

**National Geospatial Management Center ... Moving into the Future**

**2011 National Cooperative Soil Survey Conference (Asheville NC)**

May 23, 2011

**Sam Brown, Soil Scientist**

**“Web Services to support  
Soil Survey Program ”**

National Geospatial  
Management Center (NGMC)



# National Geospatial Management Center (NMGC)

## Mission

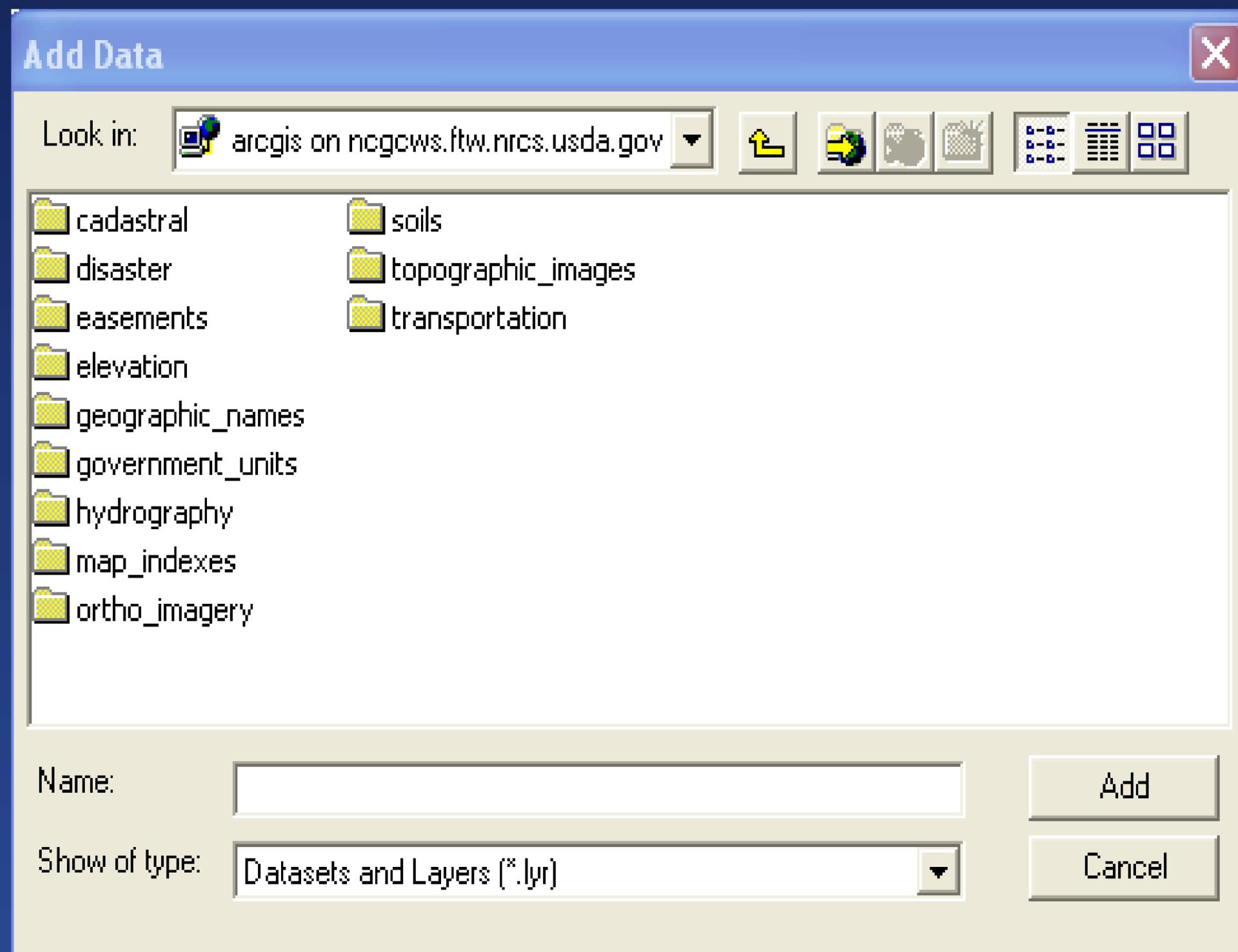
To provide consumers with accessible, always available, up-to-date, authoritative, and trusted geospatial data and value-added cartography and geospatial services:

## Key Services

- Mapping sciences (cartography, GIS, remote sensing, PNT technology)
- Aerial photography, elevation data, imagery, remote sensing, global positioning systems, training, and **Web Services (ArcMap and URL Internet access)**
- Natural resources data, geospatial technology, National Resources Inventory
- **Provide support for Soil Survey**, Engineering, Conservation Planning (CDSI), and Other agency programs
- Geospatial Data Warehousing & Distribution

# Web Services

In 2007, NGMC (former NCGC) began to inventory our data themes and expand the availability for increased NRCS programs use



<http://ncgcweb.ftw.nrcs.usda.gov/>

“GeoPortal”

The GeoPortal  
provides access  
to NRCS Web  
Services

USDA GeoPortal - Windows Internet Explorer

File Edit View Favorites Tools Help

http://ncgcweb.ftw.nrcs.usda.gov/ Live Search

USDA GeoPortal U.S. Department of Agriculture

USDA United States Department of Agriculture GeoPortal

Home About GeoPortal Help Contact Us

**Search GeoPortal**

Go

**GeoObserver**

- ▶ Easements

**Data Themes**

- ▶ Climate
- ▶ Elevation
- ▶ Easements
- ▶ Hydrography
- ▶ Imagery
- ▶ Soils

**Communities**

- ▶ Conservation Delivery Streamlining Initiative
- ▶ Major Land Resource Areas

**Welcome to GeoPortal**

The USDA GeoPortal provides an entry point to access remote sensing, geospatial static and in-situ data, information, tools, and services.

The USDA GeoPortal provides two main ways to initiate a search for geospatial resources:

- Free Text - Enter terms into the search field
- Browse via Theme, Program Areas or Community - Filter resources in the left side menu according to the program or community needs

**I Want To...**

- Find GeoData
- Use ArcMap to Find GeoData
- Order Maps, Media or Photographs

**More Data Resources**

- geodata.gov
- Geospatial Data Gateway

**Services**

- Live Data

USDA.gov | NCGC | APFO  
FOIA | Accessibility Statement | Privacy Policy | Nondiscrimination Statement | Information Quality | FirstGov | White House

# Registry of Web Services – USDA GeoPortal

Access to more than 50 Web Services

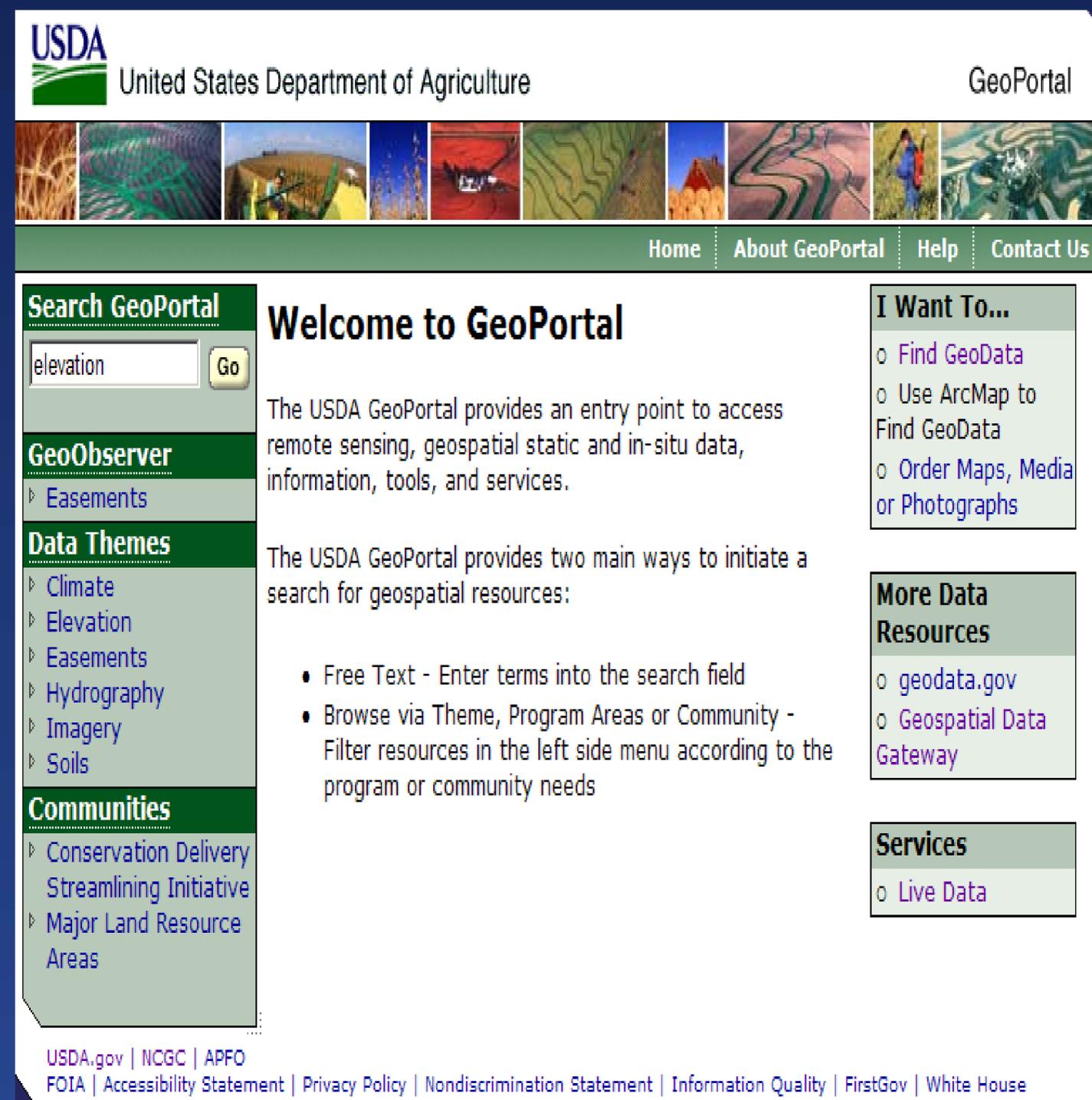
Step One, Log on to:

<http://ncgcweb.ftw.nrcs.usda.gov/>

Step Two,

In the Search GeoPortal window enter a data theme, Example:

“Elevation,” and Click the Go Button!



The screenshot shows the USDA GeoPortal homepage. At the top, there is a navigation bar with the USDA logo and the text 'United States Department of Agriculture' on the left, and 'GeoPortal' on the right. Below this is a horizontal strip of various landscape images. A green navigation bar contains links for 'Home', 'About GeoPortal', 'Help', and 'Contact Us'. The main content area is divided into several sections:

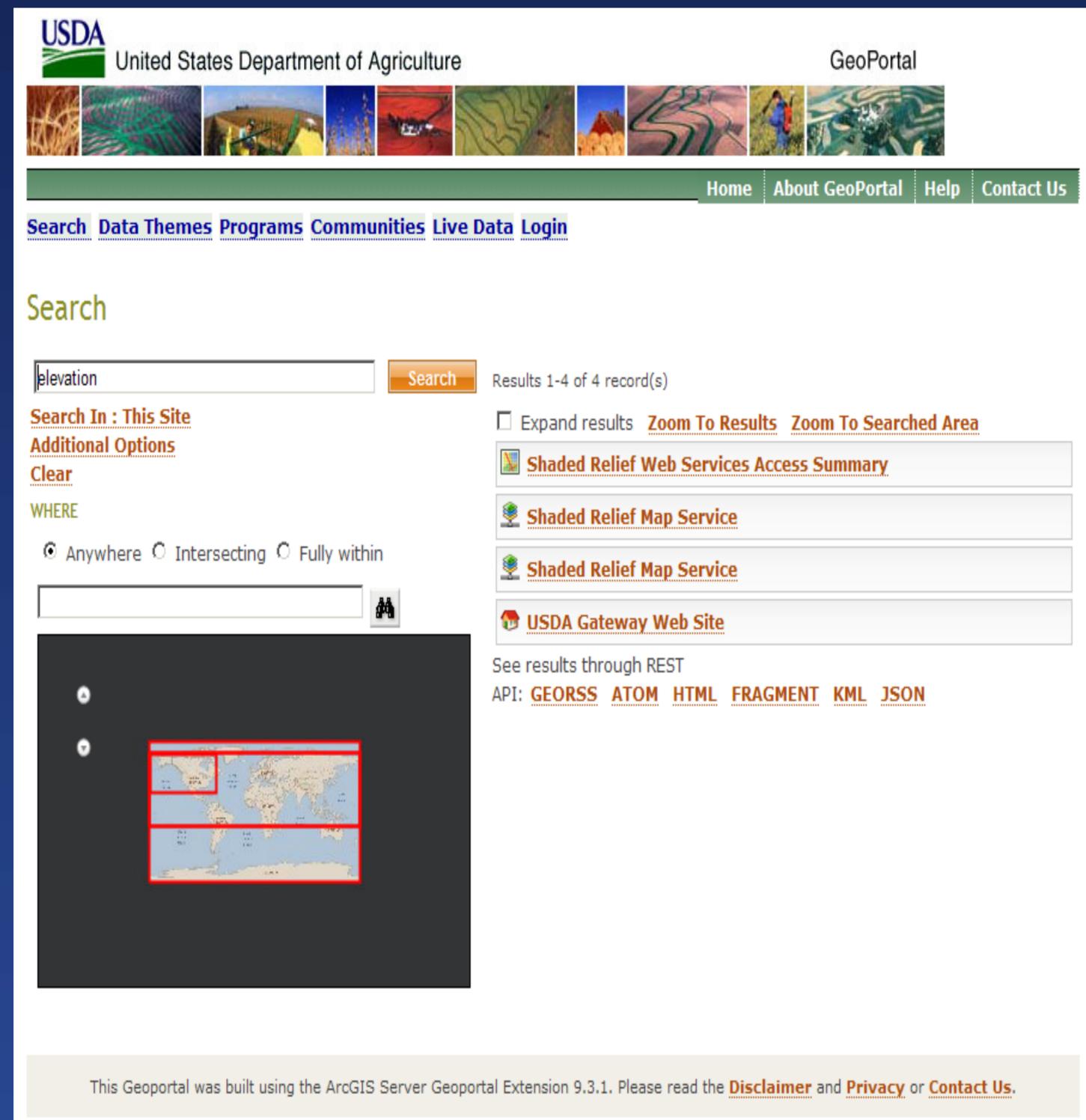
- Search GeoPortal:** A search box containing the word 'elevation' and a 'Go' button.
- GeoObserver:** A section with a dropdown menu showing 'Easements'.
- Data Themes:** A list of themes with expandable arrows: Climate, Elevation, Easements, Hydrography, Imagery, and Soils.
- Communities:** A list of community areas: Conservation Delivery Streamlining Initiative and Major Land Resource Areas.
- Welcome to GeoPortal:** A central text block stating: 'The USDA GeoPortal provides an entry point to access remote sensing, geospatial static and in-situ data, information, tools, and services.' Below this, it says: 'The USDA GeoPortal provides two main ways to initiate a search for geospatial resources:' followed by a bulleted list:
  - Free Text - Enter terms into the search field
  - Browse via Theme, Program Areas or Community - Filter resources in the left side menu according to the program or community needs
- I Want To...:** A list of links: Find GeoData, Use ArcMap to Find GeoData, Order Maps, Media or Photographs.
- More Data Resources:** A list of links: geodata.gov, Geospatial Data Gateway.
- Services:** A list of links: Live Data.

At the bottom of the page, there is a footer with links: USDA.gov | NCGC | APFO, FOIA | Accessibility Statement | Privacy Policy | Nondiscrimination Statement | Information Quality | FirstGov | White House.

