Wisconsin Crop Management Conference

Madison, WI

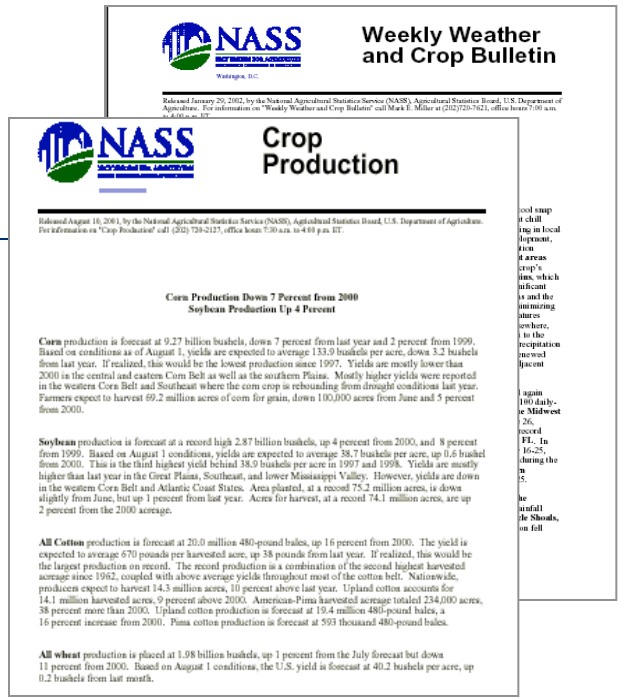
USDA crop reporting process- where do the numbers come from?

Greg Bussler, State Statistician
USDA, National Agricultural Statistics Service
Upper Midwest Region, Wisconsin Field Office

NASS' Mission

- To provide timely, accurate, and useful statistics in service to U.S. agriculture

NASS issues about 500 statistical reports each year and about 9,000 reports and news releases from its 46 field offices.



NASS

Weekly Weather and Crop Bulletin

Released January 29, 2002, by the National Agricultural Statistics Service (NASS), Agricultural Statistics Board, U.S. Department of Agriculture. For information on "Weekly Weather and Crop Bulletin" call Mark E. Miller at (202)720-7621, office hours 7:00 a.m.

NASS

Crop Production

Released August 10, 2001, by the National Agricultural Statistics Service (NASS), Agricultural Statistics Board, U.S. Department of Agriculture. For information on "Crop Production" call (202) 720-2127, office hours 7:30 a.m. to 4:00 p.m. ET.

Corn Production Down 7 Percent from 2000
Soybean Production Up 4 Percent

Corn production is forecast at 9.27 billion bushels, down 7 percent from last year and 2 percent from 1999. Based on conditions as of August 1, yields are expected to average 133.9 bushels per acre, down 3.2 bushels from last year. If realized, this would be the lowest production since 1997. Yields are mostly lower than 2000 in the central and eastern Corn Belt as well as the southern Plains. Mostly higher yields were reported in the western Corn Belt and Southeast where the corn crop is rebounding from drought conditions last year. Farmers expect to harvest 69.2 million acres of corn for grain, down 100,000 acres from June and 5 percent from 2000.

Soybean production is forecast at a record high 2.87 billion bushels, up 4 percent from 2000, and 8 percent from 1999. Based on August 1 conditions, yields are expected to average 38.7 bushels per acre, up 0.6 bushel from 2000. This is the third highest yield behind 38.9 bushels per acre in 1997 and 1998. Yields are mostly higher than last year in the Great Plains, Southeast, and lower Mississippi Valley. However, yields are down in the western Corn Belt and Atlantic Coast States. Area planted, at a record 75.2 million acres, is down slightly from June, but up 1 percent from last year. Acres for harvest, at a record 74.1 million acres, are up 2 percent from the 2000 acreage.

All Cotton production is forecast at 20.0 million 480-pound bales, up 16 percent from 2000. The yield is expected to average 670 pounds per harvested acre, up 38 pounds from last year. If realized, this would be the largest production on record. The record production is a combination of the second highest harvested acreage since 1962, coupled with above average yields throughout most of the cotton belt. Nationwide, producers expect to harvest 14.3 million acres, 10 percent above last year. Upland cotton accounts for 14.1 million harvested acres, 9 percent above 2000. American-Pima harvested acreage totaled 234,000 acres, 38 percent more than 2000. Upland cotton production is forecast at 19.4 million 480-pound bales, a 16 percent increase from 2000. Pima cotton production is forecast at 593 thousand 480-pound bales.

All wheat production is placed at 1.98 billion bushels, up 1 percent from the July forecast but down 11 percent from 2000. Based on August 1 conditions, the U.S. yield is forecast at 40.2 bushels per acre, up 0.2 bushels from last month.

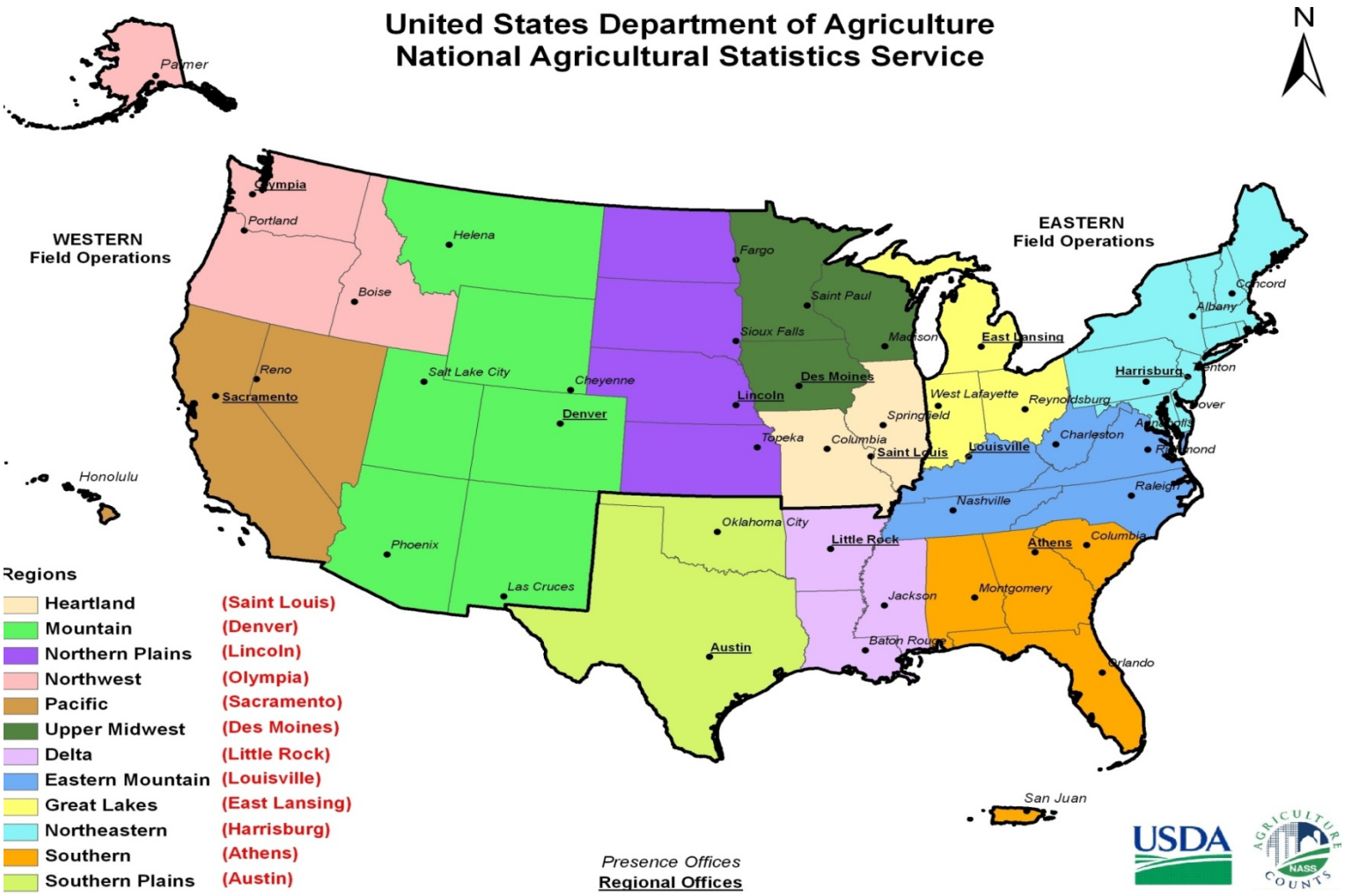
The History of NASS

USDA was founded by Lincoln in 1862

NASS, formerly known as the Division of Statistics and then the Bureau of Statistics, was founded in 1863

Bureau of Statistics employees working on crop estimates, circa 1910.

2013 – NASS Reorganization



What does NASS do?

- Administer USDA's Statistical Estimating Program and the Census of Agriculture
- Supply the statistics necessary to manage and improve the efficiency of USDA programs
- Coordinate Federal/State agricultural statistics needs

NASS Characteristics

- Independent and objective
- Unbiased appraisers of Nation's agriculture
- Non-political – career staff
- Majority of staff from a farm background

Where do the official statistics come from?

- Sample Surveys – voluntary reporting
- Agriculture Census – mandatory reporting
- Administrative Data

NASS Data Collection

- NASS collects data from producers and agribusinesses
  - Mail
  - Telephone
  - Personal Interviews
  - Internet
- NASDA Enumerators call and visit producers
- FSA Directors, County Extension Agents and producers volunteer data on crop progress and crop weather

Who Uses the Data and How?

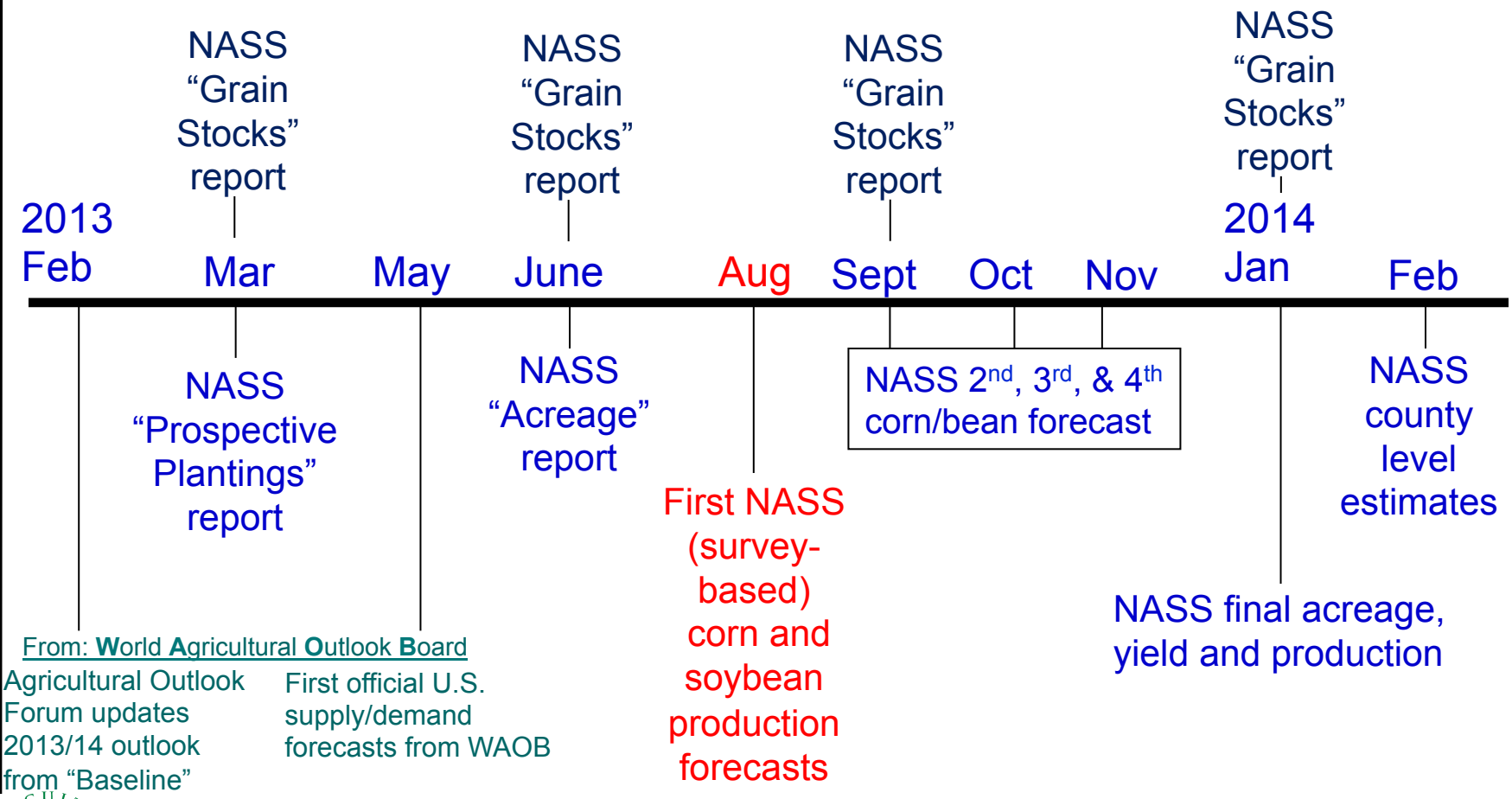
- Farmers and Ranchers
  - Provides information to make management decisions
  - Determine the feasibility of expansion
  - Helps “level the playing field”
  - Gives producers a collective voice
- Others

