



Early Season Remote Sensing Based Acreage Estimates

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Pecora 17 Conference

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Cropland Data Layer (CDL)

- Annual ag-centric land use/land cover update
 - Statistically driven
 - Census by Satellite
- Major program crop focus
 - Updated multiple times throughout growing season
- Deliver in-season acreage estimates
 - Via continuously updated ground truth
 - Via continuously updated satellite imagery



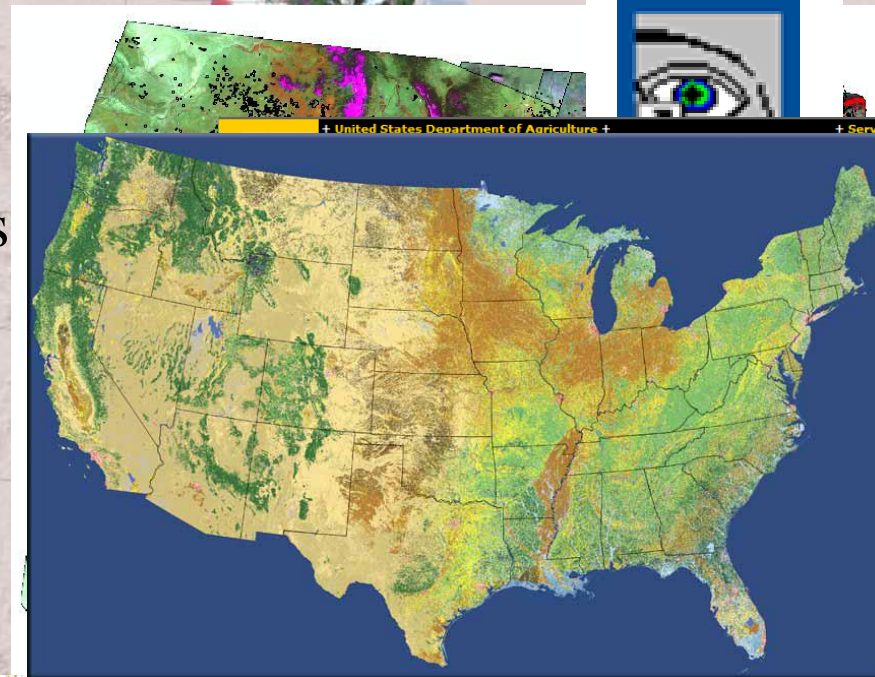
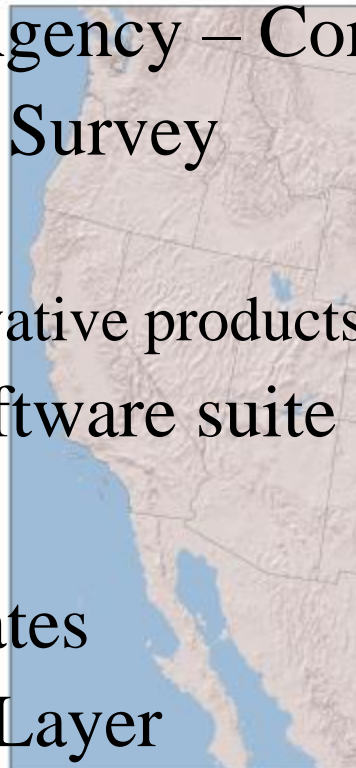
CDL Program

- Inputs

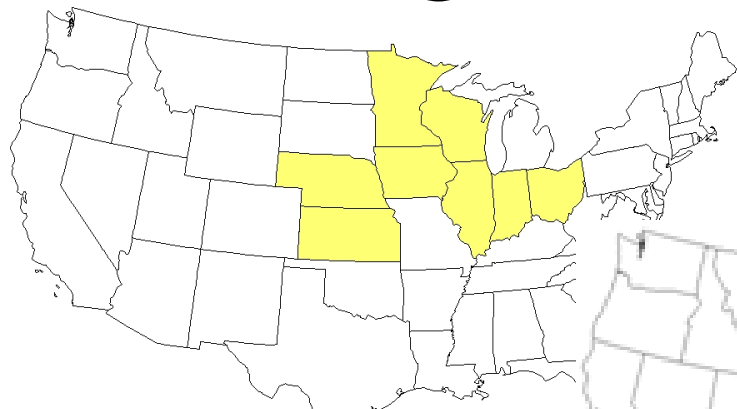
- Resourcesat-1 AWiFS imagery
- Farm Service Agency – Common Land Unit
- NASS June Ag Survey
- Ancillary data
 - NLCD & derivative products
- Commercial software suite

