Mapping and Data Management

Presented by

John Gilbert[1]

Coauthors: Dr. John Kush[1] and Dr. Becky Barlow[2]

[1] Longleaf Pine Stand Dynamics Laboratory, Auburn University School of Forestry and Wildlife Sciences
[2] Alabama Cooperative Extension System and Longleaf Pine Stand Dynamics Laboratory, Auburn University School of Forestry and Wildlife Sciences

Alabama Forest Landowners Annual Meeting
April 6, 2013

Breakout Session Outline

- Introduction and Objectives
- Online Mapping and Spatial Resources Booklet
  - USDA/NRCS Web Soil Survey
  - Google Earth
  - Alabama Historic Photo Archive
  - USDA NRCS Geospatial Data Gateway
  - USDA Agroforestry Center CanVis
- Additional Online Mapping Options
- Alabama Assessor and Property Tax Directory
- US Dept of the Interior BLM Land Record Searches
- Data Management and Record Keeping
- Question and Answer Session

Introductions

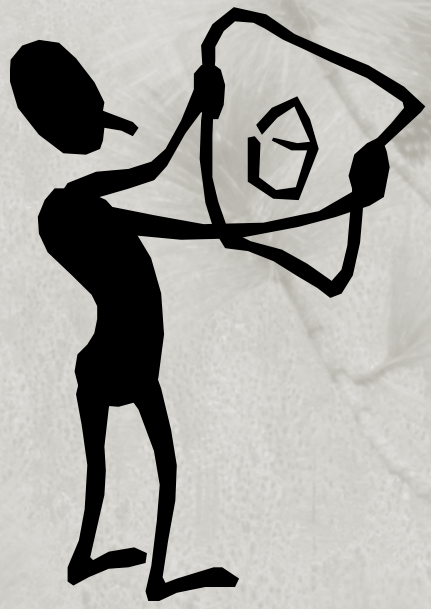
- My background
- Who is attending (private landowners, conservation professionals, others)?
- Why are you interested in online mapping?
- What types of maps do you want to create?

Spatial Opportunities

- Emerging technology
- Basic navigation
- Identify site and stand locations
- Planning and management activities
- Storing and sharing information
- Tools often available online and free

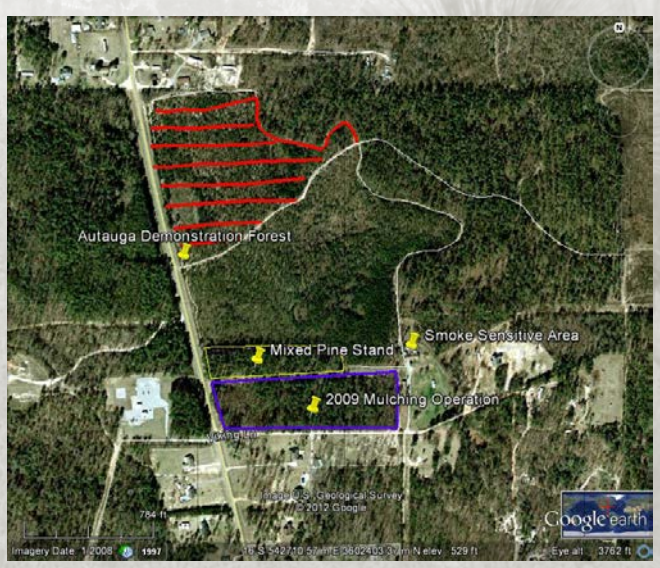
Why Are You Interested in Maps?

- Online mapping and spatial resources
  - Simple Monitoring and Planning
  - Natural Resource Management
- Property searches
  - Tax and appraisal information
- Historical information
  - Land patents
  - Survey notes
- Data management and record keeping



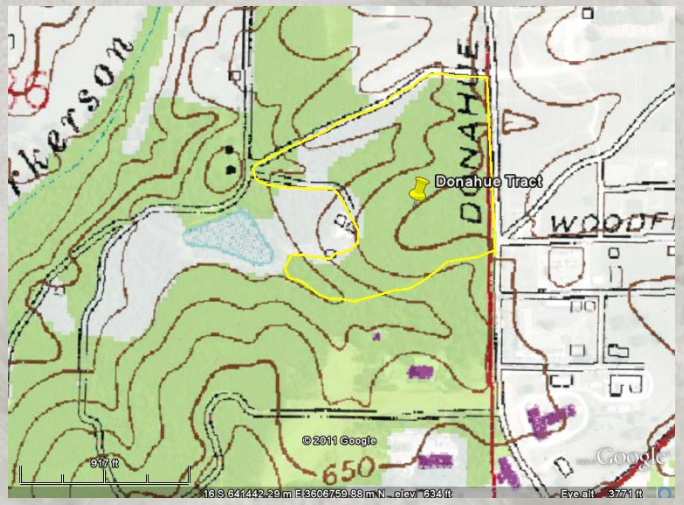
Identify Areas of Interest

- Property boundaries
- Timber stands
- Roads
- Gates
- Streamside Management Zones (SMZs)
- Stream Crossings
- Logging decks and hazards
- Wildlife food plots
- Burn plans
- Pastures
- Hunting leases
- Agroforestry/silvopasture areas



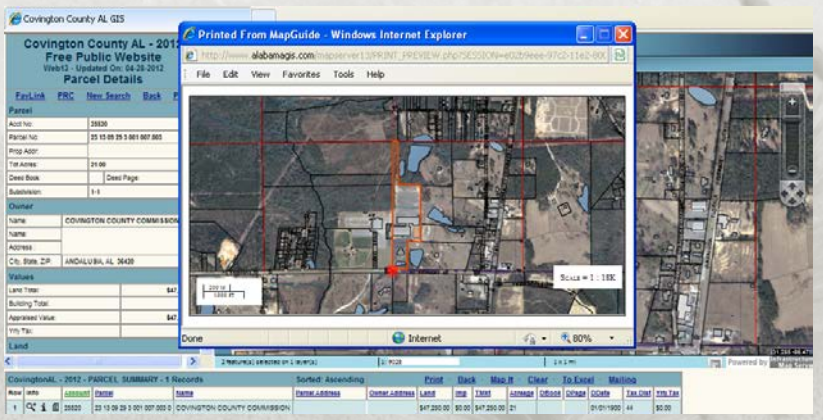
Basic Types of Maps

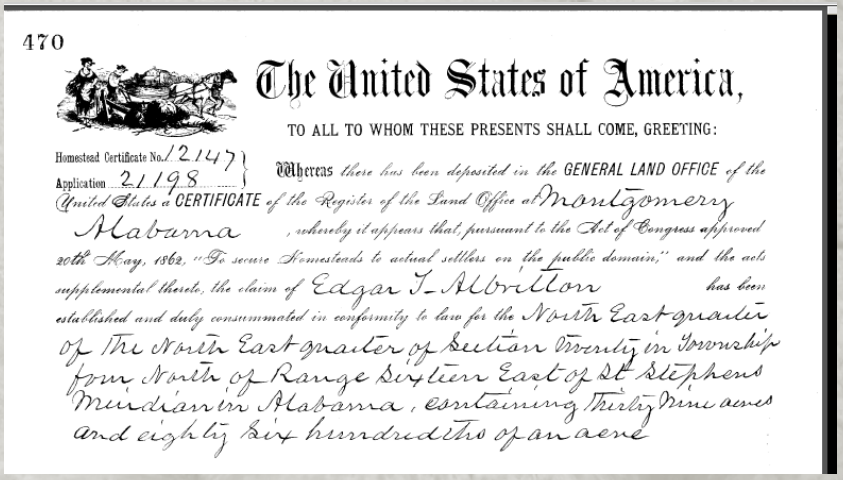
- Stand map
- Aerial photography
- Topographic
- Soils information



