

National Cartography & Geospatial Center

Bill Adams, Acting Director

National State Soil Scientist Workshop

March 30, 2010

Panola Rivers, Presenter
Digital Soil Survey Team Leader
Fort Worth, Texas

National Cartography and Geospatial Center

Moving into the Future

Overview of NCGC Modernization



NCGC MISSION

The mission of the NRCS National Cartography and Geospatial Center

(NCGC) is to provide customers with accessible, always available, up-to-date, authoritative, and trusted geospatial data and value-added geospatial services.



National Geospatial Report

A Multi-Level Agency Evaluation of
USDA-NRCS Geospatial Assets and Activities
With Findings and Recommendations for
Geospatial Implementation

Led by
National Cartography & Geospatial Center
Fort Worth, Texas

June 2008



- In 2007 NRCS began a multi-level Agency evaluation of NRCS geospatial assets and activities with findings and recommendations for geospatial implementation
- 1 Year in development
- Completed June 2008

Geospatial Data at NRCS

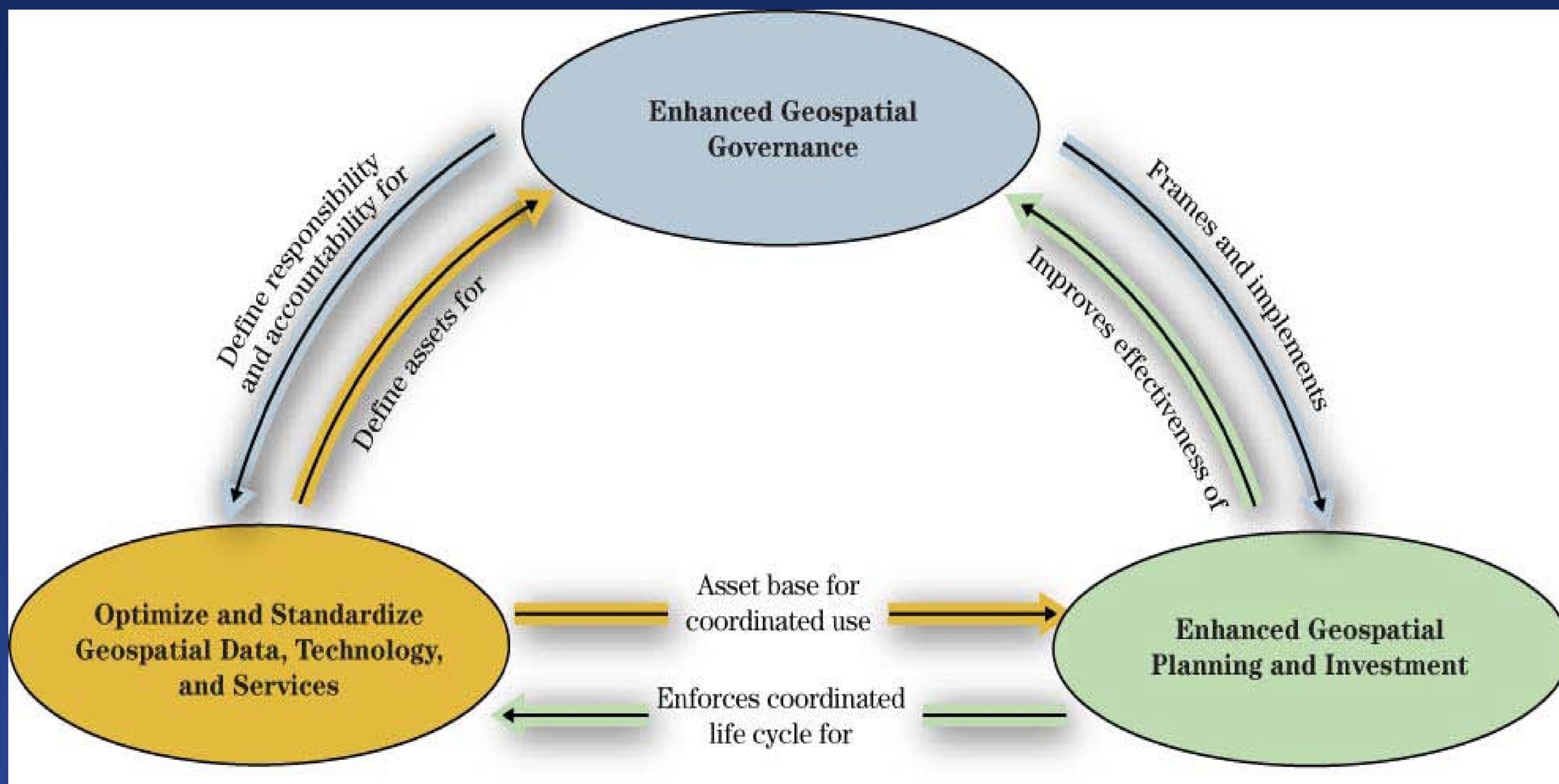
- Geospatial data is a unifying force in NRCS. It's use applies to all business areas and programs.
- NRCS would not be able to fulfill it's mission without Geospatial Data.

NRCS Geospatial Data Assets

More than 300 terabytes of data worth in excess of \$5.9 billion.

Data Category	Only Source	Replicated	Replacement Value \$
NRI Data	YES	No	500 million
Elevation data	No	No	400 million
Soils	YES	Yes	5 billion
Other vector data	No	Yes	1 million
Other imagery	No	No	10 million
Failover data	No	Yes	2 million
Other data	No	No	20 million
300 Tb			5.9 billion

Geospatial Framework



Modern NCGC Functions:

It has become clear that any structure we adopt must have a clear line of sight back to the **National Geospatial Report**.

An emphasis must be placed on:

- **Governance Support**
- **Planning and Investment**
- **Products and Services**
- **Geospatial Data Management**

Elevation initiative

Create a National High-Resolution Elevation Database that meets NRCS business requirements and deploy “value added” product and services that integrate into agency business operations

Why do we need new elevation data?