- Outputs

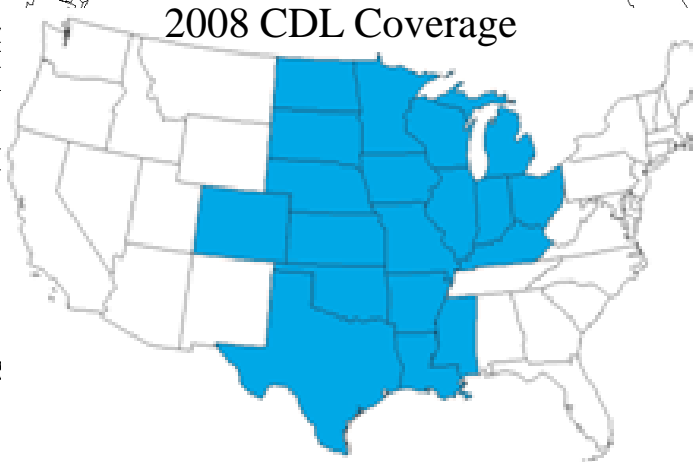
- Acreage Estimates
- Cropland Data Layer



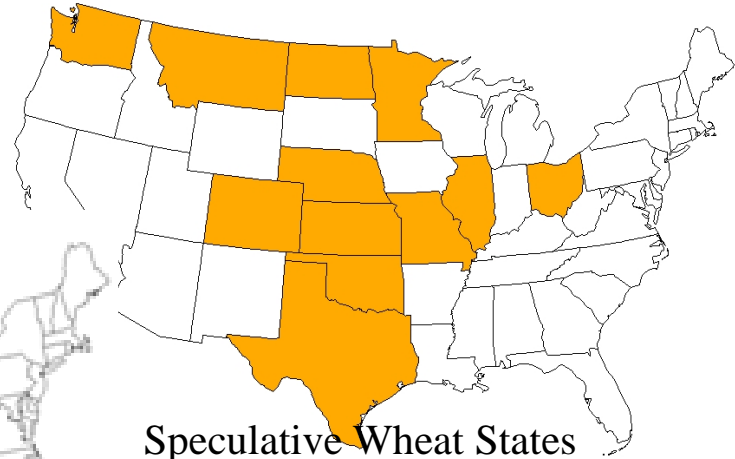
CDL Program Priorities



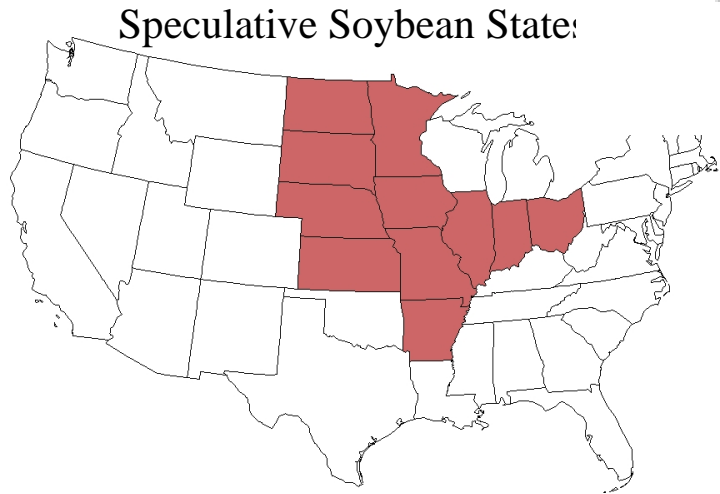
Speculative Corn States



2008 CDL Coverage



Speculative Wheat States



