

Geographic Information Systems (GIS) Data Collection and Storage

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WSS Seminar
12/16/09



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

USDA 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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- Education and Outreach
- Statistics by State
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Data and Statistics

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.

I Want To...

- Query NASS Data from a Data Base
- Search for Data by Commodity
- Request a Special Tabulation
- Contact a Specialist
- View Data in Charts and Maps

About NASS Estimates

- Importance of Ag Estimates
- Understanding Crop Forecasts
- Foundation of Estimating Pro
- Citation Reque

Also See

- NASS Publica
- Statistical Bul
- Pest Managem
- Price Reactio
- State Ag Over
- Track Records

Interactive Data

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

Interactive Statistical Maps for 2002 Census Highlights

Table Lens Application for 1997 Census Data

Last modified: 12/30/05

NASS Home | USDA.gov | FEDSTATS | Economics Statistics System (ESS) | Site Map
FOIA | Accessibility Statement | Privacy Policy | Non-Discrimination Statement | Information Quality | FirstGov | What's New

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. Soybeans account 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 crop. 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	5,500	124,400	7.4	40,100	83
	Soybeans	300	36,700	12.2	3,670	7
	Wheat	200	45,200	2.3	460	1
Central Maryland	Corn	124,200	582,400	9.9	1,230,200	2,415
	Soybeans	92,200	94,000	3.3	360,700	1,475
	Wheat	38,300	63,000	3.3	126,300	318
Southern Maryland	Corn	25,800	132,200	4.9	146,200	295
	Soybeans	43,200	39,000	3.3	142,200	334
	Wheat	16,000	57,000	0.3	14,400	36
Upper Shore	Corn	157,200	159,200	5.1	800,700	1,641
	Soybeans	13,500	19,800	3.3	64,400	163
	Wheat	1,000	1,000	0.3	3,000	8

NEWS RELEASE

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

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

USDA FORECAST

Washington, Aug. 10, 2007

history in 2007, according to of Agriculture's National Ag 13.1 billion bushels, 10.6 percent.

Based on conditions: per acre, up 3.7 bushels from behind the 160.4 bushels per million acres of corn for grain.

Yield forecasts are for Delta. Meanwhile, hot, dry conditions in the Southeast and eastern Corn Belt, Ohio

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 Agriculture 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.

http://www.nass.usda.gov:8080 - 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)

United States Total: 5,330,439

State: Total: County Total: County Total:

Download data as CSV | XML | PDF

Help | Print | Return to

Legend

Scale: National | Legend: Zero or Data Withheld <= 20,000, 20,001 to 40,000, 40,001 to 60,000, 60,001 to 80,000, 80,001 to 100,000, 100,001 >=

Comparisons: 6 | 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.

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
1-29	2,800	1,440	-45
30-49	4,700	3,440	-27
50-99	7,400	5,800	-24
100-199	1,900	2,080	+9
200-499	700	900	+29
500+	200	440	+120
Total	17,500	19,900	+20

1/7The 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

Milk cow herd size	Herds	Keep same herd size	Increase herd size	Discontinue milking
9	2,600	47	17	58
49	4,700	71	9	20
99	7,400	65	19	18
199	1,900	53	57	10
499	700	33	59	8
200+	200	22	78	0
Total	17,500	62	29	20

1/7The 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.

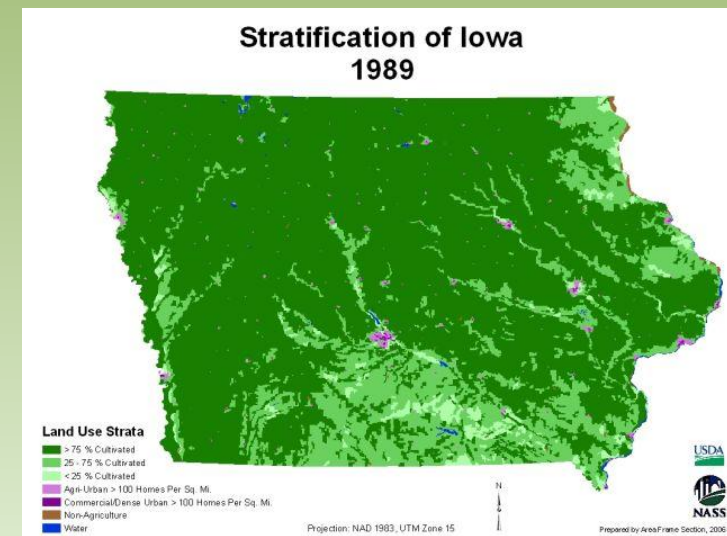
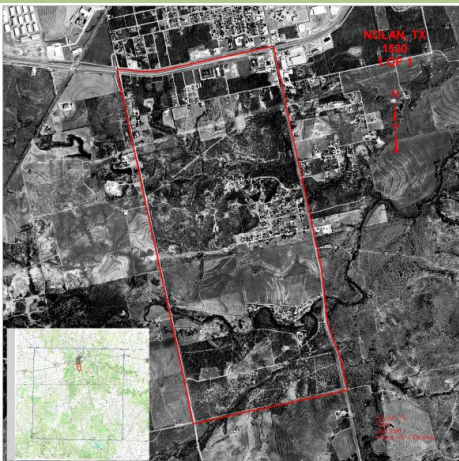
Percent of Herds by Size Group 2007 Projection

NASS Uses of GIS

- Sampling Frames
- Integrate GIS & Remote Sensing
 - Area Estimation
- Geostatistical Analysis & Mapping
- Address Geocoding/Logistics
- Disaster Monitoring