# Registry of Web Services – USDA GeoPortal

## Step Three

On the menu bar  
Click on “Live Data”

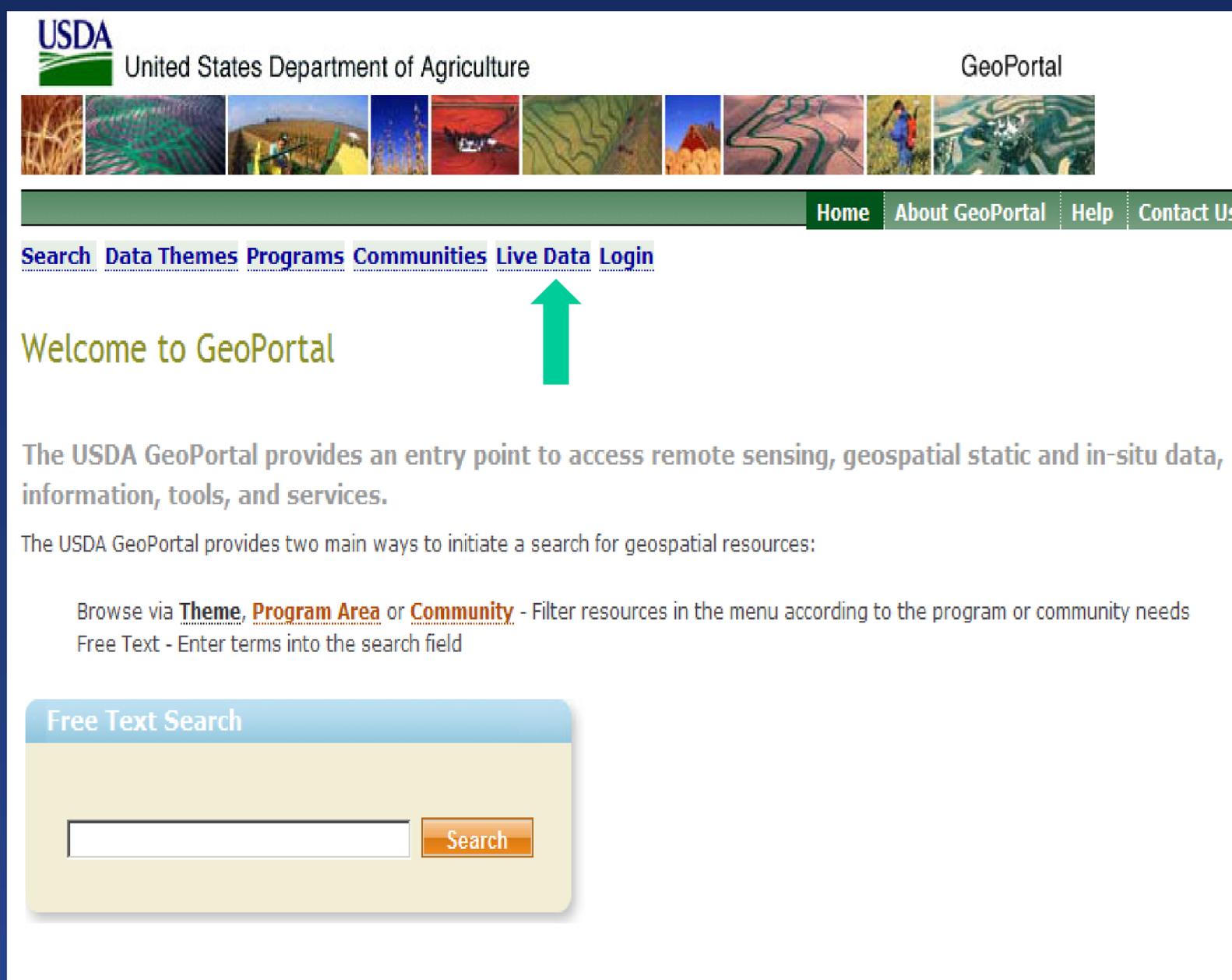


The screenshot shows the USDA GeoPortal interface. At the top, there is a navigation bar with links for Home, About GeoPortal, Help, and Contact Us. Below this is a search bar with the text 'elevation' and a 'Search' button. The search results show 1-4 records. The first result is 'Shaded Relief Web Services Access Summary', followed by two 'Shaded Relief Map Service' entries, and 'USDA Gateway Web Site'. The interface also includes a 'WHERE' section with radio buttons for 'Anywhere', 'Intersecting', and 'Fully within', and a map view showing a world map with a red bounding box around the search area.

## Registry of Web Services – USDA GeoPortal

### Step Three

On the menu bar  
Click on “Live Data”



The screenshot shows the USDA GeoPortal website. At the top left is the USDA logo and the text "United States Department of Agriculture". To the right is the "GeoPortal" logo. Below the logos is a horizontal menu bar with the following items: Home, About GeoPortal, Help, and Contact Us. Below the menu bar is a secondary navigation bar with the following items: Search, Data Themes, Programs, Communities, Live Data, and Login. A green arrow points to the "Live Data" item. Below the navigation bars is the text "Welcome to GeoPortal". Below this is a paragraph: "The USDA GeoPortal provides an entry point to access remote sensing, geospatial static and in-situ data, information, tools, and services." Below this is another paragraph: "The USDA GeoPortal provides two main ways to initiate a search for geospatial resources: Browse via Theme, Program Area or Community - Filter resources in the menu according to the program or community needs Free Text - Enter terms into the search field". Below this is a "Free Text Search" box with a search input field and a "Search" button.

# Registry of Web Services – USDA GeoPortal

The screenshot displays the USDA GeoPortal website interface. At the top, the USDA logo and "United States Department of Agriculture" are on the left, and "GeoPortal" is on the right. Below this is a horizontal navigation bar with links for "Home", "About GeoPortal", "Help", and "Contact Us". A search bar and additional navigation links ("Search", "Data Themes", "Programs", "Communities", "Live Data", "Login") are also present. The main content area is titled "Live Data and Maps" and lists several web services, each with a small globe icon, a title, a brief description, and links for "Open", "Preview", "Details", and "Metadata".

| Service Title   | Description   |
|---|---|
| <b>2011 Mississippi River Flood Image Map Service</b>       | SPOT and Landsat imagery from May 2011 showing flood disaster extents along the Mississippi River   |
| <b>2011 Mississippi River Flood Image Map Service (WMS)</b> | SPOT and Landsat imagery from May 2011 showing flood disaster extents along the Mississippi River   |
| <b>Alaska Multiresolution RGB Image Map Service</b>         | Natural Color digital Orthoimagery for Alaska including the Aleutian Islands in Alaska Albers Projection. The Orthoimagery is from several sources including Landsat Pan-Sharpener 15-meter, 1-meter (satellite and airborne), and 1-foot USGS High Resolution... |
| <b>American Samoa .6M CIR Image Map Service</b>             | Color Infrared (CIR) .6-meter digital Orthoimagery of portions of American Samoa. Includes material (c) 2003-2004 DigitalGlobe, Inc. ALL RIGHTS RESERVED. Distribution limited to partners and cooperators. Image acquisition dates range from 2003-2004.         |
| <b>American Samoa .6M RGB Image Map Service</b>             | Natural Color .6-meter digital Orthoimagery of portions of American Samoa. Includes material (c) 2003-2004 DigitalGlobe, Inc. ALL RIGHTS RESERVED. Distribution limited to partners and cooperators. Image acquisition dates range from 2003-2004.                |
| <b>CNMI .6M CIR Image Map Service</b>                       | Color Infrared (CIR) digital Orthoimagery of portions of The Commonwealth of Northern Mariana Islands (CNMI) in UTM Zone 55, WGS84. Image acquisition dates range from 2005-2006. Includes material (c) 2005-2006 DigitalGlobe, Inc. ALL RIGHTS RESERVED. Dis...  |
| <b>CNMI .6M RGB Image Map Service</b>                       | Natural Color .6-meter digital Orthoimagery of portions of The Commonwealth of Northern Mariana Islands (CNMI) in UTM Zone 55, WGS84. Image acquisition dates range from 2003-2006. Includes material (c) 2002-2006 DigitalGlobe, Inc. ALL RIGHTS RESERVED. ...   |
| <b>Congressional Districts Map Service</b>                  | The data was merged into one seamless dataset by NRCS. For the 111th Congress, since geometry did not change from the 110th, only attributes (names) needed to be changed.  |
| <b>County Boundaries Map Service</b>                        | County boundaries based on TIGER at 1:100,000 scale   |
| <b>County Boundaries with Labels Map Service</b>            | County boundaries based on TIGER at 1:100,000 scale. Labels are enabled on the detailed county boundary above 1:577,144.  |

# NGMC Image Server Web Services

**Add Image Server Connection**

Server Name:

| Name         | Geographic_... | Pixel_Source | Pixel_Unit | C |
|--------------|----------------|--------------|------------|---|
| AK           |                |              |            |   |
| Components   |                |              |            |   |
| DRG          |                |              |            |   |
| Easements    |                |              |            |   |
| FwNRCSAGSP01 |                |              |            |   |
| HI           |                |              |            |   |

Only show services available in the current view's extent

Title:

Selected Services:

|  |
|--|
|  |
|--|

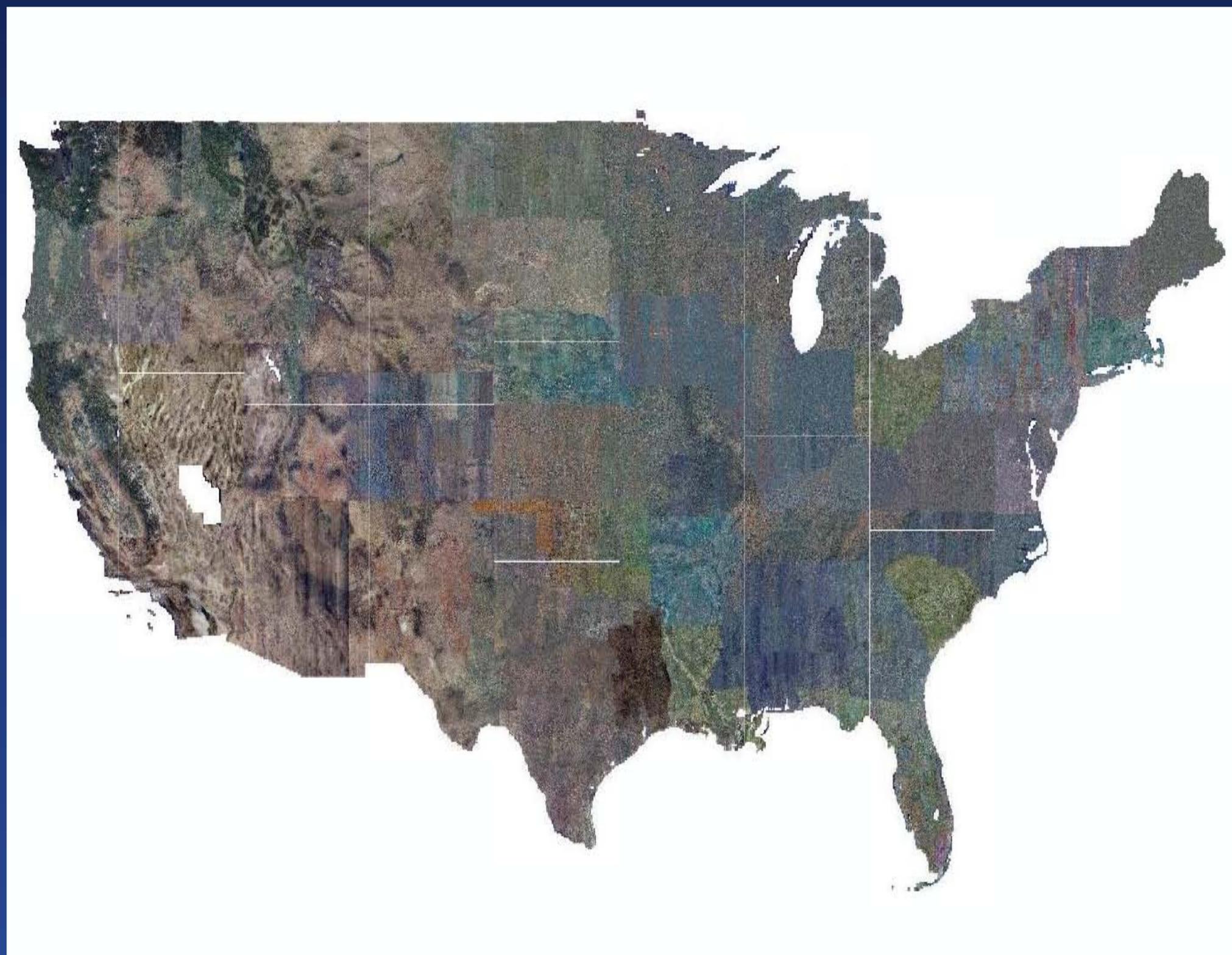
Buttons: Select, Properties..., Browse..., Remove, OK, Cancel

## Current Image Service Connections (ArcMap)

| Name                   | Geographic_...   | Pixel_Source    | Pixel_Unit  | C |
|------------------------|------------------|-----------------|-------------|---|
| AK                     |                  |                 |             |   |
| Components             |                  |                 |             |   |
| DRG                    |                  |                 |             |   |
| Easements              |                  |                 |             |   |
| FwNRCSAGSP01           |                  |                 |             |   |
| HI                     |                  |                 |             |   |
| IFSAR                  |                  |                 |             |   |
| MSRiverFlood201105     |                  |                 |             |   |
| NAIP                   |                  |                 |             |   |
| PacificBasin           |                  |                 |             |   |
| USA_HighRes            |                  |                 |             |   |
| WEB1                   |                  |                 |             |   |
| WebSoilSurvey          |                  |                 |             |   |
| Landsat_321            | USA, includin... | Landsat         | False Color | U |
| Landsat_432            | USA, includin... | Landsat         | False Color | U |
| Landsat_453            | USA, includin... | Landsat         | False Color | U |
| MODIS                  | CONUS            | MODIS           | True Color  | R |
| USA_Hillshade10m       | USA mainland     |                 |             | G |
| USA_Hillshade_10m_USGS |                  |                 |             | G |
| USA_NLCD_2001          | Conterminous ... | Landsat and ... | Color       | R |

## 2009 and 2010 NAIP IMAGERY

NGMC (former NCGC) began to serve NAIP imagery in 2007 as part our discovery business in order to provide an authoritative image base to assist NRCS program areas with visualization and area wide assessments.



**NAIP 2010, Northeast Minnesota**  
**What ground features can you identify easier with CIR Imagery?**

Natural Color (Bands 1,2,3)

Color Infrared/CIR (Bands 2,3,4)



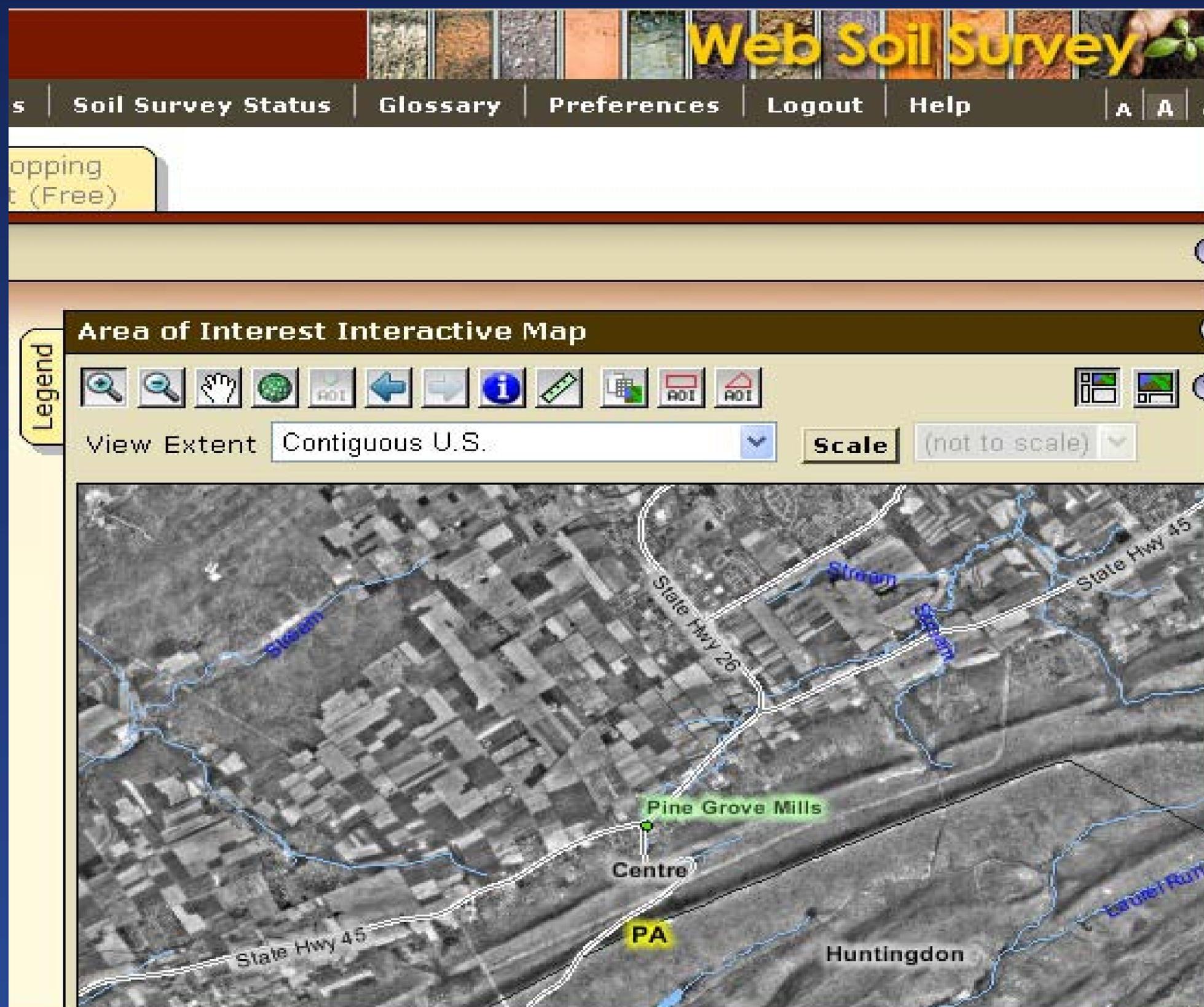
**Ground Feature Type**

- 1) Hydric Soil with Vegetation
- 2) Hydric Soil with Submerged Vegetation
- 3) Mixed Hardwood/Coniferous Forests
- 4) Hardwood Forest
- 5) Coniferous Forest

