



# Determining County Level Data for Indiana



January 28, 2010

Greg Matli and Greg Preston





# NASS County Estimates Program

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- Basic steps to determine county yields
  - Establish final State acreage and production
  - Determine District acreage and production
  - Calculate County acreage and production

Yield = production/harvested acres



# NASS County Estimates Program

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- Data Sources

1. December Agricultural Survey
2. County Agricultural Production Survey
3. FSA certified planted acres
4. Cropland Data Layer (CDL) Satellite Imagery information



# NASS County Estimates Program

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## 1. December Agricultural Survey & other Agricultural Surveys during year

- As season progresses, collect data on planted acres, harvested acres, and production
- Final planted acres, harvest acres, and yield estimates at end of season establish baseline for setting county estimates



# NASS County Estimates Program

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## 2. County Agricultural Production Survey

### ■ Process

- Questionnaires are mailed once the corn/soybean crops are 90% harvested
- Typical County Ag Prod Survey sample size
  - State ~10,000 – 20,000
  - County ~ 100 – 200

### ■ **Mail**

- Telephone follow-up



# NASS County Estimates Program

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## 2. (cont'd) County Ag Prod Survey

- Standards
  - Minimum of 30 responses per county or 25 percent acreage coverage
- Reliability of county estimates highly dependent on responses and coverage



# NASS County Estimates Program

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- County Estimates

- Tabulation

- Two key ratios

- Harvested-to-planted ratio

- Yield per acre (production/harvested acres)

- Setting Estimates

- Consider five data sources

- Grower reports receive most weight



# NASS County Estimates Program

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## ■ County Estimates

- Using FINAL State Estimate → ASD level → County level

### First Set:

- Planted acres, then
  - Harvested acres, then
  - Yield and Production
- 
- All estimates must add to the State Final Estimate
  - Likewise, County parts must add to ASD level



# COUNTY AGRICULTURAL PRODUCTION SURVEY 2009



**NATIONAL  
AGRICULTURAL  
STATISTICS  
SERVICE**

Indiana Field Office  
1435 Win Hentschel Blvd.  
Suite 110  
West Lafayette, IN 47906-4145  
Phone: 1-800-363-0469  
Fax: 1-800-363-0475  
Email: nass-in@nass.usda.gov

Information requested in this survey is used to prepare estimates of selected agricultural commodities. Facts about your operation are **confidential** and used only in combination with similar reports from other producers. Response is **voluntary**.

Please make corrections to name, address and ZIP Code, if necessary.

Please answer the following question(s) for the total acres you (name on label) operate.

1. In 2009, did you—
  - a. grow any crops or cut hay? .....  Yes [Go to Item 2]  No [Continue]
  - b. have any land in cropland (include idle cropland and cropland in government programs, such as CRP, etc.)? .....  Yes [Go to Item 2]  No [Continue]
  - c. have any whole grains, oilseeds, or hay stored on this operation? .....  Yes [Go to Item 2]  No [Continue]
  - d. have any facilities for storing whole grains, or oilseeds? .....  Yes [Go to Item 2]  No [Continue]
  - e. own or raise any livestock or poultry? .....  Yes [Go to Item 2]  No [Continue]
  - f. have more than 99 acres of pasture? .....  Yes [Go to Item 2]  No [Go to Section 4]

2. Are the day-to-day decisions for this operation made by one individual, a hired manager, or partners? [Check one]
  - One individual – [Go to Section 1.]
  - A hired manager – [Go to Section 1.]
  - Partners – [Continue]

Office Use
R. UNIT
0521

3. How many individuals are involved in the day-to-day decisions of this operation?  **Number**  
 [Enter the number of partners. Include the partner named on the label. Identify the other persons in this partnership below.]  
 Partners jointly operate land and share in decision making. Do not include landlords and tenants as partners.

4. If partnership reported in item 2, please identify the other person(s) in this partnership in the boxes below.

Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Phone: (____) _____
Did this partner also operate land individually in 2009?
<input type="checkbox"/> Yes <input type="checkbox"/> No

Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Phone: (____) _____
Did this partner also operate land individually in 2009?
<input type="checkbox"/> Yes <input type="checkbox"/> No

**Section 1 - Acres Operated**

Please report the total acres operated under this land arrangement.

1. In 2009, how many acres did this operation:

a. Own? .....

b. Rent or lease from others or use rent free?  
(Exclude land used on an animal unit month (AUM) basis.) .....

(i) Were any of these acres rented for cash?  
(Exclude land rented on a whole farm basis, share basis, per head or AUM basis,  
free of charge, and rent that includes buildings, such as greenhouses or barns.)

Yes = 1

No = 3 .....

3420

c. Rent to others? .....

2. [Calculate Item 1a + 1b - 1c.] Then the total acres operated in 2009 was .....

The remaining questions in this survey refer to the total acres operated [Item 2].

3. Of the total acres operated, how many acres are considered cropland?  
(Include land in hay, summer fallow, cropland idle, cropland used for pasture and cropland  
in government programs.) .....

