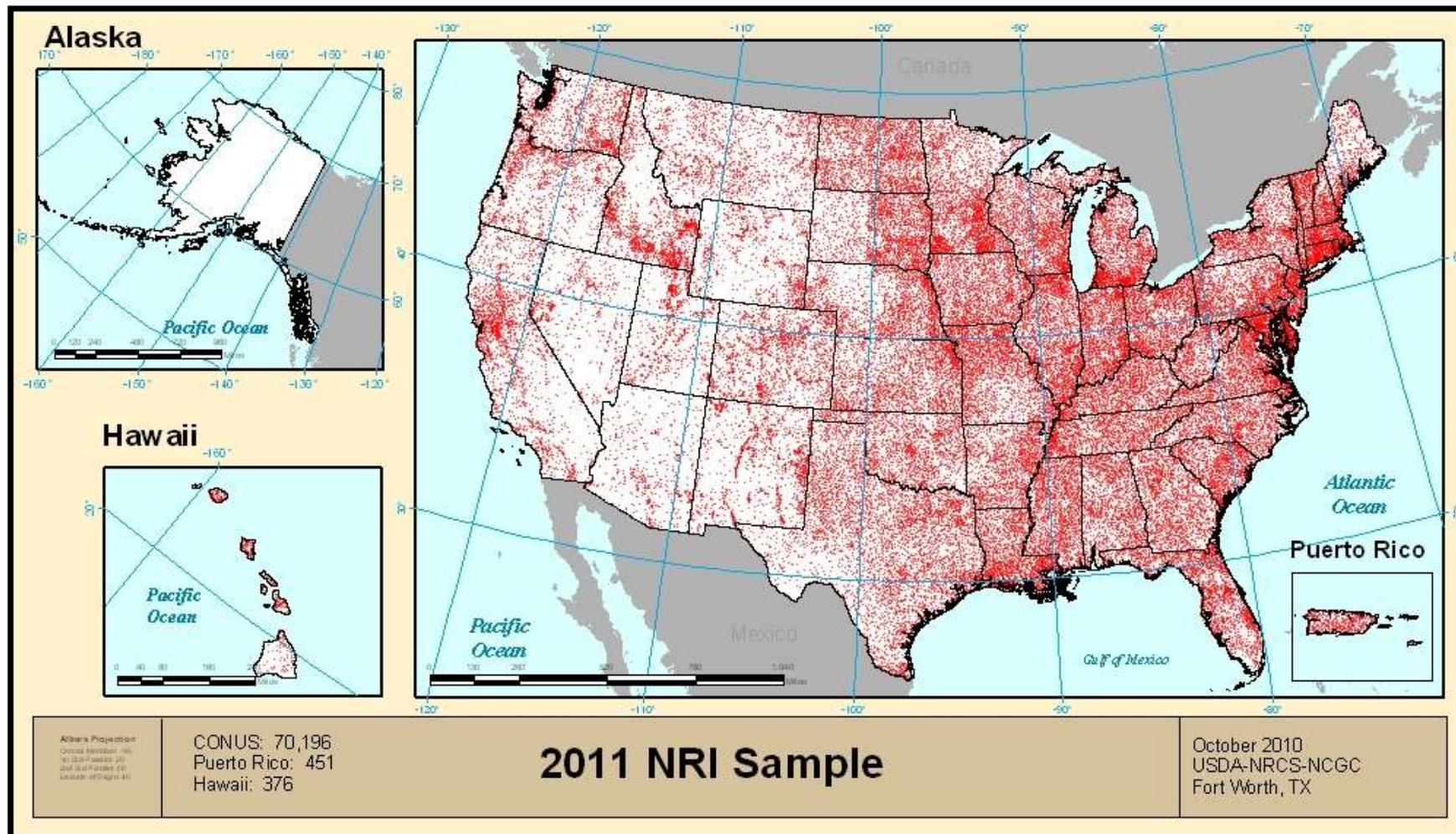


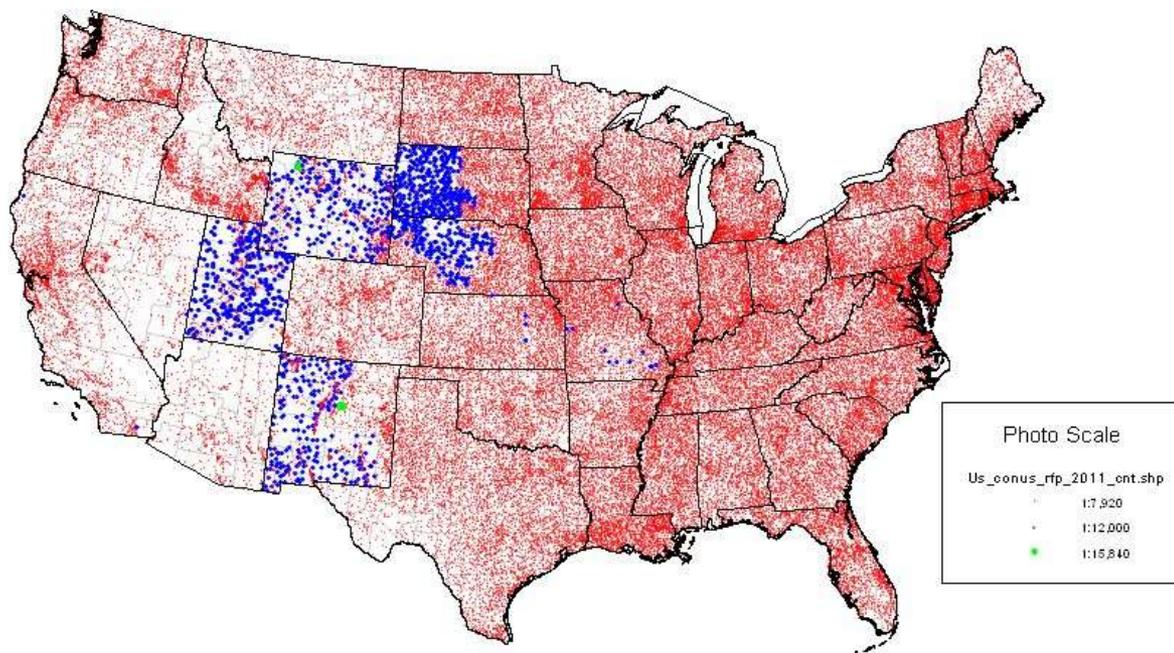
# **NRI and Stewardship Lands Photo Contract Summary**