Determining Crop Production

Production =

Harvested acres	X	Yield
(Data Sources) June Crops/Stocks and Area Surveys – updated as needed to reflect current growing conditions based on survey, satellite, and FSA acreage data	FORECAST	*(Data Sources)* Agricultural Yield Surveys Objective Yield Surveys
December Crops/Stocks Satellite Imagery FSA Acreage Data	FINAL	December Crops/ Stocks Survey Obj. Yield Survey

Timeline for 2013- Crop Corn and Soybean Numbers



Acreage Data Collection

	June C/S Survey	June Area Survey
Data Collection	May 29 – June 15	May 29 – June 15
Sample Size	Approx 70,000 farms ~2,100 in Wisconsin	Approx 11,000 segments 176 in Wisconsin
Collection Methods	phone, mail, internet, personal interview	Personal interview
Data Items	Acres planted to specific crops, acres expected to be harvested, quantities of grains and oilseed stored on-farm	Information on land use within segment and quantities of grains and oilseed stored on entire farm

June Crops/Stocks Survey

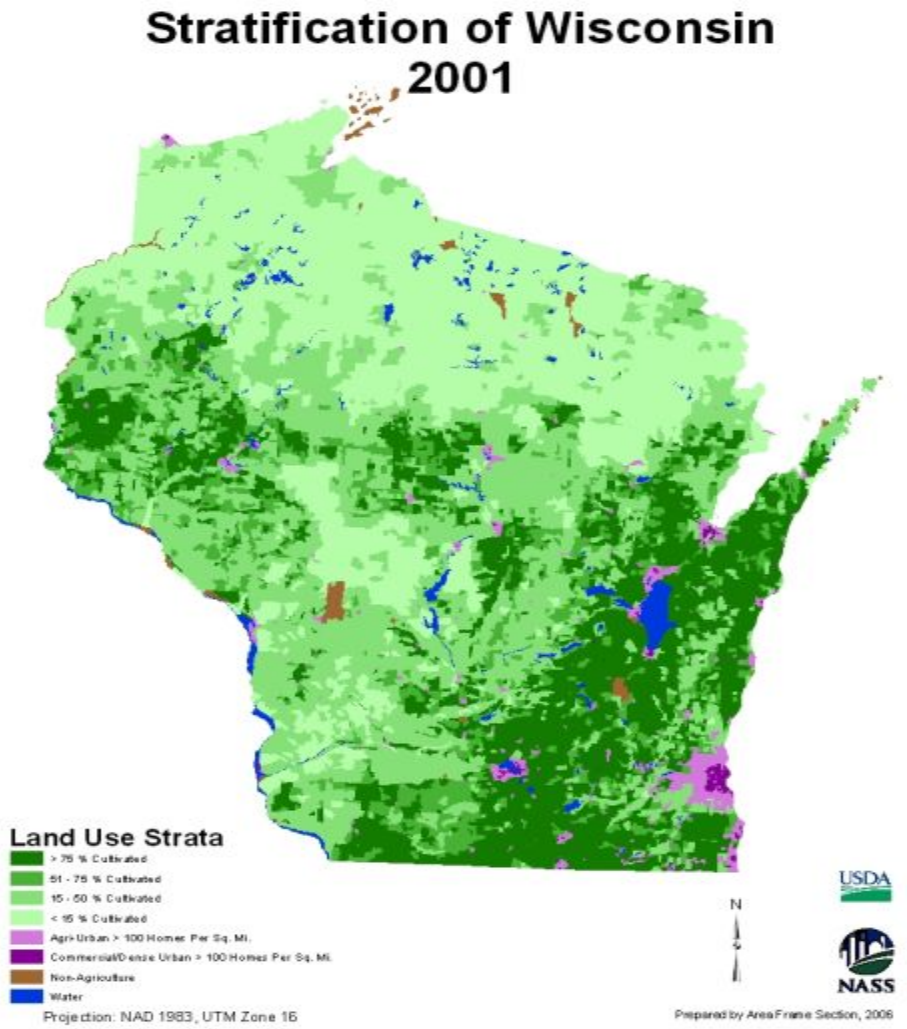
- The list of producers is stratified by size/type of farm
- Randomly select sample within each stratum
- Sample size varies by stratum
- Larger operations sampled at a higher rate

Quarterly Crop/Stocks Survey - Example

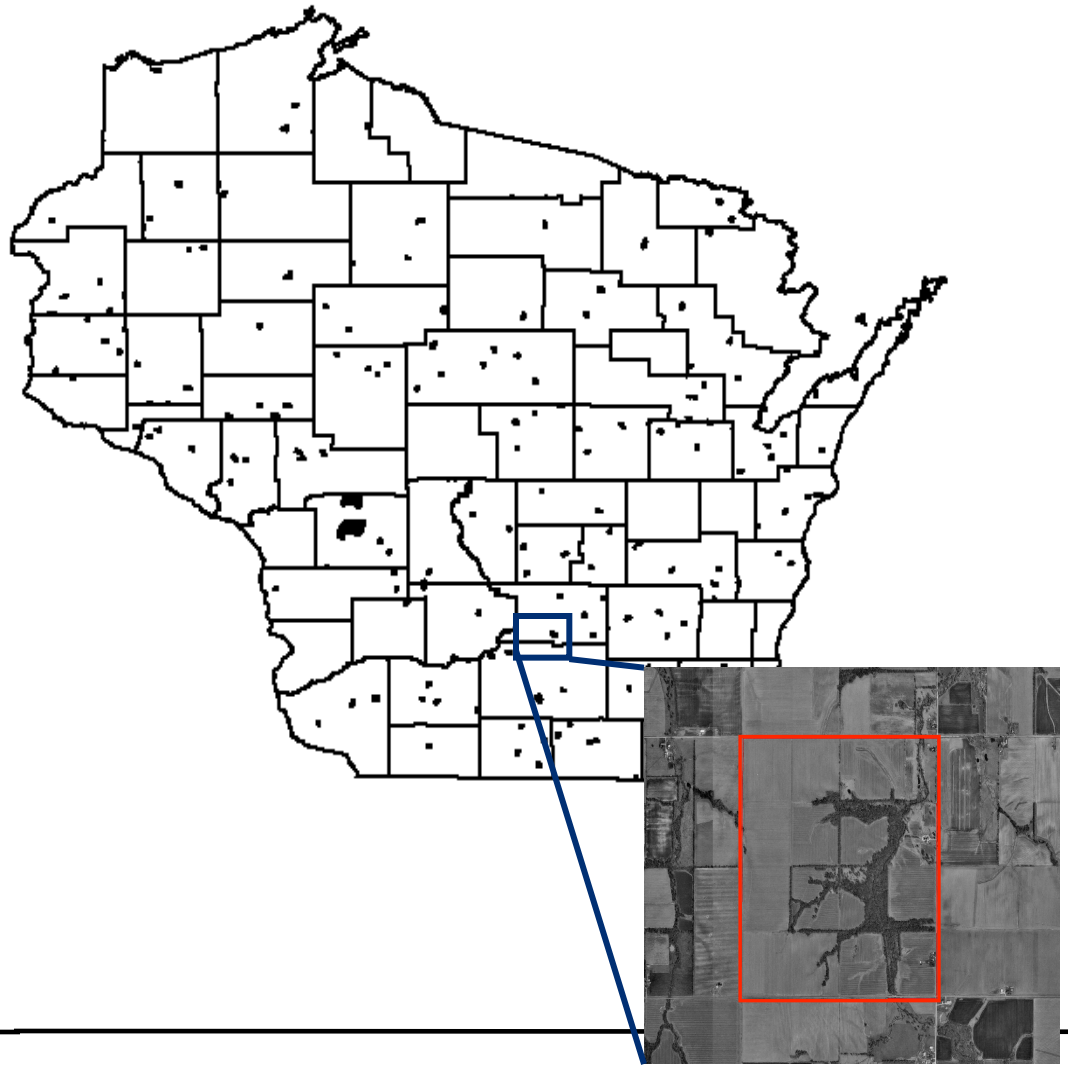
Stratum	Boundaries	Population	Sample
60	Cropland 100 - 199	5,331	124
62	Capacity 1,000 –4,999	5,732	201
63	Cropland 200 - 1,999	4,457	319
66	Capacity 5,000 - 19,999	6,781	427
69	Capacity 20,000 – 299,999	2,740	241
70	Max Wheat 25+	3,554	433
74	Cropland 2,000 – 4,999	373	98
75	Capacity 300,000 – 499,999	58	15
76	Potatoes 5 - 99	41	23
77	Potatoes 100 – 599	56	55
78	Potatoes 600 +	17	17
95	Cropland 5,000+	52	52
97	Capacity 500,000+	31	30
Total		29,223	2,035

June Area Survey

- The land area in each state is stratified by type (percent cultivation)
- Strata are divided into "segments" (~ 1 sq. mile)
- Randomly select segments within each stratum
- Sample intensively cultivated land at a higher rate



- **176 segments throughout Wisconsin**



PAGE 4

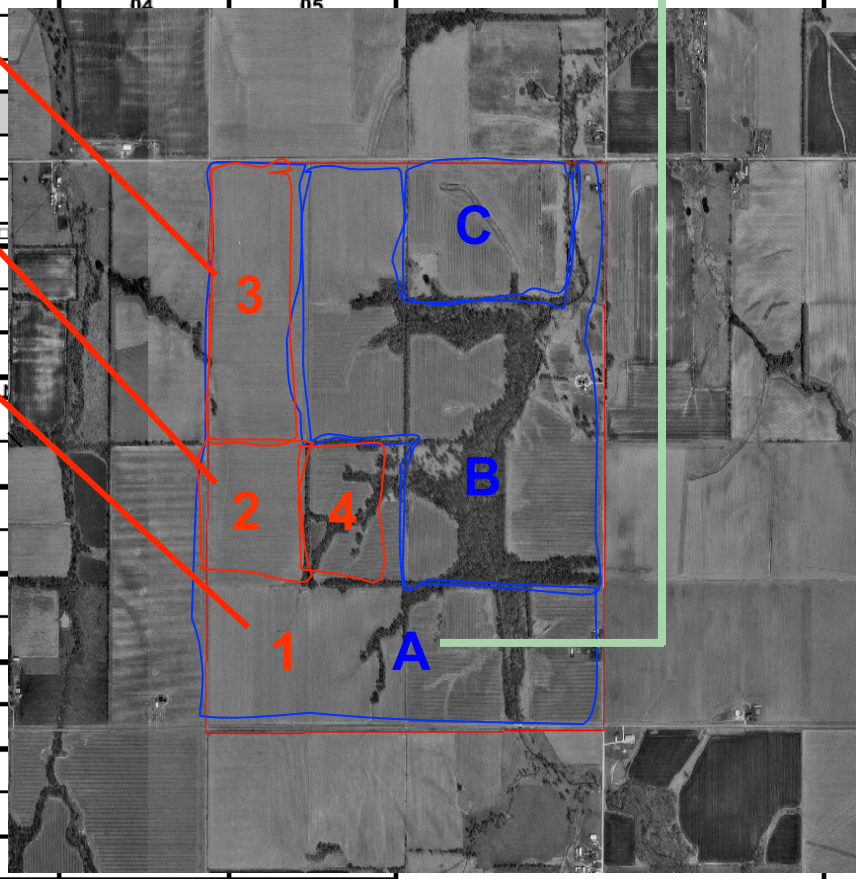
SECTION D - CROPS AND LAND USE ON TRACT

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		
2. Crop or land use. [Specify]						
3. Occupied farmstead or dwelling		843 .				
4. Waste, unoccupied dwellings, buildings and structures, roads, ditches, etc.		841 .	841 .	841		
5. Woodland	NP = Not Pastured P = Pastured [Check (✓) type]	83_ . ☐ N P ☐ P	83_ . ☐ N P ☐ P	83_ ☐ N P		
6. Pasture	Permanent (not in crop rotation)	842 .	842 .	842		
	Cropland (used only for pasture)	856 .	856 .	856		
8. Idle cropland - Idle all during 2004		857 .	857 .	857		
9. Two crops planted in this field or two uses of the same crop.		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes		
	[Specify second crop or use.]					
	Acres	844 .	844 .	844		
10. Acres left to be planted		610 .	610 .	610		
11. Acres irrigated and to be irrigated [If double cropped, include acreage of each crop irrigated.]		620 .	620 .	620		
16. **Winter Wheat** (include cover crop)	Planted	540 .	540 .	540		
17.	For grain or seed	541 .	541 .	541		
20. **Oats** (include cover crop)	Planted	533 .	533 .	533		
21.	For grain or seed	534 .	534 .	534		
24. **Corn** [Exclude popcorn and sweet corn]	Planted and to be planted	530 .	530 .	530		
25.	For grain or seed	531 .	531 .	531		
27. **Sorghum** [Exclude crosses with Sudan.]	Planted and to be planted	570 .	570 .	570		
28.	For grain or seed	571 .	571 .			
29. **Other uses** of grains planted (Abandoned, silage, green chop, etc.)	Use					
	Acres	.	.			
30. **Hay** [Cut and to be cut for dry hay.]	Alfalfa and Alfalfa Mixtures	653 .	653 .			
31.	Grain	656 .	656 .			
33.	Other Hay	654 .	654 .			
34. **Soybeans**	Planted and to be planted	600 .	600 .			
35.	Following another harvested crop	602 .	602 .			

