cluster analysis (3 attitude groups) are then separated based on farm operation type. The the graph below shows the relationship between the attitude groups and farm operation type. With the exception of Hobby Farms (~70% hold Positive Stewards, Negative Business attitudes) both active farm types and landlords (non-farming households) are evenly distributed across the 3 attitude groups. The final step was to produce the summary of key groups, so high and low sales active farms have been grouped together and separated from landlords, resulting in a total of 6 groups for Typology 1.



ACTIVE FARMS

Positive Stewardship, Negative Business

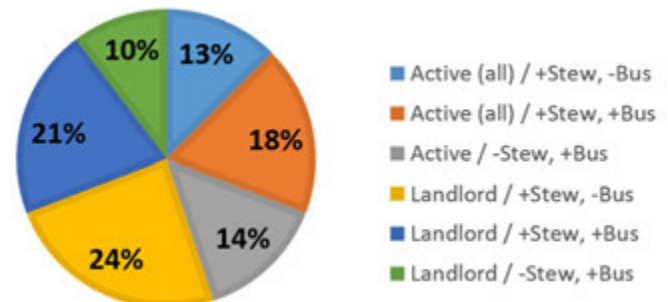
- 13 percent of survey responses

Positive Stewardship, Positive Business

- 18 percent of survey responses

Negative Stewardship, Positive Business

- 14 percent of survey responses



LANDLORDS

Positive Stewardship, Negative Business

- 24 percent of survey responses

Positive Stewardship, Positive Business

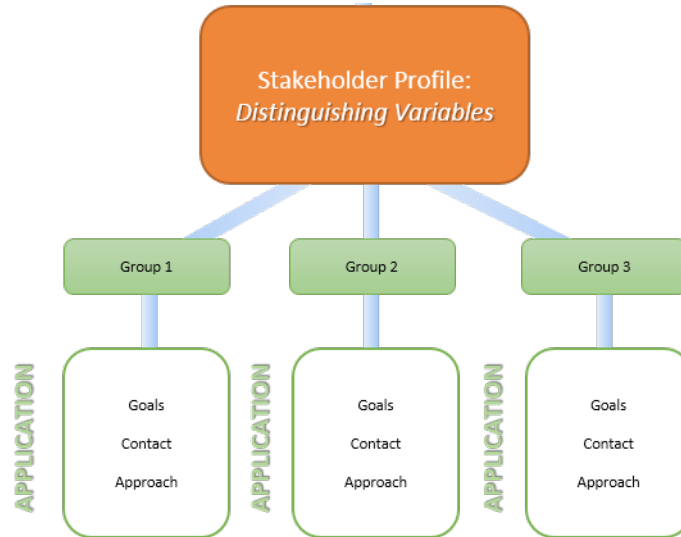
- 21 percent of survey responses

Negative Stewardship, Positive Business

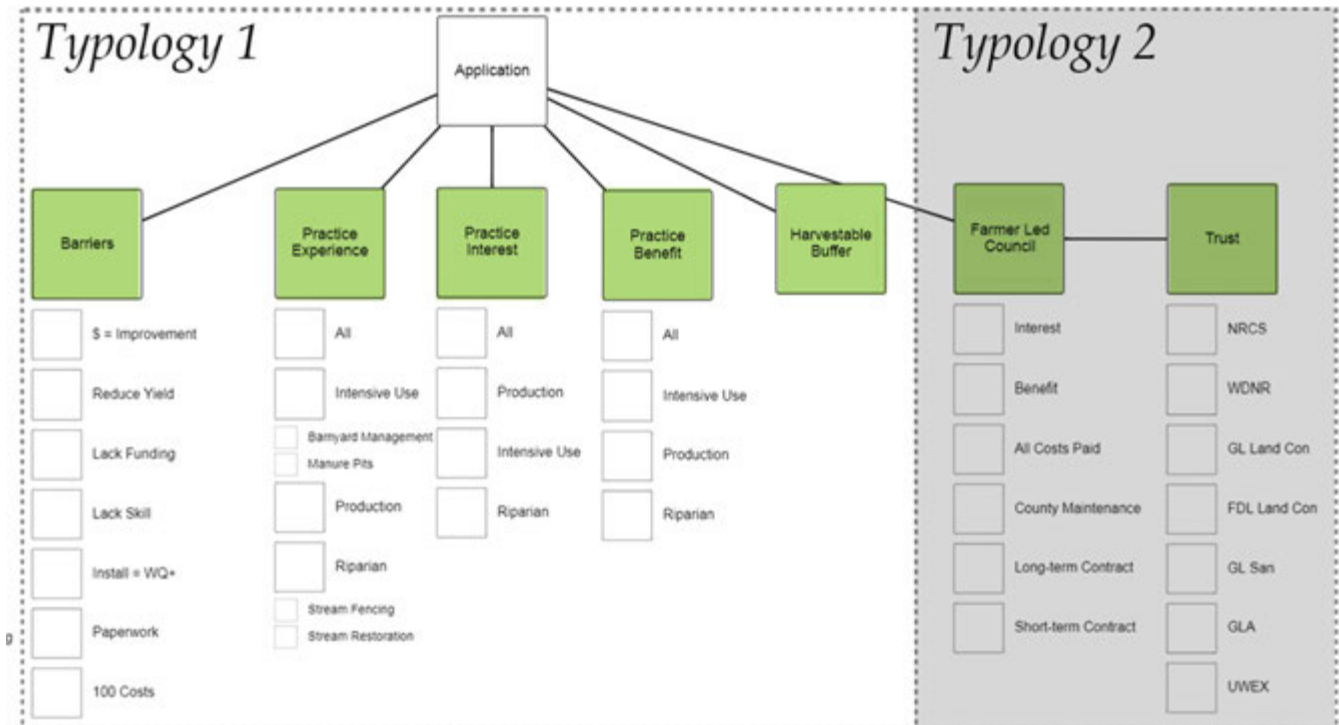
- 10 percent of survey responses

The graph (and list) shown here demonstrate the diversity of attitude perspective held by both active farm and landlord households. The emphasis of the application variables described on the following pages is to learn how to respond to this diversity in order to improve participation in conservation agriculture efforts within the watershed.

APPLICATION: USING THE TYPOLOGIES



The following sections focus on using Typology 1: FVE x Farm Operation Type to determine how these groups respond to important application variables. Specifically the analysis begins by exploring barriers to conservation followed by an analysis of conservation practice experience, interest, and perceived benefit to the watershed. Then, after introducing Typology 2, the report will further explore governance options and trust implications of the landowner groups.



APPLICATION



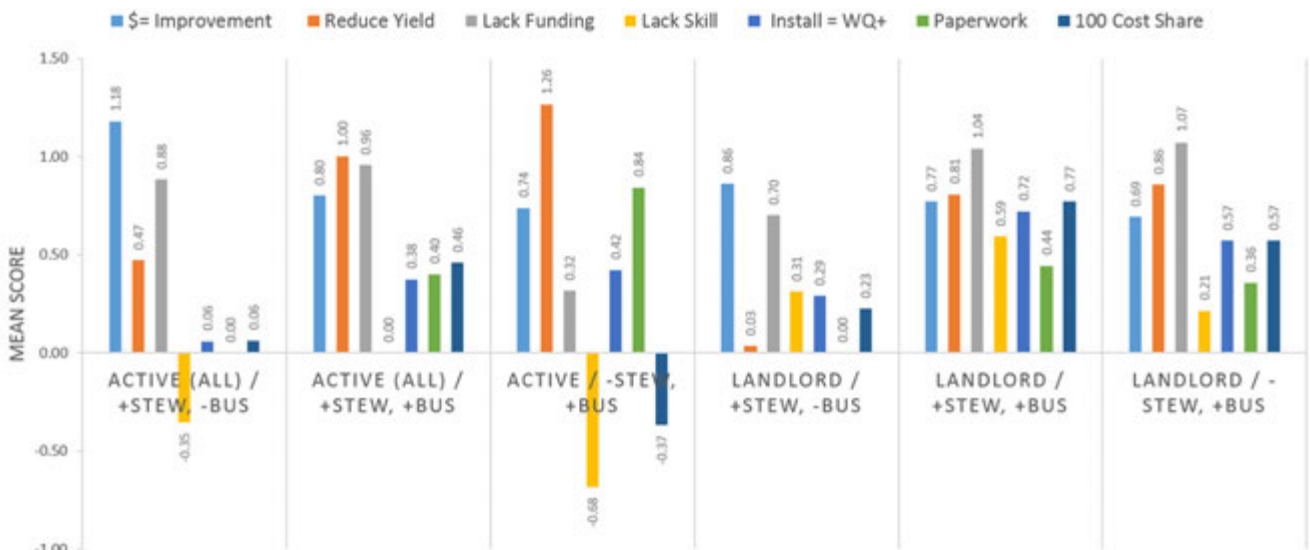
APPLICATION: BARRIERS TO CONSERVATION

Exploring factors that influence whether an agricultural landowner chooses to participate in conservation is an important starting point in assessing current outreach and developing new programming. The graph below shows overall responses indicating that practice effectiveness (\$=improvement), concern about reduced yields, and lack of funding are important concerns for all respondents. Additionally, attitude specific concerns also emerge such as those with positive business (FVE) views being significantly more concerned about yield loss.

MANAGEMENT DECISIONS

Many agencies and groups are working with farmers to improve land management practices to improve water quality. These efforts often offer cost sharing or expertise to implement new practices; however, there are many valid reasons why people aren't interested in these programs. **How important are each of following reasons when you make decisions about changing land management practices on your farm?**

	Very Unimportant	Somewhat Unimportant	Neutral	Somewhat Important	Very Important	Don't Know
Uncertainty about whether the money I invest will result in improvements in local water quality.	-2	-1	0	1	2	<input type="checkbox"/>
Concern that changing land management practices might reduce yields or overall farm productivity.	-2	-1	0	1	2	<input type="checkbox"/>
The lack of a source of funding to install or maintain these practices.	-2	-1	0	1	2	<input type="checkbox"/>
Concern that I don't have the skills and knowledge necessary to install or maintain these practices on my property.	-2	-1	0	1	2	<input type="checkbox"/>
Uncertainty about whether installing these practices on my property is likely to reduce undesirable water quality problems in nearby waterways.	-2	-1	0	1	2	<input type="checkbox"/>
The additional time spent doing paperwork isn't worth the cost share provided by organizations working to improve land management practices.	-2	-1	0	1	2	<input type="checkbox"/>
Not wanting to invest my own money in water quality practices, as I'd be more likely to participate if someone else covers 100 percent of the costs.	-2	-1	0	1	2	<input type="checkbox"/>



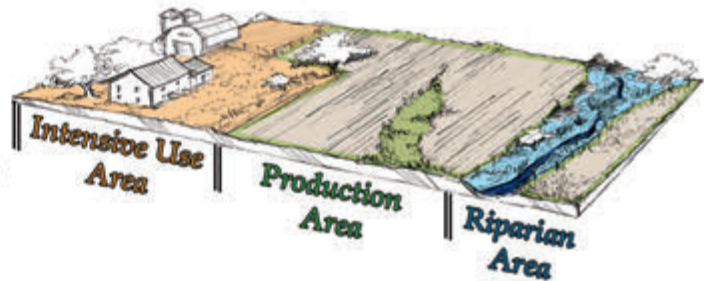
APPLICATION



APPLICATION: CONSERVATION PRACTICES

The following section focuses on understanding differences between the 6 groups (Typology 1) based on their overall experience, interest, and perceived benefit with using 13 different conservation practices that were selected for their relevance to current efforts in the Green Lake Watershed. The figure below provides the specific questions asked about each practice, along with a representative example of the 13 practices from each of the areas of the farm included in the questionnaire (Intensive Use, Production, and Riparian Areas).

We'd like to know more about your experience with conservation practices that have the potential to improve water quality in your area. *The practices presented below (and on the next page) are appropriate for different parts of a farm property and have been organized into the 3 groups shown in the diagram here.*



Please read the practice descriptions provided below and respond to these 3 questions for each:

EXPERIENCE: What is your experience using each practice on your land? *Please rate from (0) unfamiliar -- I have not heard of this before to (3) very experienced -- currently use this practice extensively on my farm.*

INTEREST: What is your level of interest in trying, or expanding the use of, each practice? *Please rate from (0) no interest -- would not work on my farm to (3) very interested -- would be a good fit for my farm.*

BENEFIT: How much benefit to water quality do you believe would come from funding installations of each practice on farms across the Green Lake Watershed? *Please rate from (0) no benefit -- would not improve water quality to (3) very beneficial -- would significantly improve water quality.*

Intensive Use Area Practices

	EXPERIENCE on your land	INTEREST in trying practice	BENEFIT to the watershed
BARNYARD WATER MANAGEMENT is a set of practices, such as gutters, roof structures over barnyards, or other methods that divert clean water (rainfall) away from possible sources of contamination.	<input type="checkbox"/> 3 Very Experienced	<input type="checkbox"/> 3 Very Interested	<input type="checkbox"/> 3 Very Beneficial
	<input type="checkbox"/> 2 Some Experience	<input type="checkbox"/> 2 Some Interest	<input type="checkbox"/> 2 Some Benefit
	<input type="checkbox"/> 1 Little Experience	<input type="checkbox"/> 1 Little Interest	<input type="checkbox"/> 1 Little Benefit
	<input type="checkbox"/> 0 Unfamiliar	<input type="checkbox"/> 0 No Interest	<input type="checkbox"/> 0 No Benefit

Production Area Practices

GRADE STABILIZATION STRUCTURES are constructed retaining walls, or retention ponds, used to stabilize areas within a field that are highly susceptible to erosion.	<input type="checkbox"/> 3 Very Experienced	<input type="checkbox"/> 3 Very Interested	<input type="checkbox"/> 3 Very Beneficial
	<input type="checkbox"/> 2 Some Experience	<input type="checkbox"/> 2 Some Interest	<input type="checkbox"/> 2 Some Benefit
	<input type="checkbox"/> 1 Little Experience	<input type="checkbox"/> 1 Little Interest	<input type="checkbox"/> 1 Little Benefit
	<input type="checkbox"/> 0 Unfamiliar	<input type="checkbox"/> 0 No Interest	<input type="checkbox"/> 0 No Benefit

