



# Ag Land Values and Technology Use Training Materials

Below you will find links to a video, PowerPoint presentation, survey information sheet, and practice interviews for NASS's Ag Land Values and Technology Use survey. The practice interviews can be used to get familiar with the survey questions and the data collection instruments.

<b>Links</b>	<b>Length (minutes/pages)</b>
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Strategic Planning and Business Services Division  
Strategic Planning Branch  
Workforce Performance and Staff Development Section

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## NASS Survey Training

# Agricultural Land Values and Technology Use



**United States Department of Agriculture  
National Agricultural Statistics Service**



Workforce Performance and Staff Development Section



# Importance of Land Values

- Agricultural land values are one of the major indicators of the financial health of the agricultural sector.



# What Drives Farm Real Estate Values?

- Farm real estate values influenced by:
  - Net returns from agriculture production
  - Interest rates
  - Government commodity programs
  - Non-farm demands for farmland



# Survey Information

- Project Code: **169** - Land Values Survey
- Questionnaires:
  - Mails around March 14
  - Web reporting option available
- Release of information:
  - *Land Values*
  - *Technology Use (Farm Computer Usage and Ownership)*
  - Early August, 3PM ET

NASS website: [www.nass.usda.gov/](http://www.nass.usda.gov/)



# Market Value

- **Total Market Value:** includes ALL land, dwellings, barns, and other buildings which could be sold under current market conditions
- **Cropland Market Value:** the value of land ONLY used to grow field crops, vegetables, fruit, nut, berry, vineyard, and nursery crops or land harvested for hay

# Market Value continued

- **Irrigated Cropland Value:** the value of cropland ONLY that normally receives or has the *potential* to receive water by artificial means
- **Permanent Pasture, Grazing, and Grassland Value:** the value of land ONLY that is normally grazed by livestock.



# Survey Questions

- Acres Operated
  - Acres owned
  - Acres rented/leased from others (+)
  - Acres rented to others (-)
- Confirm calculated Total Acres Operated (=)
- Estimated **total market value** of ALL land, dwellings, barns, and buildings for acres operated:



# Survey Questions

- Since April 1, has **total market value** of ALL land and buildings in the operation:
  - Increased
  - Decreased
  - Not changed
- (If increase/decrease): What **percent change** best describes the increase or decrease in total market value of all land and buildings in the operation?