Other Types of Information

- Parcel data and tax information
- Historical aerial photographs
- Land patent or surveyors notes





470

The United States of America,

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Homestead Certificate No. 12147
Application 21198

Whereas there has been deposited in the GENERAL LAND OFFICE of the United States a CERTIFICATE of the Register of the Land Office at Montgomery Alabama, whereby it appears that, pursuant to the Act of Congress approved 20th May, 1862, "To secure Homesteads to actual settlers on the public domain," and the acts supplemental thereto, the claim of Edgar T. Allerton has been established and duly consummated in conformity to law for the North East quarter of The North East quarter of Section Twenty in Township four North of Range Sixteen East of St Stephens Meridian in Alabama, containing Thirty Nine acres and eighty six hundredths of an acre

Mapping Opportunities

- Have you ever been interested in making maps for your property?
- Are you worried it will be too technical or complicated?
- Do you have a computer and internet access?

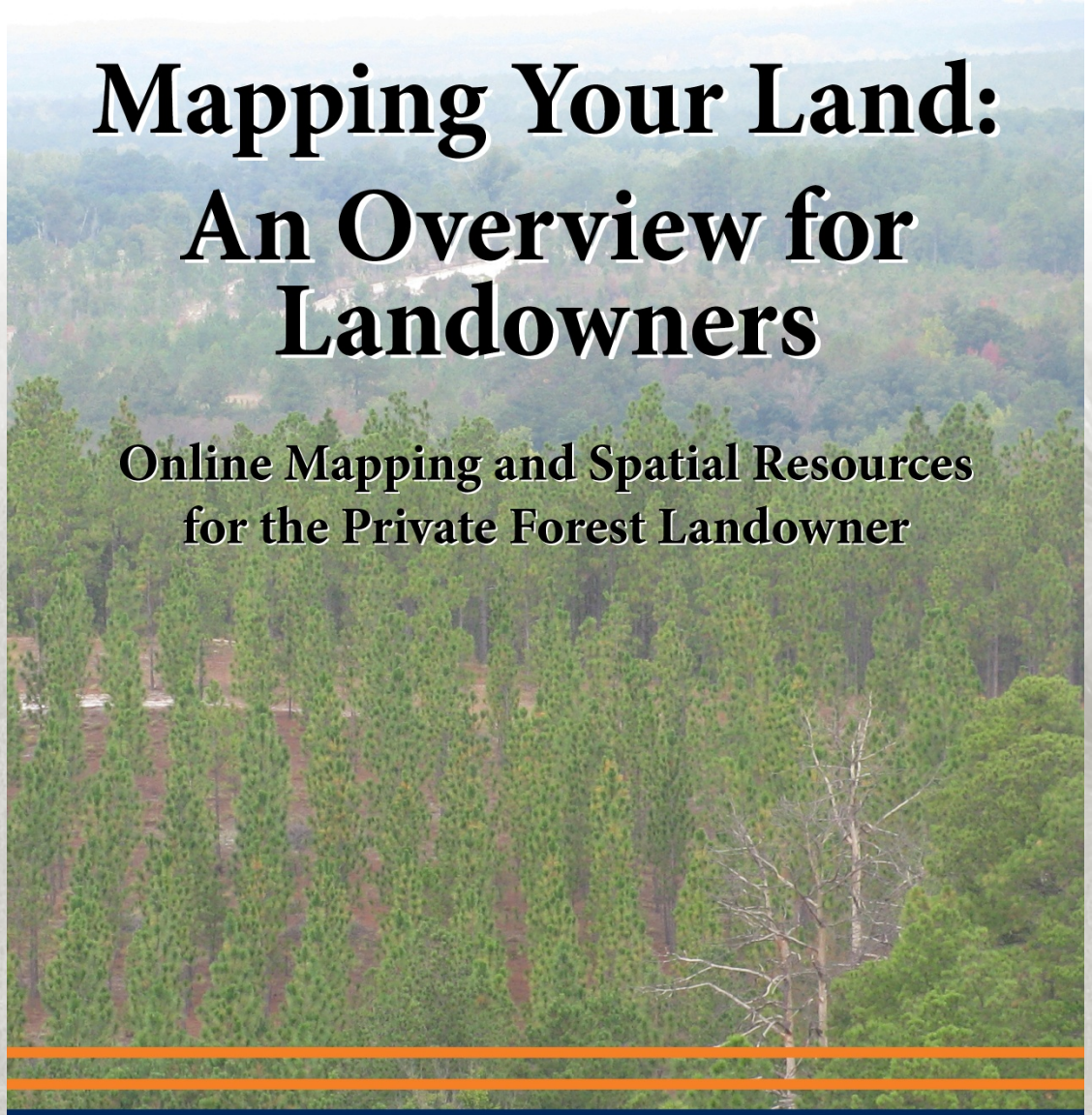
Online Mapping and Spatial Resources

AUBURN UNIVERSITY

LPSDL
Longleaf Pine Stand Dynamics Laboratory

Mapping Your Land: An Overview for Landowners

Online Mapping and Spatial Resources for the Private Forest Landowner



AUBURN UNIVERSITY

www.auburn.edu

School of Forestry and Wildlife Sciences
AUBURN UNIVERSITY

4ESTS
ALABAMA
OUR FOREST...OUR FUTURE

Online Mapping and Spatial Resources for the Private Forest Landowner

- Funding from an Alabama Forests Forever Grant
- 225 copies printed
- See Longleaf Pine Stand Dynamics Lab website: http://www.lpsdl.auburn.edu/
- Booklet available online at: http://www.lpsdl.auburn.edu/pdfs/MappingBook_FINAL.pdf

