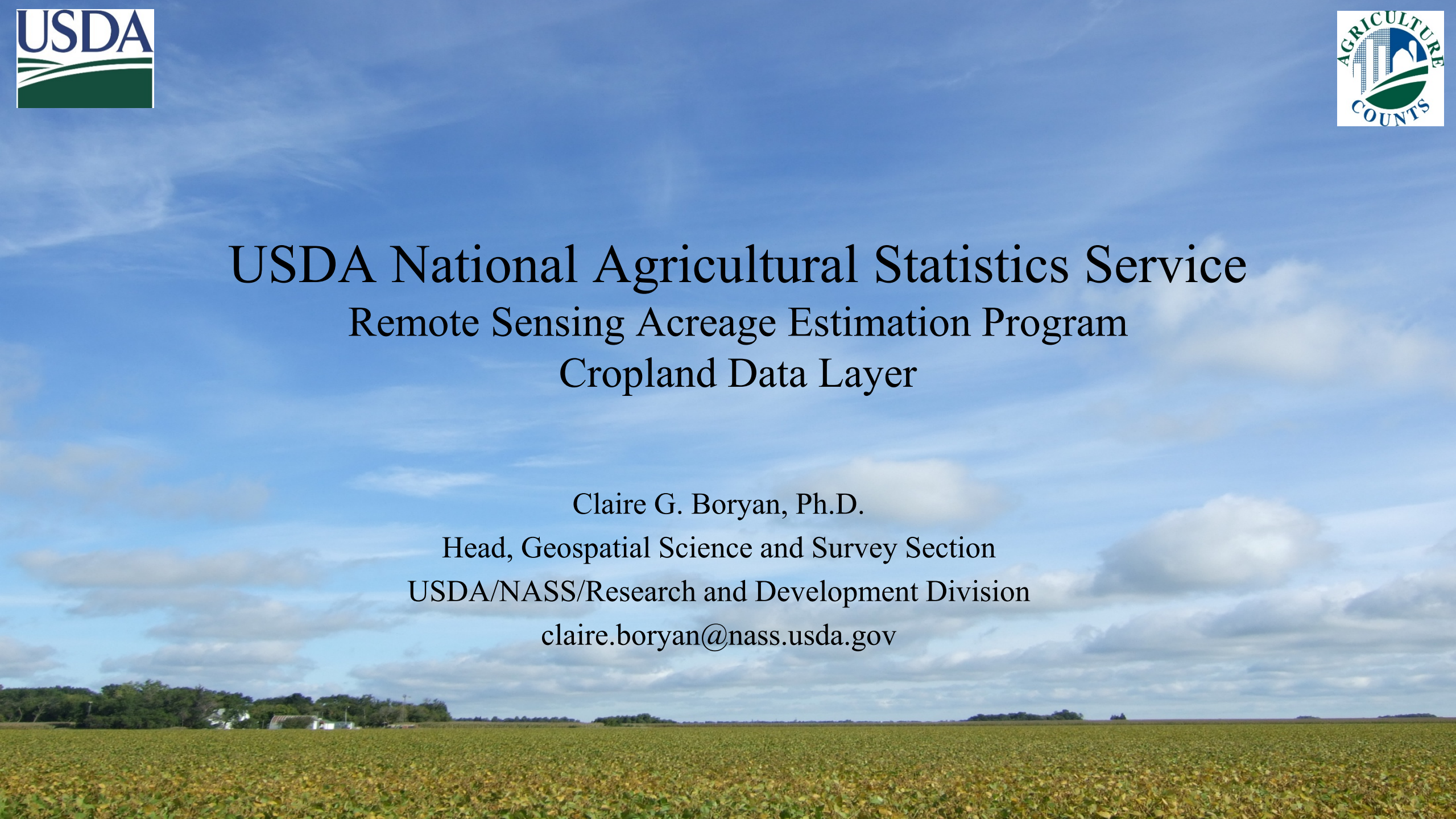

USDA National Agricultural Statistics Service

Remote Sensing Acreage Estimation Program

Cropland Data Layer

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