American Farmland Trust
SAVING THE LAND THAT SUSTAINS US

Understanding and Activating Non-Operator Landowners

Non-Operator Landowner Survey Multi-State Report

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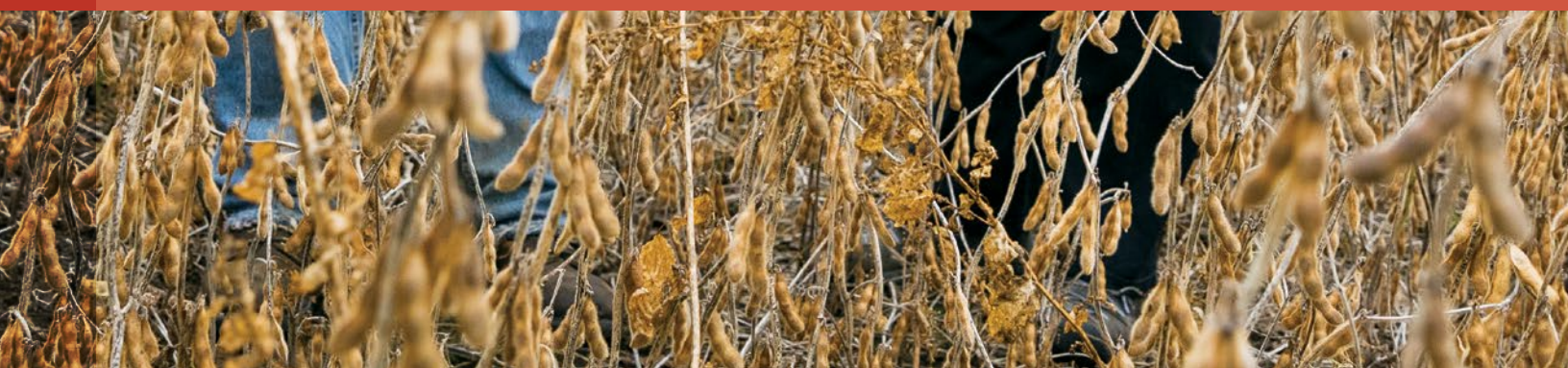

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About American Farmland Trust

American Farmland Trust (AFT) is the only national organization that takes a holistic approach to agriculture, focusing on the land itself, the agricultural practices used on that land, and the farmers and ranchers who do the work. AFT launched the conservation agriculture movement and continues to raise public awareness through our ***No Farms, No Food***® message. Since our founding in 1980, AFT has helped to permanently protect over 6.5 million acres of agricultural lands, advanced environmentally sound farming practices on a half-million additional acres and supported thousands of farm families.

EXECUTIVE SUMMARY

Understanding and Activating Non-Operator Landowners

Non-Operator Landowner Survey Multi-State Report

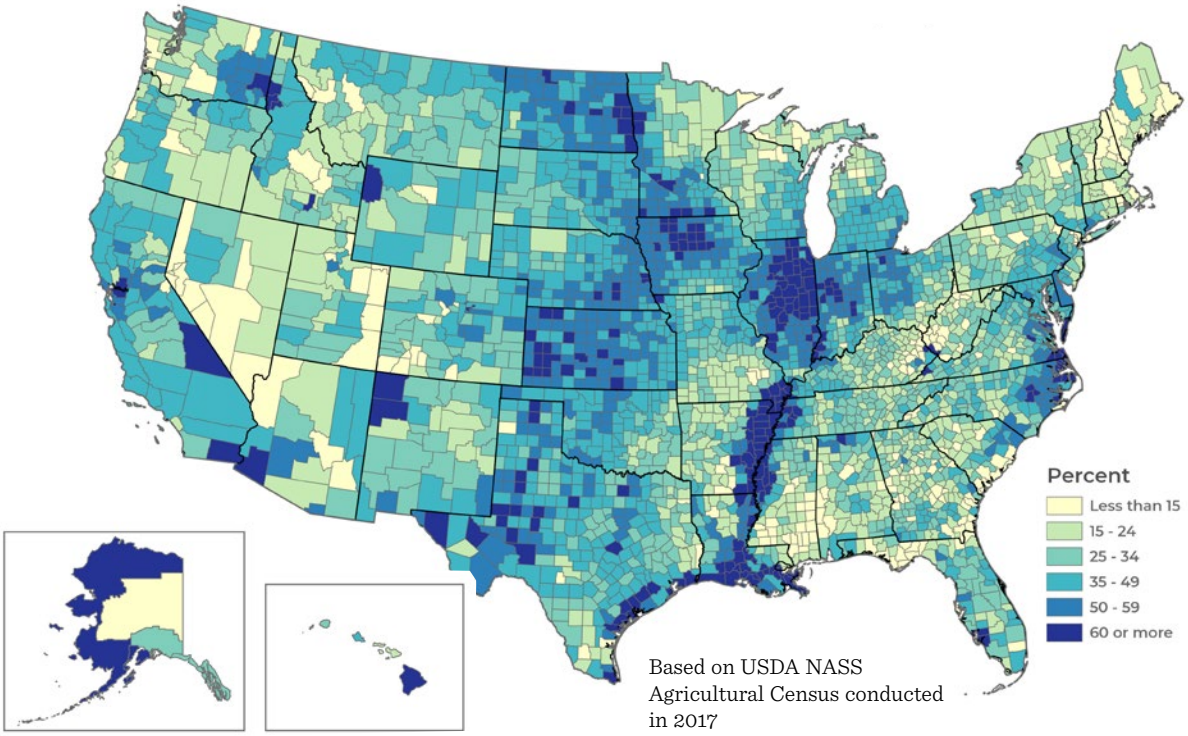
Background

Nearly 40% of U.S. farmland is rented or leased from agricultural landowners, the majority of whom are non-operator landowners, or NOLs. NOLs are increasingly being identified as a group of landowners who must be paid attention to when discussing environmental issues on agricultural lands. But who are NOLs, and what do we know about them? American Farmland Trust conducted a survey to answer these questions and fill in the data gap that exists on this important group of agricultural landowners. Our focus and interest were on NOLs who rent at least some of their farmland to farmers to operate. The survey goals included:

- Learn more about NOLs in general (e.g. age, gender, familiarity with farming, support for conservation);
- Identify ways to overcome barriers to conservation management decision-making and implementation;
- Increase understanding of the land management decision-making processes of NOLs vis a vis their relationship with their renter;
- Use the survey information gained to improve incentive mechanisms and policies aimed at promoting resource conservation on rented lands.

To achieve these goals, AFT surveyed 11 states in 2018 and 2019. Although we primarily focused on states with the largest amount of rented lands (Figure 1), we also looked at other factors, such as sampling a variety of USDA production regions. The 11 states include

FIGURE 1. PERCENT OF RENTED AGRICULTURAL LANDS IN 2017



Arkansas, California, Illinois, Indiana, Iowa, Kansas, New York, North Carolina, Ohio, Texas, and Washington.*

Results

The full report provides numerous findings that help us understand NOLs and challenge some commonly made assumptions, including (1) they care only about the bottom (financial) line, and (2) they do not care about the land. Our results suggest there are several factors more important to the NOLs in our study than financial considerations, and many of these factors revolve around conservation and farmland preservation. In fact, the findings show very clearly that NOLs are supportive of their renters taking conservation-oriented action on the land and are very willing to provide this support through actions such as extending the length of their operator's lease to facilitate implementation of conservation practices on their land, asking their operator to use certain conservation practices on their land, and asking their farm operator to amend or make an addendum to their lease requiring conservation practices. We also find that among respondents, many do not know who the next owner of their land will be, particularly for those owning land in Iowa, New York, and Ohio. In these three states, 20% or more of the respondents indicated they do not know who the next owner will be. Yet, a majority of respondents indicate that their land management decisions are greatly influenced by their commitments to future generations of their families.

We also explored similarities and differences between men and women NOLs. Some of our key findings show that women appear to be less empowered with agricultural knowledge and have significantly less experience as farm operators, compared to male NOLs. Women NOLs' lack of knowledge is also evidenced when asked about their involvement in various

Findings suggest there are several factors more important to the NOLs in our study than financial considerations, and many of these factors revolve around conservation and farmland preservation.

government conservation programs. Women were at least twice as likely as male NOLs to indicate they did not know if they were involved in any of the practices listed, such as set-aside or cost-share programs, or whether they had received technical assistance on conservation from NRCS or SWCD staff. Thus, while owners of their land, they are not aware of what is, or is not, occurring on their land. The findings of the gender analysis also show that conservation is important to both female, and male NOLs, and suggests we should be cautious in presuming that women are better allies in conservation management than male counterparts. That is, both men and women NOLs can be good partners in conservation.

We also explored similarities and differences between NOLs who have experience with farming and those who do not. The findings clearly show vast differences between those landowners who have had direct experience with farming, and those who have not, across many of the survey questions. Those landowners with no farming experience are the group least involved in conservation programs/activities and the most likely to indicate they do not know if they are involved in these programs/activities. This is also the group of landowners showing the least amount of interest in any of the outreach intervention options provided, an unfortunate finding given they could perhaps benefit the most from these interventions. The findings also help shed light on why farm operators have indicated they have difficulty communicating with NOLs—male and female—who are generations removed

* State-level summaries and methodology can be found here: https://farmlandinfo.org/collections/?special_collections=197

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from the farm. The findings are promising, though, for future generations and keeping the land in farming. Despite being removed from farming and the farming community, both literally and figuratively, there is still a desire on behalf of the vast majority of NOLs surveyed to protect farmland for their families and future generations.

A Need for Action

The survey results in the full report provide some of the most comprehensive information we have on women and men NOLs in the United States. The findings help us to identify areas of future work that could lead those in the agricultural service provision, farmland preservation, and conservation arenas to focus their outreach efforts with NOLs to improve conservation outcomes on the landscape. Five key actions are recommended to help guide future outreach and engagement with NOLs:

1. **Cultivate greater awareness among NOLs of government conservation programs**

Lack of knowledge about, and engagement with, programs that support greater conservation is a real barrier to achieving conservation practice adoption on rented lands. This is particularly true for those with little experience or background in farming, and it is more common among women NOLs. There is, however, an opportunity to cultivate awareness among NOLs who value soil quality, water quality, and other conservation efforts that could benefit their land. Therefore, greater action is needed to find, reach out to, and engage with NOLs, and ultimately, their renters, to help them access technical and financial resources that could help them improve the resilience of their lands.

2. **Amplify NOLs' willingness to support their operators with conservation practices on the land**

Our results suggest that respondents are comfortable with taking a diversity of actions to support the use of more conservation on the land they own. Unfortunately, many leases across the country are verbal, year-to-year leases. Therefore, there is an opportunity to provide more education among willing NOLs to take action to improve the terms of their leases and to increase the adoption of written leases, particularly with agreements that extend beyond one year, ideally enabling both

landowners and renters to take some short-term actions that should lead to long-term conservation benefits while sharing the risks associated with trying something new, such as adopting cover crops.

3. Reach out to female, and male, NOLs to improve outcomes on rented land

It is clear from the findings that lack of agricultural experience and knowledge may limit feelings of confidence for engaging in conversations with renters or conservation professionals on relevant conservation topics. Our results also suggest that while targeted outreach to women NOLs is critically important, we cannot forget that there is an opportunity to engage men NOLs on many of the same topics. That is, while women NOLs are still an important audience for outreach, we need to reach all NOLs to improve outcomes on the land. This has the opportunity to lead to tangible benefits on the land if outreach is targeted to address some of the gaps in NOLs' knowledge or their limitations in accessing technical and financial resources.