4. In what county was the largest value of your agricultural products raised or produced?

State

Principal County Name

Number of Acres  
in Principal County

0000

Acres

U901

+

U902

+

U90b

-

U900

=

U002

OFFICE USE

U000

U000

## Section 2 - Crops

- Please report for all land you operate. Include land you rent from others.
- If harvest is not complete, make your **best estimate** of acres and **total production**.
- Report **crops grown** for any purpose for the 2009 crop year, even if the crop has been grazed off, plowed under, or abandoned.



- **Acres for all other purposes:** Acres of the crop used for hay, pasture, cover crop, abandoned, etc.



### 1. Winter Wheat (Planted Fall 2008)

- a. Acres **planted** for all purposes last fall or this spring? (Include acres planted as a cover crop, grazed off, cut for hay/haylage/silage, or abandoned.) ..... Acres
- b. Acres **harvested** for either grain or seed? ..... Acres
- c. Total grain and seed **production**? ..... Bushels
- OR**
- d. **Yield** per acre of grain and seed harvested? ..... Bushels/Acre
- e. Acres of Winter Wheat for all **other** purposes? (Include hay, haylage, silage, pasture, cover crop, abandoned, or any other purpose than grain or seed). ..... Acres

U540
U541
U452
U151
U457



## Section 2 - Crops (Continued)



### 2. Corn (exclude popcorn and sweet corn)

- a. Acres planted for all purposes?..... Acres
- b. Acres harvested and to be harvested for either grain or seed?..... Acres
- c. Total grain and seed production?..... Bushels
- OR
- d. Yield per acre of grain and seed harvested?..... Bushels/Acre
- e. Acres cut for silage or greenchop?..... Acres
- f. Total silage and greenchop production?..... Tons
- OR
- g. Yield per acre of silage and greenchop cut?..... Tons/Acre
- h. Acres of corn for all other purposes (include abandoned acres)?..... Acres

U630
U631
U370
U637
U373
U376
U396
U379

### 3. Soybeans

- a. Acres planted for all purposes?..... Acres
- b. Acres harvested and to be harvested for beans?..... Acres
- c. Total soybean production?..... Bushels
- OR
- d. Yield per acre of soybeans harvested?..... Bushels/Acre
- e. Acres of soybeans for all other purposes (include abandoned acres)?..... Acres

U600
U763
U227
U764
U236

## Section 2 - Crops (Continued)

### Instructions for Dry Hay Crops

- Report by type of hay.
- Report all dry hay harvested during 2009.
- Include acres cut for dry hay that are enrolled in government programs. (For example: Conservation Reserve Program (CRP)).
- Count each acre only once, regardless of the number of cuttings or different uses.
- Report the total production from all cuttings for dry hay. Include the dry weight of any dehydrated hay.
- Exclude, from dry hay, acres cut only for straw, haylage, or greenchop.

#### 4. Alfalfa and Alfalfa Mixtures

a. How many acres of alfalfa and alfalfa mixtures were cut for **dry hay**? ..... Acres

Report quantity harvested in one of the following ways:  
total production, or yield, or bales.

b. What was the total production of dry hay from all cuttings? ..... Tons

OR

c. Yield per acre of dry hay? ..... Tons/Acre

OR

d. Total bales of dry hay harvested from all cuttings?

	Number of bales	Average weight per bale (Pounds)
Total Production:	_____	_____
or Bales per Acre:	_____	_____

#### 5. Small Grain Hay

a. How many acres of small grain were cut for **dry hay**? ..... Acres

Report quantity harvested in one of the following ways:  
total production, or yield, or bales.

b. What was the total production of dry hay from all cuttings? ..... Tons

OR

c. Yield per acre of dry hay? ..... Tons/Acre

OR

d. Total bales of dry hay harvested from all cuttings?

	Number of bales	Average weight per bale (Pounds)
Total Production:	_____	_____
or Bales per Acre:	_____	_____

#### 6. All Other Hay (Include clover, timothy, tall fescue, orchard grass, brome, lespedeza, sudan, sorghum-sudan crosses, and clover and grass mixtures.)

a. How many acres of all other hay were cut for **dry hay**? ..... Acres

Report quantity harvested in one of the following ways:  
total production, or yield, or bales.

b. What was the total production of dry hay from all cuttings? ..... Tons

OR

c. Yield per acre of dry hay? ..... Tons/Acre

OR

d. Total bales of dry hay harvested from all cuttings?

	Number of bales	Average weight per bale (Pounds)
Total Production:	_____	_____
or Bales per Acre:	_____	_____

### Section 3 - Livestock

Please report the number of animals, regardless of ownership, that are currently on the total acres operated.

#### 1. Cattle and Calf Inventory

	Number
a. Beef cows (include heifers that have calved) currently on this operation? .....	1351
b. Milk cows (include heifers that have calved) currently on this operation? .....	1352
c. Other cattle (include heifers that have not calved, steers, calves, and bulls)? .....	1206
d. Total cattle and calves currently on this operation (add items a, b and c)? .....	1350



### Section 4 - Change in Operator

[Complete this section only if all questions in Item 1 on the face page are answered "No".]