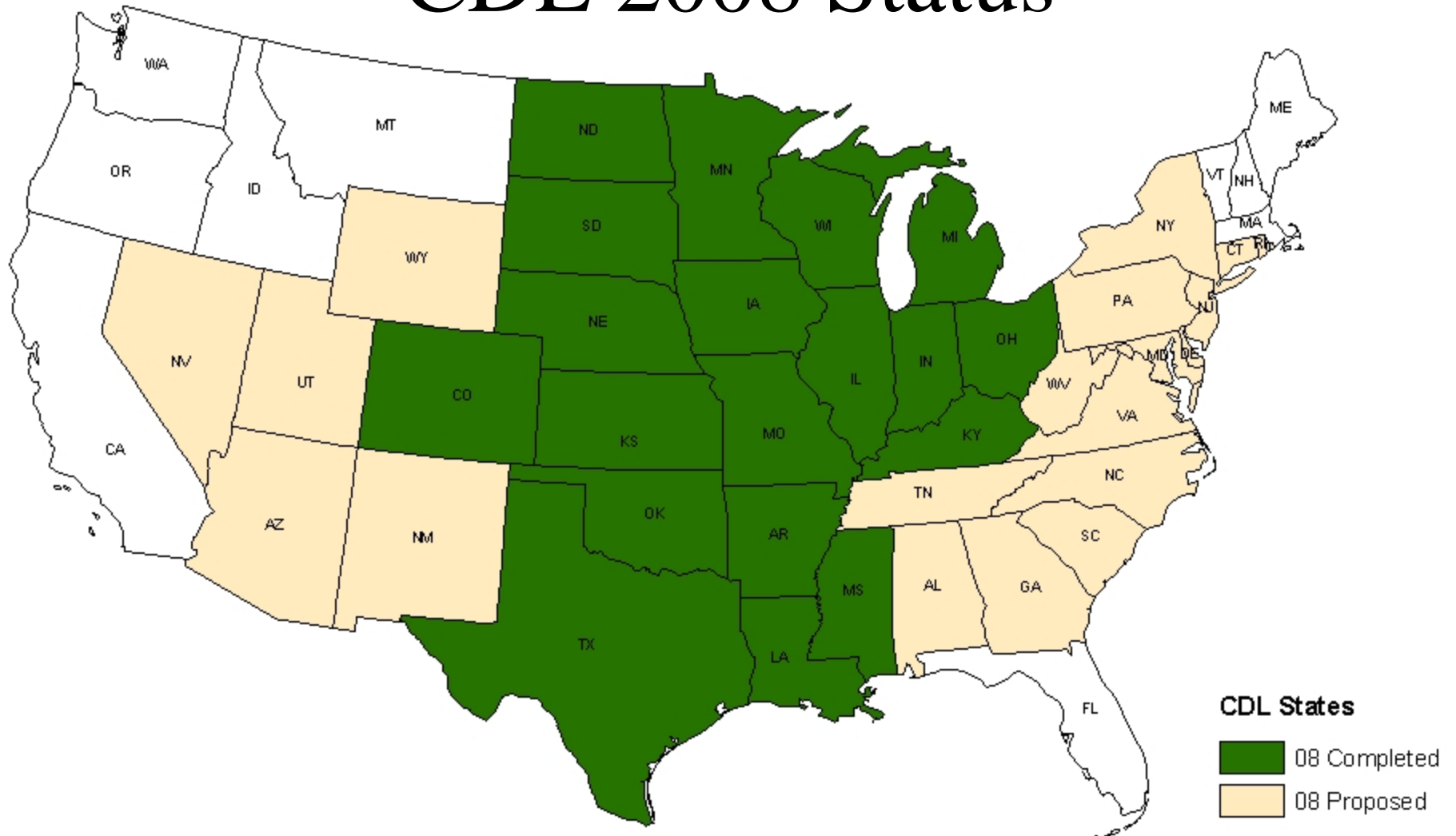
Speculative Soybean State:



Speculative Cotton States



CDL 2008 Status



Current CDL Coverage

Commodity	CDL States	US Total Acres (mill)	% US Total
Corn	18	78,177	92
Soybeans	18	74,374	91
Cotton	14	7,755	66
Wheat	13	40,252	70
Rice	5	2,924	82