4. Engage NOLs to cultivate greater opportunities to strengthen their ties to farming, the land, and community

The results show an opportunity to support NOLs in gaining more experience and knowledge about farming, as well as looking for ways to cultivate and build off ties to the land that many NOLs clearly have, illustrated in how long land ownership has been in the family and how long-standing many of their relationships with their operators are. These are assets that can be leveraged to build more community, dialogue, and understanding between landowners and operators, many of whom are connected by community, family, or social network.

5. Emphasize the need for succession planning among aging NOLs

It is critically important that NOLs are engaged on the topic of land succession and legacy planning, and have expressed, via the survey results, an interest in leaving their land to family and/or keeping the land in farming. Providing legacy planning can assist NOLs in reducing legal hurdles left to heirs (or the state), with the goal of keeping more land in agriculture. That is, the results point to the importance of supporting NOLs and their families in seeing their land as an asset worth protecting and enhancing for now and in the future.

Conclusion

These five actions should lay the foundation for future engagement and outreach with NOLs to achieve greater conservation best management practice adoption and farmland preservation on rented lands. Additionally, these actions point toward efforts needed to strengthen engagement and empowerment of women and men NOLs, who, from this study's findings, illustrate great potential to be more active partners in conservation and land protection efforts.

Introduction

Nearly 40% of U.S. farmland is rented or leased from agricultural landowners (USDA NASS 2015), the majority of whom are non-operator landowners (NOLs). NOLs are increasingly identified as a group of landowners who should be paid attention to when discussing environmental issues on agricultural lands. But who are NOLs and what do we know about them? NOLs are defined in various ways, but typically include people who lease their land to others to operate; inherit land but live elsewhere; and/or buy land for recreational or investment purposes. NOLs may be resident landowners (i.e. they live on their land) or non-resident (they live nearby, in a neighboring town or county, or far away in another state). They may own one parcel of land or multiple parcels. Our focus and interest here are on NOLs who rent at least some of their farmland to a farmer to operate.

National data on these NOLs in the U.S. has been provided only three times in history, coming from the Agricultural Economic Land Ownership Surveys (AELOS) that collected information from both landowners and renters in 1988 and 1999 as follow-ups to the periodic Census of Agriculture (in 1987 and 1997, respectively) and the 2014 Tenure, Ownership, and Transition of Agricultural Land Survey (TOTAL) survey.

The TOTAL survey focused on questions such as the economics of land ownership (e.g. rent payments, landowner assets and debts), demographic characteristics, land uses, and ownership transfer.[1] While this information has contributed to our understanding of NOLs, there are many things we still do not yet know, particularly related to NOL conservation practices and outreach, information needs, and the relationships with their renter(s). In addition, most of the existing research on NOLs

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NOLs are increasingly being identified as a group of landowners who must be paid attention to when discussing environmental issues on agricultural lands. But who are NOLs and what do we know about them?

is from studies conducted in the Midwest. While the findings from these studies have provided policymakers and practitioners with a sense of what NOLs in the Midwest look like and the barriers they face as agricultural landowners, what NOLs look like in other geographical regions is yet to be explored but essential for getting more conservation on the land.

In 2018, American Farmland Trust implemented a multi-state survey of NOLs who rent some or all of their land to a farm operator, providing the most comprehensive dataset to date on non-operater landowners since the 2014 TOTAL survey. The AFT survey provides information that complements but does not duplicate the TOTAL data.

1. For more detail on the 2014 TOTAL survey see: www.nass.usda.gov/Publications/AgCensus/2012/Online_Resources/TOTAL/index.php

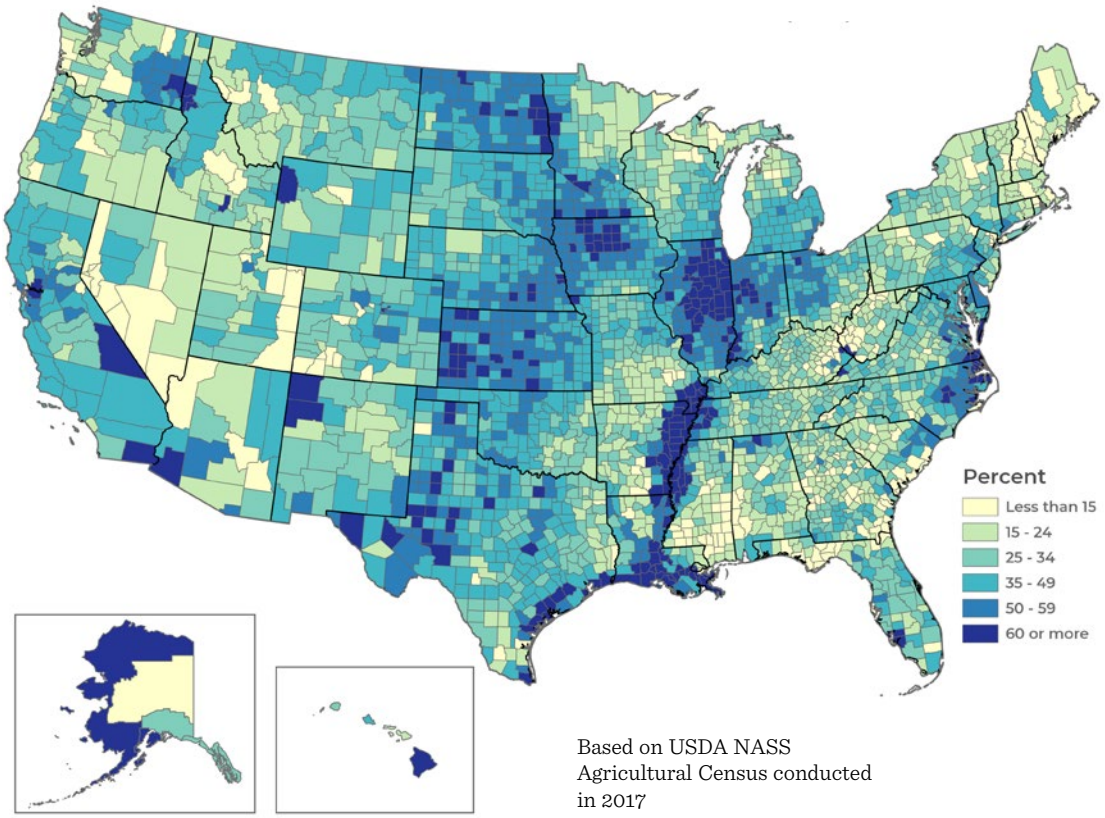
The survey was conducted first and foremost to fill the data gap that exists on this important group of agricultural landowners, with the following survey goals designed to lead eventually to more effective outreach to this important audience:

- Learn more about NOLs in general (e.g. age, gender, familiarity with farming).
- Identify ways to overcome barriers to resource management decision-making and implementation.
- Increase understanding of the land management decision-making processes of NOLs.
- Use the survey information gained to improve incentive mechanisms and policies aimed at promoting resource conservation.

To achieve these goals, AFT surveyed 11 states in 2018 and 2019. Although we primarily focused on states with the largest amount of rented lands (Figure 1), we also looked at other factors such as sampling a variety of USDA production regions. The 11 states include Arkansas, California, Illinois, Indiana, Iowa, Kansas, New York, North Carolina, Ohio, Texas, and Washington.

It can be difficult to reach NOLs, which presents challenges for research and outreach efforts. In order to survey a robust sample of NOLs across multiple states, we purchased non-operator landowner lists from Farm Market ID (FMid). FMid has "Owner" lists that do not include anyone who is an "Operator." Lists are double-checked using Core Logic[2] along with deed searches. The individuals on the

FIGURE 1. PERCENT OF RENTED AGRICULTURAL LANDS IN 2017



Based on USDA NASS Agricultural Census conducted in 2017

2. CoreLogic, Inc. provides property information and data to clients with customized data services.

TOTAL SAMPLE SIZE AND RESPONSE RATE BY STATE (N= 3,596)

	AR	CA	IA	IL	IN	KS	NY	NC	OH	TX	WA
Total N	307	254	323	384	369	367	300	337	338	311	306
Response Rate	13%	8%	40%	29%	29%	29%	13%	16%	22%	18%	21%

purchased list are considered (through FMid's analysis) to be the primary decision maker. For this study, FMid pulled a list of at least 1,500 NOLs who own land in each of the states.[3] For each state, 750 male and 750 female landowners who own 25 acres of farmland or more in the respective states (with an acre range of low to high amounts of acres) were pulled. FMid was asked to split each state into quadrants, pulling the same N from each quadrant, to strive for geographical representation across the state and, therefore, agricultural representation. Names pulled were from all NOLs who own land in the respective states, no matter where they live (in the state or out). Our first question in the survey was a screening question to ensure that all survey respondents were (1) landowners and (2) rented either all or some of their land to a farm or ranch operator or a land management firm.

Two important points regarding the sampling:

1. The sampling intentionally focused on ensuring a 50/50 gender split, given we believe for various reasons, detailed later in this report, that female landowners are underrepresented in surveys of agricultural landowners. This is important to keep in mind when interpreting the gender breakdown. For example, while 45% of the survey respondents in Illinois are female, this does not mean that of the NOLs in Illinois, 45% are women. Given there is no study population of NOLs, we cannot say with certainty how representative our sample is to the actual population of NOLs.
2. Trusts were eliminated from our sample. This was done because multiple trusts do not have a name affiliated with the mailing address, which would prevent us from identifying the gender of the landowner, which was our primary demographic of concern when selecting the sample. The elimination of trusts then, undoubtedly, has an impact on the data results.

More detail on the survey and the methodology for the survey can be found at www.farmland.org/nolssurvey.

The total sample size and response rate for each state are included in the table above.[4] The total N for the overall sample is 3,596.

This report presents select findings from the 11-state survey. We begin the report by providing an overview of the sample and comparisons across states. We then focus in on the similarities and differences of NOLs by gender, given AFT's work on, and with, women non-operating agricultural landowners. Following the gender analysis, we seek to understand NOLs' connection to farming and the agricultural community by focusing on similarities and differences of NOLs by level of farming experience. We conclude the report with a "Call to Action," recommending five actions for moving forward in the work with NOLs, based on the survey findings.

3. The one state where this differed was Iowa, where 1,000 names were pulled, 500 female and 500 male. No additional names were needed to get to the desired minimum of 300 respondents per state. For all other states, at least 1,500 names were pulled.

4. Total Ns are based on surveys returned and analyzed as of December 1, 2019.

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Key Findings of Survey Respondents

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In this section we provide a descriptive overview of the survey respondents and select questions from the survey. These questions focused on landowner demographics, land and land tenure characteristics, the rental relationship between the landowner and the farm operator who rents from them, information sources used, information needs of the landowners, participation in government conservation programs, barriers and opportunities landowners see to conservation on their rented land, and their thoughts on land management. Statistically significant differences between states were assessed using a one-way ANOVA or Chi-square test and levels of statistical significance, if any, are included in the tables.

