

The Science Behind the USDA June Crop Acreage Report



June 2011

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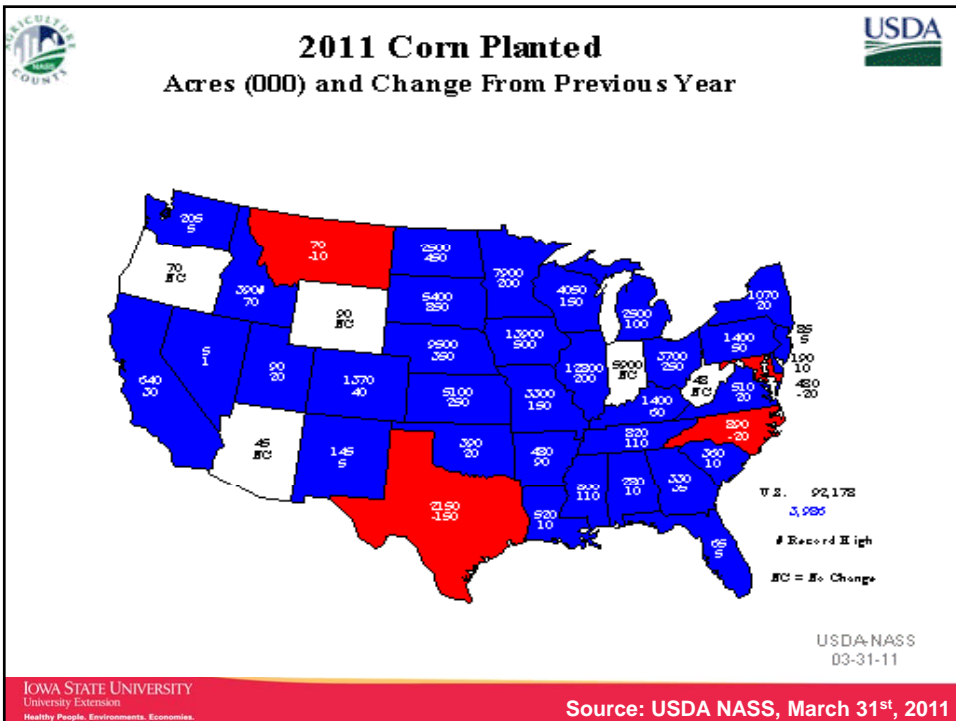
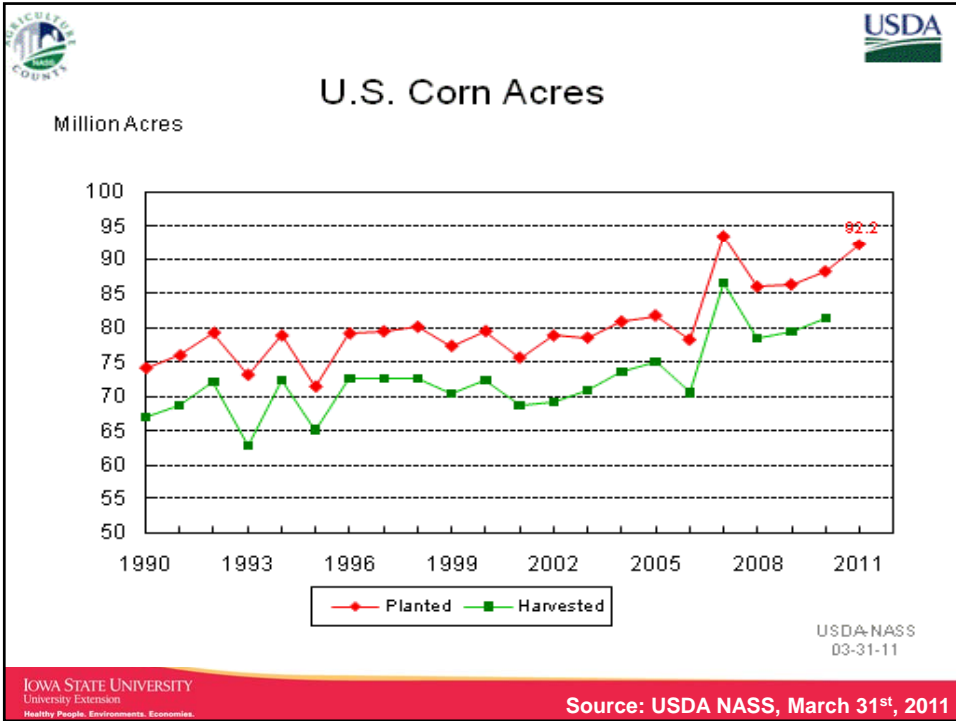
www.extension.iastate.edu/polk/farmmanagement.htm