USGS topographic maps in the service centers are out dated and need to be replaced

The accuracy and level of detail of the IFSAR and LiDAR are superior to legacy elevation products currently in use

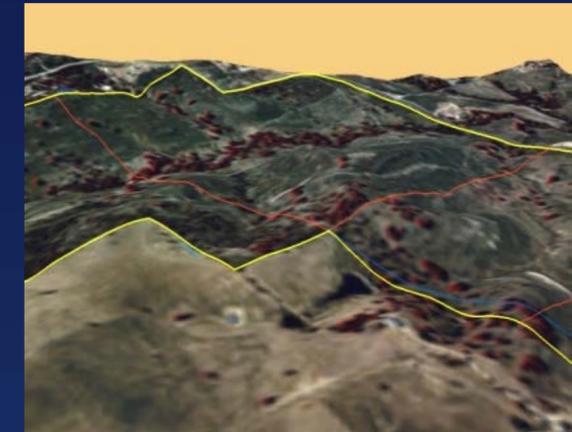
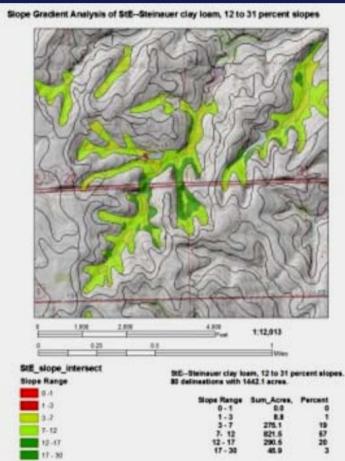
Better quality elevation data supports better decisions and analysis far beyond our existing capabilities and puts us at the forefront of emerging technologies

Keys to a successful implementation:

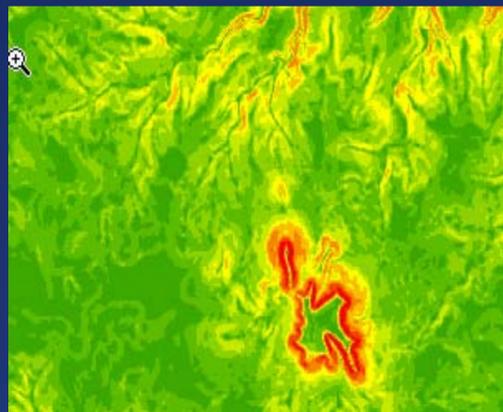
- 1. make sure the technology supports a business need**
- 2. ensure the business processes are defined to efficiently and effectively utilize the technology**
- 3. integrate the technology into business tools**

NRCS elevation requirements:

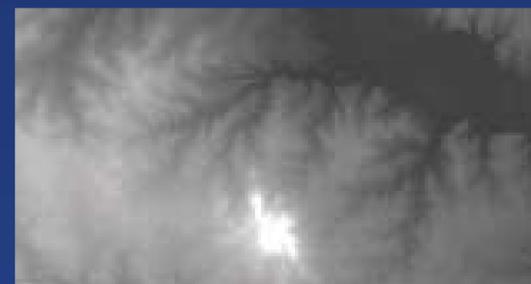
- terrain mapping
- conservation
- engineering