Landowner Demographics

The landowners who responded to our survey were, on average, older, although this varied significantly from state to state (Table 1). New York respondents were the youngest (on average, 65 years old), while Iowa respondents were the oldest (on average, 73 years old). While near gender parity was obtained in some states (i.e., Iowa, Ohio, and Washington), and expected, given how we sampled (as discussed previously), the sample still skewed heavily towards males in other states such as Arkansas (where 59% of respondents were male) and New York (where 71% of respondents were male).[5] Respondents for Arkansas, California, Kansas, Texas, and Washington tended to

5. While this survey did not capture the racial and ethnic demographics of participants, both historical and recent analyses suggest that racial and ethnic disparities in farmland tenure and farming persist in the United States, with the vast majority of land owned (98%) and operated (94%) by white landowners and farmers (Horst and Marion 2019). A robust body of literature documents the historical and structural drivers of racial and ethnic disparities in farmland tenure and farming in the United States (e.g. Carpenter 2012, Calo and De Master 2016). As part of its mission to save the land that sustains us by protecting farmland, promoting sound farming practices, and keeping farmers on the land, AFT is committed to fostering the ability of people to manage and own land for future generations regardless of their identity.

have the highest levels of formal education, and respondents for California tended to have higher farm incomes than the other states' landowners. Regarding past farming experience that the respondents have, there is a large amount of between-state variation. Those owning land in New York have the most direct farming experience (71% indicating they have operated a farm), while landowners who have land in Arkansas, Illinois, Kansas, North Carolina, Texas, and Washington tend to have less direct farming experience (39%, 32%, 31%, 33%, 38%, 34% respectively).

Key Land and Land Tenure Statistics

There is a large amount of between-state variation when it comes to acres owned and rented (Table 2). For example, while the median acres owned and rented among North Carolina respondents was 61 and 40, respectively, the median acres owned and rented among Washington respondents was 416 and 320. Respondents tended to not live on the land they rent. Indeed, only two states, Indiana and New York, had 50% or more of the landowners living on their land (50% and 66% respectively).

TABLE 1. KEY LANDOWNER STATS

	AR	CA	IA	IL	IN	KS	NY	NC	OH	TX	WA	SIG
AGE (AVERAGE)	68	70	73	69	71	69	65	72	70	71	69	***
GENDER												***
Male	59%	57%	51%	55%	57%	53%	71%	58%	51%	53%	49%	
Female	41%	43%	49%	45%	43%	47%	29%	42%	49%	47%	51%	
EDUCATION LEVELS												***
Less than high school	3%	2%	4%	1%	2%	2%	3%	2%	4%	1%	1%	
High school graduate (or equivalent)	15%	8%	35%	22%	37%	12%	20%	17%	28%	12%	8%	
Some college, no degree	21%	22%	17%	19%	16%	19%	13%	17%	16%	18%	18%	
Associate/Technical degree	7%	7%	12%	12%	7%	9%	19%	15%	10%	5%	11%	
Bachelor's degree	27%	36%	20%	27%	13%	30%	24%	24%	18%	33%	32%	
Graduate or professional degree	27%	26%	12%	19%	25%	28%	21%	24%	24%	31%	30%	
NET FARM INCOME (PRE-TAX, 2017)												***
< $25,000	51%	26%	38%	59%	67%	65%	57%	77%	61%	66%	54%	
$25,001–$75,000	29%	31%	42%	30%	23%	26%	27%	14%	27%	16%	32%	
$75,001–$125,000	7%	16%	14%	5%	6%	6%	8%	4%	6%	9%	8%	
$125,001–$175,000	5%	8%	4%	4%	1%	1%	2%	2%	3%	4%	3%	
$175,001–$225,000	2%	8%	2%	1%	1%	1%	2%	1%	1%	1%	1%	
More than $225,000	6%	11%	1%	2%	2%	1%	4%	2%	2%	3%	3%	
EXPERIENCE WITH FARMING												***
I/we have operated a farm	39%	59%	56%	32%	40%	31%	71%	33%	41%	38%	34%	
I/we have helped our parents farm	21%	15%	24%	31%	33%	34%	16%	44%	28%	26%	31%	
I/we have helped another relative farm	3%	2%	7%	5%	5%	5%	3%	4%	6%	4%	4%	
I/we have worked on a non-relative's farm	2%	2%	3%	6%	5%	4%	3%	3%	2%	<1%	3%	
Neither I nor my spouse (if any) have farmed	34%	23%	10%	27%	18%	26%	7%	17%	23%	31%	28%	

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

TABLE 2. KEY LAND STATS

	AR	CA	IA	IL	IN	KS	NY	NC	OH	TX	WA	SIG
Acres owned (median)	213	288	171	120	100	237	190	61	100	252	416	***
Acres of farmland rented out (median)	190	199	150	90	70	173	83	40	80	200	320	***
Live on parcel of land (% indicating yes)	17%	30%	43%	28%	50%	18%	66%	36%	46%	17%	21%	***
Miles live from their land if non-resident (median)	45	30	15	20	10	143	3	38	15	120	150	***
HOW ACQUIRED LAND[a]												
Purchased	36%	47%	63%	46%	55%	39%	73%	31%	54%	30%	35%	***
Inherited	72%	64%	51%	67%	56%	72%	33%	84%	57%	80%	74%	***
Sole owner (% indicating yes)	43%	56%	66%	59%	65%	54%	67%	57%	63%	50%	58%	***
Crop production activity done most often on the land	93%	89%	95%	97%	98%	90%	92%	92%	98%	86%	94%	***

Note. a = Could select multiple categories. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

In contrast, only 17% of respondents in both Arkansas and Texas reported living on their land. For those who reported living off their land, the median distance they live from their land ranged from three miles for New York respondents to 143 miles for Kansas respondents.

How the land was acquired also varied greatly between the states. Those who owned land in New York had the highest percentage in terms of purchasing it (73%), while landowners owning land in all other states acquired the land primarily by inheriting it. Respondents tended to be sole owners of the land, with at least 50% indicating sole ownership in all states except for Arkansas, where 43% indicated sole ownership. Crop production was the activity done most often on the land in all states, ranging from a low of 86% respondents for Texas land to a high of 98% of owners of Indiana and Ohio land indicating this activity.

The vast majority of respondents have owned the land for decades and are likely to keep the land in family hands (Table 3). A large majority (65% or more) of respondents indicated the land has been in their family 31 years or longer. And a large majority (59% or more) of respondents indicated the land will stay in family hands, with the next owners being a relative who will either rent the land out or farm it themselves. It is also important to note that there are several states where a significant percentage of landowners do not know who the next owner will be. For those owning land in Iowa, New York, and Ohio, 20% or more of the respondents indicated that they do not know who the next owner will be.

Relationship with Their Renter

The majority of landowners in our survey rented to people they know well, either a friend of the family or a family member (Table 4). Verbal lease agreements were most common in Arkansas, Illinois, Indiana, Kansas, North Carolina, Ohio, and Texas, while written agreements were most common in California, Iowa, New York, and Washington. While most respondents with land in California, Iowa, New York, or North Carolina had a cash rent fixed or flex payment lease, most respondents with land in Arkansas, Illinois, Indiana, Kansas, Texas, or Washington had crop share agreements. Cash rent agreements with fixed or flex payment and crop share agreements were equally common in Ohio. The majority of leases were renewed

TABLE 3. KEY LAND TENURE STATS

	AR	CA	IA	IL	IN	KS	NY	NC	OH	TX	WA	SIG
NUMBER OF YEARS LAND HAS BEEN IN THE FAMILY												***
Less than 10 years	4%	2%	2%	6%	4%	6%	8%	1%	4%	2%	2%	
10–30 years	14%	17%	20%	17%	15%	16%	27%	10%	17%	14%	14%	
31–70 years	34%	34%	37%	34%	36%	30%	29%	24%	35%	29%	23%	
71–120 years	37%	30%	30%	26%	32%	32%	22%	40%	29%	46%	45%	
More than 120 years	11%	17%	11%	17%	12%	17%	14%	25%	15%	10%	15%	
NEXT OWNER OF THE LAND[a]												
A relative who will rent it out	56%	39%	40%	52%	48%	52%	35%	65%	42%	49%	47%	***
A relative who will farm it	12%	23%	29%	18%	15%	14%	24%	16%	22%	17%	22%	***
Trust	16%	17%	13%	12%	11%	14%	10%	4%	16%	9%	10%	***
Someone unrelated	6%	11%	9%	4%	9%	8%	16%	7%	8%	10%	14%	***
Whoever pays the highest price	9%	12%	8%	8%	13%	14%	15%	10%	12%	13%	6%	**
Unknown/other	12%	14%	20%	16%	17%	12%	20%	14%	21%	15%	17%	*

Note. a = Could select multiple categories, thus results may not equal 100%. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

TABLE 4. RENTAL STATS

	AR	CA	IA	IL	IN	KS	NY	NC	OH	TX	WA	SIG
BEST DESCRIPTION OF RELATIONSHIP TO FARMER												***
Neighbor, friend of family	38%	37%	39%	44%	50%	32%	55%	53%	49%	39%	34%	
Relative, family member	20%	18%	41%	34%	20%	42%	18%	14%	31%	19%	40%	
A person who is neither a relative nor friend of family	41%	43%	20%	22%	29%	26%	28%	32%	20%	42%	24%	
LEASE CHARACTERISTICS												
Verbal	56%	14%	47%	64%	68%	71%	46%	70%	62%	57%	33%	***
Written	43%	85%	52%	36%	31%	29%	54%	29%	38%	42%	66%	***
Crop share agreement	72%	42%	24%	62%	49%	65%	6%	6%	46%	61%	76%	***
Cash rent agreement with fixed payment	15%	38%	61%	26%	40%	18%	71%	79%	38%	22%	12%	***
Cash rent agreement with flexible payment	2%	6%	10%	7%	6%	1%	8%	8%	8%	6%	3%	***
Annual term	67%	39%	84%	71%	72%	63%	57%	87%	73%	68%	29%	***
Length of time have rented to operator (median years)	10	12	12	15	15	15	7	12	17	12	15	***

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

annually (exceptions being for those owning land in California and Washington). The number of years that respondents have been renting to their current farm operator ranged from a median of seven years in New York to 17 years in Ohio.

Information Sources and Needs

The top three information sources identified by respondents are in bold in Table 5. There is much commonality among the respondents, and respondents owning land in all states (except for New York) indicate that they rely on their farm operator/lessee first and foremost for information. New York respondents indicated the local Soil and Water Conservation District (SWCD) was their top information source. Other top information sources included:

- USDA Natural Resource Conservation Service (NRCS)
- State Department of Natural Resources
- State University Extension

The top two preferences for information topics are also in bold, and there is variation among these by state. For example, respondents owning land in Illinois and North Carolina were most interested in receiving information and/or technical assistance for soil erosion control. Respondents owning land in Arkansas, Indiana, Kansas, and Washington were most interested in receiving information and/or technical assistance for soil fertility improvement. And respondents owning land in California, Iowa, New York, and Ohio were most interested in receiving information and/or technical assistance for water quality improvement. Respondents in Kansas were equally interested in soil fertility improvement and government conservation programs. Respondents in North Carolina were equally interested in soil erosion control, soil fertility improvement, and water quality improvement, while respondents in Texas were equally interested in soil fertility improvement and water quality improvement. Regarding interest in interventions,

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respondents owning land in all states were most interested in having access to educational materials developed expressly for non-operating landowners like themselves, although not a large percentage indicated interest. Interestingly, the vast majority did not express an interest in several suggested interventions aimed at providing greater resources for NOLS on the topic of conservation services.