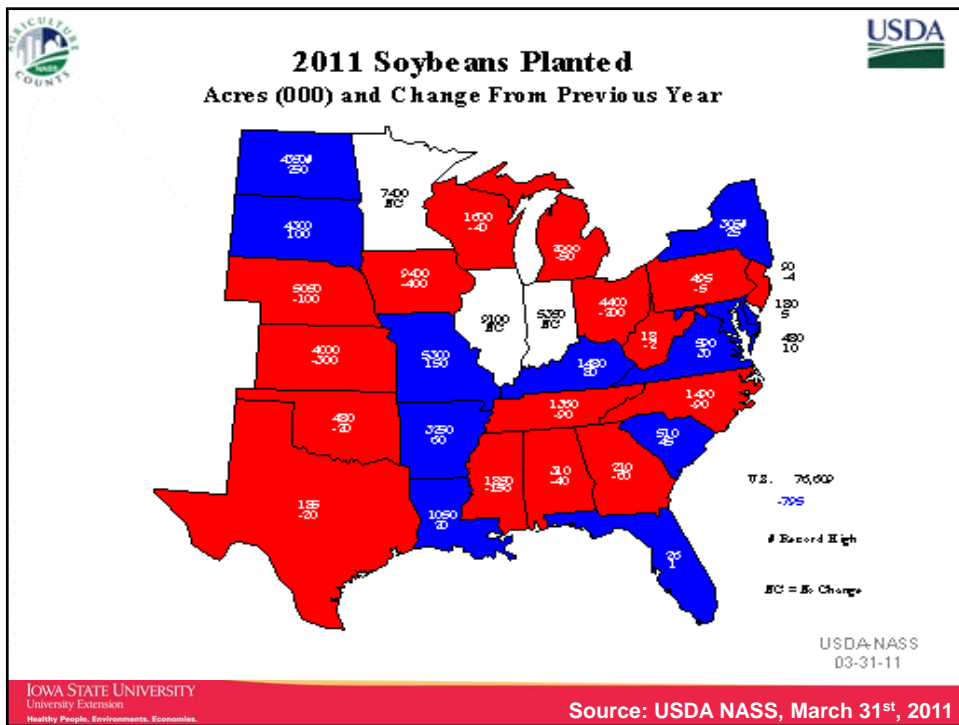
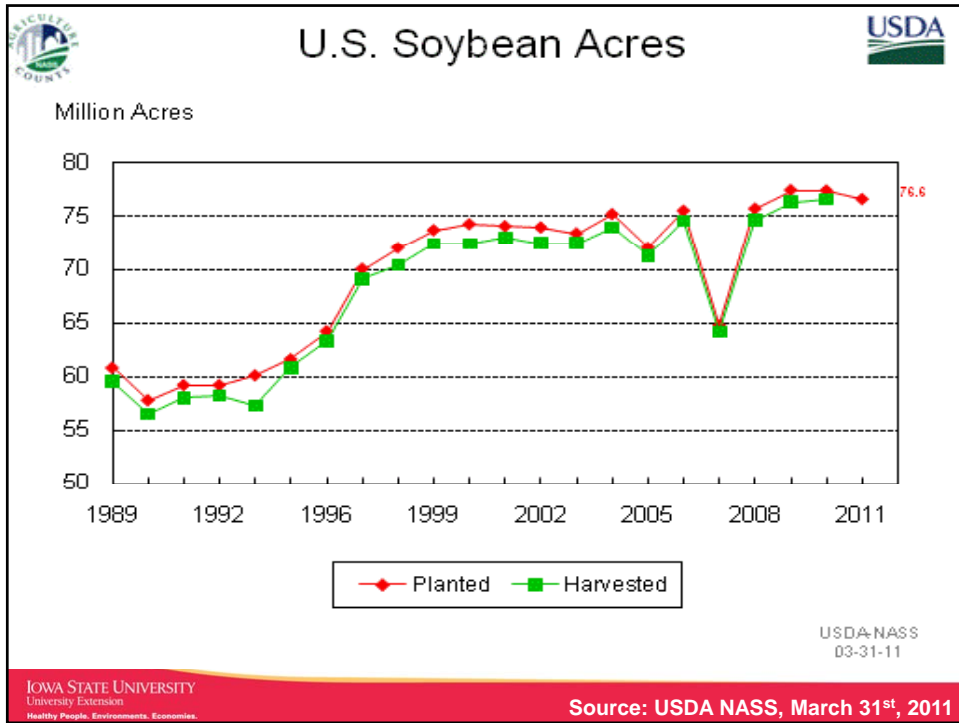
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Presentation Objectives

