New Innovations in Soil Survey Publications

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National Cartography and Geospatial Center

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Improvements to the Process

- Reduce the number of hard copies printed for each survey and supplement with CDs or other electronic media
  - Current average is around 1500 copies
  - Reduce to 500 copies and 1000-2000 CDs
  - Significantly reduces cost of printing allowing for more soil survey areas to be printed

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Improvements to the Process

- Automate as many of the publication processes as possible
  - Digital Map Finishing
  - General Soil Maps
  - Soil Survey Manuscripts

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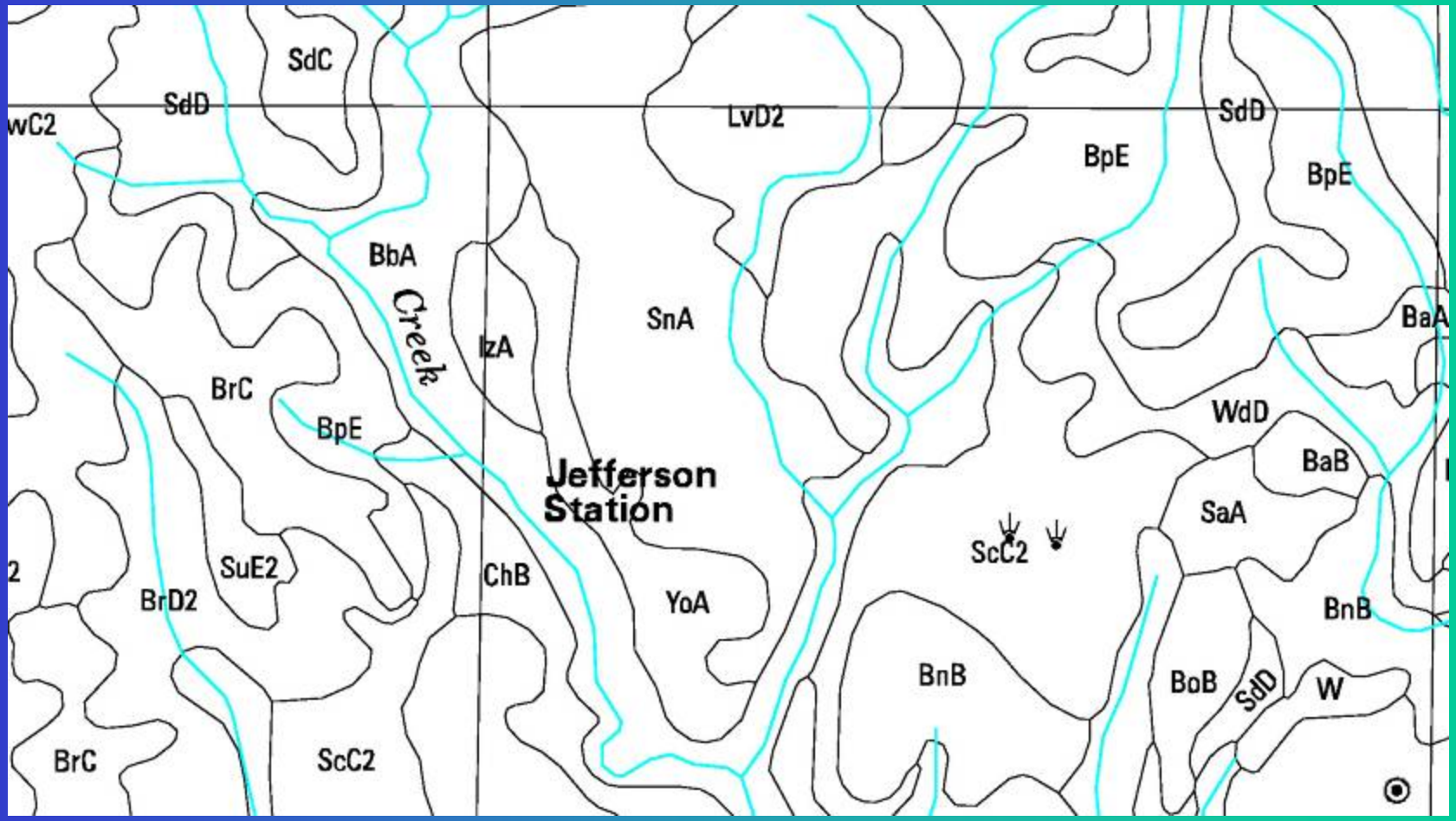
Digital Map Finishing



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Digital Map Finishing

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Improvements to the Process General Soils Maps

- NSH cites STATSGO as base for GSM
- 93 products pending at NCGC, 2 are STATSGO based
- GSMs are averaging 80+ staff hours to process to the point of making a negative ready to send to printer

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Automation Process for General Soil Maps

System Requirements

- **This is what Arc/Info needs: (any of these configurations will work)**

- **Operating System: Windows NT 4.0, Service Pack 4**
- **Memory: 32 MB RAM Minimum (64 MB RAM Recommended)**
- **ArcInfo: 521MB**

- **Operating System: SunOS 5.6 or 5.7(Solaris 2.6 or Solaris 7)**
- **Window System: CDE or OpenWindows**
- **Memory: 32 MB RAM Minimum (based on single user)**
- **Swap Space: 100 MB Minimum (based in a single user)**
- **ArcInfo: 272MB**

- **Operating System: Windows NT 4.0 SP4**
- **Processor: Pentium (or higher)**
- **Memory: 128 MB Recommended**
- **Page File: 200 MB Recommended**
- **Disk Space Requirements (on NTFS): Approximately 1.5 GB (2.5 GB recommended)**
- **Desktop Applications: A 640 MB**
- **Workstation Applications: Approximately 770 MB**
- **System drive (typically C, where winnt\system32 is located), up to 70 MB**

- **An additional 1 Gigabyte should be allocated for the GSM software and projects.**

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Process

- User contacts the Resource Data Gateway via the web
- User selects Soil Survey Area desired
- User selects layers (as described in user manual) needed such as Tiger county , SSURGO, by SSURGO area
- Files are downloaded from RDG to workspace on user computer.

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USDA:NRCS:Geospatial Data Gateway:home - Microsoft Internet Explorer

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

the one stop source of
natural resources data

USDA NATURAL RESOURCES CONSERVATION SERVICE
NATIONAL CARTOGRAPHY & GEOSPATIAL CENTER

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.

Geospatial

Data Gateway

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

Internet

Natural Resources Conservation Service

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USDA:NRCS:Lighthouse:index - Microsoft Internet Explorer provided by ESRI

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USDA Geospatial Data Gateway

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S1

Step 1

Instructions

Locate your area of interest, using the zoom in, zoom out, recenter, or pan controls.

Select your area of interest, using the select area control. Once an area has been selected you will proceed to Step 2

Options

Locate

a city, county, or state.

Quick Order

data by county.