Dorsey Plunk

USDA-NRCS-NGMC

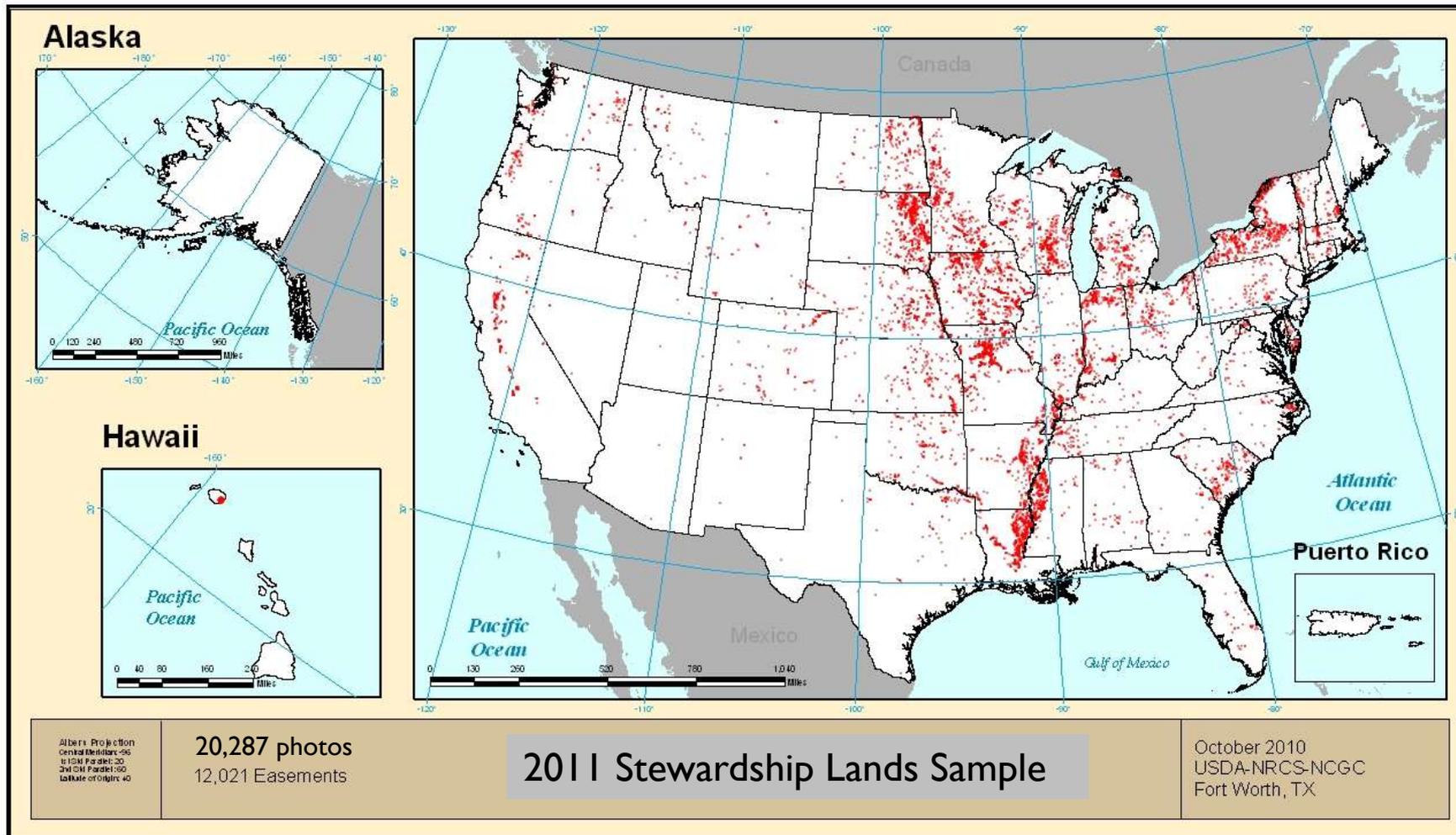


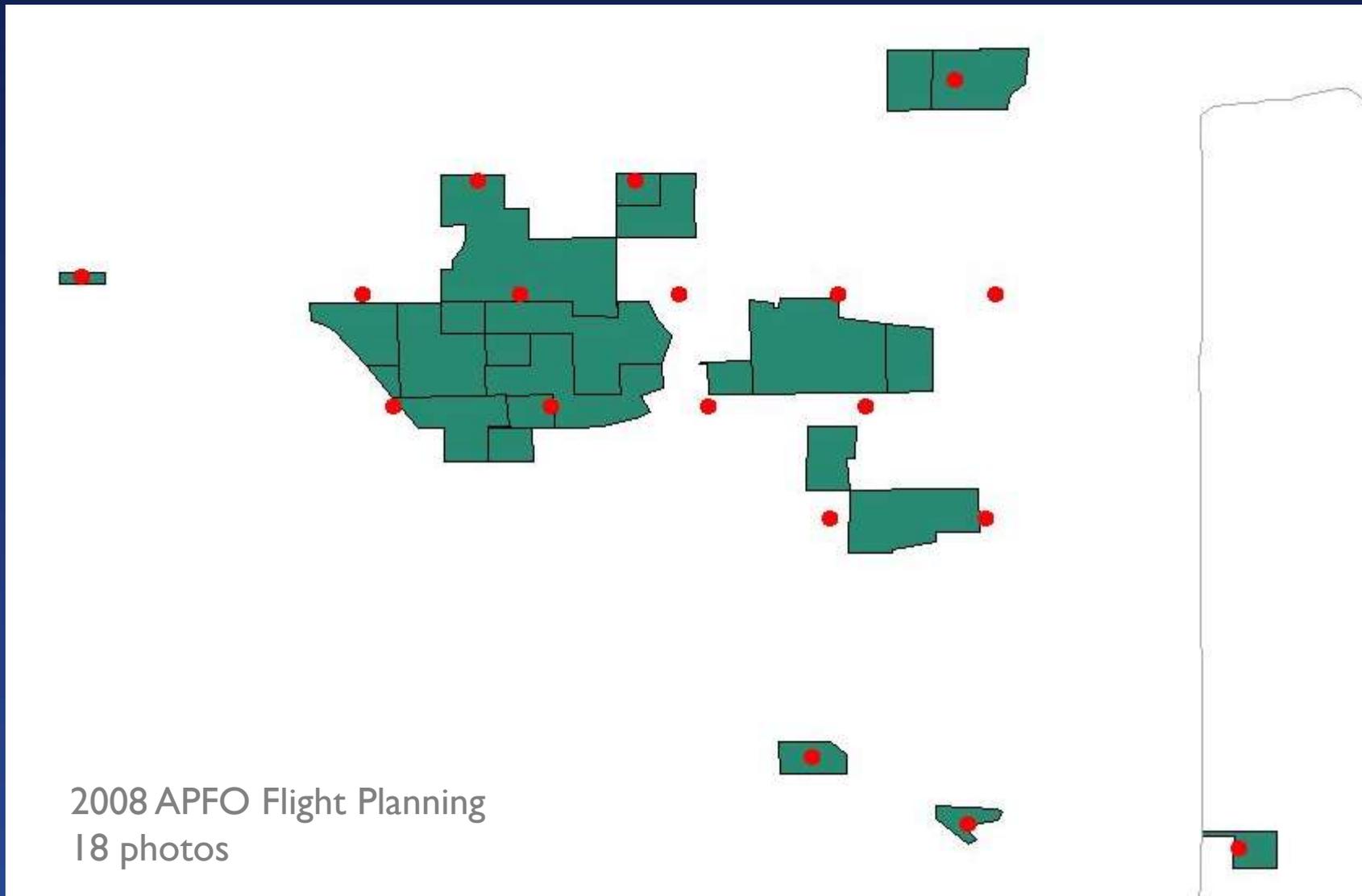
## Photo Scale

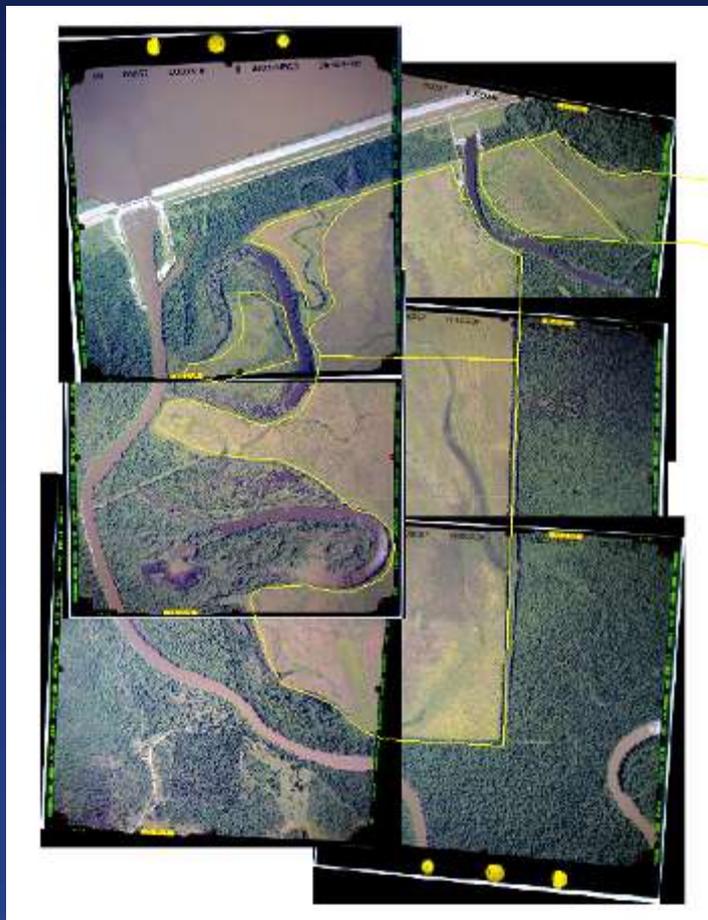


1,363 Oversized

0 400 Miles





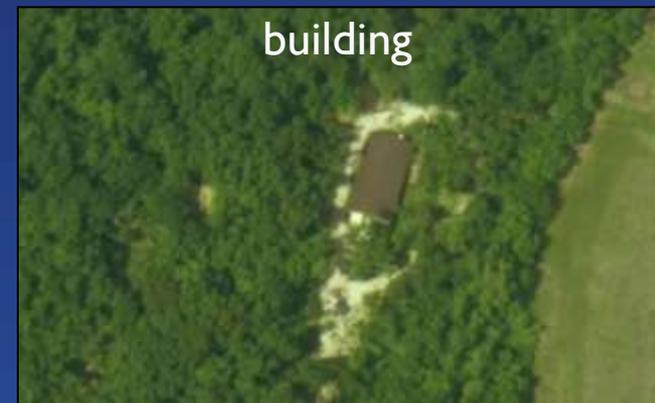
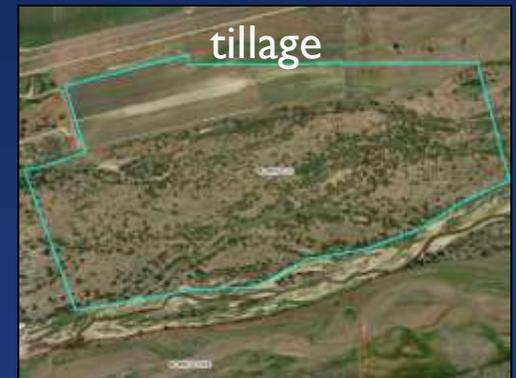