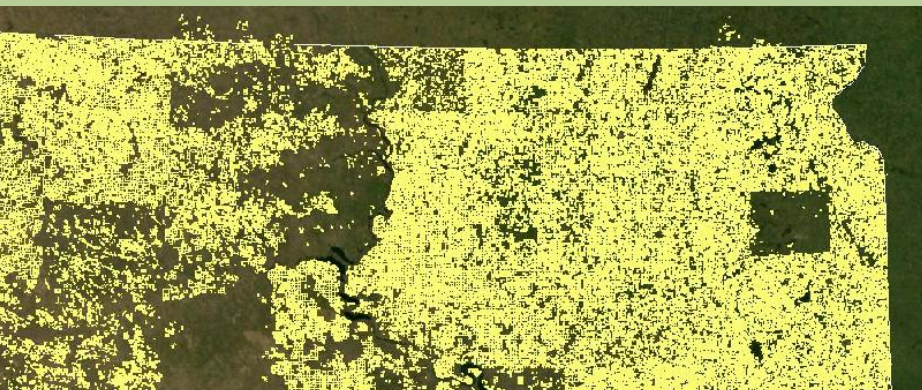
Area Sampling Frame

- GIS provides
 - Higher quality digital survey data
 - Reduce burden on data suppliers
 - Better estimates for data users
 - Centralized geodatabase & optimized workflow
 - Potential to integrate additional layers
 - Soils & climate



Area Sampling Frame

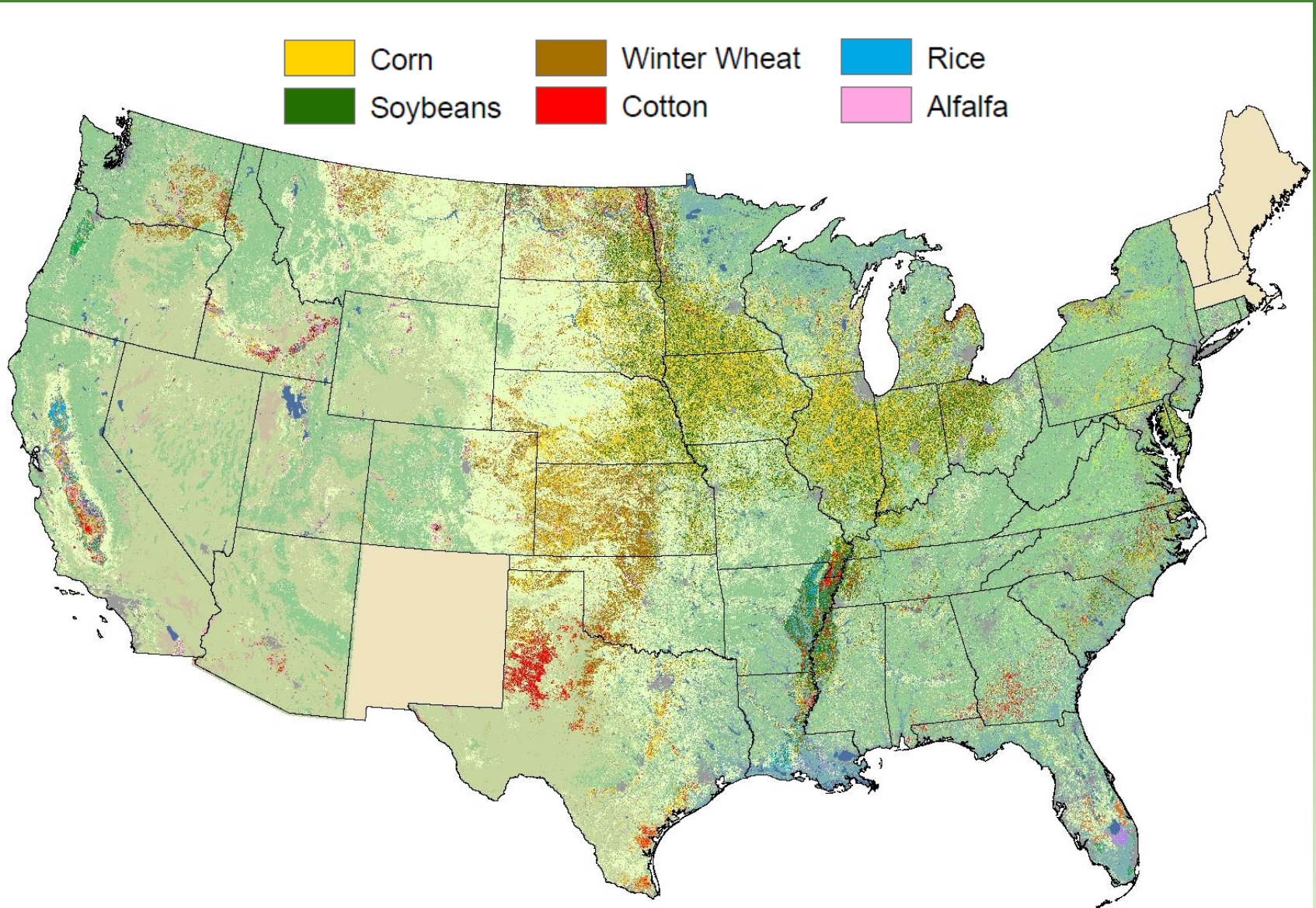
- June Area Survey
- Agriculture Coverage Evaluation Survey (ACES)
- State Equine and Turf Surveys
- Additional sampling frames
 - Grain stocks
 - Farm Service Agency/Common Land Unit



Integrate GIS & Remote Sensing

- Cropland Data Layer (National)
 - “Census by Satellite”
 - *Annually* cover major program crops
 - Crops accurately geo-located
- Deliver in-season remote sensing acreage estimates to ASB
 - June, July, August, September, and October Official Reports
 - Update planted area
 - Reduced respondent burden
- Provide timely, accurate, useful estimates
 - Measurable error
 - Unbiased/independent estimator
 - State, District, County

What is the Cropland Data Layer (CDL)?