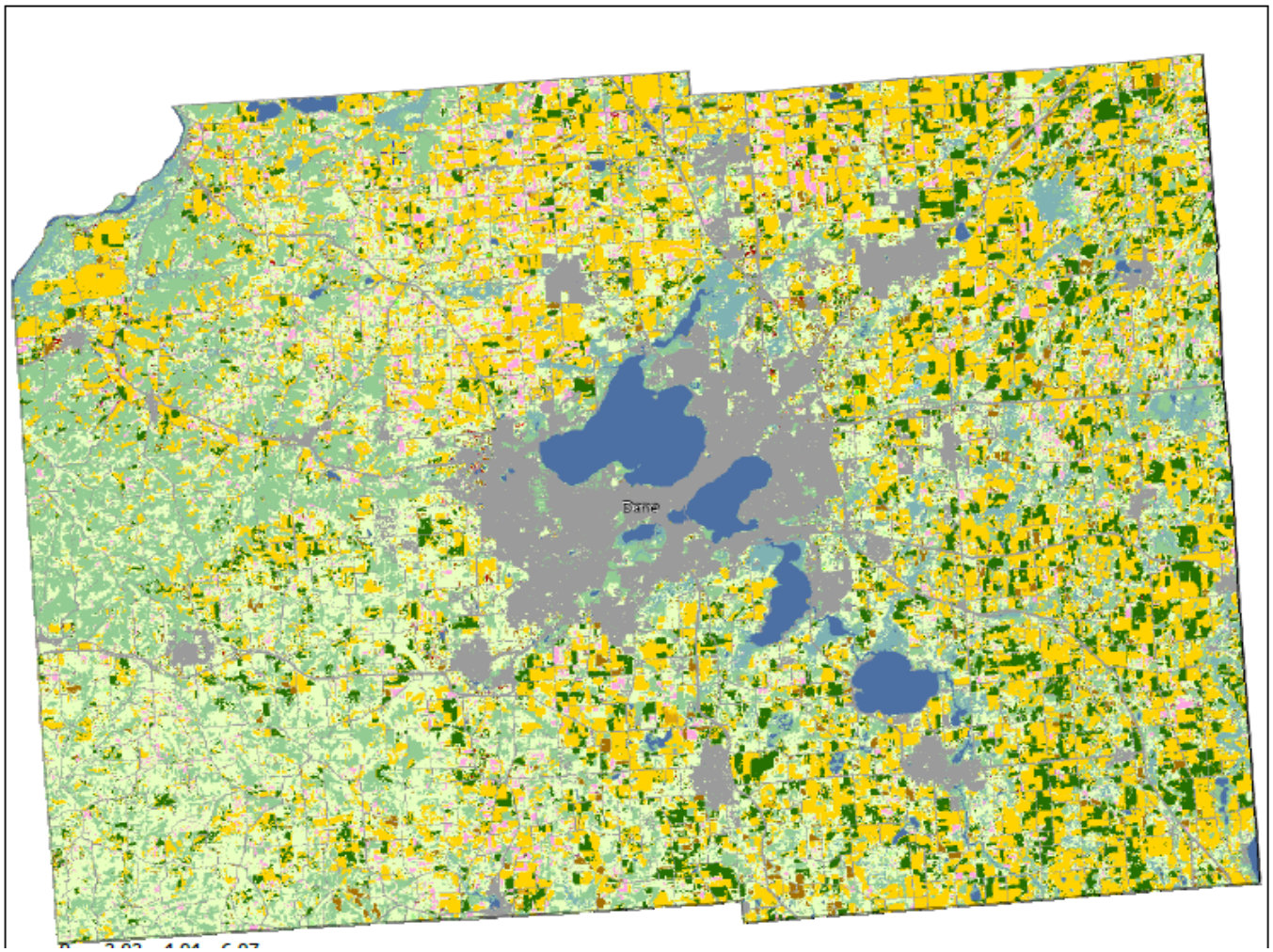


- Field level detail recorded
- Entire farm data also recorded in other sections

Other Data Used for Acreage

- Satellite imagery available after crop canopies
  - Helps determine mid-season and year-end acreage estimates
  - Helps assess the impact of weather disasters

2009 CDL, Dane County, Wisconsin



Land Cover Categories
(by decreasing acreage)

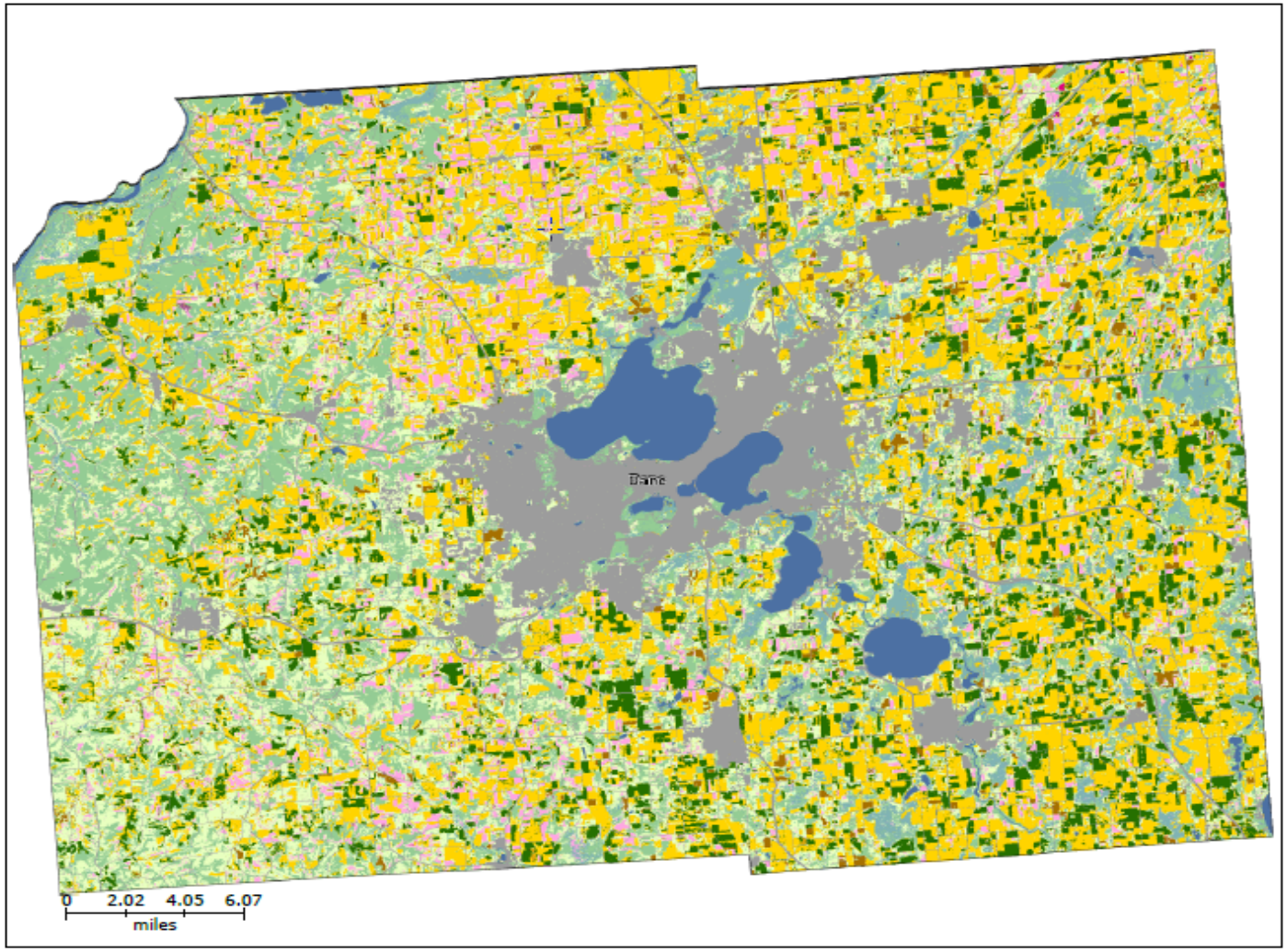
AGRICULTURE*

- Pasture/Hay
- Corn
- Soybeans
- Pasture/Grass
- Alfalfa
- Winter Wheat
- Other Hay/Non Alfalfa
- Grassland Herbaceous
- Sweet Corn
- Oats
- Dry Beans
- Peas
- Fallow/Idle Cropland
- Misc Vegs & Fruits
- Herbs
- Potatoes

NON-AGRICULTURE**

- Deciduous Forest
- Developed/Open Space
- Developed/Low Intensity
- Herbaceous Wetlands
- Open Water
- Developed/Medium Intensity

2012 CDL, Dane County, Wisconsin



Land Cover Categories
(by decreasing acreage)

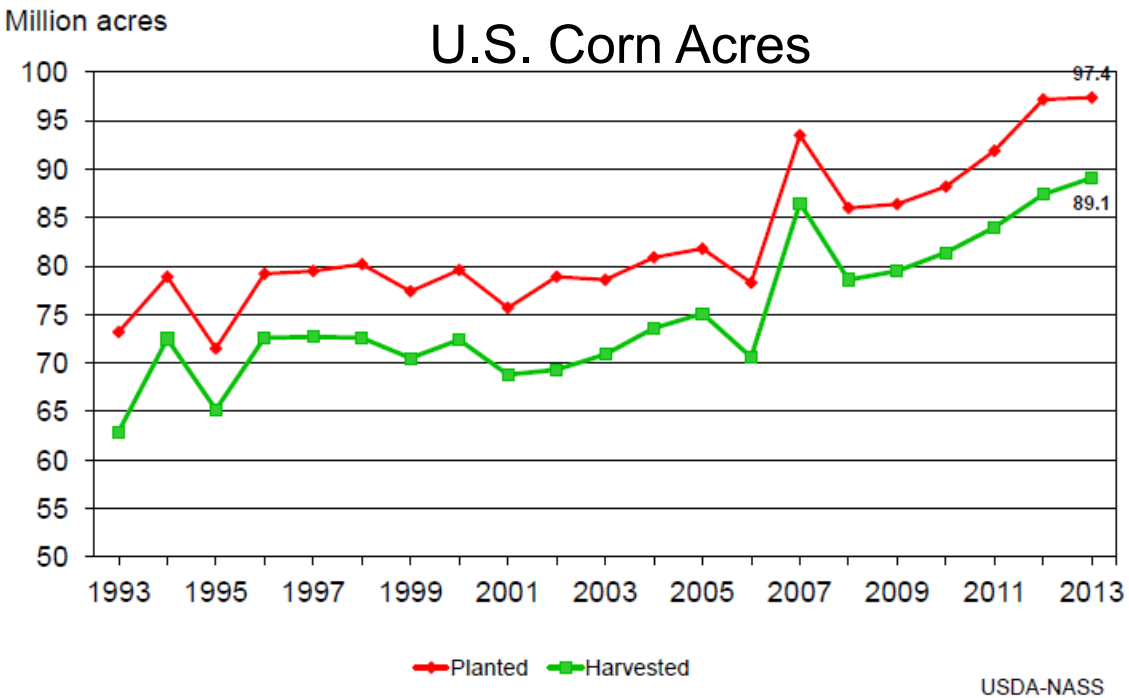
AGRICULTURE*
- Corn
- Pasture/Hay
- Soybeans
- Alfalfa
- Winter Wheat
- Other Hay/Non Alfalfa
- Oats
- Grassland Herbaceous
- Sweet Corn
- Sod/Grass Seed
- Peas
- Barley
- Fallow/Idle Cropland
- Potatoes
- Dry Beans
- Herbs