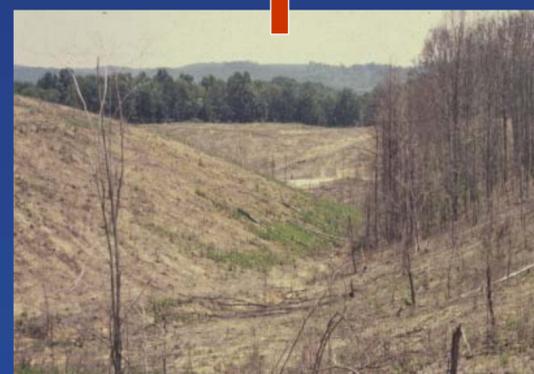
Analysis



Visualization



DEM



Reality

NRCS Elevation Requirements Project is 75% complete

Final workshop planned for this summer in Washington, DC

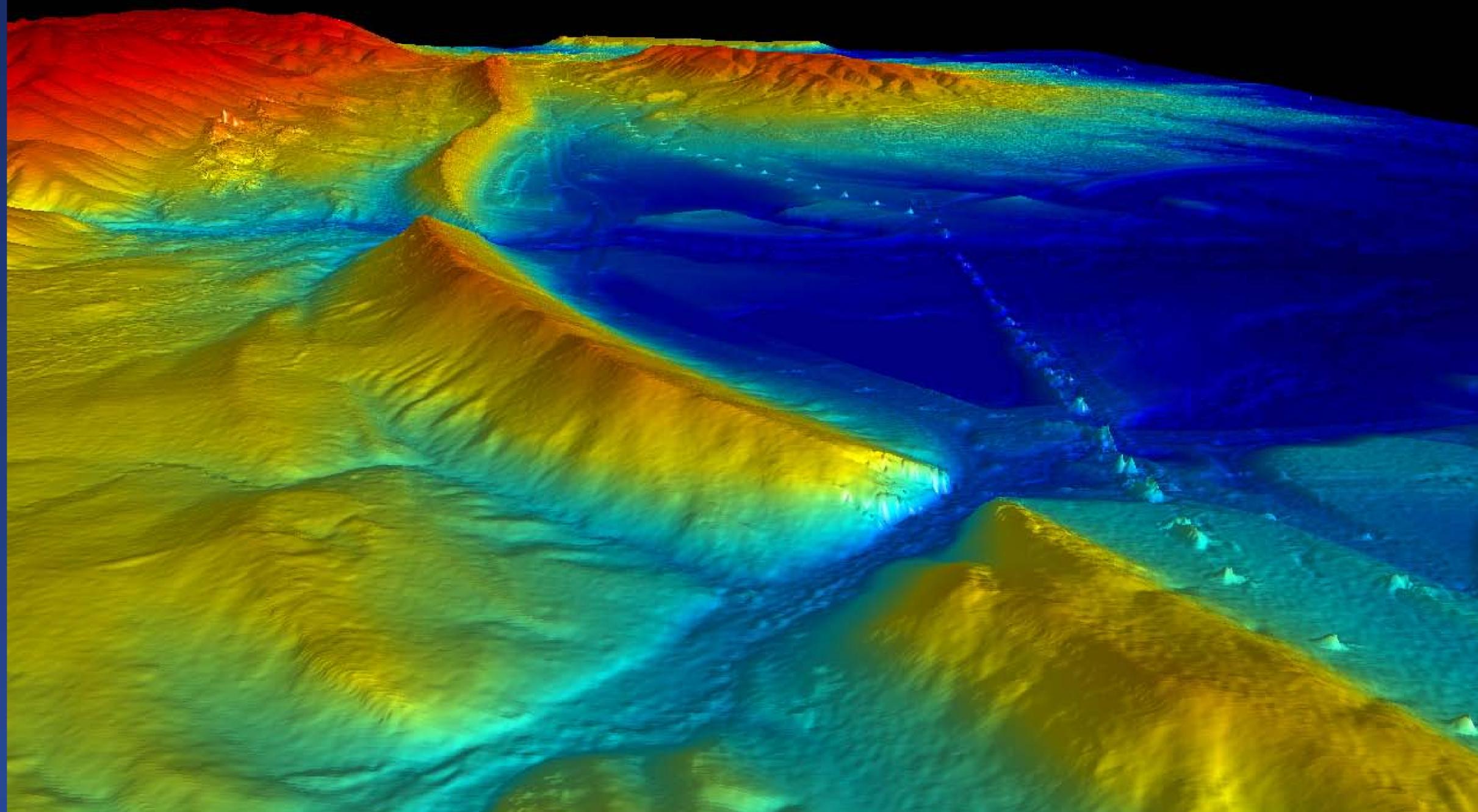
NRCS Elevation Acquisition

All tasks have been submitted to USGS
(AK, AL, IL, KS, ME, MT, ND, OR, TN, TX, RI, SD)

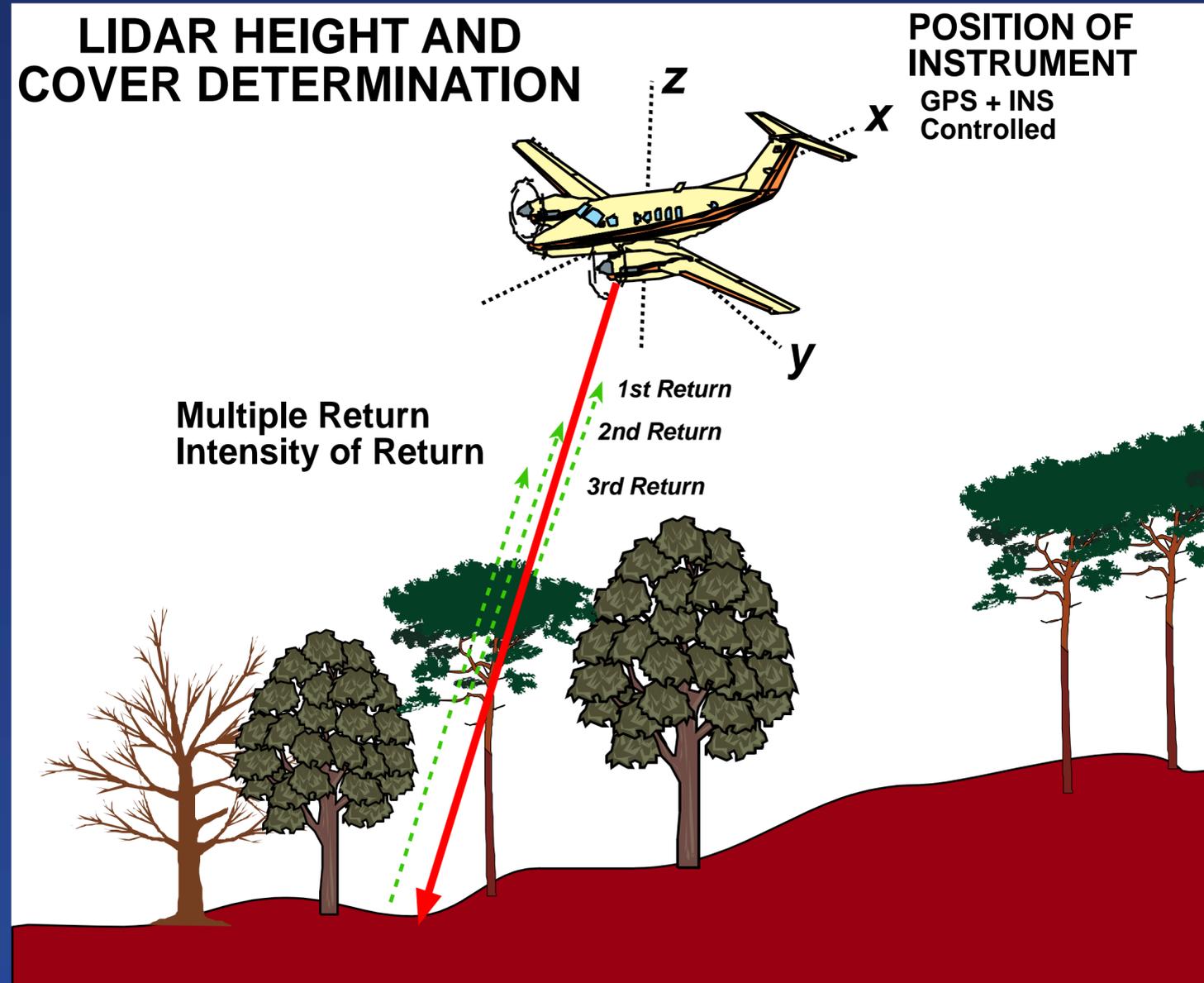
NRCS Elevation Investments for this
year are ~ \$1.6 million

Matching USGS funds for our projects
are ~ \$400,000

Intermap IFSAR Project



Light Detection and Ranging (LiDAR)