# Survey Questions

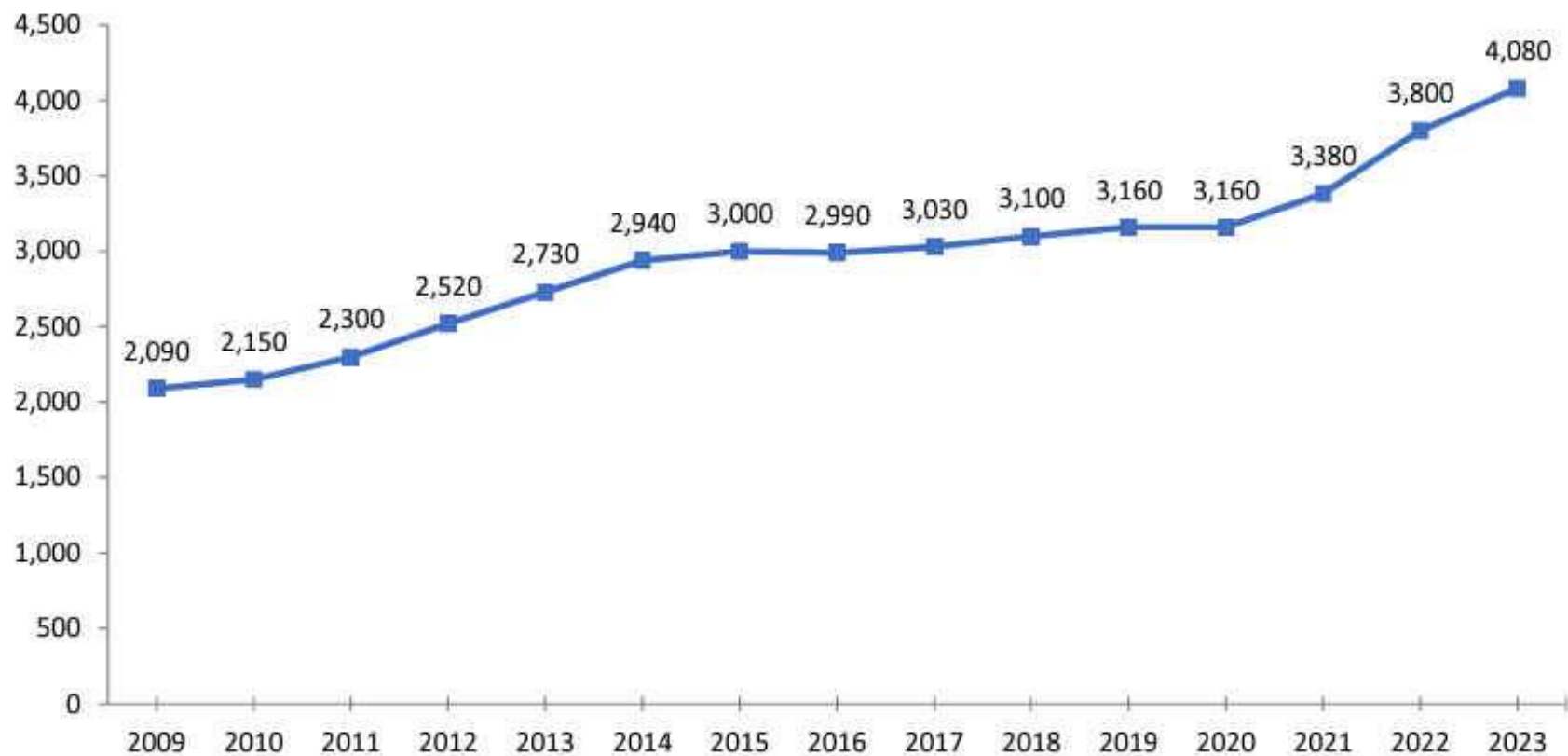
Of the total acres operated, how many are:

- Cropland?
  - Average market value per acre
    - Some states will break this down further between Non-Irrigated and Irrigated cropland
- Permanent pasture, grazing land, grassland?
  - Average market value per acre