CDL Program

- Inputs

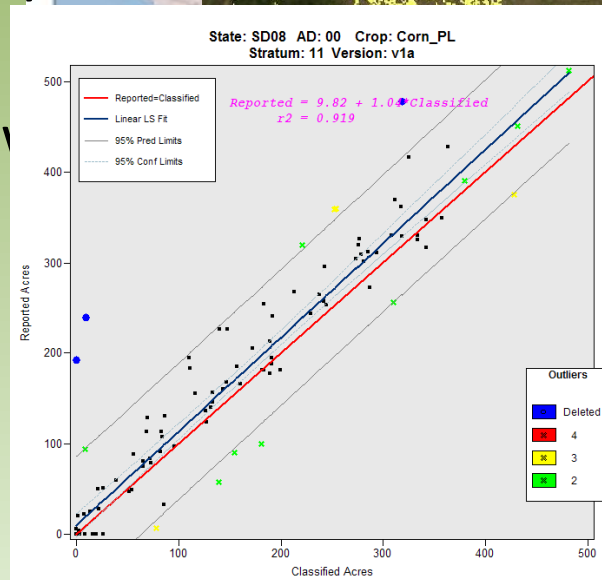
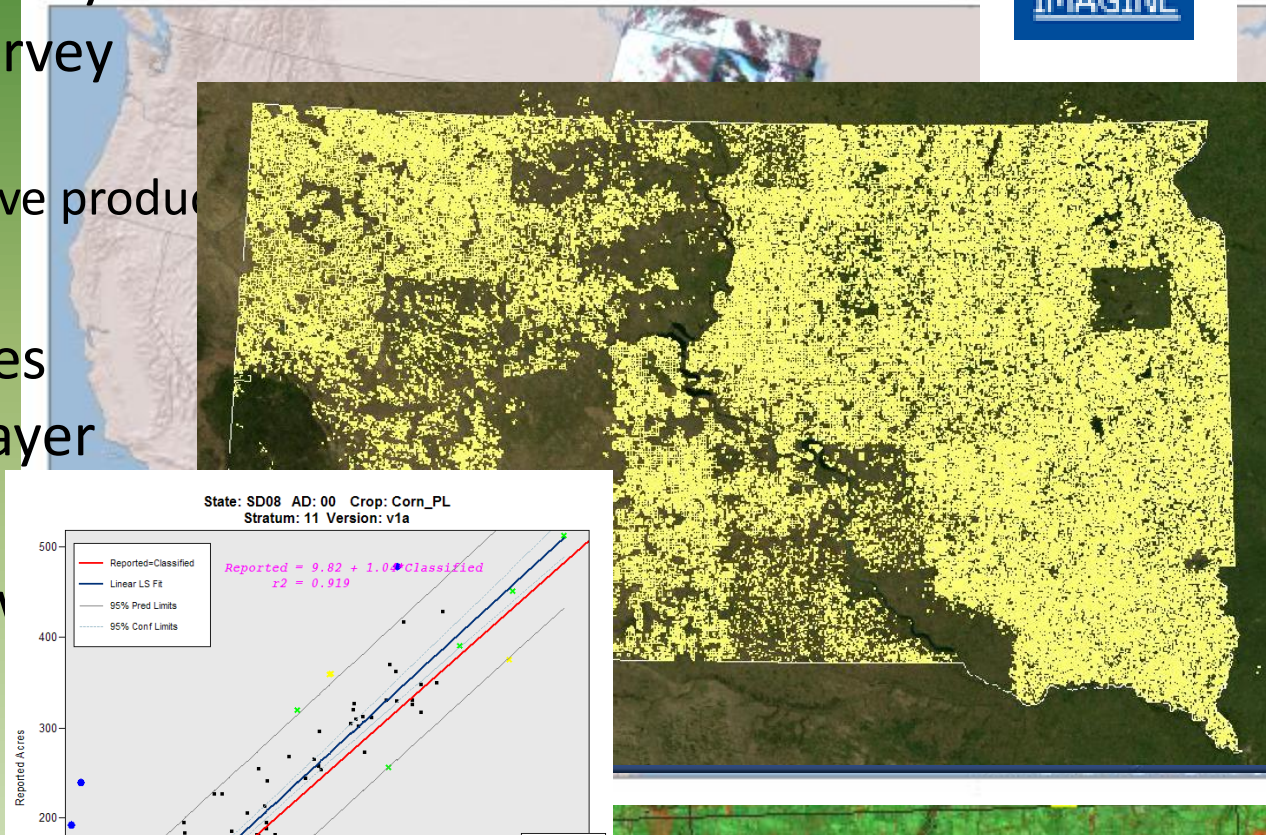
- Resourcesat-1 AWiFS imagery
- Farm Service Agency – Common Land Unit
- NASS June Ag Survey
- Ancillary data
 - NLCD & derivative products

- Outputs

- Acreage Estimates
- Cropland Data Layer

- Process

- Commercial software


















Brown County, Kansas 2008 Cropland Data Layer











Land Cover Categories

(Ordered by Decreasing Acreage)