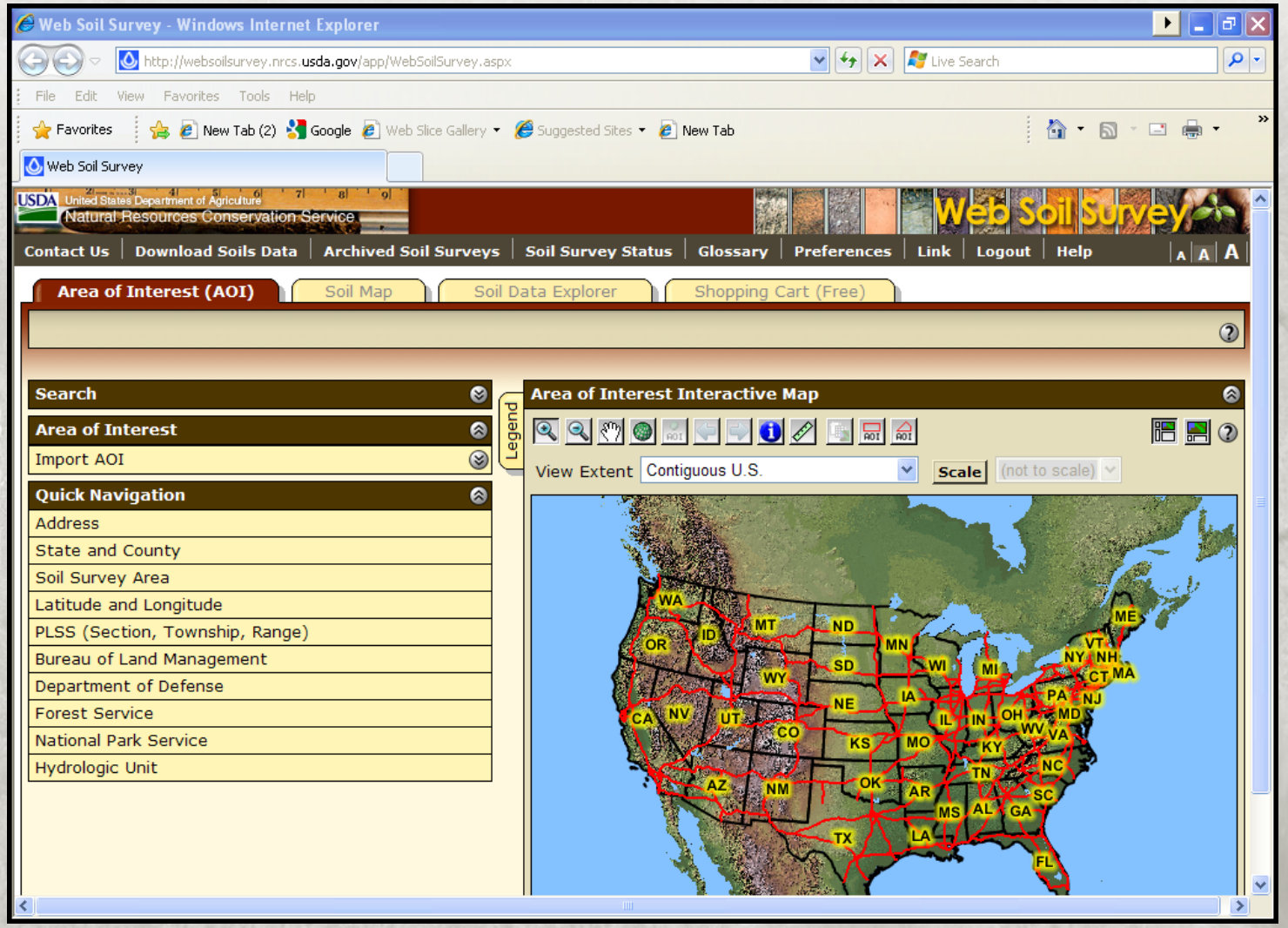
How to Use this Booklet

- Designed for private landowners and conservation professionals
- Provides tutorial information with to help users to make maps, acquire, and store data for an area of interest
- Focus on stand maps, aerial photography, topographic, and soils information
- 5 sections, each with keywords, homepage links, tutorial information, examples, screen-shots, and tips

Disclaimer

- These examples are for educational purposes only. There are no guarantees of any kind. The user assumes all risks with viewing, downloading, saving etc. online programs and products. The user is responsible for determining if the needed level of accuracy of the data meets the desired level for decision making. The authors are not liable or responsible for the use or incorrect use of this data. No guarantees, warranties, etc. are made, expressed, or implied for this brochure (including but not limited to accuracy, completeness, etc). Use this information at your own risk and liability. Please use the credit information when displaying, summarizing, or using all or any part of this information. Please note that websites are constantly changing and being updated, and links and screenshots may not match exactly as these updates are completed.

Section 1: USDA Natural Resources Conservation Service (NRCS) Web Soil Survey



Section 1: USDA Natural Resources Conservation Service (NRCS) Web Soil Survey

- Online application
- Locate a piece of property or an area of interest
- Create a boundary for the area of interest
- Display soil information with aerial photographs and/or topographic layers as backgrounds
- Create maps
- Create basic or detailed soil reports

USDA/NRCS Web Soil Survey (WSS)

- The WSS can be used to create a soil maps and explore the online soil surveys.
- Available at http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/ accessed [05/24/2011].
- Keywords: NRCS, Soil, Survey

Section 1: USDA Natural Resources Conservation Service (NRCS) Web Soil Survey

- Has anyone ever used WSS before?
- If yes, for what applications?
- Why are soils maps and information important to forestry and other natural resources?

Web Soil Survey - Home - Windows Internet Explorer

http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

File Edit View Favorites Tools Help

Favorites | Web Soil Survey - Home

USDA United States Department of Agriculture
Natural Resources Conservation Service

Web Soil Survey

Home | About Soils | Help | Contact Us

You are here: Web Soil Survey Home

Search

Enter Keywords Go

All NRCS Sites

Browse by Subject

- Soils Home
- National Cooperative Soil Survey (NCSS)
- Archived Soil Surveys
- Status Maps
- Official Soil Series Descriptions (OSD)
- Soil Series Extent Mapping Tool
- Soil Data Mart
- Geospatial Data Gateway
- eFOTG
- National Soil Characterization Data
- Soil Geochemistry Spatial Database
- Soil Quality
- Soil Geography

The simple yet powerful way to access and use soil data.

START WSS

Start the Web Soil Survey Application

Welcome to Web Soil Survey (WSS)

Web Soil Survey (WSS) provides soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS) and provides access to the largest natural resource information system in the world. NRCS has soil maps and data available online for more than 95 percent of the nation's counties and anticipates having 100 percent in the near future. The site is updated and maintained online as the single authoritative source of soil survey information.

Three Basic Steps

1 Define.

Area of Interest (AOI)

Use the Area of Interest tab to define your area of interest.

I Want To...

- Start Web Soil Survey (WSS)
- Know the requirements for running Web Soil
- Know whether Web Soil Survey works in my web browser
- Know the Web Soil Survey hours of operation
- Find what areas of the U.S. have soil data

Announcements/Events

- Web Soil Survey Release History

I Want Help With...

- How to use Web Soil Survey
- How to use Web Soil Survey Online Help
- Known Problems and Workarounds
- Frequently Asked Questions
- Citing Web Soil Survey as a source of soils data

Getting Started with the WSS

- Explore the toolbar
- Search for an Area of Interest (AOI)
- Define the AOI

1. USDA/NRCS Web Soil Survey

The USDA/NRCS Web Soil Survey (WSS) can be used to create a soils map as well as explore other online soil surveys. To get started with your own soil survey, follow the directions outlined below.

Keywords: web soil survey, NRCS

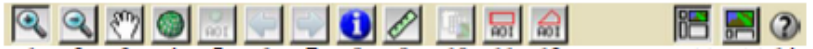
Starting the USDA/NRCS WSS:
In your web browser, go to: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

To Create a Soils Map:

1. Click the green button to "START WSS." (See right.)
2. A screen with a map of the United States will appear. (See right.)
   - The default tab is "Area of Interest (AOI)."
3. Under "Quick Navigation,"
   a. Choose an option that best represents how you would like to navigate to the area of interest (i.e. where you want to create a soils map).
      - You can also use the tool bar above the map to navigate or in conjunction with one of the other navigation options. (See sample toolbar at the bottom of this page.)