Riparian Area Practices

STREAM FENCING are practices that help reduce soil erosion by using fencing, or other field improvements, to provide a very specific place for people, animals, and vehicles to access or cross streams or other water bodies.	<input type="checkbox"/> 3 Very Experienced	<input type="checkbox"/> 3 Very Interested	<input type="checkbox"/> 3 Very Beneficial
	<input type="checkbox"/> 2 Some Experience	<input type="checkbox"/> 2 Some Interest	<input type="checkbox"/> 2 Some Benefit
	<input type="checkbox"/> 1 Little Experience	<input type="checkbox"/> 1 Little Interest	<input type="checkbox"/> 1 Little Benefit
	<input type="checkbox"/> 0 Unfamiliar	<input type="checkbox"/> 0 No Interest	<input type="checkbox"/> 0 No Benefit

CONSERVATION PRACTICES -- OVERALL MEAN SCORES

The first graph shows overall experience, interest, and perceived benefit for each of the 13 practices based on all responses from the survey. The results suggest:

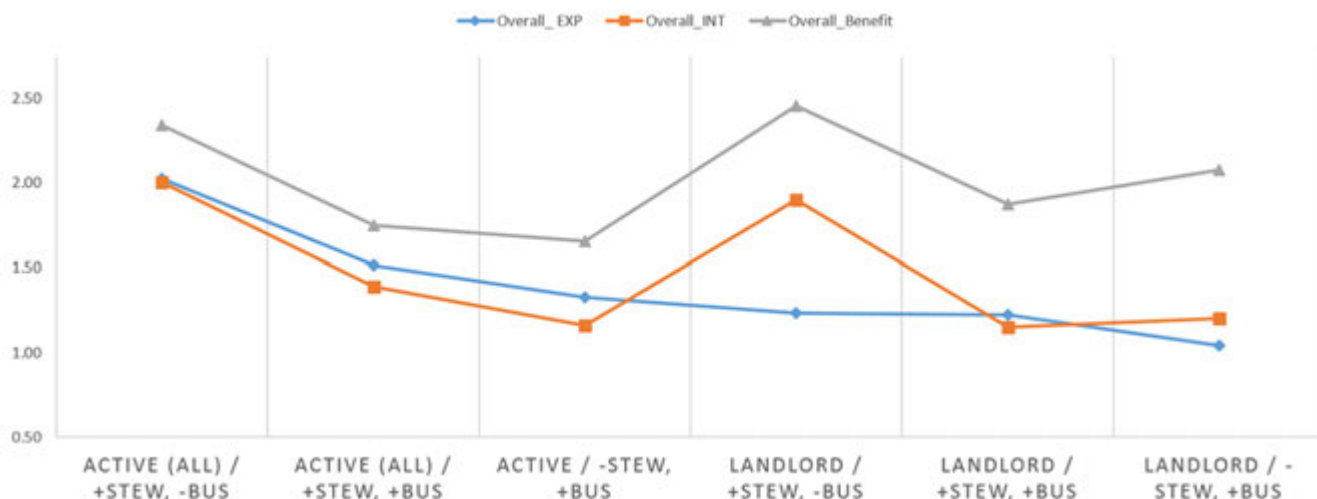
- Experience and interest is highest for Production Area practices.
- Most practices were similarly rated “Some Benefit” for perceived impact in the watershed.
- There is a large gap between experience and perceived benefit for Intensive Use and Riparian Area practices.



CONSERVATION PRACTICES -- STAKEHOLDER GROUPS

Upon introducing Typology 1 the results begin to reveal differences not shown in the overall trends. For this analysis an average score has been calculated from all 13 questions for the practices associated with each area of the farm.

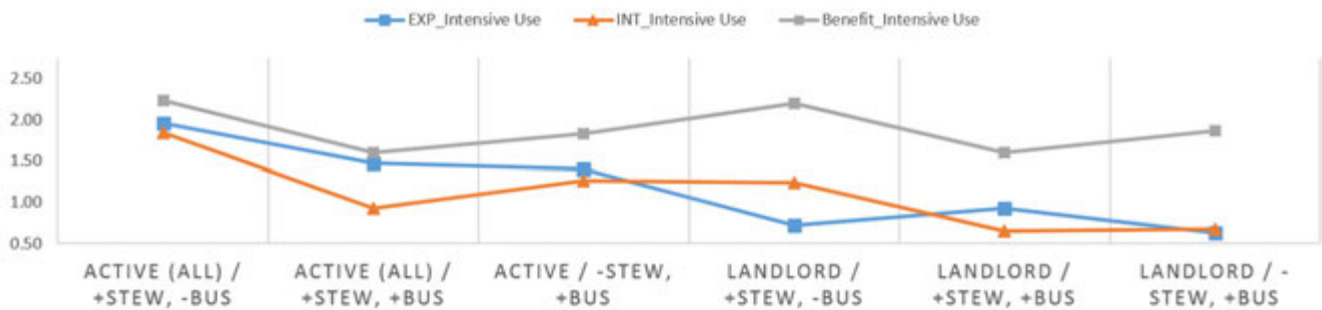
- Those who hold Positive Stewardship, Negative Business views are more interested in adopting conservation practices and hold a higher level of perceived benefit of installation.
- Active farms have more experience with conservation practices than landlords, regardless of their underlying views.



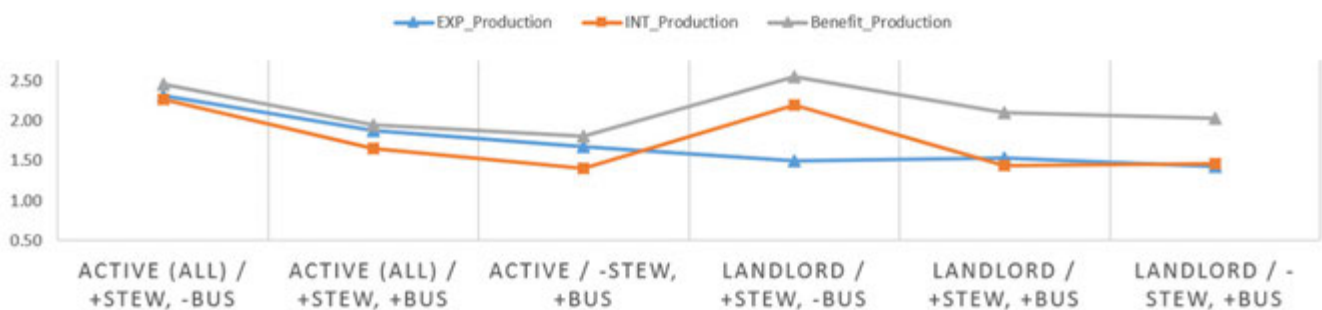
Green Lake Watershed

This analysis uses averaged responses from experience, interest, and benefit questions for the set of practices associated with each area of the farm (Intensive Use Areas, Production Areas, and Riparian Areas).

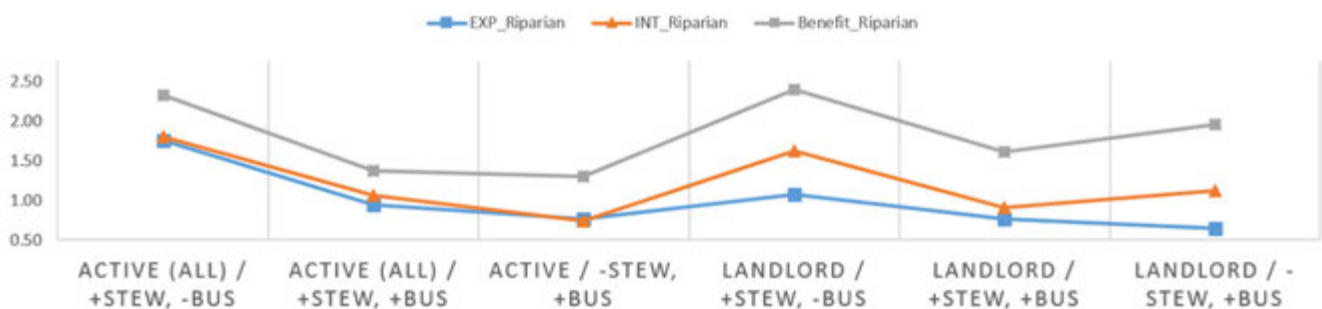
INTENSIVE USE AREAS



PRODUCTION AREAS



RIPARIAN AREAS



These results reveal the following lessons for conservation practices within these areas:

- There is little experience or interest in Intensive Use Area practices, except for Active Farms that hold Positive Stewardship, Negative Business views.
- Experience with Production Area practices is strong; however, experience is higher than overall interest except for Landlords that hold Positive Stewardship, Negative Business views.
- There is also little experience or interest in Riparian Area practices, but the perceived benefit is higher than experience for all groups.

CONSERVATION PRACTICES -- HARVESTABLE BUFFERS

MAKING CONSERVATION WORK FOR YOU

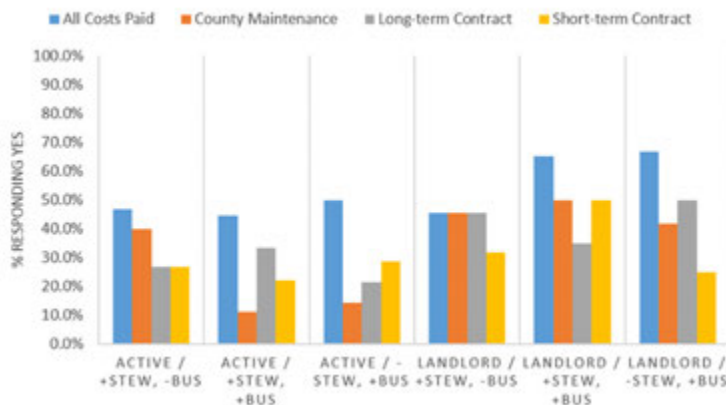
Please respond to the questions below to help us understand changes that could make new programs a better fit for you.

	INTEREST <i>in trying practice</i>	BENEFIT <i>to the watershed</i>
HARVESTABLE BUFFER PROGRAM is a proposed county government program that would provide funding to establish perennial grass cover along streams and ditches. The grass reduces stormwater runoff impacts and may also be harvested and used by the landowner.	3	3
	2	2
	1	1
	0	0

YES	NO	Would you be more interested in trying Harvestable Buffers if ...
<input type="checkbox"/>	<input type="checkbox"/>	<i>more interested if ... all the costs to install the harvestable buffer are paid by the County?</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>more interested if ... the County occasionally inspected and handled any necessary maintenance?</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>more interested if ... a long-term (25 years, 50 years, or permanent) contract were available -- assuming that longer contracts would receive a better rate (more years = more money)?</i>
<input type="checkbox"/>	<input type="checkbox"/>	<i>more interested if ... a short-term (5 years or 15 years) contract were available -- even if it paid less?</i>

The harvestable buffer is a conservation practice that is not currently available (for cost share) in Green Lake, although it is being considered as a possibility.

- Interest in a harvestable buffer practice is not very strong (mean scores range from approximately .75 to 1.5).
- Perceived benefit is stronger than current interest, suggesting that this may be an issue with a new program having unknown effectiveness (revealed as a primary barrier in previous section).



Participants were also asked to evaluate 4 possible scenarios for this program by indicating if each option would make them more interested.

- All costs paid seems most important to landlords who hold Positive Business (FVE) views.
- County maintenance is appealing for many, but not for active farms who hold Positive Business (FVE) views.
- Long term contracts are more appealing to landlords than active farms.
- Short term contract were less well received than long term contracts overall.

Stakeholder Profile:
Distinguishing Variables

ROLE OF GOVERNMENT

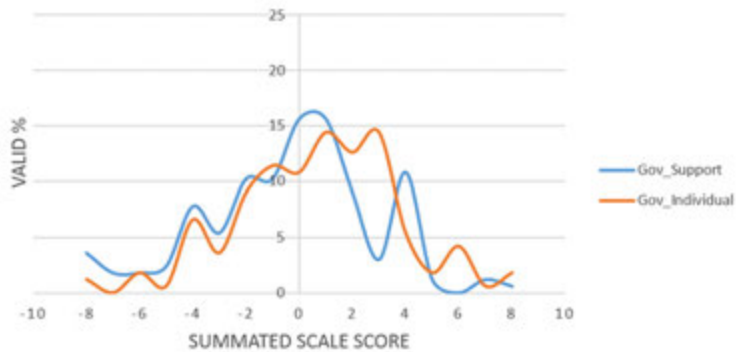
Similar to the FVE items these are grouped into 2 separate scales with one group of 4 items representing pro-government views and the other set of 4 items representing pro-individual views of farming. These sets of items are analyzed to ensure compatibility and then combined into 2 summated scales, each with a possible score range from -8 to +8.

GOVERNMENT INVOLVEMENT

This series of questions ask about your beliefs regarding how government should be involved in private land management. Please indicate whether you agree or disagree with each of the following statements:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't Know
	SD	D	N	A	SA	DK
Government expertise is essential to addressing problems facing resource management in my community. Government	-2	-1	0	1	2	<input type="checkbox"/>
Local residents are better able to address issues that concern the management of the rural landscape than the government. Individual	-2	-1	0	1	2	<input type="checkbox"/>
Solving problems currently facing farming like agricultural runoff affecting local water quality must rely on the innovation and ingenuity of farmers, not the government. Individual	-2	-1	0	1	2	<input type="checkbox"/>
Government agencies are an important partner who assists me in the management of my land. Government	-2	-1	0	1	2	<input type="checkbox"/>
Government programs do not provide me the flexibility that is needed to appropriately manage my land. Individual	-2	-1	0	1	2	<input type="checkbox"/>
Government payments are necessary to ensure that farmland is appropriately managed for the benefit of the community. Government	-2	-1	0	1	2	<input type="checkbox"/>
Private property is a right created by government that can be changed over time according to changing needs of society. Government	-2	-1	0	1	2	<input type="checkbox"/>
The government should not be allowed to regulate land management practices on private property, even if current activities have the potential to negatively impact others. Individual	-2	-1	0	1	2	<input type="checkbox"/>

Unlike the results of the FVE scales the Role of Government scales revealed a normal distribution that suggests individuals generally hold Pro-Government (+Gov) or Pro-Individual (-Gov) views regarding government's role in land management decisions based on cluster analysis results.