NON-AGRICULTURE**
- Deciduous Forest
- Developed/Low Intensity
- Developed/Open Space
- Herbaceous Wetlands
- Open Water
- Developed/Medium Intensity

Other Data Used for Acreage

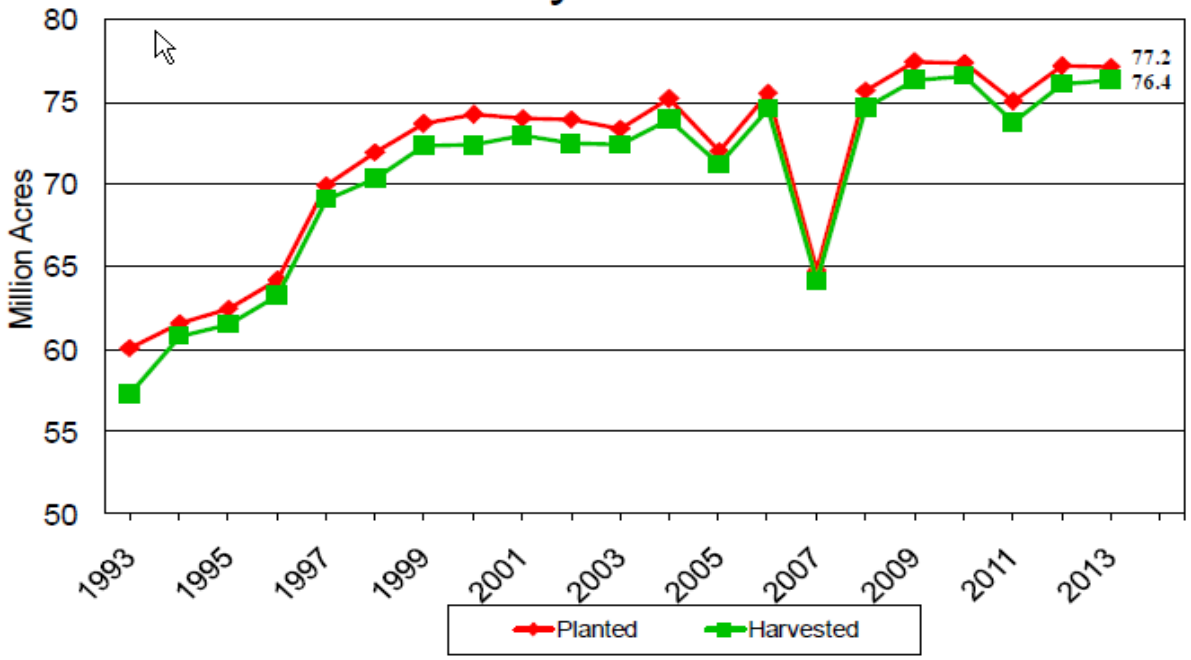
- Farm Service Agency data available in October
  - Helps determine late-season and year-end acreage estimates

U.S. Corn Acres



USDA-NASS
6-28-13

U.S. Soybean Acres



Monthly Crop Production Data Sources

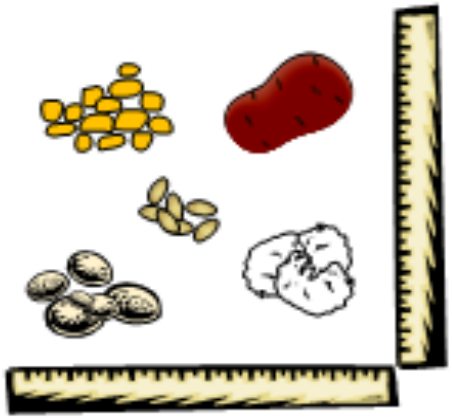
- **NASS conducts two surveys for yield**
  - Ag Yield Survey
    - List frame survey conducted in all States (May – November)
  - Objective Yield Survey (Corn & Soybeans)
    - Area frame survey conducted in major States (Aug. – Dec.)

Ag Yield Survey

- Survey of producers
- Sample screened during June Crops/Stocks survey
- Producers report:
  - Acres Harvested or expected to be harvested
  - Expected Yield (based on farmers assessment of yield prospects until harvest)
- Reference Date – 1st of the month
- Data collected mainly by mail and telephone
- Number of producers sampled varies by month

	August	September	October	November
Wisconsin	700	400	400	400
U.S.	24,000	13,000	15,000	11,000

Objective Yield Survey

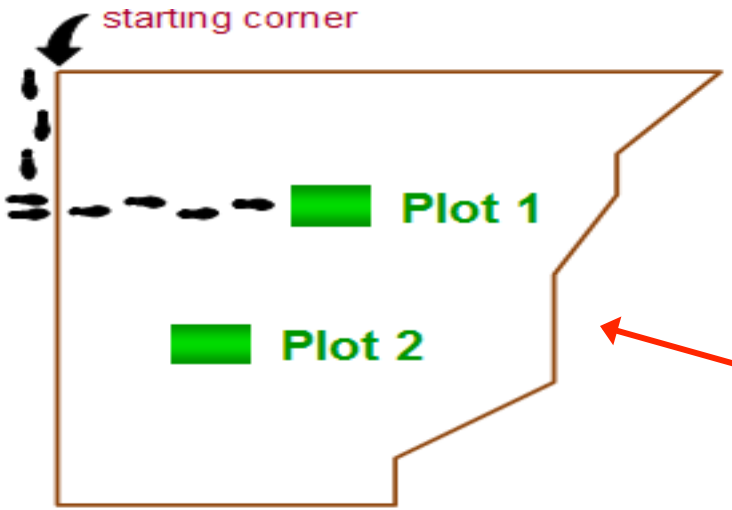


number of fruit per acre x weight per fruit – harvest loss per acre

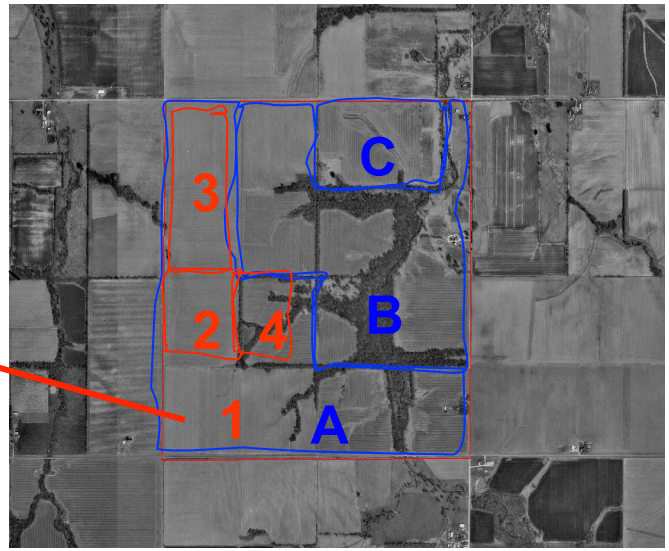
net yield

Objective Yield Survey

- Randomly selected fields from June Area Survey
  - Initial interview to update/verify acreage, ask permission
- 2 Randomly located plots per field
  - Each corn plot = 2 rows, 15 ft. long



Samples consist of 2 plots randomly located within each selected field and scientifically placed within the field with predetermined locations.



Objective Yield Survey

- Objective measurements made in the fields
  - Measure Row Width
  - Count Plants (or stalks)
  - Count Fruit (pods, ears, or proxy early in season)
  - Weigh Fruit (pods, ears, or proxy early in season)
  - Gleanings (harvest loss)

Crop	Component	Forecast Variable
Corn	Ears	- stalks
		- ears & ear shoots
		- ears with kernels
	ear weight	- historic average
		- length over husk
		- kernel row length
		- ear diameter
Soybeans	Plants pods per plant	- plants
		- main stem nodes
		- lateral branches
		- blooms, dried flowers & pods
		-pods with beans
	pod weight	- historical average
		- pods with beans

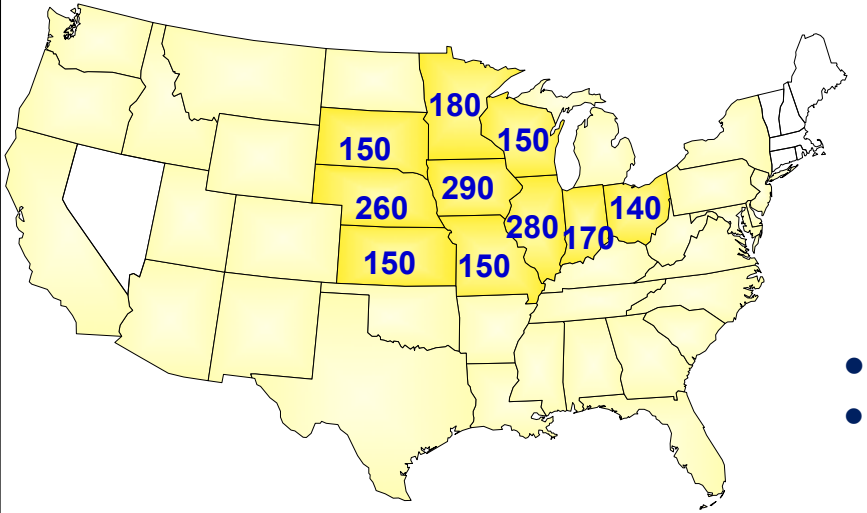
Variables used to measure the number of fruit and weight vary each month based on the stage of maturity

Objective Yield Survey

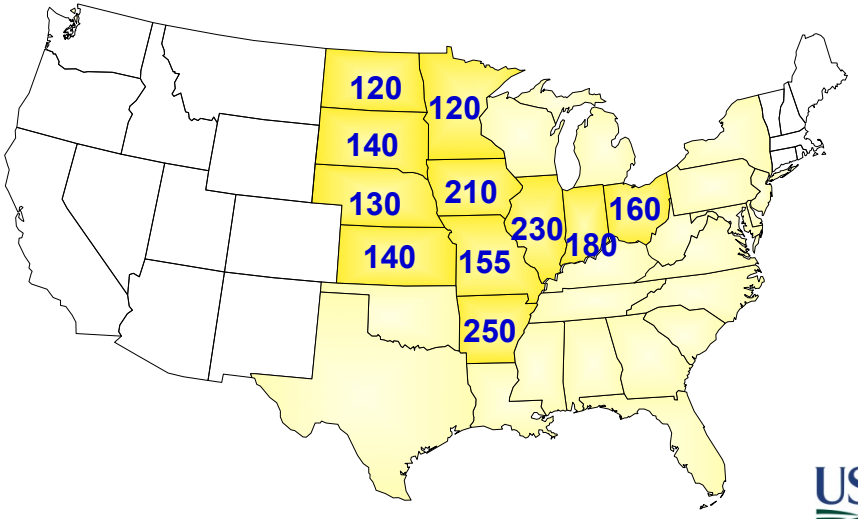
- The sample plots are visited monthly
  - Late July until crop is mature
- At maturity, plots are harvested by hand
  - Corn is weighed and 4 ears are sent to NASS regional lab
- At the NASS regional lab
  - Corn samples are shelled/threshed
  - Grain is weighed and tested for moisture content
- Return to ¼ of sample fields after farmer harvest
  - Lay out a sample plot for gleaning (harvest loss)
  - Pick up grain remaining on the ground
  - Weight and moisture content determined at NASS lab

Objective Yield Survey Sample

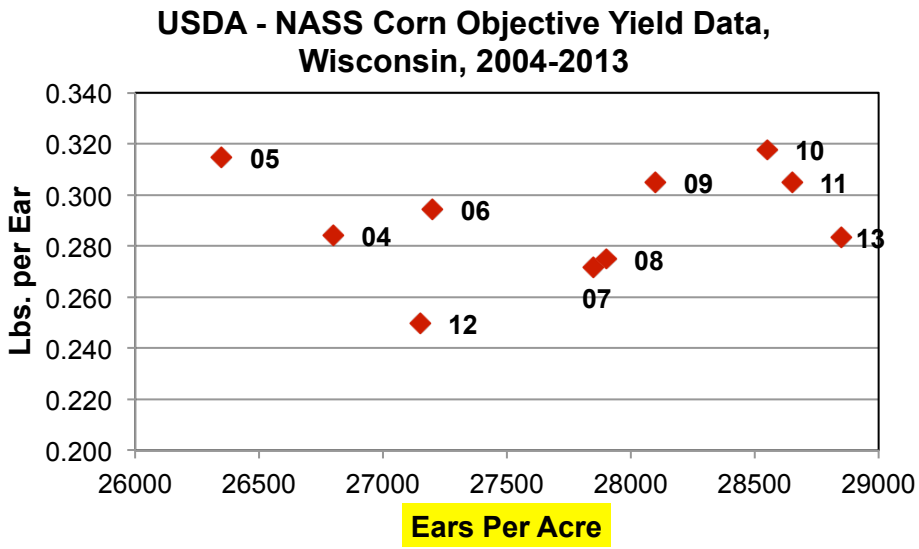
- **CORN n=1920 (only half completed in August)**
- ***10 states average ~80% of U.S. corn production***