Toolbar Buttons, From Left to Right (See Below):

1. **Zoom In** – used to zoom in toward a specific point by clicking a specific place on the map or by clicking and dragging to create a box for an area of interest
2. **Zoom Out** – used to zoom out from a specific point by clicking a specific place on the map or by clicking and dragging to create a box for an area of interest
3. **Pan** – used to move the map in any direction by clicking and dragging a point on the map
4. **Zoom to Extent** – used to zoom the map out to show the entire United States
5. **Zoom to AOI (Area of Interest)** – used to zoom the map to the AOI that has been identified
6. **Zoom History Back** – used to zoom the map back to the previous view
7. **Zoom History Forward** – used to zoom the map forward after using the Zoom History Back tool
8. **Identify** – provides information about selected features on the maps. Follow directions that appear when selected.
9. **Measure Distance** – used to measure line segments. Click and drag a point on the map and move the pointer to another point and click. Double-click to end the measurement, and it provides total segment length. Note that the units feet/miles change as you zoom in. The units can also be changed to meters/kilometers by clicking the "Use Meters/Kilometers" button.
10. **Data Available** – used to show the available data with the date by clicking on an area
11. **Define AOI by Rectangle** – used to identify the area for the soils maps by clicking and dragging to create a box around the area
12. **Define AOI by Polygon** – used to identify the area for the soils maps by clicking points around the area
13. **Normal Map Layout (L) & Full Width Map Layout (R)** – used to change the way the map layout looks
14. **Help** – provides a help menu for the WSS



3

Mapping Basics and Units

- How to find an area of interest?
  - —Address
  - —Section, Township, Range
  - —Coordinates
    - Lat,long
    - UTM

- We often collect GPS data to make maps of locations of interest and need to know what units were used to collect the data.

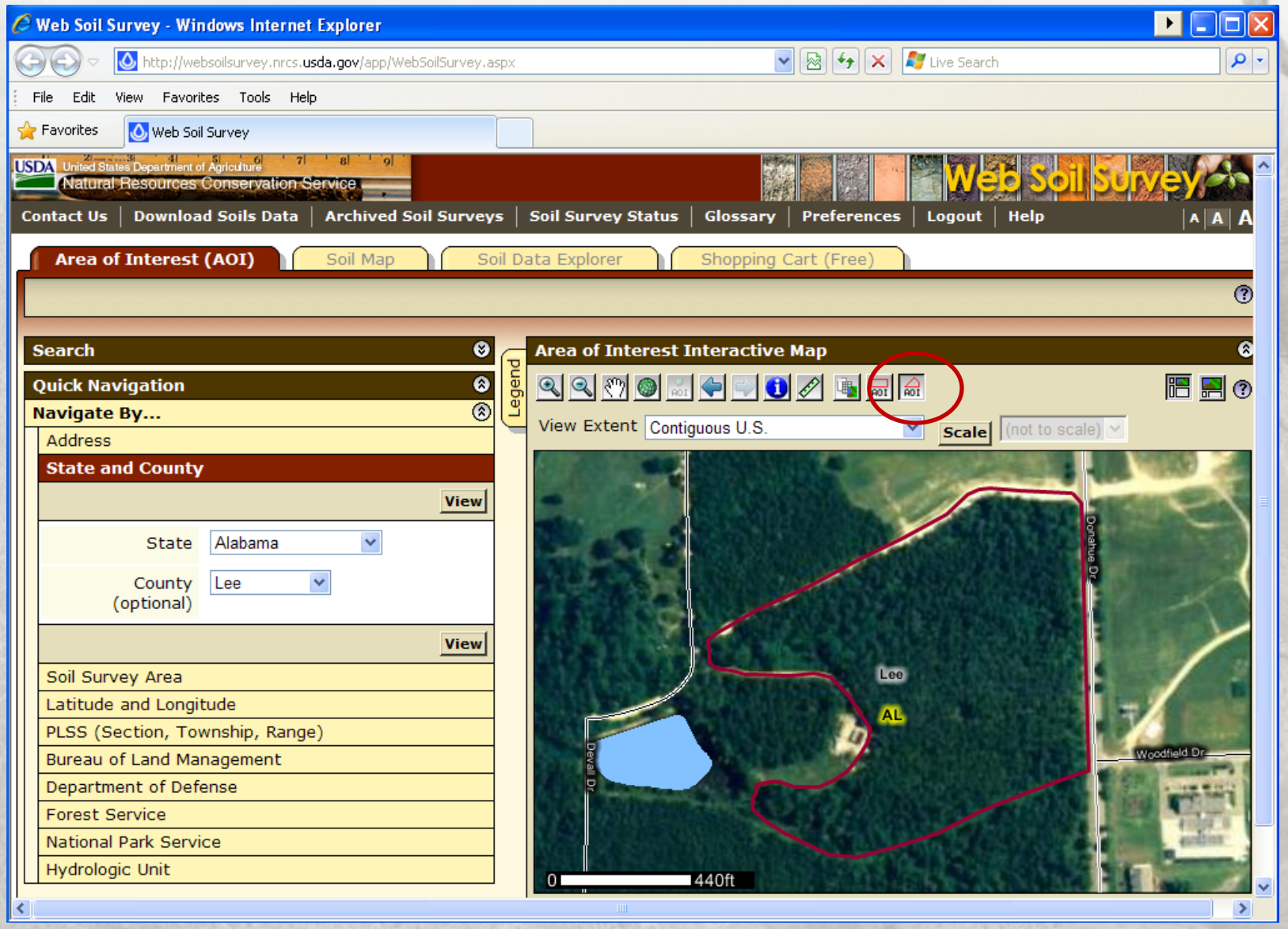
- Know your units!

Example Soils Map for the Donahue Tract

- The example tract that will be used to for this brochure is call the Donahue Tract.

- The Donahue Tract is located west of the intersection of “Donahue Dr. and Woodfield Dr. on the Auburn University Campus.

Define the Area of Interest (AOI)



Web Soil Survey - Windows Internet Explorer

http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

File Edit View Favorites Tools Help

Favorites | Web Soil Survey

Web Soil Survey
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

USDA United States Department of Agriculture Natural Resources Conservation Service

Web Soil Survey

Contact Us | Download Soils Data | Archived Soil Surveys | Soil Survey Status | Glossary | Preferences | Logout | Help | A A A

Area of Interest (AOI) | Soil Map | Soil Data Explorer | Shopping Cart (Free)

Printable Version | Add to Shopping Cart

Search

Map Unit Legend

Lee County, Alabama (AL081)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
24	Marvyn loamy sand, 1 to 6 percent slopes	17.6	79.8%
25	Marvyn loamy sand, 6 to 10 percent slopes	4.5	20.2%
Totals for Area of Interest		**22.0**	**100.0%**

Legend

Soil Map

Scale (not to scale)

Data Storage and Sharing

- Create a printable version of the map
- Save maps as a .pdf (Portable Document Format)
- Create custom reports
- Professional maps and reports
- See examples

Soil Map—Lee County, Alabama
(Donahue Tract)

Map Scale: 1:3,190 if printed on A size (8.5" x 11") sheet.