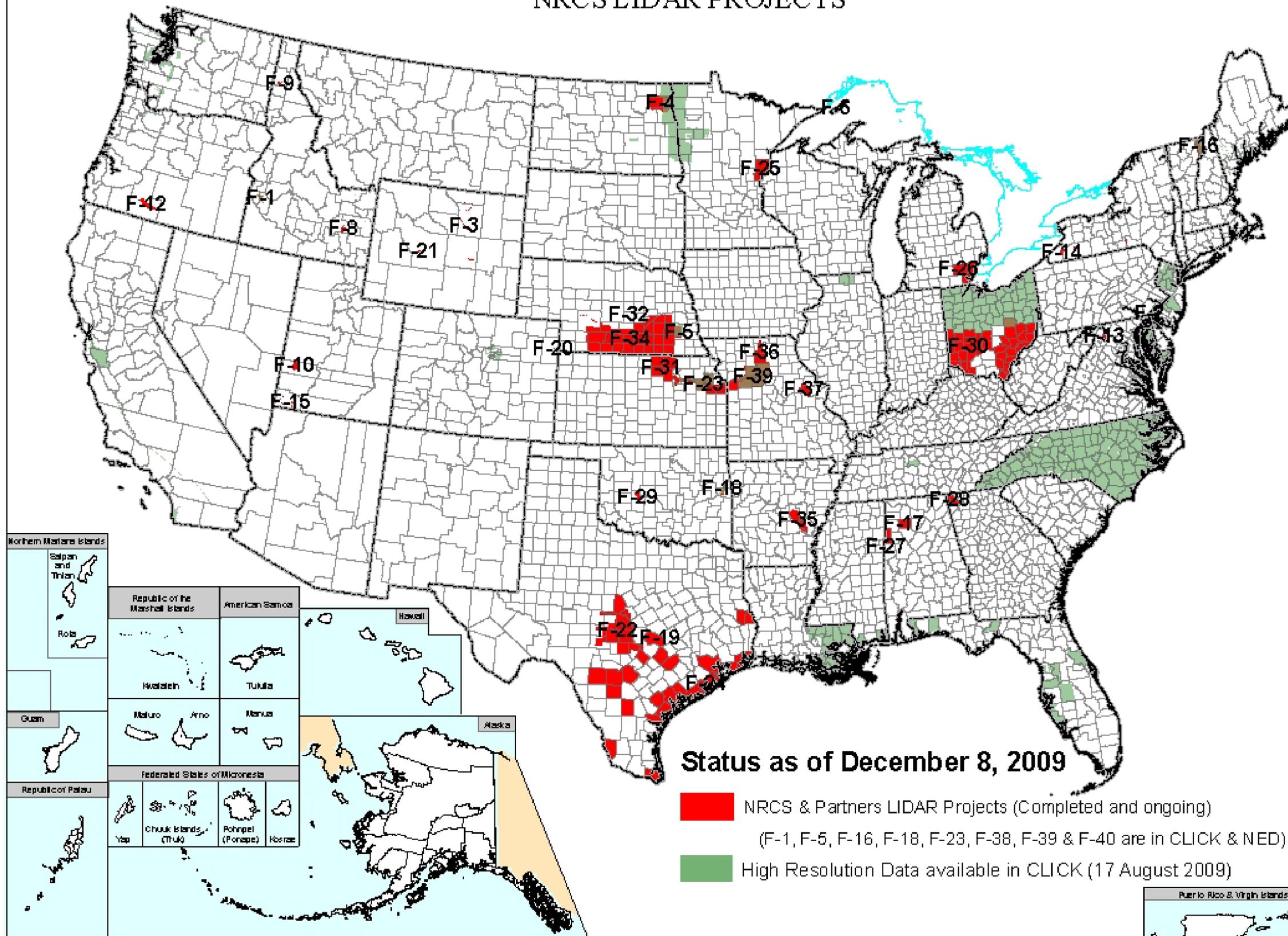
NRC & USGS Partnership

Data Delivery & Provisioning Services

US DEPARTMENT OF AGRICULTURE

NATURAL RESOURCES CONSERVATION SERVICE

NRCS LIDAR PROJECTS



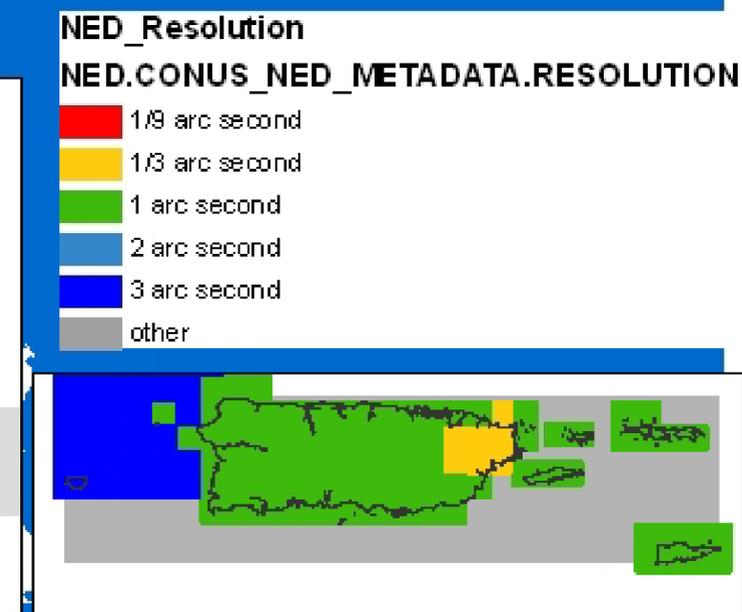
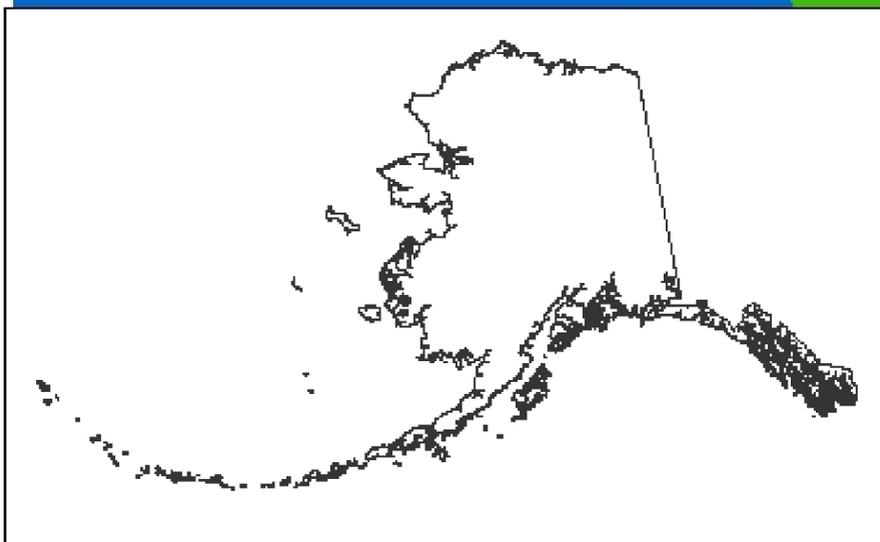
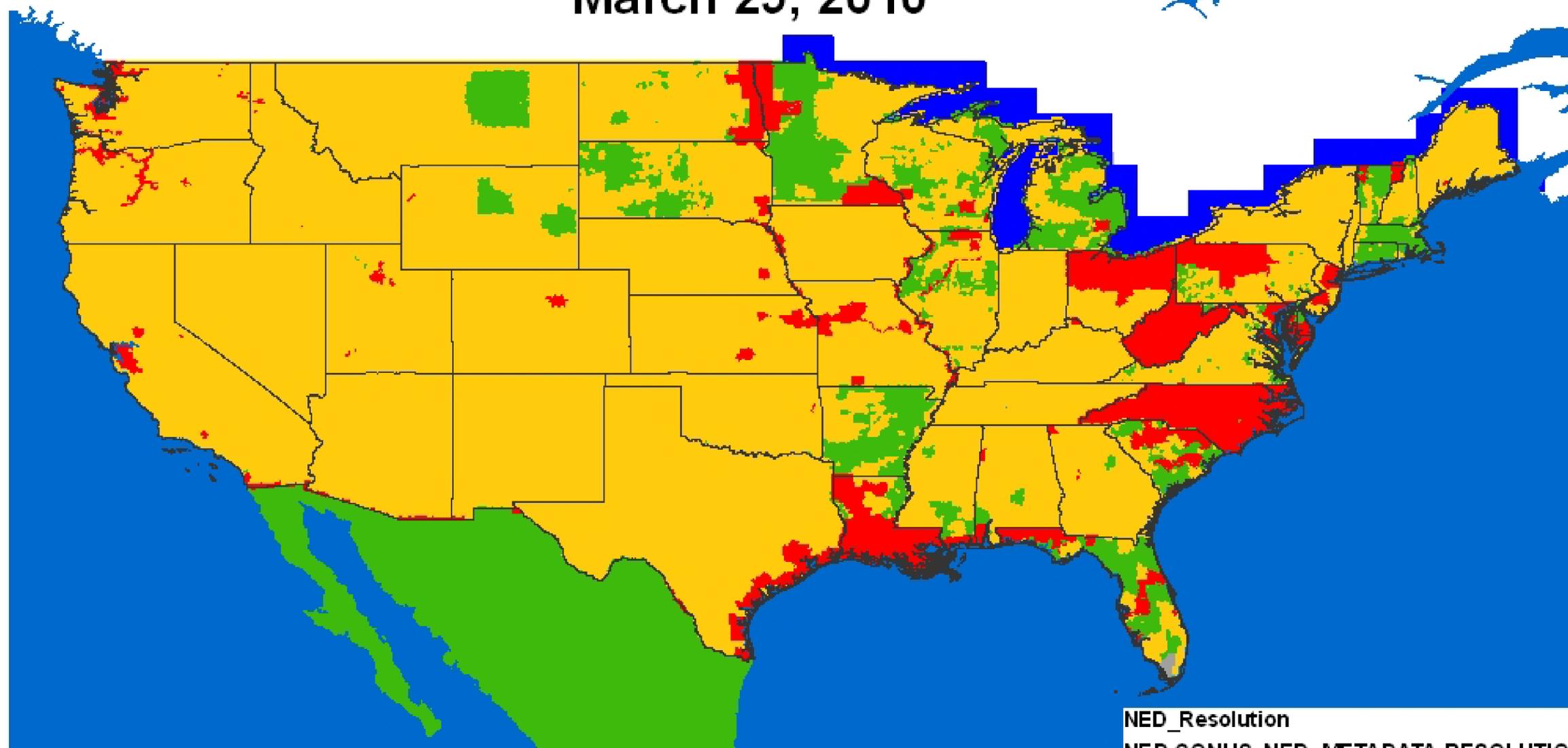
Source: USDA NRCS NCGC Geospatial Data Warehouse
DOI USGS EROS Center for LIDAR Information Coordination and Knowledge

USDA NRCS National Cartography & Geospatial Center, Fort Worth, Texas 2009.

December 2009

National Elevation Database (NED)

March 29, 2010



<http://datagateway.nrcs.usda.gov>

Internet Explorer users must check java options and use JRE 1.5 (or higher) before proceeding. (see FAQ item 2)

+ United States Department of Agriculture + + Service Center Initiative +

USDA

Get Data Login Check Order Status Maps News FAQ About Contact Administration

+ Natural Resources Conservation Service +
+ Farm Service Agency +
+ Rural Development +

the one stop source of
natural resources data

The Geospatial Data Gateway provides One Stop Shopping for natural resources or environmental data at anytime, from anywhere, to anyone. **The Gateway** allows you to choose your area of interest, browse and select data from our catalog, customize the format, and have it downloaded or shipped on CD or DVD.

SYSTEM STATUS

OUTAGES
The Geospatial Data Gateway will be down Tuesday, March 11 through Wednesday, March 12 for system upgrades. Orders placed before this period can still be downloaded. Access to the website and all associated functions will be unavailable.

Geospatial Data Gateway

Minimum Requirements: Microsoft Internet Explorer 5.5 or Netscape Communicator 4.76 with Java enabled.

WARNING: This is a United States Department of Agriculture computer system, which may be accessed and used only for official Government business (or as otherwise permitted by regulation) by authorized personnel. Unauthorized access or use of this computer system may subject violators to criminal, civil, and/or administrative action. All information on this computer system may be intercepted, recorded, read, copied, and disclosed by and to authorized personnel for official purposes, including criminal investigations. Access or use of this computer system by any person, whether authorized or unauthorized, constitutes consent to these terms.