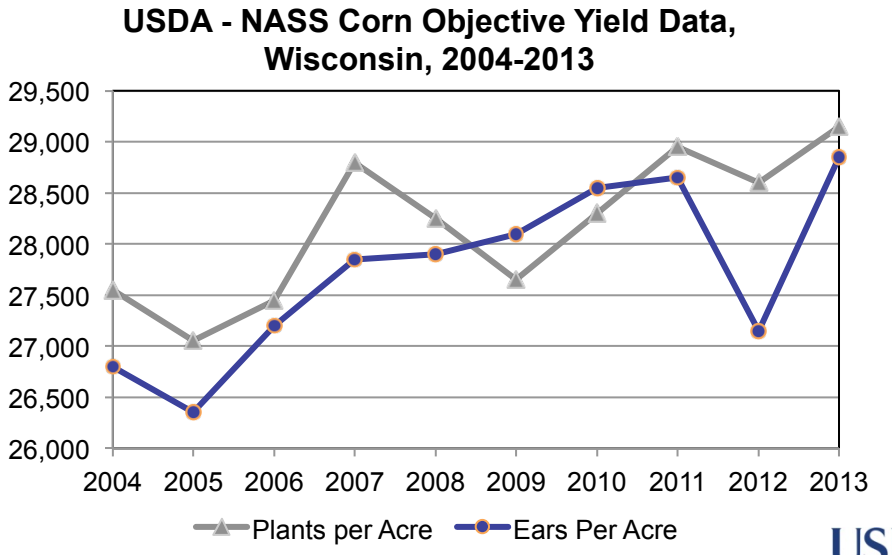


- **SOYBEANS n=1835 (only half completed in August)**
- ***11 states average ~80% of U.S. soybean production***



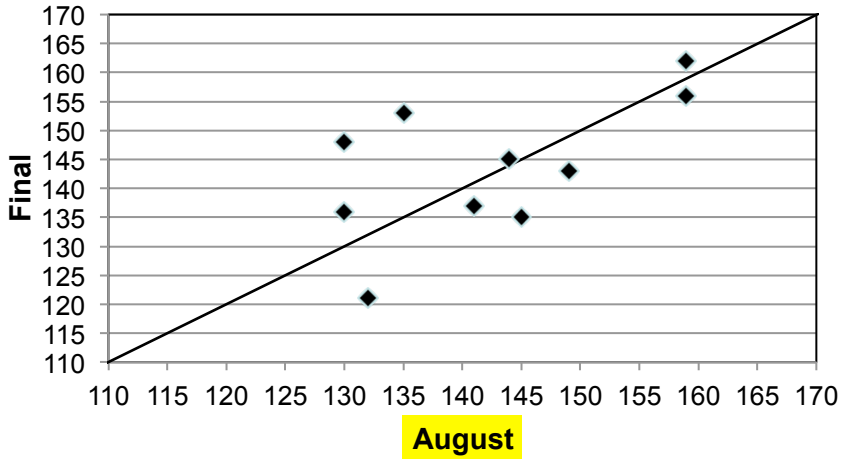
Objective Yield Survey



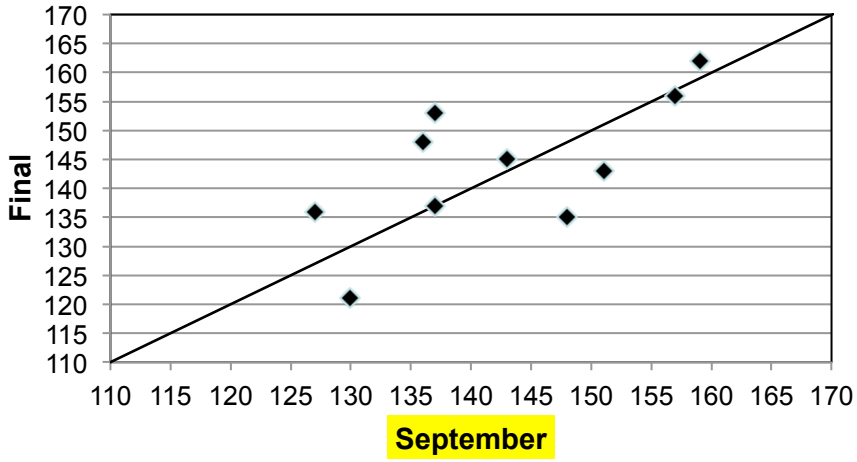


Corn Forecast Accuracy

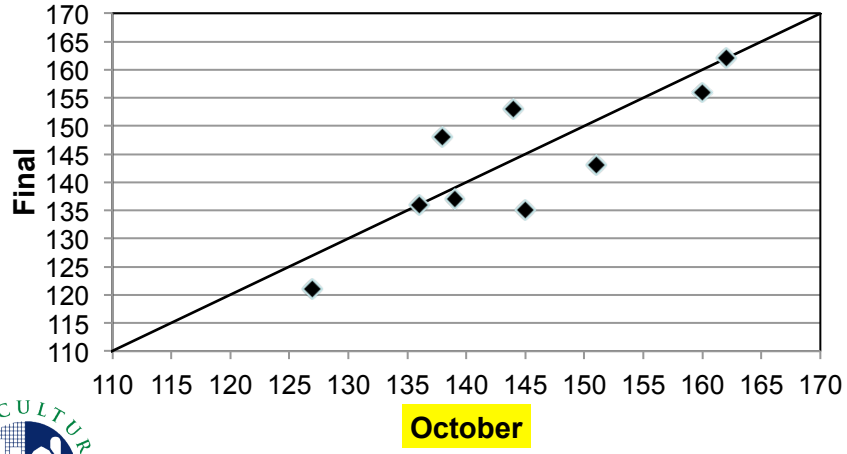
USDA - NASS August Forecast to Final Yield, Wisconsin, Corn 2004-2013



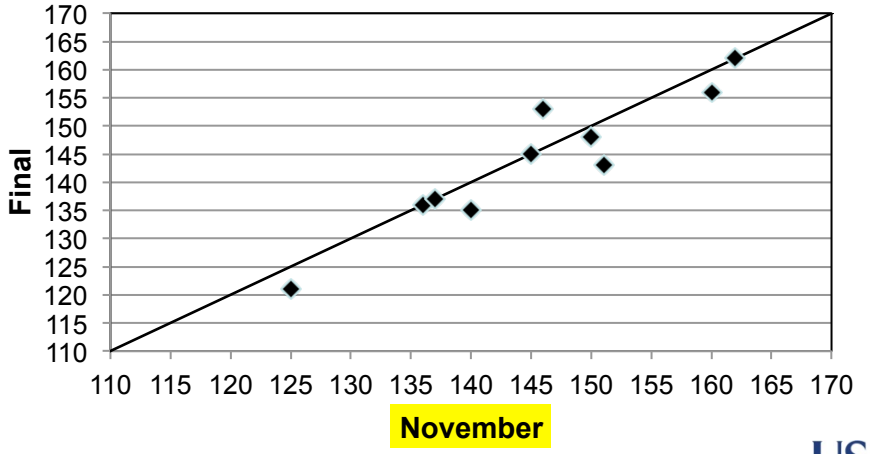
USDA - NASS September Forecast to Final Yield, Wisconsin, Corn 2004-2013



USDA - NASS October Forecast to Final Yield, Wisconsin, Corn 2004-2013

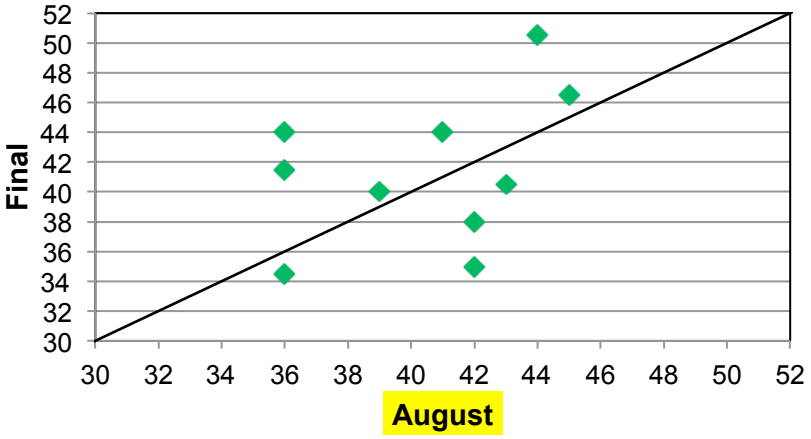


USDA - NASS November Forecast to Final Yield, Wisconsin, Corn 2004-2013

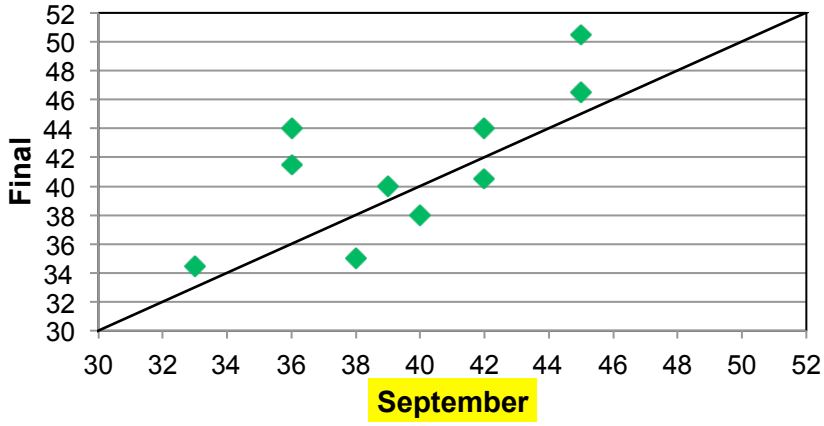


Soybean Forecast Accuracy

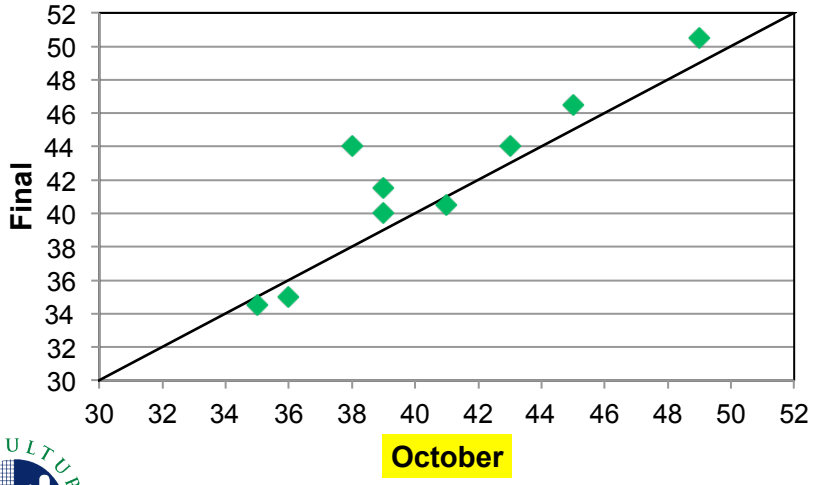
USDA - NASS August Forecast to Final Yield, Wisconsin, Soybeans, 2004-2013