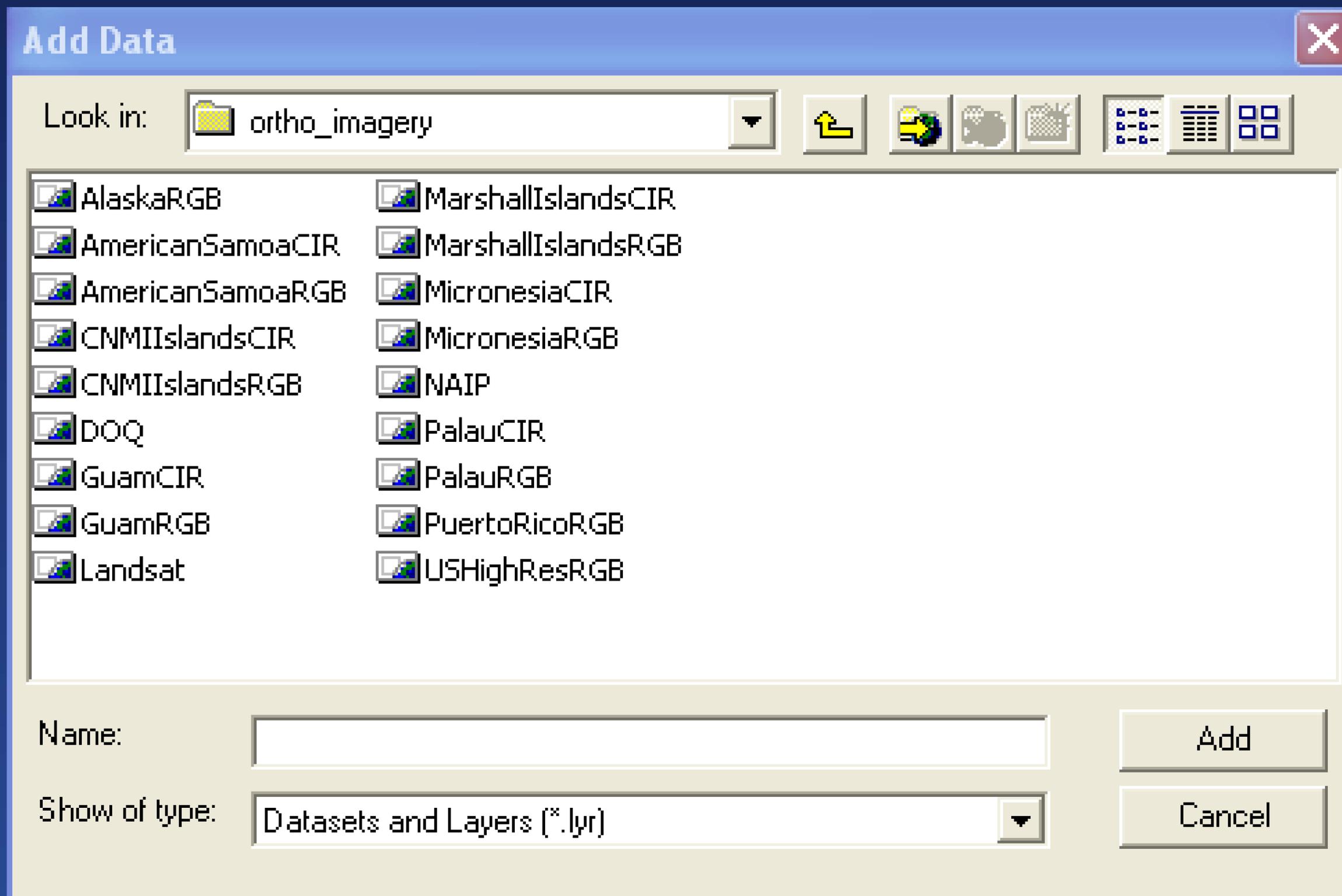
## Web Soil Survey (WSS) Imagery

Some states only had black and white imagery on the WSS

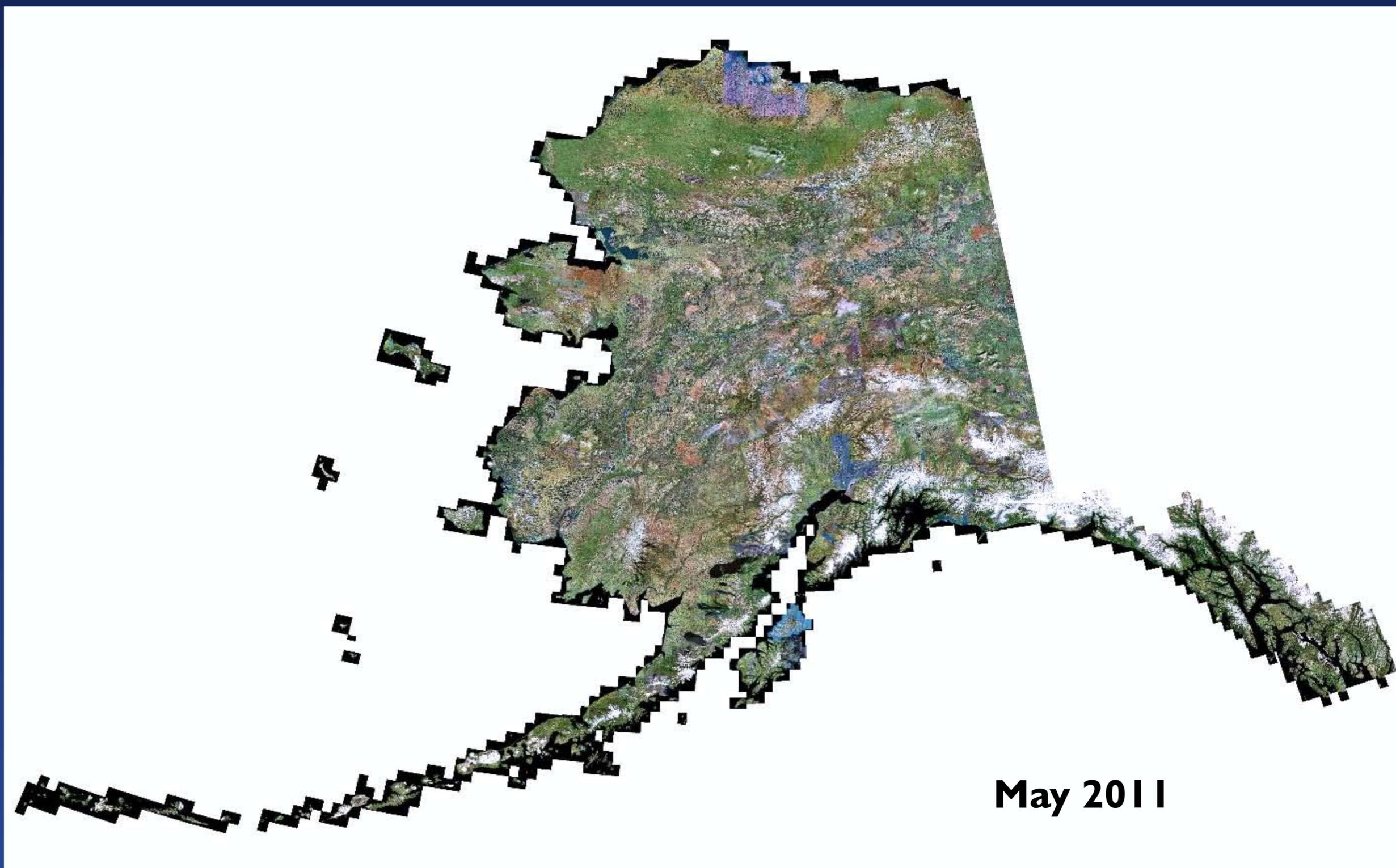
NCGC partnered with the SSD and ITC to use NAIP as the official the official back ground imagery for the Web Soil Survey



## Web Services (Arc Map) to Support NRCS Imagery for Programs Use



## Alaska Web Service



## Puerto Rico and Virgin Islands Web Service

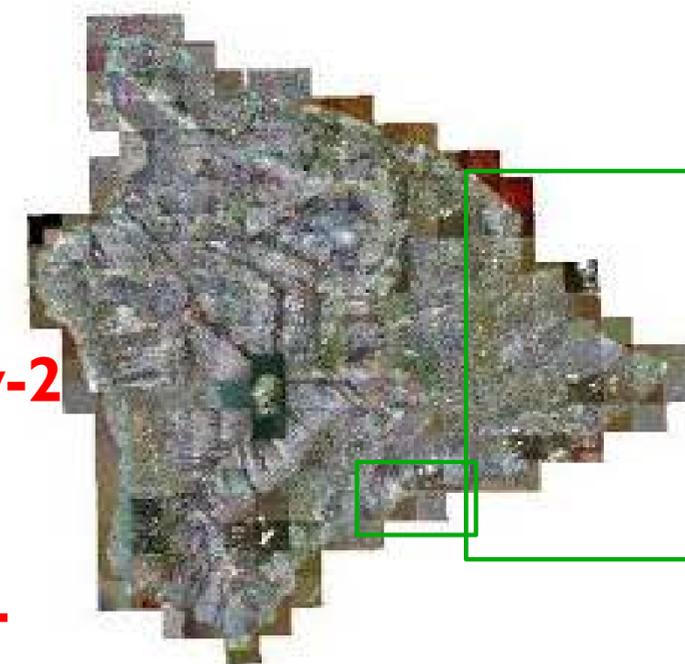
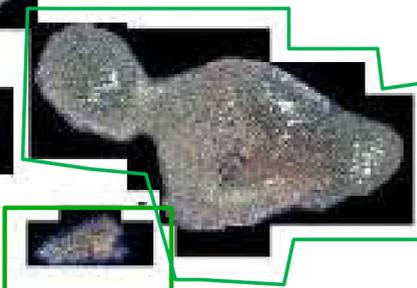


**May 2011**

## Hawaii and Pacific Basin



## Hawaiian Islands Orthoimagery Status DigitalGlobe WorldView-2 Status April 2011



**Orthoimagery Delivered and Accepted**  
**Oahu, Kauai, Niihau, Kahoolawe, Maui**  
**and the East End of Hawaii**

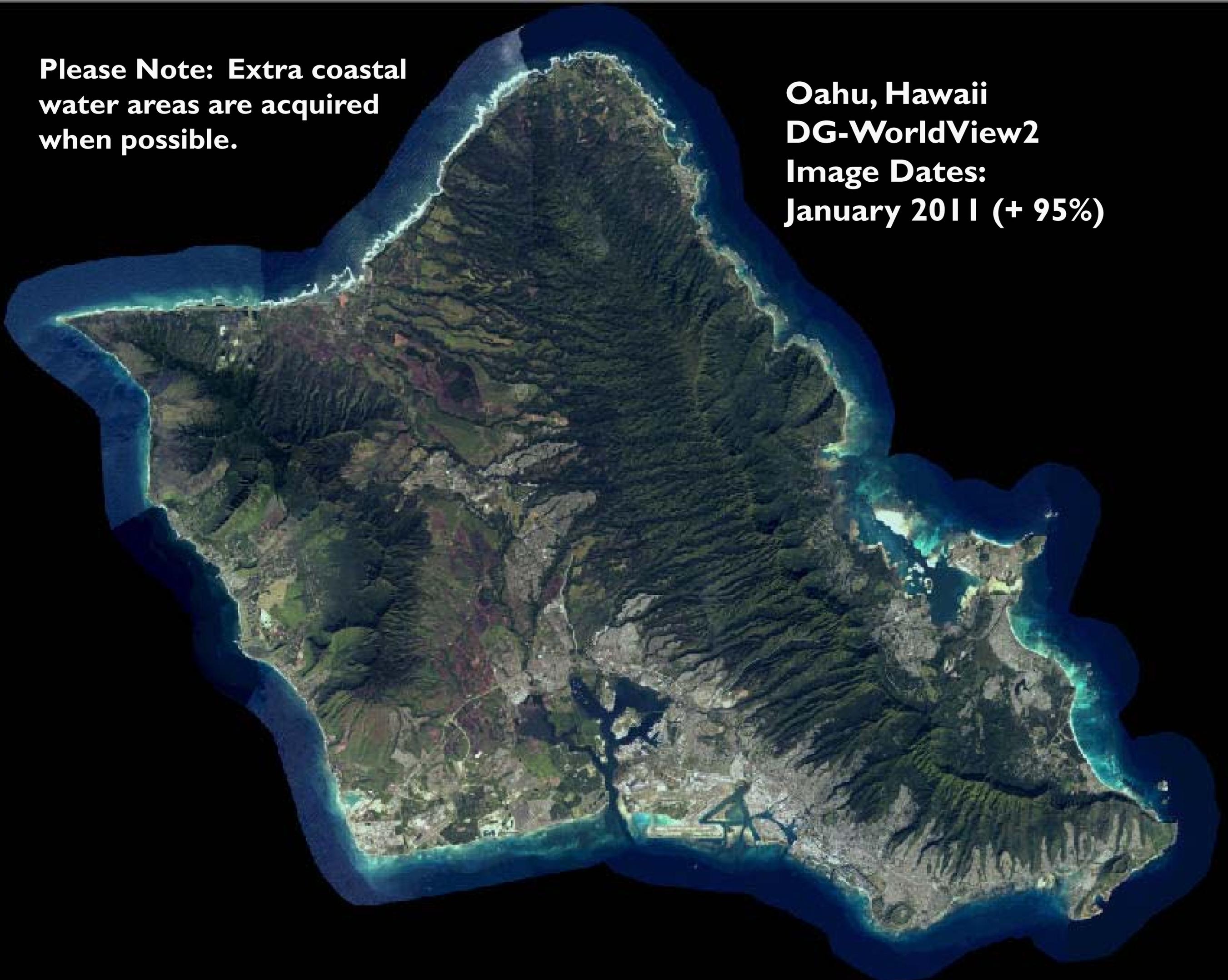


**•USGS, State of Hawaii and USDA have contracted for complete coverage of all 8 major Hawaiian Islands with DigitalGlobe/WorldView-2 Satellite Orthoimagery.**

**•Hawaii will be first state with complete collection with DigitalGlobe – WorldView-2 (.5 Meter GSD), 8 Band Multi-Spectral Imagery!**

**Please Note: Extra coastal  
water areas are acquired  
when possible.**

**Oahu, Hawaii  
DG-WorldView2  
Image Dates:  
January 2011 (+ 95%)**





**Oahu, East Coast  
DG-WV2  
January 2011**

**Set Layer Combinations for g:/hawaii\_orthoimagery\_wv2/oahu\_wv2\_8\_final\_201...**

|   |                             |              |   |
|---|-----------------------------|--------------|---|
| <input checked="" type="checkbox"/> Red :   | oahu_wv2_2011_ps_16bit_8ban | [(:Layer_4)] | 4 |
| <input checked="" type="checkbox"/> Green : | oahu_wv2_2011_ps_16bit_8ban | [(:Layer_3)] | 3 |
| <input checked="" type="checkbox"/> Blue :  | oahu_wv2_2011_ps_16bit_8ban | [(:Layer_2)] | 2 |

Auto Apply

OK Apply Close Help



## **Satellite Imagery:**

- Always collected at same everyday (10:30 Local Time).**
- NADIR was fairly good on some/most of Oahu.**

## Maui, New Version, 2/07/2011



**Kauai**  
**DG-WV-2**



United States Department of Agriculture  
Natural Resources Conservation Service

Hawaii  
DG-WV2, Partial

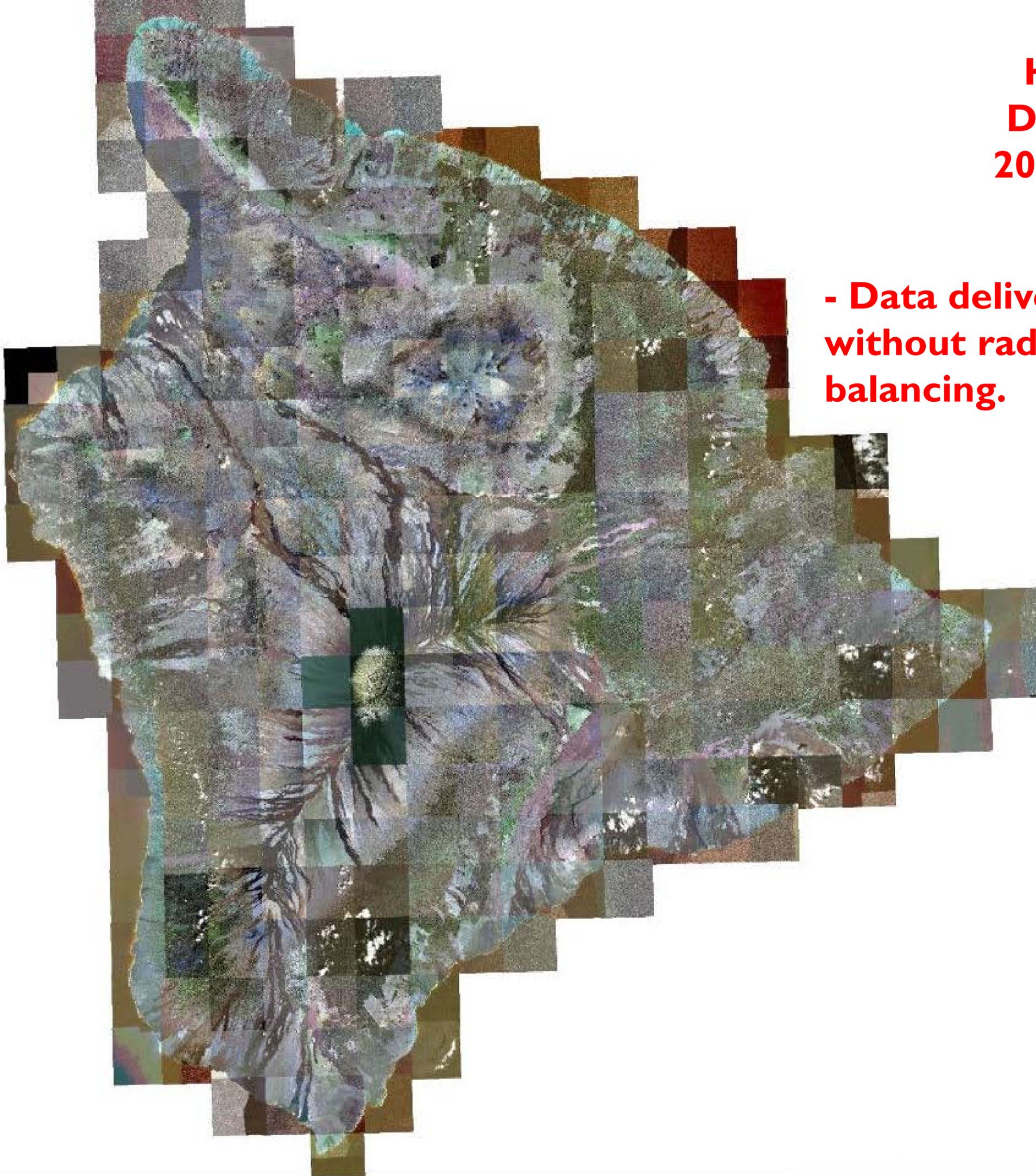
Volcano's National Park (4 Band)