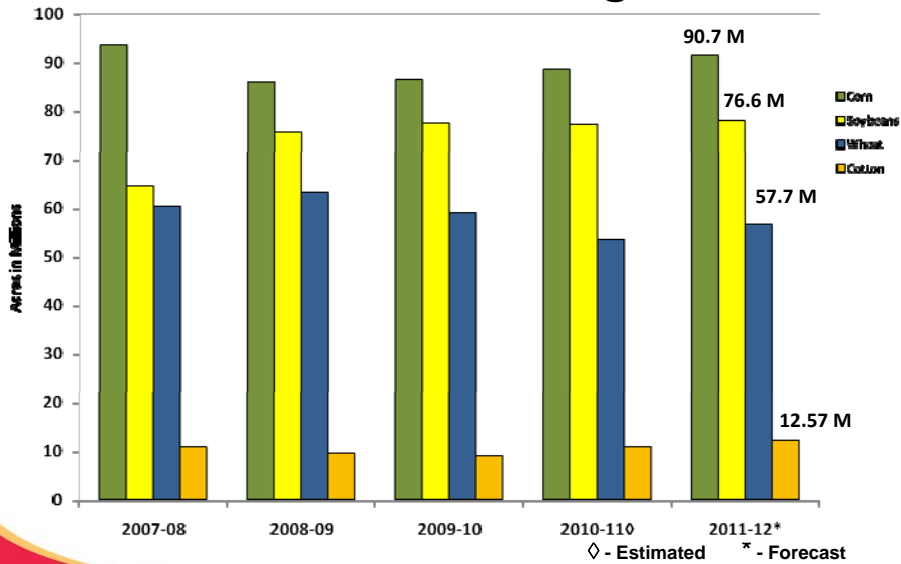
- **Highlight the Importance of the June 30th USDA Crop Acreage Report**
- **Review Historical Results for Planted vs. Harvested Corn & Soybean Acres**
- **Highlight the Scientific Measures used by USDA NASS for Conducting June Acreage Surveys and Subsequent Reports**
- **Summarize with 5 USDA Report Strategies & 3 USDA Websites**

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2011 U.S. Planted Acreage Forecast



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Source: USDA WASDE, June 9th, 2011

USDA June Acreage Surveys

- **June Crops/Stocks Survey**
 - List frame survey method
- **June Area Survey**
 - Area frame survey method

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Source: USDA NASS, Iowa Field Office

June Acreage Data Collection

	<u>June Crop/Stocks Survey</u>	<u>June Area Survey</u>
Data Collection	May 29 –June 15	May 29 –June 15
Sample Size	~ 73,500 farms ~3,000 in Iowa	~ 11,000 segments 418 in Iowa
Collection Methods	Phone, mail, web, Personal interview	Personal interview
Data Items	Acres planted to specific crops, acres expected to be harvest- ed, quantities of grains and oilseed stored on-farm	Information on land use within segment, quantities of grain to be stored on-farm & livestock inventory

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Source: USDA NASS, Iowa Field Office

June Area Survey Population & Sampling Methods

- **All land area in Iowa**
 - Samples blocks of land are called “segments”
 - Collect agricultural data from the blocks of land.

