



# USDA National Agricultural Statistics Service

## Remote Sensing Acreage Estimation Program

### Cropland Data Layer

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USDA/NASS/Research and Development Division

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# NASS Overview

Provider of timely, accurate, and useful statistics in service to U.S. agriculture

**NASS - Data and Statistics - Microsoft Internet Explorer**

Address: [http://www.nass.usda.gov/Data\\_and\\_Statistics/index.asp](http://www.nass.usda.gov/Data_and_Statistics/index.asp)

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

The 2002 Census of Agriculture is the most comprehensive source of statistics portraying our nation's agriculture.

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**Statistics by State**

Select a State

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**Quick Stats (Agricultural Statistics Data Base)**

NASS publishes U.S., state, and county level agricultural statistics for many commodities and data series. Quick Stats offers the ability to query by commodity, state(s) and year(s), providing the most up-to-date statistics including all revisions. The query dataset can be downloaded for easy use in your database or spreadsheet.

Query our Quick Stats Data Base

**Additional Crops County Resources**

Maps of crops county estimates for acreage and yield are available from NASS as both CSV data files and maps.

County data from Quick Stats data is also available in pre-extracted data sets by year and by crop.

**Census of Agriculture**

To query Census of Agriculture data, choose from the Census years below. To view the Census publications, click here:

- Data Queries for 2002, select below:
- Select a Census Query
- Data Queries for 1997, 1992, 1987

**Interactive Data**

NASS provides a variety of tools for interacting with our Census datasets.

- Interactive Statistical Maps
- Interactive Census Maps for 2002 Census Highlights
- Table Lens Application for 1997 Census Data

Last modified: 12/30/05

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## 2001 Wildlife Damage Survey

**7.7 Percent of Crop Value Lost to Deer and Geese**

Maryland farmers lost \$17.2 million of corn, soybeans and wheat to deer or geese during 2001, translates to Maryland farmers losing 7.7 percent of the crop value to deer and geese. Soybean acres for the greatest economic loss, totaling \$9.1 million, 11 percent. Corn losses were \$6.6 million, 5.8 percent and wheat \$1.5 million, 5.6 percent. Deer damage resulted in losses of \$13.6 million, 6.1 percent, while geese losses were \$3.6 million, 1.6 percent.

Production losses totaled 6.0 million bushels. Corn losses were 3.2 million bushels, soybean losses are 2.2 million bushels and wheat accounted for 0.6 million bushels. Production losses to deer were 4.7 million bushels and geese 1.3 million bushels.

In terms of yield, losses to deer were most severe in Central and Western Maryland, while geese damage greater on the Eastern Shore. Corn yield losses of 9.6 bushels per acre and 7.4 bushels per acre were reported in Central and Western Maryland, respectively. The Lower Eastern Shore reported the highest soybean loss of 6.1 bushels per acre.

Sixty-two percent of farms reported deer or geese damage to one or more crops. Damage was reported on percent of farms raising corn, 58 percent of farms growing soybeans and 27 percent of farms with wheat.

**Maryland 2001 Crop Loss from Deer**

Region	Crop	Acres Harvested	Harvested Yield (bushels)	Average Yield Loss (bushels)	Production Loss (bu)	Economic Loss (\$)
Western Maryland	Corn	5,200	124,9	7.4	40,100	83
	Soybeans	300	34.7	9.9	3,000	1,473
	Wheat	200	45.2	2.0	400	1
Central Maryland	Corn	114,200	98.4	9.6	1,100,200	2,473
	Soybeans	92,000	34.0	3.9	360,700	1,473
	Wheat	38,200	63.0	3.0	126,200	319
Southern Maryland	Corn	25,800	112.9	4.9	146,200	299
	Soybeans	42,200	38.0	3.0	142,200	584
	Wheat	35,800	57.0	0.9	14,400	36
Upper Shore	Corn	157,800	159.2	5.1	800,700	1,241
	Soybeans	212,000	39.8	2.4	846,800	2,282
	Wheat	88,800	64.0	1.1	99,100	213

<http://www.nass.usda.gov/0000> - 2002 Census of Agriculture - SVG Interactive Mapping - United S - Microsoft Internet Explorer

**National Agricultural Statistics Service** 2002 Census of Agriculture

United States | All data items are from Chapter 2 - Table 1. Area Summary Highlights: 2002  
Selected crops harvested - Land in orchards (acres)

State: United States - County Level | Data Item: Selected crops harvested - Land in orchards (acres)

Download data as CSV | XML | PDF

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**United States Total:** 5,330,439

State:

State Total:

County:

County Total:

Legend

Scale: National | Zero or Data Withheld

(Changes the data range based on National or State level)

Comparisons: 6 | 20

Color: Green

Source: USDA-NASS 2002 Census of Agriculture  
© USDA-NASS 2005-2006

Navigate: Mouse-over a specific state/county to view the state/county level data. Right click to zoom (option-click for MAC users). Hold the Alt key and click+drag to pan. For additional assistance with this application, [click here to view the support page.](#)



## NEWS RELEASE

**NATIONAL AGRICULTURAL STATISTICS SERVICE**  
United States Department of Agriculture • Washington, DC 20250  
Ag Statistics Hotline: (800) 727-9540 • [www.nass.usda.gov](http://www.nass.usda.gov)

Contact: Ellen Dougherty, (202) 690-8122  
Jeff Geuder, (202) 720-2127

### USDA FORECASTS RECORD-SETTING CORN CROP FOR 2007

Washington, Aug. 10, 2007 – U.S. corn production in 2007, according to the history of the National Agricultural Statistics Service's National Agricultural Survey, is projected at 13.1 billion bushels, 10.6 percent above the 2006 crop.