N

Meters
0 40 80 160 240

Feet
0 150 300 600 900

Soil Map—Lee County, Alabama — Donahue Tract

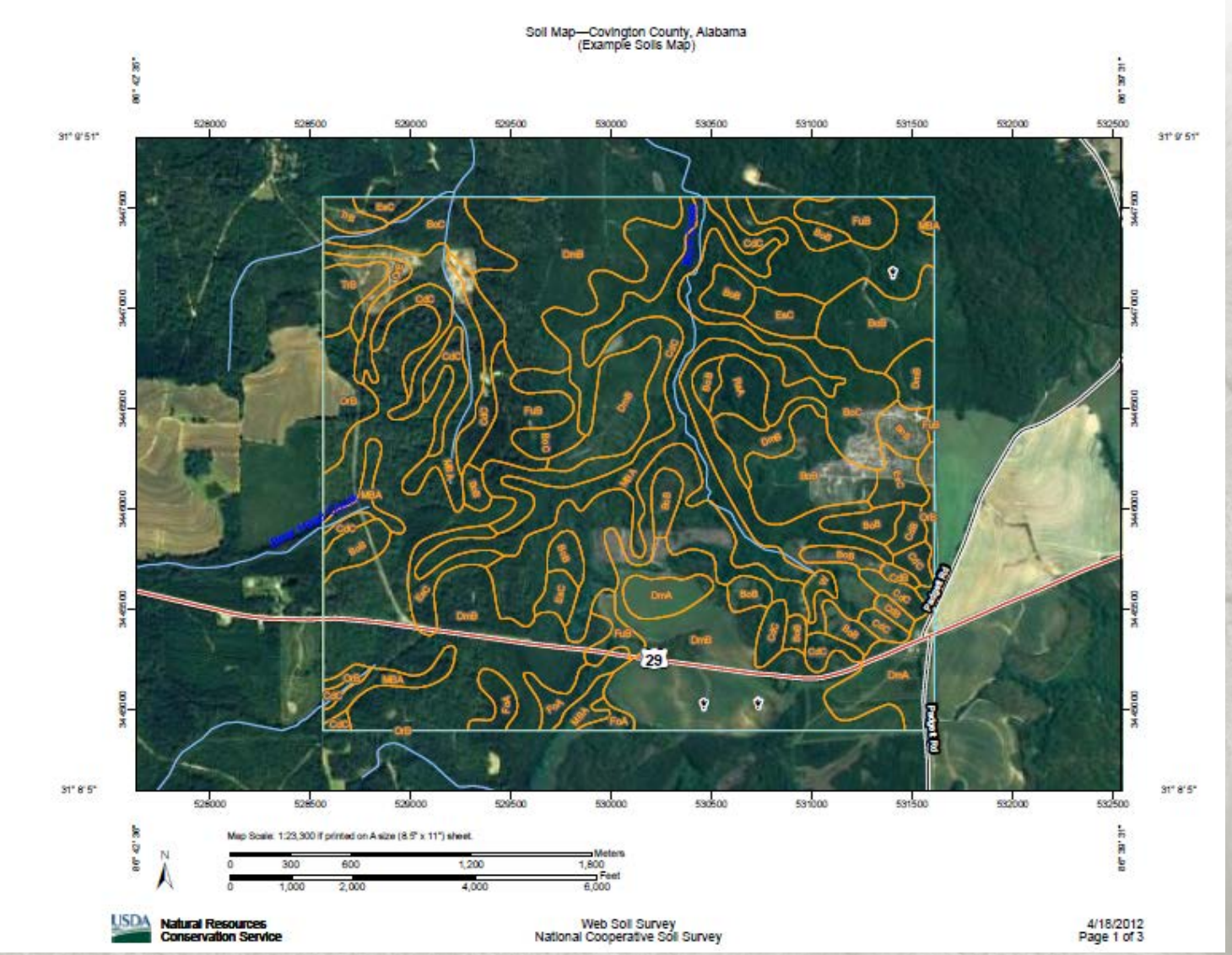
Map Unit Legend

Lee County, Alabama (AL081)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
24	Marvyn loamy sand, 1 to 6 percent slopes	17.6	79.8%
25	Marvyn loamy sand, 6 to 10 percent slopes	4.5	20.2%
Totals for Area of Interest		22.0	100.0%

USDA Natural Resources Conservation Service

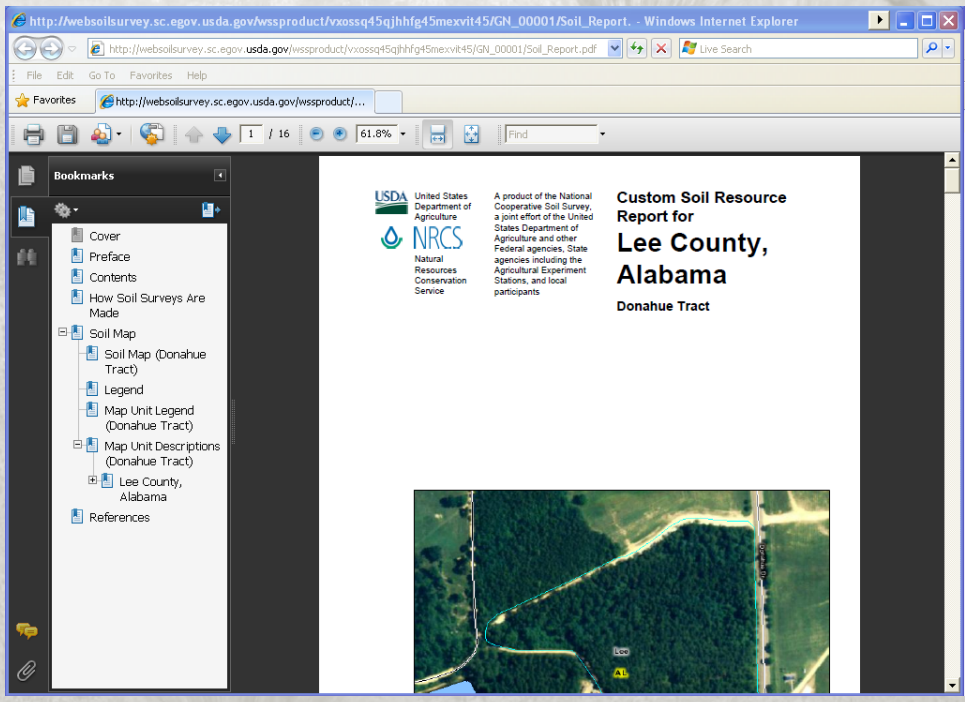
Web Soil Survey
National Cooperative Soil Survey

Example Soils Information for 2,000 acres



Custom Report

- The Custom Report can be printed, saved, and emailed following the same directions as with the “Printable Version”.
- The Custom Report provides more detailed information about the soil survey, map unit descriptions, soil descriptions.