East End, Hilo

**Hawaii  
DG-QB2  
2003-2008**

**- Data delivered by DOQQ  
without radiometric  
balancing.**



## Guam, 2/07/2011

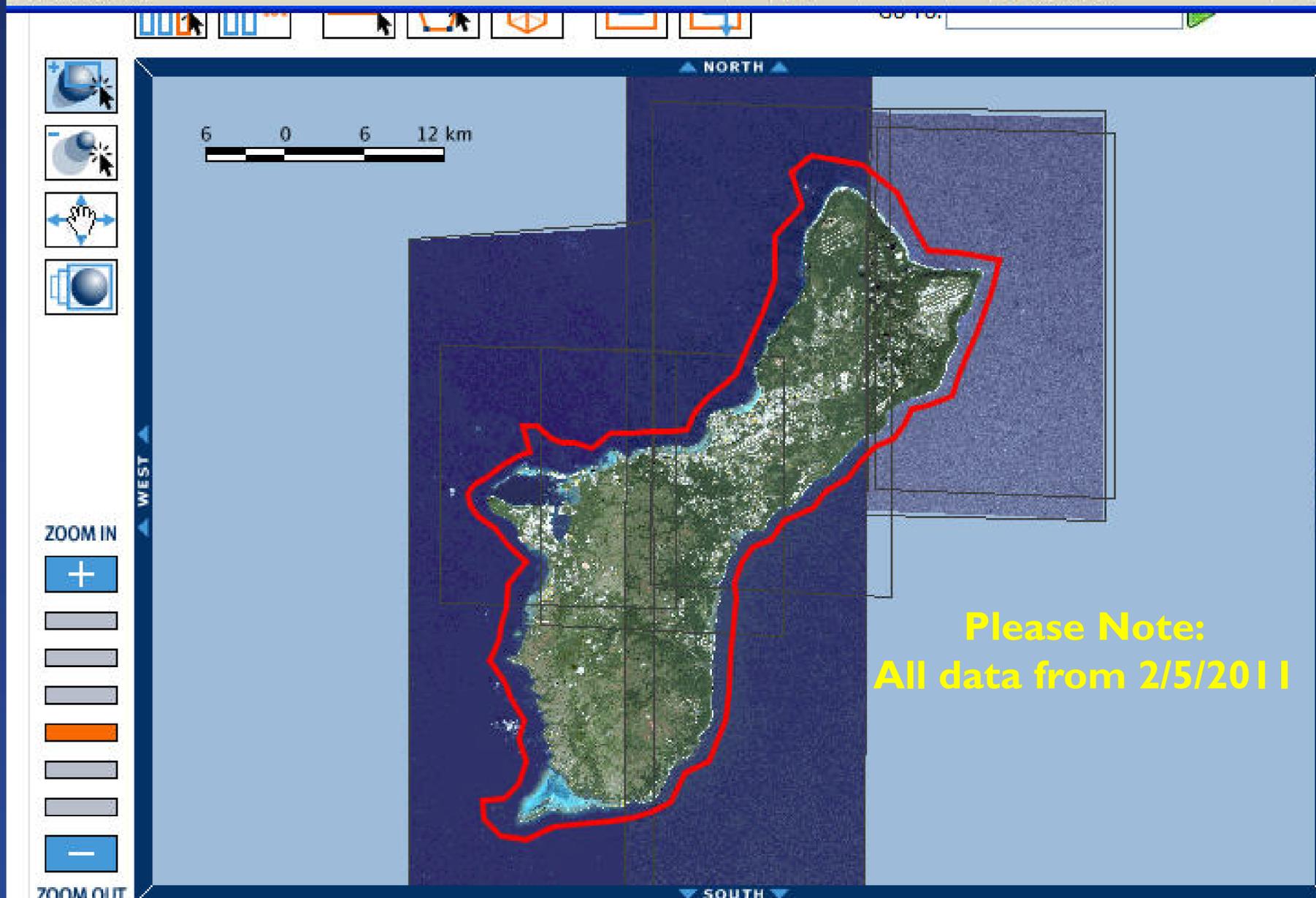
|                          |                                     |                        |                          |                  |      |            |        |        |        |    |    |             |
|--------------------------|-------------------------------------|------------------------|--------------------------|------------------|------|------------|--------|--------|--------|----|----|-------------|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <a href="#">3 View</a> | <input type="checkbox"/> | 1030010009CF2A00 | WV02 | 2011/02/05 | 17.43° | 15.33° | 55.25° | 1% | 4% | Pan_MS1_MS2 |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <a href="#">2 View</a> | <input type="checkbox"/> | 103001000912DC00 | WV02 | 2011/02/05 | 15.07° | 14.25° | 55.18° | 1% | 3% | Pan_MS1_MS2 |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <a href="#">1 View</a> | <input type="checkbox"/> | 1030010009C2DA00 | WV02 | 2011/02/05 | 17.90° | 17.74° | 55.25° | 0% | 1% | Pan_MS1_MS2 |
| <input type="checkbox"/> | <input type="checkbox"/>            | <a href="#">View</a>   | <input type="checkbox"/> | 1030010009B7C100 | WV02 | 2011/02/05 | 19.31° | 17.89° | 55.08° | 0% | 0% | Pan_MS1_MS2 |
| <input type="checkbox"/> | <input type="checkbox"/>            | <a href="#">View</a>   | <input type="checkbox"/> | 1030010009C10B00 | WV02 | 2011/02/05 | 15.12° | 15.12° | 55.1°  | 1% | 1% | Pan_MS1_MS2 |
| <input type="checkbox"/> | <input type="checkbox"/>            | <a href="#">View</a>   | <input type="checkbox"/> | 10300100096C6300 | WV02 | 2011/02/05 | 21.17° | 21.17° | 55.1°  | 0% | 0% | Pan_MS1_MS2 |

[Close](#)

Error on page.

Internet

100%



**Search Filter**

Acquisition Date: 10/1/10 - 2/8/11  
 Off Nadir Angle: 0.0 - 25.0 degrees  
 Cloud Cover: 0 - 10 %

[SEARCH](#) [MODIFY FILTER](#)

**Map Status**

Lon: Area: 791 km<sup>2</sup>  
 Lat: Scale: 1:493,435

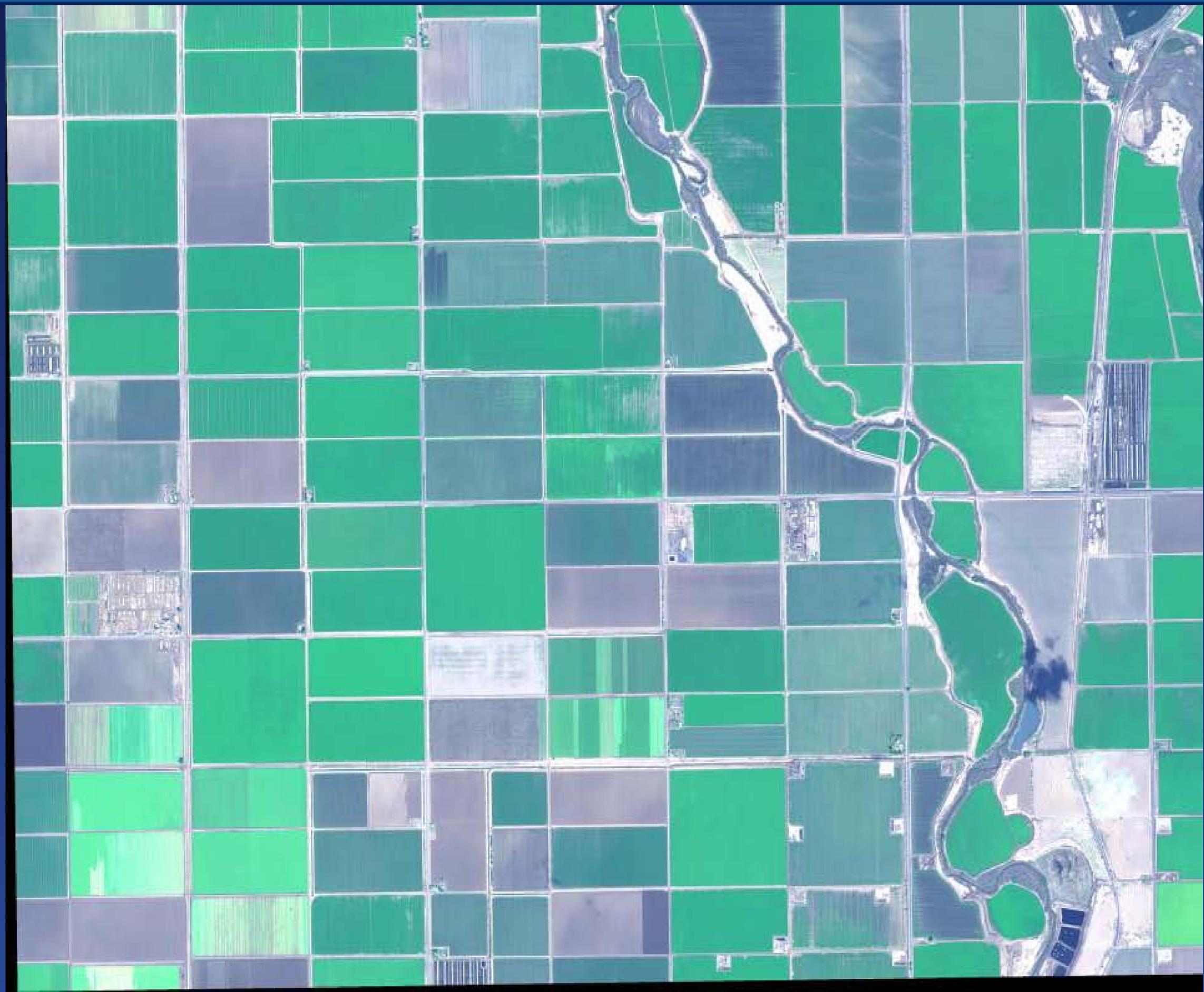


[SUBMIT](#) Email an order inquiry to Customer Service.

## Pacific Basin Status

- **USDA has collected approximately ~ 98% of all land mass within the jurisdiction of the United States:**
  - **Guam**
  - **Commonwealth of the Northern Mariana Islands**
  - **Northwestern Hawaiian Islands**
  - **Palau**
  - **American Samoa**
  - **Federated States of Micronesia**
  - **Marshall Islands**
  - **US Trusts (Palmyra, Wake, etc..)**
- **Most islands acquired also contain any visible shallow water reef areas.**
- **All data is Satellite 1 Meter or higher resolution (DG-QB2, DG-WV2, GeoEye-1)**
- **USDA upgraded most but not all DG-QB2 data to Enterprise Premium License in Fall 2009.**
- **Funding would not allow complete Enterprise Premium Licenses in Pacific Basin.**
- **Enterprise Premium (100% DG-QB2, DG-WV2) for: Guam, CNMI, Palau, American Samoa, NWHI (except I)**
- **The following have a mixture Enterprise Premium and NGA NextView/Civil Government: Marshall Islands, Federated States of Micronesia and US Trusts.**

WorldView-2  
True Color  
0.6 meter, 8 band  
to expand field  
remote activities



WorldView-2 uses  
reflectance returns  
to provide an array  
of soil and plant  
condition indicators



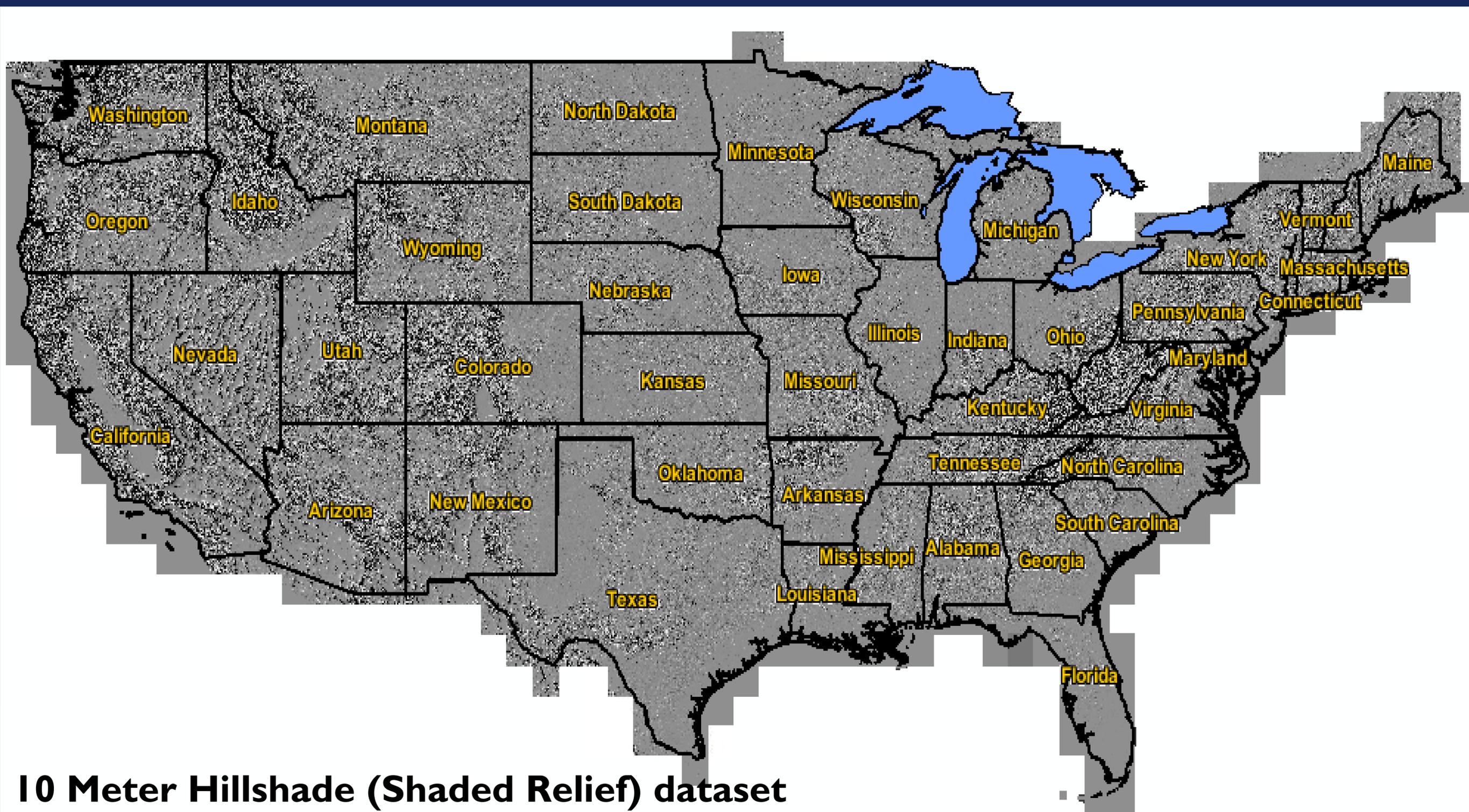
stressed vs  
mature crop

**WorldView-2**  
land covers  
**Salton Sea**  
Feb 20, 2010

|                             |   |               |                             |   |                      |
|-----------------------------|---|---------------|-----------------------------|---|----------------------|
| <input type="checkbox"/> On |     | unclassified  | <input type="checkbox"/> On |     | crop H               |
| <input type="checkbox"/> On |    | alluvial      | <input type="checkbox"/> On |    | crop I               |
| <input type="checkbox"/> On |    | bush          | <input type="checkbox"/> On |    | crop J               |
| <input type="checkbox"/> On |    | crop A        | <input type="checkbox"/> On |    | diy dirt surface     |
| <input type="checkbox"/> On |    | crop A cut    | <input type="checkbox"/> On |    | man-made             |
| <input type="checkbox"/> On |    | crop B        | <input type="checkbox"/> On |    | sol A                |
| <input type="checkbox"/> On |    | crop B moist  | <input type="checkbox"/> On |    | sol B wet            |
| <input type="checkbox"/> On |    | crop C        | <input type="checkbox"/> On |    | sol C                |
| <input type="checkbox"/> On |    | crop D        | <input type="checkbox"/> On |    | sol D                |
| <input type="checkbox"/> On |    | crop D mature | <input type="checkbox"/> On |    | sol E                |
| <input type="checkbox"/> On |    | crop E        | <input type="checkbox"/> On |    | sol F freshly tilled |
| <input type="checkbox"/> On |    | crop F dry    | <input type="checkbox"/> On |    | sol G sandy          |
| <input type="checkbox"/> On |  | crop F moist  | <input type="checkbox"/> On |  | sol G wet            |
| <input type="checkbox"/> On |  | crop G        | <input type="checkbox"/> On |  | water                |



## Elevation Data - Hillshade



**10 Meter Hillshade (Shaded Relief) dataset**

## State Geology Layer

NGMC worked with the Gateway Team to add the State Geology Layer on the Gateway in 2010 to support the soil survey MLRA update Inventory

Is there a business requirement to make the State Geology Layer available in a Web Service?