Based on conditions as of August 10, 2007, the average yield of corn is projected at 3.7 bushels per acre, up 3.7 bushels per acre from the 2006 average of 3.6 bushels per acre. Behind the 160.4 bushels per acre in the Midwest, the average yield of corn for the entire United States is projected at 3.7 bushels per acre.

Yield forecasts are higher in the Midwest, where the average yield is projected at 3.7 bushels per acre, and in the South, where the average yield is projected at 3.6 bushels per acre. In the Northeast, the average yield is projected at 3.5 bushels per acre. In the West, the average yield is projected at 3.4 bushels per acre.



## WISCONSIN AGRICULTURAL STATISTICS SERVICE

P.O. Box 8034 Madison, WI 53708-8034

In cooperation with WI Department of Agriculture, Trade and Consumer Protection



### 2002 Dairy Producer Opinion Survey

November 2002

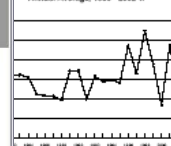
#### Wisconsin Milk Production To Recover

Milk production is expected to increase in Wisconsin during the next five years according to a survey conducted by the Wisconsin Agricultural Statistics Service. This statewide survey of producers asked for their plans with the assumption that milk prices for the next five years will be at the same level as the past five years. The survey was conducted during May and June 2002.

Based on the survey, 60 percent of producers expect to keep the same herd size, 20 percent plan to increase herd size, and 20 percent intend to discontinue milking by 2007. Actual results will depend on future milk prices, input prices, financing availability, crop yields, and other factors.

The number of herds projected for 2007 shows that the diversity of small to large herds will continue. The most prevalent herd size will remain at 50 to 99 cows.

All Milk Price, Wisconsin  
Annual Average, 1985 - 2002 \$



Wisconsin Dairy Herds by Herd Size

Milk cow herd size	May 2002 herds	May 2007 herds (projected) %	Change 2007/2002
	Number	Percent	
1 - 29	2,800	1,440	-45
30 - 49	4,700	3,440	-27
50 - 99	7,400	5,600	-24
100 - 199	1,900	2,080	+9
200 - 499	700	900	+29
500+	200	440	+120
Total	17,500	19,900	+20

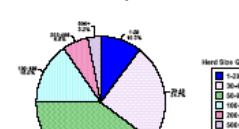
1/ The May 2007 projection is based on farmers' opinions May-June 2002, with the assumption that milk prices for the next five years will be at the same level as the past five years.

Wisconsin Dairy Farmer Plans for May 2007 1/ by Herd Size

Herds	Keep same herd size	Increase herd size	Discontinue milking
Number	Percent	Percent	Percent
2,800	47	17	36
4,700	71	9	20
7,400	63	19	18
1,900	53	37	10
700	33	59	8
200	22	78	0
17,500	60	20	20

1/ The May 2007 projection is based on farmers' opinions May-June 2002, with the assumption that milk prices for the next five years will be at the same level as the past five years.

Percent of Herds by Size Group 2007 Projection





# Research and Development Division

## Spatial Analysis Research Section

### Geospatial Science and Survey Section



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http://www.nass.usda.gov/Research\_and\_Science/index.asp

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National Agricultural Statistics Service

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### Research and Science

#### Spatial Data

Vegetation Condition Images

Cropland Data Layer

Image Gallery (2003) available for these states: Arkansas, Illinois, Indiana, Iowa, M. Dakota, Mississippi, Missouri, Nebraska, Wisconsin)

Land Use Strata for Selected States

#### Census of Agriculture

2002 Census Map Gallery

2002 Maps: Gallery | Star Tree | List

Interact with Data (1997)