## Average Farm Real Estate Value – United States: 2009-2023

Dollars per acre

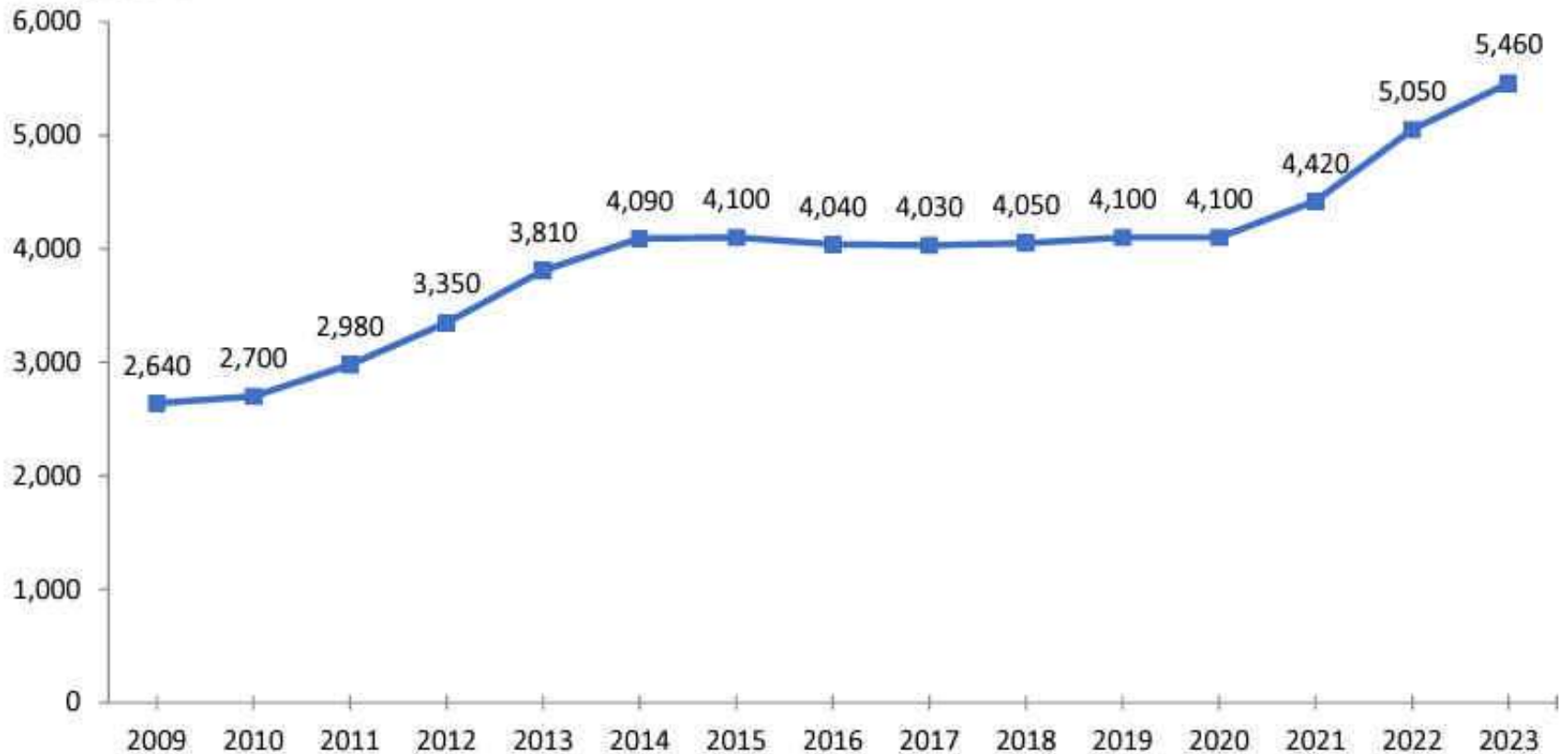


USDA - NASS  
August 4, 2023



# Average Cropland Value – United States: 2009-2023

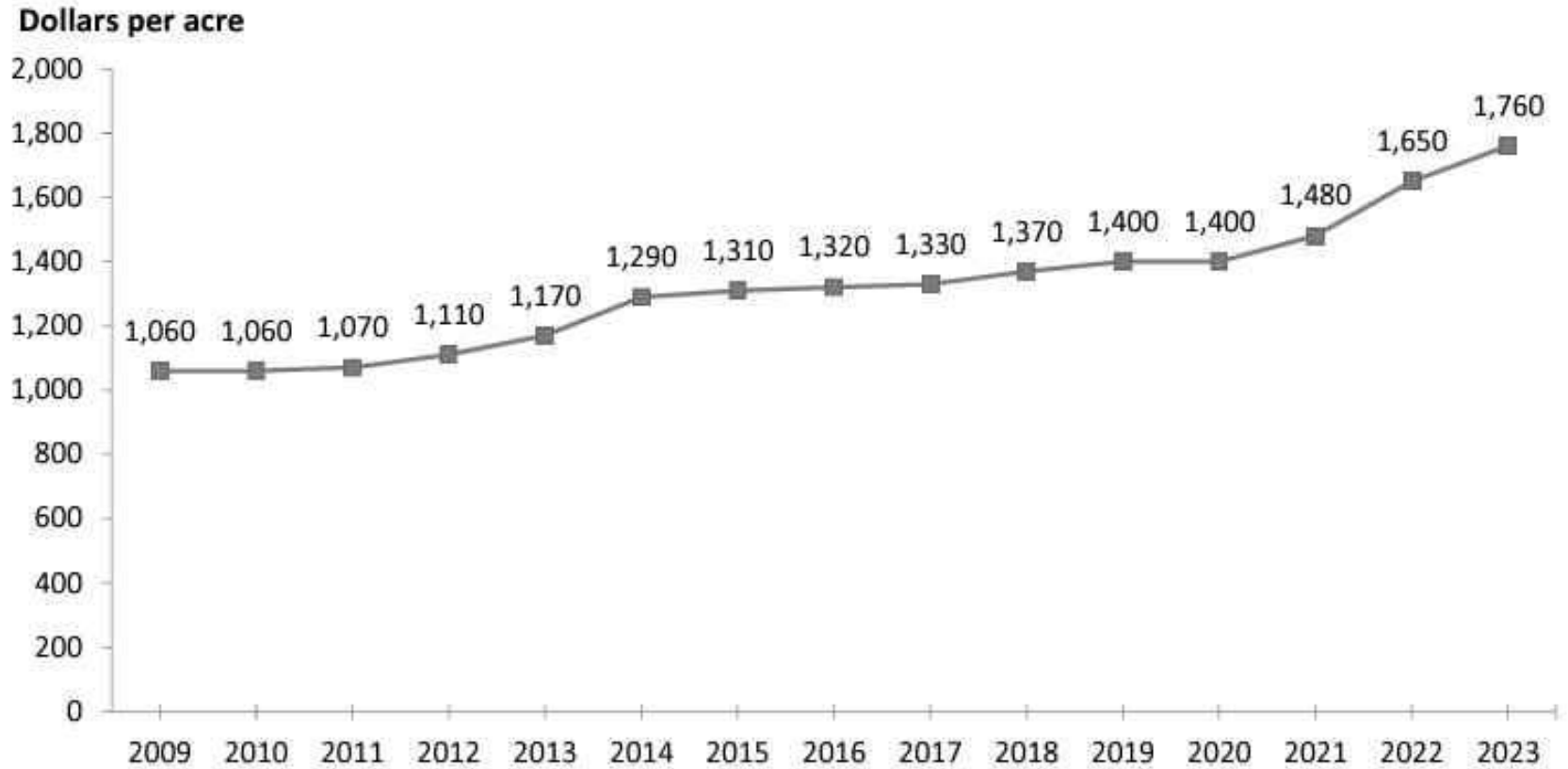
Dollars per acre



USDA - NASS  
August 4, 2023



# Average Pasture Value – United States: 2009-2023



USDA - NASS  
August 4, 2023



# Things to watch out for:

- Acres owned or rented very large
- Large percent change in total market value
- High/Low value per acre of cropland
  - Value of non-irrigated cropland greater than irrigated
  - High/Low value per acre of pasture
  - Value of pasture greater than value of cropland
- Be sure AUM Land is not being included

# Reluctant Responses

- “It’s nobody’s business what my land is worth”
  - I can appreciate you wanting to keep your information/business private. We only use your information together with all the others who report to help get a general idea of the overall land values in your area and across the country.

# Part 2 (Section 3) Technology Use



- The rest of the survey will focus on the use of:
  - Precision agriculture
  - Computers
  - Internet
- Will help measure trends in the use of these technologies in farm and ranch businesses



# Questions

- 8 multi part questions
- All are “Yes” or “No”
- Very straightforward
- Select all that apply



# Overview of Questions

- 1. Did this farm or ranch use precision ag practices to manage crops or livestock?
- 2. Type of computers used or owned?
- 3. Had access to the internet in the last 12 months?
- 4. What type of internet access?
- 5. Use the internet to purchase ag inputs, conduct ag marketing activities, or conduct any non-ag business
- 6. Access NASS website?
- 7. Access the USDA websites (excluding NASS)
- 8. Access the Federal government websites (excluding USDA sites)



# Conclusion



- Please leave notes to explain anything you encounter that is odd or unexpected
- Contact your supervisor if you have any questions or concerns.
- Thank you and have a good survey!

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## Agricultural Land Values and Technology Use Survey

Project Code: 169

### **Purpose of Survey:**

Farmland values are one of the major indicators of the financial health of farmers. The value of farmland and buildings owned accounts for 75% of all farm assets. Land is a primary source of collateral in obtaining operating loans, so changes in farmland values alter the ability of farmers to purchase additional farmland and to finance operating costs.