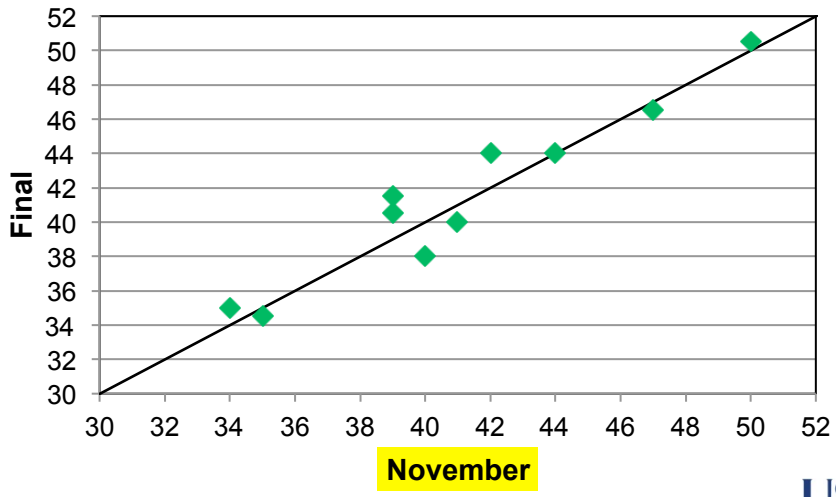
USDA - NASS September Forecast to Final Yield, Wisconsin, Soybeans, 2004-2013



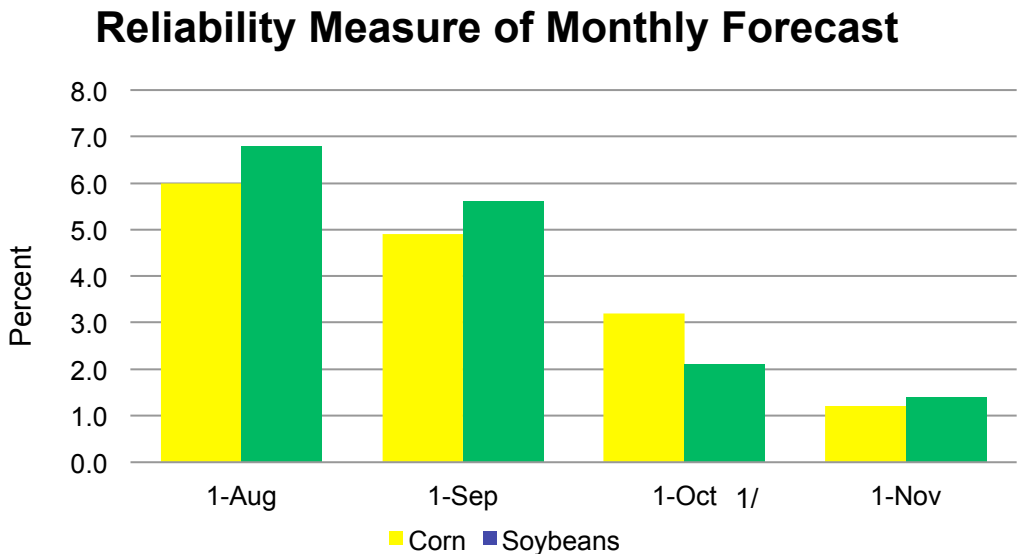
USDA - NASS October Forecast to Final Yield, Wisconsin, Soybeans, 2004-2013



USDA - NASS November Forecast to Final Yield, Wisconsin, Soybeans, 2004-2013



Accuracy of Production Forecast



1/ October 2012 data. No 2013 data due to the government shutdown

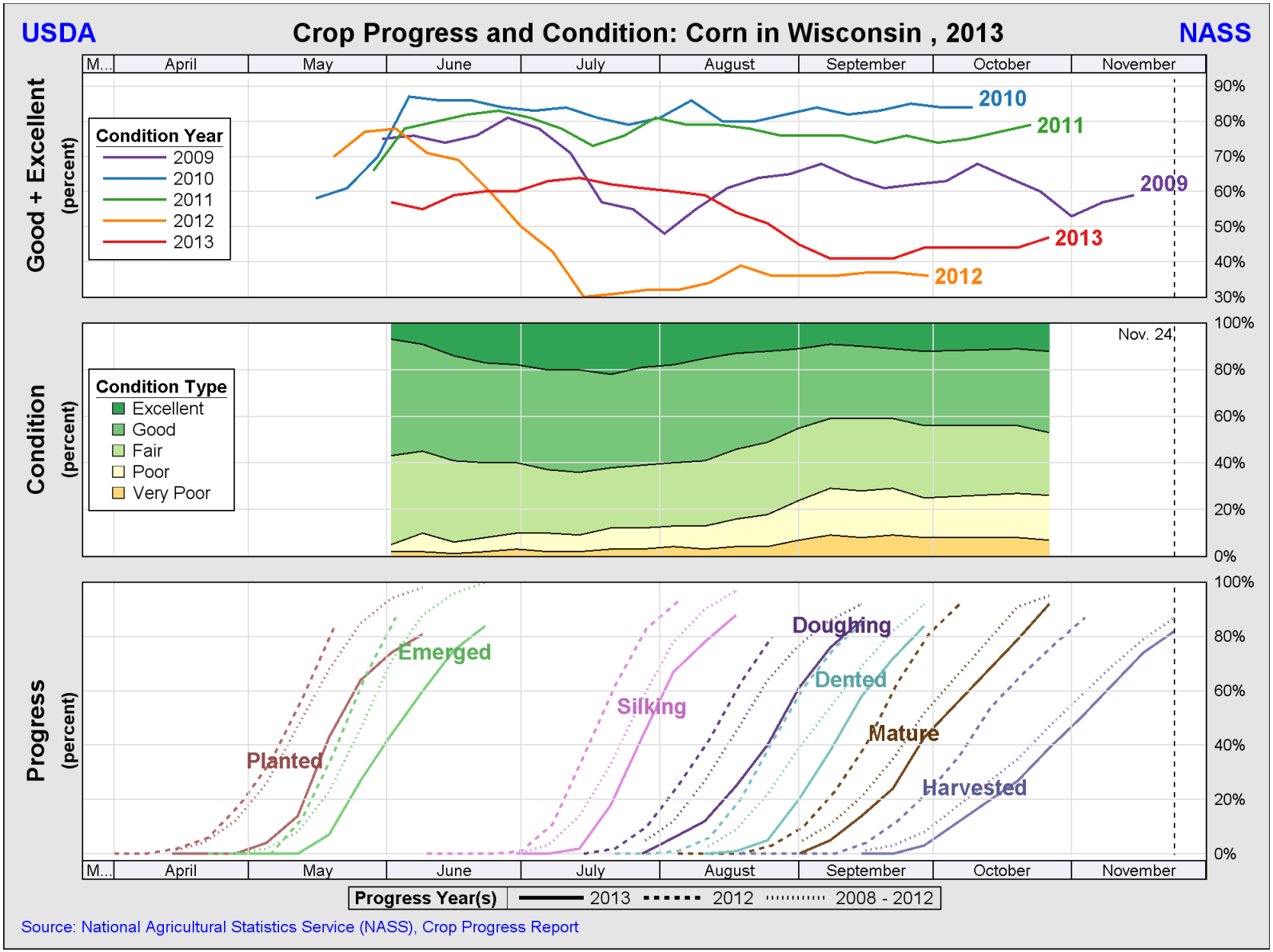
NASS "Lockup"

- The NASS Agricultural Statistics Board releases sensitive reports under Lockup conditions
- Doors are locked and armed guard stands watch
- Window shades are secured
- Phone are disconnected, no cell phones allowed
- Computer system is disconnected
- Must have lockup pass to enter
- Reporters allowed in to prepare news stories
- At about 11:45 am, Secretary is briefed
- Report released at 12:00 pm (noon) to everyone

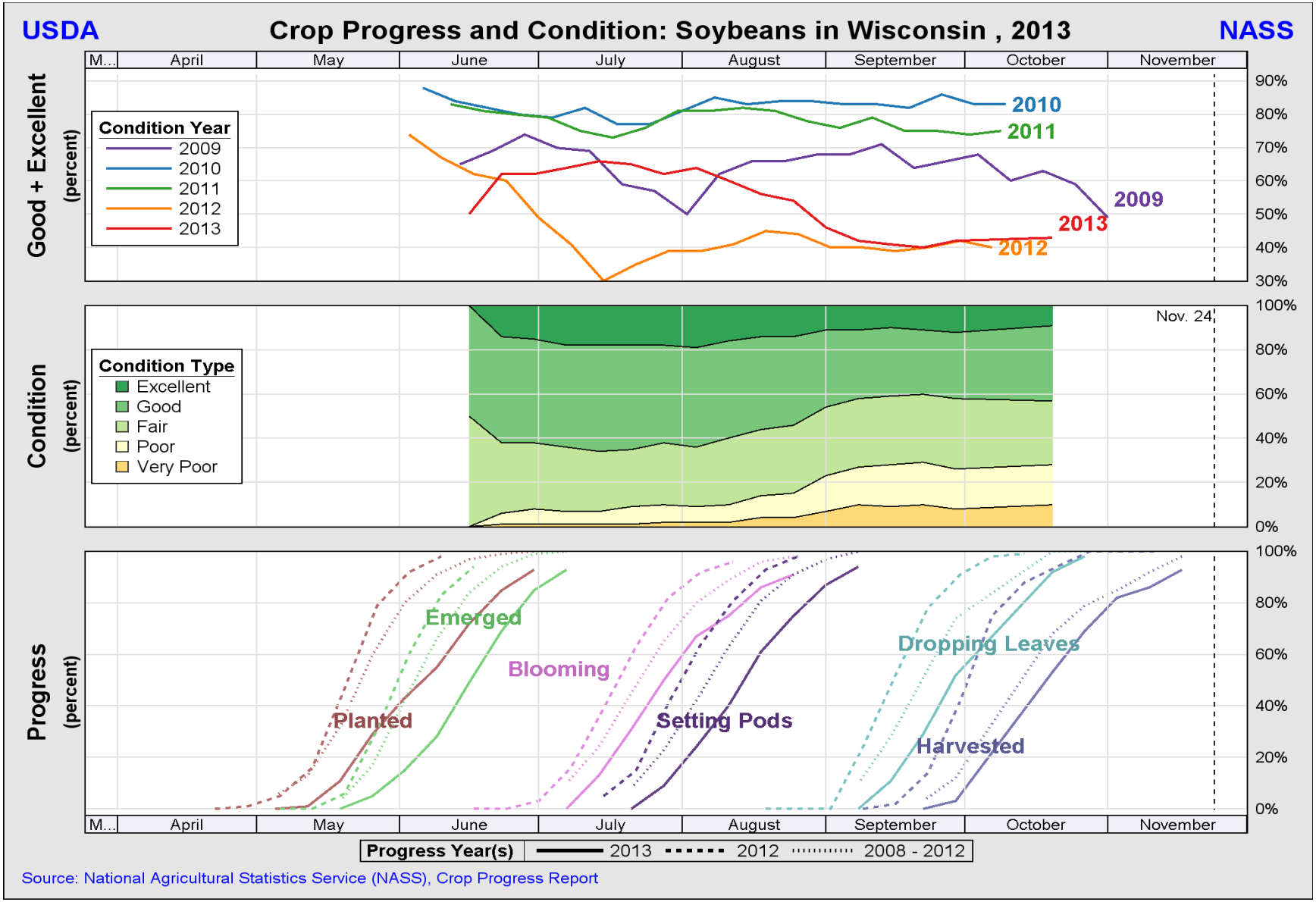
Final Acreage, Yield and Production

Production =

Harvested acres	X	Yield
(Data Sources) June Crops/Stocks and Area Surveys – updated as needed to reflect current growing conditions based on survey, satellite, and FSA acreage data	FORECAST	*(Data Sources)* Agricultural Yield Surveys Objective Yield Surveys
December Crops/Stocks Satellite Imagery FSA Acreage Data	FINAL	December Crops/ Stocks Survey Obj. Yield Survey