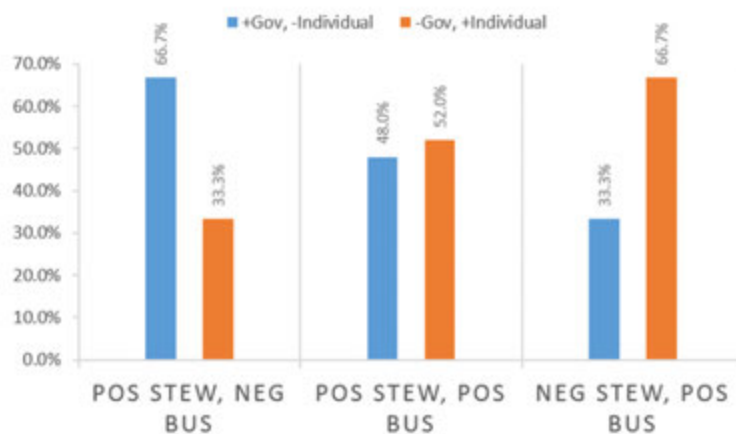
FARM TYPE X ROLE OF GOVERNMENT

No significant differences were identified for views of government involvement in land management between Active Farms (combining high and low sales) and Landlords. While there is a slightly higher rate of Pro-Individual (-Gov) views among Active Farms with sales greater than \$100,000 per year, the data reveals that both Pro-Government and Pro-Individual views are distributed across all farm operation types.

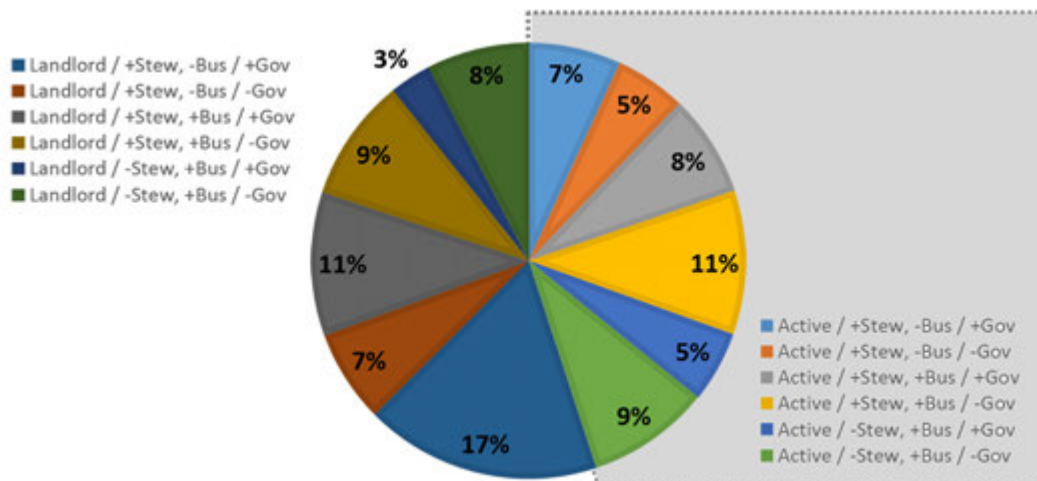


FARMERS VIEWS OF THE ENVIRONMENT X ROLE OF GOVERNMENT

The relationship between Farmers Views of the Environment and the Role of Government is more complex. It appears that those who hold Positive Stewardship, Negative Business views are more Pro-Government (+Gov) and that for those hold Negative Stewardship, Positive Business views they are more likely to hold Pro-Individual (-Gov) views. However, there are important differences in each group related to the Role of Government that may impact participation in conservation efforts.



TYOLOGY 2: FVE X FARM TYPE X GOV



APPLICATION



APPLICATION: TRUST & PARTNERS

The survey explored several key attributes necessary to building relationships with agricultural stakeholders. Of particular important is determining who the farmers trust to work with (“contact”) to make decisions that may have an impact on water quality.

TRUST IN ORGANIZATIONS

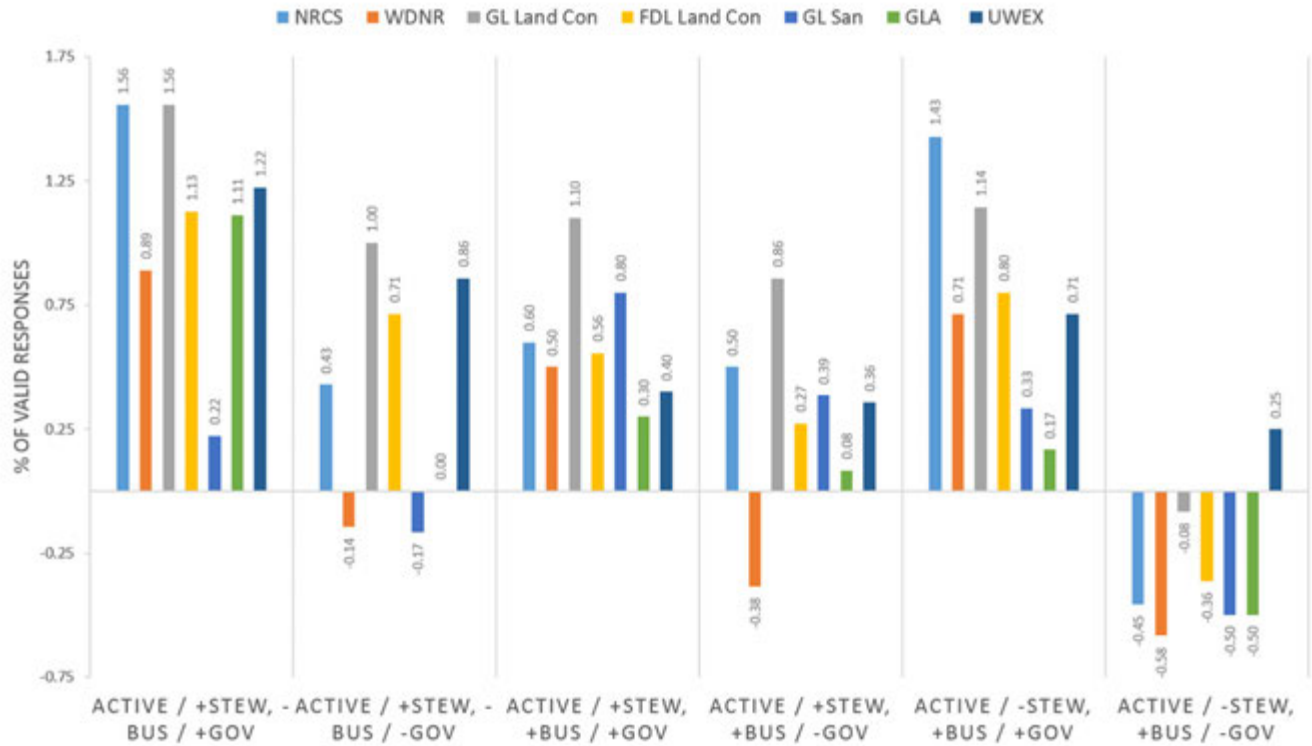
We would like to know your level of trust in organizations that are working to address water quality issues in the Green Lake Watershed. For each of the following how likely are you to work with the organization to identify new opportunities to address issues on your land?

	Very Unlikely	Unlikely	Neutral	Likely	Very Likely	Don't Know
	VUL	UL	N	L	VL	DK
USDA Natural Resource Conservation Services (NRCS) - A federal agency that provides landowners with financial and technical assistance to support the installation and upkeep of conservation practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wisconsin Department of Natural Resources (WDNR) - A state agency that provides landowners with financial and technical assistance to support the installation and upkeep of conservation practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green Lake County Land Conservation Department - A local agency that provides landowners with financial and technical assistance to support the installation and upkeep of conservation practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fond du Lac County Land and Water Conservation Department - A local agency that provides landowners with financial and technical assistance to support the installation and upkeep of conservation practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green Lake Sanitary District - A local district created to protect Green Lake by providing leadership on sanitation and related air, land, and water quality matters.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green Lake Association - A group of local citizens who are interested in addressing water quality challenges.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
University of Wisconsin Extension - Local university professionals that provides landowners with educational programs and publications.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

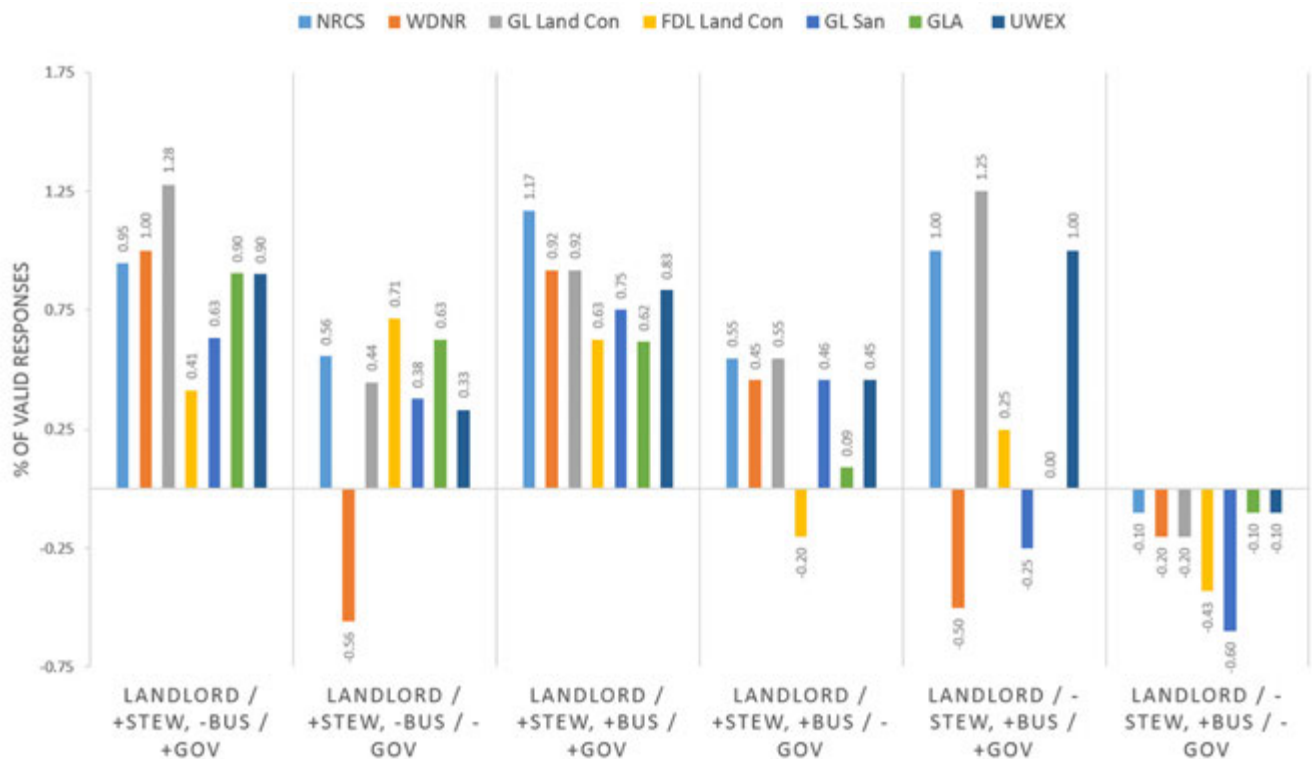
The graphs on the following page show the results for each of the twelve Typology 2 groups (active farm groups in the top graphic and landlord groups in the bottom graphic). Based on these results it is important to understand that:

- Individuals holding Pro-Government (+Gov) views are more likely to work with government agencies than those holding Pro-Individual (-Gov) views. Willingness to work with specific partners does vary based on Typology 1 (stewardship and business attitudes), suggesting that determining a primary contact is more than just selecting between government and non-government partners.
- It will be a struggle, or not possible, to reach some groups and these results suggest that this problem is most acute for those who hold Negative Stewardship, Positive Business and Pro-Individual views. This result holds for both active farms and landlords that hold this combination of attitude views.
- Due to the variability observed in these results it is appropriate to consider identifying primary contacts to take the lead with agricultural landowners in different parts of the watershed.

ACTIVE FARMERS: LIKELIHOOD WORKING WITH ORGANIZATIONS



LANDLORDS: LIKELIHOOD WORKING WITH ORGANIZATIONS



APPLICATION



APPLICATION: SUPPORT FOR FARMER-LED COUNCIL

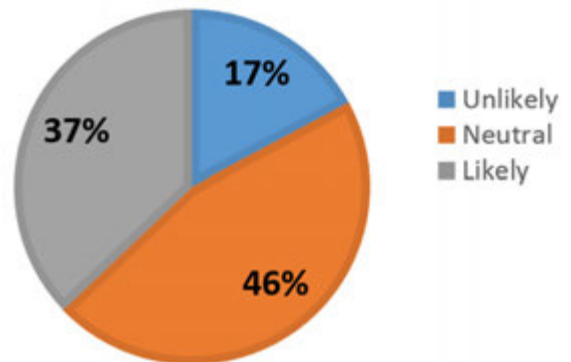
Another key attributes of relationship building with the agricultural community is soliciting their input about how they would like to participate (“the approach”) in efforts to manage watershed issues. Farmer-led councils have emerged as one pathway that focuses on building this relationship by asking agricultural stakeholders to assist directly in identifying problems and developing practical, acceptable responses that are appropriate for the local context.