S1: Locate Area | S2: Select Products | S3: Data Format | S4: Shipping Info | S5: Confirm Order

Reset Map

Info

Print

Move

Center

Zoom Out

Zoom In

Select Area

W E

Washington Montana North Dakota Minnesota Maine Oregon Idaho South Dakota Wisconsin Wyoming Michigan New York Nebraska Iowa Pennsylvania Nevada Utah Colorado Illinois Ohio Maryland Kansas Missouri Indiana Virginia California New Mexico Oklahoma Tennessee North Carolina Arizona Alabama Georgia Texas Louisiana Florida

0 841mi

Applet started Internet

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USDA:NRCS:Lighthouse:index - Microsoft Inte

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Address e=&ZipCode=&DeliveryMethod=&Pr

Search Results

Place:

Valencia

Search

Available Choices:

Valencia County, New Mexico
Valencia, PR
Valencia, PR
Valencia, PR
Valencia, PA

Continue Cancel

Warning: Applet Window

Quick Order

County:

Valencia

State:

New Mexico

Continue Cancel

Warning: Applet Window

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S1

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Reset Map

Info

Print

Move

Center

Zoom Out

Zoom In

Select Area

W E

Cibola
Suwanee
SouthGarcia
Bernalillo
Peralta
Valencia
Dalies
Torre
Valencia
New Mexico
Torrance
Belen
Turn
25
Socorro
Veguita
Sabinal
Abeytas
Bosker
0 10mi

Done

Internet

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USDA:NRCS:Lighthouse:products - Microsoft Internet Explorer provided by ESRI

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Address &ExtentMaxY=59.0&HitTab=2&Email=&FirstName=&LastName=&Address1=&Address2=&City=&State=&ZipCode= Go Links

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S1: Locate Area | S2: Select Products | S3: Data Format | S4: Shipping Info | S5: Confirm Order

S2

Step 2

Instructions

Highlight a particular product, then press Footprint, Metadata or Preview to view detailed information about that product.

Add a product to your shopping cart by clicking the box alongside its title. When satisfied with your selections, press the Continue button to proceed to Step 3: Data Format.

Continue To Step3

Available Products for the Selected Area

- Data Sets:
  - Precipitation
  - Common Land Units
  - Tiger 98
  - Topographic Images
    - Enhanced Digital Raster Graph 7.5x7.5
    - Enhanced Digital Raster Graph 1x2 1:250000
  - Elevation
  - Soils SSURGO (new format)
    - NM612-Eastern Part Valencia County, New Mexico
  - Ortho Imagery
    - Valencia County DOQ Mosaic MrSID by APFO
  - Topographic Images
    - BERNALILLO DRG MOSAIC MRSID BY NCGC
    - CIBOLA DRG MOSAIC MRSID BY NCGC
    - VALENCIA DRG MOSAIC MRSID BY NCGC

Footprint | Metadata | Preview | Unselect All Products | Select All Products

Applet started

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USDA:NRCS:Gateway: dataformat - Microsoft Internet Explorer provided by ESRI

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Address ty=&State=&ZipCode=&DeliveryMethod=&Projection=&Datum=&VectorFormat=&ImageFormat= Go Links

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S1: Locate Area | S2: Select Products | S3: Data Format | S4: Shipping Info | S5: Confirm Order

S3

Step 3

Instructions

From the dropdown lists, choose the desired format for the data you have requested. When satisfied with your selections, press the Continue button to proceed to Step 4: Shipping Information.

Continue to Step4

Data Format for the Selected Products

Format for Image Data (DRG , DEM , DOQ Mosaic MrSID , DRG Mosaic MrSID , SSURGO (old format))

Image (All Data Delivered in Native Format.) — TIFF

Format for Vector Data (Precipitation , Common Land Units , TIGER(Census) , SSURGO)

Vector (*Apply to SSURGO (old format) only) — ESRI Shape File

Format for All Data

Projection — Geographic (Lat/Long) NAD83

Extent (*Not available at this time.) — Standard Extent

Compression (*Not available at this time.) — Zip (.zip)

Zip (.zip)

Tar & GZIP (.tar.gzip)*

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Address hape+File&Projection=4269+Geographic+%28Lat%2FLong%29+NAD83&Clipping=Standard&Compression=Zip Go Links

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S4

Step 4

Instructions

Select the method of data delivery. Demographic information must be completely filled out for either mode of delivery.

Note: FTP download times are significant for most orders.

Options

Save Values

Continue to Step5

S1: Locate Area | S2: Select Products | S3: Data Format | S4: Shipping Info | S5: Confirm Order

Shipping Information for the Current Order

Delivery Method	
◉	Download
○	CDROM

Delivery Info: Required			
First Name	J. Steven		
Last Name	Nechero		
Email	snechero@ftw.nrcs.usda.gov		
Address	501 West Felix Street		
Address	FWFC Building 23		
Organization	USDA NRCS NCGC		
City	Fort Worth		
State	Texas	Zip	76115
Phone	817 509 3366	Fax	817 509 3469

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Address on=USDA+NRCS+NCGC&City=Fort+Worth&State=Texas&ZipCode=76115&Phone=817+509+3366&Fax=817+509+3 Go Links

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S5

Step 5

Instructions

Recheck current information. If any errors are present you may return to any previous step to correct. If the information is correct, the order may be submitted for processing.

Place Order

S1: Locate Area | S2: Select Products | S3: Data Format | S4: Shipping Info | S5: Confirm Order

Order Confirmation

Data Format

Projection	Geographic (Lat/Long) NAD83
Extent	Standard
Compression	Zip
Image	TIFF
Vector	Shape File

Shipping Info

Name	J. Steven Nechero		
Organization	USDA NRCS NCGC		
Email	snechero@ftw.nrcs.usda.gov		
Address	501 West Felix Street FWFC Building 23		
City, ST, Zip	Fort Worth, Texas 76115	Ship via	FTP
Phone	817 509 3366	Fax	817 509 3469

Products Ordered

Item		Description
1		Annual Precipitation
2		January Precipitation
3		February Precipitation
4		March Precipitation
5		April Precipitation
6		May Precipitation
7		June Precipitation
8		July Precipitation
9		August Precipitation

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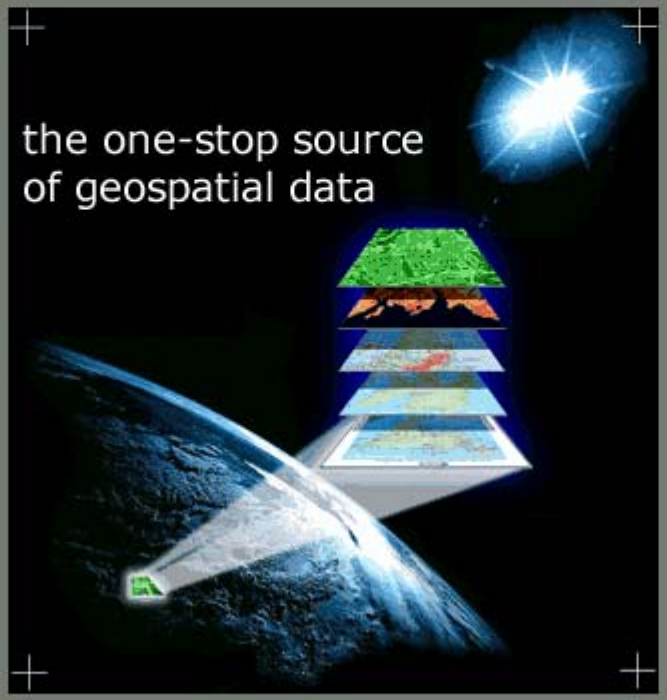
FIN

Order Placed

Gateway Order Confirmation



Thank You
for using the Geospatial Data Gateway

Gateway Order#: 10793 has been generated

You will receive e-mail notification in: 2 Minutes

You may return to the Geospatial Data Gateway

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Process

- User runs through step-by-step instructions from roads to North arrow.
- Note: User can go back and forth between layers without starting over.
- Completed product is a Postscript file which can be sent to NCGC via electronic media.
- NCGC performs cursory quality check.
- NCGC creates press ready negatives.