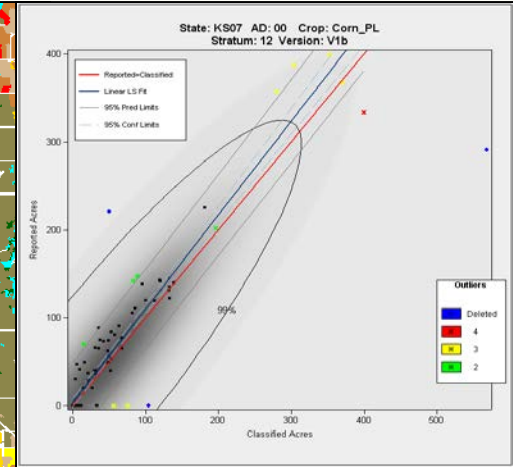
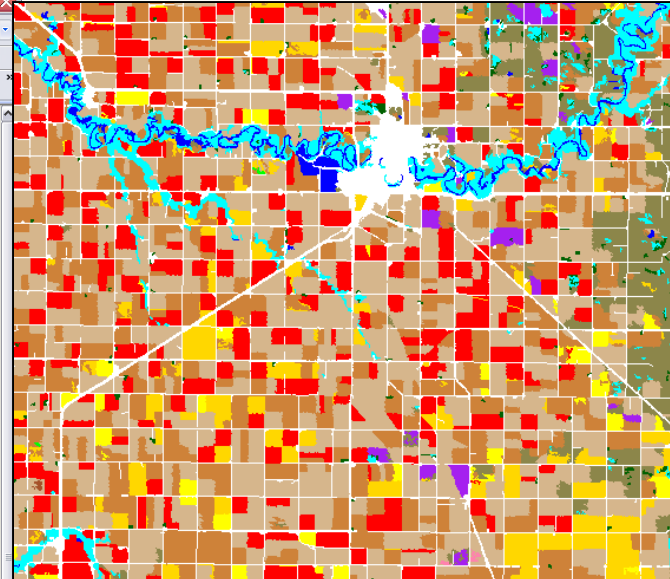
\*Linked Micromap\* Plots (1997):  
Corn | Cotton | Hay | Soybeans | Wheat

Also See

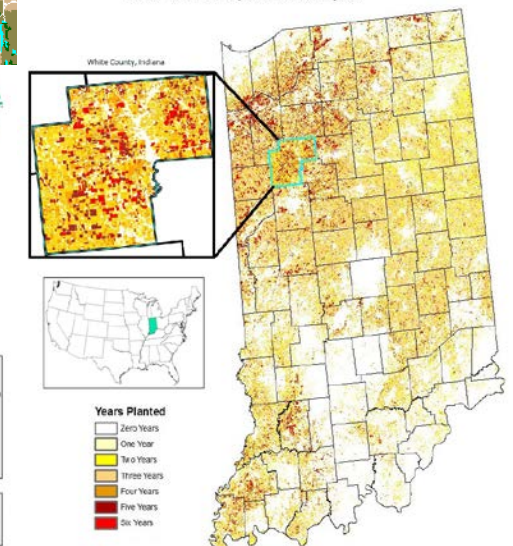
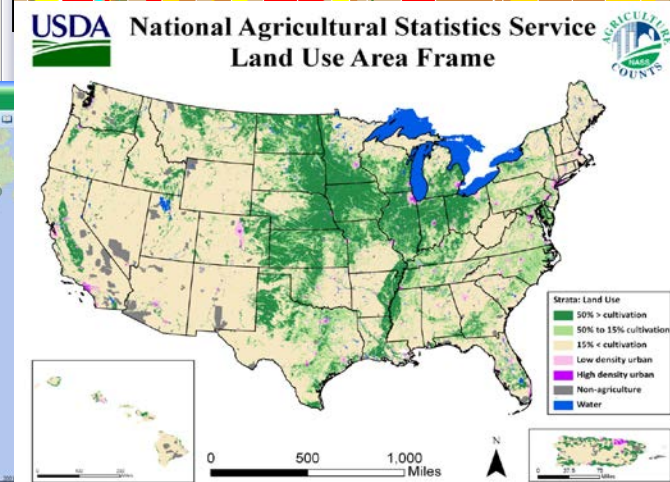
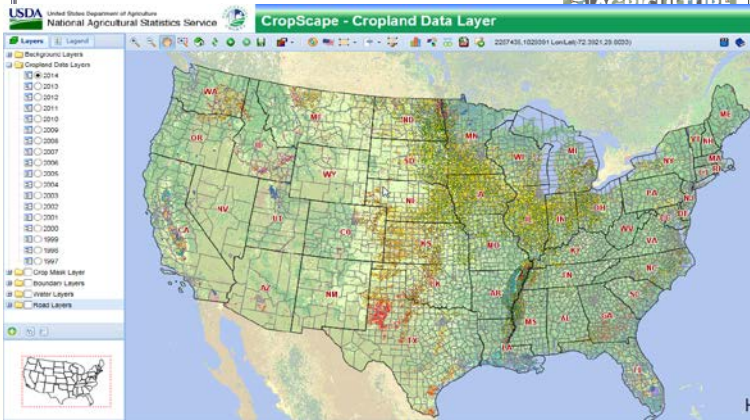
- Research Fellow and Associate Program
- Seasonal Summary of Crop Progress and Condition
- Remotely Sensed Data  
Crop Acreage  
Crop Yield  
Future Vision

Media Help

To view animated map files you must have Quicktime installed on your computer.