WORKING TOGETHER FOR WATER QUALITY

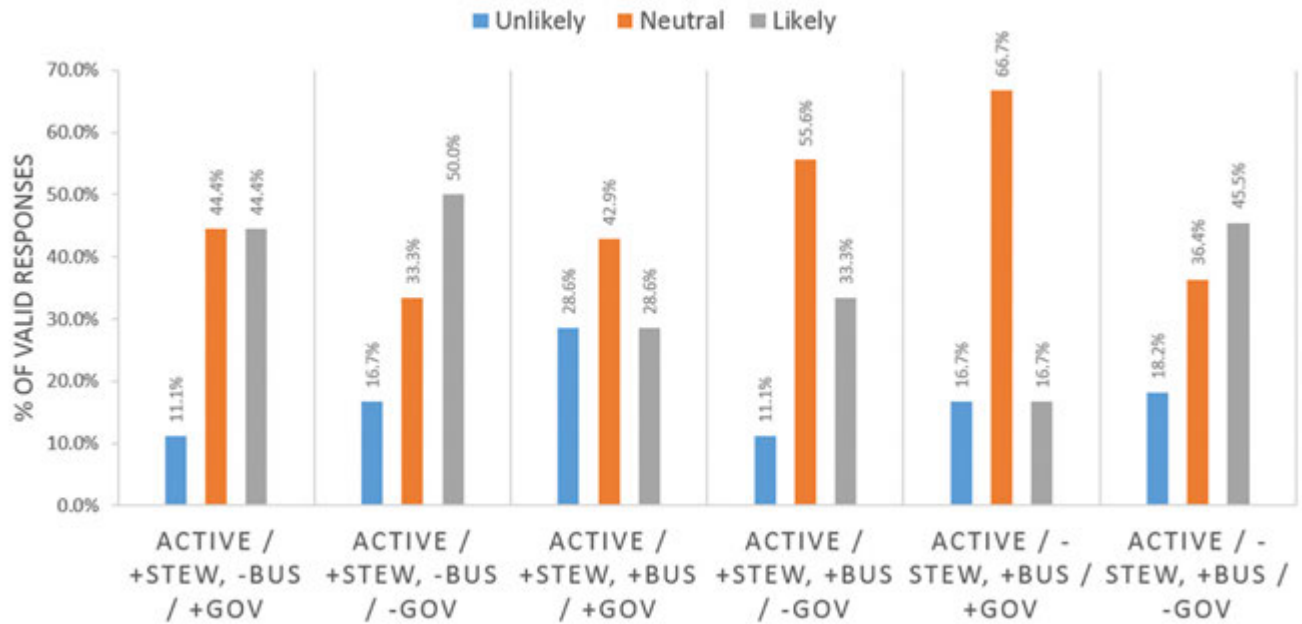
Input from local stakeholders is critical in natural resource management. Local knowledge of people, places and resources can only be obtained if local landowners are given the opportunity to be heard and participate. **This section asks about a new way that you as a rural landowner could participate in water quality management.**

FARMER-LED COUNCILS	Description: A Farmer-Led Council ...
	A. Relies on the participation of interested landowners and parallels a <u>farm advocacy group</u> .
	B. The <u>council of local farmers would work with interested landowners</u> to get water quality projects completed on private properties.
	C. This group would <u>primarily consist of individual landowners</u> with a vested interest in this landscape with support from individuals with technical expertise.
	Question: How likely are you to participate in an effort that uses FARMER-LED COUNCILS for informing decisions that impact how water quality is managed in the Green Lake Watershed?
	Extremely Unlikely Neutral Extremely Likely Don't Know
	<input type="checkbox"/> -4 <input type="checkbox"/> -3 <input type="checkbox"/> -2 <input type="checkbox"/> -1 <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> DK

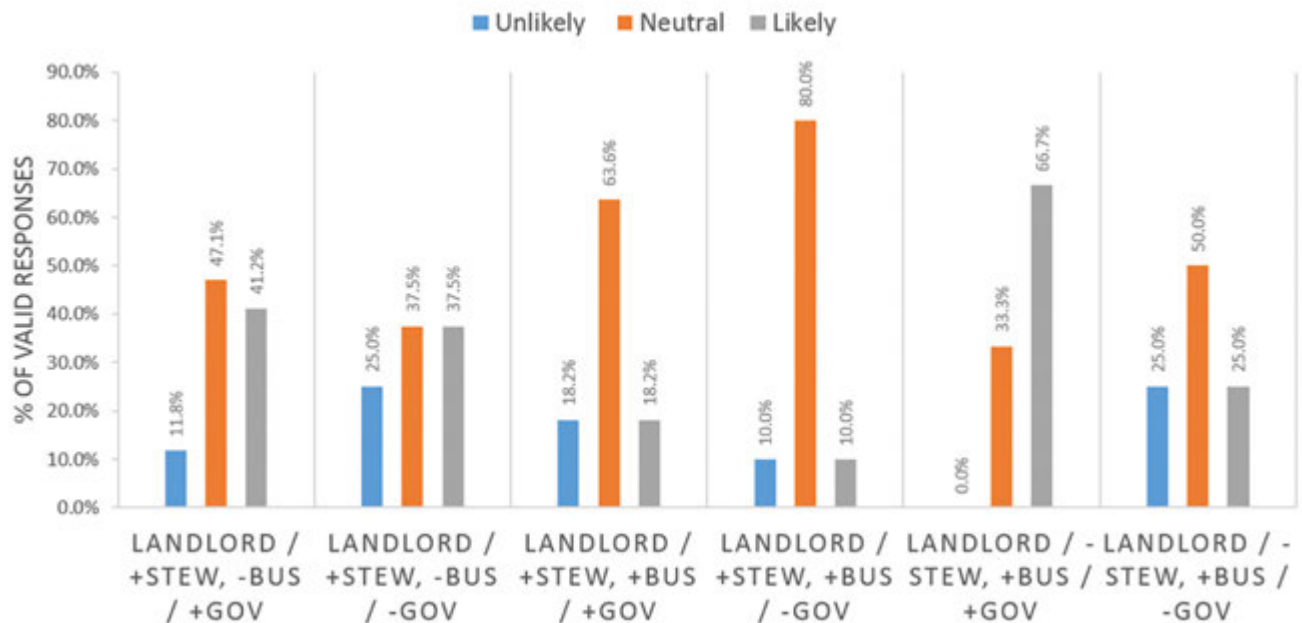
The survey asked respondents to rank their likely of support on a scale from extremely unlikely (-4) to extremely likely (+4). During the data cleaning stage these responses were recoded to reflect 3 categories: Unlikely (-4 to -2), Neutral (-1 to +1), and Likely (+2 to +4). The results, shown in the graph here, indicate that slightly more than 1/3 of agricultural landowners indicated a willingness to participate, while most other responses fell into the neutral category. This is likely the result of farmer-led councils still be a relatively new approach and awareness levels in general are very low. Overall, the result is positive that a farmer-led initiative is an option for engaging stakeholders in the Green Lake watershed.



ACTIVE FARMERS: SUPPORT FOR FARMER-LED COUNCIL



LANDLORDS: SUPPORT FOR FARMER-LED COUNCIL



On this page these results for farmer-led councils are broken down for the twelve Typology 2 groups (active farm groups in the top graphic and landlord groups in the bottom graphic).

- Farmer-led councils appear to have broad appeal (or similar pattern of unlikely responses) from all active farm groups.
- There is a slight trend of greater uncertainty (neutral responses) from landlord groups than active farms, regardless of Typology 2 views.

Factors Motivating Conservation Agriculture

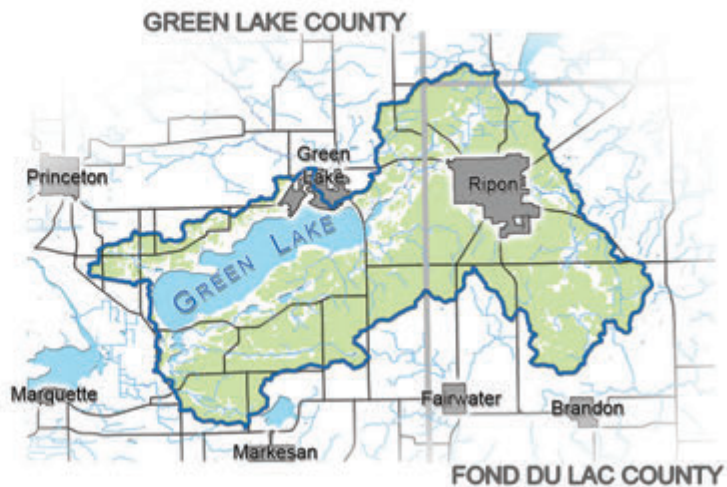


Photo credit: Green Lake Association

WHICH PART OF THE WATERSHED IS YOURS?

We're asking you to give us a general idea of the part of the watershed you call home, such as Green Lake versus Fond du Lac County, to help us better understand different landowner priorities across the watershed. Remember if any questions make you uncomfortable feel free to skip to the next question.

Please draw a circle about this size that best describes the general area where you farm, or own farmland, in the Green Lake watershed.



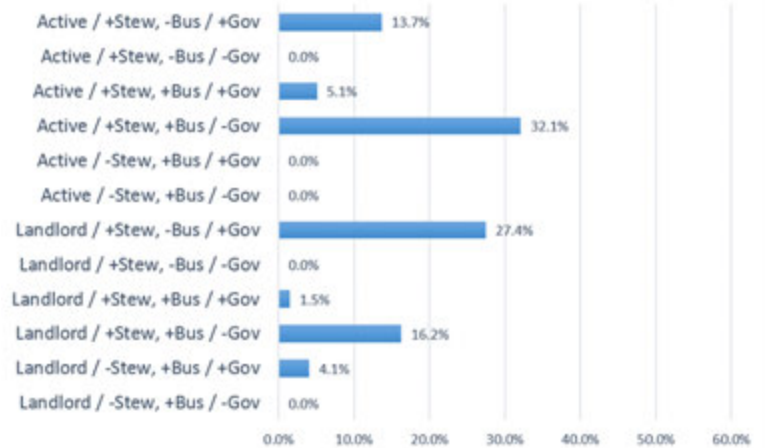
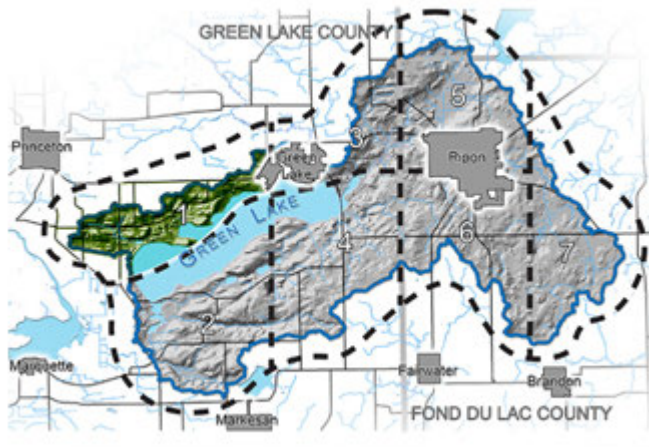
CONCLUSION #1: RESPOND TO SOCIAL CONDITIONS ON THE GROUND

In order to support the development of landscape strategies based on the social science assessment, participants were asked to provide an approximation of their location. These results were then summarized into 7 areas of the watershed to maintain confidentiality. Roughly 60 percent of survey respondents (111 individuals) provided enough information to locate their approximate area of the watershed. The result is 7 unique areas representing responses from landowners controlling more than 25,000 acres of agricultural lands in the Green Lake watershed.

CONCLUSIONS / LANDSCAPE STRATEGY

AREA 1: NORTH OF GREEN LAKE

% of Total Acres Reported

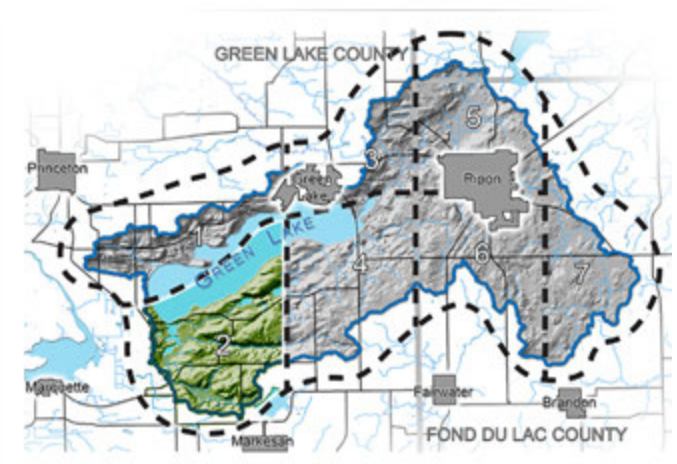
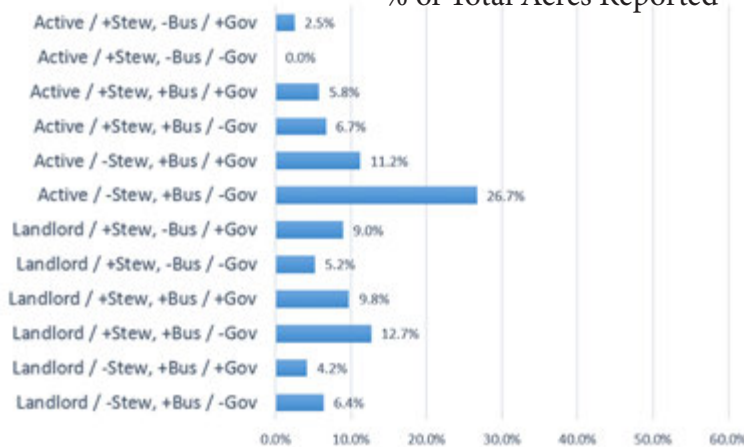


A landscape strategy for this area should recognize the following social characteristics for the dominant groups (Active / Landlord, share +Stew views, +/-Bus, +/-Gov):

- **Barriers to conservation:** Does \$ invested achieve desired result, lack of funding
- **Practices:** Gap between low current experience with practices and high desire for landlords.
- **Trusted Partners:** Green Lake County Land Conservation Department
- **Approach (farmer-led):** Yes -- for active farms, but landlords are unlikely to participate.