1. Has the operation named on the label been sold, rented, or turned over to someone else?

Yes- [Continue]       No- [Go to a.] → → → → →

2. Was the operator (name on label) operating a farm or ranch during 2009?

Yes- [Continue]       No- [Continue]

3. Please provide the following information for the operation that has taken over the land:

What is the name and address of the new operation?

Operation Name: \_\_\_\_\_

Operator Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

a. Will the land be used for any agricultural purpose by you (the operator), or anyone else in the next year? (Include growing crops or raising livestock.)

Yes     Don't Know     No

[Regardless of answer to above, please write a note to explain the situation.]

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Section 5 – Conclusion

The survey results will be available on the Internet at <http://www.nass.usda.gov>.

Thank you for your cooperation!



Respondent Name: \_\_\_\_\_ Phone: \_\_\_\_\_

9910	MM	DD	YY
Date:	__	__	__

Response	Respondent	Mode	Enum.	Eval.	Office Use for POID
1-Comp	9901	1-Op/Mgr	9902	1-Mail	9903
2-R		2-Sp		2-Tel	0096
3-Inac		3-Acct/Bkpr		3-Face-to-Face	0100
4-Office Hold		4-Partner		4-CATI	
5-R - Est		9-Oth		5-Web	
6-Inac - Est				6-e-mail	
7-Off Hold - Est				7-Fax	
8-Known Zero				8-CAPI	
				19-Other	

Optional Use	
U4U7	U4U8

S/E Name \_\_\_\_\_

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0525-0002. The time required to complete this information collection is estimated to average 25 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.



# NASS County Estimates Program

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## 3. Farm Service Agency (FSA)

- Certified planted acres (access to county totals)
- County totals are very accurate
  - Considered a minimum
  - Not all farmers sign-up with FSA

## Risk Management Agency (RMA)

- Limited information



# NASS County Estimates Program

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## 4. Cropland Data Layer (CDL)

- Mesh satellite digital data with ground truth data
  - Classify entire state for major crops
- Only useful for planted acres
  - Output both State and County estimates
- Difficult to use for harvest area or yields





# Indiana County Level Data

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- How does NASS come up with County Level Data?
  - Conduct Surveys
    - September Agricultural Survey (small grains)
    - December Agricultural Survey (row crops)
    - January Cattle Survey
    - County Agricultural Production Survey
  - CDL - Satellite Imagery
  - Administrative Data



# Indiana County Level Data

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- How many are in the sample?

Mail out

■ September Agricultural Survey	2,000
■ December Agricultural Survey	2,500
■ January Cattle Survey	900
■ Ag Yield	700
■ County Estimates	<u>16,000</u>
■ Total Sample Size	22,100



# Indiana County Level Data

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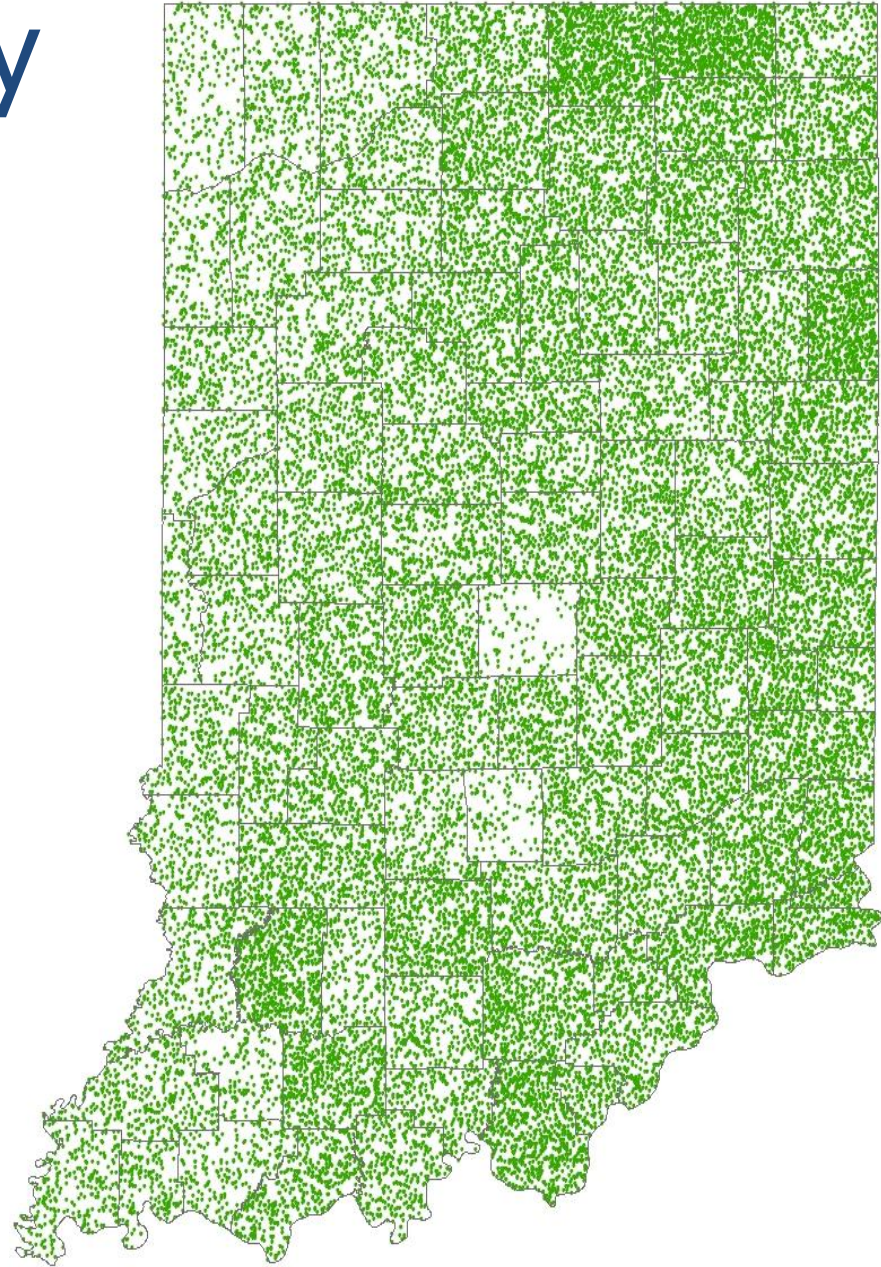
- The Sample
  - NASS uses a very sophisticated sampling method called MPPS
    - Multivariate Probability Proportional to Size Sampling
      - This works very well and is very efficient when multiple variables are being sampled (corn, soybeans, wheat, hay, cattle)