CDL States and Commodities

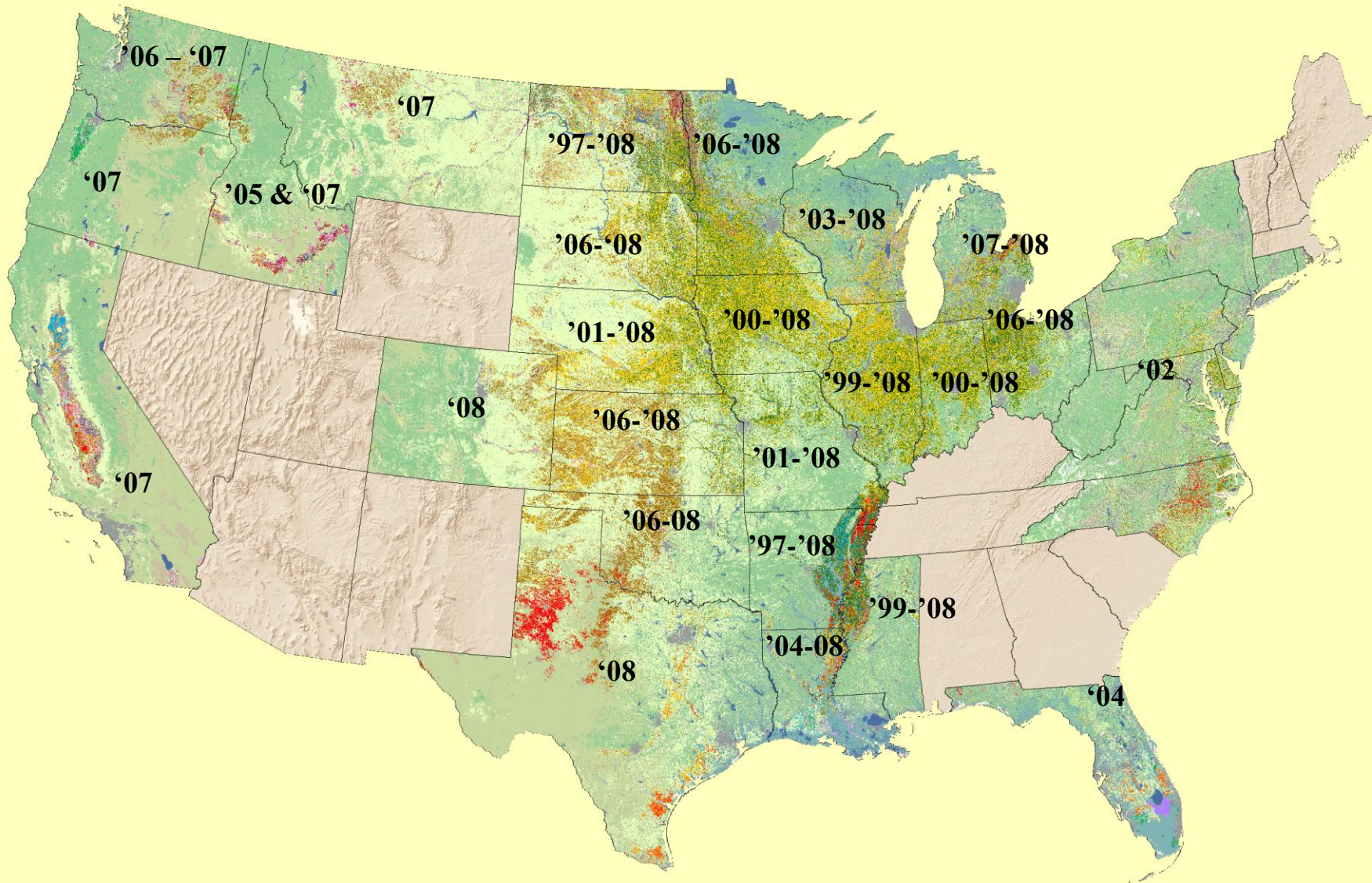
REMOTE SENSING ACREAGE ESTIMATION PROGRAM

Crops Arranged According to US Value of Production - left to right

State	Corn	Soybeans	Winter Wheat	Cotton	Spring Wheat	Rice	Sorghum	Sugar-beets	Sugar-cane	Durum Wheat	Dry Beans	Sunflower	Canola	Alfalfa
Arkansas	X	X	X	X		X								
Colorado	X		X											
Illinois	X	X	X											
Indiana	X	X	X											
Iowa	X	X												
Kansas	X	X	X				X							
Kentucky	X	X	X											
Louisiana	X	X	X	X		X			X					
Michigan	X	X	X								X			
Minnesota	X	X			X			X						
Mississippi ¹	X	X	X	X		X	X							
Missouri	X	X	X	X		X								
Nebraska	X	X	X											