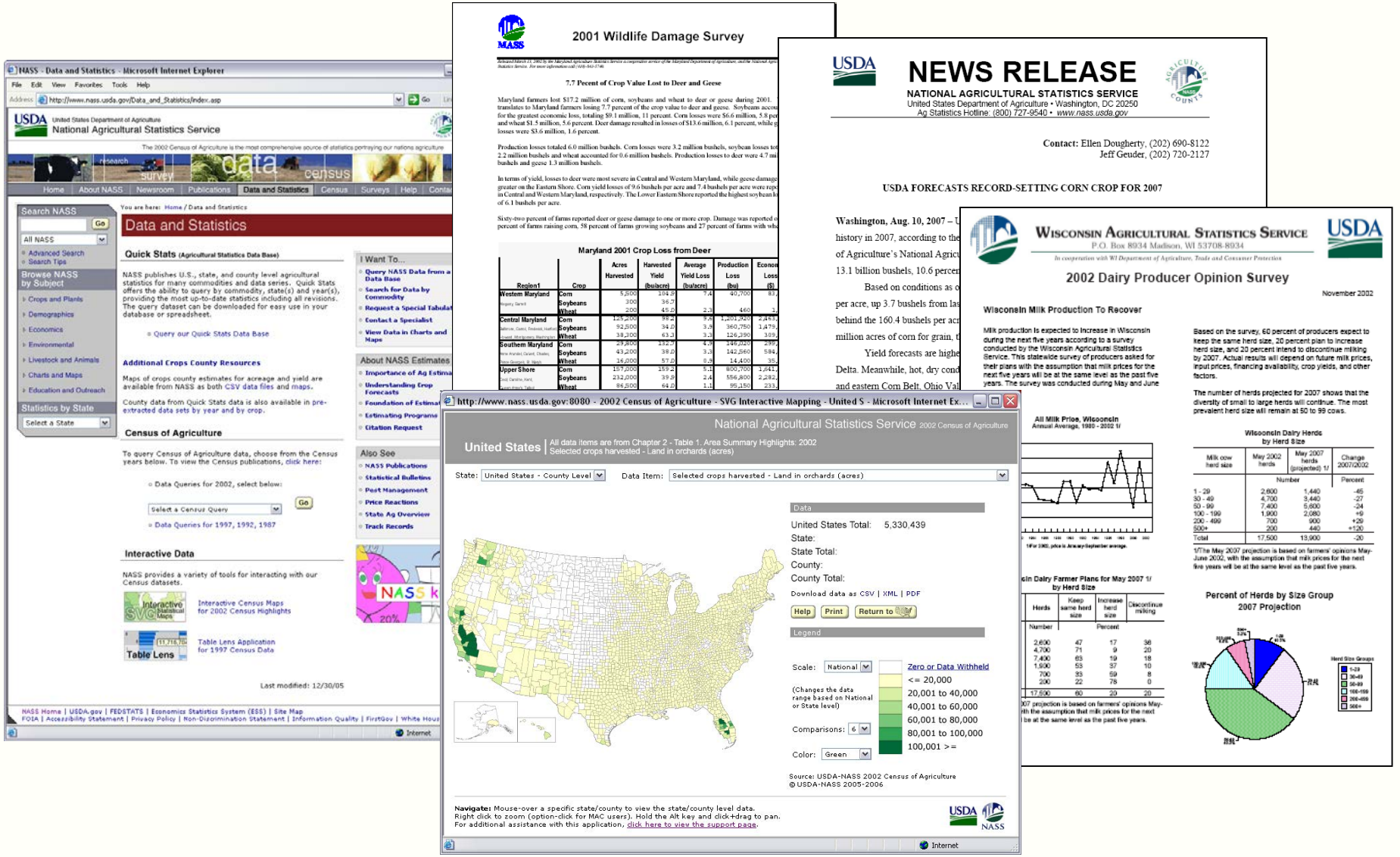
NASS Overview

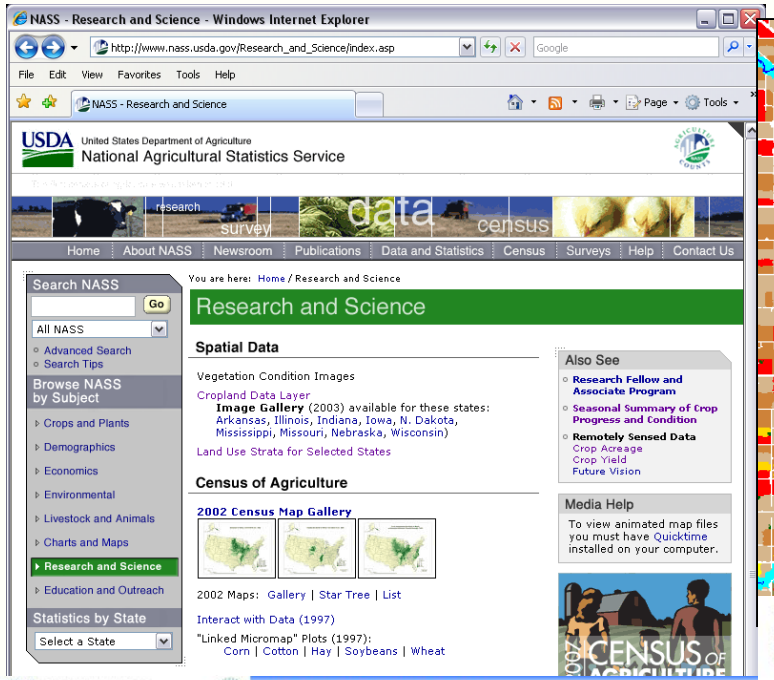
Provider of timely, accurate, and useful statistics in service to U.S. agriculture