The screenshot shows the homepage of the Geospatial Data Gateway (GDG). At the top, there is a banner with the USDA and NRCS logos and the text "United States Department of Agriculture Natural Resources Conservation Service" and "GEOSPATIAL DATA GATEWAY". Below the banner is a navigation menu with links: Home, Login, Check Order, Status Maps, News, Data Policy, FAQ, Help, Admin, and Contact Us. On the left side, there is a search box and a "Browse by Subject" menu with various categories like Natural Resources Conservation Service, Farm Services Agency, Rural Development, etc. The main content area features a large image of a rock archway over the ocean with the text "Welcome to GDG" and "the one stop source for environmental and natural resource data". Below this is a paragraph describing the GDG as the "One Stop Source" for environmental and natural resources data, available from anywhere to anyone. It also mentions a partnership between the Service Center Agencies (SCA), NRCS, FSA, and Rural Development (RD). At the bottom left, there is a "System Status" section with a clock icon and a "Please Note" message dated 6/2/2010 9:29:07 AM MST. On the right side, there is a "GET DATA" button and a "Place a Data Order" button with the GDG logo. Below these is a section titled "I Want To..." with a list of options: Order by County/Countries, Order by State, Order by Place, Order by Bounding Rectangle (Latitude and Longitude), Order by Interactive Map - Custom Area Of Interest(AOI), and Find Available Data for.

## State Geology Layer

### WHAT

Here are the available map layers for your selected area of interest.

2008 National Ag. Imagery Program Mosaic, 254 maps 307914.918 MB  

2010 National Ag. Imagery Program Mosaic, 254 maps 230678.666 MB  

#### Geographic Names

Geographic Names - Populated Places, 254 maps 5.290 MB  

Geographic Names - Non-Populated Places, 254 maps 51.577 MB  

#### Land Use Land Cover

National Land Cover Dataset by State, 1 map 1682.567 MB  

Cropland Data Layer by State, 1 map 81.486 MB  

#### Geology

National scale Geology by State, 1 map 80.591 MB  

#### Soils

Major Land Resource Areas by State, 1 map 3.578 MB  

Common Resource Areas by State, 1 map 4.093 MB  

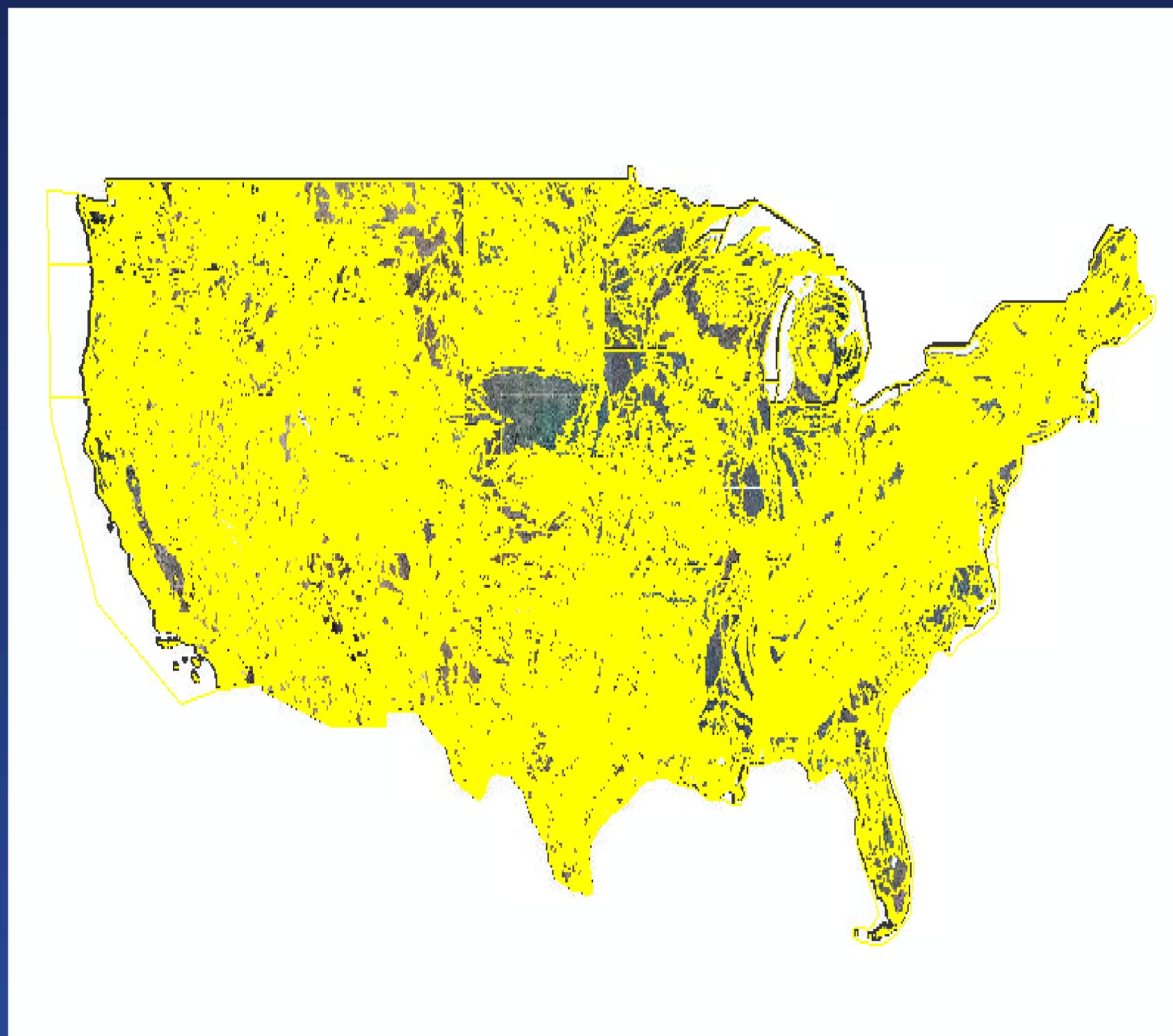
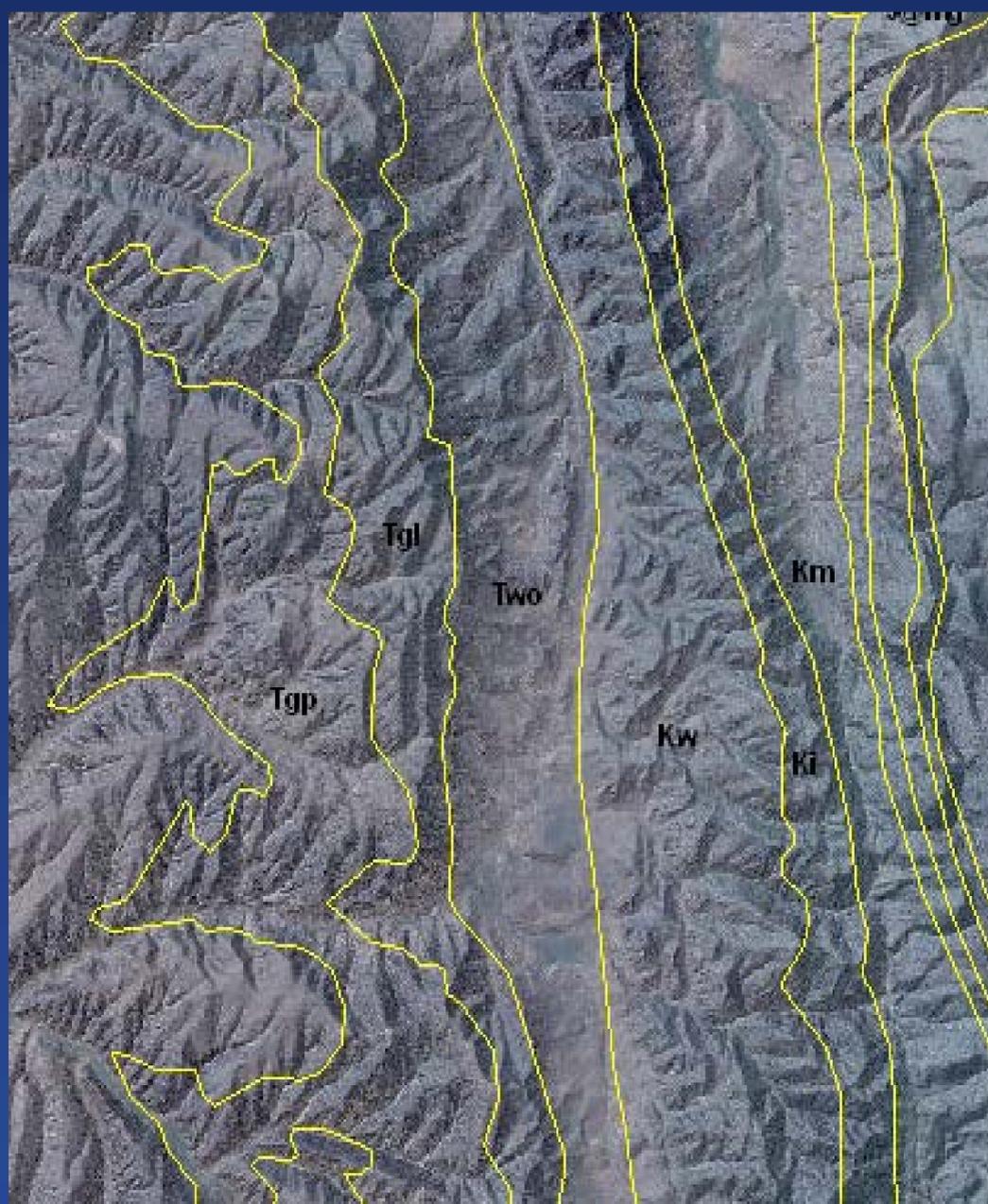
Soil Survey Spatial and Tabular Data (SSURGO 2.2), 232 maps 7345.210 MB  

Soil Survey Tabular Data Only, 233 maps 4570.250 MB  

U.S. General Soil Map (STATSGO) - State Subset, 1 map 50.005 MB  

# Geology\_USA48

AOI in Colorado



# Connecting to Services

- Connect to services through ArcCatalog or ArcMap by adding an ArcGIS connection to:  
<http://ncgcws.ftw.nrcs.usda.gov/arcgis/services>  
When connected, click on folder to view data.
- When using Image Server Plug-in (fast connection) to access the imagery, the connection can be in ArcMap. Click the “Add Image Server Connection” button and enter:  
<http://ncgcimg01.ftw.nrcs.usda.gov:10010/>
- Note: The Image Server Plug-in is standard in ArcGIS 9.3. In ArcGIS 9.2, NRCS users must request ITS installation.

## NRCS CDSI EQIP (FA) Ranking Pilot – Eight States

The purpose of the pilot is to demonstrate a GIS solution to automate financial assistance (FA) using a ranking tool and provision priority national, state and local data layers in a scientific manner based on resource concerns to support area-wide assessments and conservation planning.

### Objectives includes:

- Test the applicability of NRCS' new resource concerns and planning criteria list
- Evaluate the concept of automated ranking for financial assistance using state and local criteria in a geospatial environment
- Capture and evaluate time savings for the ranking of EQIP applications
- Test and evaluate geospatial data provisioning options, methodologies, and services to support automated FA ranking and conservation planning functions

|  |
|--|
| Select   |
| EPA: 303d waters Pesticides, Salinity, Nutrients, Sediment impairments by HUC 12 |
| EPA: 303d Waters w Nutrients, Phosphorus or Sediment Impairments by 50ft 2010    |
| EPA: 8 Hour Ozone Non Attainment Areas - 1997                                    |
| EPA: Particulate Matter 2.5 Areas - 2006   |
| FEMA: 100 yr floodplain  |
| FWS: Wildlife Refuges with 180ft and 300ft Buffers                               |
| NPS: 50 Mile Buffer of Class I Federal Lands - 2007                              |
| NRCS: Easements (buffered at 180 and 300) - 2011                                 |
| NRCS: Soils  |
| NRCS: USDA Prism Annual Precip   |
| States: AL Land Cover  |
| States: AL Land Use  |
| States: AL Out Natural Resource Waters   |
| States: AL Outstanding Waters  |
| States: AL TE Species - 2010   |
| States: AL Wild Scenic Rivers  |
| States: CA Anadromous Fish   |
| States: CA CRCC Priority Areas - 2010  |
| States: CA Public Use Buffers All - 2011   |
| States: CO BLM - 2006  |
| States: CO Geo Poli WBD  |
| States: CO Greater Sage Grouse Core - 2010                                       |
| States: CO Greater Sage Grouse Overall Minus Core - 2010                         |
| States: CO RMBO Playa 30ft - 2009  |

More than 50 priority data layers, including the **SSURGO Layer (Attributes)** were integrated into the CDSI EQIP FA Ranking Tool

|   |
|---|
| States: CO Salinity Geology - 2010              |
| States: CO Salinity Project Areas - 2008        |
| States: CO Sparrow - 2009                       |
| States: IN Karst                                |
| States: IN Land Use / Land Coverage - 2011      |
| States: KS CRP - 2009                           |
| States: KY DOW Identified Watersheds - 2004     |
| States: KY DOW Impaired Waterbodies - 2004      |
| States: KY DOW Wellhead Protection Areas - 2004 |
| States: KY Forest Priority Areas - 2010         |
| States: KY Forestland Bird Cons Areas - 2005    |
| States: KY Grassland Bird Cons Areas - 2005     |
| States: KY USGS Sinksheds - 2005                |
| States: OR Groundwater Mngmt Areas - 2008       |
| States: OR Groundwater Vulnerability - 2003     |
| States: OR Juniper Removal Potential - 2011     |
| States: OR Sage Grouse Habitat - 2011           |
| States: OR Tualatin Stream Reach Rating - 2005  |
| States: OR WERI - 2011                          |
| States: UT BLM USFS Buffers                     |
| States: UT Habitat Gap                          |
| States: UT Invasives Cheatgrass - 2007          |
| States: UT Lakes 305B WBD                       |
| States: UT Sage Grouse - 2011                   |
| States: UT Sensitive Wildlife                   |
| States: UT Shallow Groundwater SGID 500 - 1988  |

## CDSI Services Description

- NGMC received a file geodatabase with 24 pre-processed soils interps for 8 pilot states based on requests from the states (as needed for the ranking pilot)
- The data was loaded into SQL Server 2008 / ArcSDE
- NGMC created a service for each of the eight CDSI EQIP Ranking Tool Pilot states (AL, CA, CO, IN, KS, KY, NE, OR, UT) in ArcGIS Server 10
- The service contains 24 web service layers, each representing one of the soil interps
- Each Interp can be viewed as a separate sublayer in the service

## 4. Accessing the Data - via the NRCS Ranking Mart or Internet Map Service

### Accessing the Data

#### Access via the NRCS Ranking Mart

Start Internet Explorer and go to <http://web1.ftw.nrcs.usda.gov/nrcsrankingmart>

Or

#### Access via the Internet Map Service Using a GIS such as ArcCatalog or ArcMap

There are web services available using this method.

Each service contains different data to allow advanced users to recombine and use the data as necessary to accomplish their work.

Data can be accessed through ArcCatalog 9.3 or ArcMap 9.3 by adding an ArcGIS Server connection.

In ArcCatalog, click on GIS Servers>Add ArcGIS Server in the catalog tree.

Select "Use GIS Services" and click "Next".