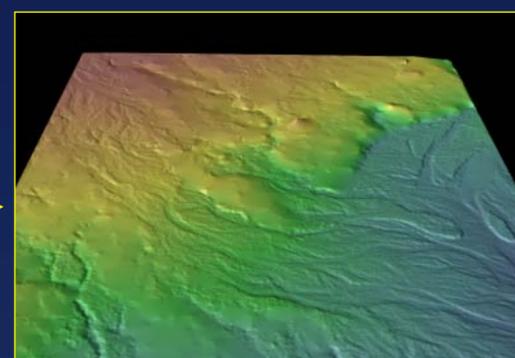
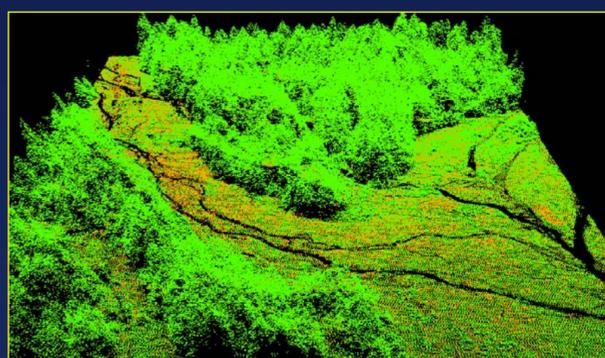
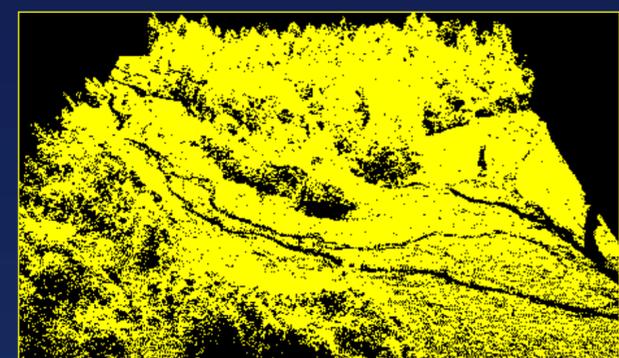
NED 1 and 1/3 arc second data services went live 16 April 2007.
NED 1/9 arc second data services went live 28 April 2008.

We refresh Gateway data services from EROS every 6 months.

IFSAR data service is available only to NRCS and FSA. We distribute DTM, DSM, ORI and COR files in geotiff format.

We have shared four LiDAR projects with EROS for incorporation into NED and also post the LAS at CLICK:

- Sallisaw, OK
- Essex, VT
- Walsh, ND
- Texas LiDAR Project



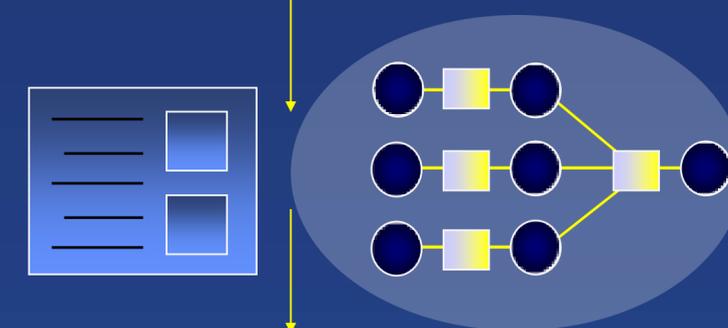
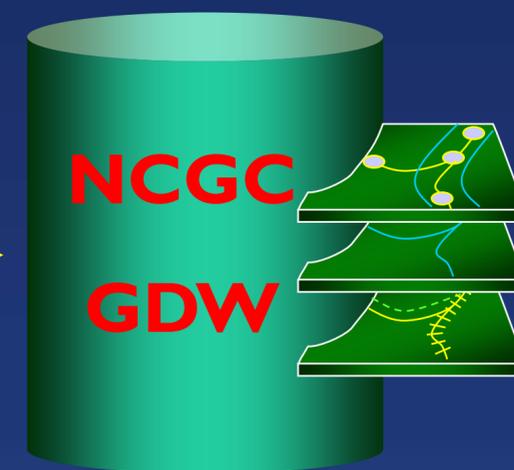
Raw Points (las)

Processing using
LiDAR software

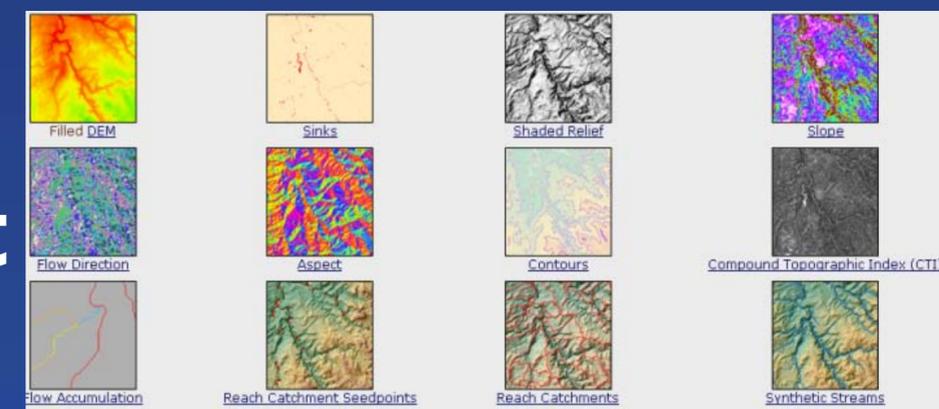
Bare Earth

NED Oracle ArcSDE

Process Models
Derivatives
ArcGIS Server



LiDAR Elevation Data Management



Elevation Web Sites for data and services

Geospatial Data Gateway <http://datagateway.nrcs.usda.gov>

USGS National Elevation Dataset <http://ned.usgs.gov>

USGS CLICK <http://lidar.cr.usgs.gov>

Open Topography Portal <http://www.opentopography.org>

NOAA Coastal Services Center <http://www.csc.noaa.gov/crs/tcm/>

US COE JALBTCX <http://shoals.sam.usace.army.mil/>

Web Services:

<http://wms.ftw.nrcs.usda.gov> (legacy)

<http://ncgcws.ftw.nrcs.usda.gov> (new ArcGIS Server)

<http://gisdata.usgs.net>

NB_170_10_1 - Request for High-Resolution Elevation Data Requirements & Examples of Use

<http://directives.sc.egov.usda.gov/viewerFS.aspx?hid=25770>

Steve Nechero, Technology Applications Team Leader

817.509.3366 Office or 817.825.2719 Cell or steven.nechero@ftw.usda.gov

ERDAS

The national Erdas 9.3 license manager is now available for all NRCS staff.