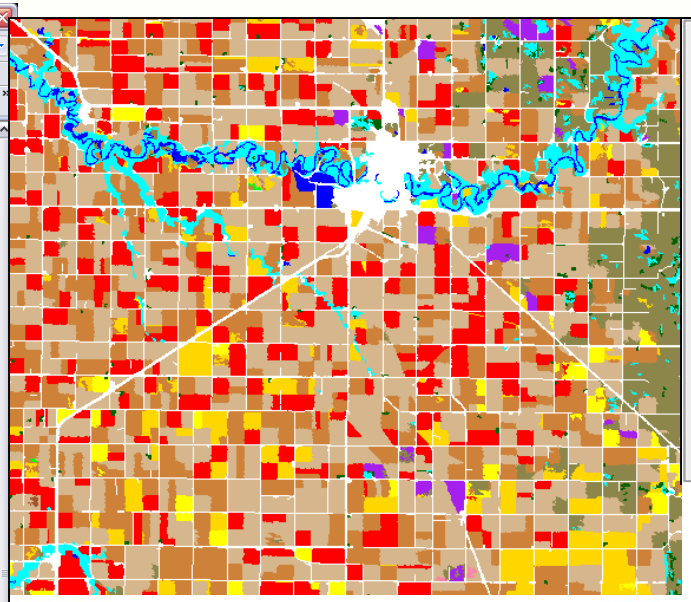


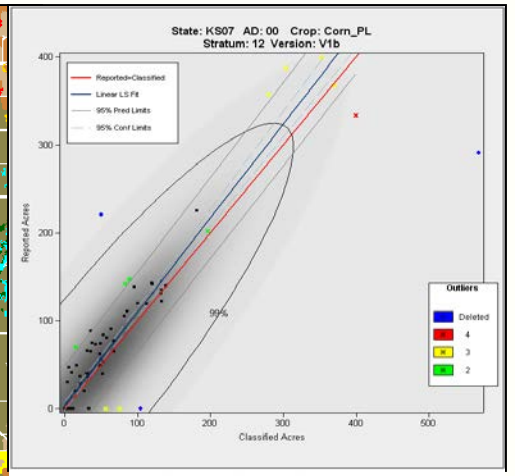
Research and Development Division

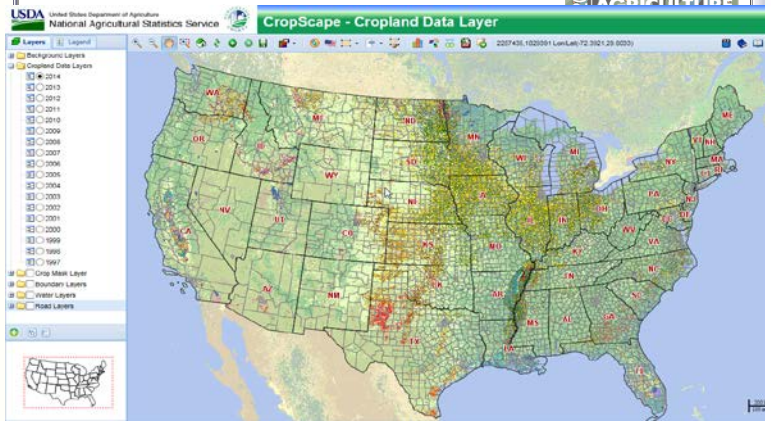
Spatial Analysis Research Section

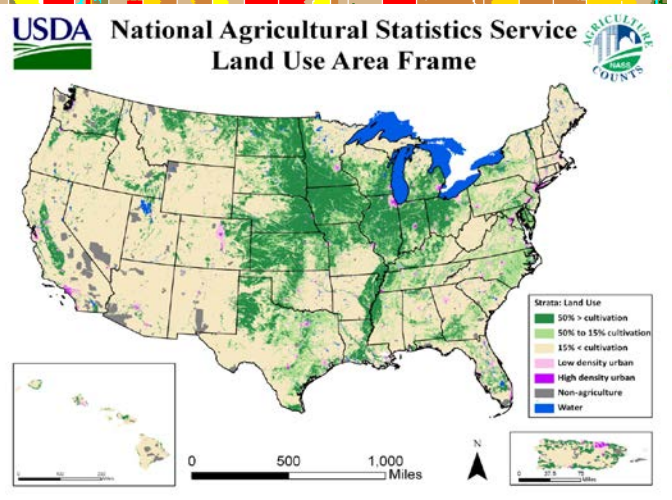