Participation in Government Conservation Programs

Involvement in government conservation programs varied widely across the states, in part to be expected given the varying types of programs that are appropriate for each state (Table 6). For example, there was high use of land-set-aside programs such as the Conservation Reserve Program (CRP) or Wetland Reserve Program (WRP) by landowners who owned land in Iowa (59%) but there was low use in North Carolina (9%). Land-set-aside programs received the highest percentage of respondents indicating their use in all states other than California, New York, and North Carolina. For these three states, the highest level of participation was

TABLE 5. INFORMATION SOURCES AND NEEDS

	AR	CA	IA	IL	IN	KS	NY	NC	OH	TX	WA	SIG
MOST IMPORTANT SOURCES OF INFORMATION												
My farm operator/lessee	**74%**	**79%**	**80%**	**77%**	**74%**	**82%**	**67%**	**68%**	**71%**	**78%**	**83%**	***
Local County Soil & Water Conservation District (SWCD)	**64%**	**58%**	**62%**	**62%**	**54%**	**60%**	**68%**	**63%**	**64%**	**58%**	**65%**	***
USDA Natural Resource Conservation Service (NRCS)	**63%**	54%	**67%**	**54%**	**48%**	**58%**	**62%**	49%	**52%**	53%	59%	***
State Department of Natural Resources	49%	44%	54%	49%	46%	44%	45%	50%	47%	42%	43%	*
State University Extension	53%	55%	60%	48%	43%	50%	53%	**55%**	51%	43%	57%	***
Farm or ranch manager	55%	**60%**	30%	46%	44%	50%	48%	51%	51%	**54%**	**60%**	***
Spouse/partner	43%	41%	47%	43%	44%	39%	53%	42%	46%	37%	40%	
% INDICATING INTEREST IN RECEIVING INFORMATION AND/OR TECHNICAL ASSISTANCE												
Soil erosion control	42%	29%	**46%**	**38%**	36%	35%	46%	**37%**	36%	37%	**36%**	***
Soil fertility improvement	**50%**	**44%**	41%	**37%**	**41%**	**39%**	**47%**	**37%**	**40%**	**38%**	**40%**	***
Water quality improvement	**49%**	**46%**	**47%**	33%	**37%**	38%	**49%**	**37%**	**41%**	**38%**	32%	***
Government conservation programs	43%	26%	43%	33%	30%	**39%**	39%	31%	32%	35%	35%	***
Conservation tillage (e.g. no-till, strip till)	33%	21%	33%	28%	28%	28%	36%	25%	29%	26%	31%	***
% INDICATING INTEREST IN INTERVENTIONS												
Having access to educational materials developed expressly for non-operating landowners like you.	**41%**	**26%**	**29%**	**34%**	**30%**	**36%**	**36%**	**33%**	**31%**	**33%**	**31%**	†
Having access to leasing tools that better account for costs, benefits and timeliness of implementing conservation practices.	31%	18%	24%	27%	24%	28%	34%	26%	24%	28%	21%	**
Working with a private business that specializes in providing conservation services targeted to non-operating landowners.	16%	12%	15%	10%	10%	11%	18%	14%	11%	14%	11%	**
Working with a government agency in providing conservation services targeted to non-operating landowners.	28%	15%	18%	18%	17%	22%	25%	20%	20%	23%	17%	*
Belonging to a network of non-operating farmland owners who face similar challenges as you do.	17%	15%	14%	14%	14%	15%	21%	18%	16%	18%	17%	
Participating in free discussions with your peers on a regular basis to compare notes/chat with conservation professionals.	15%	15%	15%	14%	14%	13%	21%	17%	13%	15%	16%	†

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

TABLE 6. INVOLVEMENT IN GOVERNMENT CONSERVATION PROGRAMS (% INDICATING 'YES')

	AR	CA	IA	IL	IN	KS	NY	NC	OH	TX	WA	SIG
Participated in land set-aside programs, like CRP (Conservation Reserve Program) or WRP (Wetland Reserve Program).	27%	12%	59%	40%	25%	30%	29%	9%	39%	20%	44%	***
Participated in cost-share programs, like EQIP (Environmental Quality Incentive Program) or CSP (Conservation Stewardship Program), that pay some costs of implementing conservation practices.	22%	15%	29%	12%	12%	18%	22%	6%	15%	15%	20%	***
Received conservation practice technical assistance from NRCS (Natural Resource Conservation Service) or SWCD (Soil and Water Conservation District) staff on this parcel.	22%	16%	35%	20%	20%	19%	34%	13%	34%	17%	16%	***
Developed or updated a conservation plan for this parcel.	20%	13%	35%	20%	15%	18%	31%	10%	24%	15%	18%	***
Received income from a sale of conservation easements on this parcel.	4%	3%	6%	5%	5%	4%	5%	4%	7%	3%	3%	***
Received payments, and/or other assistance with conservation on this parcel, but I don't recall the program's name.	15%	12%	18%	12%	13%	15%	13%	5%	16%	9%	10%	***

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

in receiving conservation practices/technical assistance from NRCS or SWCD on the parcel of land. Across the board, there is low use of government conservation programs and low use of the local NRCS or SWCD staff for technical assistance on the land. For the latter, the maximum number of landowners indicating they have used these local staff is 35% (in Iowa).

Barriers and Opportunities to Conservation on Rented Land

Respondents were asked about 21 potential barriers and opportunities to conservation that included economic factors (e.g. farm economy, profitability of farm, cost of practice), social factors (e.g. neighbors, no one else doing it), and knowledge (e.g. availability, of me, of my farmer). The most limiting and least limiting factors identified are in bold in Table 7. A relatively large percentage of respondents indicated that a weak farm economy was one of their most significant barriers to conservation. A number of respondents also indicated that requirements or restrictions associated with government conservation programs was a significant barrier to conservation.

For all states, the least significant barrier to conservation was concern about disapproval from their neighbors, and for many states (Iowa, Illinois, Kansas, New York, Ohio, and Washington) a majority of respondents indicated that their renter's lack of familiarity with conservation practices was "not at all a limiting factor" for implementing conservation practices on their land. Respondents are also not concerned that conservation practices will impact the value of their farmland.

TABLE 7. BARRIERS TO CONSERVATION ON THEIR RENTED LAND

	AR	CA	IA	IL	IN	KS	NY	NC	OH	TX	WA	SIG
MOST LIMITING FACTORS (% INDICATING "SIGNIFICANT LIMITING FACTOR")												
A weak farm economy.	**38%**	**28%**	**30%**	**20%**	**22%**	**31%**	**36%**	**19%**	**23%**	**30%**	**27%**	***
Too many requirements or restrictions associated with government conservation programs.	22%	**31%**	**21%**	**19%**	**22%**	**20%**	**27%**	18%	**23%**	18%	17%	***
My lack of familiarity with conservation practices.	21%	15%	9%	16%	15%	**20%**	9%	**21%**	16%	**23%**	12%	***
Lack of government funds for cost share.	**29%**	20%	20%	16%	16%	19%	26%	17%	20%	22%	14%	***
My renter's out of pocket expense (i.e. ability to afford it).	27%	21%	17%	14%	11%	19%	19%	17%	11%	21%	**22%**	***
Concerns that conservation practices will interfere with my ability to change land management practices as conditions warrant.	18%	**28%**	16%	15%	19%	15%	22%	16%	15%	19%	18%	***
LEAST LIMITING FACTORS (% INDICATING "NOT AT ALL A LIMITING FACTOR")												
I worry about disapproval from my neighbors.	**65%**	**78%**	**76%**	**79%**	**76%**	**76%**	**84%**	**74%**	**75%**	**78%**	**77%**	**
My renter's lack of familiarity with conservation practices.	36%	46%	57%	53%	49%	**58%**	56%	41%	51%	49%	57%	***
Concerns that conservation practices would decrease the value of my farmland.	**50%**	52%	**62%**	**60%**	**59%**	**58%**	**72%**	**59%**	**57%**	**56%**	**62%**	***
My own physical abilities.	46%	**56%**	50%	50%	44%	52%	59%	42%	52%	50%	54%	†

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

Land Management

The survey contained 14 statements which focused on land management and support for conservation practice management where respondents were asked to indicate their level of agreement for each question. The top three statements by state are in bold in Table 8. In all states, a very high percentage of respondents indicated that they trust their operator and are committed to their operator's continuation as a renter of their land. Additionally, respondents indicated that they are comfortable extending the length of their operator's lease to facilitate implementation of conservation practices on their land, that they are comfortable asking their operator to use certain conservation practices on their land, and that they are comfortable asking their operator to amend or make an addendum to their lease requiring conservation practices. Indeed, for all these statements at least 50% or more of respondents who held land in each state indicated agreement. In addition, 50% or more of respondents in Iowa, Illinois, Indiana, Kansas, New York, and Ohio indicated that they would be willing to include lease provisions related to specific conservation practices (e.g. grassed waterways, no-till, adaptive nutrient management, cover crops, filter strips, and wildlife habitat). And 50% or more of respondents in Iowa, Illinois, Kansas, New York, and Texas indicated that they would be willing to include a lease provision that requires their operator to implement soil erosion practices to conserve/improve soil health.

The data and findings presented here begin to fill important data gaps we have on these

TABLE 8. PERCEPTIONS ON LAND MANAGEMENT (% AGREEING WITH STATEMENT)

	AR	CA	IA	IL	IN	KS	NY	NC	OH	TX	WA	SIG
I trust my operator to make good conservation decisions.	**89%**	**87%**	**94%**	**92%**	**92%**	**92%**	**88%**	**90%**	**93%**	**91%**	**92%**	***
I am committed to my operator's continuation as a renter of my land.	**88%**	**84%**	**87%**	**88%**	**88%**	**88%**	76%	**87%**	**88%**	**86%**	**88%**	**
I am comfortable extending the length of my operator's lease to facilitate implementation of conservation practices on my land.	**79%**	**68%**	81%	**82%**	**81%**	**85%**	**78%**	**79%**	**82%**	**77%**	**81%**	***
I am comfortable asking my operator to use certain conservation practices on my land.	74%	66%	**84%**	**82%**	76%	73%	**84%**	73%	78%	69%	73%	***
I am comfortable asking my operator to amend or make an addendum to our lease requiring conservation practices.	60%	51%	73%	66%	58%	65%	71%	61%	69%	56%	56%	***
I would be willing to include lease provisions relating to specific conservation practices (e.g. grassed waterways, no-till, adaptive nutrient management, cover crops, filter strips and wildlife habitat).	38%	33%	61%	54%	50%	50%	50%	43%	52%	43%	40%	***
I would be willing to include a lease provision that requires my operator to implement soil erosion practices to conserve/improve soil health.	45%	42%	56%	53%	45%	50%	59%	47%	47%	52%	45%	*
I would be willing to include a lease provision that requires my operator to prepare and comply with a Conservation Plan provided by the U.S. Department of Agriculture (USDA).	27%	25%	38%	31%	26%	31%	38%	25%	31%	32%	27%	*
It is difficult to find information about government conservation programs.	20%	17%	16%	16%	15%	15%	21%	17%	17%	19%	10%	***
Enough soil and water conservation practices have been implemented on my leased land already.	32%	50%	46%	48%	47%	47%	41%	36%	43%	42%	45%	***
I don't have enough time to be directly involved in decision making regarding management on my land.	36%	33%	25%	29%	25%	41%	24%	44%	30%	40%	34%	***
I don't know enough about farming to participate in many decisions regarding management of my land.	39%	28%	31%	38%	33%	46%	13%	42%	34%	42%	46%	***
I worry that discussion of conservation on my farmland might upset my operator.	8%	8%	11%	5%	5%	7%	7%	10%	8%	8%	10%	***
I worry that discussion of conservation on my farmland might upset my family.	3%	5%	7%	2%	4%	4%	4%	3%	6%	6%	6%	†

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

landowners and allow us to begin delineating the landowners by state and agricultural production regions, a valuable contribution to the NOL discussion that to-date is missing. The findings also challenge some commonly made assumptions regarding NOLs, including (1) they care only about the bottom (financial) line, and (2) that they do not care about the land. Our results suggest that a number of factors are more important to the NOLs in our study than financial considerations, and that many of these factors revolve around conservation and farmland preservation.