Agricultural

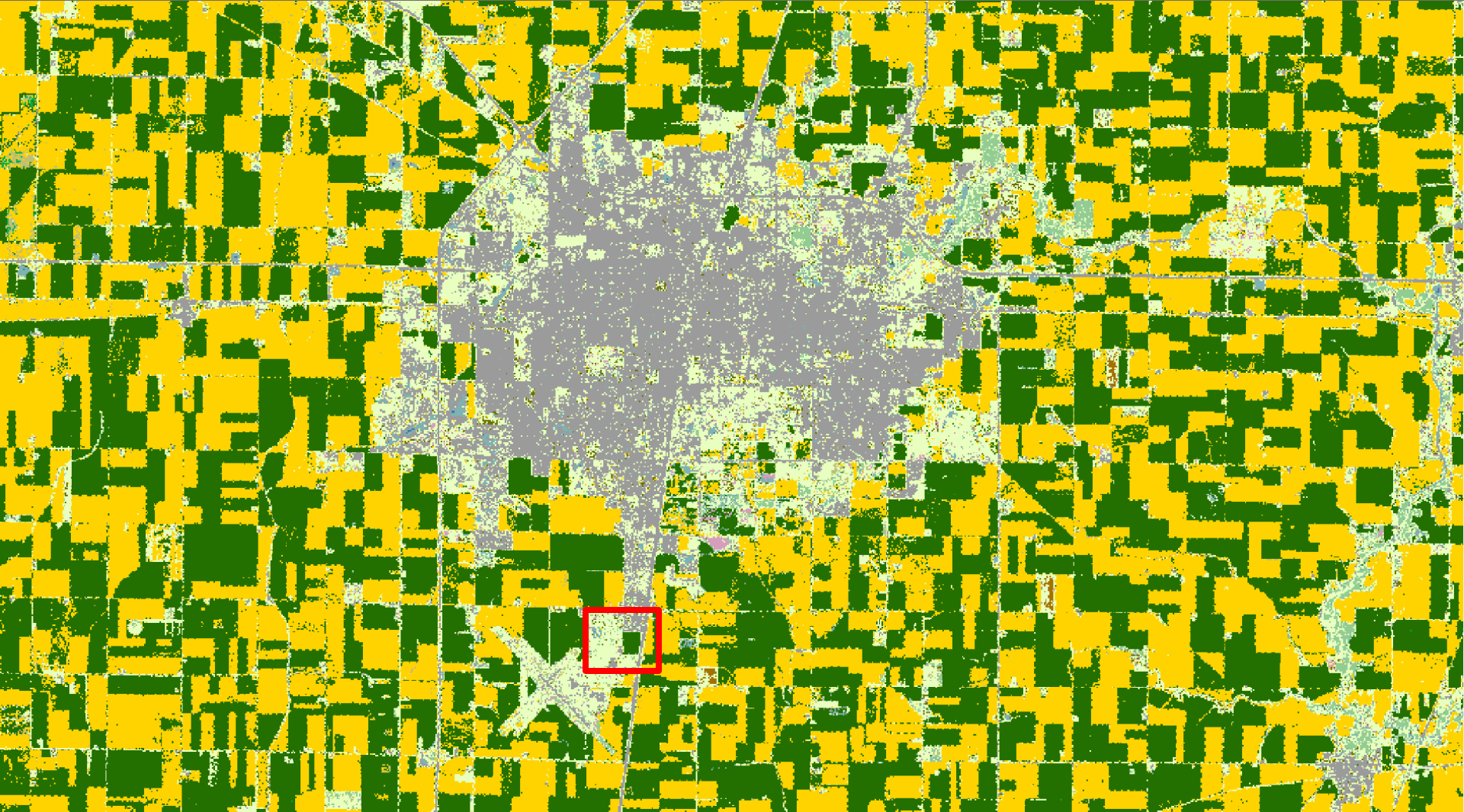
-  Soybeans
-  Corn/Sweet Corn
-  Winter Wheat
-  Alfalfa
-  Win. Wht./Soyb. Dbl. Cropped
-  Sorghum
-  Clover/Wildflowers
-  Other Crops/Grass Seed/Sod
-  Other Small Grains
-  Sunflowers
-  Oats
-  Cotton
-  Barley
-  Seed/Sod Grass
-  Other Tree Nuts