AREA 2: SOUTH OF GREEN LAKE

% of Total Acres Reported

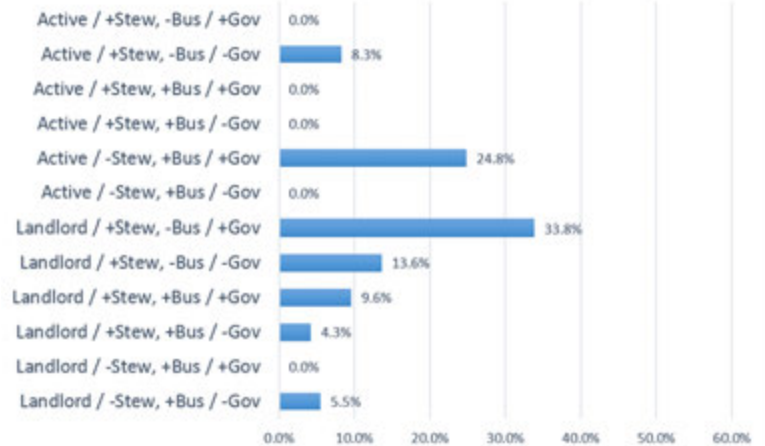
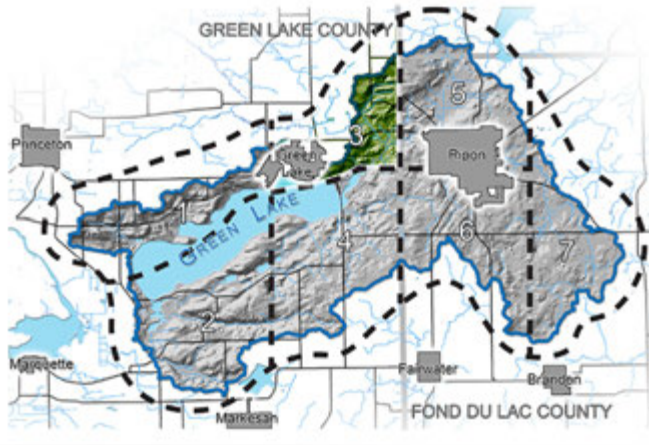


A landscape strategy for this area should recognize the following social characteristics for the dominant groups (Active, share -Stew, +Bus views, +/-Gov):

- **Barriers to conservation:** Reduced yield is the primary concern
- **Practices:** Lowest level of interest or perceived benefit of the conservation practices.
- **Trusted Partners:** Pro-Government (+Gov) Green Lake County Land Conservation Department, Pro-Individual (-Gov) unlikely to work with any of the active partners.
- **Approach (farmer-led):** Yes -- there is strong support, especially from those holding Pro-Individual (-Gov) views.

Green Lake Watershed

AREA 3: NORTHEAST OF GREEN LAKE % of Total Acres Reported

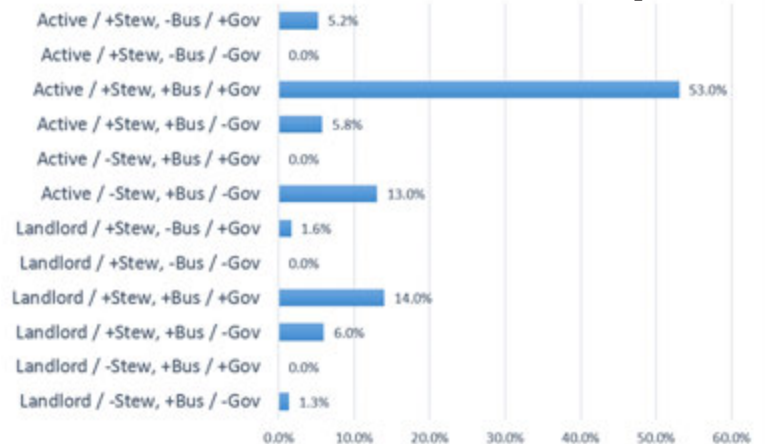
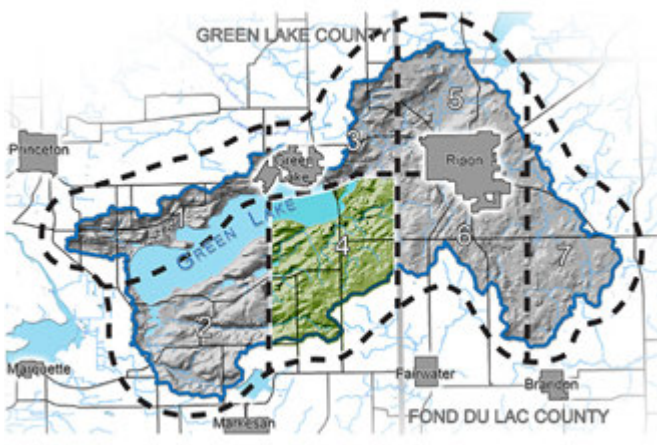


A landscape strategy for this area should recognize the following social characteristics for the dominant groups (Landlord, share +Stew / -Bus views, +/-Gov):

- **Barriers to conservation:** Does \$ invested achieve desired result, lack of funding
- **Practices:** For the dominant group (Landlords, +Stew / -Bus, +/-Gov) current experience with practices is low, but there is a high level of interest in practices for landlords.
- **Trusted Partners:** All partners, except WDNR.
- **Approach (farmer-led):** No -- this group is unlikely to participate.

Note: Secondary group -- active farm (24.8%) that shares characteristics with those in Area #2.

AREA 4: SOUTHEAST OF GREEN LAKE % of Total Acres Reported

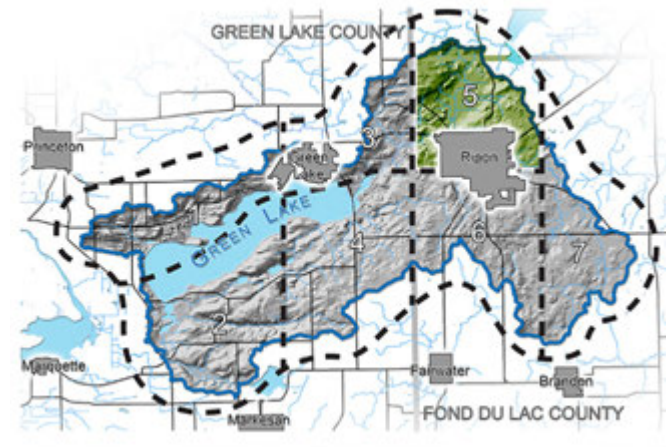
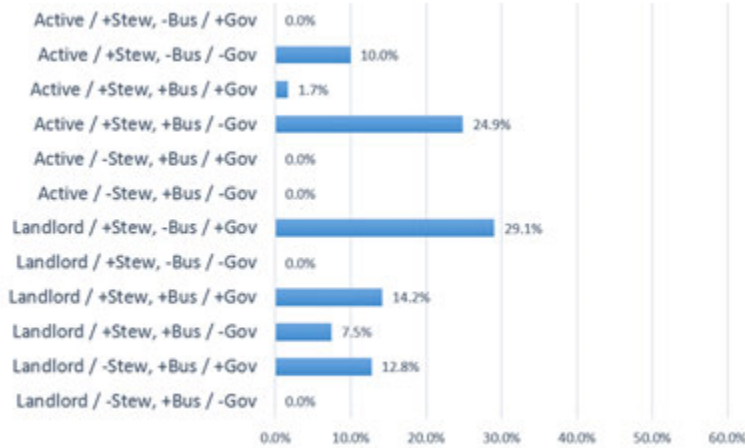


A landscape strategy for this area should recognize the following social characteristics for the dominant groups (Active / Landlord, share +Stew, +Bus views, share +Gov views):

- **Barriers to conservation:** Availability of 100 percent cost share (in addition)
- **Practices:** Limited room for improvement as current experience matches practice interest.
- **Trusted Partners:** Most partners, except for WDNR, Fond du Lac County Land Conservation Department, and the Green Lake Association.
- **Approach (farmer-led):** No -- there is a high degree of uncertainty with mean neutral responses between 55-80 percent.

AREA 5: NORTH OF RIPON

% of Total Acres Reported

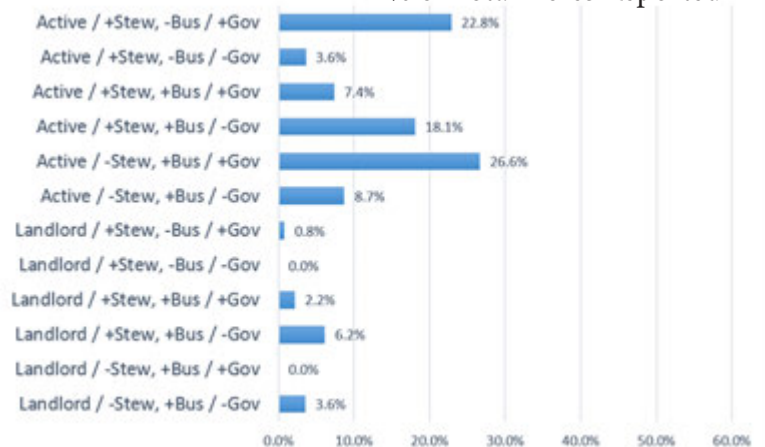
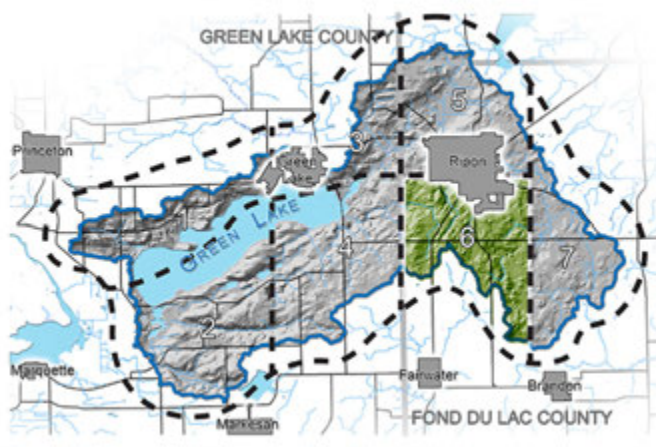


A landscape strategy for this area should recognize the following social characteristics for the dominant groups (Active / Landlord, share +Stew views, +/-Bus, +/-Gov):

- There is a lot of diversity in farmers views of the environment (Typology 1) resulting in a lot of distinct groups within this area; however, the Positive Stewardship views are a dominant feature even if there is disagreement about Business views.
- The general trend is that active farms tend to hold Pro-Individual (-Gov) views and landlords in this area of the watershed generally hold Pro-Government (+Gov) views.

AREA 6: SOUTH OF RIPON

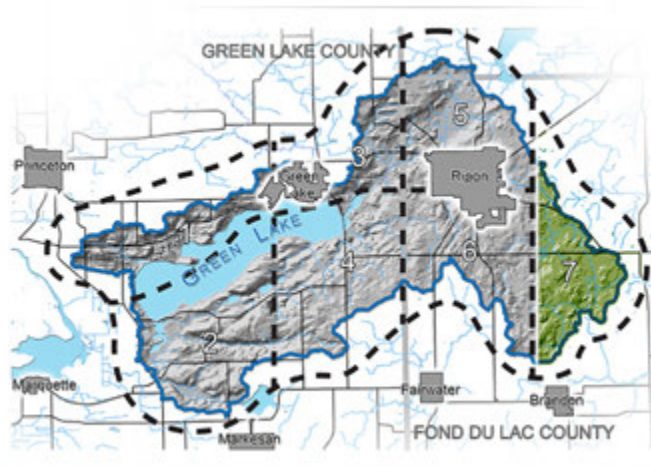
% of Total Acres Reported



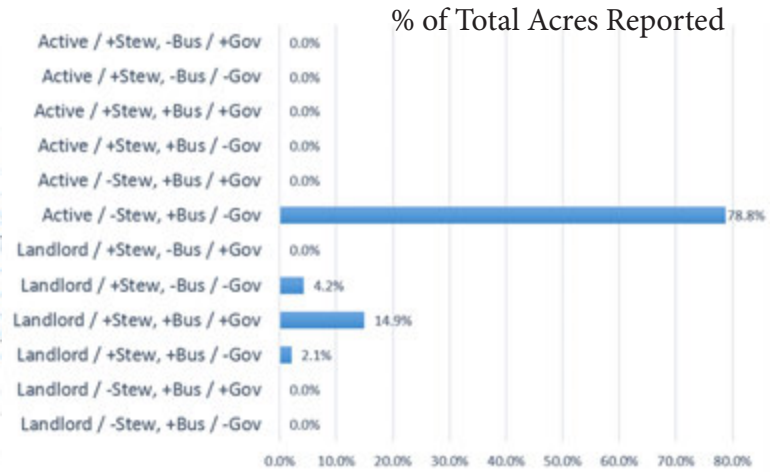
A landscape strategy for this area should recognize the following social characteristics for the dominant groups (Active, +/-Stew, +/-Bus, +/-Gov):

- There are few landlords in this area (at least that provided their location on the survey).
- The active farms in this area represent nearly every possible Typology 2 group, suggesting a wide range of barriers, practices, and trusted partners must be considered for this area.