Nationally, only one to three percent of all land in farms is sold each year. Therefore, we are asking land operators for their **best judgment as to the value of the land they operate**. A few respondents may have a difficult time providing land value information. Recent sales of nearby land or appraisals may be useful references in estimating the value of their land.

### **Survey Specifics:**

Familiarize yourself with the questions before beginning your calls.

### **Acres Operated and Total Value:**

Record acres to whole numbers.

Record TOTAL Value. If value per acre is given, convert to total value.

Record dollars to whole dollars.

Please prompt the respondent to **include his home, barns, and other buildings** in the estimated market value, as well as all cropland, woodland, pasture, wasteland, and government program land.

If values are given by the respondent on a per acre basis, they should be converted to a total value by multiplying the value per acre times the acres reported.



Please remember we are after the farmer's **opinion** of current market value: *Market value is the value in which the land **could be sold under current market conditions** if allowed to be on the market for a reasonable amount of time. This value should be for the **most likely purpose** the land would be sold, including non-agricultural uses. If it is more likely to be sold for development, a high value is acceptable. The land can be in "current use" status, and still be valued at "development" prices, if the market is there for development.*

## **Change in Total Market Value of all land and buildings**

If the respondent does not know the percent change in value or does not want to estimate the percent change in value, please try to at least obtain his/her opinion on if market values are going up or down.

The range expected includes decreases of 1 - 50%, and increases of 1 - 100%. In rare cases, land may more than double in one year due to the proximity to development, expansion in size of operation, or other specific reasons. **Please record the reason if you encounter unusually high percent changes.**

### **Cropland and Pasture:**

- Include hay land as cropland.
- Record acres to whole numbers.
- **Record market value on per acre basis.** If only a total is available, divide total by acres given.
- Record dollars/acre to whole dollars.

The acres recorded in this section may not necessarily total to the number of acres in the previous section, since this is a breakdown of just cropland and pastureland. **Do not include woodland or wasteland.** For example, if a maple syrup grower is sampled, they would not report their woodland or taps as cropland for the purposes of this survey.

### **“Not Farming anymore!”**

The Ag Land Values Survey sample tries to include a large cross-section of farms, and often you are contacting folks not usually included in other survey work done. This increases the chance of encountering an operation no longer in business, or someone who does not consider themselves a farm because they only have a few animals, etc. What we have found is that many folks do not consider themselves a farm, but may produce maple syrup, keep bees, horses, or cut hay or Christmas trees. Documentation will help NASS make the correct determination of the farm status, either keeping the operation on our list as a farm or removing it.

The second part of the survey focuses on technology use by these farming operations.

This information helps to measure trends in the use of technology in farm and ranch businesses.

The information will also be used to help USDA determine the most useful technological platforms to help serve the American farmer through all of the programs offered to them.

There are 8 multi part questions in this section that all consist of “Yes” or “No” answers asking about precision agriculture, computers used by the operation, and internet usage.

The questions are very straightforward and you will simply select all the answers/options that apply to the operation

# Ag Land Values and Technology Use Surey

## Practice Interviews

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### Practice Interview 1

Who is responding? **Operator**

Let me verify the name, address, and phone number that I have for this operation. Is this information correct? **Yes**

Will crops (including fruits and nuts, vegetables, nursery, or greenhouse crops) be grown or hay cut at any time during 20XX, **OR** is any of the land in this operation in government programs? **Yes**

Now I would like to ask about the total acres operated under this land arrangement. Please include the farmstead, all cropland, woodland, pasture, wasteland, and government program land.