Area of Interest (AOI) | Soil Map | **Soil Data Explorer** | Shopping Cart (Free)

View Soil Information By Use: All Uses

Printable Version | Add to Shopping Cart

Intro to Soils | **Suitabilities and Limitations for Use** | Soil Properties and Qualities | Ecological Site Assessment | Soil Reports

Search

Suitabilities and Limitations Ratings

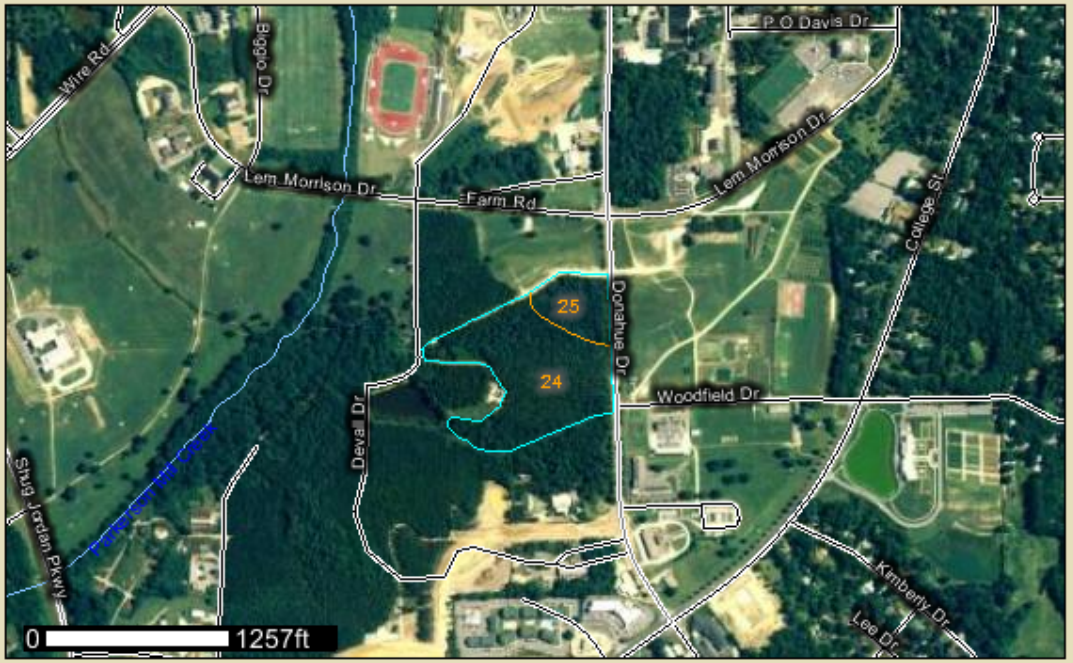
Open All | Close All

- Building Site Development
- Construction Materials
- Disaster Recovery Planning
- Land Classifications
- Land Management
- Military Operations
- Recreational Development
- Sanitary Facilities
- Vegetative Productivity
- Water Management

Legend

Soil Map

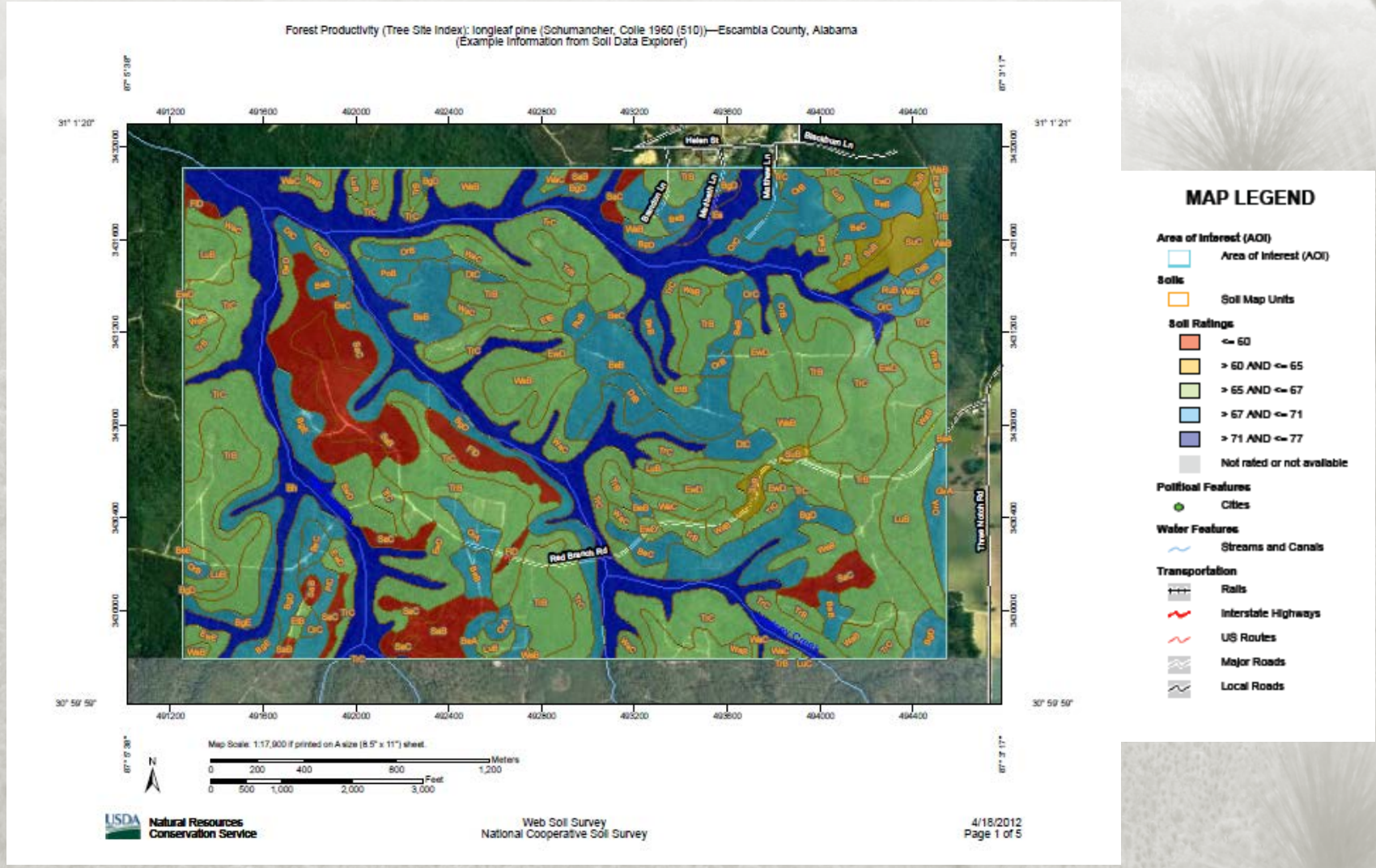
Scale (not to scale)