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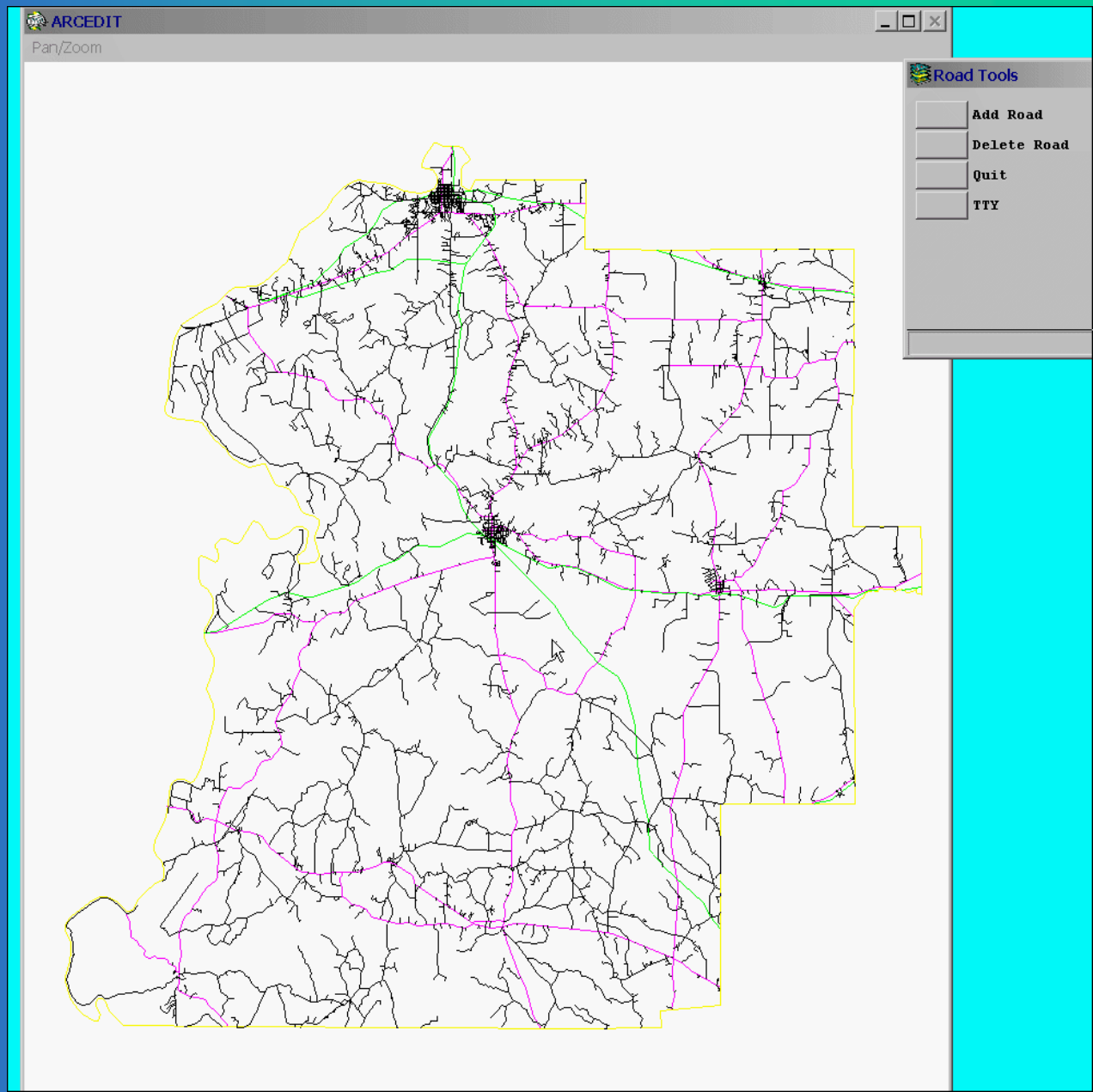
Road Tools

- This is from the 'Road Tools' menu, add roads screen.
- Magenta lines are the roads the software has selected.
- Black lines are roads that could be added to the layer.
- Green lines are the railroads, on a separate layer.
- Yellow lines represent the county line/ssa boundary, on a separate layer



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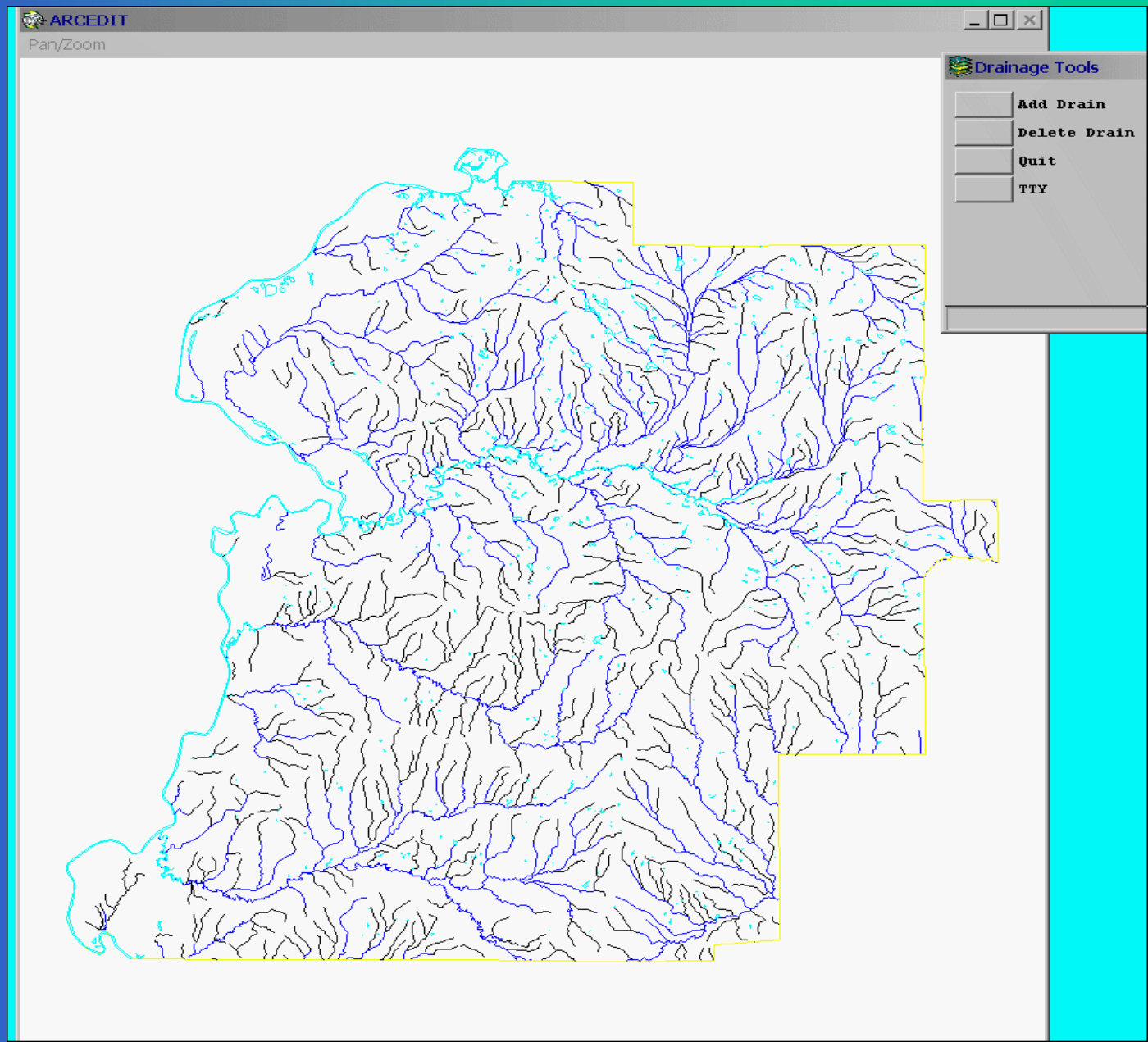
DRAIN TOOLS

- This is from the 'Drain Tools' menu, add drains screen.
- Blue lines are the drains the software has selected.
- Black lines are drains that could be added to the layer.
- Light blue lines are water bodies, on a separate layer.
- Yellow lines represent the county line/ssa boundary, on a separate layer.