# Indiana County Level Data

## Population

**2009 County Level Data**

1 dot = 1 Operation

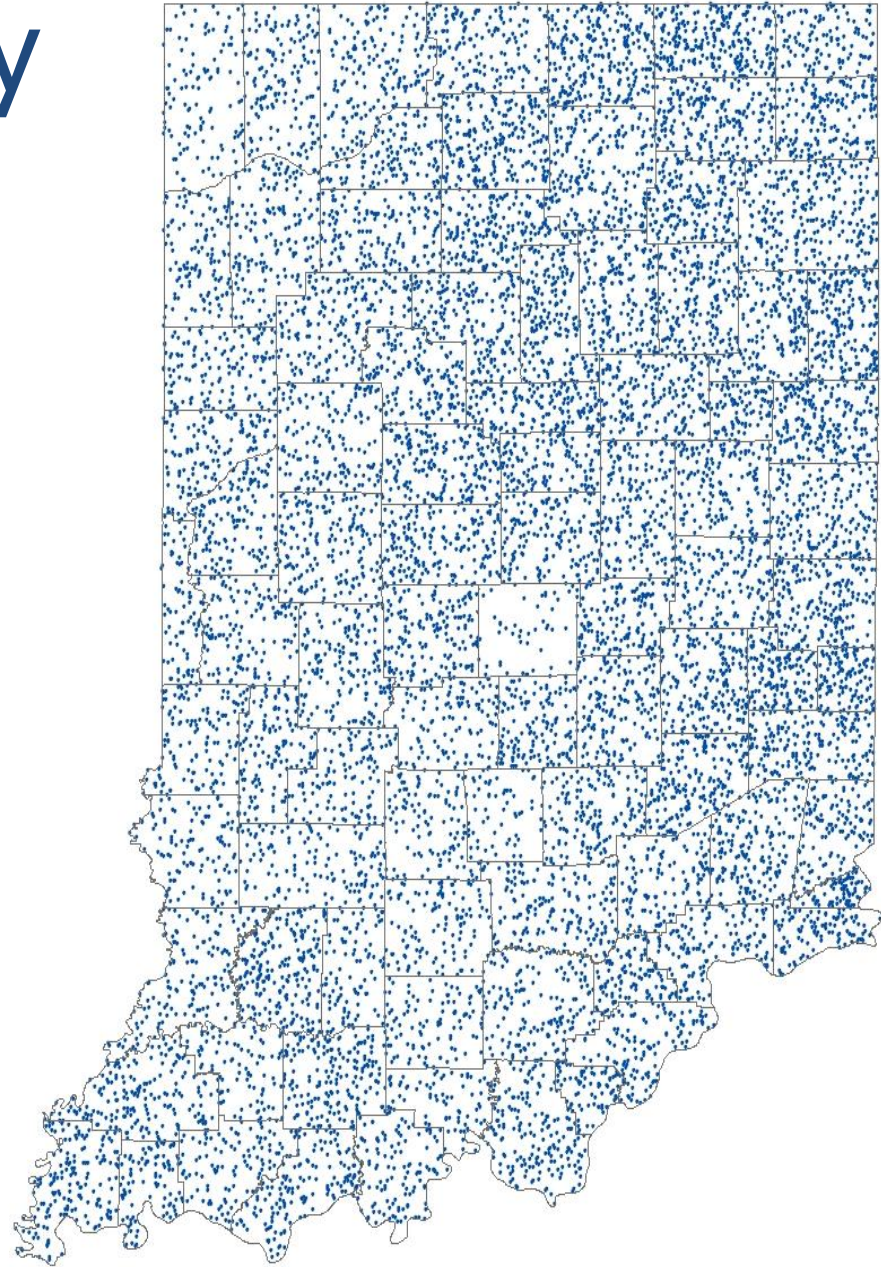


# Indiana County Level Data

## Sample

**2009 County Level Data**

1 dot = 1 Operation





# Indiana County Level Data

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- The Sample Summary Indications
  - Direct Expansion (DE)
  - Ratio-to-Land Planted (R/L PL)
  - Ratio-to-Land Harvested (R/L HV)
  - Identical Match (H/H)
  - Composite Ratio (CR HV)
  - Harvested/Planted (H/P)
  - Yield (YLD)