Geospatial Science and Survey Section

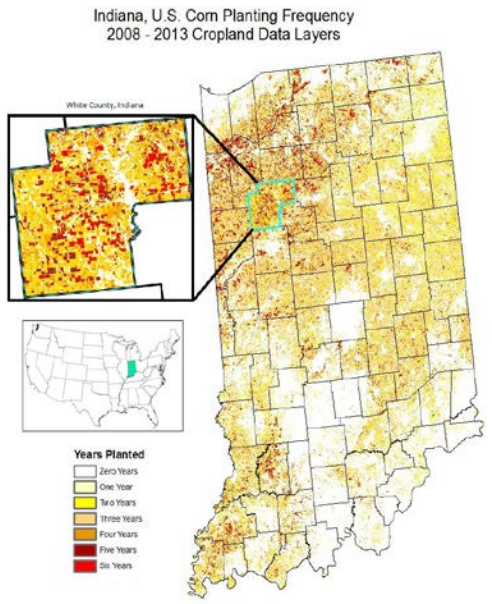








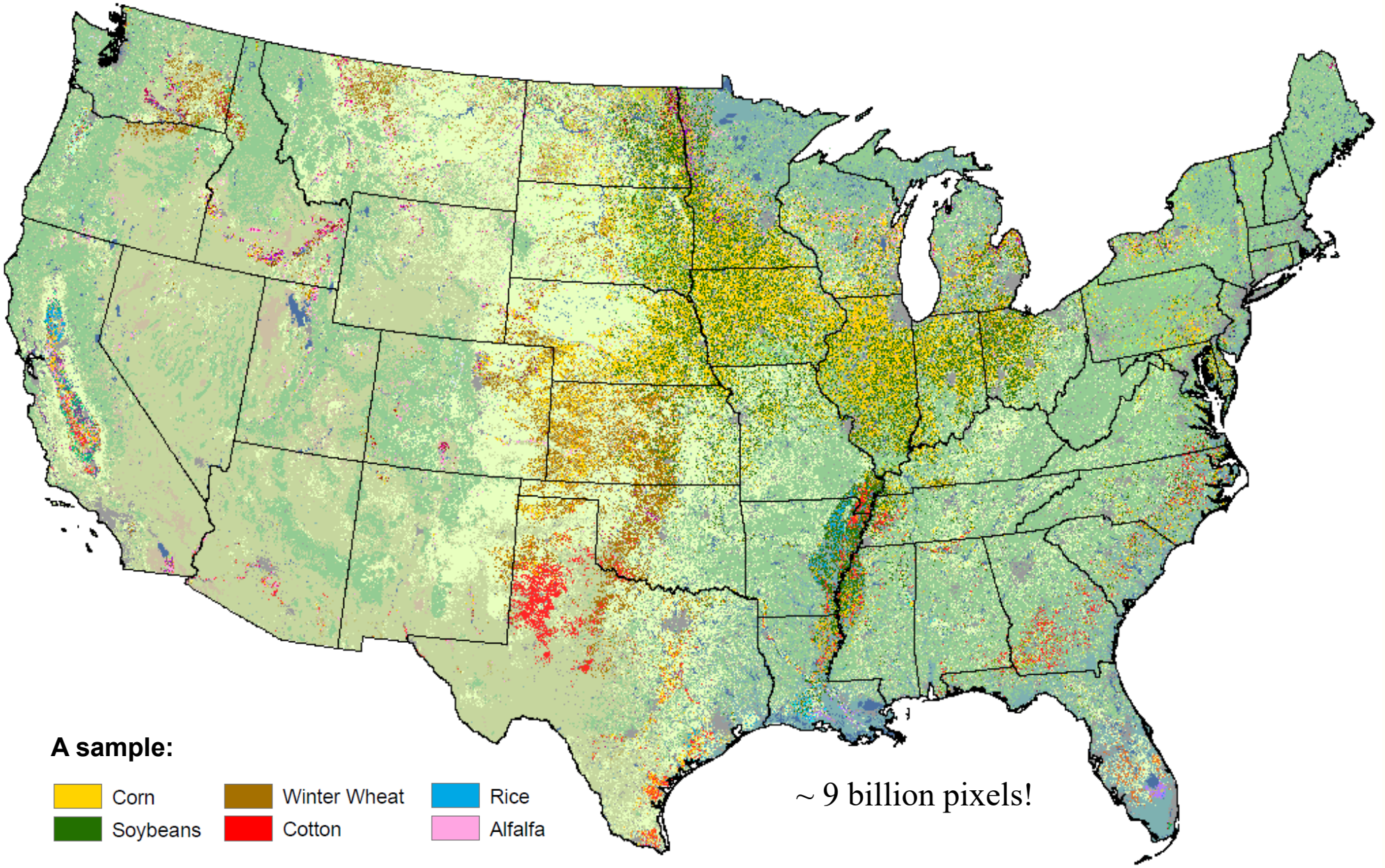




Remote Sensing Acreage Estimation Program Objectives

- **“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!