In fact, the findings show very clearly that NOLs are supportive of their renters taking conservation-oriented action on the land, and very willing to provide this support through such action as extending the length of their operator's lease to facilitate implementation of conservation practices on their land, asking their operator to use certain conservation practices on their land, and asking their operator to amend or make an addendum to their lease requiring conservation practices. The implications of these findings are discussed further in our Call to Action.

Role of Gender: Similarities and Differences

According to the TOTAL data, in 2014 women landlords owned 87,269,480 acres, which represents (1) nearly 10% of the 911 million acres used for agriculture, (2) 25% of the acres rented out for farming, and (3) 31% of the 283 million acres rented out by non-operator landlords (USDA NASS 2015). In addition, the Iowa Land Ownership Survey,[6] which has collected panel data from a representative statewide sample of land parcels and landowners in Iowa since 1949 (Duffy and Smith 2008) shows that in 2017, 49% of Iowa's agricultural landowners were women non-operating landowners. They owned 47% of Iowa's farmland and leased 55% of all acres (Zhang et al. 2018).

We suspect the NASS TOTAL survey numbers to be inaccurate, and that there are more female NOLs than the data show. A probable under-sampling of women landowners in the TOTAL data was confirmed by a USDA Economic Research Service (ERS) staff member involved in the survey (personal communication) and based on anecdotal evidence from prior surveys sent to women landowners; we know they often pass these surveys on to either their male renter to fill out, or a male relative, for they believe, as one female landowner stated, they "don't know about farming" (personal communication). Even with our focus on sampling, striving for a 50/50 gender split, only 29% of the respondents owning land in New York were women, and only one state (Washington) reached the 50% mark (at 51%).

Given AFT's focused work on women NOLs and women farmers, we sought to understand more clearly how male and female NOLs compare and contrast, particularly in their support for conservation management and the strength of their relationship with their farmer. In the following analysis, we focus on some of the same survey questions as those discussed previously, then expand upon the landowner-renter relationship.

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To conduct this analysis, the sample was split by gender, with male respondents making up 56% of the sample (N=1,959) and female respondents making up 44% of the sample (N=1,561). Chi-squared tests, one-way ANOVAs, and Kruskal-Wallis H tests were employed to assess whether there were statistically significant differences between male and female NOLs, and levels of statistical significance, if any, are included in the tables.

Landowner Socio-Demographics and Land Characteristics

Overall, women landowners in the survey are significantly older than male landowners, have lower net farm incomes, and have much less experience with being a farm operator (48% for

6. Iowa is the only state to systematically collect detailed ownership information on agricultural landowners.

male landowners compared to 34% for female landowners—Table 9). Women landowners own fewer acres, are less likely to live on the land, and are more likely to live a significant distance from the land (Table 10). They also are much more likely than male landowners to have inherited the land (73% and 57% respectively) and much less likely than male landowners to have purchased the land (35% and 55% respectively). Those women who are not sole landowners (44%) are significantly more likely to own the land with siblings (63% of women indicating so compared to 55% of men), while men who are not sole owners (57%) are significantly more likely to own with their spouse (27% indicating this compared to 6% of women landowners (results not shown)).

Overall, the agricultural land owned by the women landowners in our study had been in the family significantly longer than land owned by the male landowners in our study (Table 11). Male landowners also indicated a higher percentage will be selling the land to whomever pays the highest price (13% indicating so, compared to 9% for female landowners).

TABLE 9. KEY LANDOWNER STATS

	MALE	FEMALE	SIG
Age (average)	69	71	***
NET FARM INCOME (PRE-TAX, 2017)			***
< $25,000	55%	60%	
$25,001–$75,000	27%	27%	
$75,001–$125,000	8%	7%	
$125,001–$175,000	4%	20%	
$175,001–$225,000	2%	2%	
More than $225,000	4%	2%	
EXPERIENCE WITH FARMING			***
I/we have operated a farm	48%	34%	
I/we have helped our parents farm	24%	33%	
I/we have helped another relative farm	6%	2%	
I/we have worked on a non-relative's farm	5%	1%	
Neither I nor my spouse (if any) have farmed	16%	29%	

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

TABLE 10. KEY LAND STATS

	MALE	FEMALE	SIG
Acres owned (average)	433	355	***
Acres of farmland rented out (average)	305	293	
Live on parcel of land (% indicating yes)	38%	29%	***
Miles live from their land if non-resident (average)	193	235	*
HOW ACQUIRED LAND[a]			
Purchased	55%	35%	***
Inherited	57%	73%	***
Sole owner (% indicating yes)	43%	56%	

Note. a = Could select multiple categories thus results may not equal 100%. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

Rental Relationship

Both male and female landowners were comparable in terms of the type of relationship they have with their farmer, indicating the farmer is typically a neighbor/friend of the family (Table 12), and are also comparable in terms of more likely to have a verbal rather than a written lease with their farmers (56% and 54% indicating). The landowners differ significantly in what type of lease they have with their farmer, with women landowners primarily having a crop share agreement (50%

TABLE 11. KEY LAND TENURE STATS

	MALE	FEMALE	SIG
NUMBER OF YEARS LAND HAS BEEN IN THE FAMILY			***
Less than 10 years	5%	3%	
10–30 years	20%	11%	
31–70 years	30%	34%	
71–120 years	32%	36%	
More than 120 years	14%	16%	
NEXT OWNER OF THE LAND[a]			
A relative who will rent it out	48%	48%	
A relative who will farm it	19%	19%	
Trust	13%	12%	
Whoever pays the highest price	13%	9%	***
An unrelated person who will rent the land for agricultural production	4%	2%	†
Unknown	12%	14%	†

Note. a = Could select multiple categories, thus results may not equal 100%. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

TABLE 12. RENTAL STATS

	MALE	FEMALE	SIG
BEST DESCRIPTION OF RELATIONSHIP TO FARMER			
Neighbor, friend of family	45%	43%	
Relative, family member	25%	28%	
A person who is neither a relative nor friend of family	30%	28%	
LEASE CHARACTERISTICS			
Verbal	56%	54%	
Written	44%	46%	
LEASE AGREEMENT			***
Crop share agreement	44%	50%	
Cash rent agreement with fixed payment	41%	34%	
Cash rent agreement with flexible payment	6%	6%	
Annual term	68%	62%	***
Length of time have rented to operator (average years)	15	17	***

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

indicating) and male landowners more likely to have a cash rent agreement with either a fixed or flexible payment (47% indicating). Female landowners have had the same farmer farming their land an average of 17 years, compared to 15 years for male landowners.

Information Sources and Needs

Table 13 contains results of information sources and needs. The top five information sources for both male and female landowners are included. For both groups, the farm operator was the most important source of information, though significantly higher for female landowners, and the local county SWCD was the second most important source of information. Both groups were fairly similar in terms of the types of information or technical assistance they want to receive. Male landowners indicated soil fertility and water quality improvement as their primary topics, and female landowners indicated soil fertility improvement. Across the board, men were more interested in receiving information/technical assistance than women landowners. Both groups were interested first and foremost in having access to educational materials developed expressly for non-operating

TABLE 13. INFORMATION SOURCES AND NEEDS

	MALE	FEMALE	SIG
MOST IMPORTANT SOURCES OF INFORMATION[a]			
My farm operator/lessee	**2.95**	**3.07**	***
Local County Soil & Water Conservation District (SWCD)	**2.65**	**2.66**	
USDA Natural Resource Conservation Service (NRCS)	**2.56**	**2.51**	
State Department of Natural Resources	2.32	2.34	
State University Extension	2.45	2.43	
Farm or ranch manager	2.28	2.36	*
% INDICATING INTEREST IN RECEIVING INFORMATION AND/OR TECHNICAL ASSISTANCE[b]			
Soil fertility improvement	**2.32**	**2.02**	***
Water quality improvement	**2.32**	**2.01**	***
Soil erosion control	**2.29**	**2.01**	***
Government conservation programs	2.20	1.97	***
Conservation tillage (e.g. no-till, strip till)	2.05	1.79	***
% INDICATING INTEREST IN INTERVENTIONS[c]			
Having access to educational materials developed expressly for non-operating landowners like you.	**2.15**	**2.07**	**
Having access to leasing tools that better account for costs, benefits and timeliness of implementing conservation practices.	2.00	1.83	***
Working with a private business that specializes in providing conservation services targeted to non-operating landowners.	1.61	1.42	***
Working with a government agency in providing conservation services targeted to non-operating landowners.	1.85	1.70	***
Belonging to a network of non-operating farmland owners who face similar challenges as you do.	1.71	1.56	***
Participating in free discussions with your peers on a regular basis to compare notes/chat with conservation professionals.	1.71	1.51	***

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.
[a] Measured on a scale from 1=Not Important to 4=Very Important
[b] Measured on a scale from 1=Not at all Interested to 4=Very Interested
[c] Measured on a scale from 1=Not at all Interested to 4=Very Interested

landowners like themselves, although the interest in this differed significantly between the groups, with male landowners indicating a higher level of interest, as they did with all intervention scenarios presented (which were not particularly high among either group, with a mean of 2.15 for men and 2.07 for women being the highest mean attained, slightly above "somewhat interested").

Participation in Government Conservation Programs

Male landowners were more involved in all government conservation programs included in the survey, other than land set aside programs such as CRP and WRP (Table 14). Male landowners were significantly more involved than female landowners in three ways, including cost-share programs such as EQIP (23% participated compared to 15% females participating); receiving conservation technical assistance from NRCS or SWCD local staff (30% and 23% respectively); and developing or updating a conservation plan for the land parcel (26% and 20% respectively).

Importantly, in all programs and activities listed in Table 14, women were at least two times as likely to indicate *they did not know* if they were involved in these practices or had received technical assistance (results not shown). For cost-share programs, receiving technical assistance, and developing or updating a conservation plan, at least 21% of the women indicated they did not know if this had occurred on their land, illuminating a lack of knowledge about what is occurring on the land they own.

Barriers to Conservation on Rented Land and Land Management

When asked about barriers to conservation on the land they rent to an operator, both male and female landowners indicated the number one barrier was a weak farm economy, and the second barrier concern for their renter's out of pocket expense (Table 15). Women landowners identified "My lack of familiarity with conservation practices" as their fourth most limiting factor (out of 21), while male landowners identified this as their ninth most limiting factor—a significant difference between the two groups.