Individual orthorectified SL photos

Mosaicked, tone balanced, SL photos



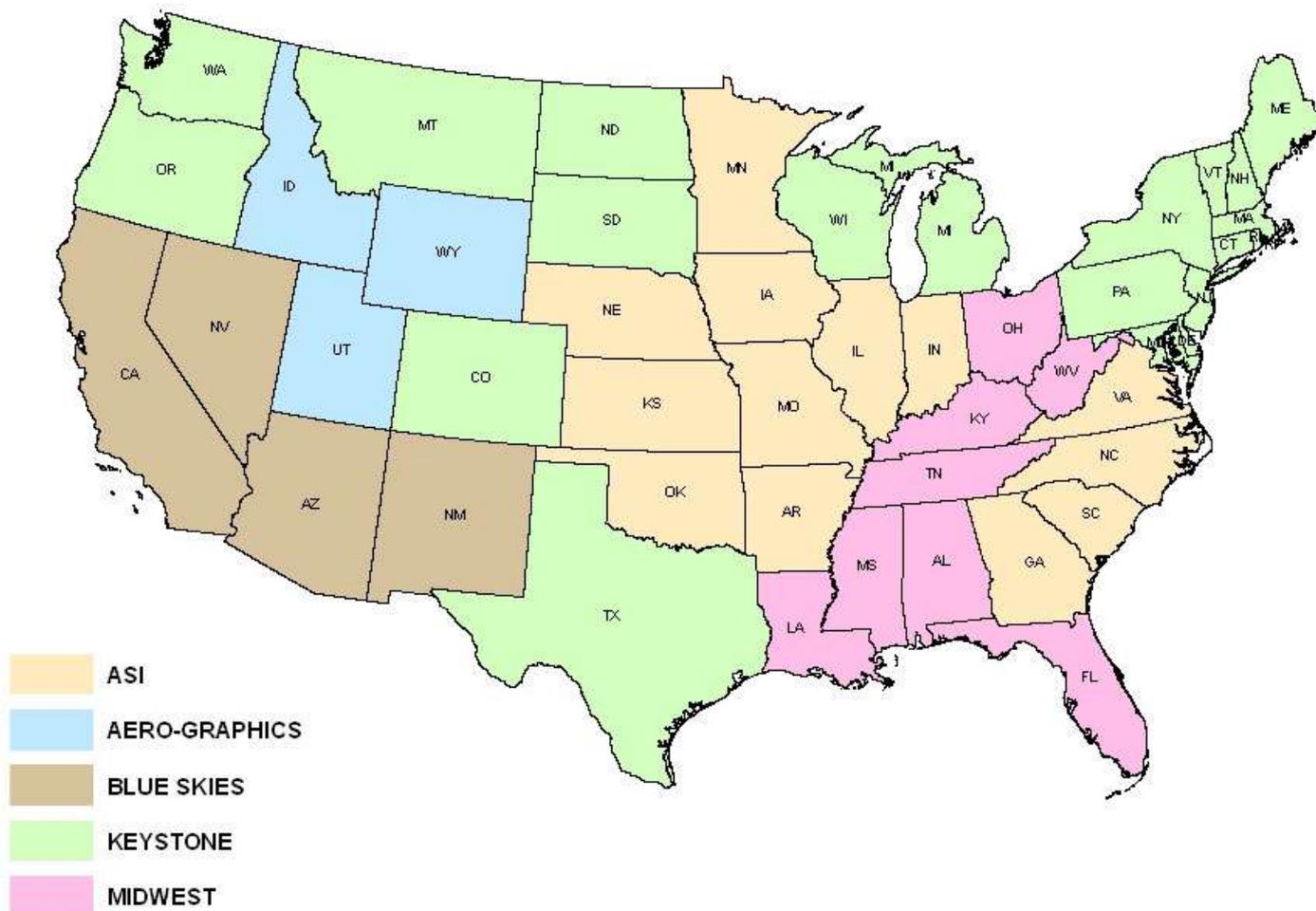
# Administrative Assessment



# Bioassessment

- Identify linkage between remote sensing classifications and on-site biological indicators.