Green Lake Watershed



AREA 7: SOUTHEAST OF RIPON



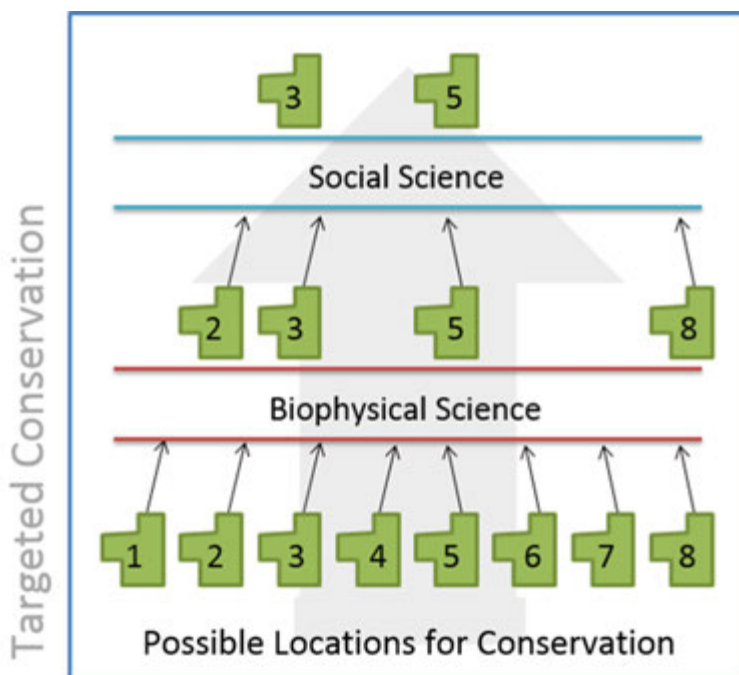
A landscape strategy for this area should recognize the following social characteristics for the dominant groups (Active, share -Stew, +Bus, -Gov views):

- **Barriers to conservation:** Reduced yield is the primary concern
- **Practices:** Lowest level of interest or perceived benefit of the conservation practices.
- **Trusted Partners:** Pro-Government (+Gov) Green Lake County Land Conservation Department, Pro-Individual (-Gov) unlikely to work with any of the active partners.
- **Approach (farmer-led):** Yes -- there is strong support, especially from those holding Pro-Individual (-Gov) views.

Note: Shares characteristics with those in Area #2, but more dominant here.

CONCLUSION #2: INTEGRATE SOCIAL & ECOLOGICAL DATA

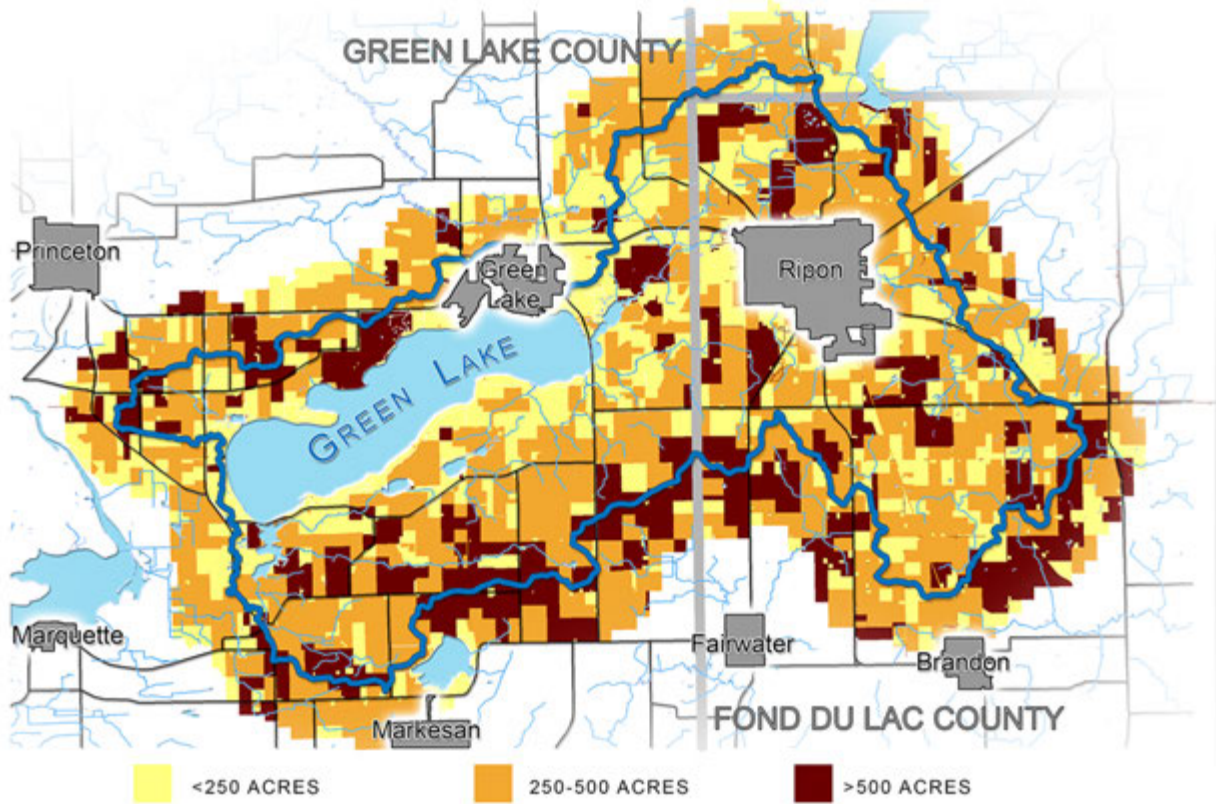
APPLICATION OF SPATIAL DATA



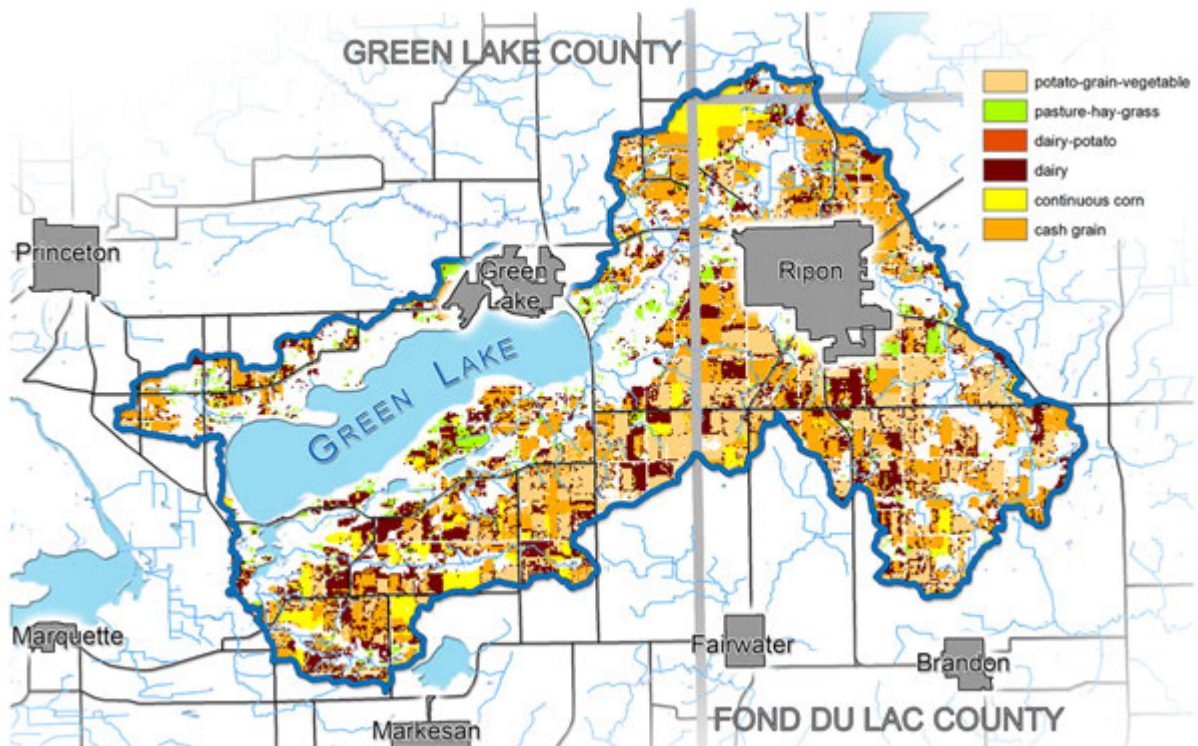
Adapted from Walter et al. (2007)

The survey data, and social breakdown of the watershed presented above, can provide insight into the practical realities of finding willing landowners to participate in conservation efforts. This information needs to be integrated with biophysical science that identifies where landscape strategies can intervene effectively to resolve or mitigate conditions that are leading to impairments in local waterways. The Green Lake Association has already invested in this information and maintains partnerships promoting BMPs within the watershed, but what is missing is an intentional analysis of both social and ecological data to provide the foundation for conservation decision making. As the maps on the next page show this is a complex analysis, but the data is available.

GENERAL TRENDS: OWNERSHIP ASSEMBLAGE



GENERAL TRENDS: CROP ROTATION



Green Lake Watershed

CONCLUSION #3: BUILD RELATIONSHIPS & AWARENESS

GROWING AWARENESS WITHIN THE AGRICULTURE COMMUNITY



The survey results confirmed anecdotal evidence conveyed by partners through past experience that the efforts of the Green Lake Association to address water quality are not widely known or understood by the agricultural community. In fact, only about 1 in 3 agricultural landowners are familiar with the Green Lake Association. Efforts to address this challenge must continue to focus on building these relationships through:

- Continuing to create outreach opportunities, such as the recent GLA conservation field day and the Green Lake producer video documentary.
- Investing in expanding GLA efforts, or supporting other community (non-governmental) programming to coordinate conservation. *Note: Support for farmer-led councils should be carefully considered and depends on who GLA is attempting to establish a new relationship as it is not supported by all types of agricultural landowners.

CONCLUSION #4: RESPOND TO EMERGING OPPORTUNITIES

SUPPORT FOR WOMEN WHO OWN FARMLAND



The prevalence of non-farming households (landlords), that is now an established trend across multiple studies of watersheds in Central Wisconsin conducted by Dr. Aaron Thompson, presents unique outreach challenges. For Green Lake this type of landowner is also more likely to be older and has a higher percentage of females. This presents an excellent opportunity to include a new group in the conversation, while also addressing the challenge that only 1 in 4 landlords have clear plans for the future of their land. Green Lake is not completely unique and existing “women in agriculture” programs could be contacted for support and resources (Iowa State University, 2017).

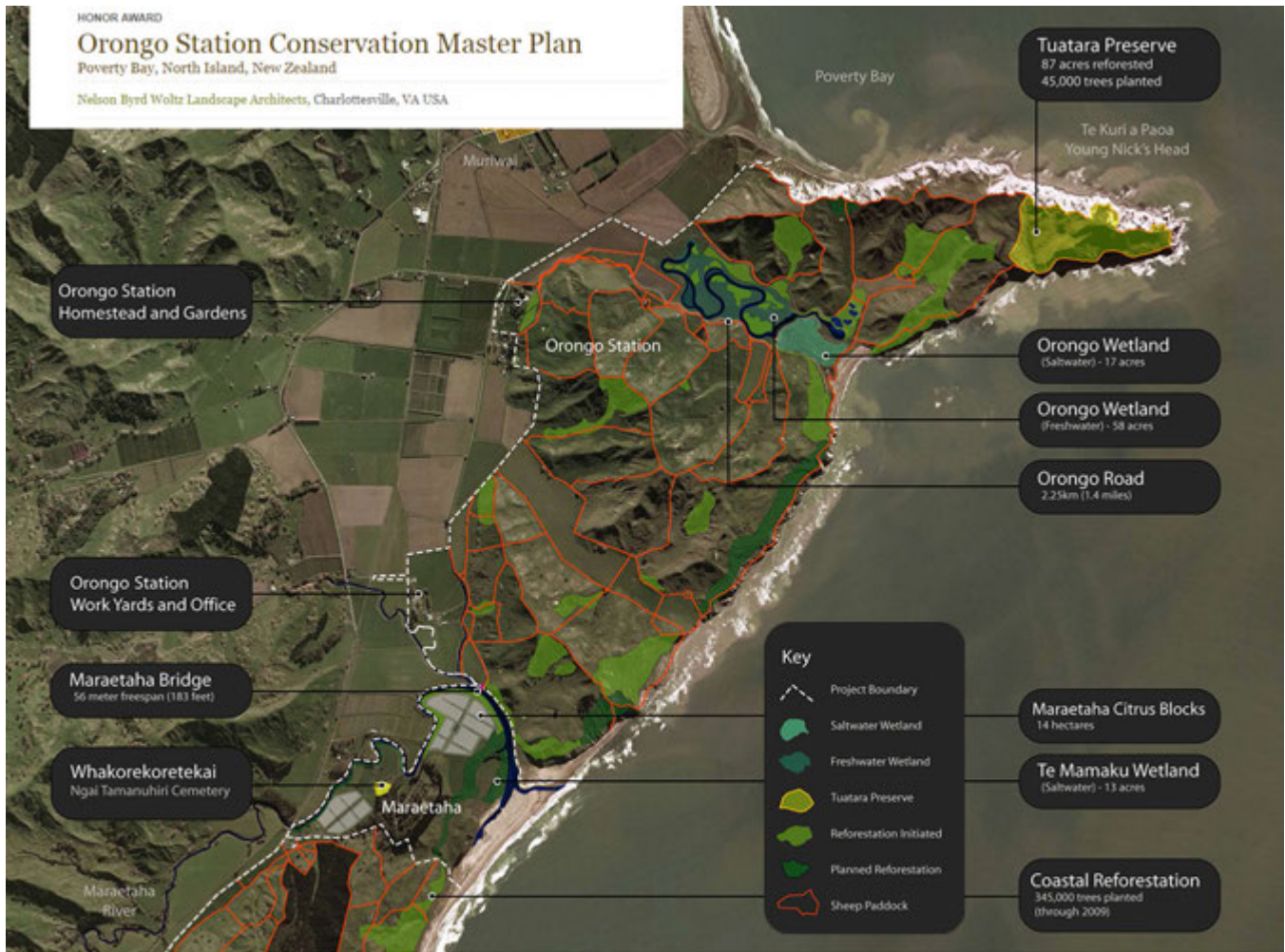
BUILDING RELATIONSHIPS WITH THE NEXT GENERATION



While the average age of those surveyed is over 60 years, it is important to note that active farms (especially high sales) had a slightly lower average age and that 70 percent plan to have a family member continue their operation in the future. If GLA wants improved relationships with farmers in the future it is important to begin investing in relationship building with the next generation today. This may include efforts through 4-H or FFA programming to youth, but perhaps most importantly is focusing on identifying ways to support producers who are actively transitioning into farm management roles. Farm transition is a significant challenge and there are many programs to support young farmers (USDA, 2017). However, there are also many aspects that impact local waterways, like land management decisions, that could be an opportunity for new local conservation programs and support.