North Dakota	X	X			X			X		X	X	X	X	
Ohio	X	X	X											
Oklahoma	X		X				X							
South Dakota	X	X	X		X									
Texas	X		X	X			X							
Wisconsin	X	X												X



Cropland Data Layers 1997 - 2008



CDL Program Estimation

- **State level/large domain**

- Classification accuracy
- Apply regression equations to population level classified pixel counts within area frame land use strata
- Sum across strata

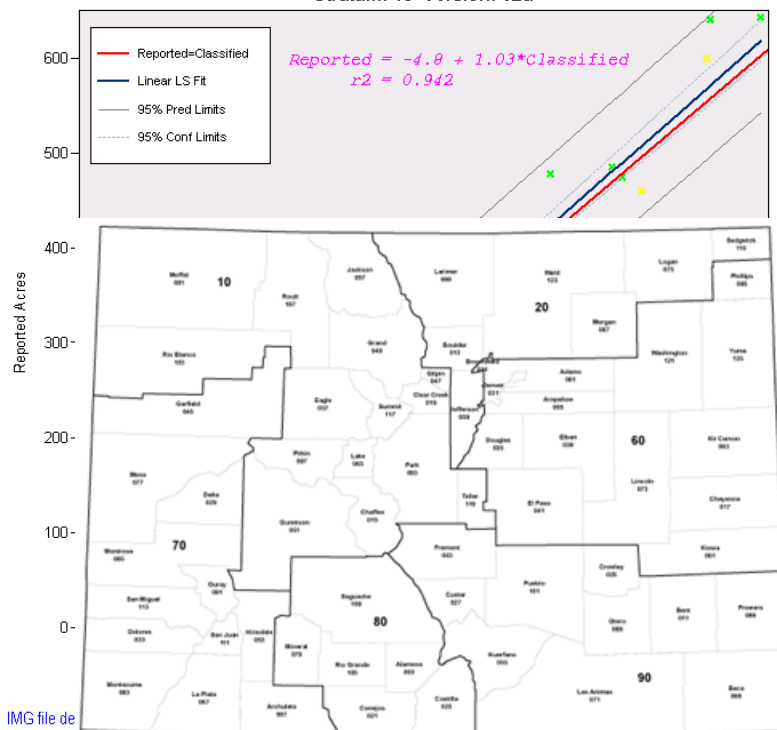
- **County level/small domain**

- Battese-Fuller approach
 - Incorporate an additional term that accounts for co
- Pixel count ~ biased
 - Not subject to sampling error ~ census
 - Nonsampling error due to pixel misclassification