How many acres did this operation own? **150**

How many acres did this operation rent or lease from others, or use rent free? **200**

How many acres did this operation rent to others? **75**

Then the total acres operated was 275. Is that correct? **Yes**

Do the total 275 acres operated include any grazing land used on an animal unit month (AUM) or fee-per-head basis? **No**

Do the 275 acres include the farmstead, all cropland, woodland, pastureland, wasteland, and government program land? **Yes**





What is your best estimate of the total market value of all land, dwellings, barns, and other buildings on the total acres operated? **\$350,000**

Since April 1, 20XX, has the total market value of all land and buildings in your operation increased, decreased, or not changed? **Increased**

What percent change best describes the increase or decrease in the total market value of all the land and buildings in your operation since April 1, 20XX? **3%**

(The following questions are based on Questionnaire version with cropland split by irrigated/non-irrigated. If your record is not, combine cropland acres and list value as \$5,000/acre)

The remaining questions in this survey refer to the 275 acres as your “total acres operated”.

Of the total 275 acres operated, how many acres are considered Non-Irrigated cropland? (Include fruit, nut, berry, vineyard, and nursery land.) **100**

What is the average market value per acre for these non-irrigated cropland acres? **\$3,250**

Of the total 275 acres operated, how many acres are considered irrigated cropland? (Include fruit, nut, berry, vineyard, and nursery land.) **125**

What is the average market value per acre for these irrigated cropland acres? **\$6,800**

Of the total 275 acres operated, how many acres are considered permanent pasture, grazing land, or grassland? **40**

What is the average market value per acre for these permanent pasture, grazing land, or grassland acres? **\$2,400**

In the last 12 months, did this farm or ranch use precision agriculture practices to manage crops or livestock? This would include the use of global positioning (GPS) guidance systems, GPS yield monitoring and soil mapping, variable rate input applications, use of drones for scouting fields or monitoring livestock, electronic tagging, precision feeding, robotic milking, etc.? **Yes**

For this farm or ranch, do you (operator or partner(s)) own or use any of the following types of computers? Desktop or laptop **Yes**

- A. Smart phone **Yes**
- B. Tablet or other portable wireless computer **No**
- C. Some other type of computer **No**

For this farm or ranch, have you (operator or partner(s)) had access to the internet in the last 12 months? **Yes, this operation has access to the internet.**

For this farm or ranch, in the last 12 months have you (operator or partner(s)) had access to the internet using a:

- A. Cellular data plan for a smart phone or other mobile device **Yes**
- B. Broadband (high speed) internet service (cable, fiber optic, DSL service) **Yes**
- C. Satellite internet service? **No**
- D. Dial-up internet service? **No**
- E. Some other service? **No**

For this farm or ranch, did you (operator or partner(s)) use the internet for any of the following in the last 12 months?

- A. Purchase agricultural inputs such as seed, fertilizer, chemicals, veterinarian supplies, feed, machinery, replacement parts, farm supplies, farm or ranch office equipment, etc.? **Yes**
- B. Conduct agricultural marketing activities such as direct sales of commodities, on-line crop and livestock auctions, on-line market advisory services, commodity price tracking, etc.? **Yes**
- C. Conduct any non-agricultural business such as making airline reservations? **No**

For this farm or ranch, did you (operator or partner(s)) access the National Agricultural Statistics Service (NASS) website to review reports or research information in the last 12 months? **No**

For this farm or ranch, did you (operator or partner(s)) access the United States Department of Agriculture (USDA) website, excluding the NASS website, in the last 12 months:

- A. To review reports or research information? **Yes**
- B. To conduct agricultural or farm business (USDA service center eForms, access your USDA customer statement, etc)? **Yes**

For this farm or ranch, did you (operator or partner(s)) access the Federal government websites, excluding all USDA websites in the last 12 months:

A. For any reason? **Yes (the IRS)**

B. To conduct agricultural or farm business (Federal Disaster relief, etc.)? **No**

Do you make any day-to-day decisions for another farm or ranch? **No**

Would you rather have a brief summary emailed to you at a later date? **No**

## **Practice Interview 2**

Who is responding? **Operator**

Let me verify the name, address, and phone number that I have for this operation. Is this information correct? **Yes**

Will crops (including fruits and nuts, vegetables, nursery, or greenhouse crops) be grown or hay cut at any time during 20XX, **OR** is any of the land in this operation in government programs? **Yes**



Now I would like to ask about the total acres operated under this land arrangement. Please include the farmstead, all cropland, woodland, pasture, wasteland, and government program land.

