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Iowa Farm and Rural Life Poll: 2015 Summary Report

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2015 Summary Report

Introduction

The Iowa Farm and Rural Life Poll is an annual survey of Iowa farmers. The survey project collects and disseminates information on issues of importance to agricultural stakeholders across Iowa and the Midwest. The Farm Poll has been conducted every year since its establishment in 1982. It is the longest-running survey of its kind in the nation. Iowa State University (ISU) Extension and Outreach, the Iowa Agriculture and Home Economics Experiment Station, the Iowa Department of Agriculture and Land Stewardship, and the Iowa Agricultural Statistics Service are partners in the Farm Poll. The information gathered through the annual survey is used to inform the development and improvement of research and extension programs and is used by local, state, and national leaders in their decision-making processes. We thank the many farm families who responded to this year’s survey and appreciate their continued participation.

This year’s Farm Poll focused primarily on soil and water conservation. Soil is the foundation of Iowa agriculture’s long-term productivity. However, recent research has also shown that in many areas, [Iowa’s soils are eroding](#) at rates that far exceed regeneration

capacity. New research has shown that “[soil health](#)” is important, and healthy soils can lead to better crop yields, reduce the need for inputs, and even have positive impacts on water quality. Similarly, the [Iowa Nutrient Reduction Strategy](#), which was established in 2013, has brought more attention to efforts to reduce agriculture’s impacts on water quality. Specific topic areas covered in the 2015 survey include perspectives on soil health, changes in farming practices and strategies that can effect agriculture’s ecological impact, motivations underlying conservation practice adoption, and monarch butterfly conservation. This report and all other Farm Poll reports are available from the Extension Store ([store.extension.iastate.edu](#)) or from Extension Sociology ([soc.iastate.edu/extension/ifrlp/reports.html](#)).

Who Participates?

The 2015 Farm Poll questionnaires were mailed in February to a statewide panel of 2,093 farmers. Usable surveys were received from 1,159 farmers, resulting in a response rate of 55 percent. On average, Farm Poll participants were 65 years old. Because the Farm Poll is a panel survey, in which the same farmers participate in multiple years,

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participants are somewhat older on average than the general population of farmers. Farm Poll participants' farms were also somewhat larger on average than Iowa farms as a whole. Farm Poll participants' farms averaged 441 acres, compared to the 2012 Census of Agriculture average of 346 acres.

Soil Health

Soil health has been [defined](#) as “the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans.” Soil science has increasingly focused on understanding what makes soils healthy, what impacts healthy (or unhealthy) soils have on agricultural productivity, and how to manage for soil health. As the scientific understanding of soil health has developed, important soil and water conservation agencies and organizations, such as the USDA Natural Resources Conservation Service, have given [soil health a central role](#) in their conservation outreach to farmers and landowners.

While soil health research and programming has received increasing attention, little is known about farmers' perspectives on soil health. The 2015 Farm Poll survey provided 16 items on the topic and asked farmers to indicate their level of agreement on a five-point scale from strongly disagree (1) to strongly agree (5). The items were preceded by the text,

The concept of “soil health” has been a topic of discussion in the agricultural community in recent years. Soil health has been defined as “the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans.” What are your thoughts about soil health?

The survey items were developed in collaboration with NRCS staff and ISU scientists.

Perceived benefits and concerns

Several items measured farmers' perceptions of the potential benefits of soil health and

possible concerns about practices that could have negative impacts on soil health. Most farmers agreed that healthy soils can have positive impacts on production processes. Ninety-three percent agreed that healthy soils can lead to increased crop yields (table 1). Seventy-seven percent agreed that healthy soils can increase resilience to drought conditions, and 75 percent agreed that healthy soils can reduce crop input needs.

Two items examined concerns that some scientists and farmers have expressed about the impacts of production practices on soil health. Eighty-four percent of respondents agreed or strongly agreed that they were concerned about the impacts of soil compaction on soil health (table 1). Seventy percent indicated that they were concerned about the impacts of pesticides on soil health.