# Indiana County Level Data

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- The Satellite Summary Indications
  - Remote Sensing Regression  
(Acreage) – CDL
  - Remote Sensing Yield – Direct
  - Remote Sensing Yield - Index



# Indiana County Level Data

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- Cropland Data Layer (CDL)
  - State acreage indications
  - County acreage indications
  - Image product available to the public

# Indiana Crop Data Layers

## Land Cover Categories

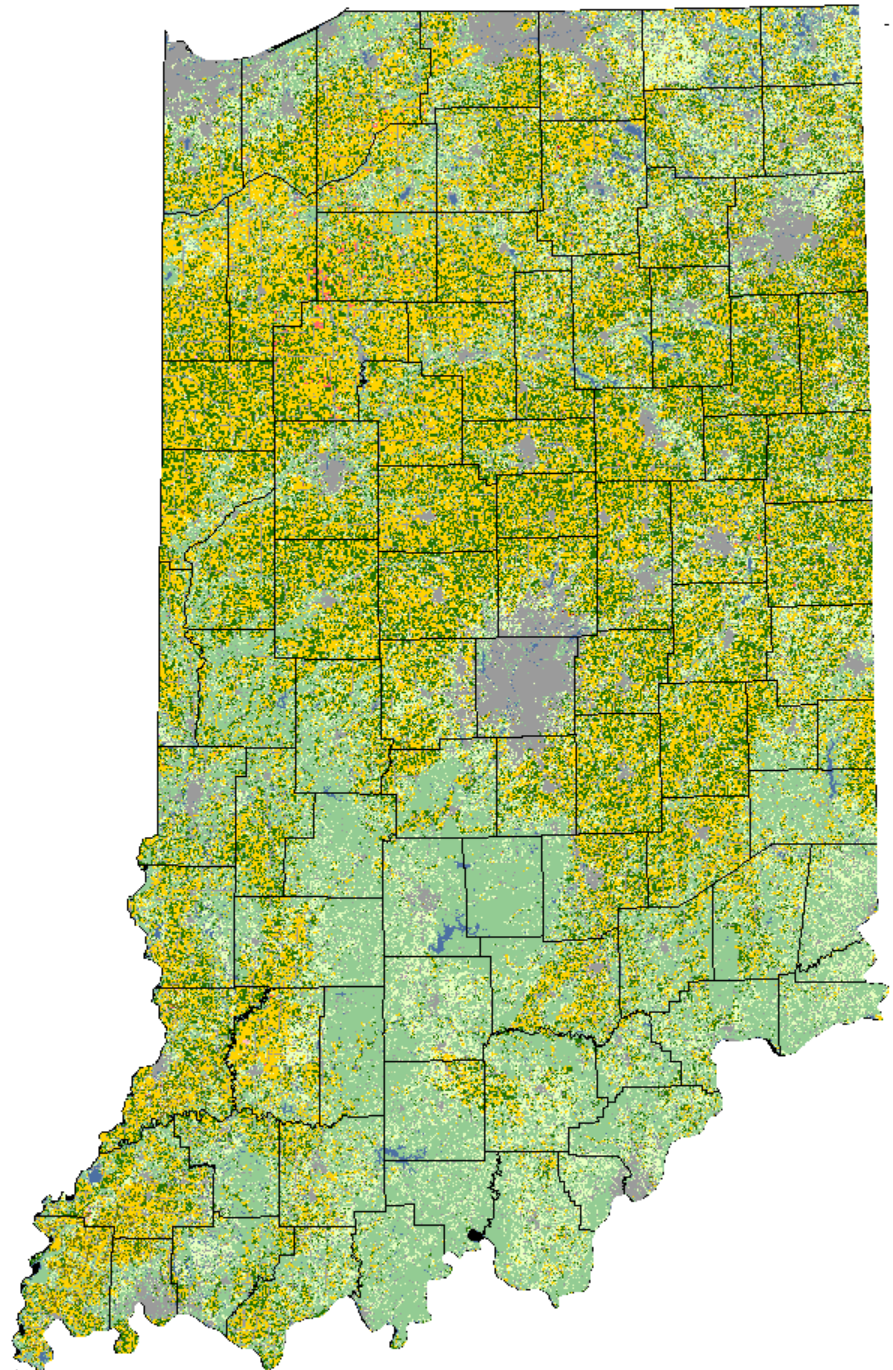
(Ordered by Decreasing Acreage)