This noted lack of knowledge about conservation on farmland is also seen with the female landowners' agreement with various statements on land management. Female respondents were much more likely to agree that they "don't know enough about farming to participate in many decisions regarding management of the land," differing significantly from male landowners (Table 16). The two groups were mixed in terms of willingness to make changes to the lease they had with

TABLE 14. INVOLVEMENT IN GOVERNMENT CONSERVATION PROGRAMS (% INDICATING 'YES')

	MEN	WOMEN	SIG
Participated in land set-aside programs, like CRP (Conservation Reserve Program) or WRP (Wetland Reserve Program).	33%	35%	
Participated in cost-share programs, like EQIP (Environmental Quality Incentive Program) or CSP (Conservation Stewardship Program), that pay some costs of implementing conservation practices.	23%	15%	***
Received conservation practice technical assistance from NRCS (Natural Resource Conservation Service) or SWCD (Soil and Water Conservation District) staff on this parcel.	30%	23%	***
Developed or updated a conservation plan for this parcel.	26%	20%	***
Received income from a sale of conservation easements on this parcel.	5%	4%	
Received payments, and/or other assistance with conservation on this parcel, but I don't recall the program's name.	16%	13%	

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

TABLE 15. BARRIERS TO CONSERVATION ON THEIR RENTED LAND

	MALE	FEMALE	SIG
MOST LIMITING FACTORS‡			
A weak farm economy.	**2.85**	**2.84**	
Too many requirements or restrictions associated with government conservation programs.	2.52	2.44	**
My lack of familiarity with conservation practices.	1.98	2.45	***
Lack of government funds for cost share.	2.46	2.46	
My renter's out of pocket expense (i.e. ability to afford it).	**2.57**	**2.49**	†
Concerns that conservation practices will interfere with my ability to change land management practices as conditions warrant.	2.39	2.28	*

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.
‡ Measured on a scale where 1=Not at all a limiting factor to 4=Significant limiting factor

TABLE 16. PERCEPTIONS ON LAND MANAGEMENT‡

	MALE	FEMALE	SIG
I trust my operator to make good conservation decisions.	**4.16**	**4.28**	***
I am committed to my operator's continuation as a renter of my land.	**4.09**	**4.27**	***
I am comfortable extending the length of my operator's lease to facilitate implementation of conservation practices on my land.	**3.98**	**4.15**	***
I am comfortable asking my operator to use certain conservation practices on my land.	**3.91**	**3.91**	
I am comfortable asking my operator to amend or make an addendum to our lease requiring conservation practices.	**3.67**	**3.70**	
I would be willing to include lease provisions relating to specific conservation practices (e.g. grassed waterways, no-till, adaptive nutrient management, cover crops, filter strips and wildlife habitat).	3.36	3.30	*
I would be willing to include a lease provision that requires my operator to implement soil erosion practices to conserve/improve soil health.	3.37	3.34	†
I would be willing to include a lease provision that requires my operator to prepare and comply with a Conservation Plan provided by the U.S. Department of Agriculture (USDA).	2.99	3.04	
It is difficult to find information about government conservation programs.	2.60	2.63	
Enough soil and water conservation practices have been implemented on my leased land already.	3.32	3.35	
I don't have enough time to be directly involved in decision making regarding management on my land.	2.57	2.78	***
I don't know enough about farming to participate in many decisions regarding management of my land.	2.36	3.04	***
I worry that discussion of conservation on my farmland might upset my operator.	2.03	2.04	
I worry that discussion of conservation on my farmland might upset my family.	1.77	1.80	

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.
‡ Measured on a scale where 1=Strongly Disagree to 5=Strongly Agree.

their farm operator to include conservation practices (for example, male landowners were significantly more likely to indicate their agreement on including lease provisions related to specific conservation practices such as grassed waterways and soil erosion practices, while female landowners were significantly more likely to indicate their willingness to extend the length of their operator's lease to facilitate implementation of conservation practices on the land). While both groups of landowners indicated their highest level of agreement on the statement, "I trust my operator to make good conservation decisions," females agreed significantly more. This also occurred with the second highest agreed upon statement, "I am committed to my operator's continuation as renter of my land," with women landowners again agreeing significantly more.

Given the importance of the renter relationship, and AFTs work in this area, we examined more closely the qualities deemed most important when evaluating farm operators (Table 17). The top three qualities for both male and female landowners are in bold. "Trustworthiness" of the operator is the number-one quality for both groups, though this differed significantly, with female landowners indicating this at a higher level of importance. "That they care about my land" was the number-two quality identified for both groups, though this also differed significantly, with women landowners again indicating this at a higher level of importance. Indeed, the two groups differed significantly on a number of the other statements in the table, with women placing more importance on many of them, as detailed in Table 17.

Additional results (not shown) find that women are much less likely to indicate they are the primary decision maker on the land (37% compared to 60% of male landowners), and are also significantly more likely to note their operator is the one primarily responsible for decisions on the land such as crop inputs, tillage practices, crop varieties/rotations, and conservation practices used or not. Given the stated lack of knowledge of farming by the women, relying on their operator for these decisions is not surprising.

TABLE 17. IMPORTANCE OF QUALITIES WHEN EVALUATING POTENTIAL OR CURRENT FARM OPERATORS[‡]

	MALE	FEMALE	SIG
Trustworthiness	**3.91**	**3.94**	**
Ability to maintain soil productivity	**3.74**	3.80	***
Reliability in paying rent on time	3.50	3.49	
Reputation as a good farmer	3.72	**3.81**	***
Ability to avoid soil erosion	3.67	3.72	**
Amount of rent they will pay per acre	3.05	3.08	†
Ability to avoid contaminating waterways (chemicals, nutrients, etc.)	3.58	3.72	***
The length of time they (or their family) have rented from my family	3.11	3.26	***
Ability to maintain wildlife habitat	2.81	2.92	†
That I like them as a person	3.41	3.44	*
They they care about me	3.24	3.29	**
That they care about my land	**3.78**	**3.82**	**
That they are financially responsible	3.73	3.80	***
That they are a good communicator	3.45	3.58	***

Note. † = p ≤ .1; * = p ≤ .05; ** = p ≤ .01; *** = p ≤ .001.
[‡] Measured on a scale where 1=Not at all important to 4=Very important.

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The findings show the women appear to be less empowered with knowledge, which may explain why they have more confidence and trust in their renter. As noted previously, women respondents also indicated they have significantly less experience as a farm operator, no doubt contributing to their perceived lack of knowledge of agriculture. This lack of knowledge is also evidenced when asking about the involvement in various government conservation programs, where, as noted, women were at least two times as likely to indicate they did not know if they were involved in these practices or had received technical assistance.

For cost-share programs, receiving technical assistance, and developing or updating a conservation plan, at least 21% of the women indicated they did not know if this had occurred on their land. Thus, while owners *of* their land, they are not aware of what is, or is not, occurring *on* their land. Indeed, in previous qualitative work by AFT, women landowners have stated that they believe their lack of knowledge about current farming practices is a significant barrier for them to manage their land well. The quantitative data from this NOL survey echoes this finding.

Multiple researchers have noted the gendered structure of agriculture, which explains in part the lack of knowledge noted by women NOLs.[7] Various demographics in our survey findings appear to also contribute to this lack of knowledge identified by the women landowners. These include women being significantly more likely to live off the land than male landowners, significantly more likely to live further away from their land, and for those who do not live on their land, significantly less likely to visit the land with some frequency (43% of male landowners visit their land at least monthly, compared to 25% of female landowners, 13% of male landowners indicated they visit their land less than once a year, compared to 23% of female landowners—results not shown).

The findings of the gender analysis also show that conservation is important to both female and male NOLs and suggest we should be cautious in presuming that women are better allies in conservation management than male counterparts. That is, our research findings show that both men and women NOLs can be good partners in conservation.

7. See for example, Sachs (1983), Carter (2019) and Petrzelka et al. (2018) for detailed analyses regarding the patriarchal structure of agriculture and its impact on women farmers and landowners.

Role of Farming Experience: Similarities and Differences

One of the primary goals of the survey was to understand more clearly where and how to begin conservation outreach work with NOLs. While AFT's work in various states, as well as previous research, has alerted those working in the area of conservation outreach to the specific barriers and needs of women non-operator landowners, it became evident to AFT through our work in the Great Lakes that farm operators have difficulty communicating with NOLs—male and female—who are generations removed from the farm. Thus, while the farmland is often still "family land," the landowners have little to no experience with farming the land, which can lead to difficulties for the farm operator and for implementing conservation on the land.

To examine potential barriers and pathways for conservation outreach to this group of landowners, we need to first understand if, and how, those who have no farming experience differ from those who have been/are more directly involved in farming. To conduct this analysis, the respondents were split into three groups: those who indicated on the survey they were/are farm operators themselves; those who indicated they helped out on a farm (i.e. helped their parents, grandparents, or non-relative), and those who indicated they have no farming experience. Of the total sample, 42% (N=1,508) had direct farming experience, 36% (N=1,278) had helped on a farm, and 22% (N=795) had no farming experience. Chi-squared tests, one-way ANOVAs, and Kruskal-Wallis tests were used (depending on the variable type) to assess whether there were statistically significant differences based on respondents' level of experience with farming. Levels of statistical significance, if any, are included in the tables.

We begin the discussion by focusing on similar survey questions as the preceding sections, and then delve into the importance of various land management considerations on the farmland that the respondent rents out.

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Landowner Demographics

In terms of age, Table 18 shows those who have the most farming experience are the oldest of the three groups, while those with no farming experience, the youngest. The groups also differ significantly in terms of gender makeup, with those who have directly operated a farm significantly more often being male, and those who have no farming experience significantly more often being female. Education levels also differ significantly among the three groups, with 33% of those who have directly operated a farm indicating they are a high school graduate or less, (compared to 17% for those with some farming experience and 10% for those with none), and 67% of those with no farming experience indicating they have a bachelor's degree or higher (compared to 38% for those with direct farm experience and 53% for those with some). Forty-four percent of those with direct farming experience indicated their net

TABLE 18. KEY LANDOWNER STATS

	DIRECTLY OPERATED FARM	HELPED OPERATE FARM	NO FARMING EXPERIENCE	SIG
Age (average)	72	68	67	***
GENDER				***
Male	64%	55%	41%	
Female	36%	45%	59%	
EDUCATION LEVELS				***
Less than high school	4%	1%	1%	
High school graduate (or equivalent)	29%	16%	9%	
Some college, no degree	20%	17%	15%	
Associate/Tehcnical degree	10%	12%	9%	
Bachelor's degree	23%	26%	30%	
Graduate or professional degree	15%	27%	37%	
NET FARM INCOME (PRE-TAX, 2017)				***
< $25,000	44%	68%	67%	
$25,001–$75,000	34%	22%	21%	
$75,001–$125,000	11%	5%	6%	
$125,001–$175,000	4%	2%	2%	
$175,001–$225,000	2%	2%	2%	
More than $225,000	5%	2%	2%	

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

farm income was less than $25,000, compared to 68% of those who helped operate a farm, and 67% of those with no farm experience.

Key Land and Land Tenure Statistics

While those who have directly operated a farm own the most acres, those with no farming experience lease out the most acres (Table 19). At least some respondents in all three groups indicated they live on the parcel of land, though this differed significantly between the groups, with 49% of those with direct farming experience living on the land compared to 28% of those who helped operate a farm and 14% of those with no farming experience. It is also this latter group who lives farthest from the land, as compared to the other two groups, roughly three times the distance as those with direct farm experience, and two times the distance for those who have helped operate a farm. For those not living on the land, when asked how often they visit the land (results not shown), 35% of those who have no farming experience indicated they visit the land less than once a year, followed by 20% indicating they visit the land once a year, compared to 36% of those with direct farming experience visiting the land at least once a week, followed by 20% visiting the land monthly. While the majority of those who directly operated a farm purchased their land (66% indicating), for those who helped on a farm or had no farming experience, at least 75% in each group indicated they inherited the land. Finally, those who have direct farming experience are also significantly more likely to indicate they are sole owners of the land, (66% indicating) as compared to the other two groups.