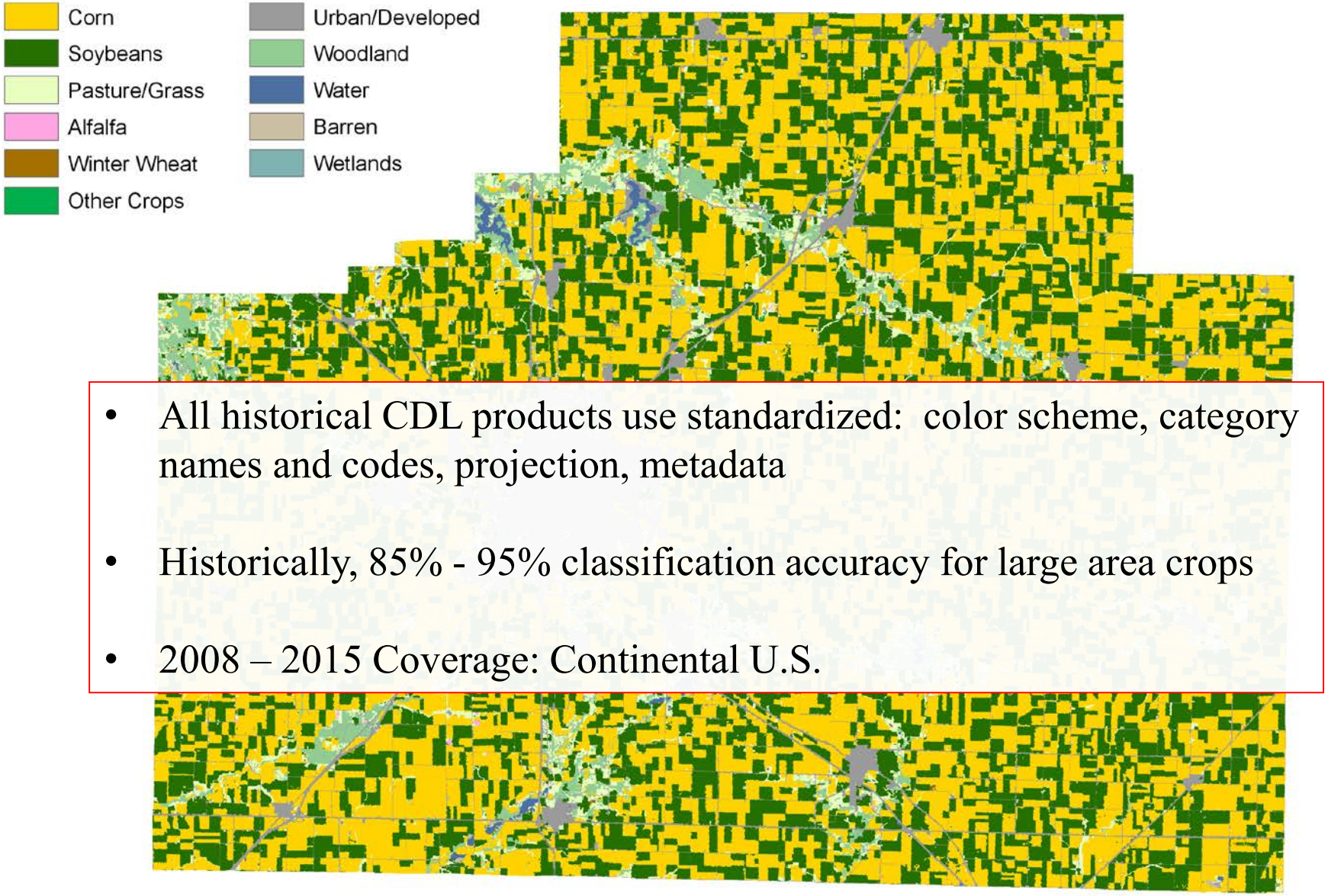
Cropland Data Layer



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. Vegs. & 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		Dbl. 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			