Non-Agricultural

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

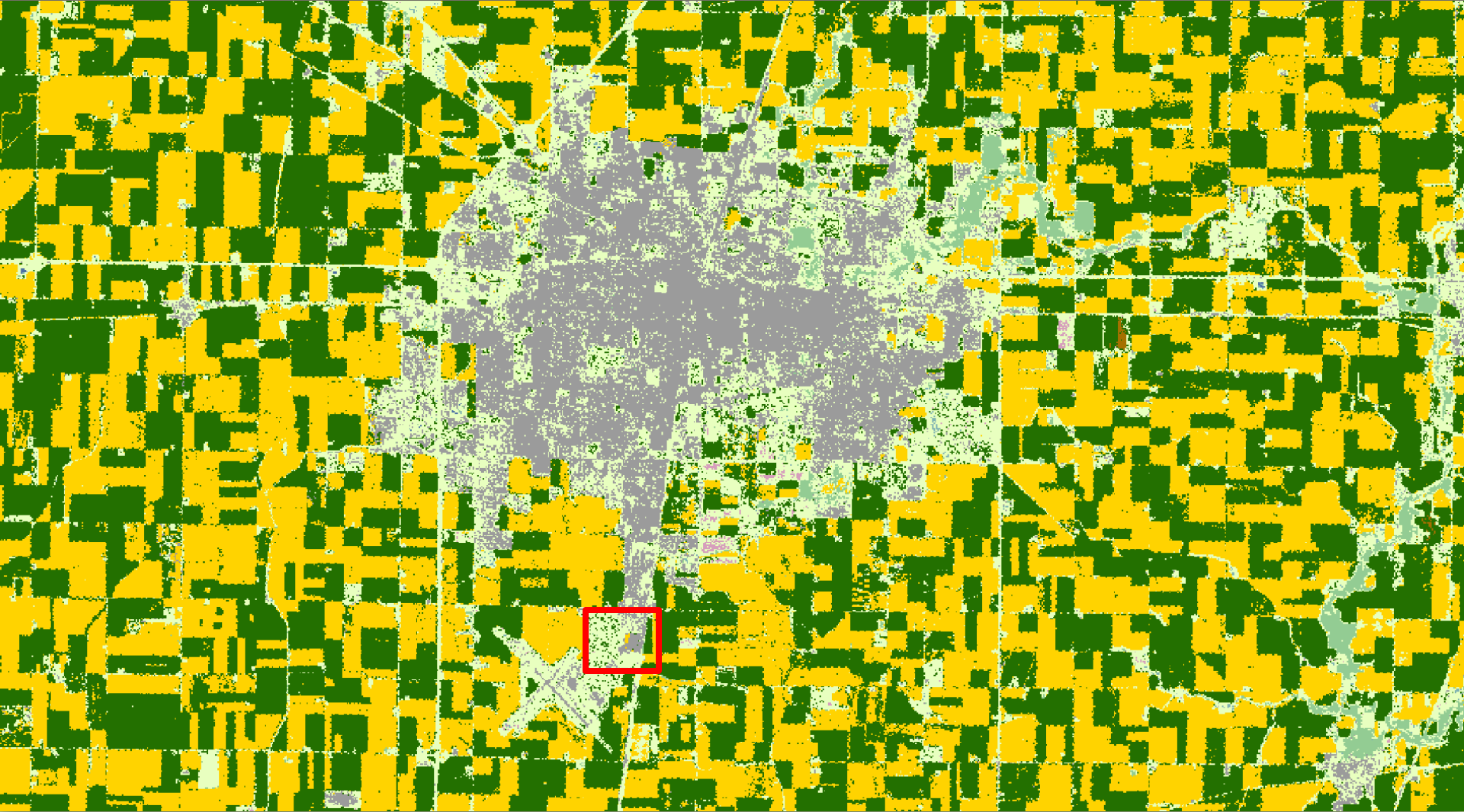
Geostatistical Analysis & Mapping

- Mapping/data mining of NASS statistical data
 - County Estimates
 - Agricultural Census
 - Cropland Data Layer
 - Ad-hoc requests
- Trajectory analysis
 - Crop rotation, change detection, predictive forecasting