- **Provide timely, accurate, useful indications**

- Measurable error
- Unbiased/independent estimator
- Update planted area

State: CO08 AD: 00 Crop: Wht_Wintr_PL
Stratum: 13 Version: v2a

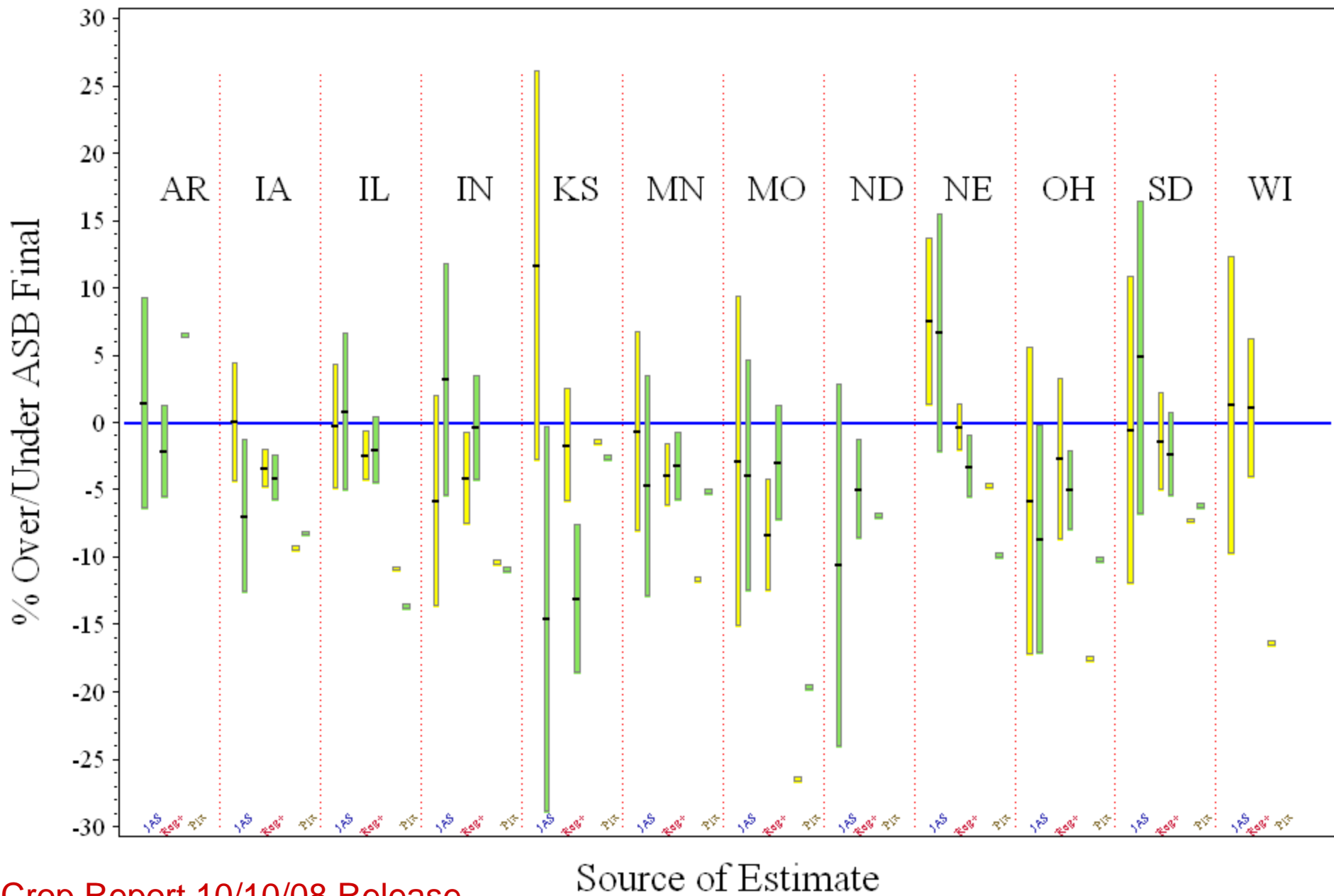


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2008 State Level Estimates +/- 2% CVs

Corn Soybeans



USDA Corrects October Crop Acreage Estimates

WASHINGTON, Oct 28, 2008 – The U.S. Department of Agriculture today adjusted its official October acreage and production estimates for six field crops. USDA revised the numbers after discovering discrepancies in a Farm Service Agency (FSA) database of producer-reported crop acreage used by the National Agricultural Statistics Service (NASS). NASS published the changes this morning in a corrected version of the Oct. 10 *Crop Production*. The World Agricultural Outlook Board also issued an abbreviated *World Agricultural Supply and Demand Estimates* (WASDE) report reflecting the acreage updates.

This morning's crop report includes changes to acreage and production estimates for corn, soybeans, sorghum, canola, sunflowers and dry edible beans. The revisions will have no impact on crop support payments to farmers.