Knowledge and capacity

Five survey items focused on farmers' perceptions regarding their understanding of soil health and their ability to take actions to improve the health of their soils. Seventy-two percent of respondents indicated that they had paid more attention to soil health in recent years, and 76 percent agreed that they had taken recent steps to improve soil health (table 1). About two-thirds of farmers expressed that they have a good understanding of the concept of soil health (69 percent) and know how to manage for improved soil health (67 percent). A slight majority (54 percent) indicated that they have an effective soil health management plan, while 37 percent expressed uncertainty. Sixty-nine percent of respondents indicated that they would like to learn more about how to improve soil health.

Soil health information networks

A third area of inquiry centered on information about soil health. As soil and water conservation agencies and organizations have incorporated the concept of soil health into

Table 1. Farmer perspectives on soil health

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
	— Percent —				
Perceived benefits and concerns					
Healthy soils can increase yields.....	0.4	0.5	6.7	61.5	31.0
I am concerned about the impact of soil compaction on soil health.....	0.5	4.5	11.4	60.4	23.2
I am concerned about the impact of pesticides (herbicides, insecticides, fungicides) on soil health	1.6	6.7	21.4	49.3	21.1
Healthy soils can increase drought resilience	0.8	2.0	19.8	57.4	20.0
Healthy soils can reduce input needs	0.7	2.7	21.6	56.8	18.2
Perceived knowledge and management capacity					
In the last couple of years I have taken steps to improve the health of the soils I farm.....	1.3	6.1	16.8	64.5	11.3
I have paid more attention to soil health in the last couple of years	1.8	7.7	19.1	59.9	11.6
I have a good understanding of the concept of soil health	0.9	5.6	24.5	57.8	11.2
I would like to learn more about how to improve soil health	1.8	5.5	23.6	59.2	10.0
I know how to manage for improved soil health	1.2	4.3	27.7	57.7	9.0
I have an effective soil health management plan	1.4	8.3	36.5	45.3	8.4
Information on Soil Health					
I have noticed more discussion of soil health in the farm press in the last couple of years.....	1.1	2.7	16.0	63.8	16.4
I have noticed more discussion of soil health among fellow farmers in the last couple of years	2.1	10.6	41.3	41.8	4.1
USDA NRCS is a good source of information on soil health	1.9	5.1	29.7	54.1	9.2
Landlords					
In general, landlords know what farming practices can improve soil health.....	4.7	22.7	44.9	25.3	2.4
In general, landlords have a good understanding of the concept of soil health.....	5.3	23.5	49.3	19.7	2.3

their outreach strategies, more information about soil health has been available to farmers. Eighty percent of respondents agreed that they had noticed more discussion of soil health in the farm press recently (table 1). Fewer than half (46 percent), agreed that they had noticed more discussion of soil health among fellow farmers, however. Almost 65 percent of respondents agreed that the NRCS is a good source of information on soil health.

Landlords

A final pair of items asked farmers about landlord knowledge of soil health. More than half of Iowa farmland is rented, and in some counties it is estimated that 70 percent or more is rented. Anecdotal evidence has suggested that many landlords are not well-informed about soil health. Farmer responses aligned with that anecdotal evidence. Just 22 percent of farmers agreed that landlords

have a good understanding of soil health, and only 28 percent agreed that landlords know what farming practices can improve soil health (table 1). Additionally, it is important to note that 49 and 45 percent of respondents (and 45 and 43 percent of those who rent land) reported that they were uncertain on these two items, respectively, suggesting that many farmers have not discussed soil health with their landlords.

Changes in Farming Practices and Strategies

The [Iowa Nutrient Reduction Strategy](#) provides guidance to farmers and agricultural advisers regarding numerous practices that farmers can employ to reduce losses of nutrients such as nitrogen and phosphorus into waterways. The 2015 Farm Poll survey listed a number of key nutrient loss reduction practices (along with several other agricultural practices of interest) and asked farmers whether they had changed their use of the practices in recent years. Farmers were provided with introductory text that explained the question and asked to indicate whether their use of the practices had decreased, increased, or stayed the same. The introductory text was:

As conditions and technologies change over time, farmers can adapt by making changes to their operations. Thinking about the last 10 years or so, how has your use of the following practices changed in your farm operation?