At least 52% or more of those who have helped farm or have no farming experience indicated the land has been in their family for more than 71 years, compared to 42% of those who have

directly farmed (Table 20). When asked who the next owner of the land will be, the land will more likely stay in the family of those who have operated their own farm compared to the latter two groups, differing significantly.

Rental Relationship

Those who have no farming experience are much more likely to be renting their land to a person who is neither a relative nor a friend of the family (Table 21). Forty-six percent of this group indicated that is the best description of their relationship to their farm operator, while 45% of those who operated a farm and 47% of those who helped operate a farm indicated the best description is a neighbor/friend of the family.

When asked about leasing terms, all three groups are more likely to have a verbal lease (54%, 59%, 52% indicating) and renew the lease

TABLE 19. KEY LAND STATS

	DIRECTLY OPERATED FARM	HELPED OPERATE FARM	NO FARMING EXPERIENCE	SIG
Acres owned (average)	478	310	377	***
Acres of farmland rented out (average)	326	240	342	**
Live on parcel of land (% indicating yes)	49%	28%	14%	***
Miles live from their land if non-resident (average)	108	227	312	***
HOW ACQUIRED LAND				
Purchased	66%	34%	28%	***
Inherited	49%	75%	77%	***
Sole owner (% indicating yes)	66%	52%	43	***

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

TABLE 20. KEY LAND TENURE STATS

	DIRECTLY OPERATED FARM	HELPED OPERATE FARM	NO FARMING EXPERIENCE	SIG
NUMBER OF YEARS LAND HAS BEEN IN THE FAMILY				***
Less than 10 years	4%	4%	4%	
10–30 years	18%	14%	17%	
31–70 years	37%	30%	24%	
71–120 years	30%	36%	37%	
More than 120 years	12%	16%	19%	
NEXT OWNER OF THE LAND[a]				
A relative who will rent it out	43%	52%	52%	***
A relative who will farm it	30%	14%	7%	***
Trust	11%	14%	12%	
Someone unrelated	11%	8%	12%	†
Whoever offers the highest price	10%	11%	13%	†
Unknown	11%	14%	14%	

Note. [a] = Could select multiple categories, thus results may not equal 100%. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

TABLE 21. RENTAL STATS

	DIRECTLY OPERATED FARM	HELPED OPERATE FARM	NO FARMING EXPERIENCE	SIG
BEST DESCRIPTION OF RELATIONSHIP TO FARMER				***
Neighbor, friend of family	45%	47%	38%	
Relative, family member	32%	26%	16%	
A person who is neither a relative nor friend of family	23%	27%	46%	
LEASE CHARACTERISTICS				
Verbal	54%	59%	52%	***
Written	46%	41%	47%	
LEASE AGREEMENT				***
Crop share agreement	38%	49%	59%	
Cash rent agreement with fixed payment	47%	37%	23%	
Cash rent agreement with flexible payment	7%	6%	5%	
Annual term	66%	67%	61%	***
Length of time have rented to operator (average years)	13	17	20	***

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

on an annual basis (66%, 67%, 61%). Where the groups differ is in the type of lease they hold. Those with farming experience indicated a cash rent agreement with a fixed payment (47%), while those who have helped operate a farm and those with no farming experience were more likely to have a crop-share agreement (49% and 59% respectively). Those with no farming experience have had the longest relationship with their farm operator. On average, they have rented to the same operator for 20 years, compared to 13 years for those who have directly operated a farm, and 17 years for those who have helped operate a farm.

Conservation Information Sources and Needs

Those who have helped operate a farm and those with no farming experience rely first and foremost on their farm operator as an information source about conservation on their land, while those who have directly operated a farm rely first and foremost on agricultural retailers, followed by their farm operator (Table 22). Included in the top three sources for all three groups (in bold) is the local county SWCD.

In terms of level of interest in receiving information and/or technical assistance, none of the groups are highly interested in receiving information, with most means slightly below or above "Somewhat Interested." The group with no farming experience has the least amount of interest in any of the options provided, yet in general has the highest means in terms of level of interest in various types of intervention activities (albeit most means are between "Not at all interested" to "Somewhat interested").

These findings help explain the low level of involvement by the no-farming experience group in government conservation programs and/or seeking technical assistance from government natural resource agencies (Table 23). In general, those who have directly operated a farm have been the most involved in government programs and government agencies such as NRCS and SWCD. Those with no farming experience were approximately three times more likely to indicate they "did not know" if the various government programs or conservation activities had occurred on the land they own (results not shown). These results are, in part, not surprising when looking

at how often the landowners communicate with their renter. For those with direct farming experience, the average number of times one communicated with their renter during a year is 27, compared to 12 times for those who helped operate a farm, and seven times for those with no farming experience. When examining communication regarding conservation, those with direct farming experience communicated on average seven times a year with their renter, compared to three for those who helped operate a farm, and two for those with no farming experience (results not shown).

TABLE 22. INFORMATION SOURCES AND NEEDS

	DIRECTLY OPERATED FARM	HELPED OPERATE FARM	NO FARMING EXPERIENCE	SIG
MOST IMPORTANT SOURCES OF INFORMATION				
My farm operator/lessee[a]	**2.91**	**3.04**	**3.09**	***
Local County Soil & Water Conservation District (SWCD)	**2.70**	**2.66**	**2.53**	**
USDA Natural Resource Conservation Service (NRCS)	2.57	**2.56**	2.42	***
State Department of Natural Resources	2.30	2.37	2.30	
State University Extension	2.44	2.47	2.37	
Farm or ranch manager	2.21	2.37	**2.43**	***
Ag retailers	**3.09**	2.09	1.82	***
INTEREST IN RECEIVING INFORMATION AND/OR TECHNICAL ASSISTANCE[b]				
Soil fertility improvement	**2.30**	**2.18**	2.01	***
Soil erosion control	2.25	**2.15**	**2.04**	***
Water quality improvement	**2.32**	2.13	1.90	***
Government conservation programs	2.14	2.09	**2.04**	*
Conservation tillage (e.g. no-till, strip till)	2.02	1.92	1.82	***
Wildlife Habitat	1.07	1.98	1.94	
INTEREST IN INTERVENTIONS[c]				
Having access to educational materials developed expressly for non-operating landowners like you.	**2.00**	**2.18**	**2.21**	***
Having access to leasing tools that better account for costs, benefits and timeliness of implementing conservation practices.	1.90	1.94	1.93	
Working with a private business that specializes in providing conservation services targeted to non-operating landowners.	1.54	1.50	1.56	
Working with a government agency in providing conservation services targeted to non-operating landowners.	1.74	1.80	1.84	†
Belonging to a network of non-operating farmland owners who face similar challenges as you do.	1.58	1.67	1.72	**
Participating in free discussions with your peers on a regular basis to compare notes/chat with conservation professionals.	1.60	1.64	1.61	

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

[a] Measured on a scale from 1=Not Important to 4=Very Important

[b] Measured on a scale from 1=Not at all Interested to 4=Very Interested

[c] Measured on a scale from 1=Not at all Interested to 4=Very Interested

Barriers to Conservation on Rented Land

While all three groups indicated a "weak farm economy" as their biggest barrier to conservation on their rented land, this differed significantly between them, with those with no farming experience indicating it more of a limiting factor than the other two groups (Table 24). Indeed, for every barrier listed in Table 24, those with no farming experience indicated it was more of a barrier than the other two groups. This group, along with those who helped operate a farm, noted lack of satisfaction with assistance available from the local conservation agency as their second highest limiting factor, while those who have operated a farm noted the renter's out-of-pocket expense.

Land Management

As with the findings in the gender analysis, there are no clear patterns in perceptions of land management by the three groups (Table 25). And as expected, given previous findings,

TABLE 23. INVOLVEMENT IN GOVERNMENT CONSERVATION PROGRAMS (% INDICATING 'YES')

	DIRECTLY OPERATED FARM	HELPED OPERATE FARM	NO FARMING EXPERIENCE	SIG
Participated in land set-aside programs, like CRP (Conservation Reserve Program) or WRP (Wetland Reserve Program).	33%	35%	35%	
Participated in cost-share programs, like EQIP (Environmental Quality Incentive Program) or CSP (Conservation Stewardship Program), that pay some costs of implementing conservation practices.	26%	15%	14%	***
Received conservation practice technical assistance from NRCS (Natural Resource Conservation Service) or SWCD (Soil and Water Conservation District) staff on this parcel.	34%	23%	16%	***
Developed or updated a conservation plan for this parcel.	31%	20%	16%	***
Received income from a sale of conservation easements on this parcel.	6%	5%	4%	
Received payments, and/or other assistance with conservation on this parcel, but I don't recall the program's name.	16%	13%	15%	

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

TABLE 24. BARRIERS TO CONSERVATION ON LANDOWNERS RENTED LAND

	DIRECTLY OPERATED FARM	HELPED OPERATE FARM	NO FARMING EXPERIENCE	SIG
MOST LIMITING FACTORS[a]				
A weak farm economy.	**3.32**	**3.42**	**3.75**	***
Too many requirements or restrictions associated with government conservation programs.	2.97	3.17	3.53	***
Lack of government funds for cost share.	2.92	3.22	3.56	***
My renter's out of pocket expense (i.e. ability to afford it).	**3.09**	3.21	3.61	***
I'm not satisfied with the assistance available from my local conservation agency	2.77	**3.26**	**3.65**	***
Practices do not improve the profitability of my land	2.87	3.00	3.43	***

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.

[a] Measured on scale where 1=Not at all a limiting factor to 4=Significant limiting factor.

TABLE 25. PERCEPTIONS ON LAND MANAGEMENT[a]

	DIRECTLY OPERATED FARM	HELPED OPERATE FARM	NO FARMING EXPERIENCE	SIG
I trust my operator to make good conservation decisions.	**4.23**	**4.21**	**4.18**	
I am committed to my operator's continuation as a renter of my land.	**4.13**	**4.17**	**4.25**	*
I am comfortable extending the length of my operator's lease to facilitate implementation of conservation practices on my land.	**4.01**	**4.08**	**4.10**	
I am comfortable asking my operator to use certain conservation practices on my land.	**3.97**	**3.89**	**3.82**	***
I am comfortable asking my operator to amend or make an addendum to our lease requiring conservation practices.	**3.72**	**3.68**	3.62	**
I would be willing to include lease provisions relating to specific conservation practices (e.g. grassed waterways, no-till, adaptive nutrient management, cover crops, filter strips and wildlife habitat).	3.35	3.32	3.31	
I would be willing to include a lease provision that requires my operator to implement soil erosion practices to conserve/improve soil health.	3.38	3.33	3.34	*
I would be willing to include a lease provision that requires my operator to prepare and comply with a Conservation Plan provided by the U.S. Department of Agriculture (USDA).	3.04	2.97	3.06	†
It is difficult to find information about government conservation programs.	2.46	2.69	2.78	***
Enough soil and water conservation practices have been implemented on my leased land already.	3.39	3.32	3.25	***
I don't have enough time to be directly involved in decision making regarding management on my land.	2.44	2.74	2.97	***
I don't know enough about farming to participate in many decisions regarding management of my land.	1.99	2.80	**3.70**	***
I worry that discussion of conservation on my farmland might upset my operator.	1.98	2.03	2.14	***
I worry that discussion of conservation on my farmland might upset my family.	1.76	1.80	1.83	†

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.
[a]Measured on scale where 1=Strongly Disagree to 5=Strongly Agree.

all three groups trust their operator to make good conservation decisions, though they differ significantly on the level of agreement on this (those who have directly operated a farm are most trusting, while those who have no farming experience are least trusting). Those with no farming experience are the most committed to the continuation of their operator as a renter on their land and are in high agreement that they do not know enough about farming to participate in many decisions regarding management of the land. Those who have either directly farmed or helped operate a farm are more willing to:

- Ask their operator to use certain conservation practices on their land.
- Amend or make an addendum to the lease requiring conservation practices.
- Include lease provisions relating to specific conservation practices.