Green Lake Watershed

CONCLUSION #5: DEFINE "CONSERVATION AGRICULTURE" FOR GREEN LAKE



ANALYSIS AND PLANNING
2010 ASLA PROFESSIONAL AWARDS
AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS

Presented here is an award winning project from New Zealand focused on allocating conservation agriculture practices at the landscape scale. The purpose of this example is to suggest that a more detailed landscape plan for Green Lake, developed with input from agricultural stakeholders, could provide a stronger plan for protection of Green Lake and some needed clarity for agricultural landowners regarding what is being asked of them to protect local waterways. Additionally, the survey revealed the following design challenges:

- Unlike Production Area practices (high experience and interest), Riparian Area practices did not generate significant interest from landowners. There is a belief that they are very beneficial to the watershed; however, how do we improve the design of these practices so that they are acceptable and generate interest from landowners?
- Related to the landscape scale challenge questions above -- how can we show agricultural landowners the future we need in order to protect Green Lake? Would partnering with a few landowners in the watershed to work through design challenges benefit all outreach efforts?

Factors Motivating Conservation Agriculture

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APPENDIX

SURVEY INVITATION LETTER

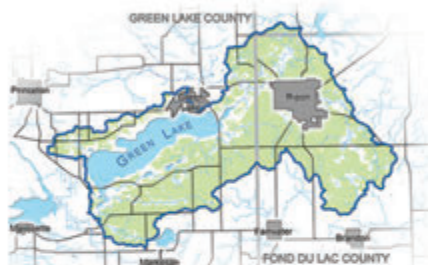
Green Lake Farmer Survey



College of Natural Resources
University of Wisconsin-Stevens Point

We're asking for your help! A group in your community – the Green Lake Management Planning (LMP) Team – is working hard to protect the health of Big Green Lake. The multi-organization team works around Green Lake's shorelines, urban and agricultural areas in their effort to improve lake water quality. As highlighted in green in the map shown here, this lake is part of an agricultural landscape, which means that problem solving help from the farming community is critical to the success of community efforts.

**The survey booklet will arrive
in the mail in about 7 -10 days.**



**This advance letter is simply intended to let you know about this
opportunity to contribute, but it also helps us keep costs down by
confirming valid mailing addresses.**

We want your input on the priorities of those who know the land best: agricultural producers and landowners in the Green Lake watershed. We are asking you to complete this survey, which should take about 20 minutes of your time. The survey is being conducted by the UW-Extension Center for Land Use Education at UW-Stevens Point that assists communities in understanding the priorities of key stakeholders. Please contribute to this effort by completing the survey and returning it in the enclosed postage paid envelope.

Here are a few important notes about this study:

- All results will be kept confidential; we're just looking for your important perspective about how to better manage Green Lake and the surrounding watershed.
- All responses will be treated as anonymous and records used to contact respondents containing identifying information will be destroyed prior to the research team reviewing data.
- Please skip any questions that make you feel uncomfortable or that you don't know how to answer.
- We do not anticipate any potential for risk or harm due to participation in this study; however, if you have any complaints about your treatment as a participant in this study please contact Dr. Debbie Palmer, IRB Chair at (715) 346-3953, e-mail at irbchair@uwsp.edu, or mail at University of Wisconsin-Stevens Point, Science Building D240, Stevens Point Wisconsin 54481.

While your participation is voluntary your input can help bring local voices into these important efforts to benefit Green Lake! If you have any questions or comments about this project you may contact me using the information provided below.

Thank you for your time and we're looking forward to hearing from you!

Dr. Aaron Thompson, Associate Professor
E-mail: aaron.thompson@uwsp.edu Phone: 715.346.2278

APPENDIX

APPENDIX

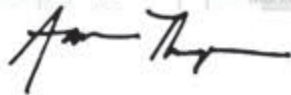
REMINDER POSTCARD

Dear Green Lake Watershed Landowner,

I am sending you this reminder because your input is extremely valuable. We haven't heard back from you on the Green Lake Watershed Survey seeking your opinions about how landowners in your community should be included in making water quality decisions in this watershed. Hearing from everyone is important as your opinions and experiences are unique from those who have already responded.

If you've already taken the time to complete the survey thank you for your assistance, if not please take this opportunity to complete the survey in order to inform this important work.

Sincerely,



Dr. Aaron Thompson, Assistant Professor

E-mail: aaron.thompson@uwsp.edu

Phone: 715.346.2278

Green Lake Watershed



College of Natural Resources
University of Wisconsin - Stevens Point

Dr. Aaron Thompson

UWSP Center for Land Use Education -- TNR 207

800 Reserve St

Stevens Point, WI 54481

APPENDIX

SURVEY QUESTIONNAIRE

Green Lake Farmer Survey



College of Natural Resources
University of Wisconsin-Stevens Point

GREEN LAKE COUNTY



FOND DU LAC COUNTY

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Thank you for your time and we're looking forward to hearing from you!

Dr. Aaron Thompson, Associate Professor
E-mail: aaron.thompson@uwsp.edu Phone: 715.346.2278

PLEASE READ BEFORE BEGINNING THIS SURVEY:

This survey must be completed by an adult 18 years of age or older. Due to the type of research being conducted it is important that the individual responsible for making land management decisions is the individual who completes this survey to the best of his or her ability.

Please mark all answers clearly, in pen or pencil, as indicated below.


Example "A" Example "B"

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APPENDIX

SURVEY QUESTIONNAIRE

Green Lake Watershed



CONSERVATION PRIORITIES

To begin we'd like to understand your priorities for the Green Lake Watershed. Please indicate whether you support each of the following goals by responding Yes or No.

YES	NO	Encouraging land management practices that promote good soil health.
<input type="checkbox"/>	<input type="checkbox"/>	
YES	NO	Reducing soil erosion entering into waterways from both shoreline and upland sources.
<input type="checkbox"/>	<input type="checkbox"/>	
YES	NO	Funding practices on local farms that help reduce phosphorus runoff, which can improve local water quality.
<input type="checkbox"/>	<input type="checkbox"/>	
YES	NO	Promoting the protection and restoration of riparian wetlands and marshes.
<input type="checkbox"/>	<input type="checkbox"/>	
YES	NO	Reducing habitat fragmentation and promoting the protection and restoration of areas for wildlife.
<input type="checkbox"/>	<input type="checkbox"/>	
YES	NO	Ensuring that someone who can provide technical assistance for installing conservation practices is available to come out to my property and meet with me.
<input type="checkbox"/>	<input type="checkbox"/>	

FARMERS AND THE ENVIRONMENT

The next series of questions ask about trade-offs farmers must make between production and conservation considerations. Please indicate whether you agree or disagree with each of the following statements:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't Know
	SD	D	N	A	SA	DK
Good farming requires using all available acreage as efficiently as possible to maximize yields.	<input type="checkbox"/> -2	<input type="checkbox"/> -1	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/>
To protect the rural landscape, farmers must move away from conventional agricultural practices to approaches that more closely mimic natural processes.	<input type="checkbox"/> -2	<input type="checkbox"/> -1	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/>
Modifications to my farm that increase production, such as the removal of grasslands, fence rows, or grass field buffers have little impact on the environment.	<input type="checkbox"/> -2	<input type="checkbox"/> -1	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/>
Programs to protect soil and water resources should emphasize approaches that primarily benefit agricultural production.	<input type="checkbox"/> -2	<input type="checkbox"/> -1	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/>
As a result of modern agricultural practices, farmers must exert more effort now to protect the environment than was necessary in the past.	<input type="checkbox"/> -2	<input type="checkbox"/> -1	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/>
The primary role of farms is the production of food and related agricultural products; the protection of the environment is separate from this purpose.	<input type="checkbox"/> -2	<input type="checkbox"/> -1	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/>
Good farming results from placing equal importance on the management of both the agricultural and natural areas of my farm.	<input type="checkbox"/> -2	<input type="checkbox"/> -1	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/>
A successful farmer is someone who continuously evaluates the environmental impact of their farm and adopts new approaches to protect the environment.	<input type="checkbox"/> -2	<input type="checkbox"/> -1	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/>

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APPENDIX

SURVEY QUESTIONNAIRE

GOVERNMENT INVOLVEMENT						
This series of questions ask about your beliefs regarding how government should be involved in private land management. Please indicate whether you agree or disagree with each of the following statements:	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't Know
	SD	D	N	A	SA	DK
Government expertise is essential to addressing problems facing resource management in my community.	-2	-1	0	1	2	<input type="checkbox"/>
Local residents are better able to address issues that concern the management of the rural landscape than the government.	-2	-1	0	1	2	<input type="checkbox"/>
Solving problems currently facing farming like agricultural runoff affecting local water quality must rely on the innovation and ingenuity of farmers, not the government.	-2	-1	0	1	2	<input type="checkbox"/>
Government agencies are an important partner who assists me in the management of my land.	-2	-1	0	1	2	<input type="checkbox"/>
Government programs do not provide me the flexibility that is needed to appropriately manage my land.	-2	-1	0	1	2	<input type="checkbox"/>
Government payments are necessary to ensure that farmland is appropriately managed for the benefit of the community.	-2	-1	0	1	2	<input type="checkbox"/>
Private property is a right created by government that can be changed over time according to changing needs of society.	-2	-1	0	1	2	<input type="checkbox"/>
The government should not be allowed to regulate land management practices on private property, even if current activities have the potential to negatively impact others.	-2	-1	0	1	2	<input type="checkbox"/>

MANAGEMENT DECISIONS						
Many agencies and groups are working with farmers to improve land management practices to improve water quality. These efforts often offer cost sharing or expertise to implement new practices; however, there are many valid reasons why people aren't interested in these programs. How important are each of following reasons when you make decisions about changing land management practices on your farm?	Very Unimportant	Somewhat Unimportant	Neutral	Somewhat Important	Very Important	Don't Know
	-2	-1	0	1	2	
Uncertainty about whether the money I invest will result in improvements in local water quality.	-2	-1	0	1	2	<input type="checkbox"/>
Concern that changing land management practices might reduce yields or overall farm productivity.	-2	-1	0	1	2	<input type="checkbox"/>
The lack of a source of funding to install or maintain these practices.	-2	-1	0	1	2	<input type="checkbox"/>
Concern that I don't have the skills and knowledge necessary to install or maintain these practices on my property.	-2	-1	0	1	2	<input type="checkbox"/>
Uncertainty about whether installing these practices on my property is likely to reduce undesirable water quality problems in nearby waterways.	-2	-1	0	1	2	<input type="checkbox"/>
The additional time spent doing paperwork isn't worth the cost share provided by organizations working to improve land management practices.	-2	-1	0	1	2	<input type="checkbox"/>
Not wanting to invest my own money in water quality practices, as I'd be more likely to participate if someone else covers 100 percent of the costs.	-2	-1	0	1	2	<input type="checkbox"/>

- 3 -

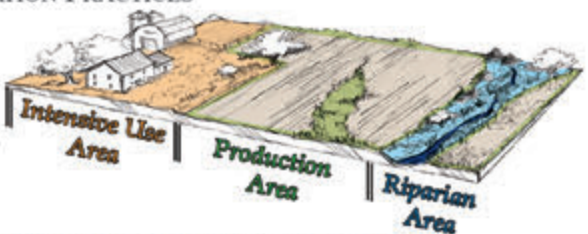
Former Survey

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APPENDIX

SURVEY QUESTIONNAIRE

CONSERVATION PRACTICES



We'd like to know more about your experience with conservation practices that have the potential to improve water quality in your area. The practices presented below (and on the next page) are appropriate for different parts of a farm property and have been organized into the 3 groups shown in the diagram here.

Please read the practice descriptions provided below and respond to these 3 questions for each:

EXPERIENCE: What is your experience using each practice on your land? Please rate from (0) unfamiliar -- I have not heard of this before to (3) very experienced -- currently use this practice extensively on my farm.

INTEREST: What is your level of interest in trying, or expanding the use of, each practice? Please rate from (0) no interest -- would not work on my farm to (3) very interested -- would be a good fit for my farm.

BENEFIT: How much benefit to water quality do you believe would come from funding installations of each practice on farms across the Green Lake Watershed? Please rate from (0) no benefit -- would not improve water quality to (3) very beneficial -- would significantly improve water quality.