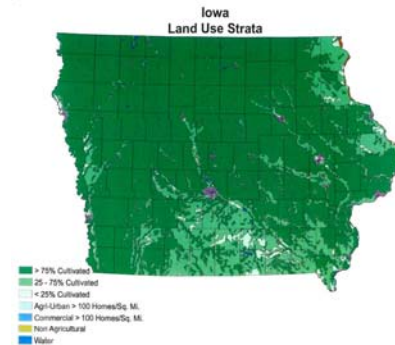


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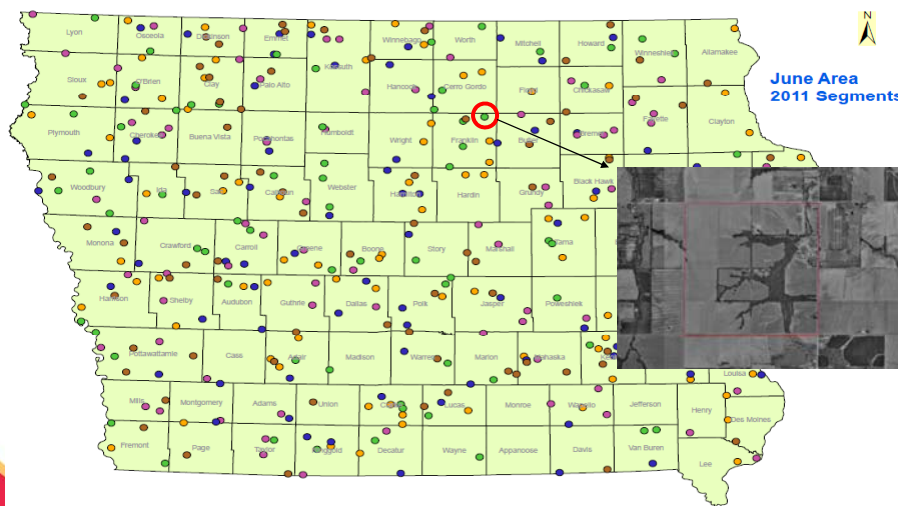
Source: USDA NASS, Iowa Field Office

Stratified Data based on Cultivation

- State is stratified based on % of land cultivated
- Strata are divided into segments (about 1 sq. mile each)



Maps are Obtained for Area Segments



June Area Survey Data Collection

- Data collection by personal interview
- All land within the segment boundaries is accounted for.



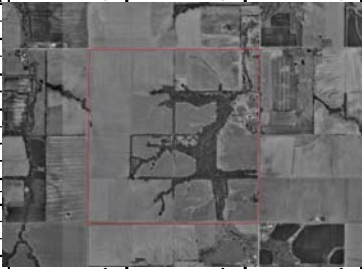
Field & Farm Level Detail Recorded

PAGE 4 SECTION D - CROPS AND LAND USE ON TRACT 29

How many acres are inside this blue tract boundary drawn on the photo (map)?

Now I would like to ask about each field inside this blue tract boundary and its use during 2004.