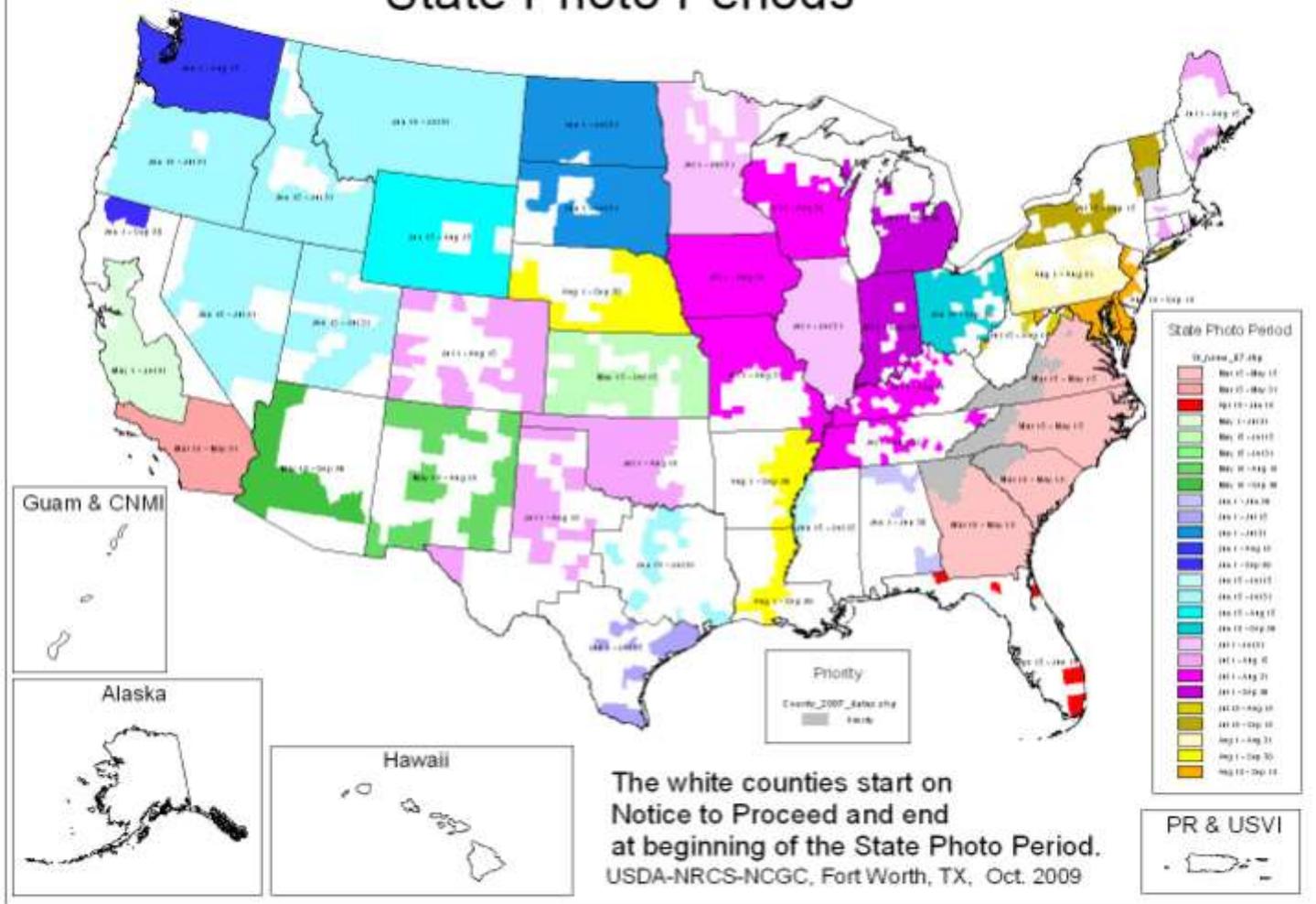
## NRI/Stewardship Lands 2011



U.S. Department of Agriculture

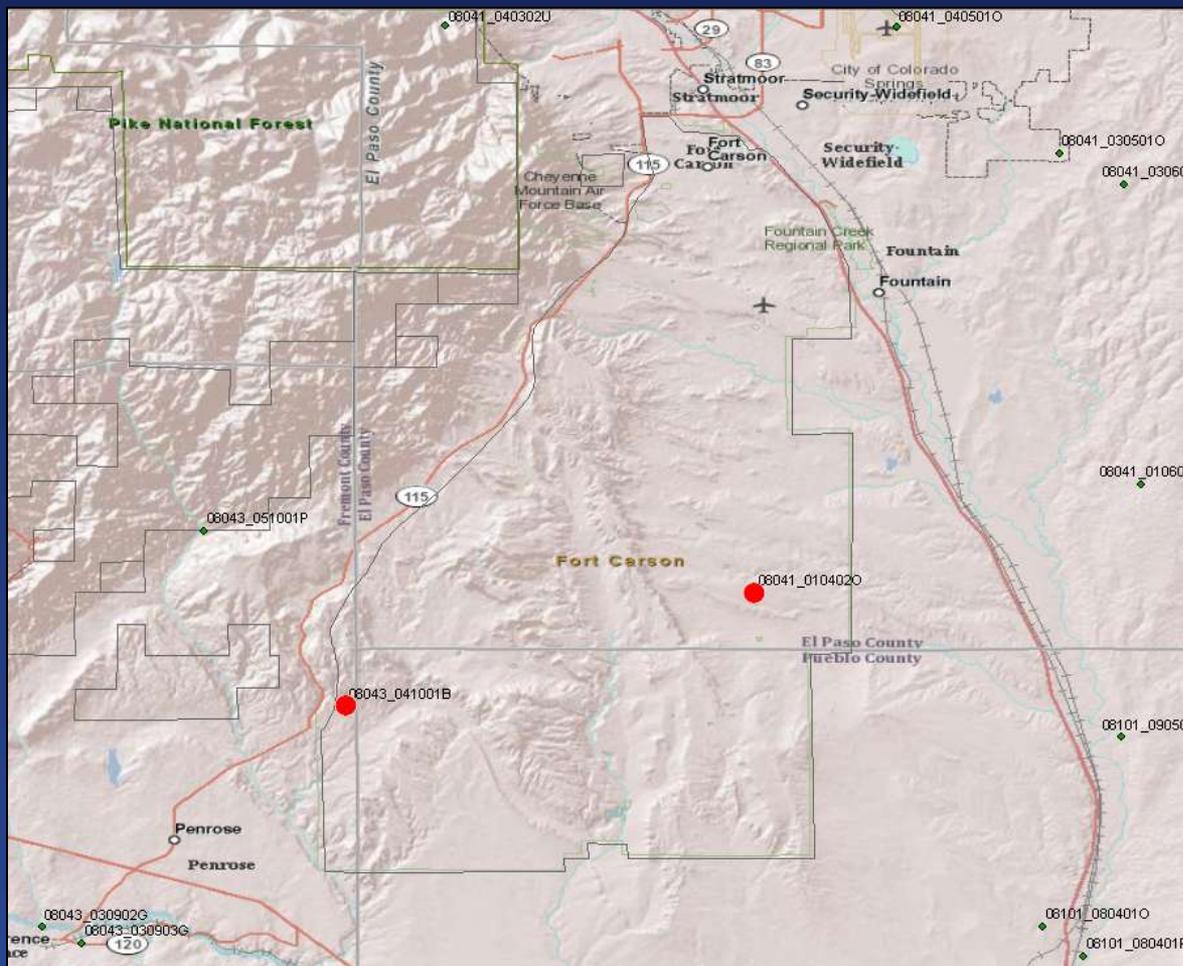
Natural Resources Conservation Service

## State Photo Periods

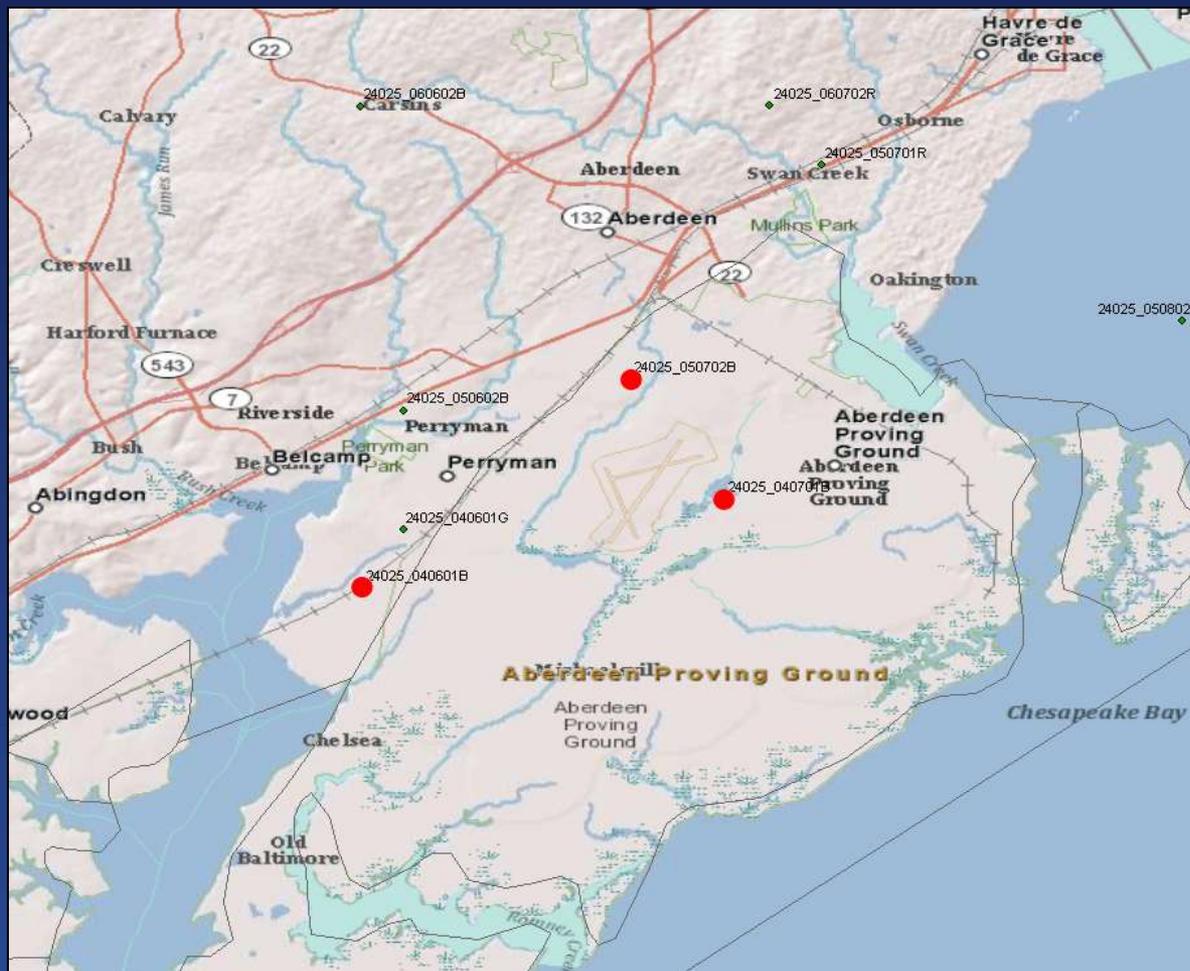




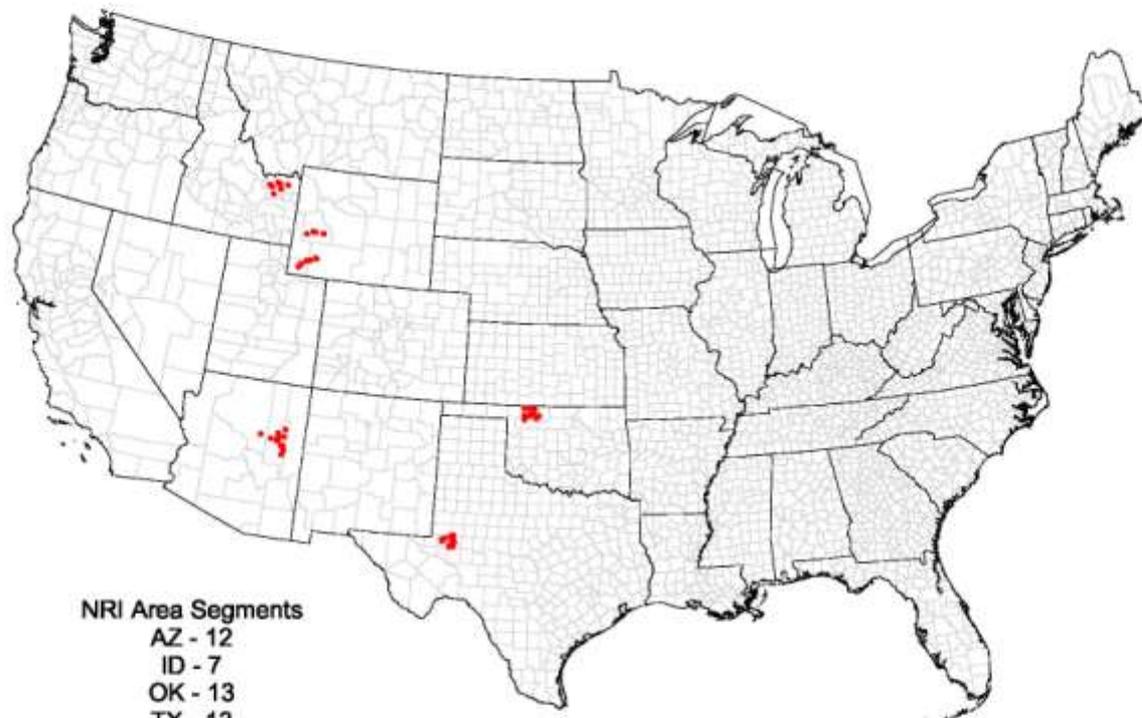
# Colorado Restricted Sites



# Maryland Restricted Sites



## Digital High Resolution Locations



### NRI Area Segments

- AZ - 12
- ID - 7
- OK - 13
- TX - 13
- WY - 10

Each area segment contains 2 points.