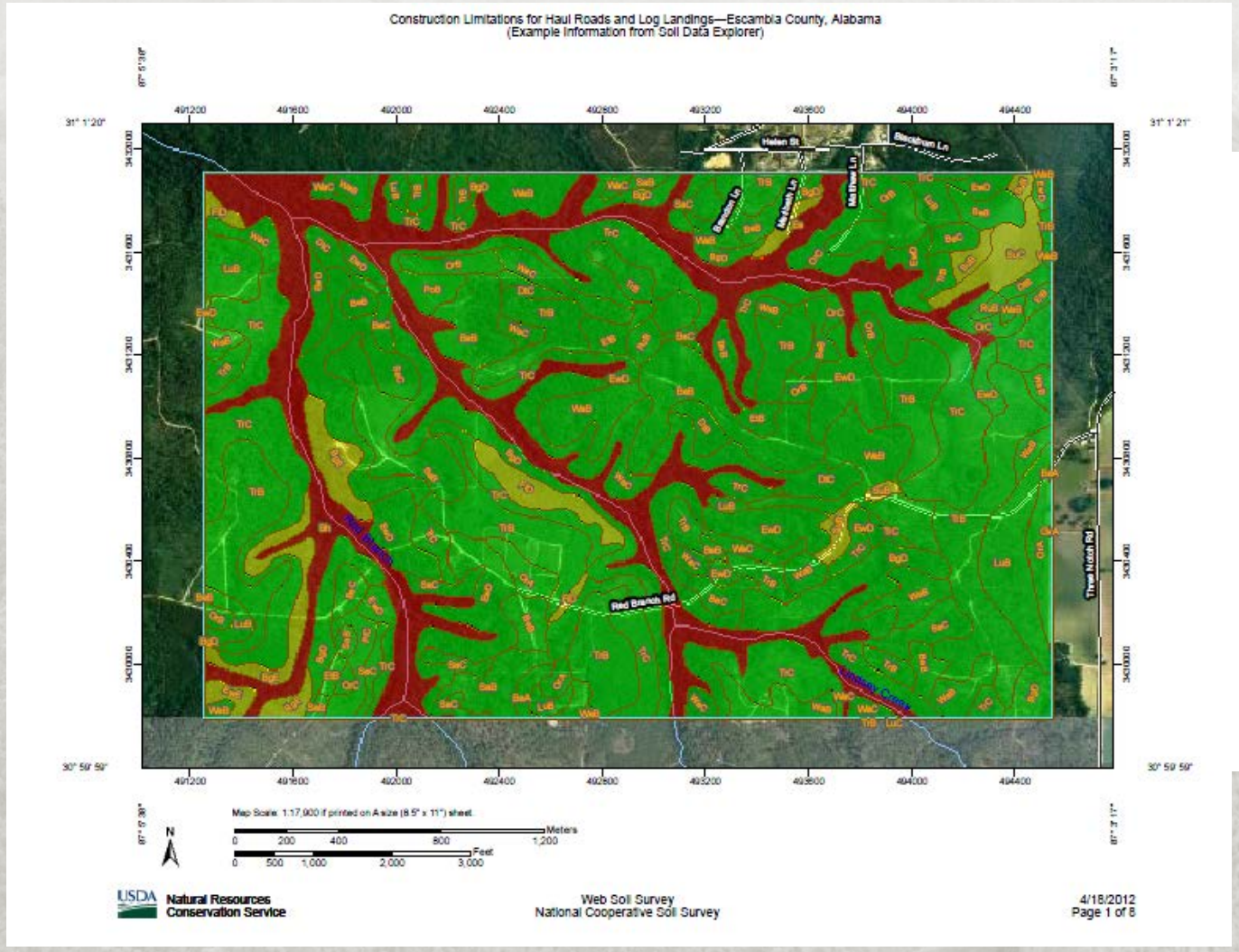
Exploring Soils Information

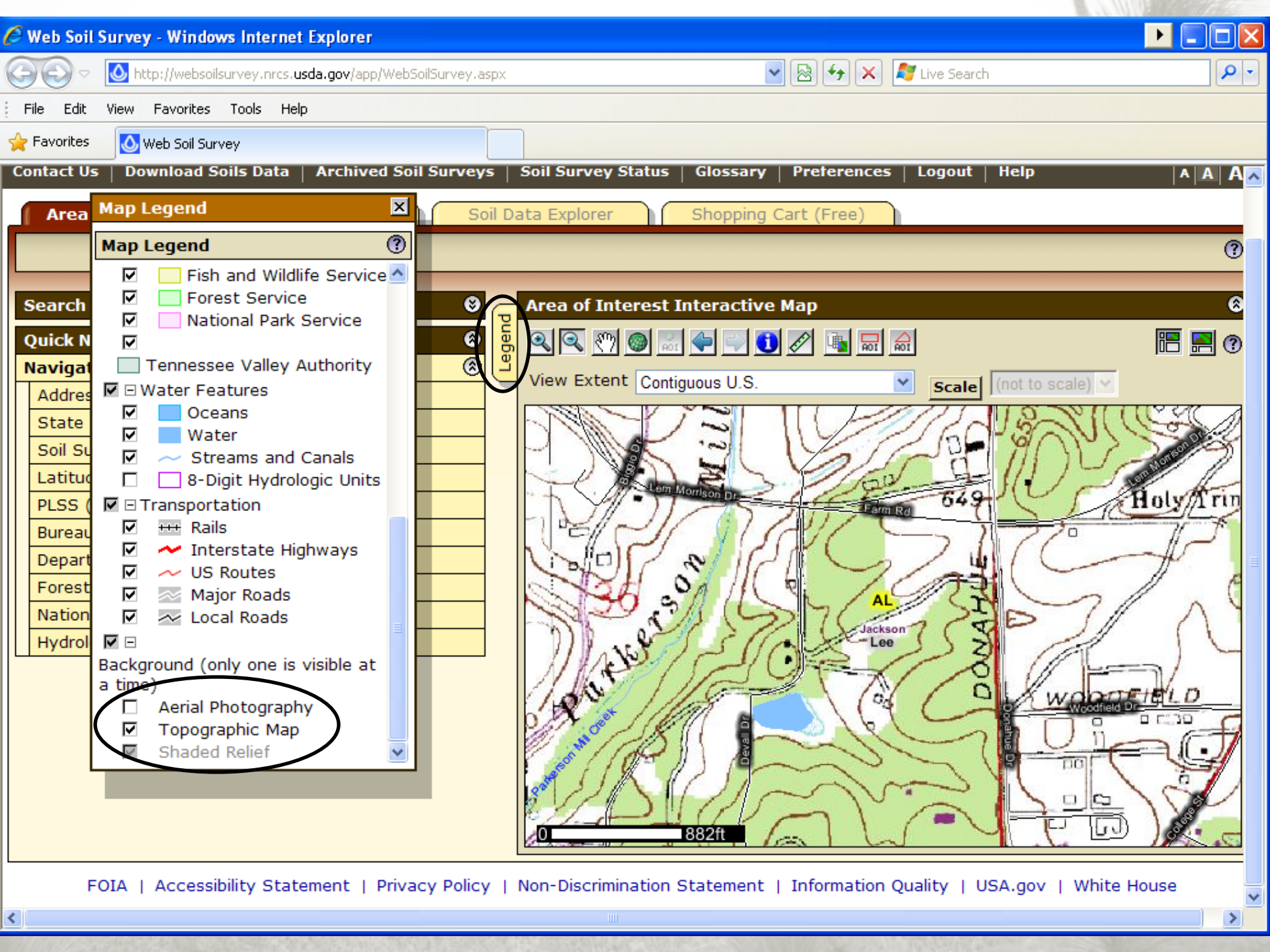
- Use the Soil Data Explorer
  - Introduction to Soils
  - Suitabilities and Limitations for Use
    - Land Management
      - Haul Roads and Log Landing Limitations
    - Vegetation Productivity
      - Site Index
  - Soil Properties and Qualities
  - Soil Reports