Green Lake Watershed

<i>Intensive Use Area Practices</i>	EXPERIENCE <i>on your land</i>	INTEREST <i>in trying practice</i>	BENEFIT <i>to the watershed</i>
BARNYARD WATER MANAGEMENT is a set of practices, such as gutters, roof structures over barnyards, or other methods that divert clean water (rainfall) away from possible sources of contamination.	3 Very Experienced 2 Some Experience 1 Little Experience 0 Unfamiliar	3 Very Interested 2 Some Interest 1 Little Interest 0 No Interest	3 Very Beneficial 2 Some Benefit 1 Little Benefit 0 No Benefit
WASTE STORAGE are constructed structures put in place to temporarily store animal waste until it can be properly applied to fields.	3 Very Experienced 2 Some Experience 1 Little Experience 0 Unfamiliar	3 Very Interested 2 Some Interest 1 Little Interest 0 No Interest	3 Very Beneficial 2 Some Benefit 1 Little Benefit 0 No Benefit

<i>Production Area Practices</i>	EXPERIENCE <i>on your land</i>	INTEREST <i>in trying practice</i>	BENEFIT <i>to the watershed</i>
GRADE STABILIZATION STRUCTURES are constructed retaining walls, or retention ponds, used to stabilize areas within a field that are highly susceptible to erosion.	3 Very Experienced 2 Some Experience 1 Little Experience 0 Unfamiliar	3 Very Interested 2 Some Interest 1 Little Interest 0 No Interest	3 Very Beneficial 2 Some Benefit 1 Little Benefit 0 No Benefit
TERRACE SYSTEM is used to farm uneven or hilly terrain using terraced fields to decrease erosion and surface runoff.	3 Very Experienced 2 Some Experience 1 Little Experience 0 Unfamiliar	3 Very Interested 2 Some Interest 1 Little Interest 0 No Interest	3 Very Beneficial 2 Some Benefit 1 Little Benefit 0 No Benefit
GRASSED WATERWAYS are intentionally graded shallow channels that are seeded with grass to protect natural drainage ways from gully erosion during a stormwater runoff event.	3 Very Experienced 2 Some Experience 1 Little Experience 0 Unfamiliar	3 Very Interested 2 Some Interest 1 Little Interest 0 No Interest	3 Very Beneficial 2 Some Benefit 1 Little Benefit 0 No Benefit

- 4 -

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APPENDIX

SURVEY QUESTIONNAIRE

<i>Production Area Practices (continued)</i>	EXPERIENCE <i>on your land</i>	INTEREST <i>in trying practice</i>	BENEFIT <i>to the watershed</i>
NO TILL PLANTING is a practice that limits soil disturbance and erosion by allowing planting to occur directly into the previous year's crop residues without tilling.	<input type="checkbox"/> 3 Very Experienced <input type="checkbox"/> 2 Some Experience <input type="checkbox"/> 1 Little Experience <input type="checkbox"/> 0 Unfamiliar	<input type="checkbox"/> 3 Very Interested <input type="checkbox"/> 2 Some Interest <input type="checkbox"/> 1 Little Interest <input type="checkbox"/> 0 No Interest	<input type="checkbox"/> 3 Very Beneficial <input type="checkbox"/> 2 Some Benefit <input type="checkbox"/> 1 Little Benefit <input type="checkbox"/> 0 No Benefit
NUTRIENT MANAGEMENT involves adjusting the method (i.e. injection or incorporation), rate, or timing of applications to minimize the potential for contaminated runoff into nearby waterways or field tiles.	<input type="checkbox"/> 3 Very Experienced <input type="checkbox"/> 2 Some Experience <input type="checkbox"/> 1 Little Experience <input type="checkbox"/> 0 Unfamiliar	<input type="checkbox"/> 3 Very Interested <input type="checkbox"/> 2 Some Interest <input type="checkbox"/> 1 Little Interest <input type="checkbox"/> 0 No Interest	<input type="checkbox"/> 3 Very Beneficial <input type="checkbox"/> 2 Some Benefit <input type="checkbox"/> 1 Little Benefit <input type="checkbox"/> 0 No Benefit
COVER CROPS are plants that are seeded into a field alongside the commercial crop primarily to manage soil erosion or improve soil health.	<input type="checkbox"/> 3 Very Experienced <input type="checkbox"/> 2 Some Experience <input type="checkbox"/> 1 Little Experience <input type="checkbox"/> 0 Unfamiliar	<input type="checkbox"/> 3 Very Interested <input type="checkbox"/> 2 Some Interest <input type="checkbox"/> 1 Little Interest <input type="checkbox"/> 0 No Interest	<input type="checkbox"/> 3 Very Beneficial <input type="checkbox"/> 2 Some Benefit <input type="checkbox"/> 1 Little Benefit <input type="checkbox"/> 0 No Benefit
CONTOUR FARMING encourages row cropping practices, such as tillage ridges and furrows, that work to prevent stormwater from flowing downslope in order to decrease erosion and surface runoff.	<input type="checkbox"/> 3 Very Experienced <input type="checkbox"/> 2 Some Experience <input type="checkbox"/> 1 Little Experience <input type="checkbox"/> 0 Unfamiliar	<input type="checkbox"/> 3 Very Interested <input type="checkbox"/> 2 Some Interest <input type="checkbox"/> 1 Little Interest <input type="checkbox"/> 0 No Interest	<input type="checkbox"/> 3 Very Beneficial <input type="checkbox"/> 2 Some Benefit <input type="checkbox"/> 1 Little Benefit <input type="checkbox"/> 0 No Benefit
<i>Riparian Area Practices</i>	EXPERIENCE <i>on your land</i>	INTEREST <i>in trying practice</i>	BENEFIT <i>to the watershed</i>
STREAM FENCING are practices that help reduce soil erosion by using fencing, or other field improvements, to provide a very specific place for people, animals, and vehicles to access or cross streams or other water bodies.	<input type="checkbox"/> 3 Very Experienced <input type="checkbox"/> 2 Some Experience <input type="checkbox"/> 1 Little Experience <input type="checkbox"/> 0 Unfamiliar	<input type="checkbox"/> 3 Very Interested <input type="checkbox"/> 2 Some Interest <input type="checkbox"/> 1 Little Interest <input type="checkbox"/> 0 No Interest	<input type="checkbox"/> 3 Very Beneficial <input type="checkbox"/> 2 Some Benefit <input type="checkbox"/> 1 Little Benefit <input type="checkbox"/> 0 No Benefit
STREAMBANK STABILIZATION are practices designed to restore, stabilize, or protect the bank of the stream by seeding, planting, or using other forms of sediment control in critical areas.	<input type="checkbox"/> 3 Very Experienced <input type="checkbox"/> 2 Some Experience <input type="checkbox"/> 1 Little Experience <input type="checkbox"/> 0 Unfamiliar	<input type="checkbox"/> 3 Very Interested <input type="checkbox"/> 2 Some Interest <input type="checkbox"/> 1 Little Interest <input type="checkbox"/> 0 No Interest	<input type="checkbox"/> 3 Very Beneficial <input type="checkbox"/> 2 Some Benefit <input type="checkbox"/> 1 Little Benefit <input type="checkbox"/> 0 No Benefit
WETLAND SCRAPES are practices that provide for water quality improvement, reduce flooding, and provide habitat for wildlife by restoring the conditions necessary for the reestablishment of wetland plants.	<input type="checkbox"/> 3 Very Experienced <input type="checkbox"/> 2 Some Experience <input type="checkbox"/> 1 Little Experience <input type="checkbox"/> 0 Unfamiliar	<input type="checkbox"/> 3 Very Interested <input type="checkbox"/> 2 Some Interest <input type="checkbox"/> 1 Little Interest <input type="checkbox"/> 0 No Interest	<input type="checkbox"/> 3 Very Beneficial <input type="checkbox"/> 2 Some Benefit <input type="checkbox"/> 1 Little Benefit <input type="checkbox"/> 0 No Benefit
VEGETATIVE BUFFERS are permanent plantings of trees and grasses along a stream or ditch that are designed to prevent stormwater runoff from carrying soil or other pollutants directly into the waterway.	<input type="checkbox"/> 3 Very Experienced <input type="checkbox"/> 2 Some Experience <input type="checkbox"/> 1 Little Experience <input type="checkbox"/> 0 Unfamiliar	<input type="checkbox"/> 3 Very Interested <input type="checkbox"/> 2 Some Interest <input type="checkbox"/> 1 Little Interest <input type="checkbox"/> 0 No Interest	<input type="checkbox"/> 3 Very Beneficial <input type="checkbox"/> 2 Some Benefit <input type="checkbox"/> 1 Little Benefit <input type="checkbox"/> 0 No Benefit

Former Survey

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APPENDIX

SURVEY QUESTIONNAIRE

Green Lake Watershed

MAKING CONSERVATION WORK FOR YOU

Please respond to the questions below to help us understand changes that could make new programs a better fit for you.

	INTEREST <i>in trying practice</i>	BENEFIT <i>to the watershed</i>
HARVESTABLE BUFFER PROGRAM is a proposed county government program that would provide funding to establish perennial grass cover along streams and ditches. The grass reduces stormwater runoff impacts and may also be harvested and used by the landowner.	<input type="checkbox"/> 3 Very Interested	<input type="checkbox"/> 3 Very Beneficial
	<input type="checkbox"/> 2 Some Interest	<input type="checkbox"/> 2 Some Benefit
	<input type="checkbox"/> 1 Little Interest	<input type="checkbox"/> 1 Little Benefit
	<input type="checkbox"/> 0 No Interest	<input type="checkbox"/> 0 No Benefit

YES **NO** **Would you be more interested in trying Harvestable Buffers if ...**

Y N *more interested if ... all the costs to install the harvestable buffer are paid by the County?*

Y N *more interested if ... the County occasionally inspected and handled any necessary maintenance?*

Y N *more interested if ... a long-term (25 years, 50 years, or permanent) contract were available -- assuming that longer contracts would receive a better rate (more years = more money)?*

Y N *more interested if ... a short-term (5 years or 15 years) contract were available -- even if it paid less?*

WORKING TOGETHER FOR WATER QUALITY

Input from local stakeholders is critical in natural resource management. Local knowledge of people, places and resources can only be obtained if local landowners are given the opportunity to be heard and participate. **This section asks about a new way that you as a rural landowner could participate in water quality management.**

Description: A Farmer-Led Council ...

FARMER-LED COUNCILS

A. Relies on the participation of interested landowners and parallels a farm advocacy group.

B. The council of local farmers would work with interested landowners to get water quality projects completed on private properties.

C. This group would primarily consist of individual landowners with a vested interest in this landscape with support from individuals with technical expertise.

Question: How likely are you to participate in an effort that uses FARMER-LED COUNCILS for informing decisions that impact how water quality is managed in the Green Lake Watershed?

Extremely Unlikely Neutral Extremely Likely Don't Know

-4 -3 -2 -1 0 1 2 3 4 DK

WHICH PART OF THE WATERSHED IS YOURS?

We're asking you to give us a general idea of the part of the watershed you call home, such as Green Lake versus Fond du Lac County, to help us better understand different landowner priorities across the watershed. Remember if any questions make you uncomfortable feel free to skip to the next question.

Please draw a circle about this size that best describes the general area where you farm, or own farmland, in the Green Lake watershed.

Example

- 6 -

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APPENDIX

SURVEY QUESTIONNAIRE

Green Lake Association

Have you heard about Green Lake Association's efforts? They work to promote the conservation of Green Lake by addressing negative water quality trends before they become a critical issue that will affect this lake over the long term. Please select the response that best describes your familiarity.

Never heard about these efforts
 Heard of them, but don't know much about them
 Heard of them and know what they are doing
 I've attended meetings or events in the past

BENEFITS OF GREEN LAKE

The following series of questions asks about possible community benefits of Green Lake. Please indicate your level of agreement with the following statements, which begin with "I personally benefit from ..."

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't Know
	SD	D	N	A	SA	DK
I personally benefit from ... access to fishing or hunting opportunities on Big Green Lake.	-2	-1	0	1	2	<input type="checkbox"/>
... local tax dollars generated by shoreline development on Green Lake.	-2	-1	0	1	2	<input type="checkbox"/>
... access to customers for local products, such as Farmers Markets, who are attracted to the area by amenities around Green Lake.	-2	-1	0	1	2	<input type="checkbox"/>
... opportunities for water-based recreation, such as boating or swimming, on Green Lake.	-2	-1	0	1	2	<input type="checkbox"/>
... places for friends, family, or other groups to gather and enjoy leisure time together around Green Lake.	-2	-1	0	1	2	<input type="checkbox"/>

TRUST IN ORGANIZATIONS

We would like to know your level of trust in organizations that are working to address water quality issues in the Green Lake Watershed. For each of the following how likely are you to work with the organization to identify new opportunities to address issues on your land?

	Very Unlikely	Unlikely	Neutral	Likely	Very Likely	Don't Know
	VUL	UL	N	L	VL	DK
USDA Natural Resource Conservation Services (NRCS) - A federal agency that provides landowners with financial and technical assistance to support the installation and upkeep of conservation practices.	-2	-1	0	1	2	<input type="checkbox"/>
Wisconsin Department of Natural Resources (WDNR) - A state agency that provides landowners with financial and technical assistance to support the installation and upkeep of conservation practices.	-2	-1	0	1	2	<input type="checkbox"/>
Green Lake County Land Conservation Department - A local agency that provides landowners with financial and technical assistance to support the installation and upkeep of conservation practices.	-2	-1	0	1	2	<input type="checkbox"/>
Fond du Lac County Land and Water Conservation Department - A local agency that provides landowners with financial and technical assistance to support the installation and upkeep of conservation practices.	-2	-1	0	1	2	<input type="checkbox"/>
Green Lake Sanitary District - A local district created to protect Green Lake by providing leadership on sanitation and related air, land, and water quality matters.	-2	-1	0	1	2	<input type="checkbox"/>
Green Lake Association - A group of local citizens who are interested in addressing water quality challenges.	-2	-1	0	1	2	<input type="checkbox"/>
University of Wisconsin Extension - Local university professionals that provides landowners with educational programs and publications.	-2	-1	0	1	2	<input type="checkbox"/>

- 7 -

Farmer Survey

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APPENDIX

SURVEY QUESTIONNAIRE

Green Lake Watershed

DEMOGRAPHIC INFORMATION

Please answer the following questions about yourself, the **information will be used for classification purposes only**.

What is your gender? Male
 Female

In what year were you born?

What is your highest level of formal education?
 Some high school
 High school graduate or GED
 Some college
 2 year degree
 4 year degree
 Graduate degree
 Other (specify)

In 2016 how many acres of land did you:

a. Own (Total)

b. Rent from others.....

c. Set aside for conservation.....

Please indicate which best describes your farm operation based on **gross farm sales**.
 Less than \$50,000
 \$50,000 - \$100,000
 \$100,000 - \$250,000
 \$250,000 - \$499,999
 More than \$500,000
 Do not farm

Describe your farming operation by marking the response that best describes you.
 Farmer -- primarily row crops
 Farmer -- primarily dairy
 Farmer -- other: not dairy or row crops
 Primarily a landlord -- do not farm
 Hobby farm -- full-time, off-farm job

Which of these responses best describes your retirement plans?
 I will never fully retire from farming (retaining control of management and providing some labor).
 I will semi-retire from farming (providing some management and / or labor).
 I will fully retire from farming (leaving all management and labor to others).

What would you consider to be the most likely outcome for your farm when you decide to quit farming?
 A family member will continue the farm operation.
 Sell my land to another farmer.
 Sell all or part of the land to a developer.
 Sell all or part of the land for conservation.
 I don't know what options are available for my land.

Check all that apply.

YOUR VIEWS

Please record any additional thoughts and any comments about this survey in the space provided.

Thank you!

For completing this survey, please return it to us in the included pre-paid envelope.

- 8 -

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