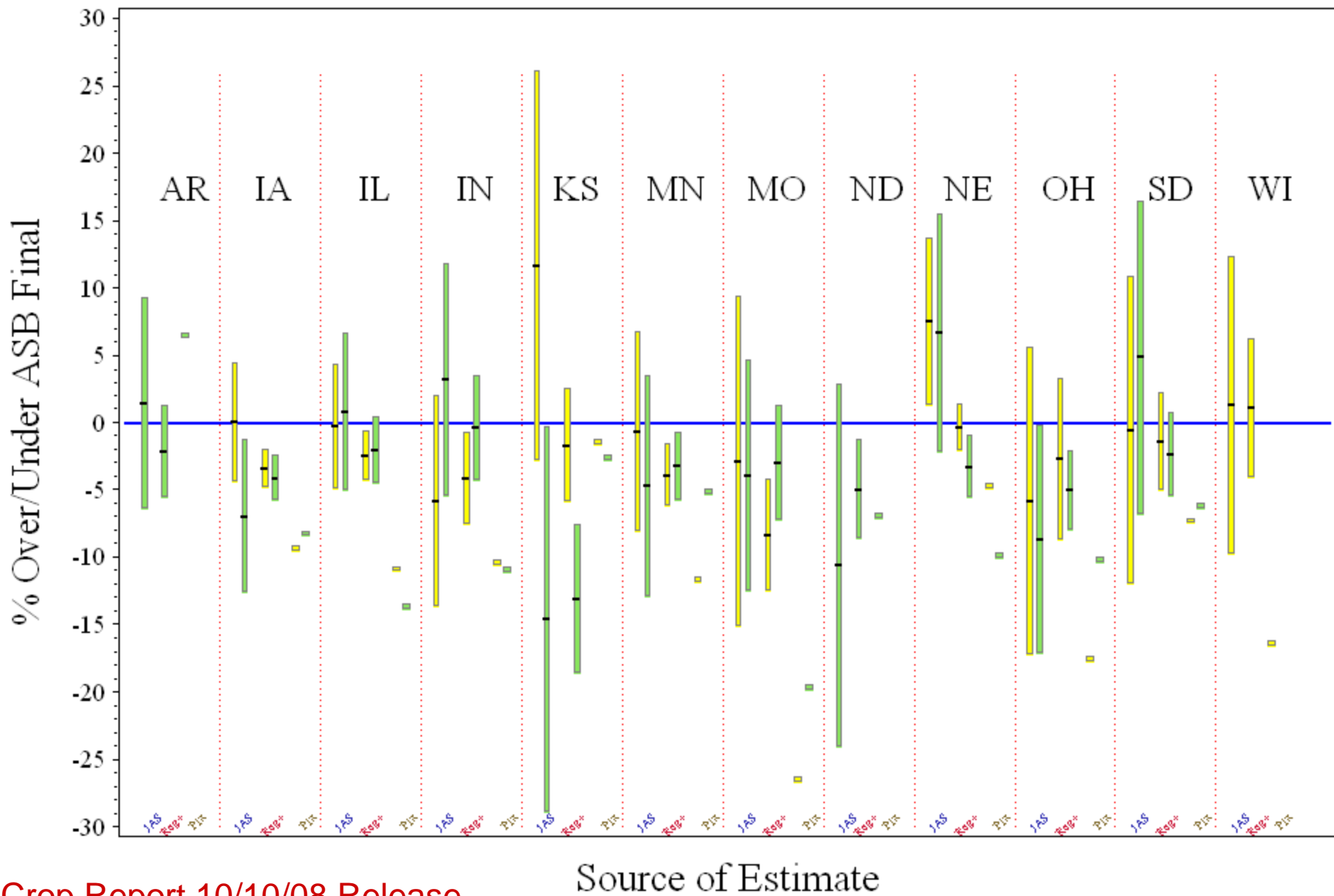
Overstated soybean acres by 1.1 million acres
Overstated corn acres by 800,000 acres
Overstated canola, sunflowers & dry edible beans
Understated sorghum acres by 200,000 acres