The ten-year time frame was used because many of the practices can be established over a several-year period, and the objective of the question set was to detect medium-term trends in the use of different practices. It is important to note that the “no change” category could signify that a farmer had adopted the practice more than 10 years before the 2015 survey. The question set also included a “not applicable” category because some practices only apply to certain types of cropping systems. Because

most of the practices are most relevant to farmers who plant row crops, the results presented in this section are only for farmers who reported cropland, and for whom the items were applicable.

For contextual purposes, if data on Farm Poll respondents’ use of a particular practice or set of practices are available from past Farm Poll surveys, some basic background statistics on practice use are provided. However, this report does not provide in-depth examination of change over time. A future report may use past Farm Poll data to evaluate magnitude of change over time for several key practices in greater detail.

Tillage

Reductions in tillage can decrease soil erosion and sediment loss into waterways, and can be beneficial for soil health. Reduction of fall tillage is viewed to be particularly effective in decreasing erosion and negative impacts on soil health because soils are not exposed to the elements during the period between harvest and planting of the next crop. The question set contained questions on both type of tillage used and timing of tillage.

The 2013 Farm Poll survey¹ indicated that in 2012, among farmers who planted corn, soybeans, or other row crops, 29 percent employed continuous no till (all crops, all years), 31 percent reported use of strip till, ridge till, or other reduced tillage method, and 36 percent reported “intermittent” no-till practices, depending on the crop.² Results from the 2012 Farm Poll survey³ showed that in 2011, 52 percent of farmers who planted corn or soybeans typically did at least some tillage in the fall, 64 percent typically did at least some tillage

¹Previously unpublished data.

²Some farmers reported multiple tillage approaches. It is important to recognize that individual farmers might use different tillage approaches on different fields and farms due to a variety of factors such as slope, drainage, landlord preferences, etc.

³Previously unpublished data.

Table 2. Changes in management, last 10 years (only farmers with cropland)

	Major Decrease	Moderate Decrease	No Change	Moderate Increase	Major Increase
— Percent —					
Tillage					
Use of other conservation tillage methods that leave more than 30% of residue on the soil surface.....	1.2	1.7	42.9	44.4	9.8
Use of No-till (continuous all crops all years)	1.7	3.7	49.1	32.3	13.3
Fall Tillage.....	18.3	17.8	50.2	12.0	1.7
Spring Tillage	14.2	22.1	53.5	9.7	0.5
Nutrient management					
Use of soil testing and related methods to determine optimal fertilizer rates.....	0.3	2.4	36.4	46.5	14.4
GPS-facilitated precision agriculture practices such as variable rate fertilizer application.....	0.4	2.4	40.5	39.5	17.3
Use of nitrogen stabilizers (e.g., N-Serve).....	1.8	2.1	49.9	34.8	11.4
Growing season application of nitrogen fertilizer (e.g., side-dress).....	3.1	4.1	54.4	32.3	6.1
Spring application of nitrogen fertilizer	3.1	7.1	56.4	26.7	6.7
Fall application of nitrogen fertilizer	16.9	14.5	52.0	14.5	2.1
Pests					
Scouting for pests and disease	0.1	1.6	39.2	50.4	8.8
Use of pesticides (insecticides, herbicides, or fungicides)....	1.9	7.0	48.4	37.2	5.5
Other conservation and agronomic practices					
Practices to improve soil health	0.1	1.4	36.0	55.2	7.3
Installation of drainage (tile, ditches, etc.).....	0.4	1.7	40.7	47.3	9.8
Structural conservation practices such as terraces, grassed waterways, contour buffer strips, and buffer strips along streams	0.5	2.1	43.4	44.6	9.4
Use of cover crops.....	2.1	2.5	60.2	28.6	6.6
Shifting marginal cropland into other uses such as pasture/hay.....	4.1	6.3	63.7	21.1	4.8
Use of longer-season crop varieties.....	1.2	10.8	67.4	18.9	1.7

in the spring, and 39 percent reported that they typically tilled in both the fall and the spring.⁴

Results from the 2015 survey indicate that farmers have made substantial changes to their tillage approaches over the last decade. A little over half (54 percent) of farmers reported that they had increased their use of “conservation tillage” methods, and 46 percent reported an increase in their use of continuous no-till

⁴One motivation for tillage in both fall and spring is that spring tillage can be employed to repair erosion damage that occurs over the winter. Other reasons might include different soil types, moisture levels, drainage, etc.