Indiana, U.S. Corn Planting Frequency  
2008 - 2013 Cropland Data Layers

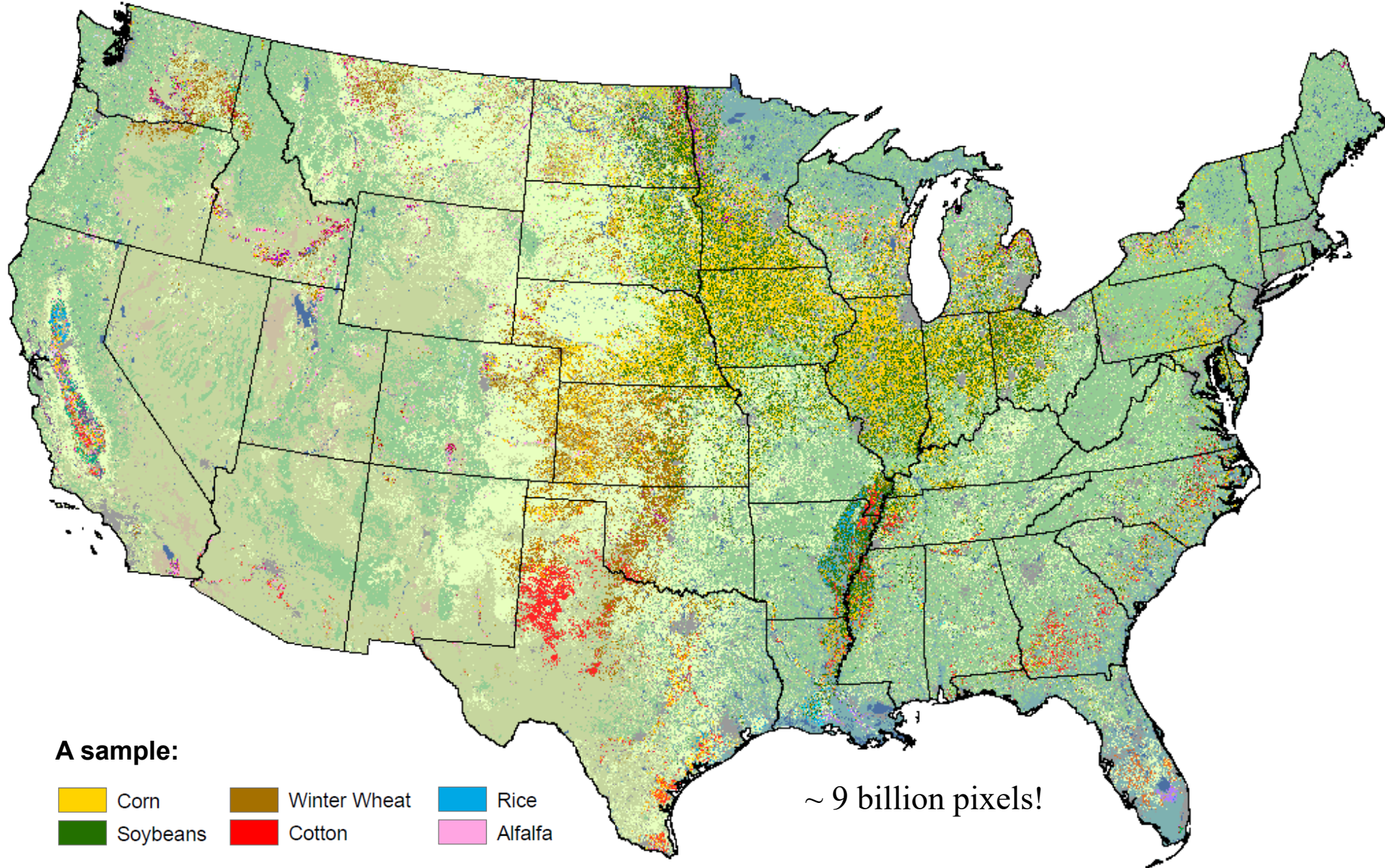




# Remote Sensing Acreage Estimation Program Objectives

- **“Census by Satellite”**
  - Without area duplication
  - Major corn and soybean regions
- **Provide timely, accurate, useful independent estimates**
  - Measurable error
  - County and state level
- **Public domain crop specific crop classification**
  - <http://nassgeodata.gmu.edu/CropScape>
  - Google CropScape!

# Cropland Data Layer



**A sample:**



~ 9 billion pixels!