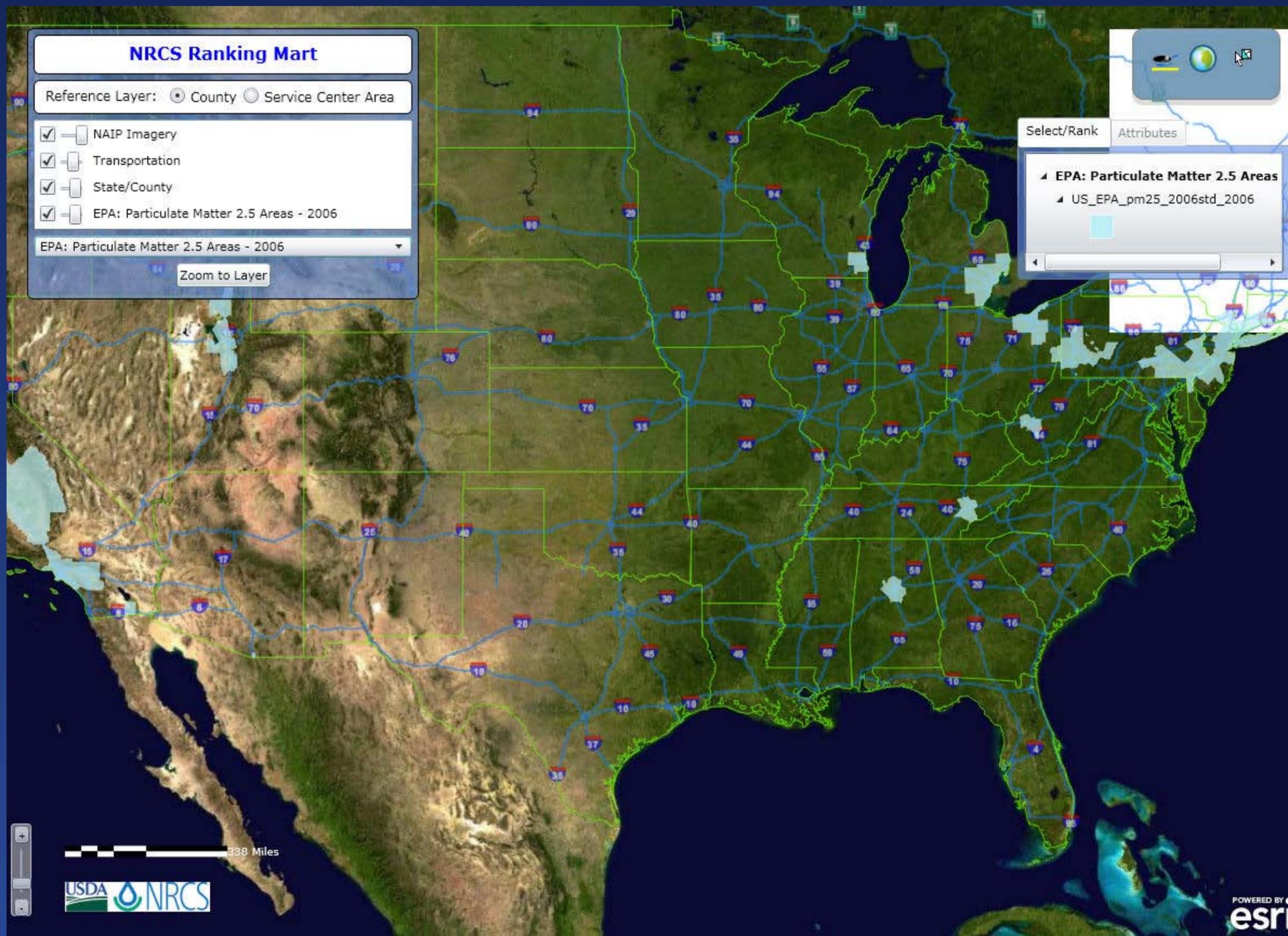
Choose "Internet" as the type of ArcGIS Server connection and enter <http://gisapps1.ftw.nrcs.usda.gov/arcgis/services>

Click "Finish".

## 4. Accessing the Data –

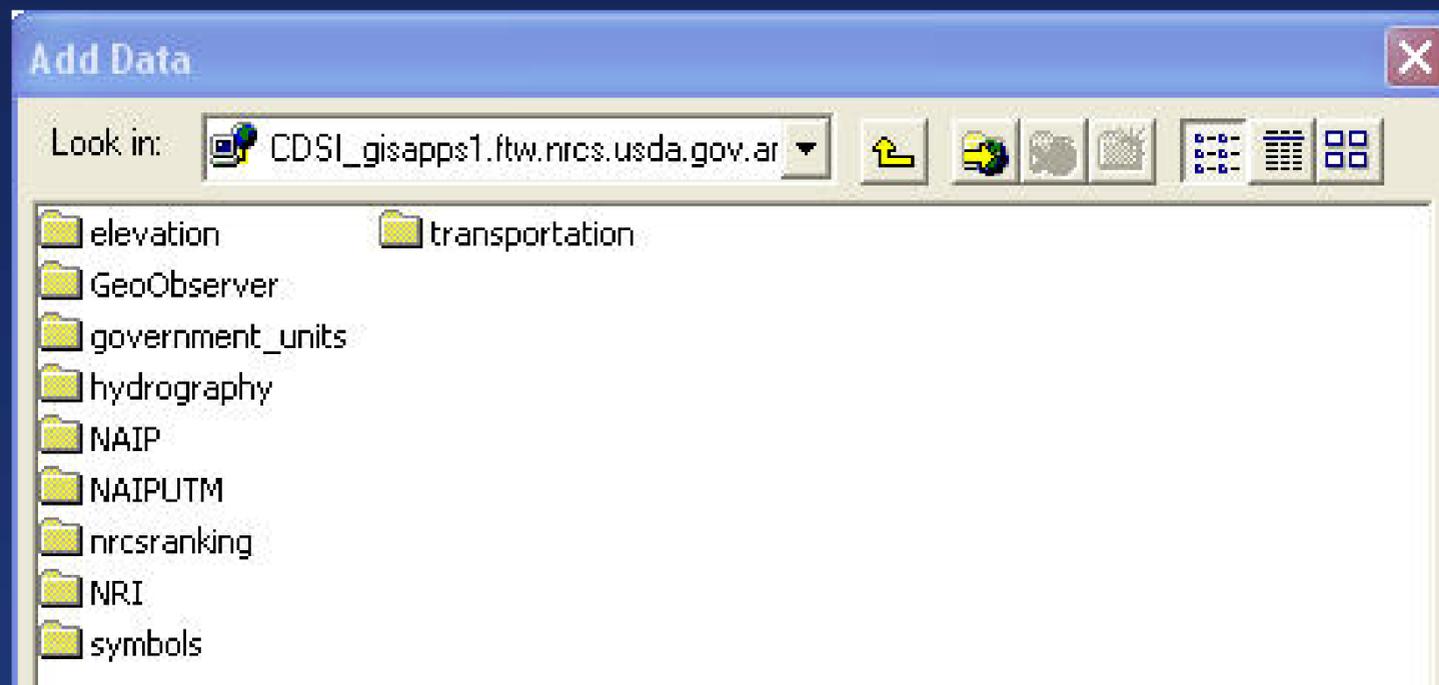
### NRCS Ranking Mart

<http://web1.ftw.nrcs.usda.gov/nrcsrankingmart2/>

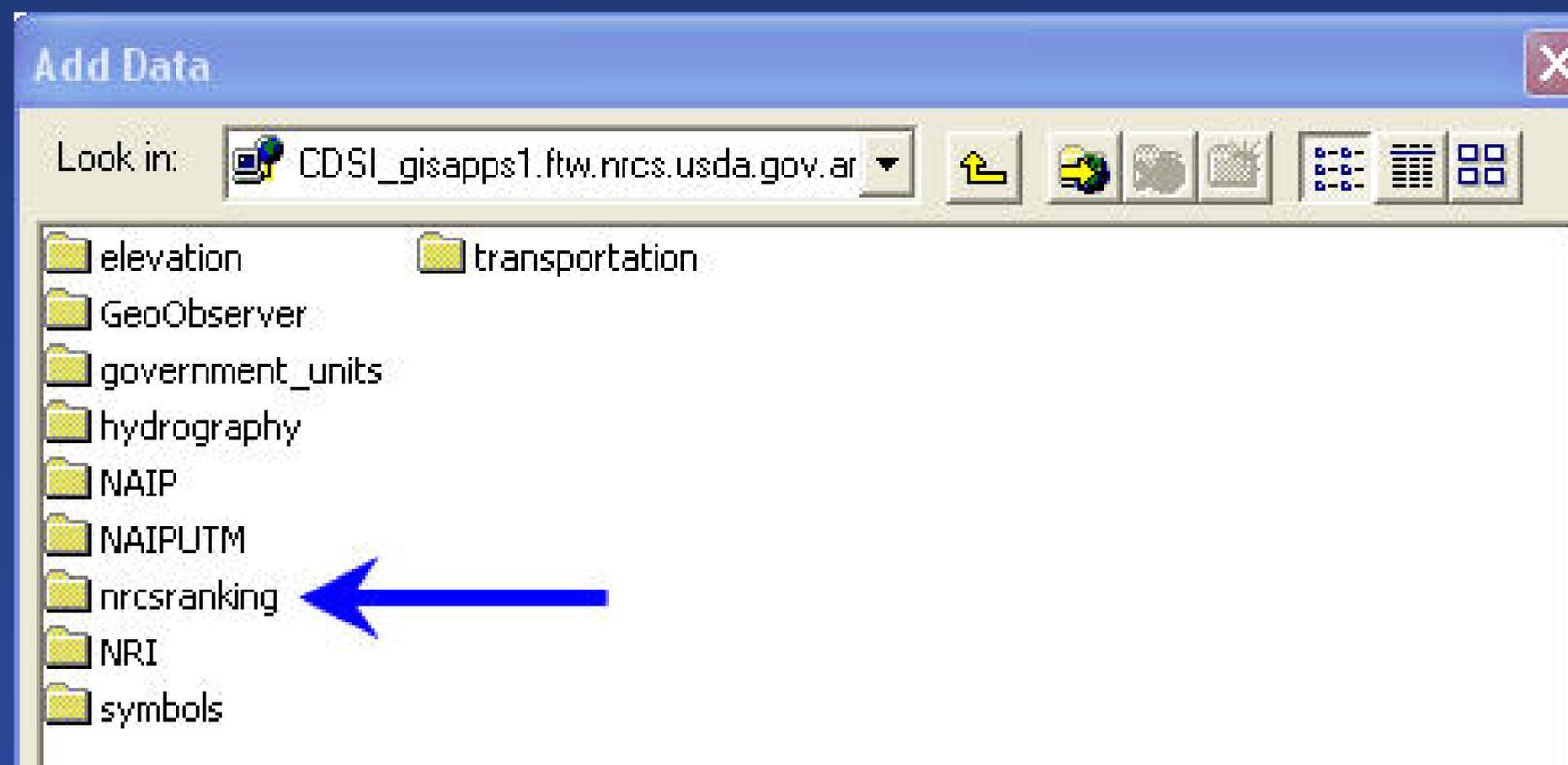


## 4. Accessing the Data

### Web Map Service – Data Available using a GIS such as ArcMap



**Data in nrcsranking is specific to the FA Ranking Pilot**

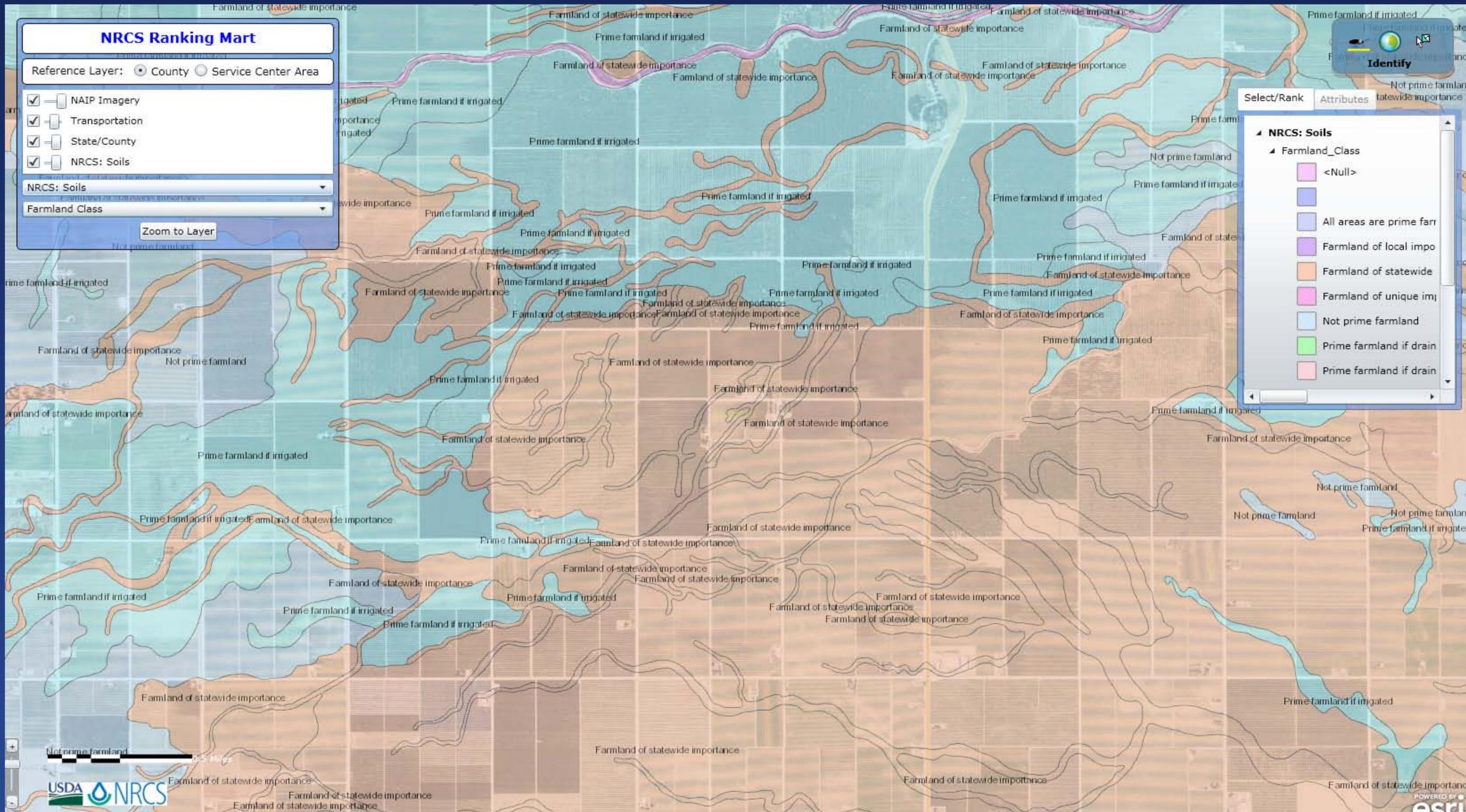


## 4. Accessing the Data

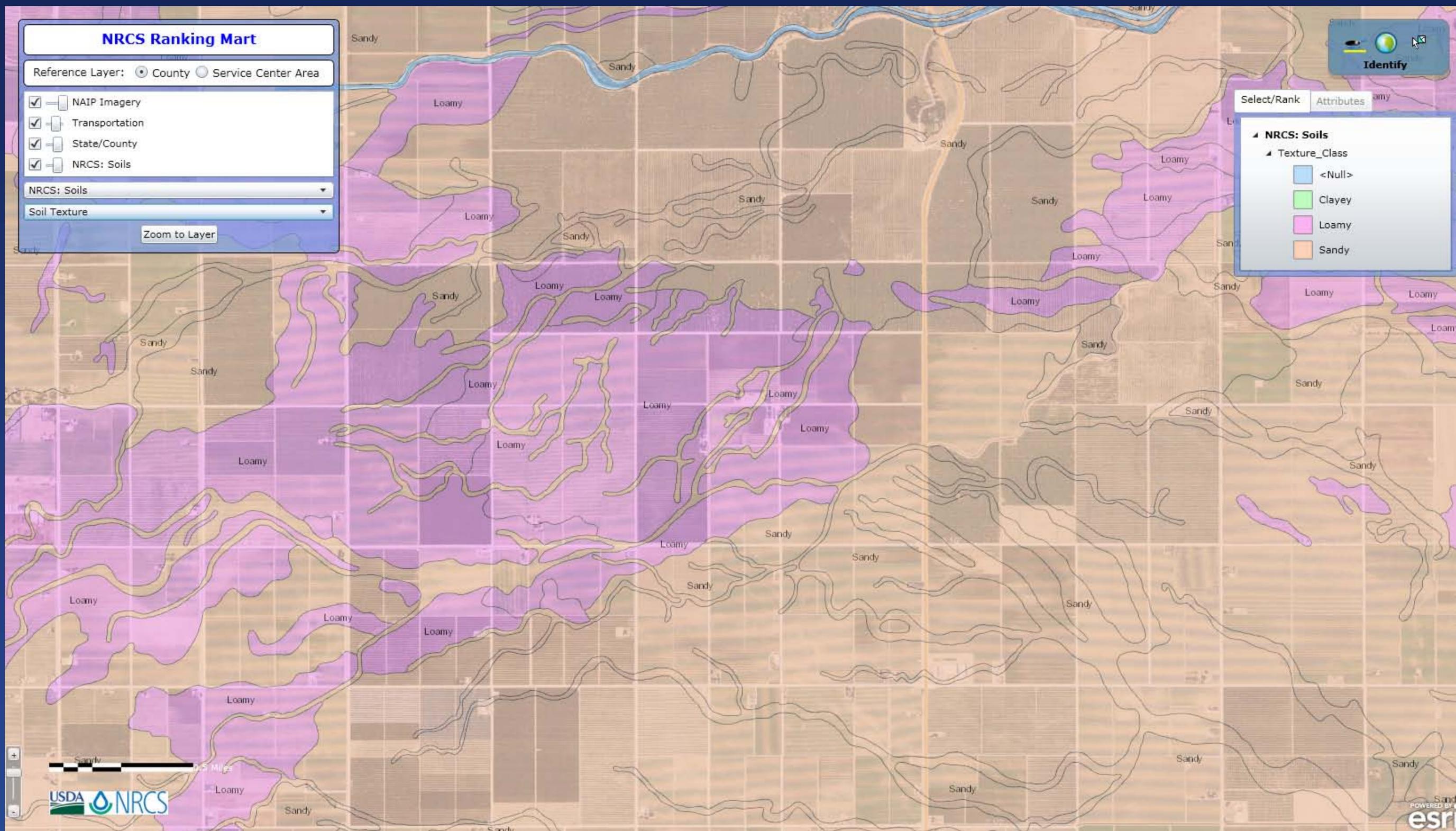
Data in **nrcsranking** is specific to the FA Ranking Pilot  
Contents of nrcsranking :

| Contents   Preview   Metadata  |  |             |
|--|--|-------------|
| Name   |  | Type        |
|  epa                |  | Map Service |
|  fema               |  | Map Service |
|  fws                |  | Map Service |
|  nps                |  | Map Service |
|  nrcs               |  | Map Service |
|  nrcs_soils_us_2010 |  | Map Service |
|  reference          |  | Map Service |
|  states             |  | Map Service |
|  states_habitats    |  | Map Service |