(table 2). About 36 percent of farmers reported that they had reduced fall tillage, and a similar proportion had reduced spring tillage. Fourteen and 10 percent of farmers reported that they had increased their use of fall and spring tillage, respectively, and about half reported no change in their use of fall and spring tillage.

Nutrient management

Six items focused on different practices farmers can use to manage fertilizers, nitrogen in particular. Overall, the results

indicate that farmers are increasing their use of recommended nutrient management practices. The greatest change was reported in use of soil testing and similar methods to determine fertilizer rates: 61 percent of respondents reported a moderate or major increase (table 2). About 57 percent reported an increase in their use of precision agriculture practices such as variable rate fertilizer application. Forty-six percent reported an increase in the use of nitrogen stabilizers.

Three items examined timing of nitrogen fertilizer application, and results point to a shift from fall application to spring and/or growing season application. Thirty-eight percent of farmers reported a moderate or major increase in growing season application (e.g., sidedress) of nitrogen and 33 percent reported increases in spring application (table 2). Conversely, 31 percent reported a decrease in fall application of nitrogen fertilizer.

Pest management

Two items examined trends in pest and disease management. Scouting for pests and diseases is a foundation of [integrated pest management \(IPM\)](#) practices that have been heavily promoted in Iowa to help farmers learn strategies that help them to minimize the use of insecticides, herbicides, and fungicides. Fifty-nine percent of respondents reported that they had increased their use of scouting (table 2). Forty-three percent indicated that they had increased their use of pesticides, while nine percent had decreased use.

Other conservation and agronomic practices

Six items measured changes in farmers' use of several practices that have implications for reducing nutrient loss and soil erosion as well as for maintenance or improvement of crop productivity (table 2). Sixty-three percent of respondents had undertaken moderate or major increases in practices to improve soil health.

Fifty-seven percent had installed tile or other drainage. Fifty-four percent of farmers reported that they had increased their use of structural conservation practices such as terraces, buffer strips, or grassed waterways, and 35 percent had increased their use of cover crops. Twenty-six percent reported that they had shifted marginal cropland into other uses such as pasture or hay. Twenty-one percent indicated that they had increased their use of longer-season crop varieties, although 12 percent reported a decline in the same variable.

Factors influencing change in practices and strategies

Following the questions about changes in management practices was a question that sought to measure factors that may have influenced the changes. The question set was prefaced by the text, "Thinking generally about the changes in your operation that you reported in the previous question, how much influence have the following had on your decisions to make those changes?" Farmers were asked to rate the influence of each of seven factors on a five-point scale ranging from no influence (1) to very strong influence (5). It is important to note that the list of factors was not exhaustive. Due to space considerations, only a handful of items could be included.

The most influential factor was stewardship ethics, with 48 percent of farmers indicating that this factor was a strong or very strong influence (table 3). This was followed by economics, with 43 percent rating this factor as a strong or very strong influence. Concern about water quality was rated as a strong or very strong influence by 33 percent of respondents.

Extreme and increasingly variable weather has been a constant in recent years. Farmers have had to deal with extreme rains, drought, and other factors, so several weather-related items were included to gauge their influence on changes in practices and strategies. On the whole, the weather-related items were rated

Table 3. Factors that influenced changes in management practices.