# Crop Categories







1	Corn	41	Sugarbeets	73	Other Tree Fruits	227	Lettuce
2	Cotton	42	Dry Beans	74	Pecans	228	Cucumbers
3	Rice	43	Potatoes	75	Almonds	229	Pumpkins
4	Sorghum	44	Other Crops	76	Walnuts	230	Lettuce/Durum Wht
5	Soybeans	45	Sugarcane	77	Pears	231	Lettuce/Cantaloupe
6	Sunflower	46	Sweet Potatoes	80	Other Non-Tree Fruit	232	Lettuce/Upland Cotton
10	Peanuts	47	Misc. Veggies. & Fruits	92	Aquaculture	233	Lettuce/Barley
11	Tobacco	48	Watermelons	204	Pistachios	234	Durum Wht/Sorghum
12	Sweet Corn	49	Onions	205	Triticale	235	Barley/Sorghum
13	Pop. or Orn. Corn	50	Pickles	206	Carrots	236	WinWht/Sorghum
14	Mint	51	Chick Peas	207	Asparagus	237	Barley/Corn
21	Barley	52	Lentils	208	Garlic	238	WinWht/Cotton
22	Durum Wheat	53	Peas	209	Cantaloupes	239	Soybeans/Cotton
23	Spring Wheat	54	Tomatoes	210	Prunes	240	Soybeans/Oats
24	Winter Wheat	55	Caneberries	211	Olives	241	Corn/Soybeans
25	Other Small Grains	56	Hops	212	Oranges	242	Blueberries
26	DbI. Crop WinWht/Soy	57	Herbs	213	Honeydew Melons	243	Cabbage
27	Rye	58	Clover/Wildflowers	214	Broccoli	244	Cauliflower
28	Oats	59	Sod/Grass Seed	216	Peppers	245	Celery
29	Millet	60	Switchgrass	217	Pomegranates	246	Radishes
30	Speltz	61	Fallow/Idle Cropland	218	Nectarines	247	Turnips
31	Canola	62	Pasture/Grass	219	Greens	248	Eggplants
32	Flaxseed	66	Cherries	220	Plums	249	Gourds
33	Safflower	67	Peaches	221	Strawberries	250	Cranberries
34	Rape Seed	68	Apples	222	Squash	251	Corn - Non-Irrigated
35	Mustard	69	Grapes	223	Apricots	252	Soybean - Non-Irrigated
36	Alfalfa	70	Christmas Trees	224	Vetch	253	WinWheat - Non-Irrigated
37	Other Hay	71	Other Tree Nuts	225	WinWht/Corn		
38	Camelina	72	Citrus	226	Oats/Corn		

# Cropland Data Layer McLean County, Illinois

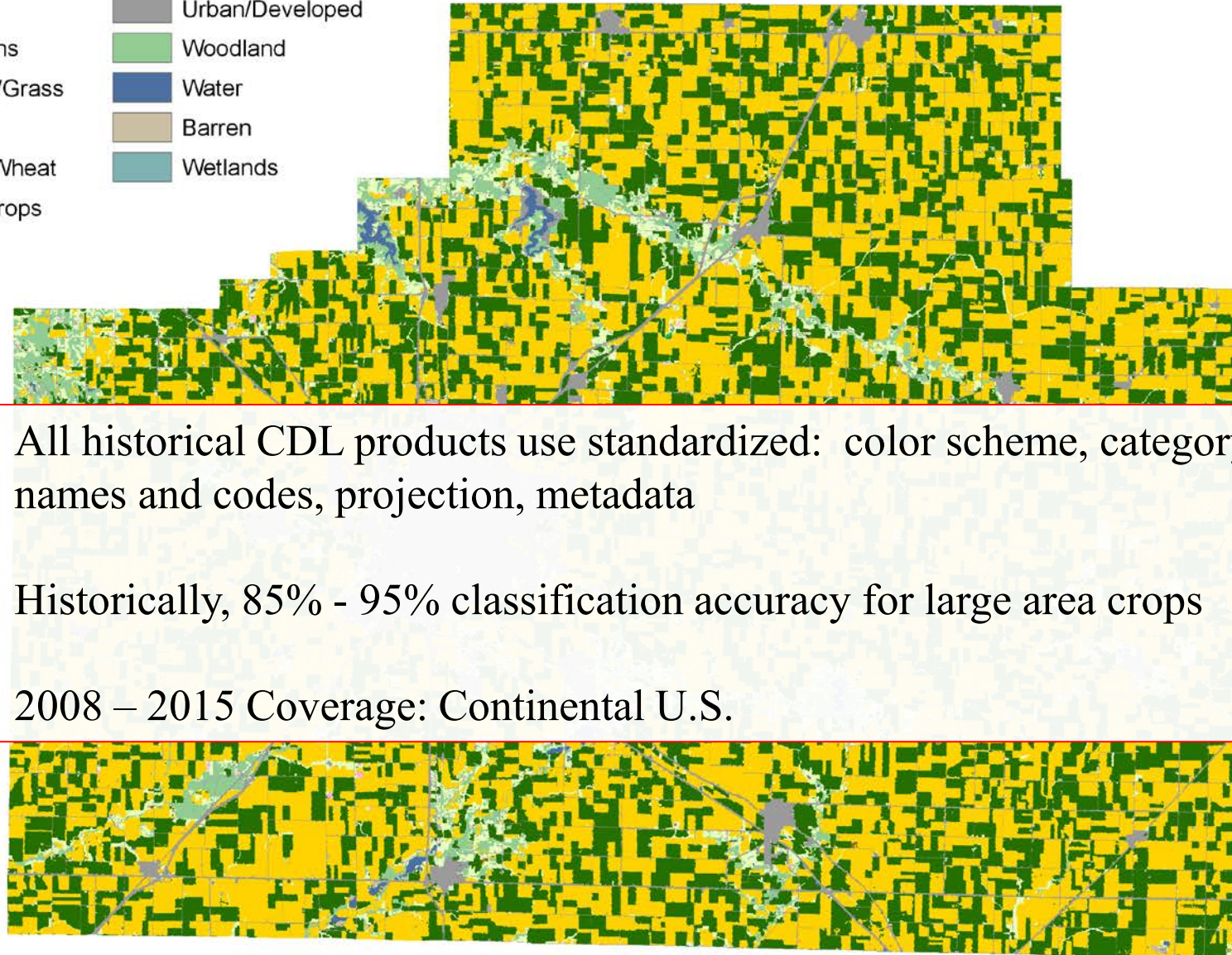
## Land Cover Categories (by decreasing acreage)