http://www.nass.usda.gov/Newsroom/2008/10_28_2008.asp



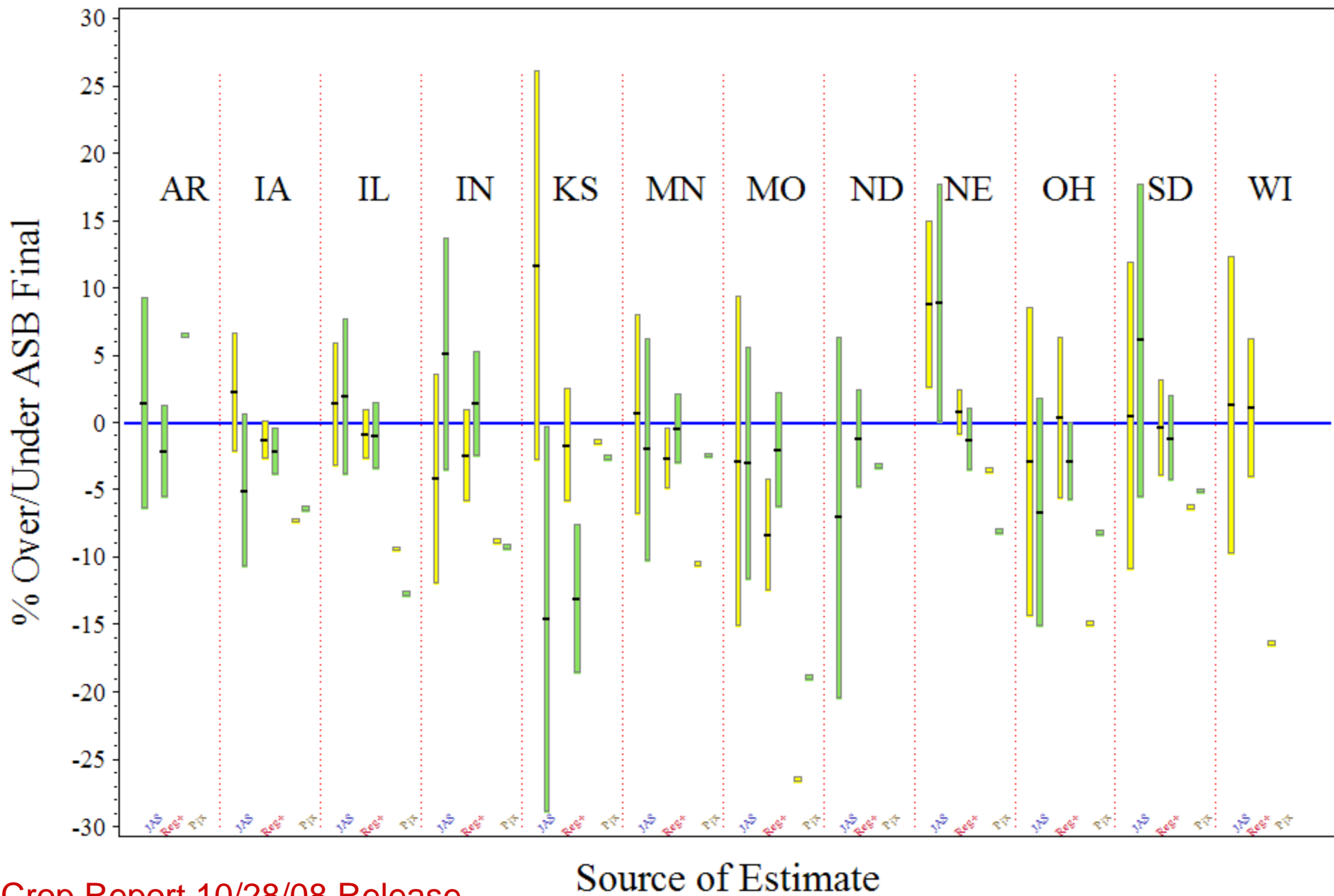
2008 State Level Estimates +/- 2% CVs

Corn Soybeans



2008 State Level Estimates +/- 2% CVs

■ Corn
 ■ Soybeans



CDL Summary

- Statistically robust program method
- Annual ag-centric land use/land cover update
- Major program crop focus
- Derive in-season acreage estimates

- Available via Geospatial Data Gateway
 - Post official county estimates release



Thank you!