The server is `txfortwortc004.ftw.nrcs.usda.gov` and the IP address is `199.158.163.21`.

At this time there are no limits in regards to accessing any of the licensed features by users.

The utilization of the existing pool of licenses will be monitored to determine if limits need to be put in place.

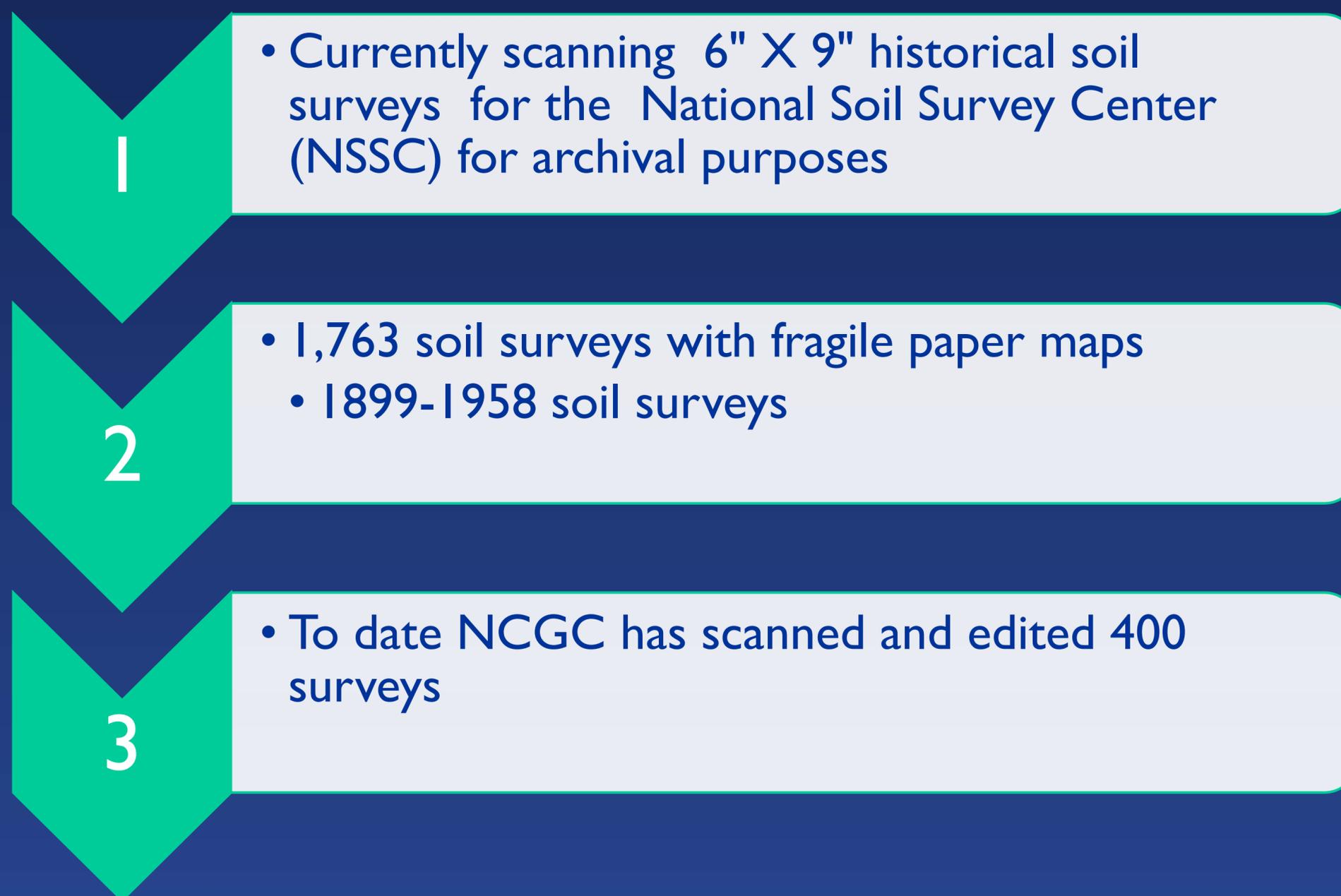
Historical soil publication materials

- 25 to 30 years at National Archives
- Sent back to NCGC
- Court order to not destroy materials
- Available to states for utilization and long term custody