### Agriculture

-  Corn
-  Soybeans
-  Pasture/Grass
-  Alfalfa
-  Winter Wheat
-  Other Crops

### Non-Agriculture

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

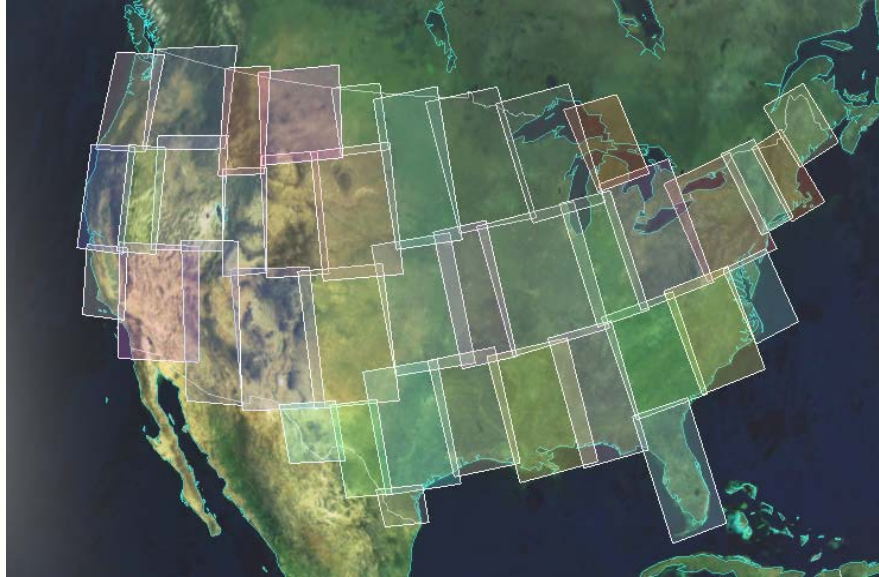


- All historical CDL products use standardized: color scheme, category names and codes, projection, metadata
- Historically, 85% - 95% classification accuracy for large area crops
- 2008 – 2015 Coverage: Continental U.S.