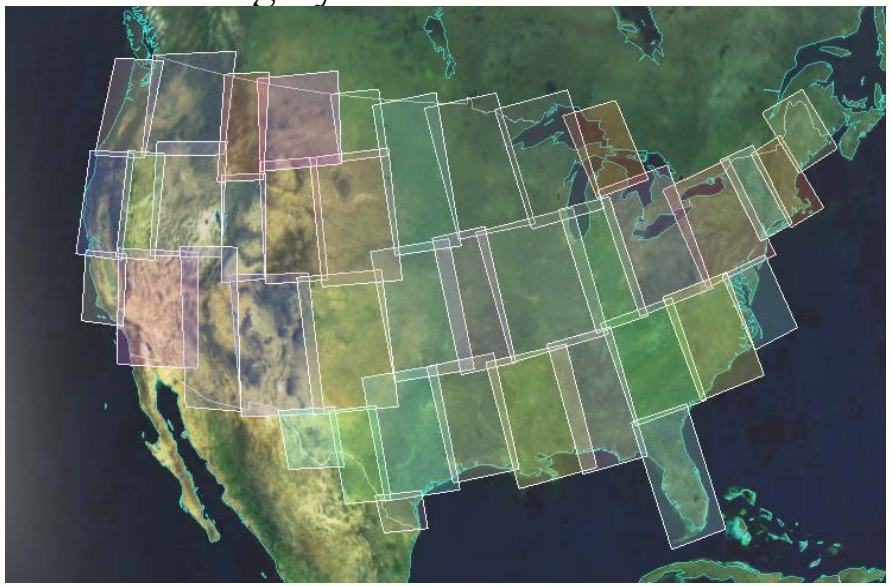
Cropland Data Layer
McLean County, Illinois



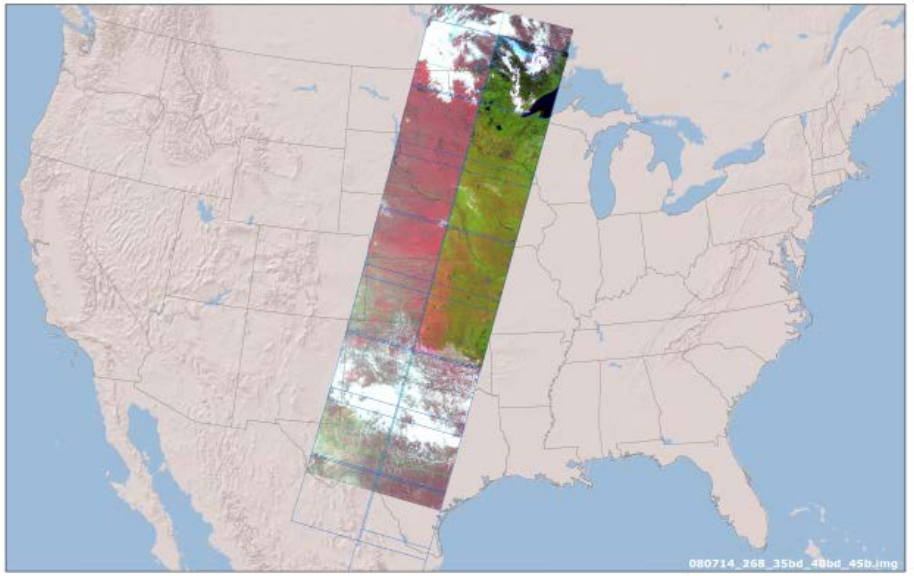
- All historical CDL products use standardized: color scheme, category names and codes, projection, metadata
- Historically, 85% - 95% classification accuracy for large area crops
- 2008 – 2015 Coverage: Continental U.S.