	No Influence	Slight Influence	Moderate Influence	Strong Influence	Very Strong Influence
	— Percent —				
My stewardship ethics	11.0	10.3	30.6	34.8	13.3
Economics	12.2	13.5	30.9	32.7	10.7
Concern about water quality	15.8	18.5	32.7	25.2	7.7
Extreme rains	18.2	17.0	30.4	26.7	7.6
Wet springs	19.0	20.3	31.6	23.8	5.2
Drought.....	23.6	23.7	30.7	18.4	3.5
Increased weather variability.....	24.3	21.2	33.1	17.8	3.6

as less influential than stewardship ethics and economics (table 3). The proportion of respondents who selected strong or very strong influence was 34 percent for extreme rains, 29 percent for wet springs, 22 percent for drought, and 21 percent for increased weather variability.

Conservation Practice Use

In the last several years, numerous public and private agricultural stakeholders have increased financial and technical assistance to help farmers and landowners enhance soil and water conservation activities. Several survey questions were included to measure recent investment in conservation practices, and motivations for such investments. Another set of items asked farmers to provide their opinions regarding factors that may impede progress on conservation practice adoption. The results reported in this section are for all of the farmers in the sample.

Expenditures on conservation practices

One way to gauge agricultural conservation practice adoption is by measuring the amount of money that is spent on practices and strategies. This year’s survey provided farmers with a detailed definition of conservation practices and asked them to estimate how much they had spent in the previous decade. The text provided was:

Over the past 10 years, what was the approximate total cost of all of the conservation practices that have been implemented on the land you farm to address soil erosion, water quality, wildlife habitat or similar conservation objectives?

Conservation practices can be defined as practices that minimize potential negative impacts of agriculture (i.e., reducing erosion and protecting water quality) while maintaining or enhancing benefits such as soil health and fertility. The term conservation practice can refer to practices that are implemented on a yearly basis, such as cover crops or no-till, or relatively permanent structural practices such as grassed waterways or terraces. Installation of tile drainage is NOT considered to be a conservation practice unless combined with a nitrogen-loss reducing practice such as a bioreactor or a nutrient-removal wetland.

Please consider all expenses incurred by you (and/or your landlords, if applicable), including labor and materials provided in-kind and those covered by cost-share or other sources.

Following this comprehensive description, a table with 10 conservation expenditure categories ranging from “No conservation expenditure” to \$200,000 or more was provided, and farmers were asked to select the one that most closely reflected their expenditures.

Only about 12 percent of farmers indicated that they had not incurred any conservation expenditures over the ten-year period leading up to the 2015 survey (table 4). Thirty percent had spent between \$1 and \$5,000. Nearly 18 percent reported expenditures of between \$5,000 and \$9,999, and 12 percent between \$10,000 and \$19,999. Smaller, but still substantial proportions spent between \$20,000 and \$29,999 (9 percent), between \$30,000 and \$49,999 (9 percent), or between \$50,000 and \$74,999 (5 percent). About five percent reported more than \$75,000 in conservation spending.

Table 4 provides a rough estimate of what these levels of expenditures by category would total if we assume that Iowa Farm and Rural Life Poll participants are representative of Iowa farmers as a whole. The 2012 Census of Agriculture estimated that there were 88,637 farmers in Iowa. If we multiply the number of farmers who would fall in each expenditure category by the lower and upper bounds of the range of values in each category, we can estimate “low” and “high” totals for conservation spending in each category and overall. For example, for the “less than \$5,000” category we multiply the minimum (\$1) and maximum (\$4,999) in the category by 26,591,

or 30 percent of all Iowa farmers. This gives us a range of expenditure from about \$26,600 to \$132,929,000. Since the last category, \$200,000 or more, does not have a maximum, we use \$200,000 as both the minimum and maximum. Summing the minimum and maximum values gives an overall expenditure estimate. These figures indicate that overall ten-year spending by Iowa farmers (and their landlords, if applicable), including cost-share from government or other sources and labor in-kind, was between \$1.3 billion on the low side and about \$2.2 billion on the high side.

It is worth noting that there was a substantial correlation between farm size and conservation expenditure, as would be expected. Most of the farmers who reported no conservation expenditure had relatively small operations: they had an average of 164 acres of cropland and 75 percent reported less than \$100,000 in gross farm sales. At the other end of the spectrum, the farmers who reported \$20,000 or more in conservation spending averaged 683 acres of cropland and 76 percent had gross farm sales of \$100,000 and above. In other words, larger-scale farmers tended to report higher conservation spending.