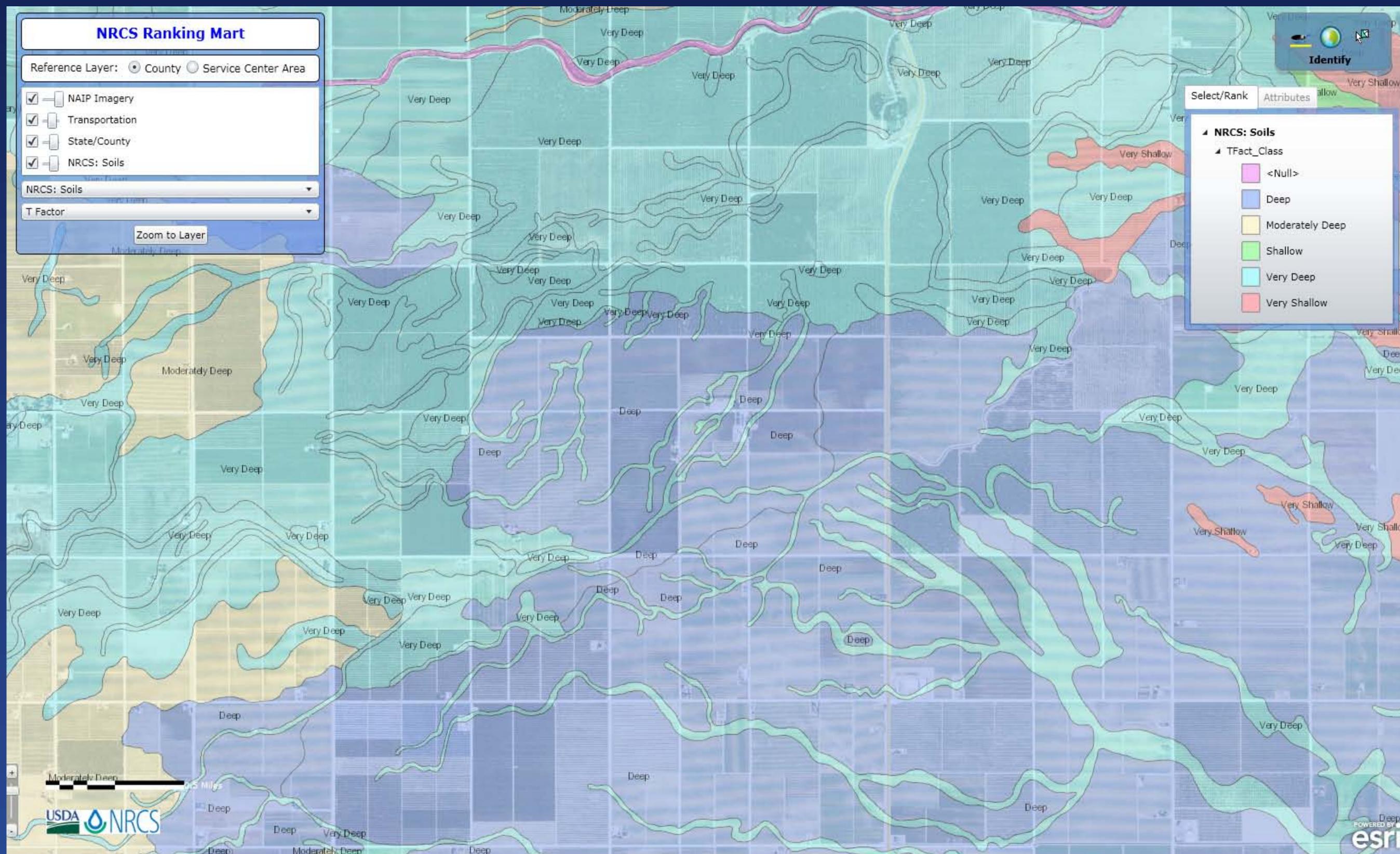
# NRCS CDSI EQIP Ranking Mart Soil Attributes Farmland Class



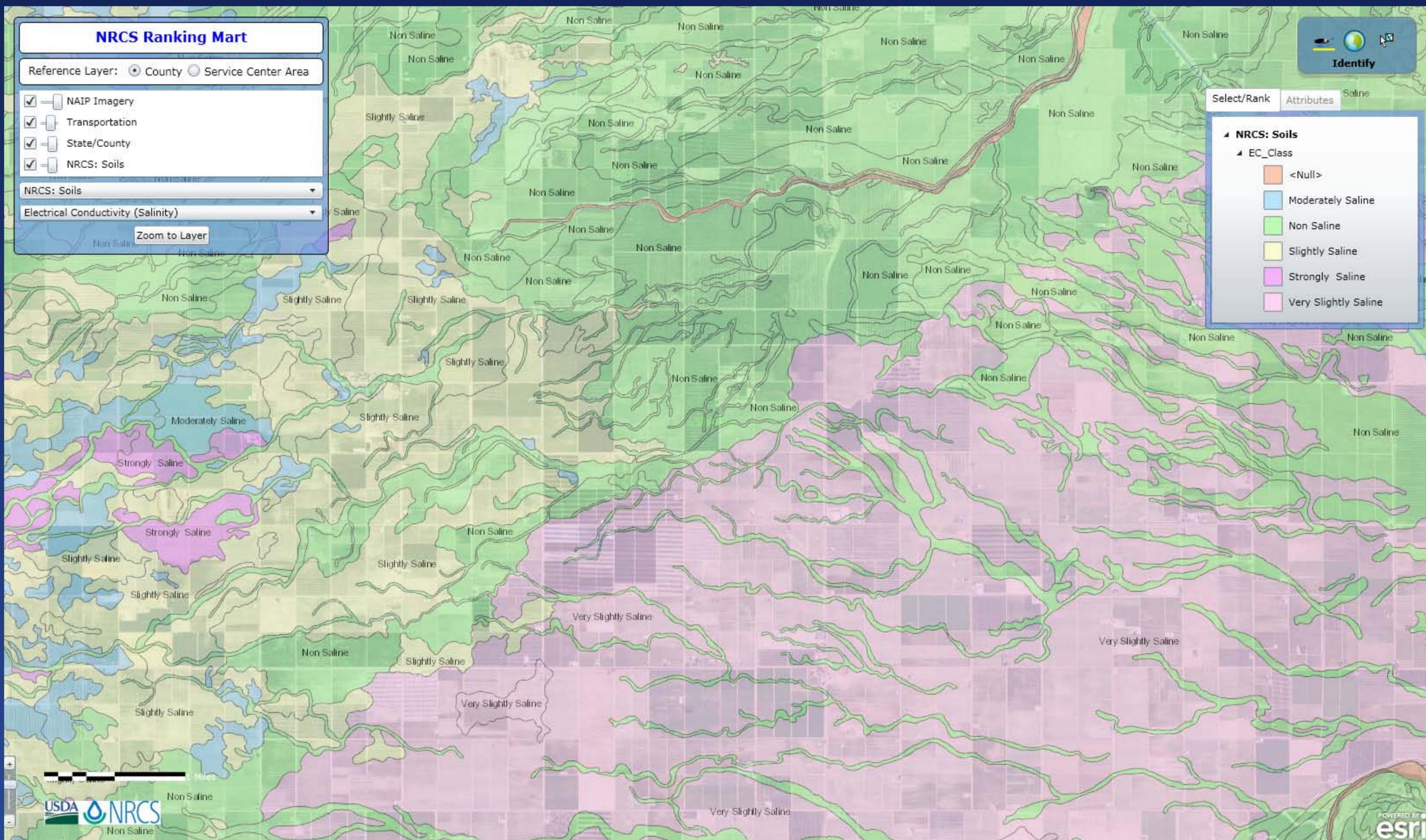
# NRCS CDSI EQIP Ranking Mart Soil Attribute Soil Texture



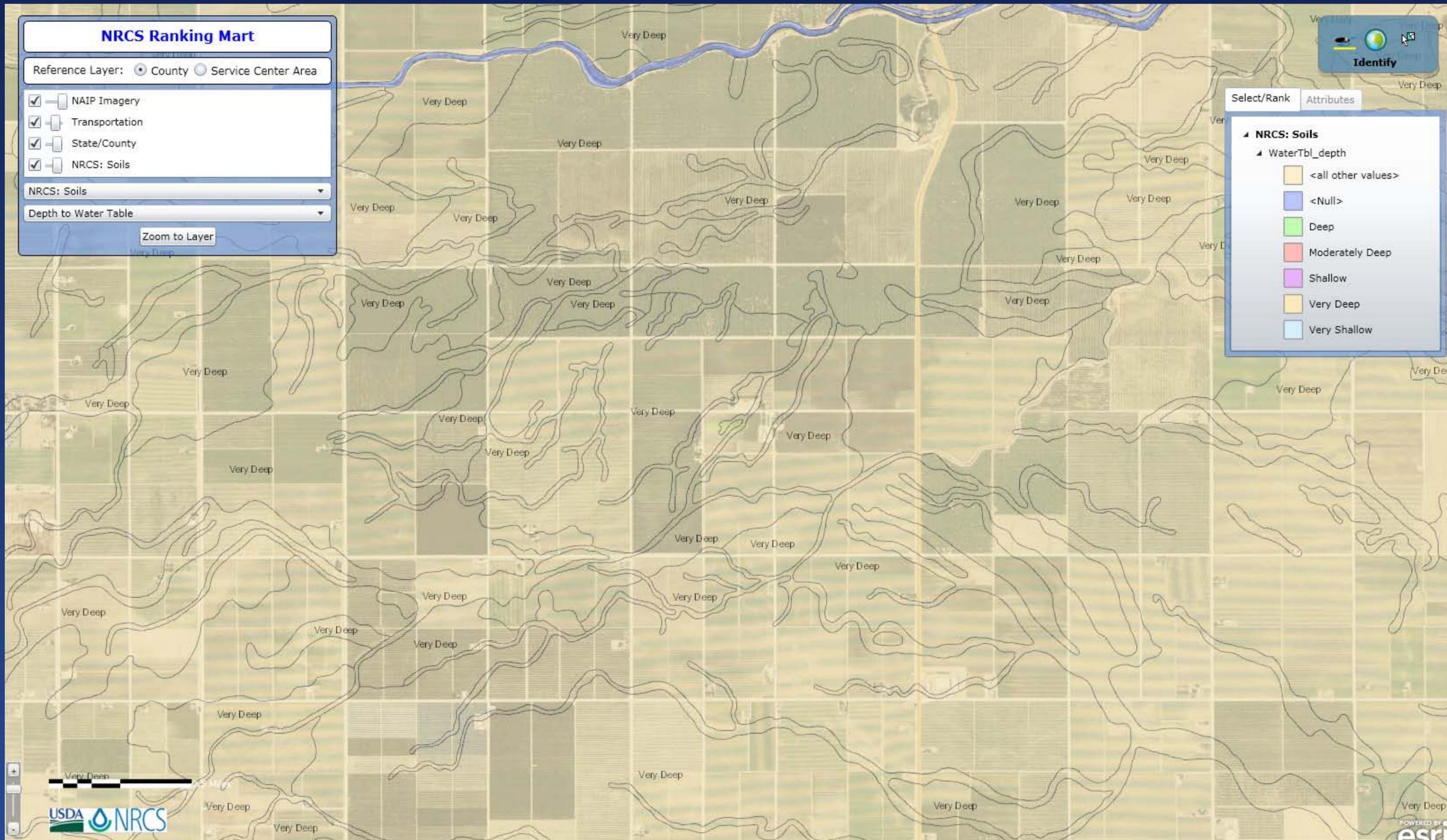
# NRCS CDSI EQIP Ranking Mart Soil Attributes T Factor