### Agricultural

-  Corn
-  Soybeans
-  Winter Wheat
-  Win. Wht./Soy. Dbl. Crop.
-  Alfalfa
-  Misc. Vegs. & Fruits
-  Watermelon
-  Other Crops
-  Sorghum
-  Dry Beans
-  Potatoes
-  Oats
-  Clover/Wildflowers
-  Rye
-  Tobacco
-  Christmas Trees

### Non-Agricultural

-  Woodland
-  Grass/Pasture/Non-Ag
-  Urban/Developed
-  Water
-  Wetlands
-  Barren
-  Shrubland
-  Fallow/Idle Cropland



# Indiana Crop Data Layers

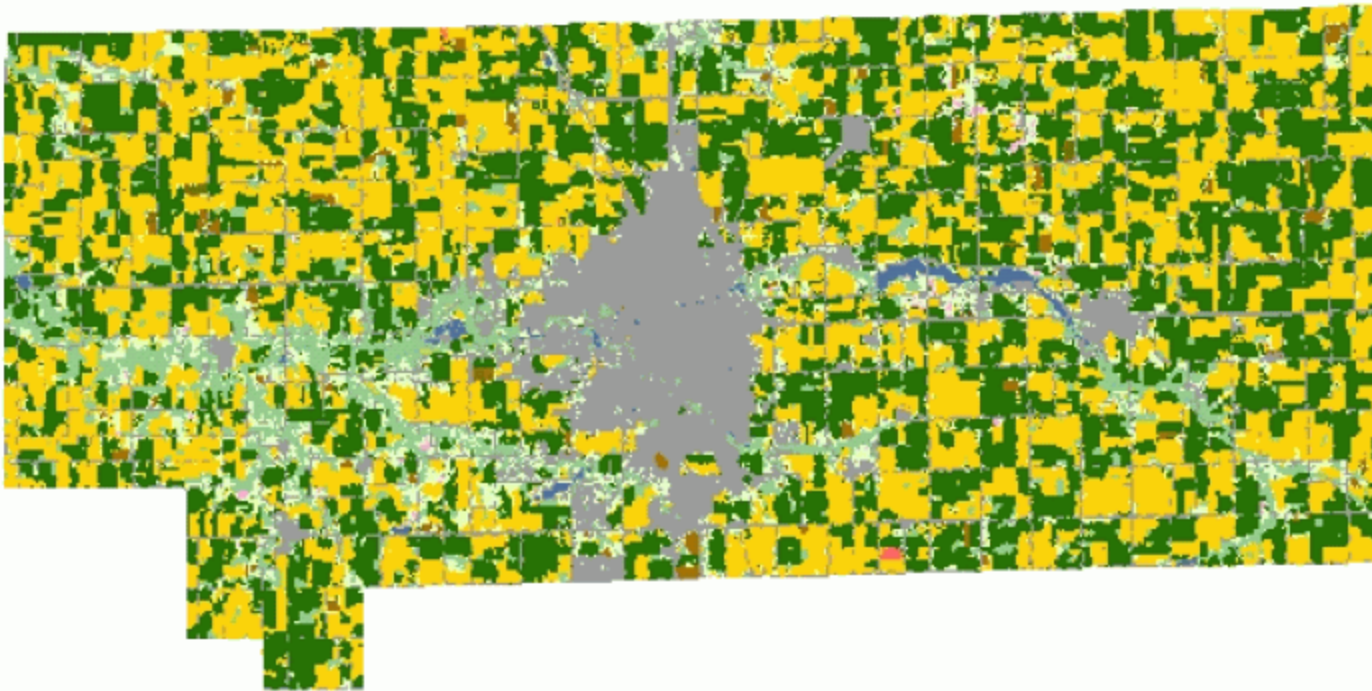
## Land Cover Categories

### AGRICULTURE

- Corn
- Soybeans
- Grass/Pasture/Non-Ag
- Winter Wheat
- Win. Wht./Soyb. Dbl. Cropped
- Alfalfa
- Fallow/Idle Cropland
- Misc. Veggies. & Fruits
- Sorghum
- Watermelon
- Other Crops
- Seed/Sod Grass
- Dry Beans
- Clover/Wildflowers
- Potatoes
- Oats
- Spring Wheat
- Rye