Table 4. Estimated expenditures on conservation practices, previous 10 years

	Percent	Estimated number of Iowa farmers in each category ¹	Low estimate	High estimate
No conservation expenditure	11.9	10,548	\$0	\$0
Less than \$5,000	30.0	26,591	\$26,600	\$132,929,000
\$5,000 to \$9,999	17.7	15,689	\$78,444,800	\$156,872,000
\$10,000 to \$19,999	12.3	10,902	\$109,024,000	\$218,036,000
\$20,000 to \$29,999	8.9	7,889	\$157,774,000	\$236,653,000
\$30,000 to \$49,999	8.7	7,711	\$231,343,000	\$385,563,000
\$50,000 to \$74,999	5.2	4,609	\$230,456,000	\$345,680,000
\$75,000 to \$99,999	2.4	2,127	\$159,547,000	\$212,727,000
\$100,000 to \$199,999	1.9	1,684	\$168,410,000	\$336,819,000
\$200,000 or more	1.0	886	\$177,274,000	\$177,274,000
Total	100	88,637	\$1,312,297,000	\$2,202,552,000

¹Calculated based on 2012 USDA Census of Agriculture estimated number of farmers in Iowa.

Motivations for conservation practice adoption

Researchers, policymakers, conservation agencies and organizations, and other stakeholders have long examined and discussed factors that explain investment in soil and water conservation practices. The 2015 Farm Poll survey provided farmers with a list of potential motivations and asked them to rank their importance on a five-point scale from not important at all (1) to very important (5). Items were developed to examine multiple dimensions of three motivational categories: stewardship; policy, regulatory, and economic; and, social pressure. The 21 items, which were not organized by category in the survey, were preceded by the following text:

The following are some factors related to decisions about soil and water conservation. Thinking in general about the conservation practices that you have used in your farm operation over the years, please rate how important the following factors have been in decisions to incorporate conservation practices into your operation.

The data presented in this section is from all of the farmers in the sample.

The highest-rated items were measures of *stewardship motivations*. The top reason, with 81 percent of farmers rating it as important or very important, was to protect the land for the next generation (table 5). Following in order of importance were five items that were rated as important or very important by at least 70 percent of respondents: because it is the right thing to do, to avoid polluting streams, rivers and lakes, to protect investment in the land, to maintain or enhance productivity, and to maintain or improve soil health. These were followed by keeping chemicals and nutrients on the farm (66 percent important or very important) and stewardship ethics (64 percent important or very important). Three items were rated as important or very important

by slightly more than half of respondents: feeling of responsibility to earlier generations (56 percent), to reduce the environmental impact of farming activities (56 percent), and to improve wildlife habitat (54 percent).

The next set of potential conservation practice adoption motivations, which were termed *policy, regulatory, and economic*, were generally rated lower in importance (table 5). Just two of the nine items were rated as important or very important by more than half of respondents: to increase long-term profitability (57 percent) and that cost-share programs helped make it more affordable (53 percent). Forty-eight percent of farmers indicated that maintaining eligibility for Farm Bill programs was an important or very important reason, and 46 percent reported the same for both compliance with Farm Bill requirements and avoiding problems with regulatory agencies. These were followed by preparing for programs that reward conservation behavior (39 percent important or very important), preparing for potential future regulations (37 percent important or very important), the tax benefits associated with conservation expenditures (32 percent important or very important), and having more revenue available than usual (28 percent important or very important).

The motivations that turned out to be least important were related to *social pressure*. “Embarrassment about visible problems” was rated as important or very important by 33 percent of respondents (table 5). Just 19 percent of farmers rated “family members encouraged me to” and “neighborhood expectations,” respectively, as important or very important.