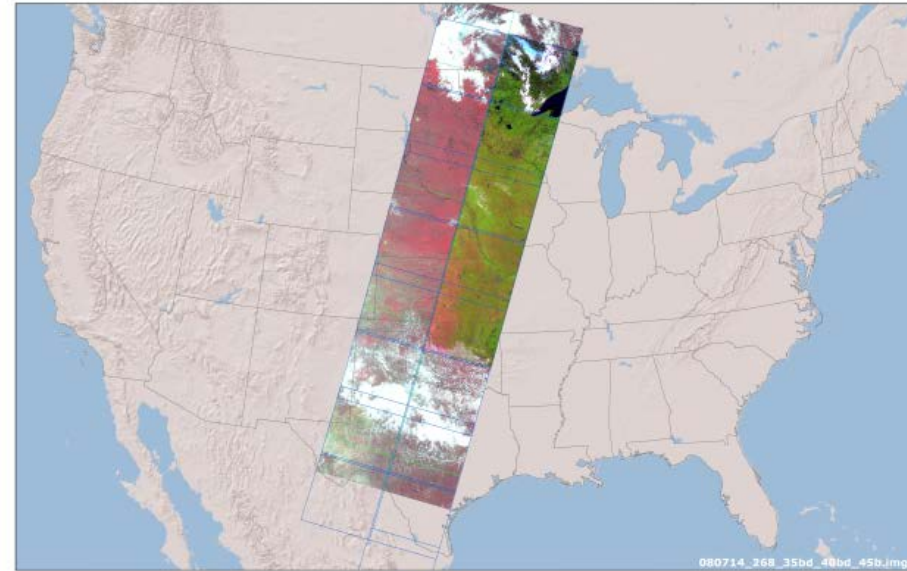


# 2016 Cropland Data Layer Inputs

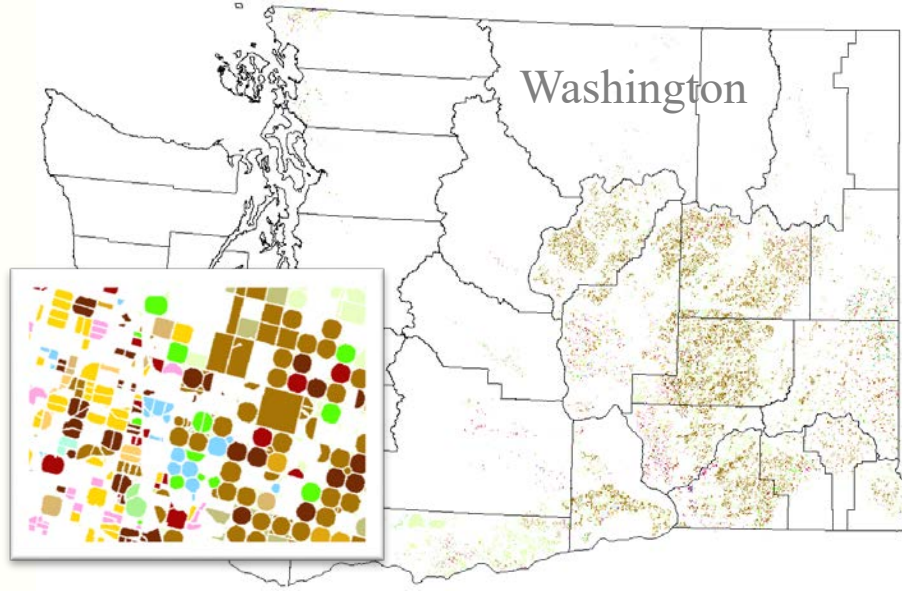
Satellite Imagery – Deimos & UK2



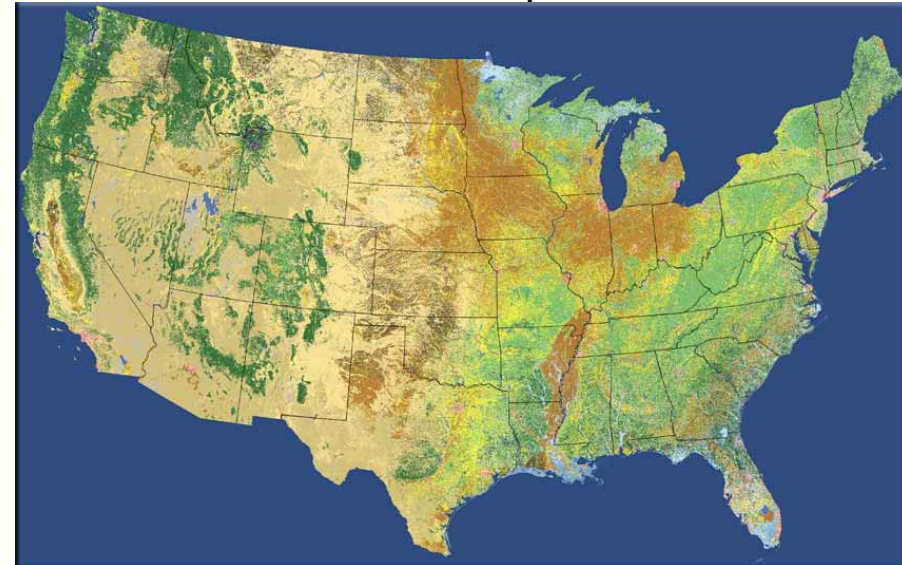
Satellite Imagery – Landsat 8



Farm Service Agency: Common Land Unit



2011 NLCD & Derivative products





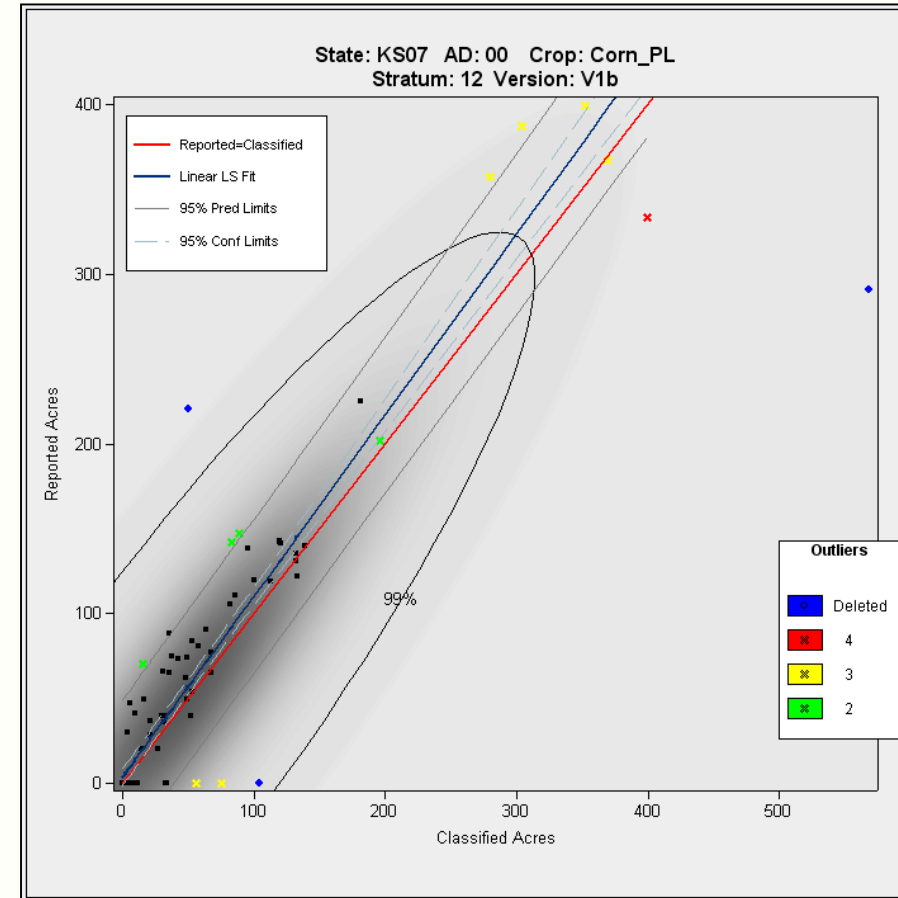
# Regression-based Acreage Estimator

Regression used to relate categorized pixel counts to the ground reference data