### NON-AGRICULTURE

- Woodland
- Urban/Developed
- Water
- Wetlands
- Shrubland
- Barren

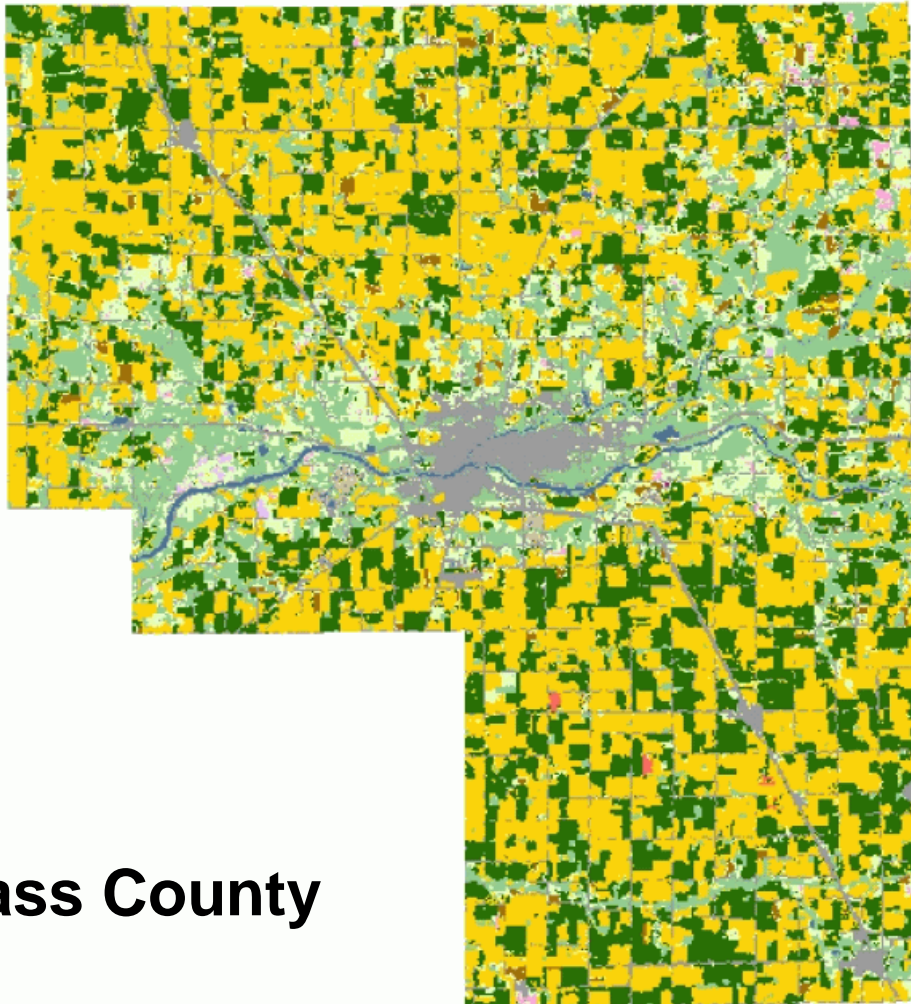


**Howard County**

CDL Classification



# Indiana Crop Data Layers



**Cass County**

## Land Cover Categories

### AGRICULTURE

- Corn
- Soybeans
- Grass/Pasture/Non-Ag
- Winter Wheat
- Win. Wht./Soyb. Dbl. Cropped
- Alfalfa
- Fallow/Idle Cropland
- Misc. Veggies. & Fruits
- Sorghum
- Watermelon
- Other Crops
- Seed/Sod Grass
- Dry Beans
- Clover/Wildflowers
- Potatoes
- Oats
- Spring Wheat
- Rye