FIELD NUMBER	01	02	03	04	05
1. Total acres in field	828	828	828	828	828
2. Crop or land use. (Specify)	843				
3. Occupied farmstead or dwelling	841	841	841	841	841
4. Waste, unoccupied dwellings, buildings and structures, roads, ditches, etc.	841	841	841	841	841
5. Woodland	842	842	842	842	842
6. Pasture	856	856	856	856	856
7. Idle cropland - idle all during 2004	857	857	857	857	857
8. Two crops planted in this field or two uses of the same crop.	844	844	844	844	844
10. Acres left to be planted	810	810	810	810	810
11. Acres irrigated and to be irrigated	820	820	820	820	820
16. Winter Wheat	541	541	541	541	541
17. Oats	533	533	533	533	533
20. Corn	530	530	530	530	530
24. Sorghum	570	570	570	570	570
25. Soybeans	571	571	571	571	571
30. Hay	853	853	853	853	853
31. Grain	856	856	856	856	856
33. Other Hay	854	854	854	854	854
34. Soybeans	800	800	800	800	800
35. Soybeans	802	802	802	802	802



Basic Survey Data Collected

- List of farms/farmers w/ associated information
- Collect agricultural data from the name on the list for the farm(s) he/she operates.

<u>Name, Address</u>	<u>Cropland</u>	<u>Capacity</u>
Farmer Brown 985 Oak Street Adel, IA 52240	2000 A.	100,000 bu.

Additional Survey Data Collected

- Stratified based on size/type of farm
- Sample size varies by stratum
- Larger operations sampled at a higher rate.

Quarterly Crop/Stocks Survey

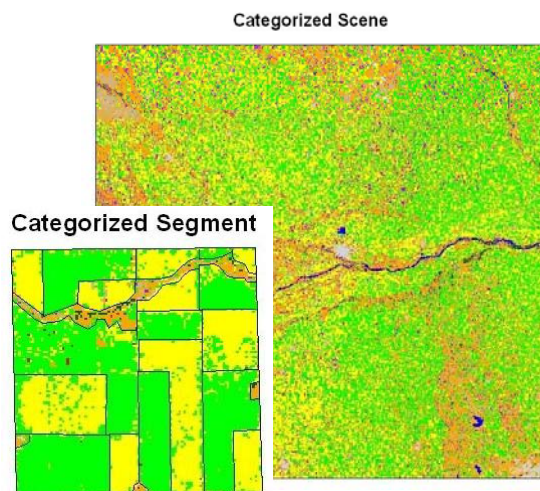
<u>Stratum</u>	<u>Boundaries</u>	<u>Population</u>	<u>Sample</u>
62	Cropland 200-599	5,184	152
65	Capacity 1-14,999	17,628	585

Acreage Updates made in October Crop Production Report

- Survey Data (from June and subsequent months)
- Use of FSA Certified Planted Acreage Reports
 - Aggregate to State level
 - Considered to a minimum (not all farmers certify acres)
 - Not complete until October
- Remote Sensing Data (from satellite).

Remote Sensing -Cropland Data Layer

- Uses Satellite Imagery
 - Ground truth with NASS June Area Survey and FSA data
- Regression-based acreage estimator.



Geographic Information System

2010 Iowa Cropland Data Layer



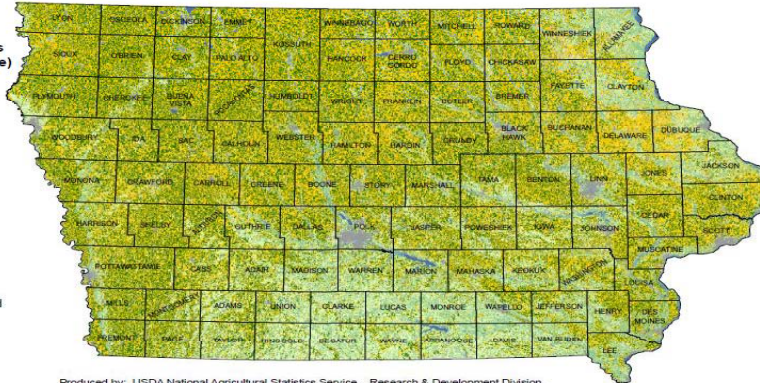
Land Cover Categories (by decreasing acreage)