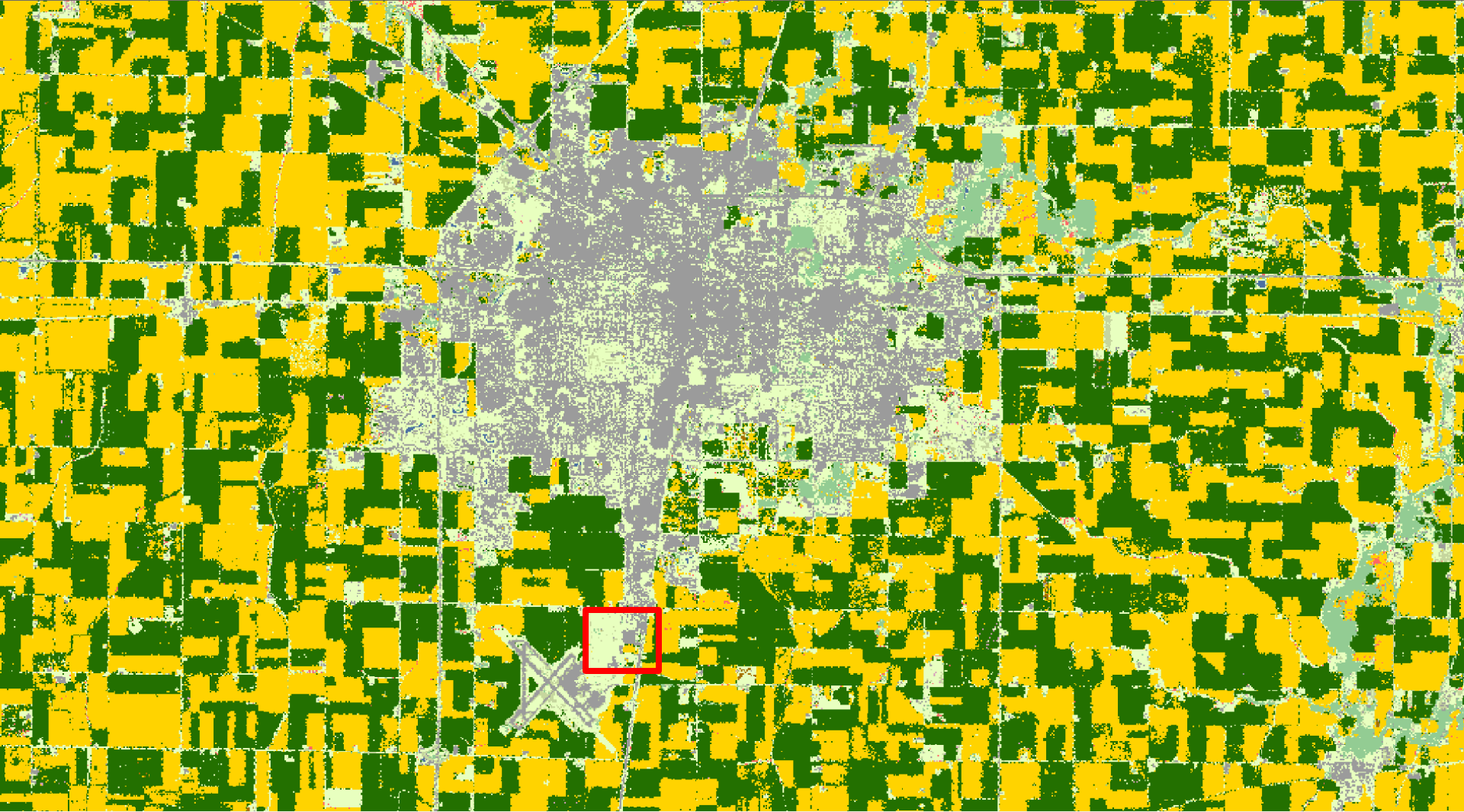
1999 CDL
First year in production

Land Cover Change
Location: Champaign-Urbana, Illinois



2000 CDL

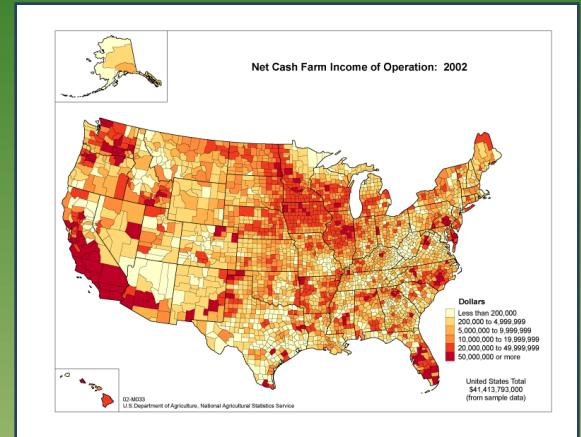
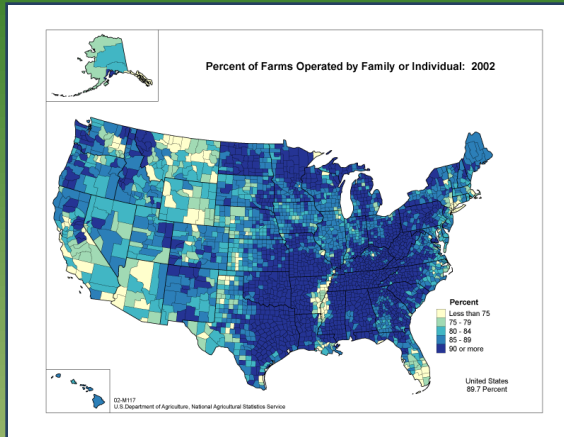
Walmart built a new store near the airport



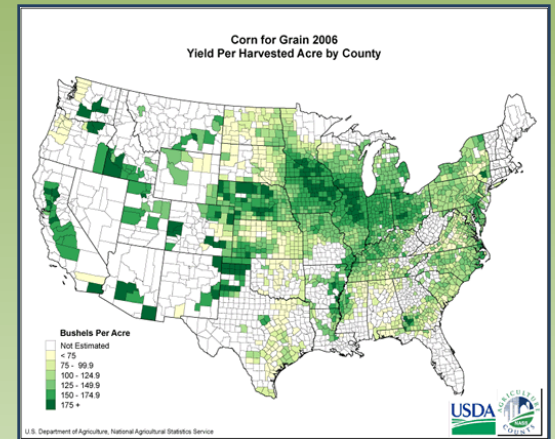
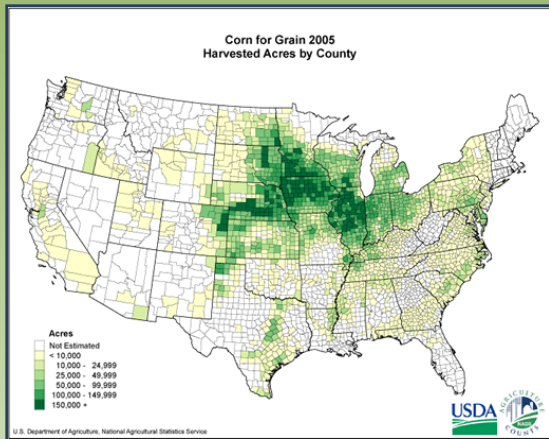
2001 CDL

Walmart is done with construction
and farming returns to a small patch of land next to the store