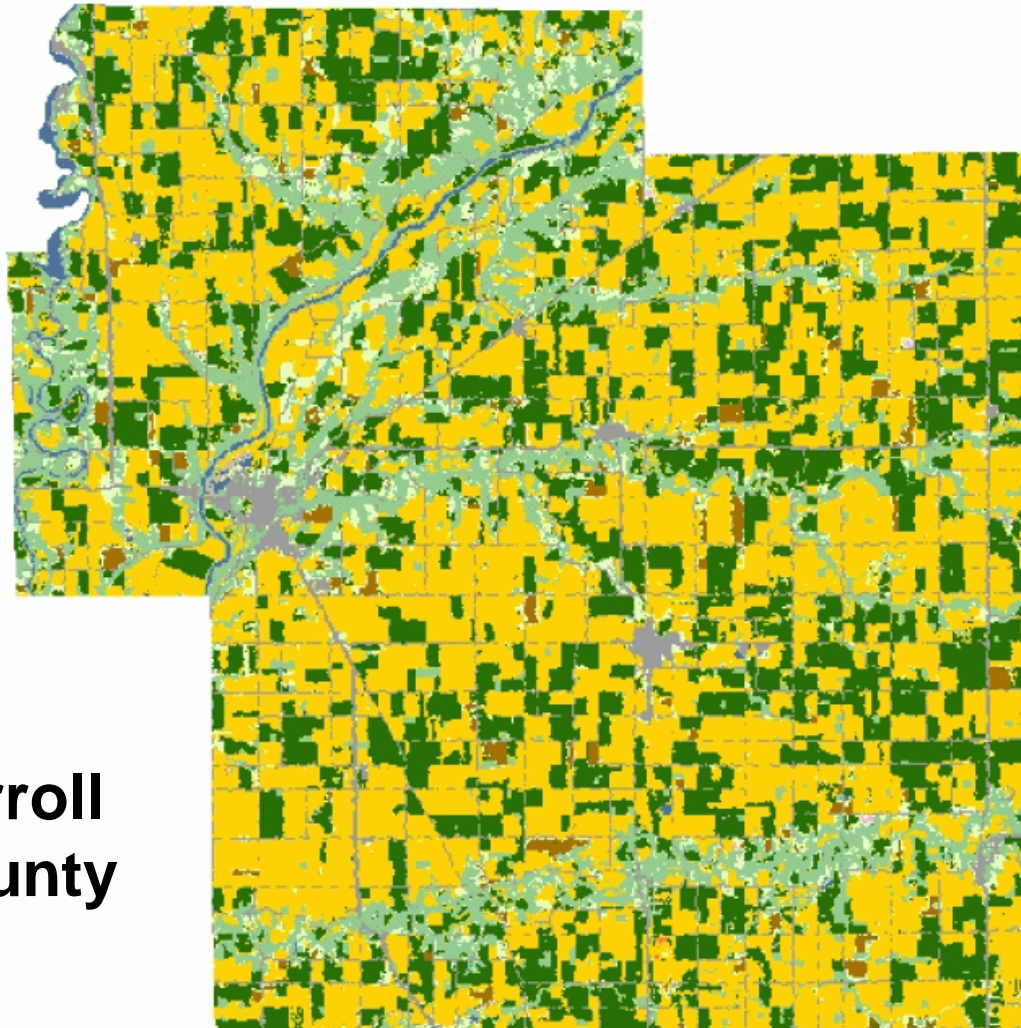
### NON-AGRICULTURE

- Woodland
- Urban/Developed
- Water
- Wetlands
- Shrubland
- Barren

CDL Classification



# Indiana Crop Data Layers



**Carroll  
County**

## Land Cover Categories

### AGRICULTURE

- Corn
- Soybeans
- Grass/Pasture/Non-Ag
- Winter Wheat
- Win. Wht./Soyb. Dbl. Cropped
- Alfalfa
- Fallow/Idle Cropland
- Misc. Veggies. & Fruits
- Sorghum
- Watermelon
- Other Crops
- Seed/Sod Grass
- Dry Beans
- Clover/Wildflowers
- Potatoes
- Oats
- Spring Wheat
- Rye

### NON-AGRICULTURE

- Woodland
- Urban/Developed
- Water
- Wetlands
- Shrubland
- Barren

CDL Classification







# NASS Corn Estimation Program Summary

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- Set final State acreage and production
- Set District acreage and production
- Set County acreage and production

Yield = production/harvested acres

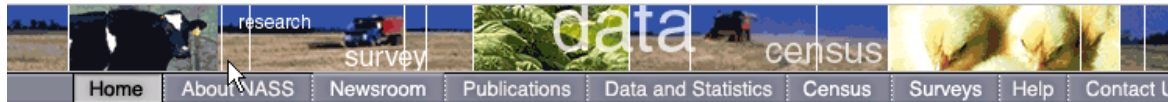
➔ Most important factor... **Grower Responses**



# Use of County Estimates

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- USDA-Risk Management Agency
  - Group Risk Plan (GRP)
  - Group Risk Income Protection (GRIP)
- Provisions of plans
  - NASS yield - The yield calculated by dividing the National Agricultural Statistics Service (NASS) estimate of the corn for grain production in the county, by the NASS estimate of the acres of corn planted in the county, as specified in the actuarial documents. The actuarial documents will specify whether harvested or planted acreage is used to calculate the yield that is used to establish the expected county yield and calculate revenues.



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## Headlines

[Release Dates for 2009 County Crop Estimates](#)

[2009 Crop Year One for the Record Books](#)

[NASS to Resurvey Some Corn, Soybean Producers](#)

[USDA Conducts 2009 Census of Horticulture](#)

[54.9 Million Acres of U.S. Farmland Now Irrigated](#)

[NASS Seeks Long Range Planning Input](#)

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["Under Lock and Key" - Farm Journal Looks at Lockup](#)

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Jan 25, 2010

**Cotton Ginnings**  
Released at 08:30 A.M. ET

[Text](#) | [PDF](#) | [CSV](#)

**Poultry Slaughter**  
Released at 08:30 A.M. ET

[Text](#) | [PDF](#) | [CSV](#)

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# NASS County Level Data

- Published –

<http://www.nass.usda.gov>

- Wheat February 19, 2010
- Corn & Soybeans February 26, 2010
- Thank you! --- Questions?