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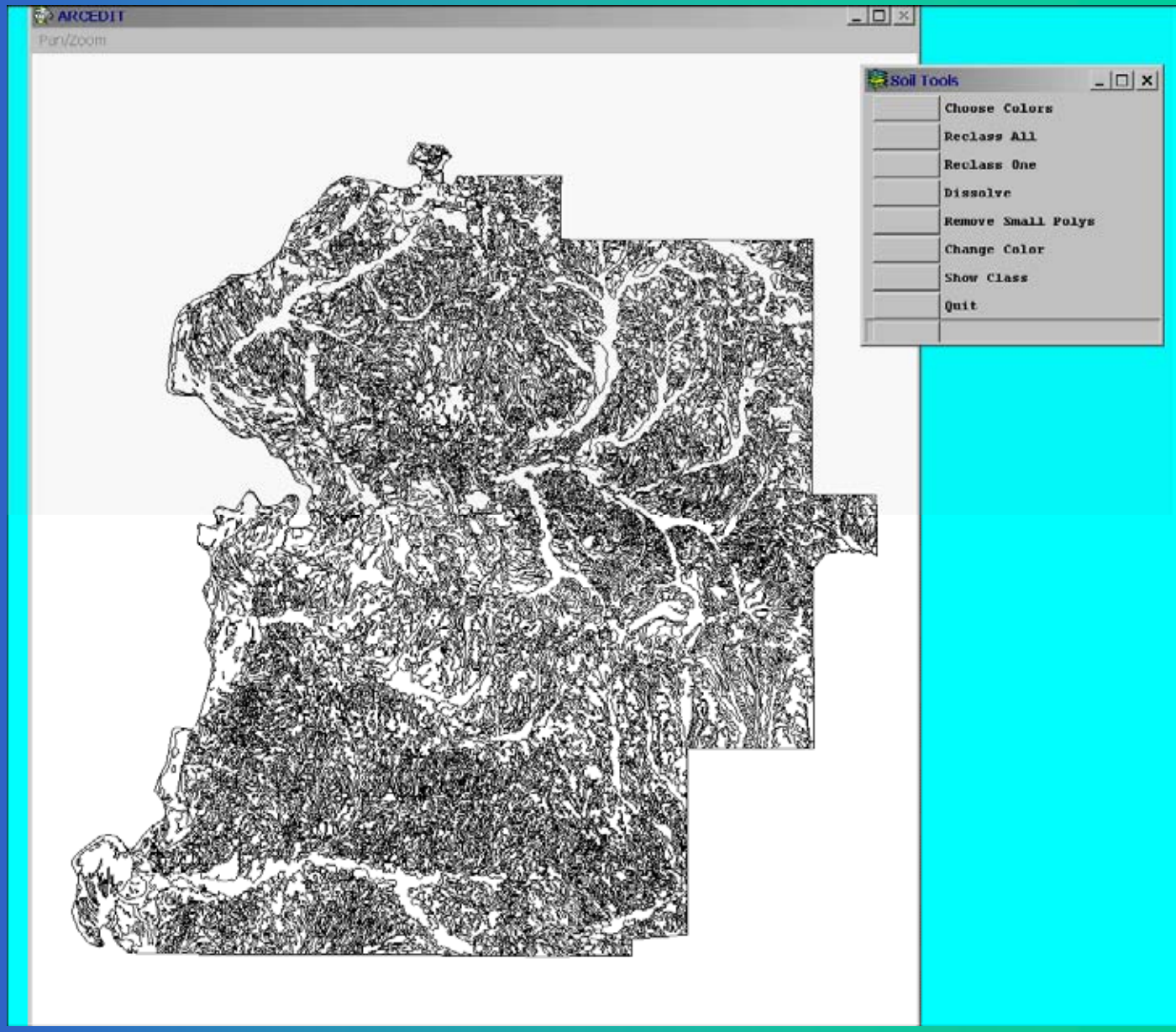
SSURGO DATA

- This is the original ssurgo data.



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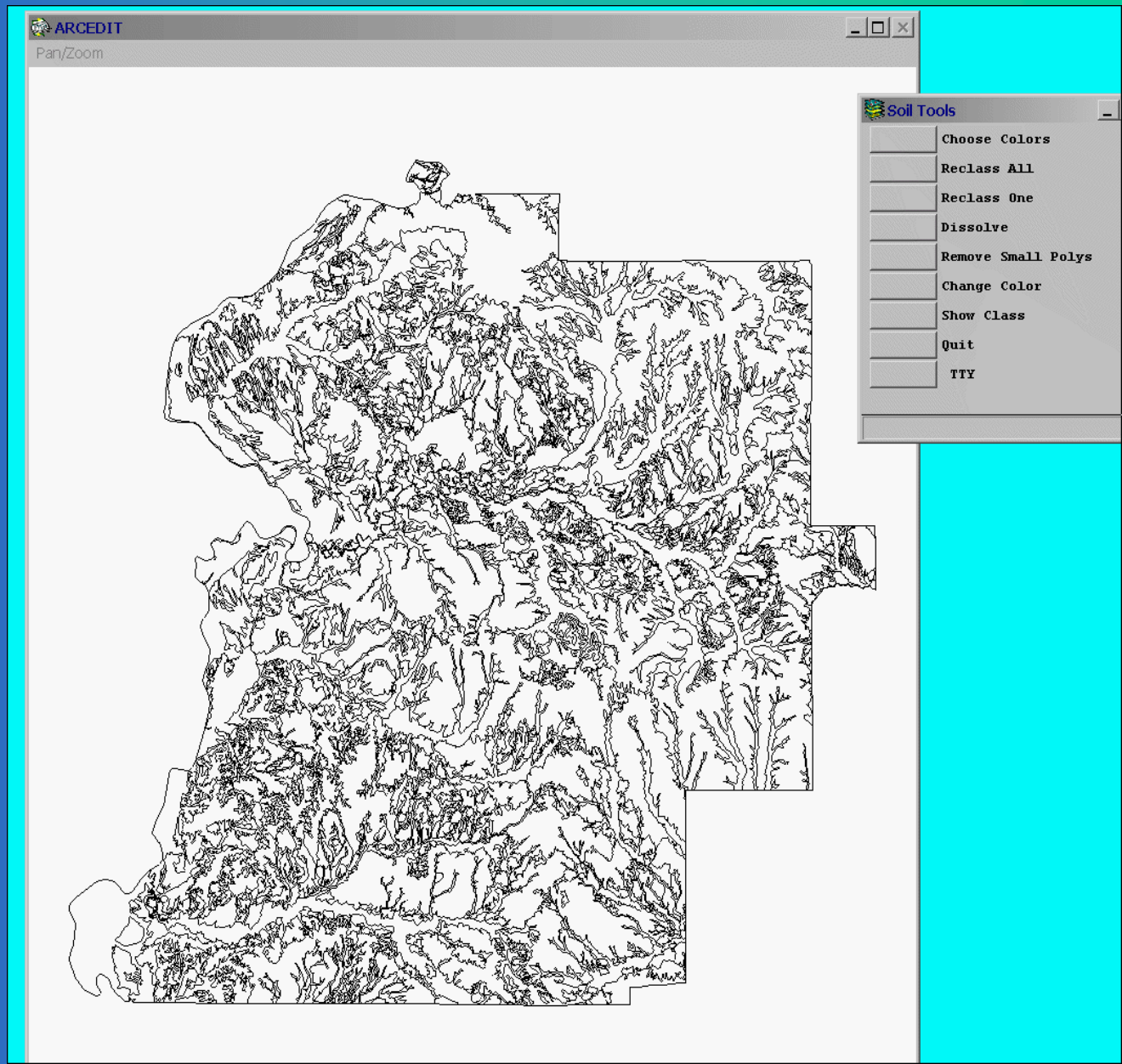
SSURGO RECLASS

- Soils reclass map with small polygons removed.