Agriculture

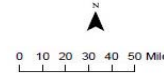
- Corn
- Soybeans
- Pasture/Grass
- Alfalfa
- Other Hay
- Oats
- Winter Wheat
- Sweet Corn
- Other Crops
- Sod/Grass Seed
- Dry Beans
- Spring Wheat
- Fallow/Idle Cropland

Non-Agriculture

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



Produced by: USDA National Agricultural Statistics Service, Research & Development Division, Geospatial Information Branch, Spatial Analysis Research Section.
 Cropland Data Layer CropScape Website: <http://nassgeodata.gmu.edu/CropScape>
 Data Sources: Resourcesat-1 AWFS courtesy of USDA Foreign Agricultural Service, Landsat 5 TM, Image Processing - Rulesquest See5 and ERDAS Imagine.
 Ground Truth: The Farm Service Agency Common Land Unit for crops classes, and 2001 National Land Cover Dataset (NLCD) for non-agricultural classes.
 Ancillary Data: NLCD Impervious Surface, NLCD Forest Canopy, National Elevation Dataset, and Moderate Resolution Imagery Spectroradiometer (MODIS) 16 day Normalized Difference Vegetation Index (NDVI) composite.
 Cartographic Generalization: Smaller categories aggregated into larger categories.
 Projection: UTM zone 15, WGS84 datum.
 Map Production: ESRI ArcGIS 9.3.1.

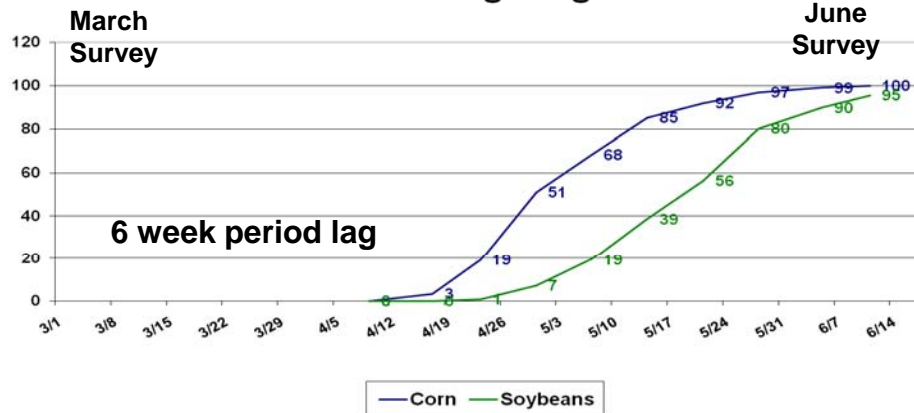


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Source: USDA NASS, Iowa Field Office

March Planting Intentions vs. June Acreage Reports

Usual Planting Progress



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Source: USDA NASS, Iowa Field Office

Accuracy of Corn Planted Acres

% Change from June to Final Report

- U.S. Average change is .6%
- Iowa Average change is .9%
- Smallest and Largest U.S. Change
 - 24,000 A in 1994 (< .1%)
 - 1.3 million A in 2008 (1.5%)

Accuracy of Soybean Planted Acres

% Change from June to Final Report

- U.S. Average change is 1%
- Iowa Average change is 1.3%
- Smallest and Largest U.S. Change
 - 150,000 A in 1992 (< .3%)
 - 1.5 million A in 2007 (2.4%)

5 USDA Report Strategies

Explain to Others
How USDA
Reports are
Compiled

Understand
the Scientific
Methods that
USDA Uses

Build Your
Knowledge as to
Acreage and Crop
Production
Reports

Consider
Assisting
USDA by
Providing
Data if
Requested

Understand the Lack of Scientific Methods
Many Private Industry Surveys Use

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Source: Johnson, ISU Extension, June 2011

3 USDA Crop-Related Web Sites

- **USDA National Agricultural Statistics Service (NASS)**
www.nass.usda.gov
- **USDA Commodity Forecasts**
www.usda.gov/oce/commodity
- **USDA World Agricultural Supply and Demand Estimate (WASDE)**
www.usda.gov/oce/commodity/wasde

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