- (X) – Cropland Data Layer (CDL) classified acres
- (Y) – June Area Survey (JAS) reported acres

Using both CDL and JAS acreage results in estimates with reduced error rates over JAS alone

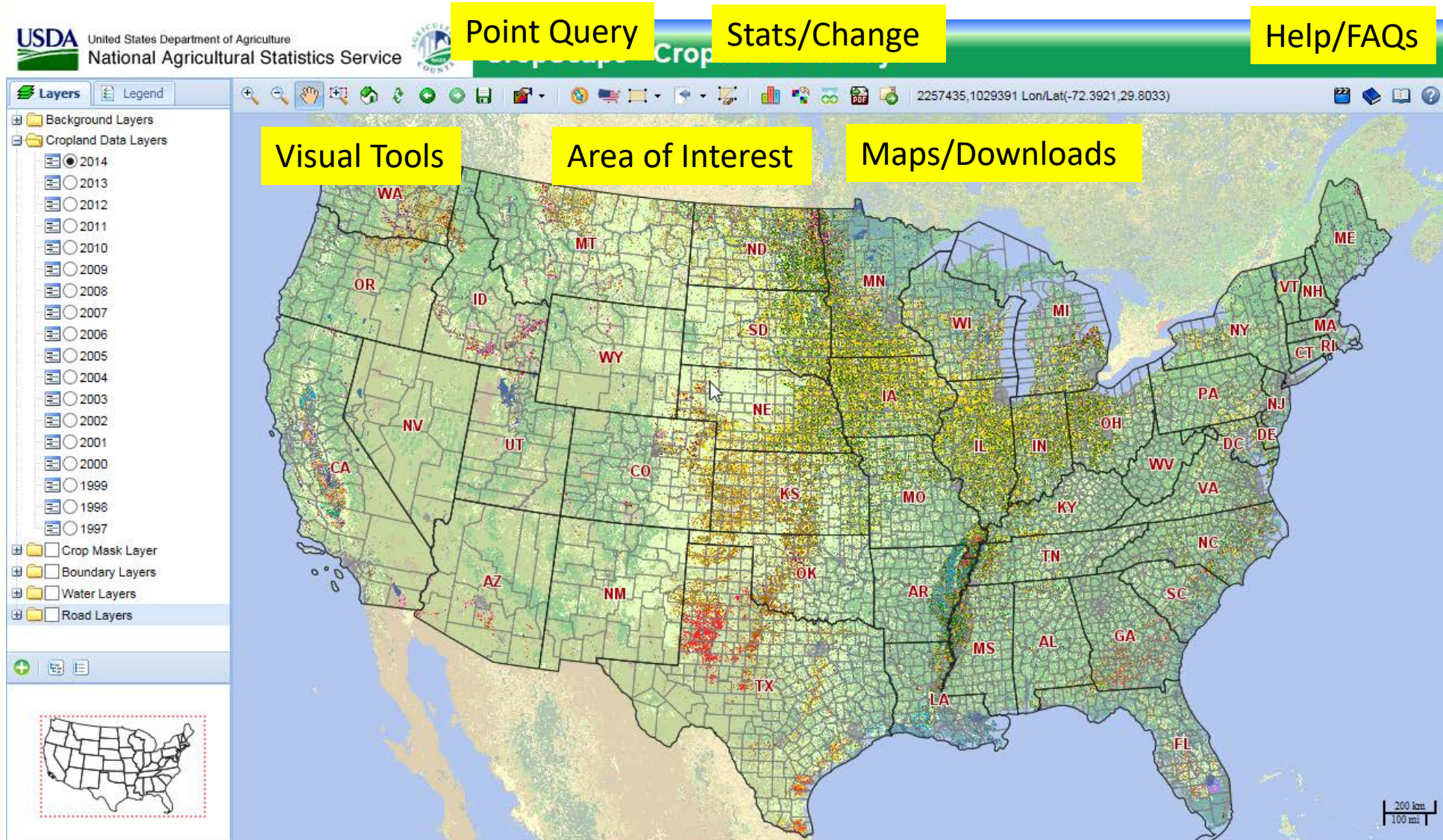
Outlier segment detection - removal from regression analysis



Acreage not just about counting pixels



# CropScape



<http://nassgeodata.gmu.edu/CropScape>





Thank you

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