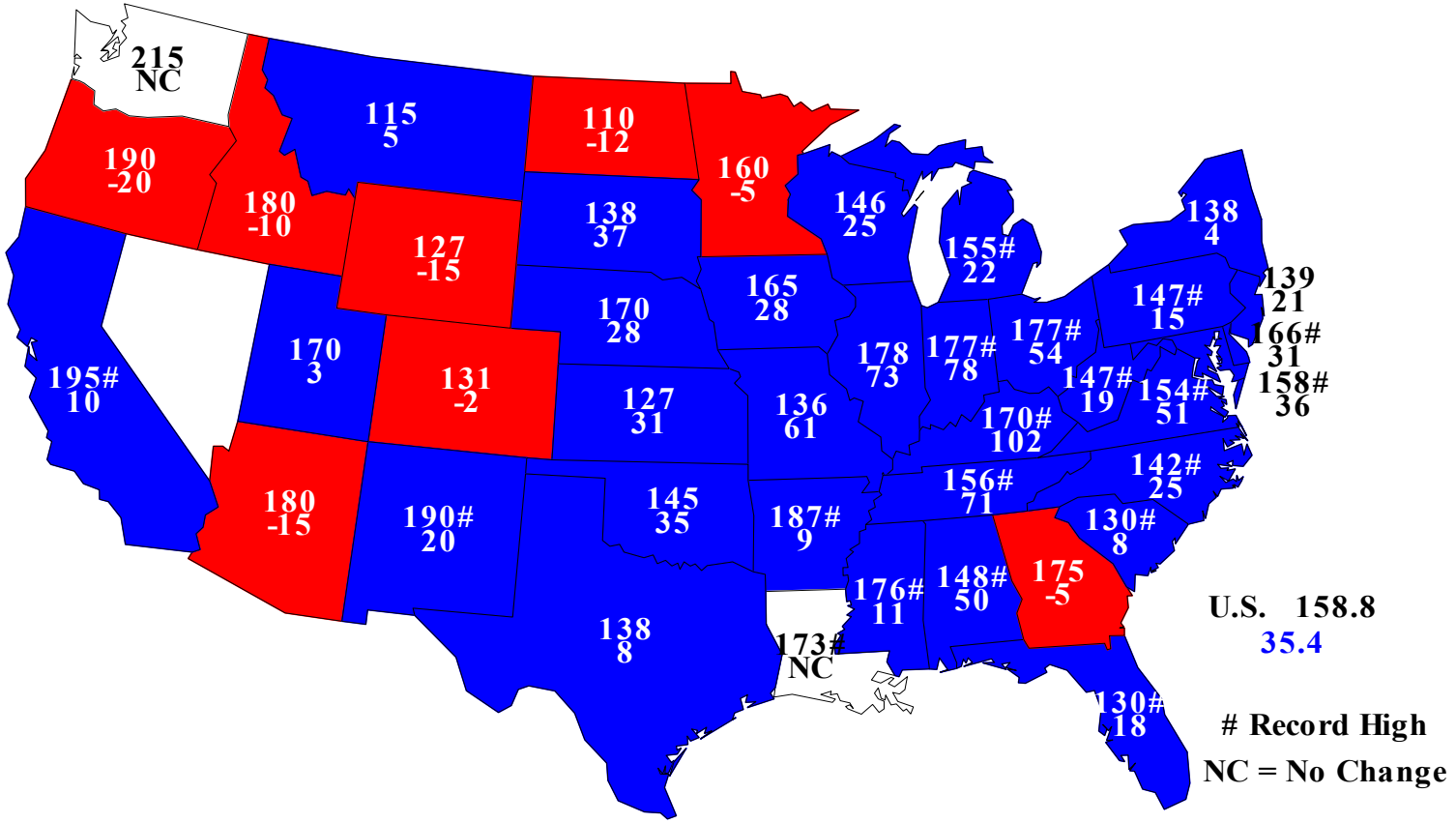


Source: National Agricultural Statistics Service (NASS), Crop Progress Report


USDA
Crop Progress and Condition: Soybeans in Wisconsin , 2013
NASS
Good + Excellent (percent)
M...
April
May
June
July
August
September
October
November
Condition Year
2009
2010
2011
2012
2013
2010
2011
2009
2013
2012
90%
80%
70%
60%
50%
40%
30%
Condition (percent)
Condition Type
Excellent
Good
Fair
Poor
Very Poor
Nov. 24
100%
80%
60%
40%
20%
0%
Progress (percent)
Emerged
Planted
Blooming
Setting Pods
Dropping Leaves
Harvested
Progress Year(s)
2013
2012
2008 - 2012
Source: National Agricultural Statistics Service (NASS), Crop Progress Report

Corn for Grain Yields, 2013

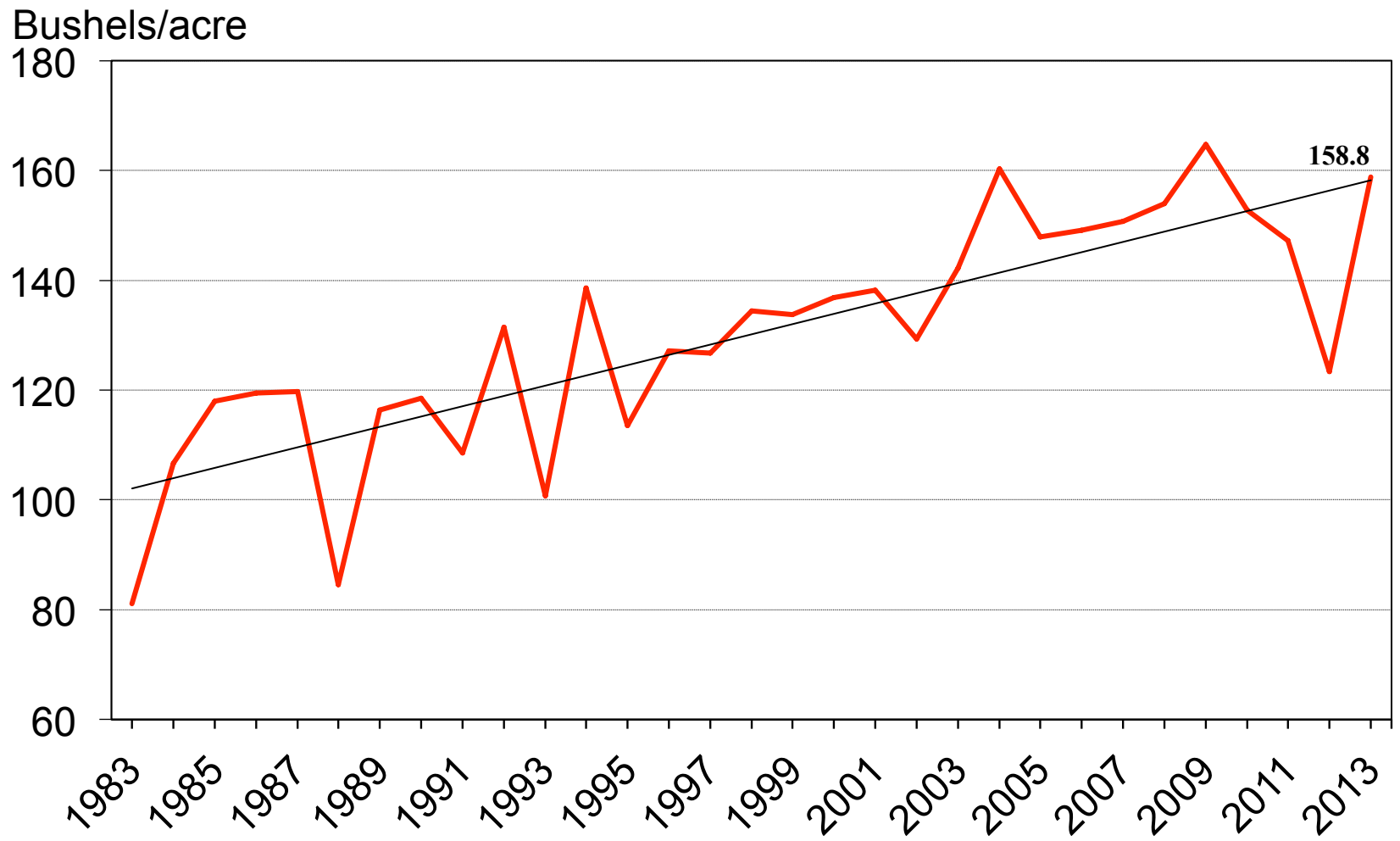
Bushels and Change From Previous Year



Crop Production 2013 Annual

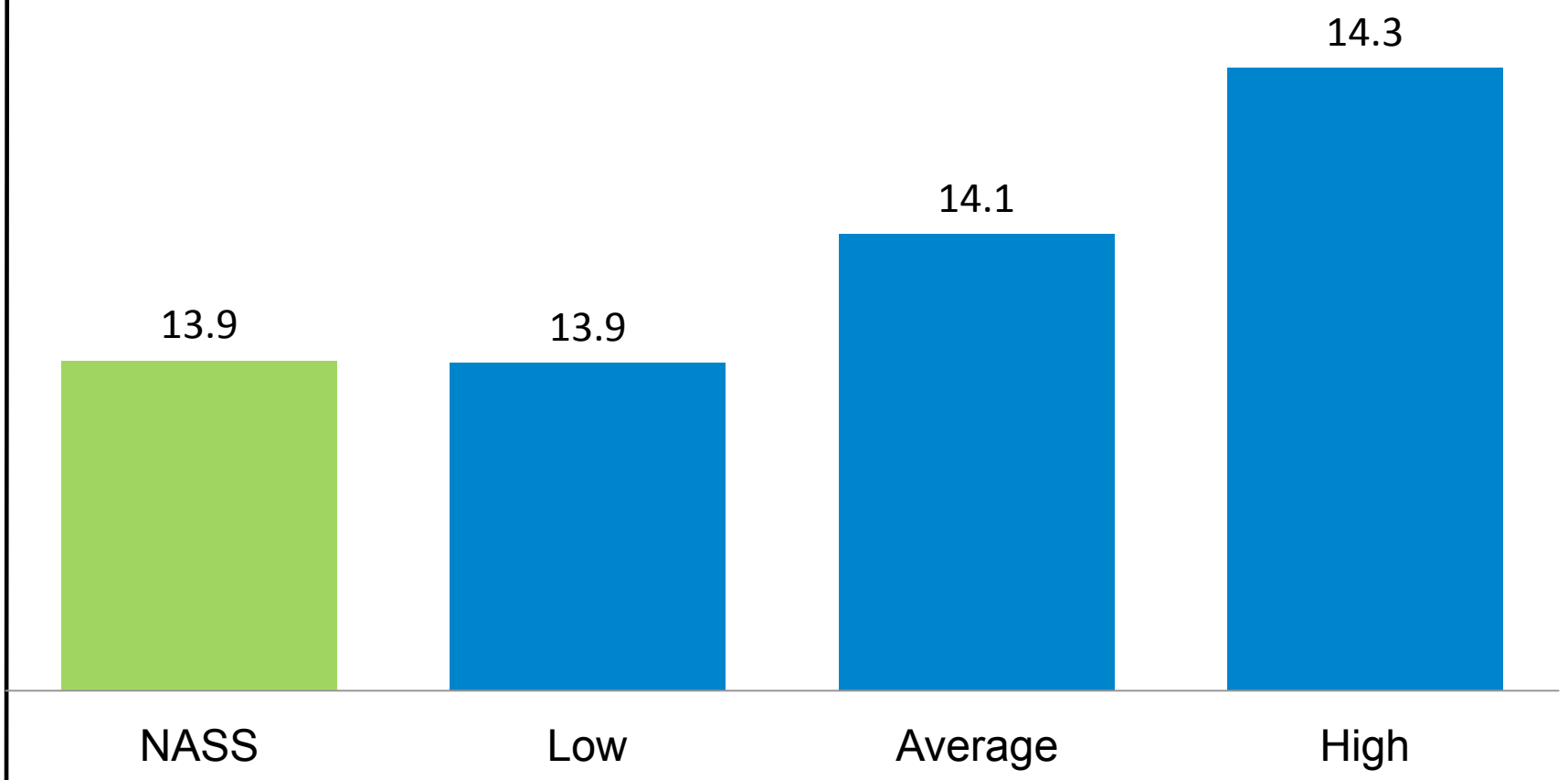
Crop	Unit	2013	% Change from Previous Forecast	% Change from Previous Season
Corn				
Planted	Mil Ac	95.4	+<0.1	-1.8
Harvested	Mil Ac	87.7	+0.5	+0.3
Yield	Bu/Ac	158.8	-1.0	+28.7
Production	Bil Bu	13.9	-0.5	+29.2
Dec Stocks	Bil Bu	10.4	---	+29.8