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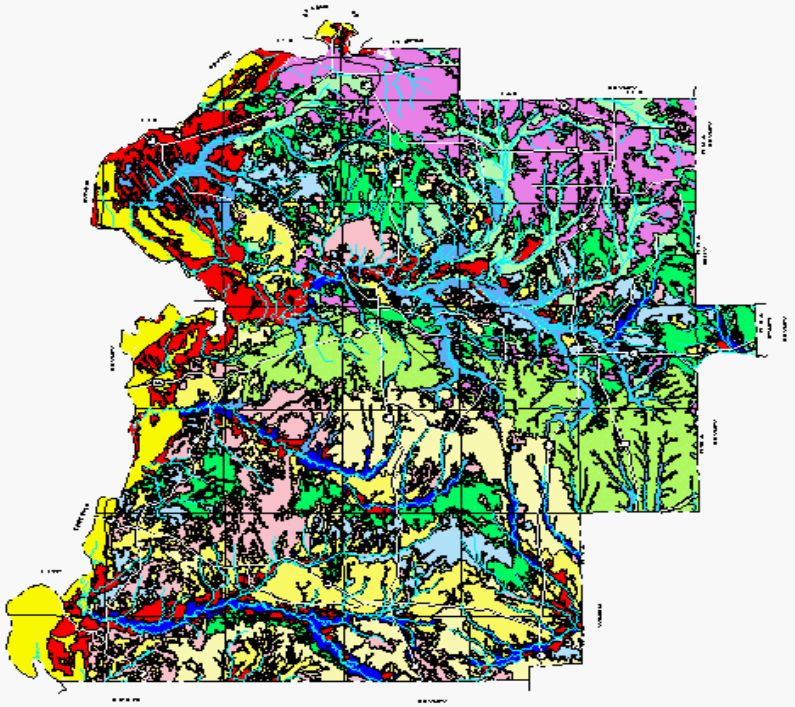
ARCPLOT

Pan/Zoom



LEGEND

Urban-Moorevillo-Una

Bama-Smithdale-Savannah

Luverne-Hidaio

Vaiden-Sucarnoochee-Searcy

Wilcox-Conecuh

Oktibbeha-Brantley-Luverne

Moorevillo-Mantachie-Kinston

Wadley-Boykin-Smithdale

Sucarnoochee-Houlka

Sumter-Demopolis-Faunsdale

Cahaba-Izagora-Chrysler

Luverne-Smithdale-Boykin

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
In cooperation with
ALABAMA AGRICULTURAL EXPERIMENT STATION and the
ALABAMA SOIL AND WATER CONSERVATION COMMITTEE

GENERAL SOILS MAP

MARENGO COUNTY, ALABAMA

Map Tools

Add Title Block

Add Section Box

Add North Arrow

Make Soils Map

Add Legend

Make Index Map

QUIT Quit

TTY

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Soil Surveys on CDs and other media

- CD Summit and report
- Multiple formats available

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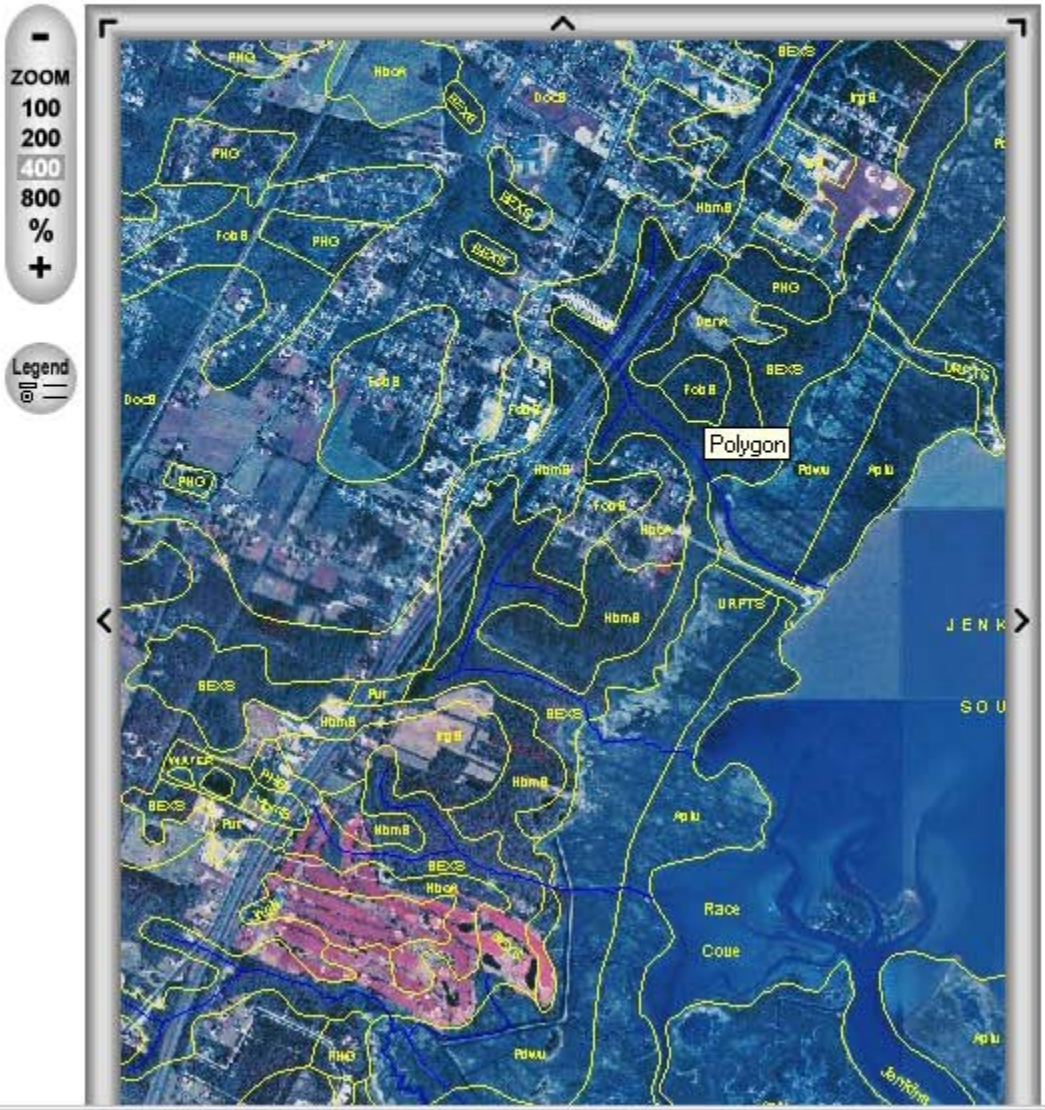
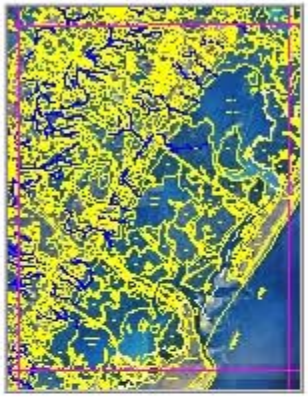
Edit View Favorites Tools Help

Search Favorites Media

E:\nj_cape_may\dmap\stone_harbor\index.html

Stone Harbor, Cape May County, New Jersey





Total Area in Meters	37681.71260
Perimeter in Meters	749.66264
Detailed Soil Survey Map Unit	FobB

file:///E:/nj_cape_may/dmap/stone_harbor/att/soils_all_pat1636.html

Adobe.pdf example --historical

Acrobat Reader - [19-Tabloid72dpi.pdf]

File Edit Document View Window Help

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Publications

- Generally speaking, IF the soils information is ready to put onto CD-ROM for distribution, it is ready to be sent for hard copy publication.
- Some of the issues to consider:
  - What constitutes an “official” soil survey?
  - If CD releases supplement the hard copy, can they be different from the hard copy, i.e.. Other thematic maps.