Reasons for continued soil erosion and water quality impairment

Major agricultural soil and water conservation efforts have attempted to reduce agriculture’s negative ecological impacts since the 1930s, yet soil erosion and water quality degradation

Table 5. Motivations for conservation practice use

	Not at All Important	Slightly Important	Moderately Important	Important	Very Important
	— Percent —				
Stewardship					
Protect the land for the next generation.....	2.2	3.7	12.8	38.4	42.9
Because it is the right thing to do	2.7	3.5	13.9	42.9	37.0
Avoid polluting streams, rivers and lakes	2.8	4.0	13.4	44.3	35.5
Protect my investment in the land	2.7	4.3	15.4	44.7	32.9
Maintain or enhance productivity	3.0	5.5	18.7	46.8	26.1
Maintain or improve soil health	2.5	5.3	21.5	48.8	21.8
Keep chemicals and nutrients on the farm.....	6.1	7.5	20.7	44.1	21.5
My stewardship ethics	3.7	7.3	25.5	43.5	20.0
Feeling of responsibility to earlier generations	8.0	12.7	23.5	36.8	19.0
Reduce the environmental impact of my farming activities	6.1	10.4	27.9	42.8	12.8
Improve wildlife habitat	5.2	15.7	24.7	35.8	18.6
Policy, regulatory, and economic					
Increase long-term profitability	6.8	10.9	25.2	39.5	17.6
Cost-share programs helped make it more affordable	11.5	14.3	21.3	36.1	16.9
Ensure eligibility for Farm Bill programs and payments.....	11.6	16.1	24.3	34.6	13.4
Comply with Farm Bill requirements	11.4	15.3	27.0	35.4	10.8
Avoid problems with regulatory agencies.....	11.4	16.1	26.7	32.5	13.3
Prepare for programs that reward conservation behavior.....	13.8	19.0	27.8	30.3	9.0
Prepare for potential future regulations	14.9	18.1	30.5	30.4	6.1
Tax benefits of conservation expenses.....	18.8	23.5	25.8	25.4	6.5
I had more revenue than usual.....	20.3	22.2	29.8	23.6	4.1
Social pressure					
Embarrassment about visible problems.....	20.4	20.5	26.3	25.3	7.5
Family member(s) encouraged me to.....	31.2	26.2	23.6	15.4	3.6
Neighborhood expectations	32.7	23.0	25.3	15.4	3.6

is still widespread. Ten survey items asked farmers’ opinions about potential reasons for ongoing problems. The introductory text read:

State and federal governments, land grant universities, farmer groups, and others have been promoting soil and water conservation practices for decades. Despite these long-term efforts, agriculture still has soil erosion and water quality impairment issues. Please indicate your agreement or disagreement with

the following statements about potential reasons why that is.

The agreement scale ranged from strongly disagree (1) to strongly agree (5).

The item that received the highest level of agreement was, that tillage makes soils vulnerable to erosion, with 72 percent of farmers either agreeing or strongly agreeing (table 6). Fifty-seven percent of respondents

Table 6. Reasons for continued soil erosion and water quality impairment issues

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
	— Percent —				
Tillage makes soils vulnerable to erosion	1.9	10.4	15.8	52.7	19.2
Pressure to make profit margins makes it difficult to invest in conservation practices.....	1.8	17.3	24.0	46.3	10.7
Farmers who are poor stewards of the land cause most of the soil erosion and water quality problems.....	2.8	13.0	30.0	41.8	12.4
Soil erosion is difficult to avoid in corn-soybean production systems.....	5.4	31.7	18.5	38.1	6.3
Nutrient loss is difficult to avoid in corn-soybean production systems.....	4.8	28.9	24.0	37.3	4.9
There is not enough cost-share and other support available from government agencies.....	3.8	15.5	41.0	30.9	8.8
Many farmers don't have the economic resources to adopt sufficient conservation practices.....	5.1	26.1	29.7	33.7	5.3
Many farmers are not aware of water quality impacts.....	3.9	31.3	32.1	27.8	4.9
Nutrient loss is difficult to avoid in tile-drained fields.....	5.0	27.5	41.4	22.3	3.8
Many conservation practices have negative impacts on yields	6.9	35.1	36.2	18.9	2.8

agreed that pressure to make profit margins makes it difficult to invest in conservation practices. Fifty-four percent of farmers agreed with the statement, “farmers who are poor stewards of the land cause most of the soil erosion and water quality problems.”