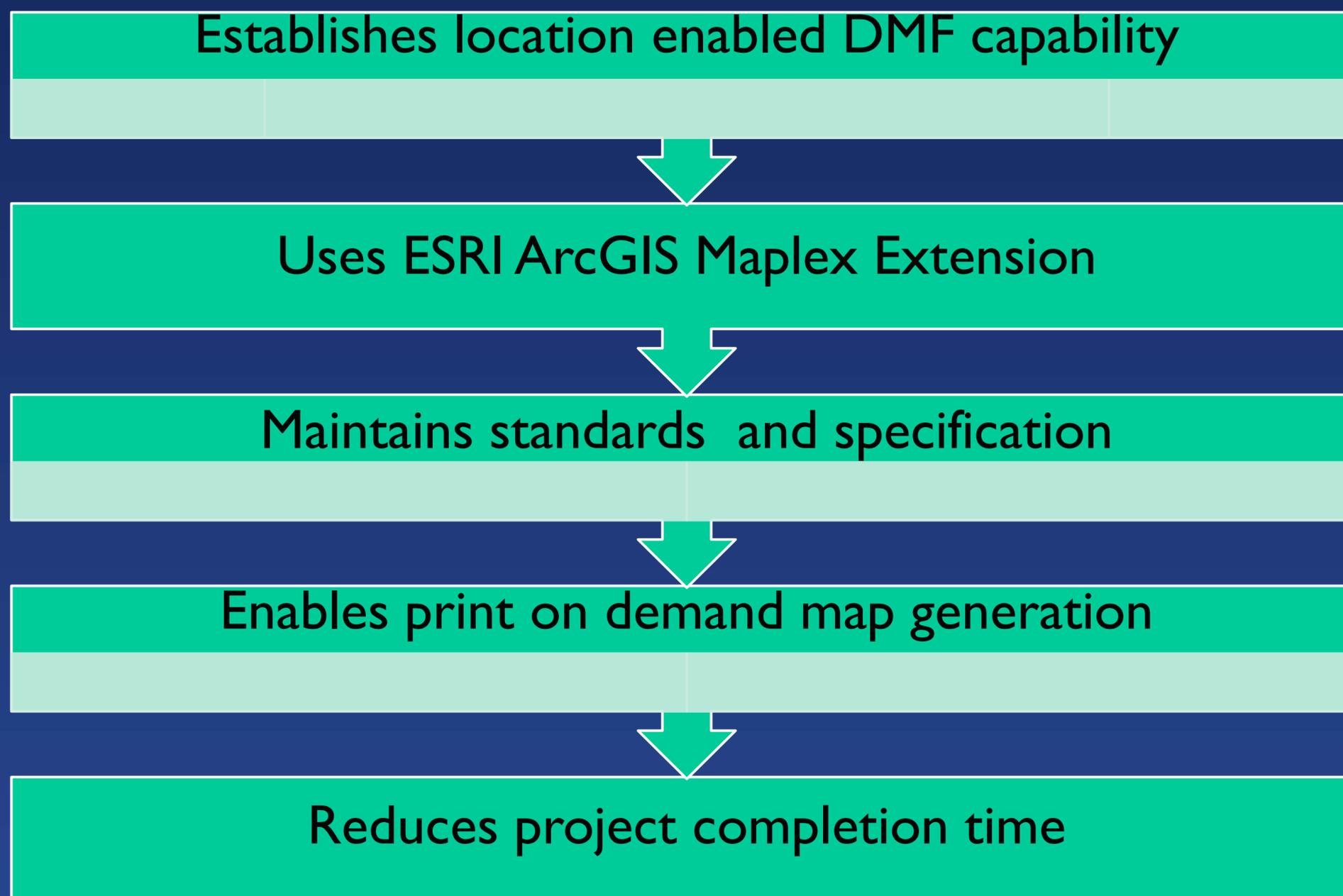
Panola Rivers, Digital Soil Survey Team Leader

- Historical Soil Survey Project
- Digital Map Finishing and Print on Demand Maps

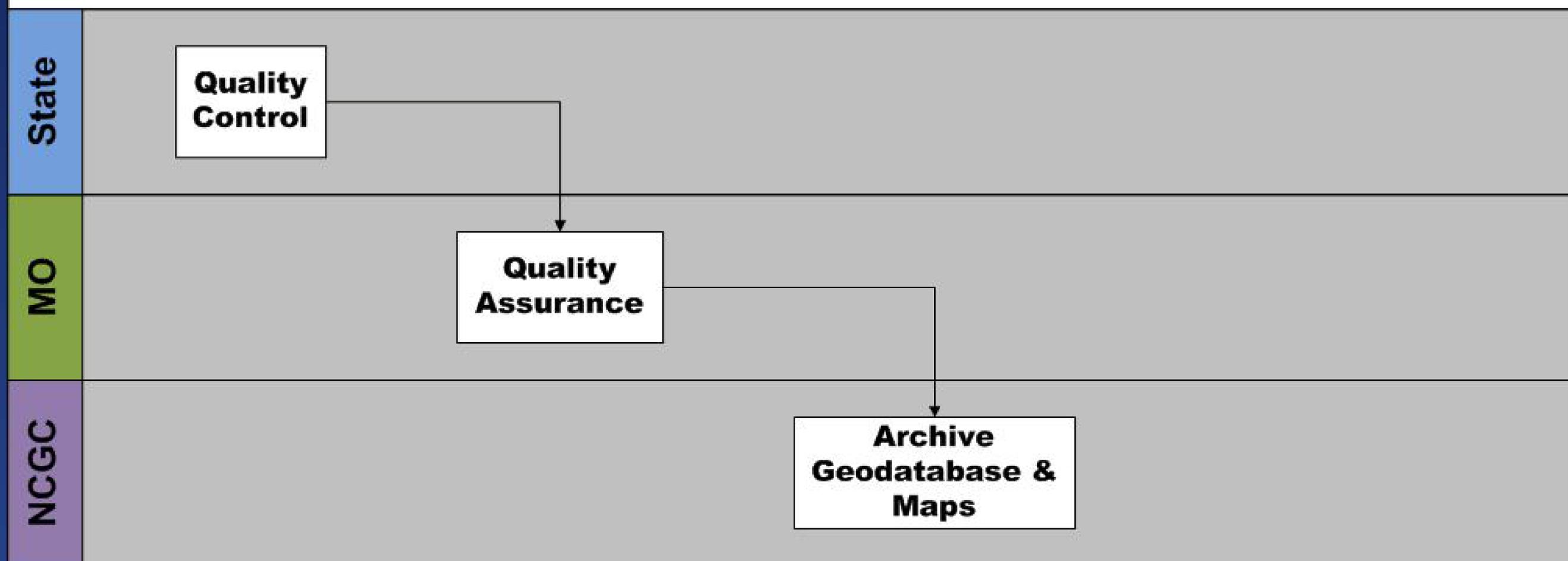
Historical Soil Survey Scanning Project



ArcGIS Digital Map Finishing and Print on Demand Map (DMF-PODM) process and application



QA / QC Procedure for DMF



DMF Status

- NCGC Technical Support



- DMF Sites

(2 sites remain – TN and IN)

Summary

- The new DMF PODM reduces the time required to finish a product and provides convenient access to soil survey maps when needed
- A National Bulletin will be released announcing the new process when it is available
- NSSH (Part 647) is being updated to reflect the new procedure
- Contact NCGC for additional information at 817-509-3420

National Cartography & Geospatial Center



Bill Adams, Acting Director

bill.adams@ftw.usda.gov

817-509-3420

NCGC Home Page - <http://www.ncgc.nrcs.usda.gov>