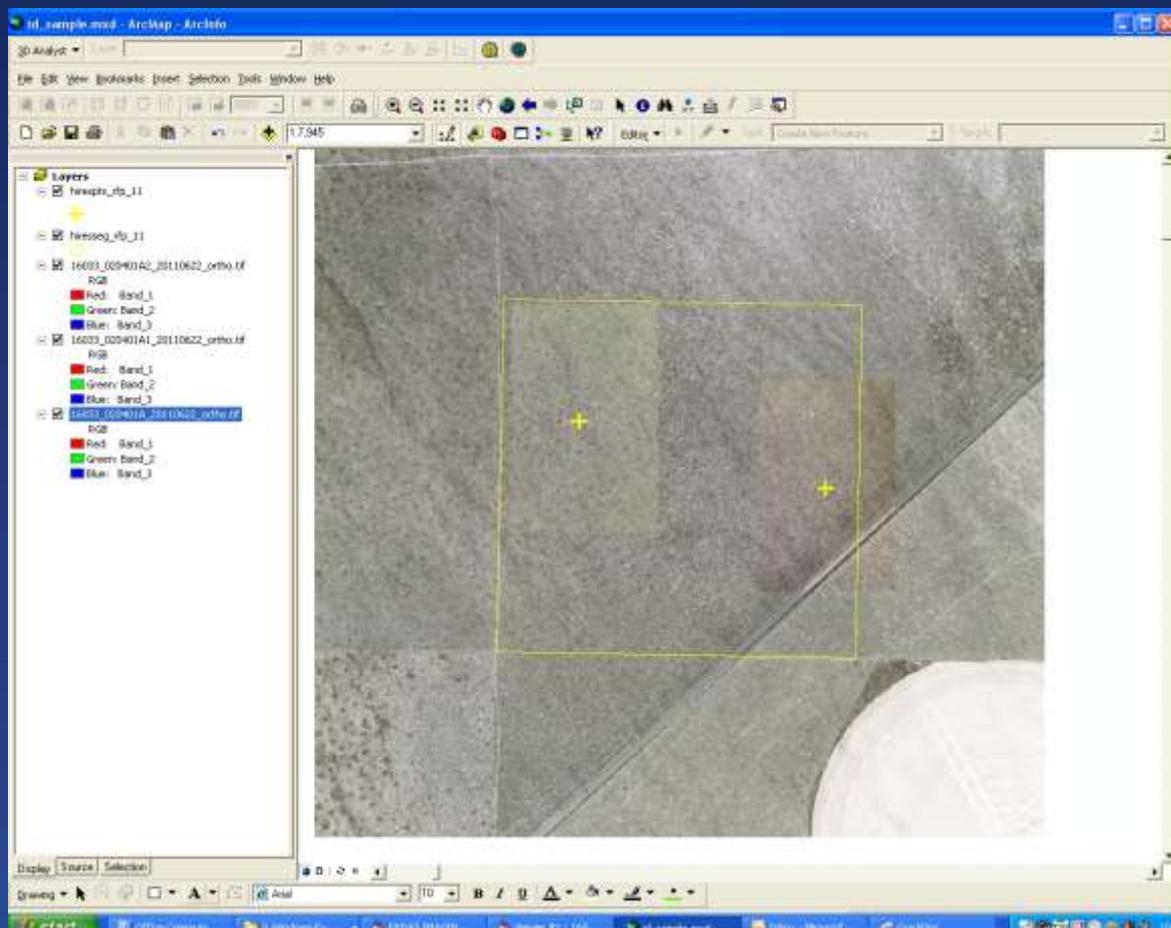
0 400 Miles

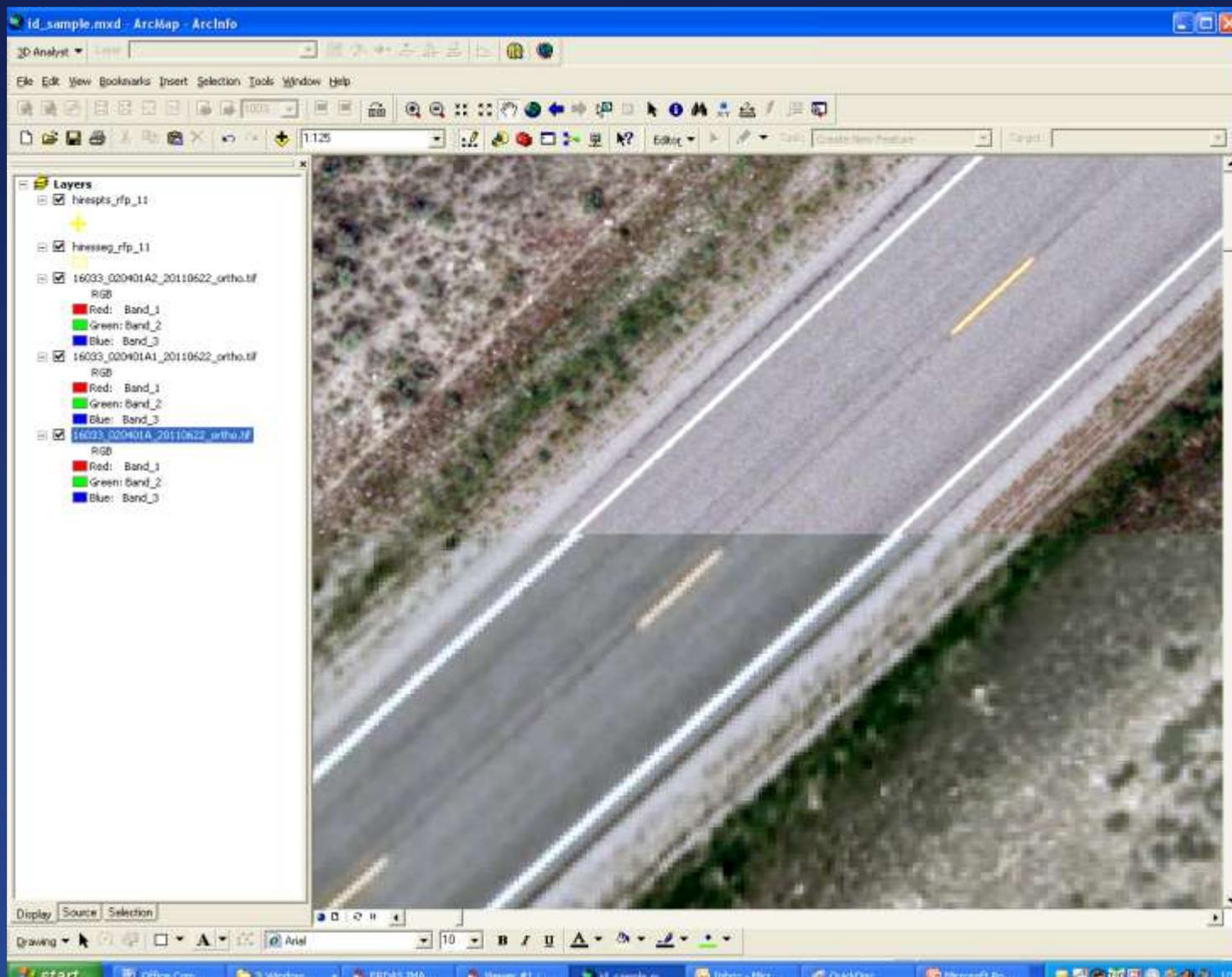
CONTRACTOR	STATES	NO. OF SITES/POINTS	TOTAL AMOUNT
<b>AERO-GRAPHICS</b> Original Proposal Offer:	<b>ID, WY</b>	<b>17/34</b>	<b>\$24,225.00</b>
<b>MIDWEST AERIAL PHOTO.</b> Original Proposal Offer:	<b>AZ, OK TX</b>	<b>38/76</b>	<b>\$31,920.00</b>

Name of Offeror	Business Size	NRI Site/ Scan Qty	NRI Per Site Total Amount
<b>Aero-Graphics</b>	SB		
NRI Area Segment		17	\$475.00 \$8,075.00
NRI Point		34	\$475.00 \$16,150.00
Average Unit Price			\$475.00
Grand Total		51	\$24,225.00
<b>Midwest Aerial Photo</b>	ESB		
NRI Area Segment		38	\$540.00 \$20,520.00
NRI Point		76	\$150.00 \$11,400.00
Average Unit Price			\$280.00
Grand Total		114	\$31,920.00