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New Innovations and Products

- DMF issues
- Resource Data Gateway and Soils Data Warehouse
- New GIS tools

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DMF quad overlap/DMF by Survey area

- Print 300 meter overlap on quads.
  - Soil lines over print on top of a dashed white quad neat line
  - Roads where used shown in white with fine black lines edges. Soil lines over print on top of roads.
  - Hydro - where a blue plate is used make all water polygon edges blue.

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Digital Map Finished Products

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Digital Map Finished Products

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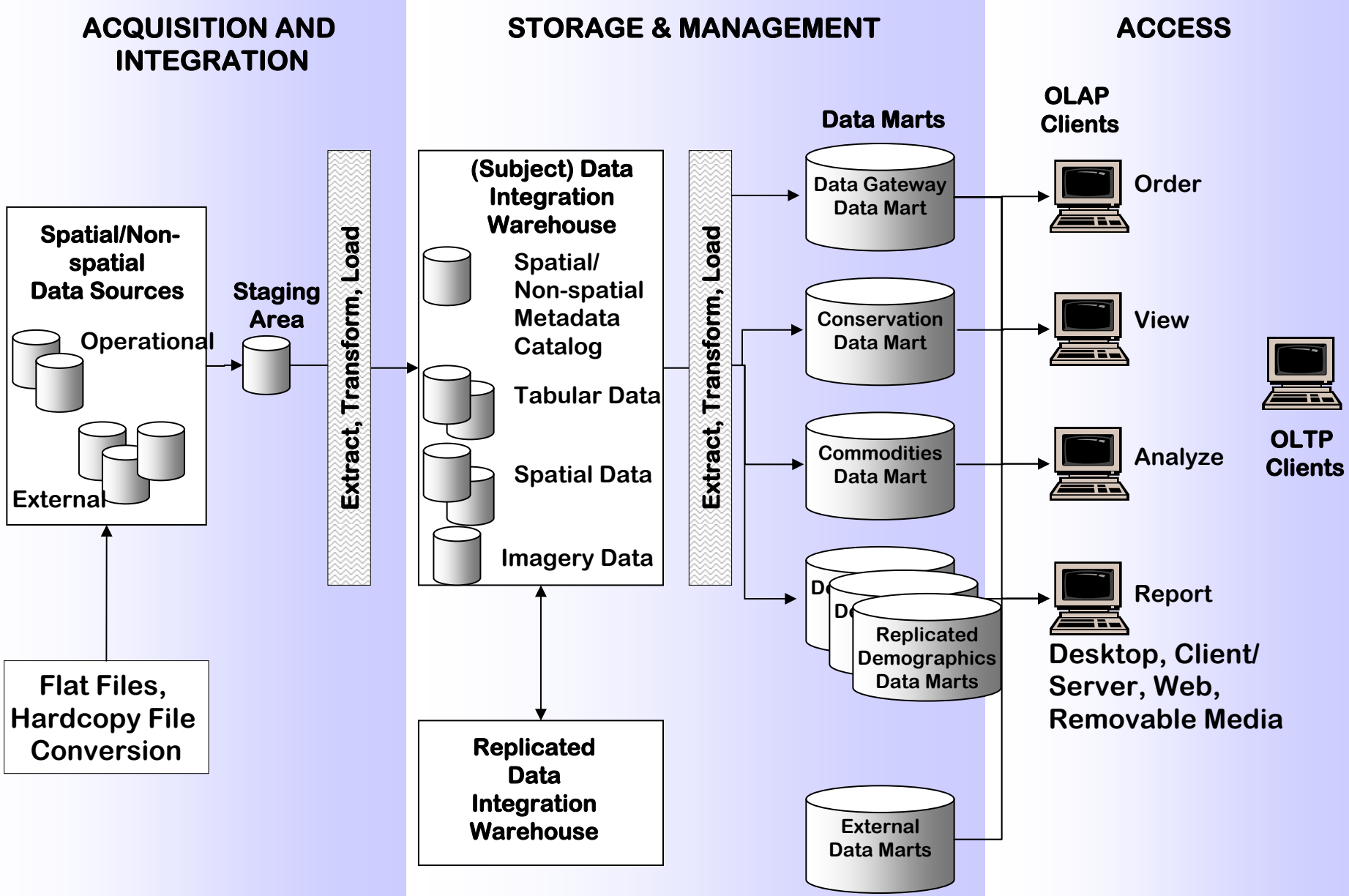
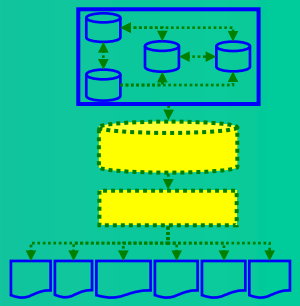
Natural Resources Conservation Service

FRAMEWORK for ORGANIZING and MANAGING GEOSPATIAL DATA



Soil Data Warehouse



Resource Data Gateway

Orthoimagery

Soils

Climate

Plant/ Crop

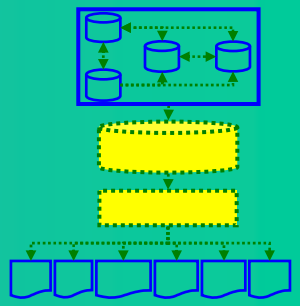
Census

TIGER

Natural Resource Data Warehouse

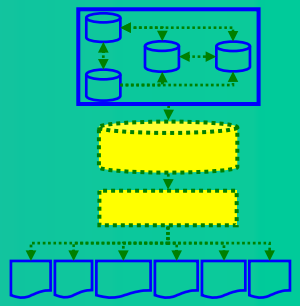
Fort Collins Web Farm / Fort Worth Data Center

Soil Data Warehouse



- Single source for distributing soil data
  - Deliver consistent soil data for all products
  - Build infrastructure and implement warehouse in FY2002
- Integration of Other Resource Databases
  - Plant information
  - Climate information
  - Orthoimagery