GIS Mapping Applications

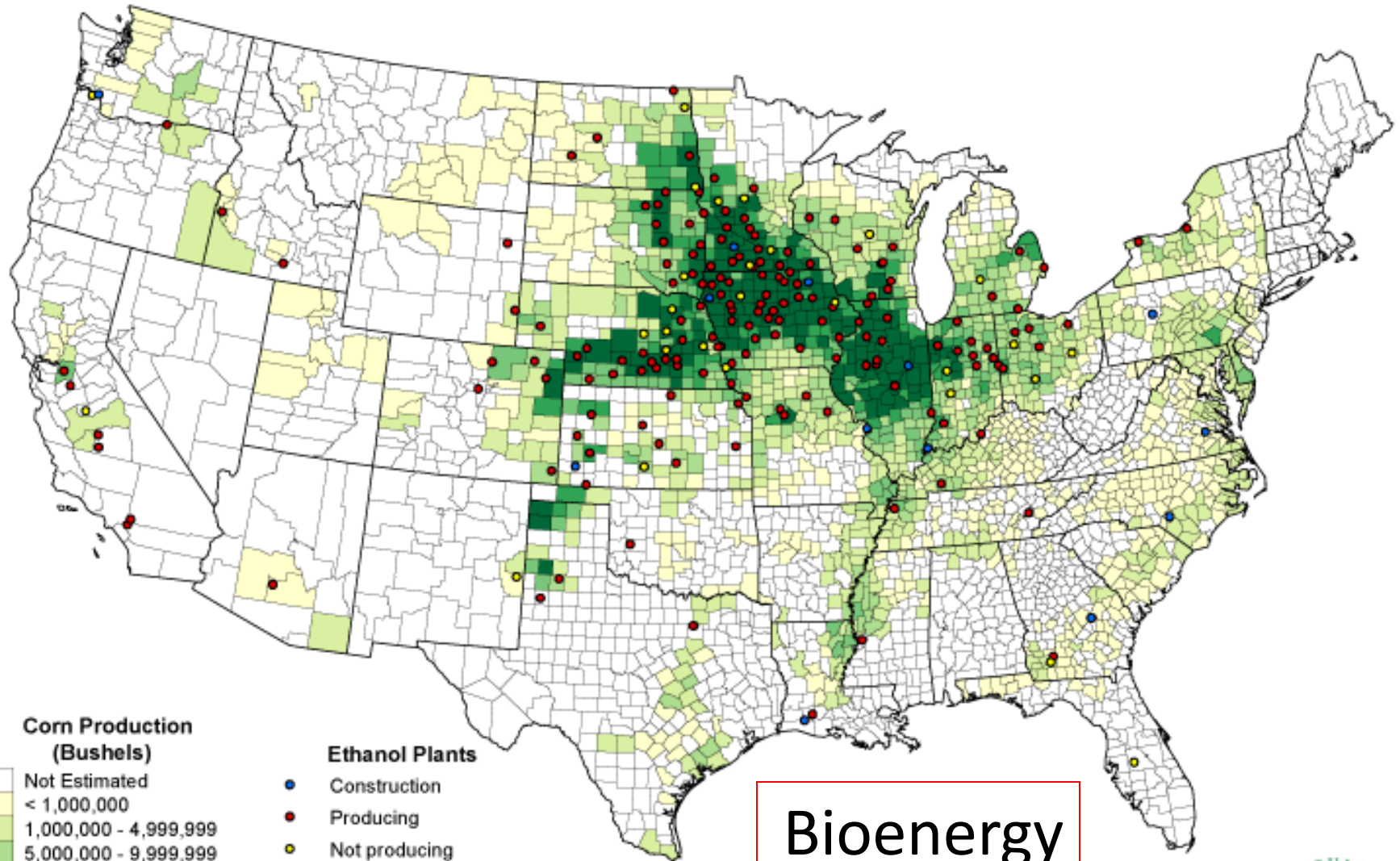


County Estimates Agricultural Census



Corn for Grain 2008

Production by County and Location of Ethanol Plants

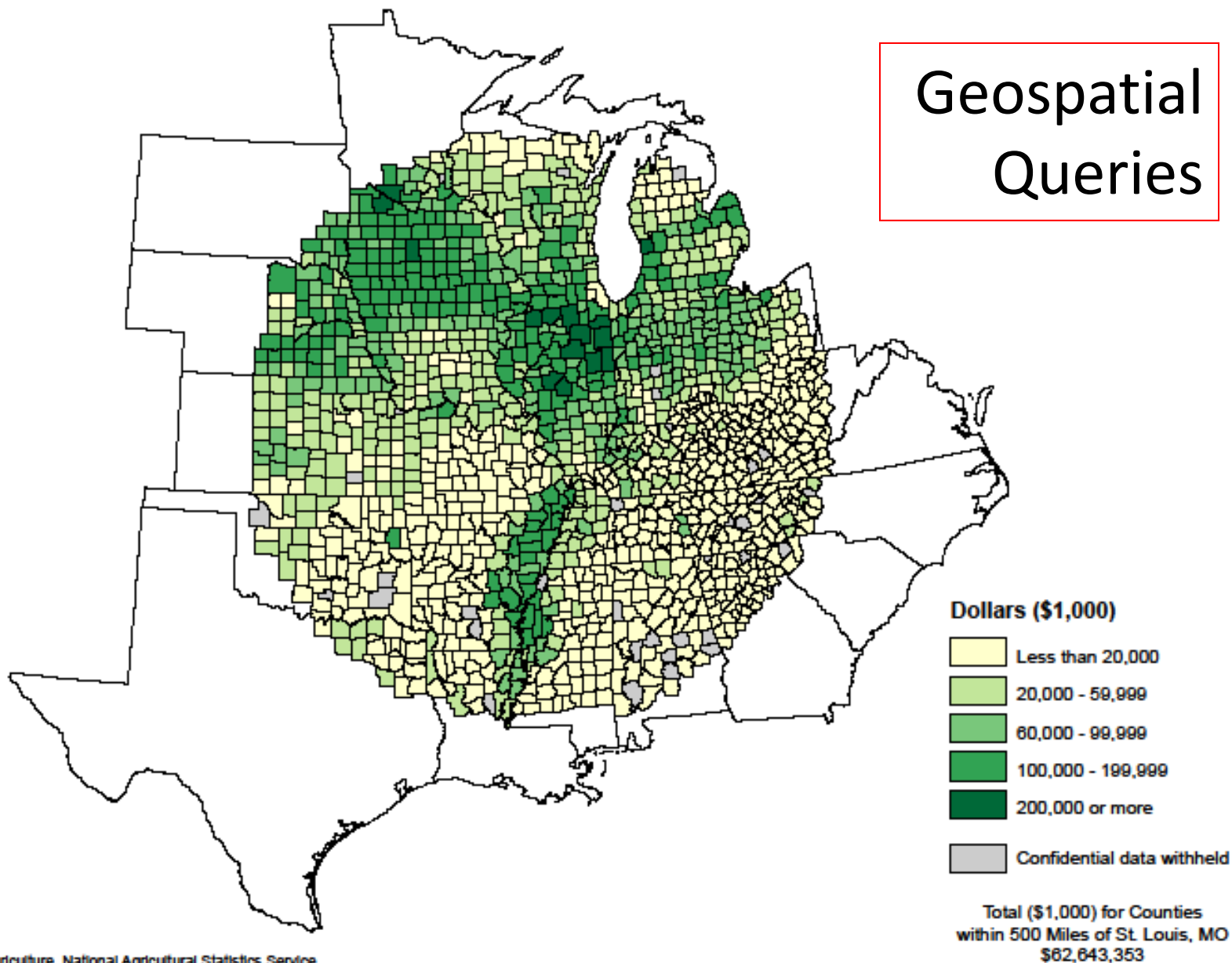


Bioenergy
Queries



**Value of Crops Sold
for Counties within 500 Miles of St. Louis, Missouri: 2007**

**Geospatial
Queries**



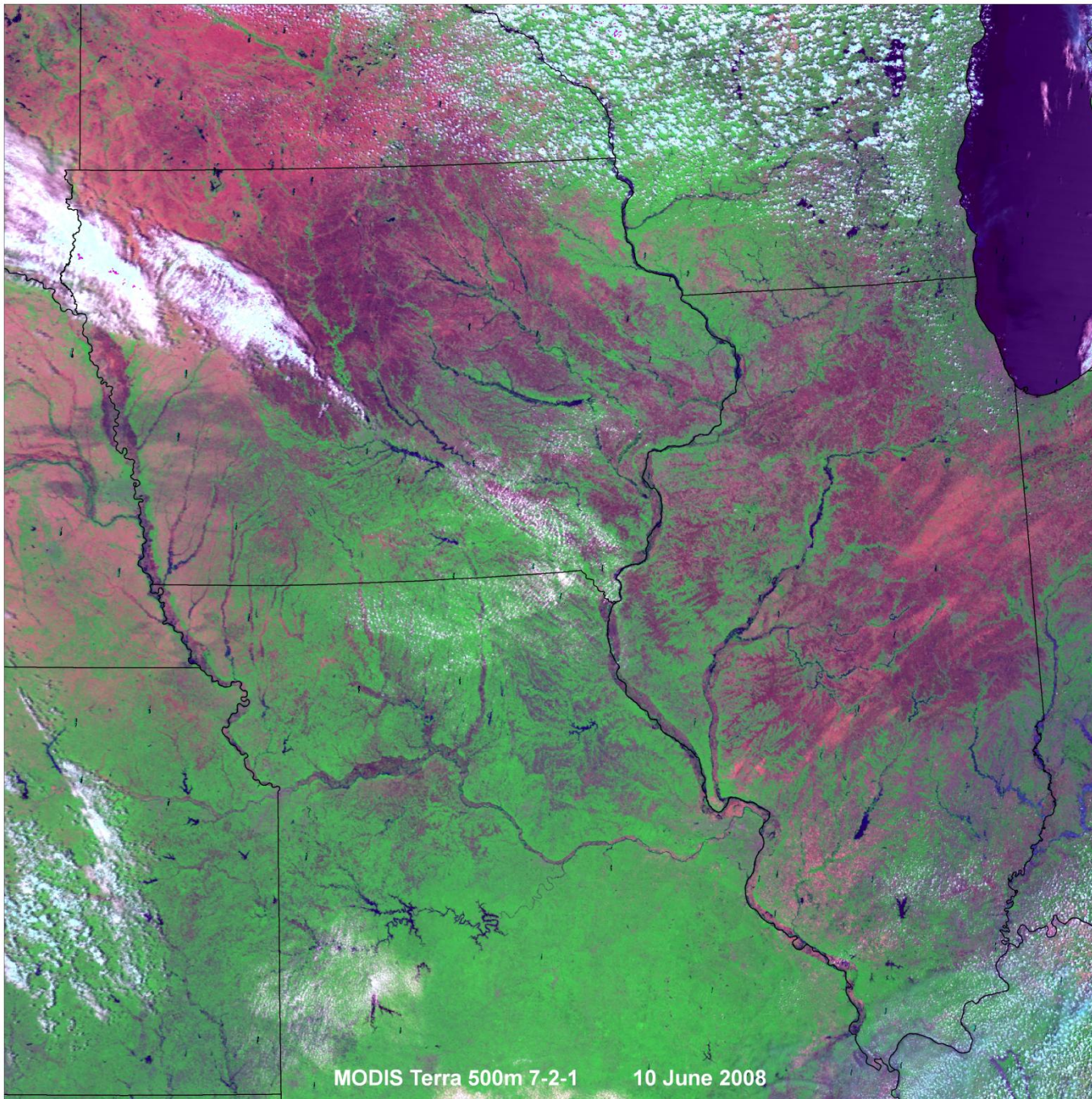
Address Geocoding/Logistics

- Geocoding List Frame records using TeleAtlas geospatial data
 - More cost efficient surveys and estimators
 - Aid in sample design and allocation
 - Data editing and imputation
- Route optimization for area survey enumeration
 - Visit 11,000 segment sample sites within two weeks

Disaster Monitoring



MODIS
Terra 500m
6/10/08



Disaster
Monitoring

Summary

GIS Uses

- Sampling Frames
- Integrate GIS & Remote Sensing
- Geostatistical Analysis & Mapping
- Address Geocoding/ Logistics
- Disaster Monitoring

Agency Support

- Technological leadership
- Cooperative partnerships



Thank You!