Subtotal  
\$56,145.00  
3% \$ 1,684.35  
  
Grand Total  
\$57,829.35

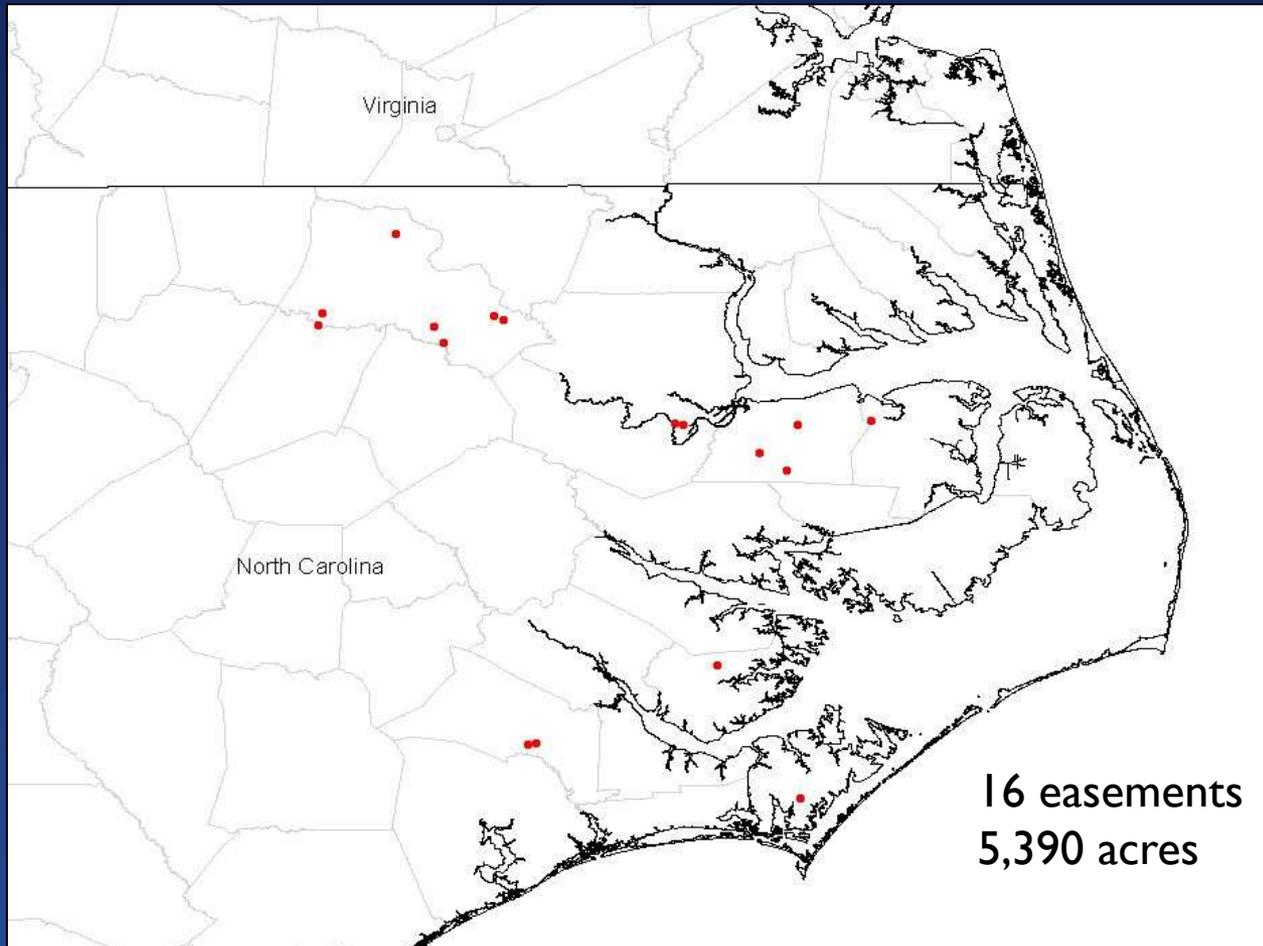
# ARS Sample - Idaho



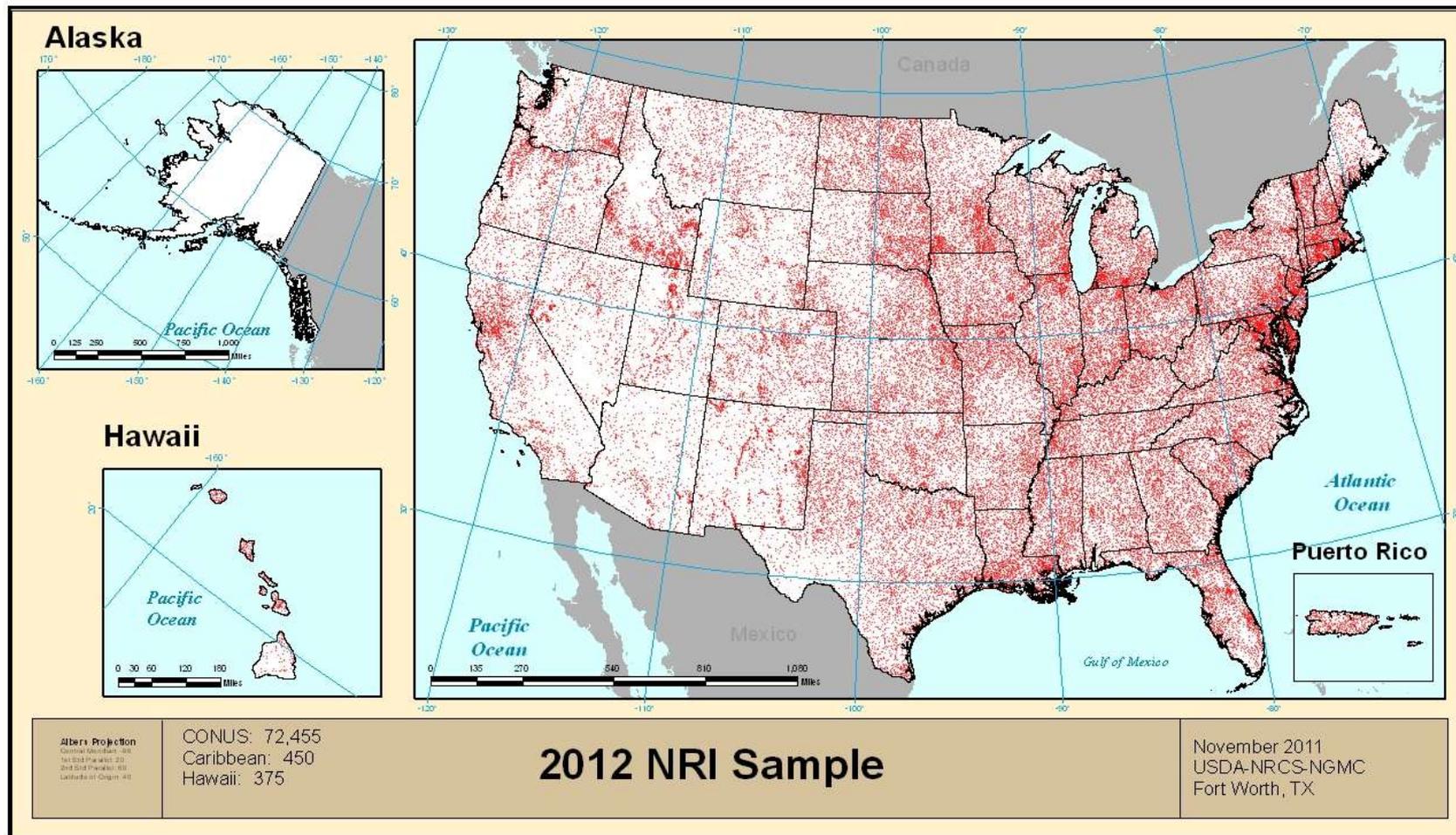


# NEAP Pilot – N. Carolina

## National Easement Assessment Project



Keystone	
15-cm	\$22,632.60
8-cm	\$24,507.43
Subtotal	\$47,140.03
3%	\$ 1,414.20
Grand Total	\$48,554.23