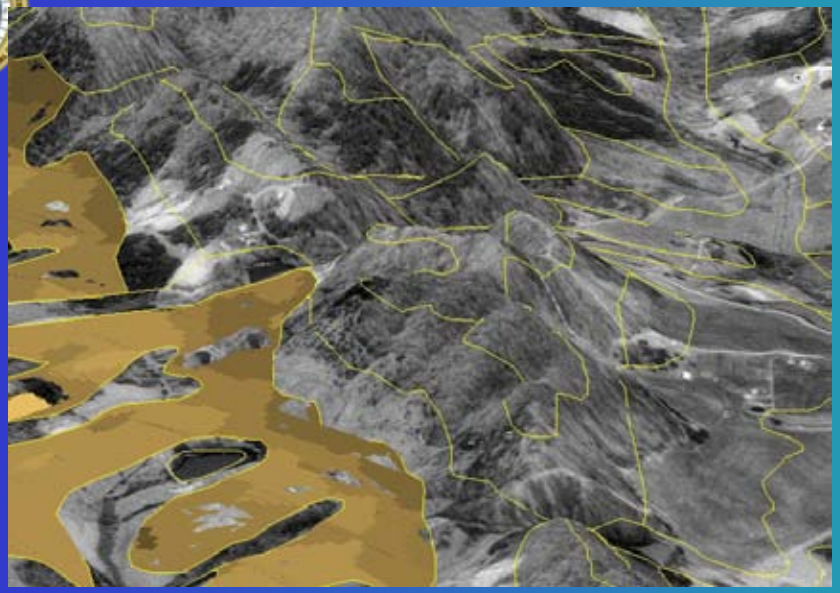
Resource Data Gateway

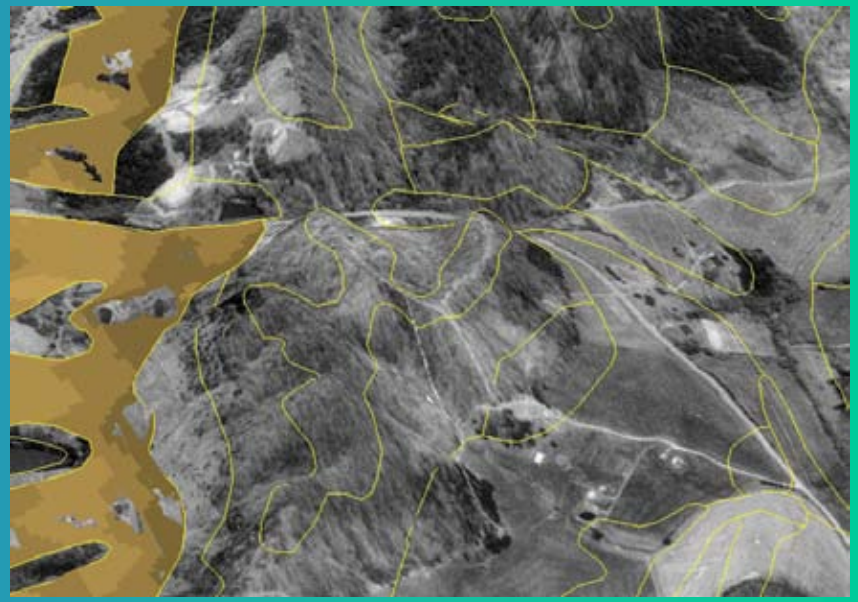


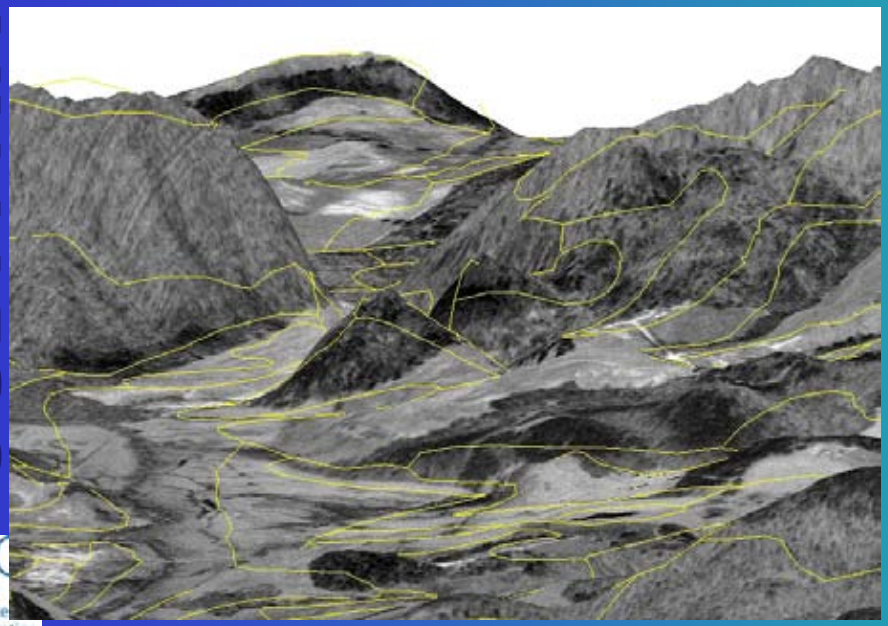
- Single access to data
  - Catalogue of all resource data for a specific geographic area
  - Data may be located at multiple physical locations
- Select and order data
  - Select one or more data sets
  - Specify delivery options: ftp, CD-ROM
  - http://lighthouse.nrcs.usda.gov/gateway/

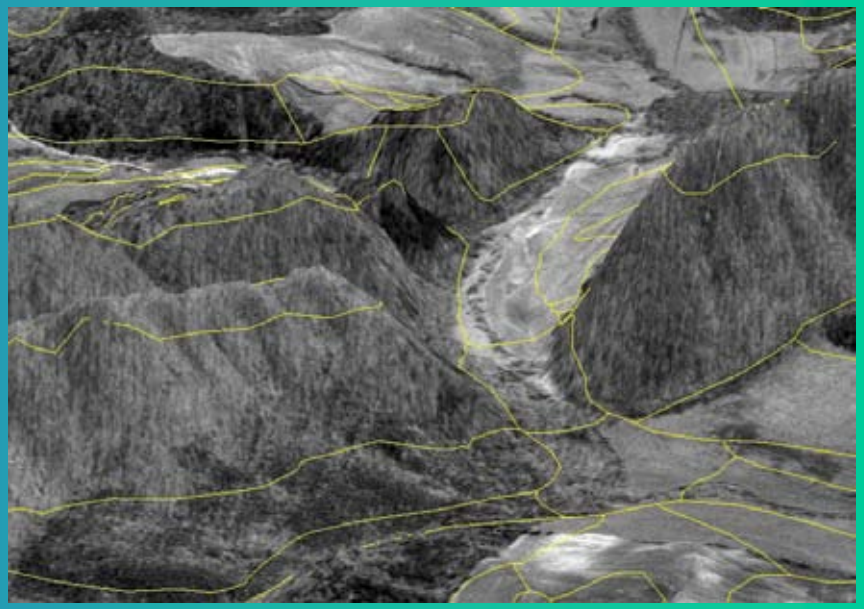
Future Tools for Use in Lieu of Stereo Pairs