U.S. Corn Yield



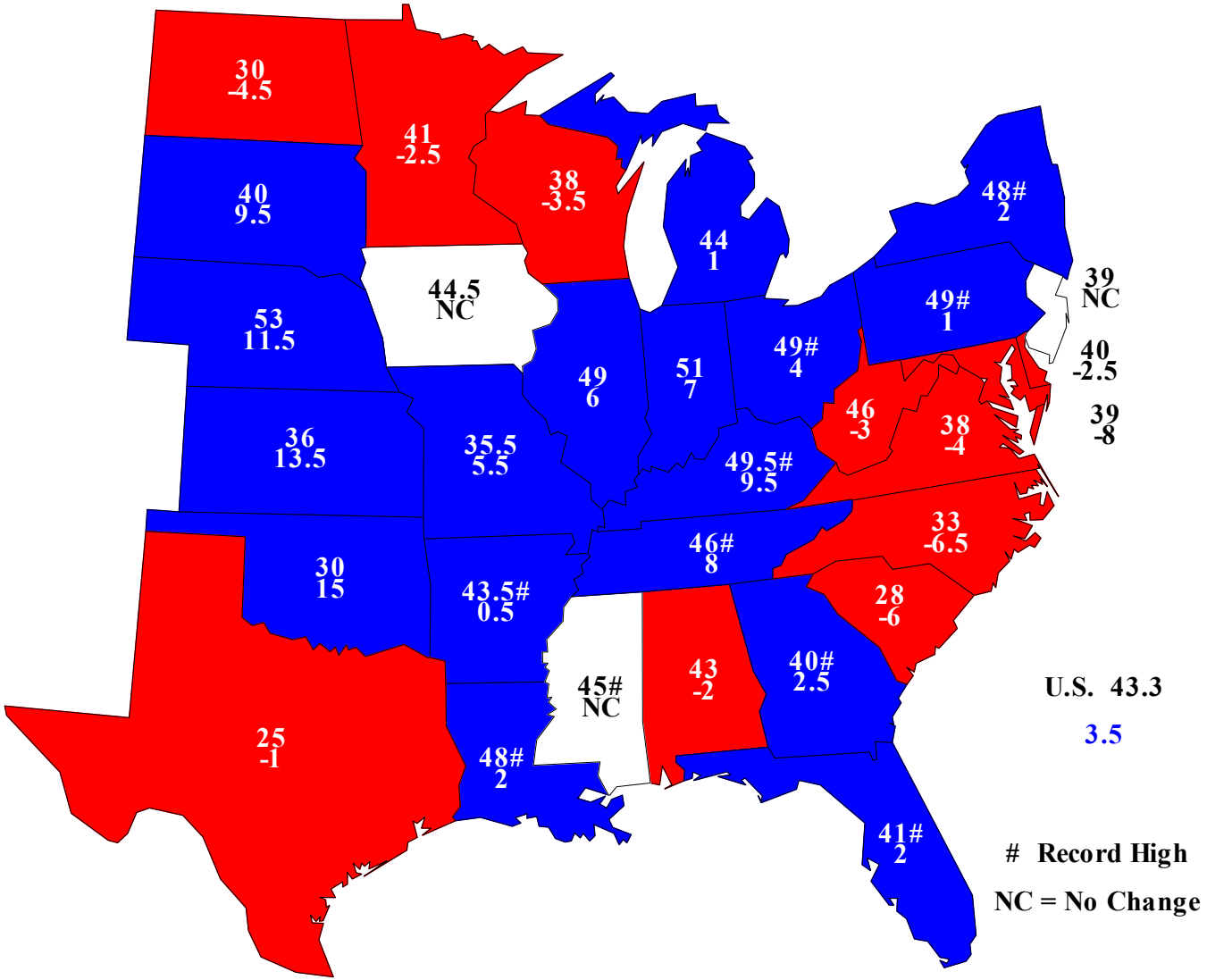
NASS Estimates vs. Expectations

Corn Production (Billion bushels)



Soybean Yields 2013

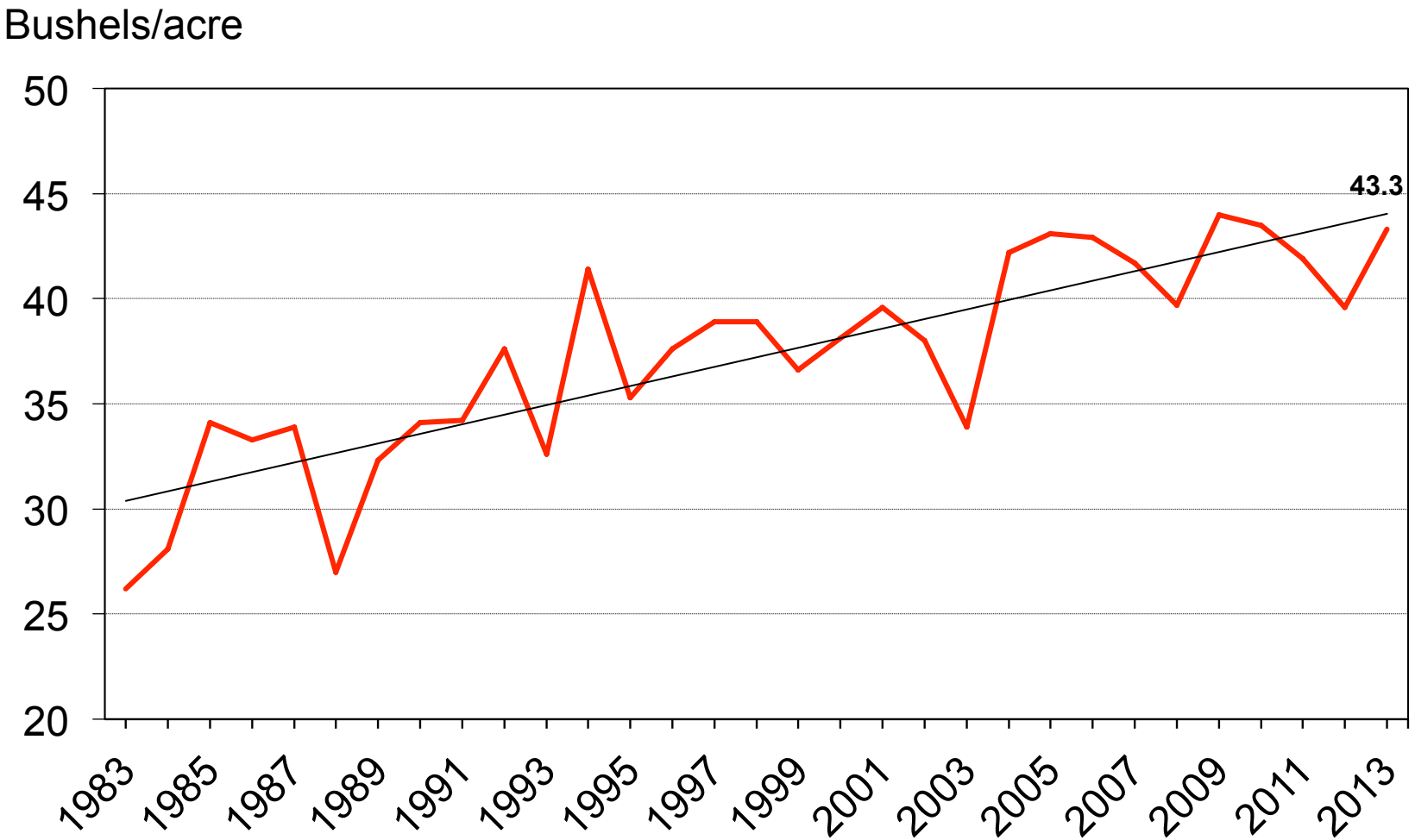
Bushels and Change From Previous Year



Crop Production 2013 Annual

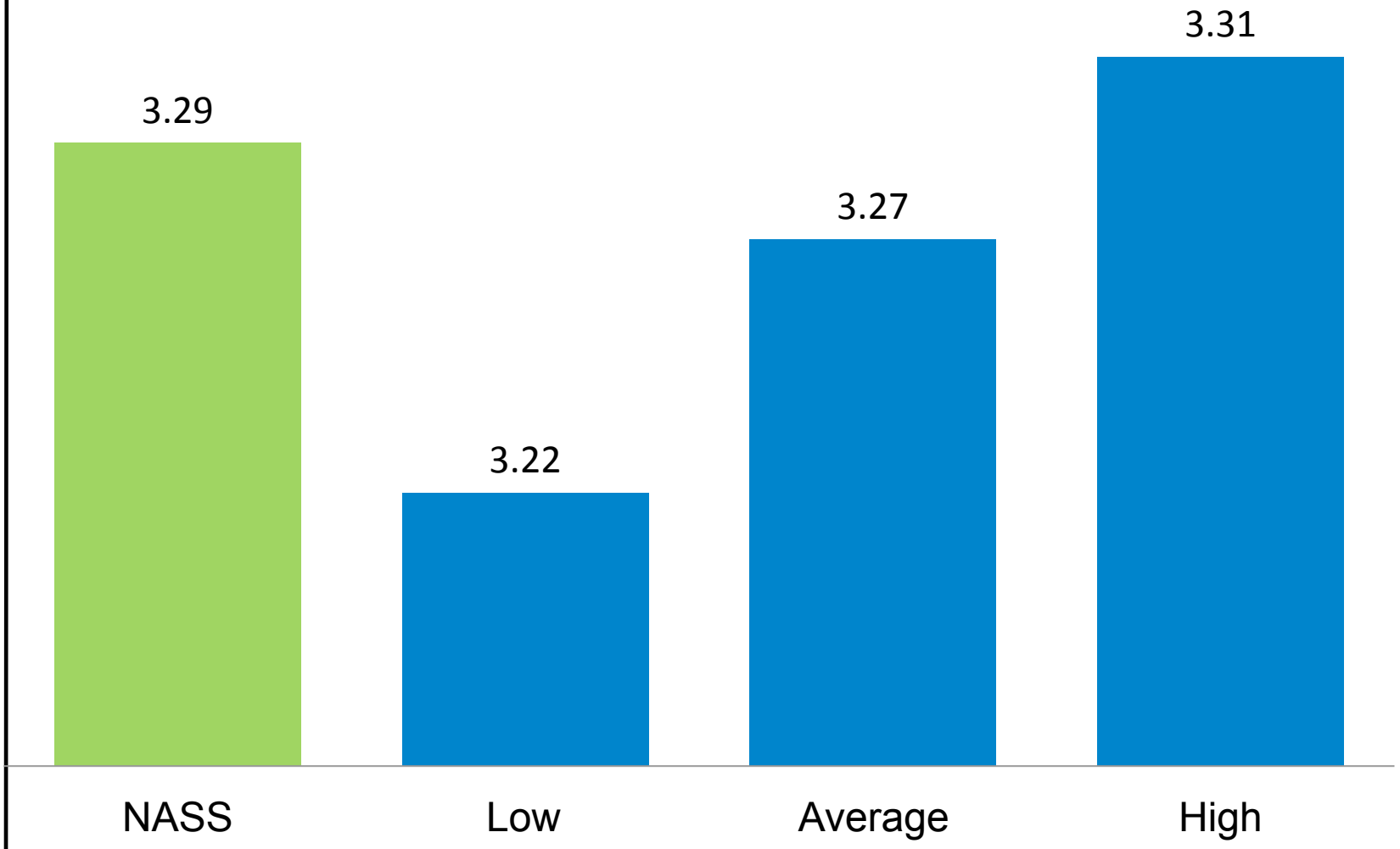
Crop	Unit	2013	% Change from Previous Forecast	% Change from Previous Season
Soybeans				
Planted	Mil Ac	76.5	+0.1	-0.9
Harvested	Mil Ac	75.9	+0.2	-0.4
Yield	Bu/Ac	43.3	+0.7	+8.8
Production	Bil Bu	3.29	+1.0	+8.4
Dec Stocks	Bil Bu	2.15	---	+9.2

U.S. Soybean Yield



NASS Estimates vs. Expectations

Soybean Production (Billion bushels)



CORN PRICE
Changes following Crop Production Reports[1]

Report	One Day After Report	One Week After Report
2003-2012 Crop Production	24 Increases Ave 12.9 cents/bu	27 Increases Ave 21.4 cents/bu
	3 No Change	0 No Change
	23 Decreases Ave -10.6 cents/bu	23 Decreases Ave -20.3 cents/bu
Total Reports	50	50

[1]Closing cash price for Southern Iowa #2 yellow corn

SOYBEAN PRICE
Changes following Crop Production Reports[1]

Report	One Day After Report	One Week After Report
2003-2012 Crop Production	27 Increases Ave 24.0 cents/bu	28 Increases Ave 37.1 cents/bu
	1 No Change	0 No Change
	22 Decreases Ave -21.9 cents/bu	22 Decreases Ave -43.4 cents/bu
Total Reports	50	50

[1]Average price paid at Southern Iowa points by processors

How Does NASS Work For You?

By Providing Information that:

- You can use to refine your marketing plan, make better decisions,& levels the playing field for you
- You can use in your land rental agreements
- You can use to promote or defend agriculture
- Is used to administer the crop insurance and farm programs
- Allows your input suppliers to deliver services to you more efficiently
- Your elected officials use to make decisions

In Conclusion……

- Information allows producers to make better decisions and makes markets more efficient
- NASS mission is to provide information
- NASS forecasts/estimates based on survey data **-only possible with the cooperation of farmers**
- Confidentiality and Security – taken seriously
- NASS statistics are available to all
- Everyone gets the same results at the same time
- Used extensively throughout the industry

NASS Reports Available at:

- **www.nass.usda.gov**

Or Contact:

- NASS Wisconsin Field Office

(800) 789-9277

nass-wi@nass.usda.gov