# NRCS CDSI EQIP Ranking Mart Soil Attribute Salinity EC\_Class

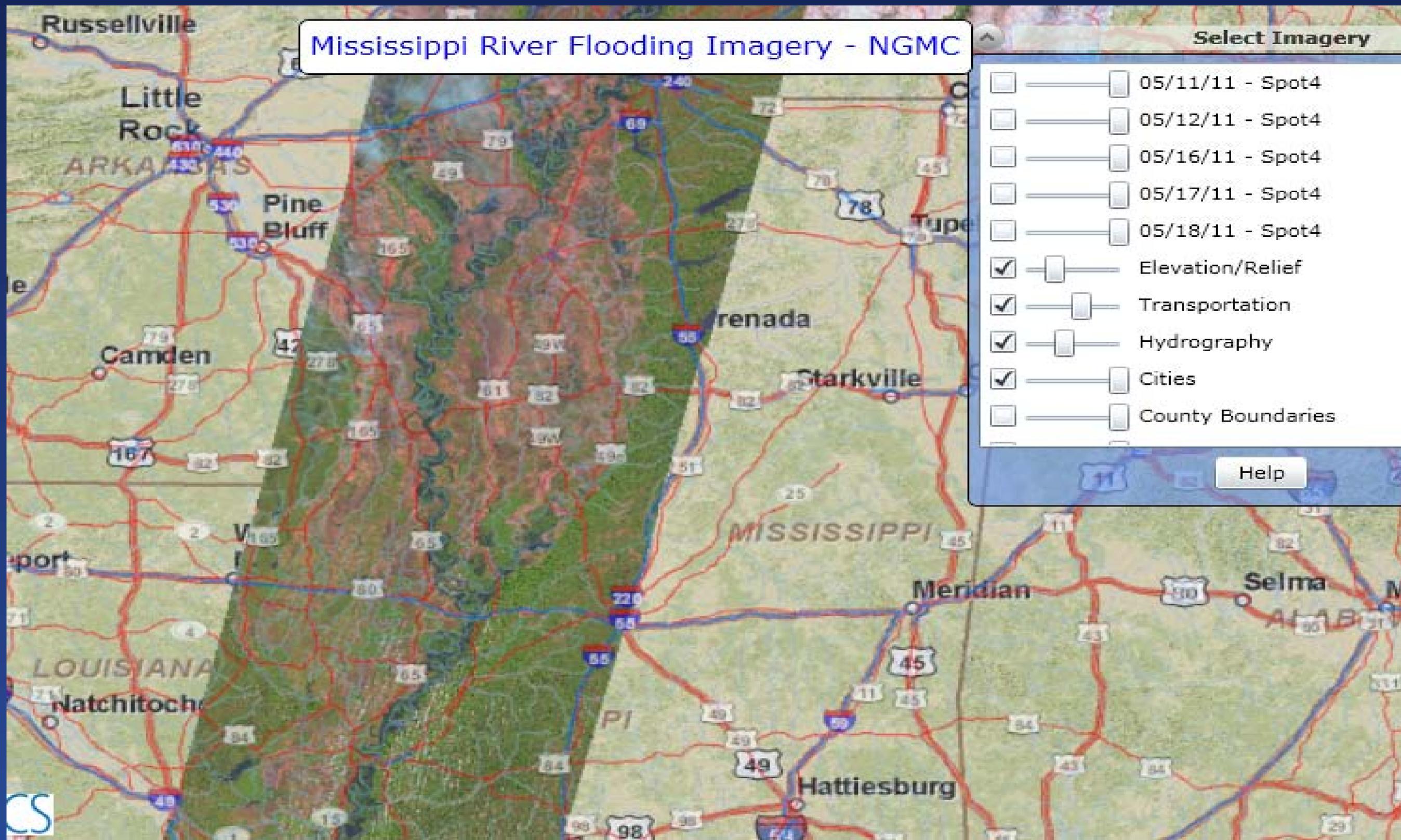


# NRCS CDSI EQIP Ranking Mart Soil Attribute Depth to Water Table



# Mississippi River Flooding

Mississippi River Flooding Imagery - NGMC



## NGMC Web Services

# Slides

# NGMC Cache Tile Service

Slides

 <http://web1.ftw.nrcs.usda.gov/cachetiles/>

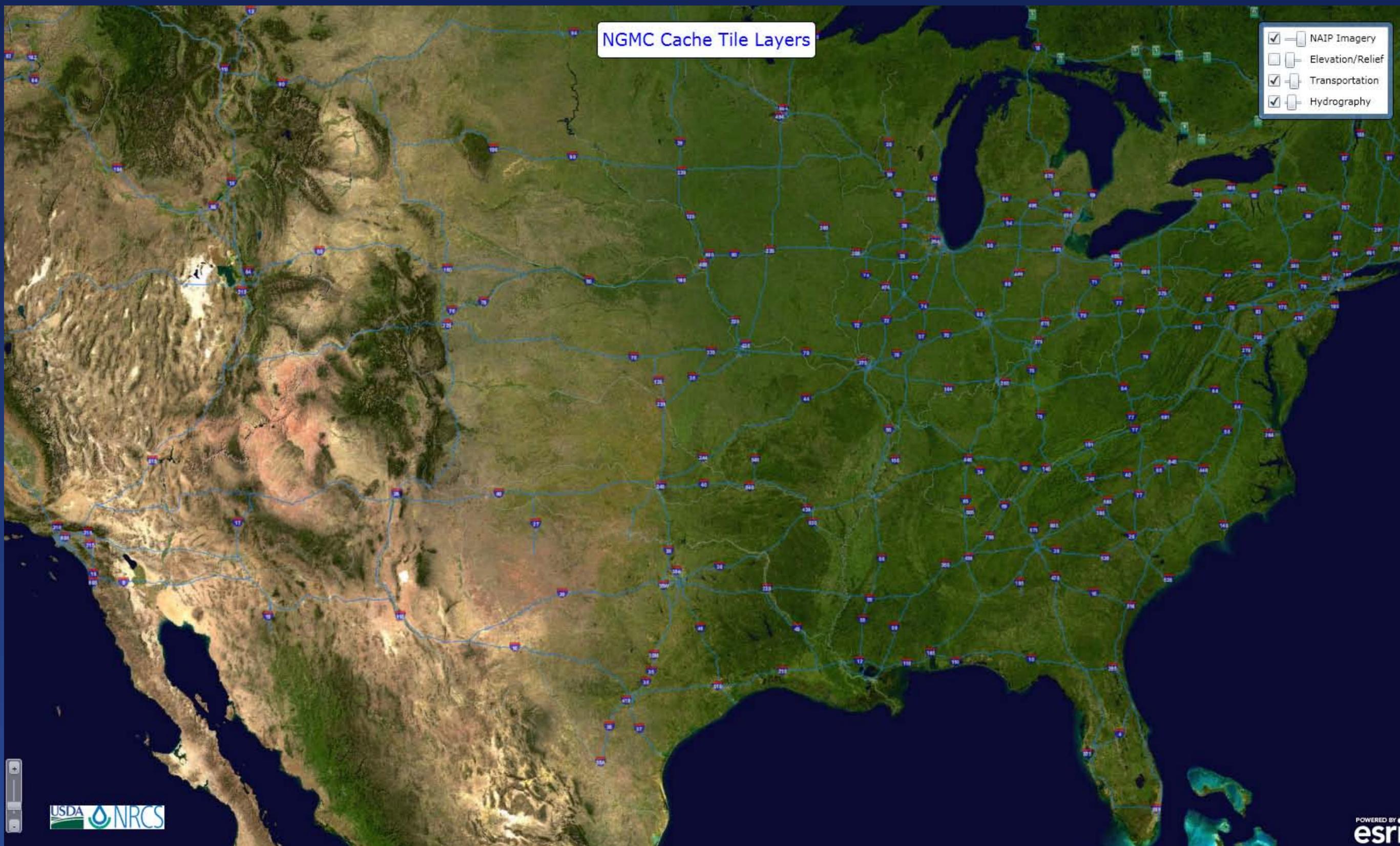
NGMC Cache Tile Layers

- NAIP Imagery
- Elevation/Relief
- Transportation
- Hydrography

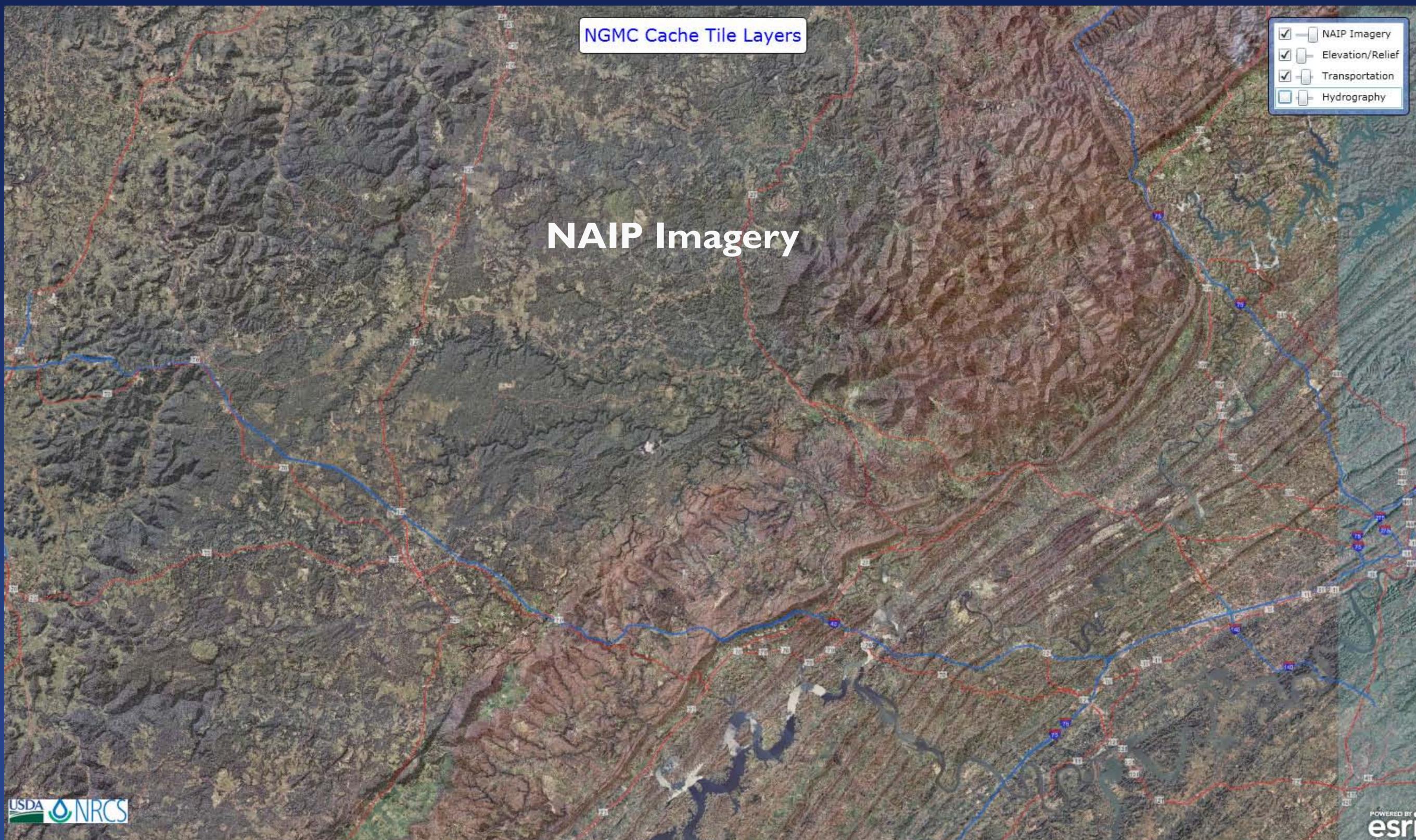
USDA NRCS

POWERED BY esri

# NGMC Cache Tile Service



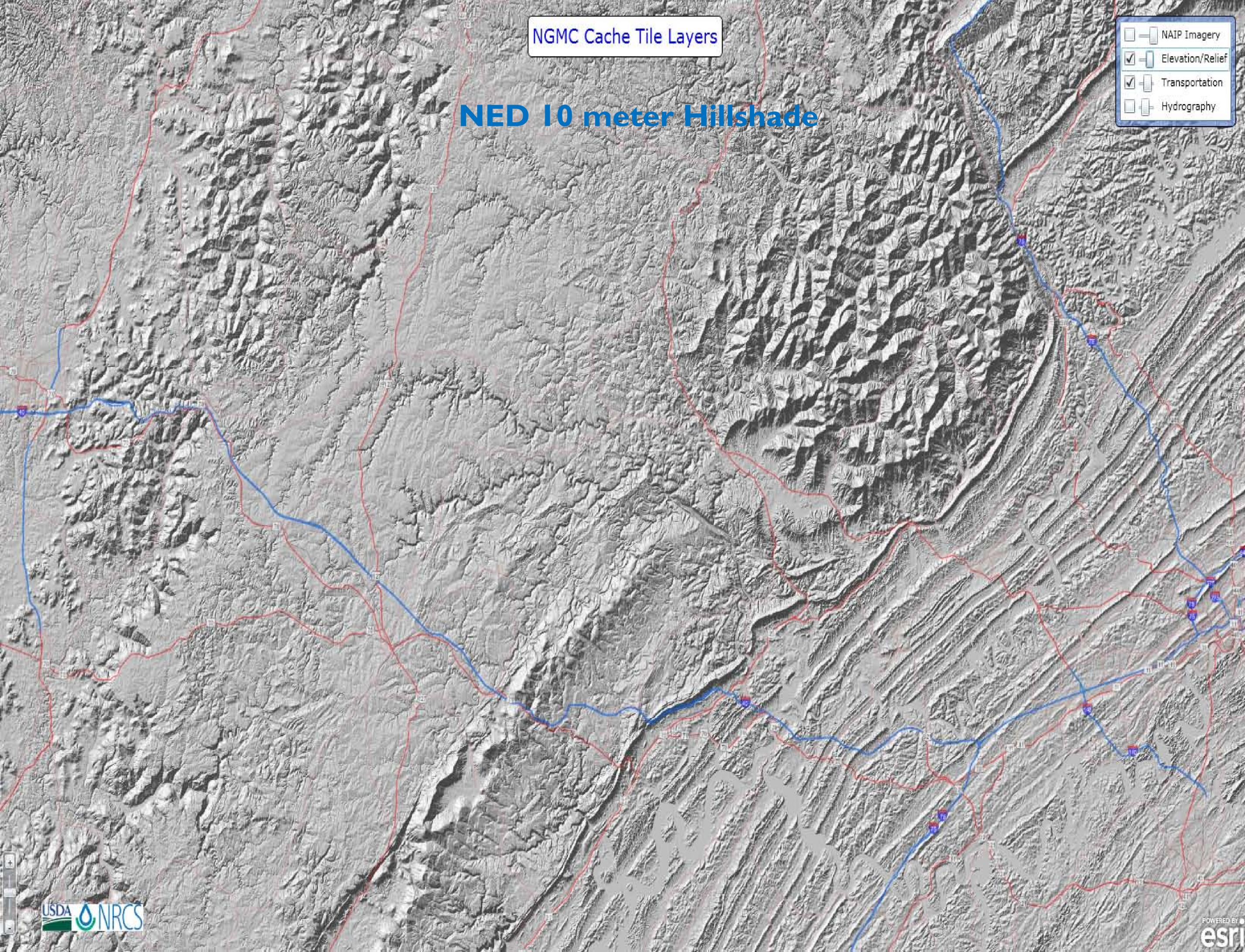
# Eastern Oklahoma



NGMC Cache Tile Layers

# NED 10 meter Hillshade

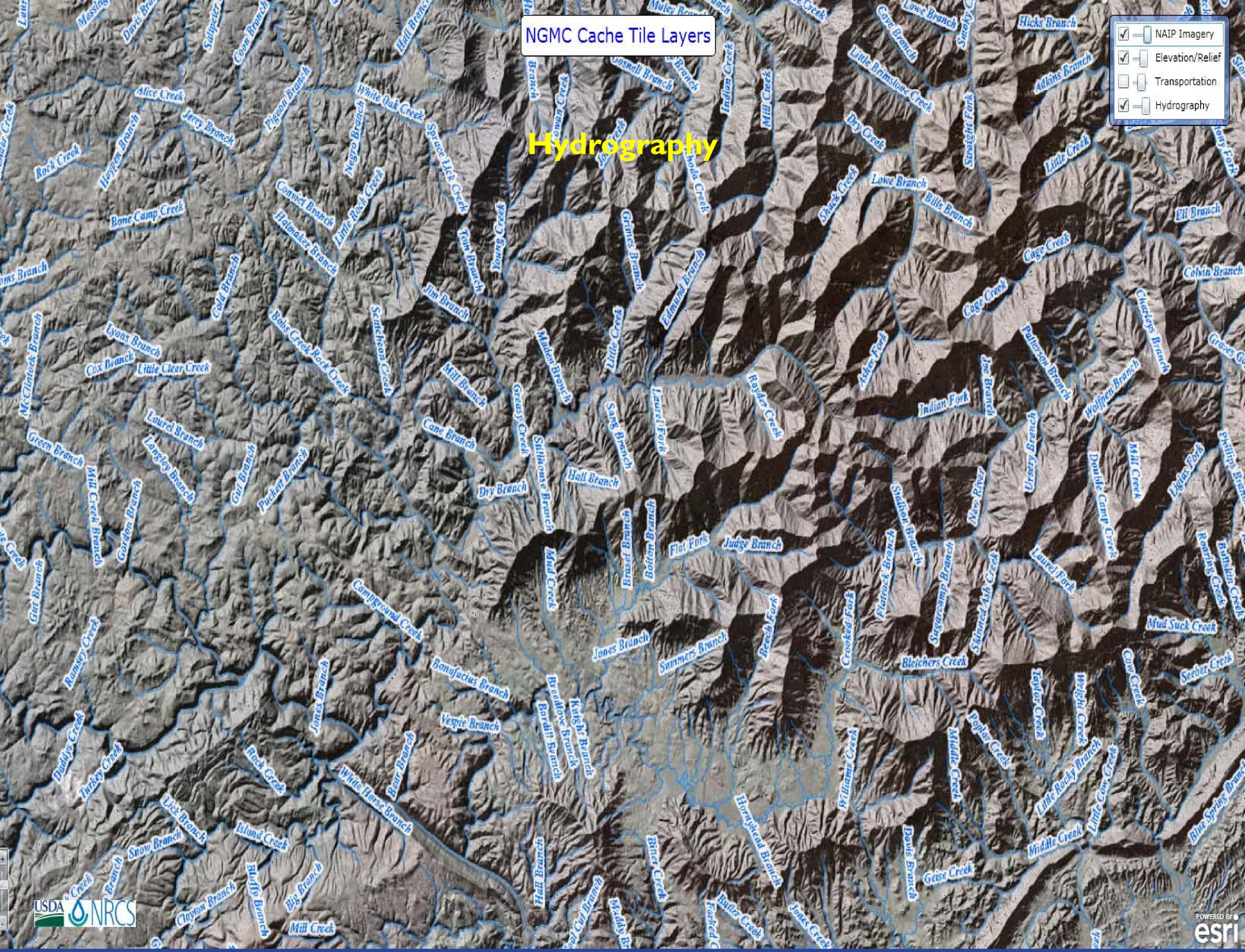
- NAIP Imagery
- Elevation/Relief
- Transportation
- Hydrography

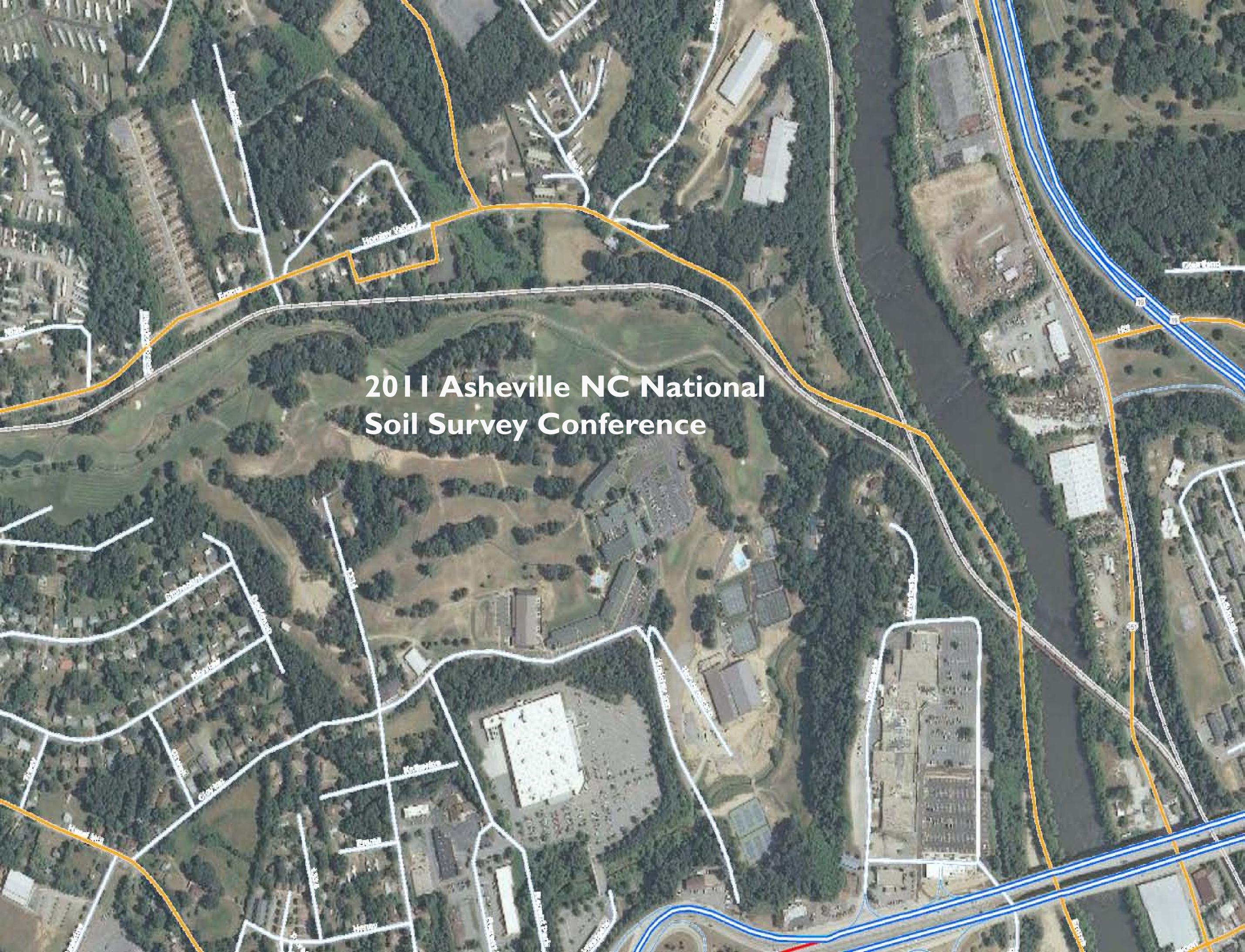


# NGMC Cache Tile Layers

- NAIP Imagery
- Elevation/Relief
- Transportation
- Hydrography

## Hydrography





**2011 Asheville NC National  
Soil Survey Conference**

# *National Geospatial Management Center*



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