Soil Landscape Visualization with ArcScene









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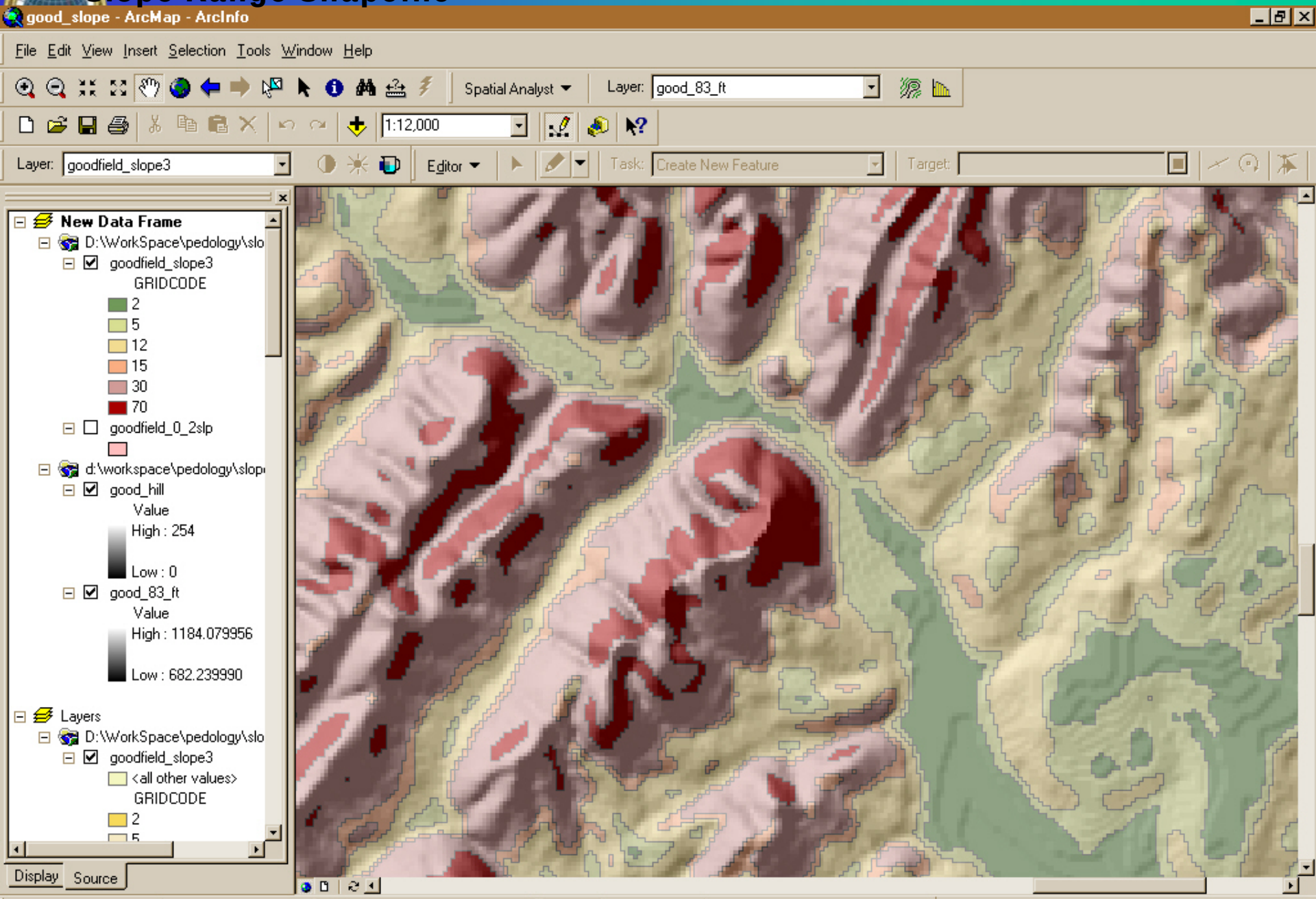
Example of Navigation

Slope Range Shapefile



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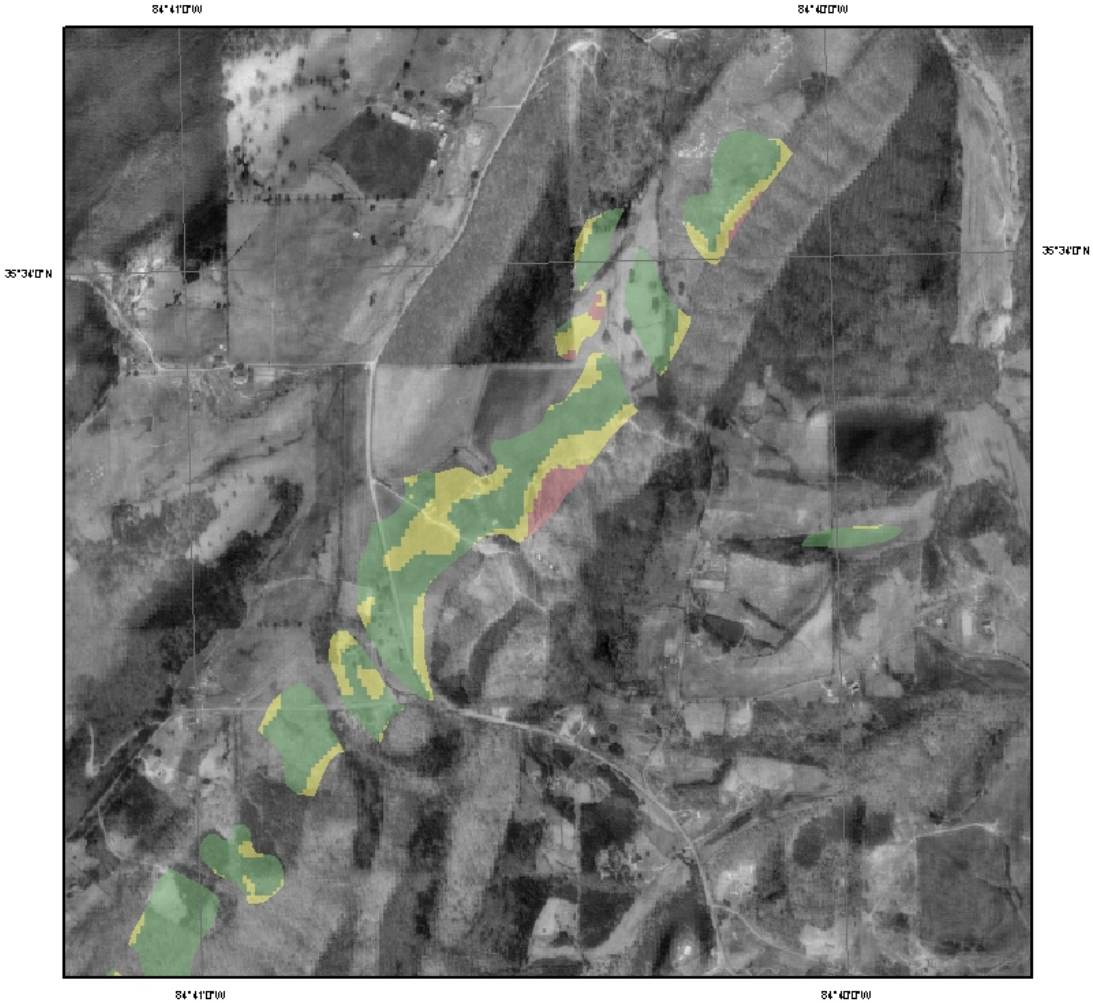
Quantification of Slope Inclusions

Example of Soil Map Unit Inclusion Determination Using Slope Derived From 10 Meter DEM



MapUnit/Slope Inclusions

- Dissimilar 0 to 2%
- Similar 2 to 5%
- 5 to 12%
- Similar 12 to 20%
- Dissimilar 30 to 60%
- Dissimilar >60%

Extent and acreage of Apison-Sunlight complex, 5 to 12 percent slope for the Tranquitlity Quadrangle, McMinn Co., TN

Slope Range	Acres	Percent of Map Unit
2 to 5%	4.4	1.0
5 to 12%	64.0	14.1
12 to 20%	294.5	64.7
20 to 30%	83.8	18.4
30 to 60%	8.6	1.9
>60%	0.2	0.0
Total	**455.5**	**100.1**

0 550 1,100 2,200 3,300 4,400 Feet

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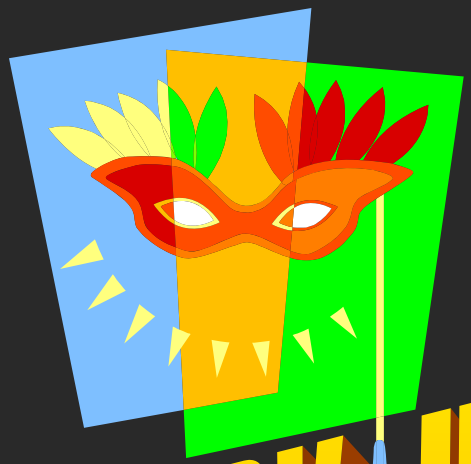

HAPPY HALLOWEEN

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