How many acres did this operation own? **3,250**

How many acres did this operation rent or lease from others, or use rent free? **5,450**

*This is a large number of acres rented – Operator confirmed that 5,450 acres are correct. This would be a great place to leave a note stating this is correct and was confirmed with the operator.*

How many acres did this operation rent to others? **0**

Then the total acres operated was 8,700. Is that correct? **Yes**

Do the total 8,700 acres operated include any grazing land used on an animal unit month (AUM) or fee-per-head basis? **No**

Do the 8,700 acres include the farmstead, all cropland, woodland, pastureland, wasteland, and government program land? **Yes**

What is your best estimate of the total market value of all land, dwellings, barns, and other buildings on the total acres operated? **\$4,250,000**

Since April 1, 20XX has the total market value of all land and buildings in your operation increased, decreased, or not changed? **Increased**

What percent change best describes the increase or decrease in the total market value of all the land and buildings in your operation since April 1, 20XX? **11%**

(If practice record has irrigated and non-irrigated asked separately, list all as non-irrigated cropland)

The remaining questions in this survey refer to the 8700 acres as your “total acres operated”.

Of the total 8700 acres operated, how many acres are considered cropland? (Include fruit, nut, berry, vineyard, and nursery land.) **8,000**

What is the average market value per acre for these cropland acres? **\$3,800**

Of the total 8700 acres operated, how many acres are considered permanent pasture, grazing land, or grassland? **700**

What is the average market value per acre for these permanent pasture, grazing land, or grassland acres? **\$1,900**



In the last 12 months, did this farm or ranch use precision agriculture practices to manage crops or livestock? This would include the use of global positioning (GPS) guidance systems, GPS yield monitoring and soil mapping, variable rate input applications, use of drones for scouting fields or monitoring livestock, electronic tagging, precision feeding, robotic milking, etc.? **Yes**

For this farm or ranch, do you (operator or partner(s)) own or use any of the following types of computers?

- A. Desktop or laptop **Yes**
- B. Smart phone **Yes**
- C. Tablet or other portable wireless computer **Yes**
- D. Some other type of computer **No**

For this farm or ranch, have you (operator or partner(s)) had access to the internet in the last 12 months? **Yes**



For this farm or ranch, in the last 12 months have you (operator or partner(s)) had access to the internet using a:

- A. Cellular data plan for a smart phone or other mobile device **Yes**
- B. Broadband (high speed) internet service (cable, fiber optic, DSL service) **No**
- C. Satellite internet service? **Yes**
- D. Dial-up internet service? **No**
- E. Some other service? **No**

For this farm or ranch, did you (operator or partner(s)) use the internet for any of the following in the last 12 months?

- A. Purchase agricultural inputs such as seed, fertilizer, chemicals, veterinarian supplies, feed, machinery, replacement parts, farm supplies, farm or ranch office equipment, etc.? **Yes**
- B. Conduct agricultural marketing activities such as direct sales of commodities, on-line crop and livestock auctions, on-line market advisory services, commodity price tracking, etc.? **Yes**
- C. Conduct any non-agricultural business such as making airline reservations? **No**

For this farm or ranch, did you (operator or partner(s)) access the National Agricultural Statistics Service (NASS) website to review reports or research information in the last 12 months? **Yes**





For this farm or ranch, did you (operator or partner(s)) access the United States Department of Agriculture (USDA) website, excluding the NASS website, in the last 12 months:

- A. To review reports or research information? **Yes**
- B. To conduct agricultural or farm business (USDA service center eForms, access your USDA customer statement, etc)? **Yes**

For this farm or ranch, did you (operator or partner(s)) access the Federal government websites, excluding all USDA websites in the last 12 months:

- A. For any reason? **Yes (the IRS)**
- B. To conduct agricultural or farm business (Federal Disaster relief, etc.)? **No**

Do you make any day-to-day decisions for another farm or ranch? **No**

Would you rather have a brief summary emailed to you at a later date? **No**

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