TABLE 26. WHEN MAKING LAND MANAGEMENT DECISIONS....‡

	DIRECTLY OPERATED FARM	HELPED OPERATE FARM	NO FARMING EXPERIENCE	SIG
AS A LANDOWNER, WHEN MAKING MANAGEMENT DECISIONS ABOUT MY LAND I CONSIDER....				
The neighboring landowners	3.67	3.66	3.57	†
The surrounding communities	3.49	3.48	3.43	
Endangered species	3.43	3.42	3.47	
Wildlife habitats	3.69	3.70	3.65	
Biodiversity	3.40	3.41	3.42	
Water quality	4.07	3.91	3.81	***
Soil quality	**4.30**	**4.20**	**4.06**	***
Need for income from the land	**4.18**	4.02	3.94	***
Needs of the farm operator leasing my land	4.12	**4.12**	**4.11**	
Keeping land in farming	**4.28**	**4.23**	**4.14**	**
Future generations of my family	4.14	4.08	4.04	*

Note. † = $p \leq .1$; * = $p \leq .05$; ** = $p \leq .01$; *** = $p \leq .001$.
‡ Measured on scale where 1=Strongly Disagree to 5=Strongly Agree.

Factors taken into consideration when making management decisions are included in Table 26. The results show that the dominant factor considered for those who have directly farmed is soil quality, followed closely by "keeping land in farming." Keeping land in farming is the dominant factor considered for those who have helped operate a farm and those with no farming experience, followed by soil quality for the former and needs of the farm operator for the latter. One other statement that received strong levels of agreement (i.e. a mean of 4.00 or higher) across all three groups as factors that need to be considered when making management decisions on the land included "Future generations of my family." Concern for the neighboring landowners and communities is highest for those who have directly operated a farm, but only minimally significantly different, if at all, from the other two groups.

The findings in this analysis clearly show vast differences between those landowners who have had direct experience with farming and those who have not, in many of the survey questions and foci. Experience with farming (perhaps direct ties to land) is related to the way NOLs approach land ownership in important ways. The findings also help shed light on why farm operators have indicated they have difficulty communicating with NOLs—male and female—who are generations removed from the farm. In terms of conservation, those landowners with no farming experience are the ones either least involved in conservation programs/activities or the most likely to indicate they do not know if they are involved in these programs/activities. This is also the group of landowners showing the least amount of interest in any of the intervention options provided, an unfortunate finding given they are the ones indicating they know the least about farming, yet they could perhaps benefit the most from the outreach interventions.

The findings are promising, though, for future generations and for keeping the land in farming. Despite being removed from farming and the farming community, both literally and figuratively, there is still a desire on behalf of NOLs to protect farmland for their family and future families.

Call to Action

This survey and the results herein provide some of the most comprehensive information we have on women and men NOLs across a diverse geography of landownership in the United States. This work is particularly unique in that it explores some of the barriers and facilitators of conservation practice adoption, succession planning, and ties to the land among NOLs, building off work done in more constrained geographic regions (e.g. Petrzelka and Marquart-Pyatt 2011, Ranjan et al. 2019, Ulrich-Schaad et al., 2016). The survey results help us to identify areas of future work that could lead those in the agricultural service provision, farmland preservation, and conservation arenas to focus their outreach efforts with NOLs to improve conservation outcomes on the landscape.

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In this section, we articulate a call to action centered around five key actions that should orient future work with NOLs. These include: (1) Cultivate greater awareness among NOLs, particularly women and those with no farming experience, of government programs that support conservation practice adoption; (2) Amplify NOLs' willingness to support their operators in experimenting with more conservation practices on their land; (3) Reach out to women NOLs, as well as men, to improve outcomes on rented land; (4) Engage NOLs to cultivate greater opportunities to experience farming and strengthen their ties to the land and community; and (5) Emphasize the need for succession planning among aging NOLs. We discuss each of these actions in more detail below.

Cultivate Greater Awareness Among NOLs of Government Conservation Programs

Our results suggest that many of the NOLs surveyed had less awareness about government conservation programs and very little use of local NRCS or SWCD staff or technical assistance. A number of respondents also indicated that requirements or restrictions associated with government conservation programs were a significant barrier to conservation. Lack of knowledge about, and engagement with, programs that could support greater conservation is a real barrier to achieving conservation practice adoption on rented lands. This is particularly true for those with little experience or background in farming and is more common among women NOLs. There is, however, an opportunity to cultivate awareness among NOLs who value soil quality, water quality, and other conservation efforts that could benefit their land. Therefore, greater action is needed to find, reach out to, and engage with NOLs, and ultimately, their renters, to help them access technical and financial resources that could help them improve the resilience of their lands. However, further work must also be done to help reduce unnecessary restrictions associated with these programs that might limit their implementation, particularly on rented lands.

Amplify NOLs' Willingness to Support Their Operators with Conservation Practices on the Land

Our results suggest that respondents are comfortable with taking a number of actions to support the use of more conservation on the land they own. This included support for making changes to lease agreements, such as extending the length of their operator's lease to facilitate implementation of conservation practices or asking to amend or make an addendum to their lease requiring conservation practice use by their renters. Unfortunately, many leases across the country are only verbal, year-to-year leases (verbal lease agreements were most common in Arkansas, Illinois, Indiana, Kansas, North Carolina, Ohio, and Texas, while written agreements were most common in California, Iowa, New York, and Washington). Therefore, there is an opportunity to provide more education among willing NOLs to take action to improve the terms of their leases and to increase the adoption of written leases, particularly with agreements that extend beyond one year, to improve the transparency between renters and landowners, ideally enabling both landowners and renters to take some short-term risks that should lead to long-term conservation benefits.

Reach Out to Female and Male NOLs to Improve Outcomes on Rented Land

Women NOLs are still an important audience for outreach, yet we need to be sure to reach all NOLs to improve outcomes on the land. Our results suggest there are fewer differences between men and women NOLs than perhaps anticipated, particularly in terms of support for conservation or willingness to engage their renters on topics related to conservation and farm stewardship. It is clear, however, that lack of experience and knowledge, particularly among women, may limit feelings of confidence for engaging in conversations with renters or conservation professionals on relevant conservation topics, as women were more likely to say they "don't know enough about farming to participate in decisions regarding management." However, our results also suggest that while targeted outreach to women NOLs is critically important, we cannot forget that there is an opportunity to engage men NOLs on many of the same topics. This has the opportunity to lead to tangible benefits on the land if outreach is targeted to address some of the gaps in NOLs' knowledge or their limitations in accessing technical and financial resources.

Engage NOLs to Cultivate Greater Opportunities to Strengthen Their Ties to Farming, the Land, and Community

The survey results clearly illustrate that those who have either directly farmed or helped operate a farm are more comfortable asking their operators to use certain conservation practices on their land, amend or make an addendum to the lease requiring conservation practices, and are more willing to include lease provisions relating to specific conservation practices. Therefore, there is an opportunity to create more opportunities to support NOLs in gaining more experience and knowledge about farming, as well as looking for ways to cultivate and build off ties to the land that many NOLs clearly have, illustrated in how long land ownership has been in the family and how long-standing many of their relationships with their operators are. These are assets that can be leveraged to build more community, dialogue, and understanding between landowners and operators, many of whom are connected by community, family, or social network.

Emphasize the Need for Succession Planning Among Aging NOLs

We report that among respondents, many do not know who the next owner of their land will be, particularly for those owning land in Iowa, New York, and Ohio. In these three states, 20% or more of the respondents indicated they do not know who the next owner will be. And yet,

a majority of respondents also indicate that their land management decisions are greatly influenced by their commitments to future generations of their family. Therefore, it is critically important that NOLs are engaged on the topic of land succession and legacy planning to improve the dialogue surrounding succession planning and reducing legal hurdles left to heirs (or the state). The goal is keeping more land in agriculture and supporting NOLs and their families in seeing their land as an asset worth protecting and enhancing now and in the future. This points to the need to enhance some of the efforts to support landowners in doing more succession planning to prepare for the future, something that American Farmland Trust has made central to our mission of work on farmland preservation.

These five actions should lay the foundation for future engagement and outreach with NOLs in order to achieve greater conservation best management practice adoption on rented lands. Additionally, these actions point toward efforts needed to strengthen engagement and empowerment of women and men NOLs, who, from this study's findings, show a high potential to be partners in conservation and land protection efforts with those working in the agricultural conservation and farmland protection arenas.

References

Calo, A. and K. T. De Master. 2016. "After the incubator: Factors impeding land access along the path from farmworker to proprietor." Journal of Agriculture, Food Systems, and Community Development 6(2): 111–127.

Carpenter, S. 2012. "The USDA discrimination cases: *Pigford, In re Black Farmers, Keepseagle, Garcia*, and *Love.*" Drake Journal of Agricultural Law 17(1): 1–35.

Carter, A. 2019. "We don't equal even just one man": Gender and Social Control in Conservation Adoption." Society and Natural Resources 32(8): 893–910.

Duffy, M. and D. Smith. 2008. "Farmland ownership and tenure in Iowa 2007." Ames: Iowa State University Extension PM 1983 Revised.

Horst, M. and A Marion. 2019 "Racial, ethnic and gender inequities in farmland ownership and farming in the U.S." Agriculture and Human Values 36:1–16.

Petrzelka, P., A. Sorensen, and J. Filipiak. 2018. "Women agricultural landowners—Past time to put them 'On the radar.'" Society & Natural Resources 31(7):853-864.

Petrzelka, P, and S. Marquart-Pyatt. 2011. "Land tenure in the US: Power, gender, and consequences for conservation decision making." Agriculture and Human Values 28:549-560.

Ranjan, P., C.B. Wardropper, F.R Eanes, S.M.W. Reddy, S.C. Harden, Y.J. Masuda, and L.S. Prokopy, 2019. "Understanding barriers and opportunities for adoption of conservation practices on rented farmland in the US." Land Use Policy 80: 214–223.

Sachs, C. E. 1983. The invisible farmers: Women in agricultural production. Totowa, NJ: Rowman & Allanheld.

Ulrich-Schad, J., Babin, N, Ma, Z. and L.S. Prokopy. 2016. "Out-of-state, out of mind? Non-operating farmland owners and conservation decision making." Land Use Policy 54: 602–613.

USDA NASS, 2017 Census of Agriculture, Ag Census Data on Rented Land. https://www.nass.usda.gov/Publications/AgCensus/2017/index.php

USDA NASS 2015. Farmland ownership and tenure. Results from the 2014 Tenure, ownership and transition of agricultural land survey. www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/TOTAL/TOTAL_Highlights.pdf.

Zhang, W., Plastina, A., and Sawadgo, W. 2018. "Iowa farmland ownership and tenure survey 1982-2017: A thirty-five year perspective." Working Paper 18-WP-580. Center for Agricultural and Rural Development. Iowa State University. https://store.extension.iastate.edu/product/6492

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