2016 Cropland Data Layer Inputs

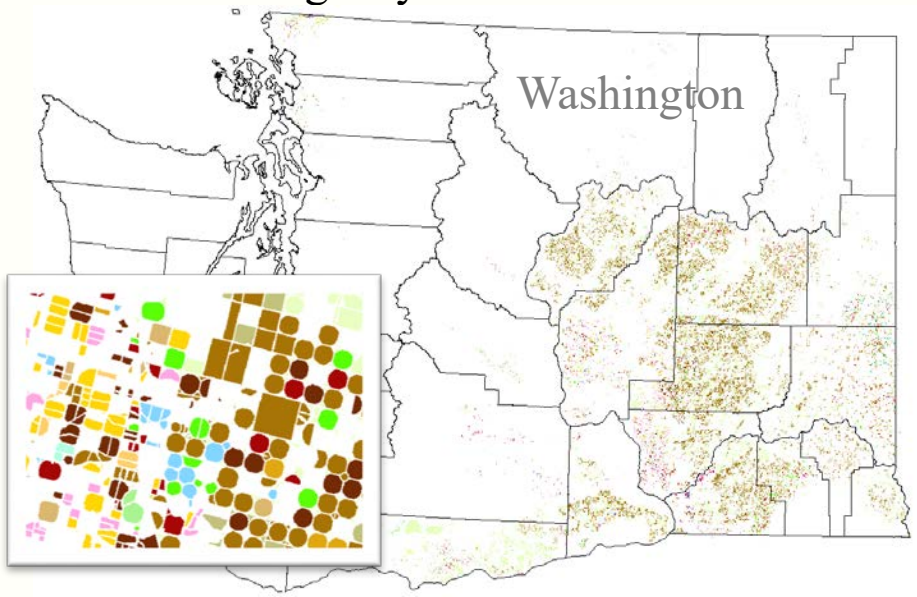
Satellite Imagery – Deimos & UK2



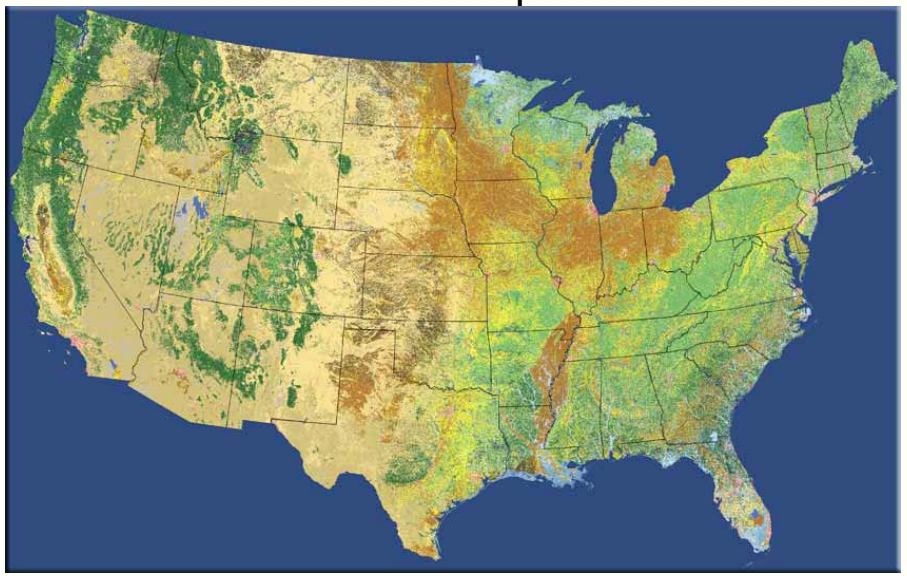
Satellite Imagery – Landsat 8



Farm Service Agency: Common Land Unit



2011 NLCD & Derivative products



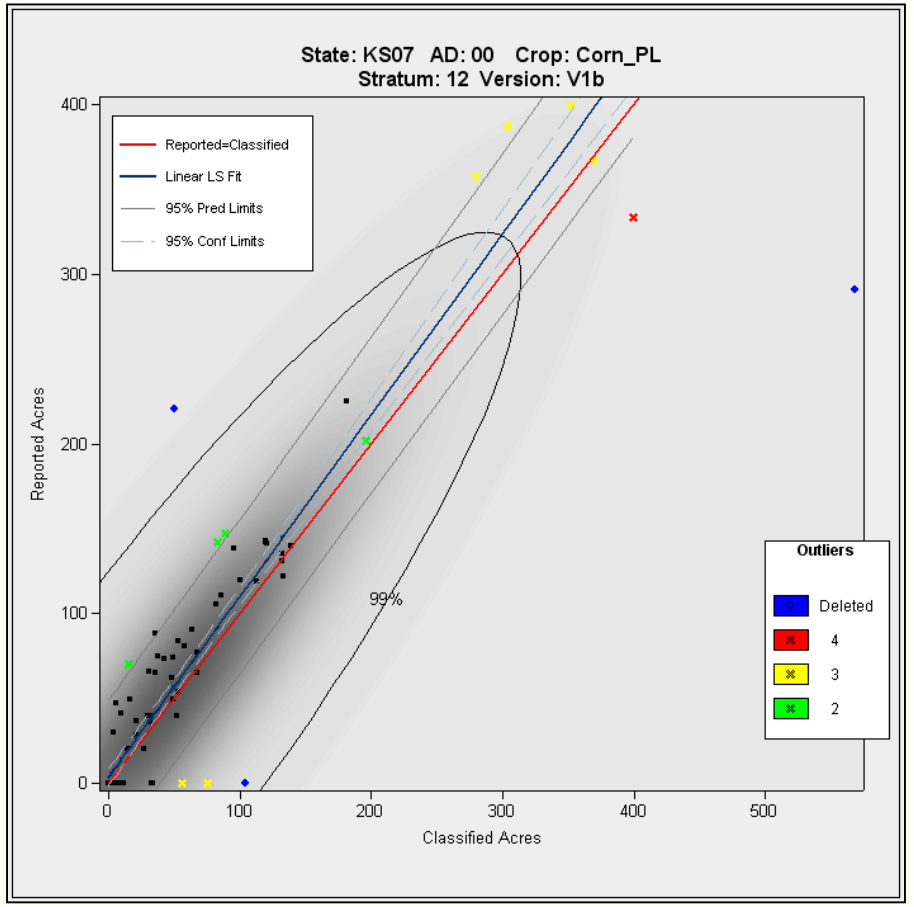