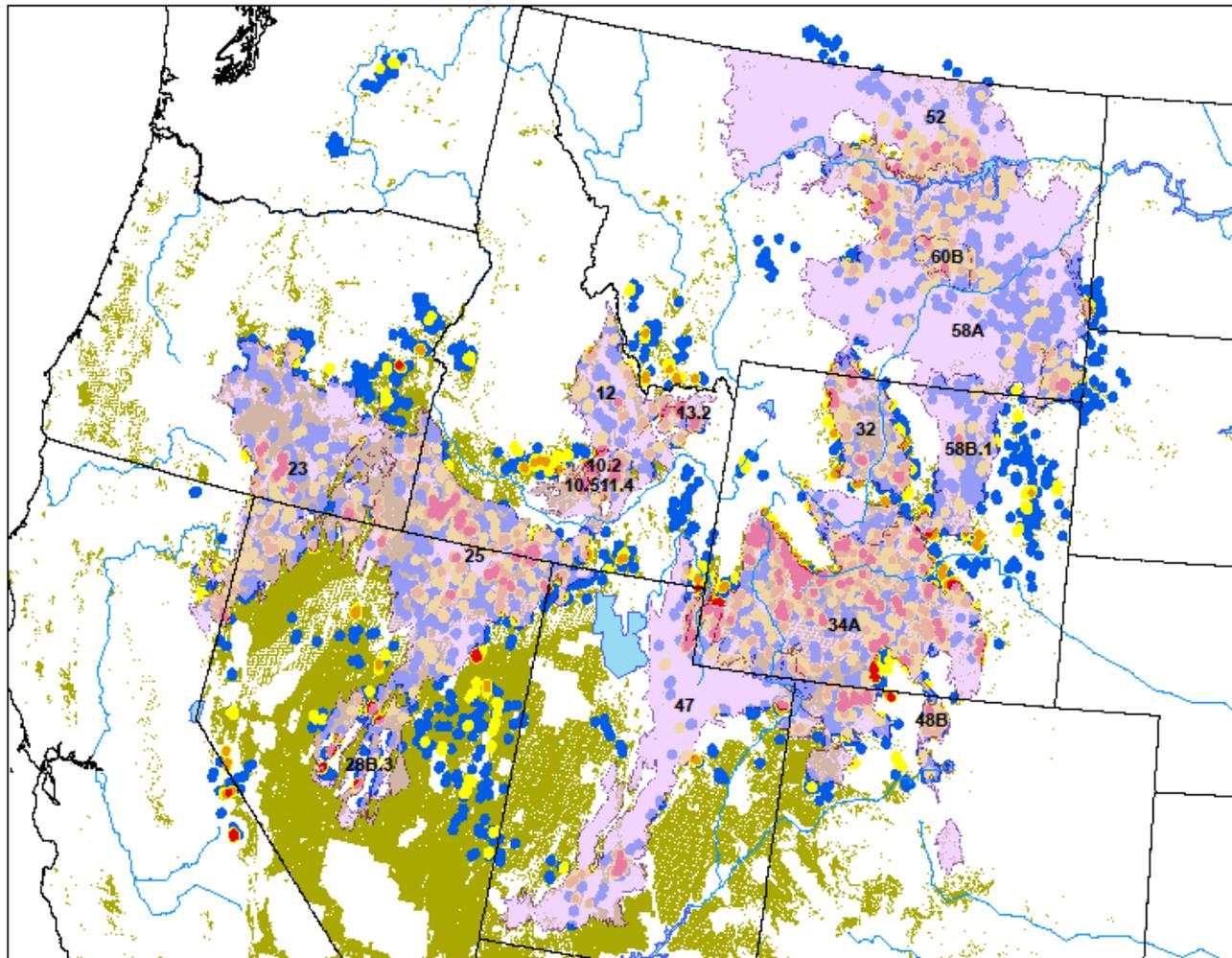


Includes 1,400 Range Sample and 2,000 BLM Sample

# BLM Intensification Area

- Designed to target areas where Sage-Grouse populations exist
- Based on Major Land Resource Areas (MLRA) and Common Resource Areas (CRA)

**-DRAFT-**  
**Greater Sage-Grouse  
Sampling-Intensification Areas**



- Draft Intensification Areas
- BreedingDensity25
- BreedingDensity50
- BreedingDensity75
- BreedingDensity100
- BLM Managed Lands
- Lakes
- State Boundaries
- Rivers

Notes:  
 Bolded map labels (e.g., 60B) are the MLRA or CRA identification numbers for the selected intensification polygons.  
 Greater Sage-grouse breeding density layer is from Doherty et al. 2010

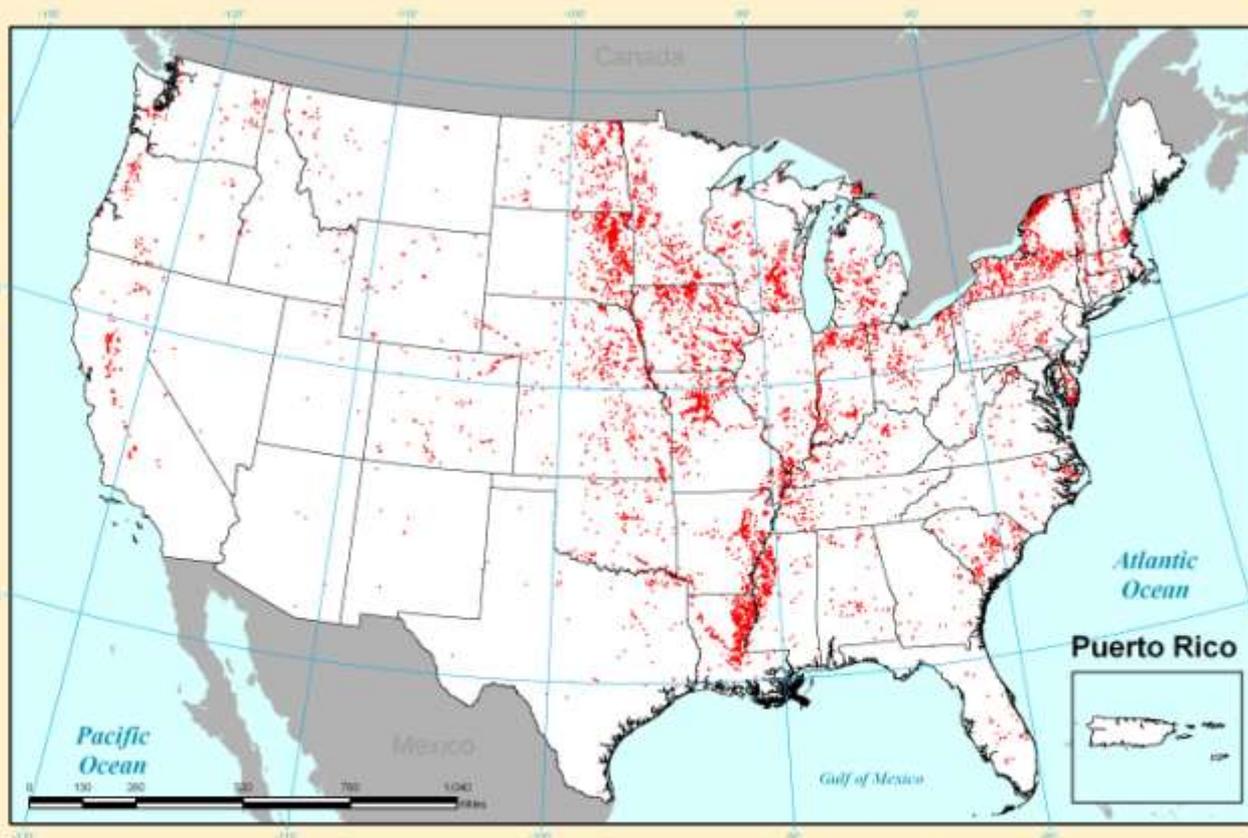


Disclaimer:  
 Although the data presented with this map, and the map itself, have been processed successfully on BLM computers, we cannot be held responsible for errors in the data. We do not warrant the use of this map in the field. Reproduction, for resale, is prohibited without the written permission of the BLM.

### Alaska



### Hawaii



Albers Projection  
Central Meridian: -95  
Std. Par: 100  
2nd Std. Parallel: 33  
3rd Std. Parallel: 67  
Latitude of Origin: 47

13,114 Easements  
21,811 Photos

## 2012 Stewardship Lands Sample

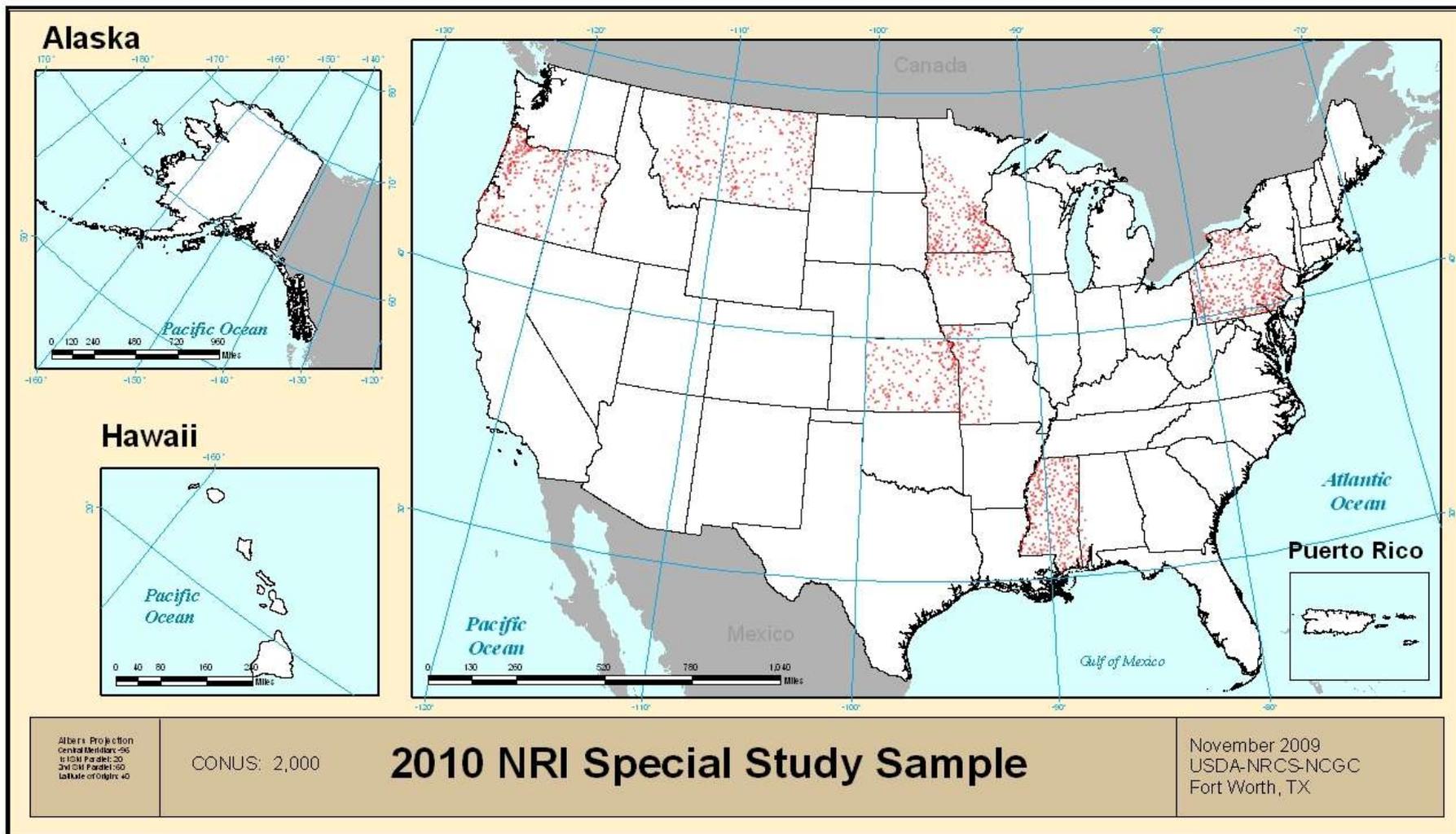
October 2011  
USDA-NRCS-NGMC  
Fort Worth, TX