Several statements received responses that were more balanced between agreement, uncertainty, and disagreement. About 44 percent of respondents agreed that soil erosion is difficult to avoid in corn-soybean production systems, while 37 percent disagreed (table 6). Forty-two percent agreed that nutrient loss is difficult to avoid in corn-soybean production systems, compared to 34 percent who disagreed. Forty percent agreed that cost share and other support from government agencies is insufficient, compared to 19 percent who disagreed. Thirty-nine percent agreed that many farmers do not have the economic resources to adopt sufficient conservation practices, while 31 percent disagreed.

The remaining items garnered more disagreement (or uncertainty) than agreement.

Thirty-five percent of respondents disagreed with the statement, “many farmers are not aware of water quality impacts,” compared to 33 percent who agreed, and 32 percent uncertain (table 6). Thirty-three percent disagreed that nutrient loss is difficult to avoid in tile-drained fields, compared to 26 percent who agreed, and 41 percent uncertain. Finally, 42 percent disagreed with the statement, “many conservation practices have negative impacts on yields,” compared to 22 percent agreement and 36 percent uncertain.

Monarch Conservation

The population of monarch butterflies in North America has declined steeply, and many biologists fear that the species’ migrations between Mexico and the United States could be in peril. In 2015, the [Iowa Monarch Conservation Consortium \(monarch.ent.iastate.edu\)](http://monarch.ent.iastate.edu) was created by farmer and commodity groups, conservation organizations, private companies, state agencies, and Iowa State University to enhance monarch butterfly reproduction in Iowa through collaborative

Table 7. Farmers who indicated that they would be willing to plant to monarch habitat, estimated acres that they would be willing to plant.

	Acres	Willing, but don't know how many acres
How many acres of milkweeds, wildflowers, and other monarch-friendly habitat would you be willing to plant using your own money?	7.3	62%
If you could receive 50% of the cost of planting, how many acres of milkweeds, wildflowers, and other monarch-friendly habitat would you be willing to plant?	9.5	56%
If you could receive 100% of the cost of planting, how many acres of milkweeds, wildflowers, and other monarch-friendly habitat would you be willing to plant?	13.1	45%

efforts that will not impact crop production. To help prepare for that effort, the 2015 Farm Poll contained a short question set to gauge farmers' initial willingness to consider planting some monarch-friendly habitat on their land. The question set was preceded by the text,

In recent years the population of monarch butterflies in North America has declined so steeply that many biologists fear that the species could be in danger of extinction. The drop is primarily due to habitat loss, and in particular the decline of the milkweed plants in the Corn Belt that monarchs need to live, reproduce, and migrate. A conservation plan is being developed to help increase monarch populations by planting species of native milkweeds and nectaring wildflowers across the region. Please answer the following questions about your potential willingness to participate in a monarch conservation plan.

Following the preamble, the question, “would you be willing to consider planting one or more

kinds of milkweed and wildflowers or otherwise improving monarch habitat on some of your land?” was posed. Forty-two percent of farmers indicated that they would consider planting or improving monarch habitat on their land.

Farmers who responded affirmatively were then asked to estimate how many acres of monarch habitat they might be willing to plant using their own money, if they could receive half of the cost of planting, and if they could receive 100 percent of the cost of planting. Many farmers selected “don't know” (table 7). Among farmers who provided an estimate of how many acres of monarch habitat they would consider planting, if using their own money they predicted they would plant an average of 7.3 acres, if receiving 50 percent cost share they would plant 9.5 acres, and if they could receive 100 percent cost share they would be willing to plant an average of 13.1 acres of monarch-friendly habitat.

Prepared by J. Gordon Arbuckle Jr., extension sociologist. Renea Miller provided valuable layout assistance to the questionnaire and this report. The Iowa Department of Agriculture and Land Stewardship–Agriculture Statistics, assisted in the data collection.

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