Regression-based Acreage Estimator

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**

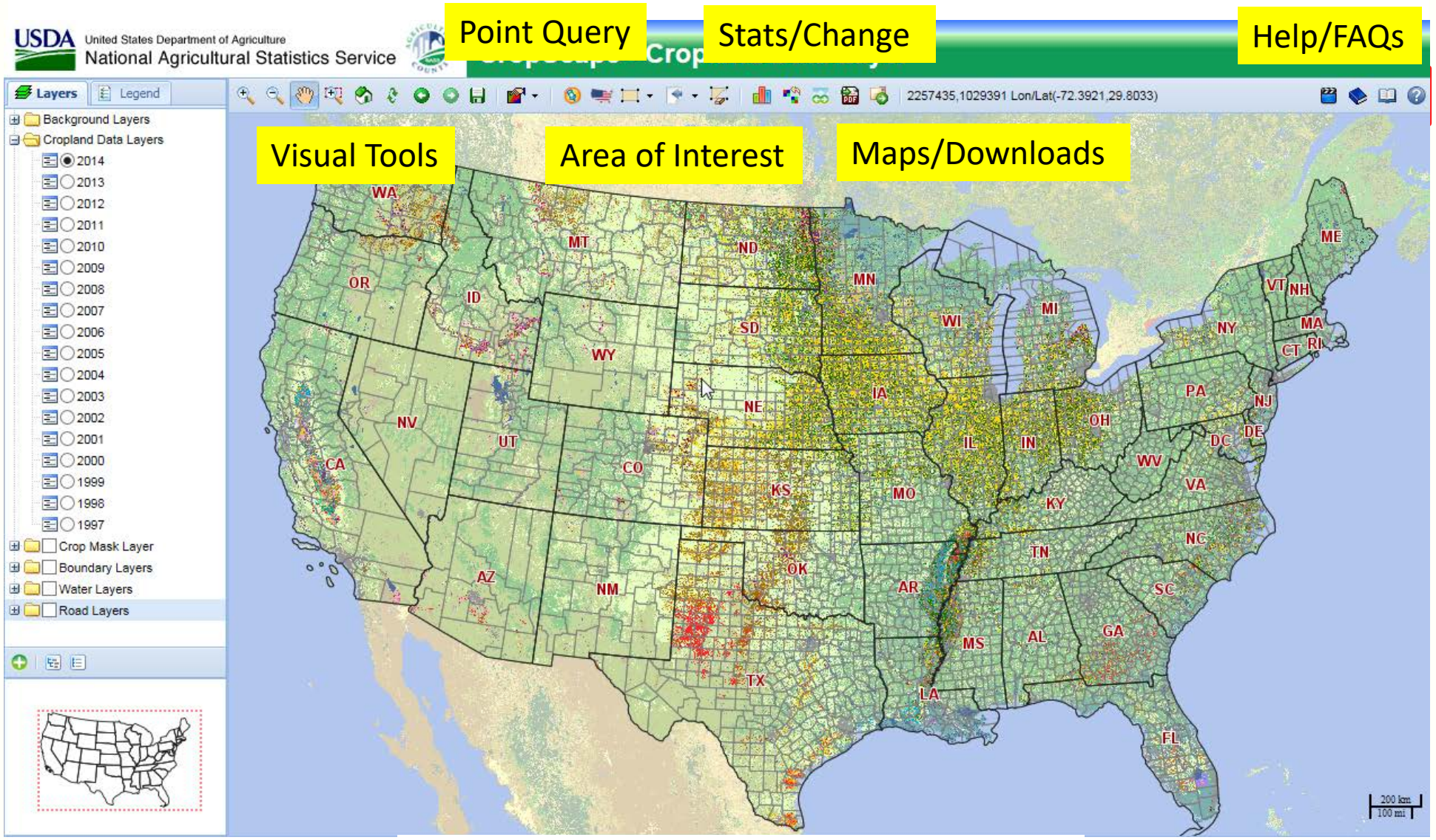
Using both CDL and JAS acreage results in estimates with reduced error rates over JAS alone

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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