# What about digital?

- Elimination of film processing and scanning costs.
- More automated workflow.
  - Orthophotos/mosaics with little delay between capture and end-product.
- Twelve-bit-per-pixel radiometric resolution, or even higher, ensures better light sensitivity.
- 4-band option.
- Film cameras no longer made.
- Kodak no longer makes CIR or color positive film.

# 2010 Measurement Study Overview

- Potential protocol change
  - Film photos used and data collection done on the scanned films.
  - Digital photos are used and the color infrared is an available option during data collection procedure.
- Goal
  - Examine the effects of the introduction of digital image and inclusion of color infra-red on measurements of NRI variables.
- Treatments
  - Film (Analog)
  - Digital Image 3 Bands (RGB)
  - Digital Image 4 Bands (RGB+CIR)



# Longitudinal dataset goals

- Consistent time series
- Reproduce previously released estimates
- Estimates of change are on the same variable

# 2010 Measurement Study – RSL

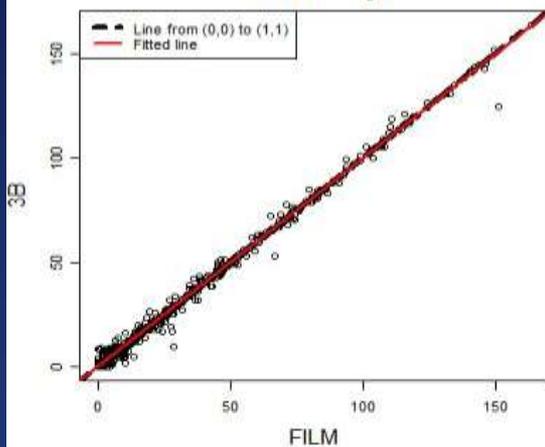
## Pro

- Images were registered
- Didn't have to use light table
- Better PI
  - Water
  - Hardwood/conifer
  - Shrubs/grass
  - Wetlands

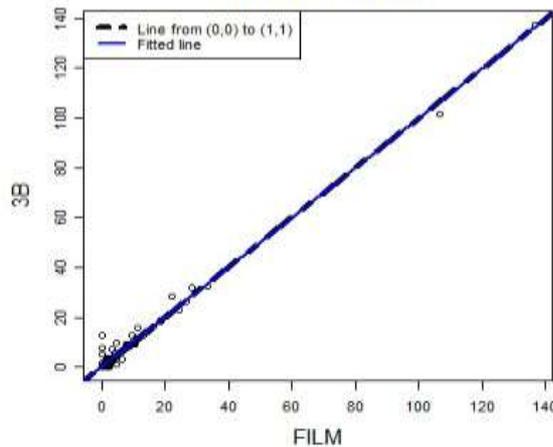
## Con

- Quality film trumps hi-res digital for PI
- No image date/time stamp
- Smaller buffer
- Tiling and refreshing in Collect was slow
- Image shifts between ortho film and digital
- No detail in shadows
- Couldn't tell paved from unpaved roads

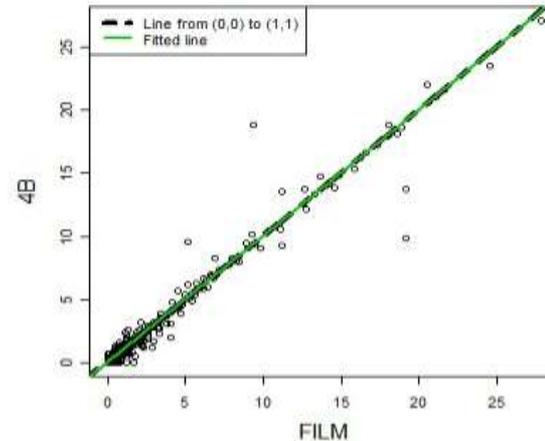
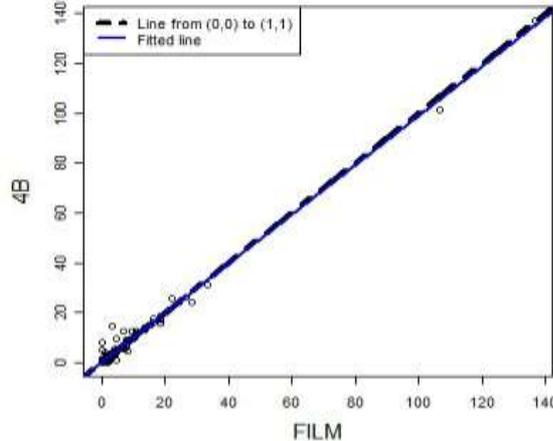
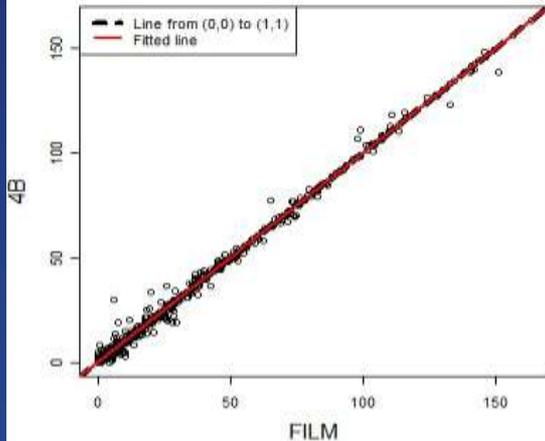
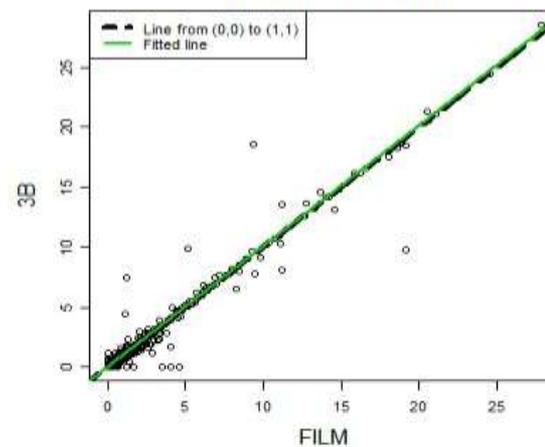
Built-up



Small water



Small stream



# Comments From CSSM

- The observations of three segment level variables coincide on the mean levels under three treatments.
- The color infrared option does help reduce the variation of the measurement errors for the Small Stream variable. However, for the Built-up variable, there is increased variation in the measurement error when using new treatments, suggesting that we need to work more in instructions, training and edits on the data collection of those variables.
- Similar analyses will be applied to the point level variables.

# Alignment Study

- Remote Sensing Labs examined 2010 digital orthos to check alignment and registration with prior year's imagery
- Maximum allowable horizontal displacement of 33 ft; no tolerance for horizontal displacement that alters land cover/use of a point

# Alignment Study

- RSLs submitted 82 sites for review
  - 10 segments were recommended for corrections
  - Another group of images had either incorrect UTM projections or mistaken segment ids
  - The remainder of suspect segments were accepted for data collection

# Alignment Study

- Further review on approximately a third of the orthoimages
  - 22 segments were corrected by rubbersheeting or by contractors

# Cost Effective Analysis Acquisition Costs

Equivalent analog and digital product specifications (70,898 segments)				
	Analog		Digital	
	Item	Cost	Item	Cost
	Natural color	\$8,812,880	3-band natural color (8 bit)	\$11,343,680
	Mono coverage (single exposure) 6 in GRD		Mono coverage (single exposure) 15 cm GSD	
	Orthorectified by RSL		Orthorectified by Vendor	

Analog: \$85 per photo and \$10 per scan.

Digital: The costs are estimated at \$160 for a 15-cm resolution orthorectified image.

2010 CONUS costs: \$93.71 (\$78 - \$95.73) analog. \$189.24 (\$115 - \$255) digital.

# Total RSL Film Ortho vs. Digital Cost

Type	Acquisition Cost	Cost Avoidance	Total
Analog	\$8,812,880	\$0	\$8,812,880
Digital	\$11,343,680	\$1,160,327	\$10,183,353
			-\$1,370,473 (Additional cost for digital)