Example Site Index Map



Example Map for Haul Roads and Log Landing Limitations




Web Soil Survey - Windows Internet Explorer
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx
Live Search
File Edit View Favorites Tools Help
Favorites
Web Soil Survey
Contact Us | Download Soils Data | Archived Soil Surveys | Soil Survey Status | Glossary | Preferences | Logout | Help
Area
Map Legend
Map Legend
Fish and Wildlife Service
Forest Service
National Park Service
Tennessee Valley Authority
Water Features
Oceans
Water
Streams and Canals
8-Digit Hydrologic Units
Transportation
Rails
Interstate Highways
US Routes
Major Roads
Local Roads
Background (only one is visible at a time)
Aerial Photography
Topographic Map
Shaded Relief
Soil Data Explorer
Shopping Cart (Free)
Search
Quick N
Navigat
Address
State
Soil Su
Latitud
PLSS
Bureau
Depart
Forest
Nation
Hydrol
Legend
Area of Interest Interactive Map
View Extent
Contiguous U.S.
Scale
(not to scale)
Lem Morrison Dr
Farm Rd
649
Parkerson Mill Creek
Deval Dr
AL
Jackson
Lee
DONAHUE
WOODFIELD
Woodfield Dr
Donahue Dr
College St
0
882ft
FOIA | Accessibility Statement | Privacy Policy | Non-Discrimination Statement | Information Quality | USA.gov | White House

Tips and Troubleshooting

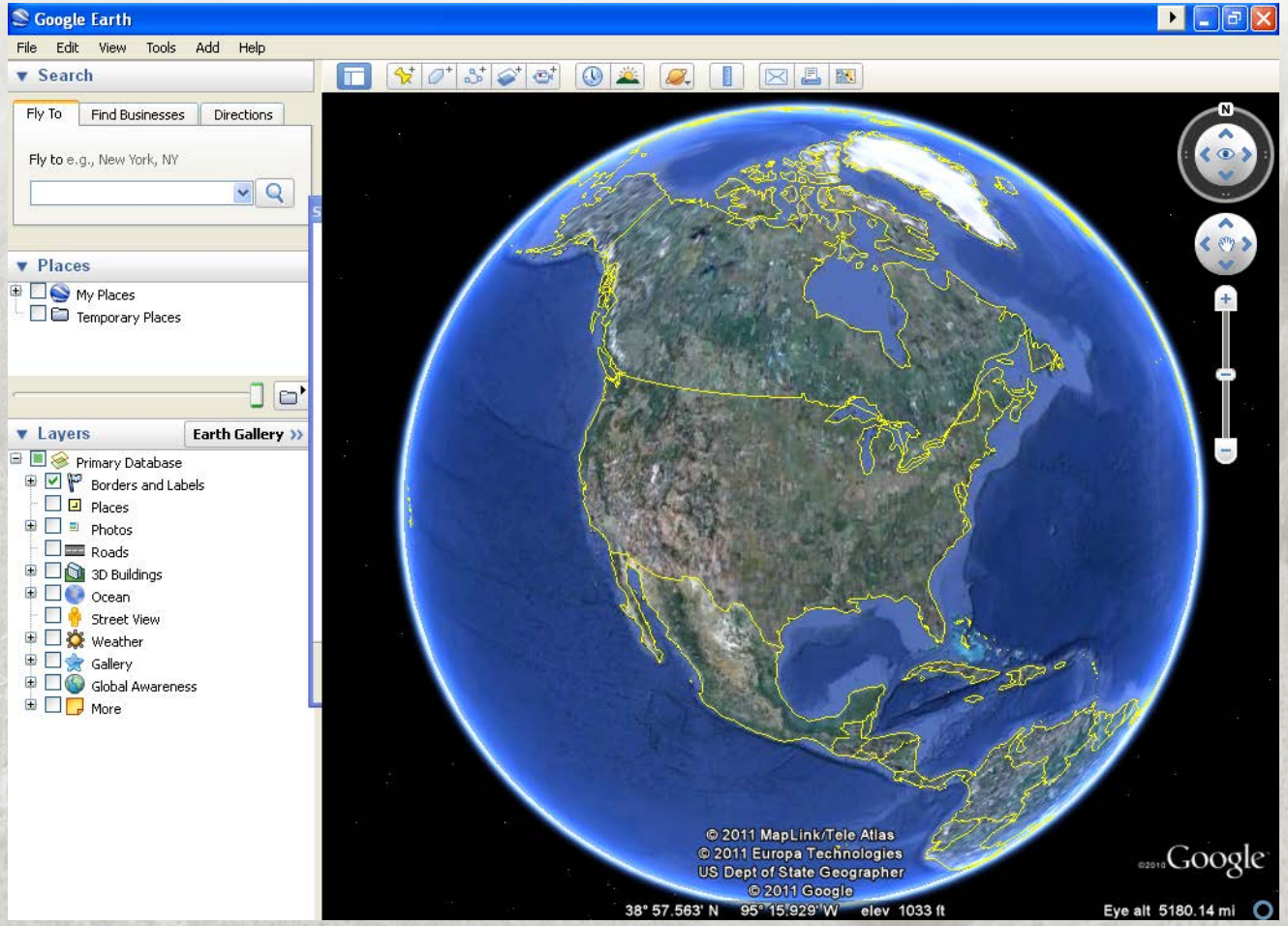
- If WSS is not working, check the system requirements to run the program. See http://websoilsurvey.nrcs.usda.gov/app/Help/Requirements.htm .
- "Want" and "Help" Menus are located on the right side of the WSS homepage.
- For more instructions see http://websoilsurvey.nrcs.usda.gov/app/Help/WSS_HomePage_HowTo.pdf
- It may be necessary to turn off the Pop-up blocker/allow Pop-ups from the WSS website
- Some of the process might take time to complete, Be patient.
- The session can also timeout if there is a long period of inactivity, which will require starting over.

Section 1: USDA Natural Resources Conservation Service (NRCS) Web Soil Survey

- What are some applications you could see this program being used for?

- What would you use it for?

Section 2: Google Earth



© 2011 MapLink/Tele Atlas, © 2011 Europa Technologies, US Dept of State Geographer, © 2011 Google

Section 2: Google Earth

- Requires downloading a program
- Locate a piece of property or area of interest
- Store location and description information
- Create maps
- Opportunities for improved communication

Section 2: Google Earth
Google Earth Use and Tutorial Information

- Main website
  - http://www.google.com/earth/index.html
  - © 2011 Google

- Google Earth is free to use, but it requires the software to be downloaded, installed, and an internet connection. http://www.google.com/earth/download/ge/

- Keywords: Google Earth

Section 2: Google Earth System Requirements

- Can be used on PC's, Mac's, and Linux systems

- Basic system needs
  - 512 MB of RAM
  - 400 MB of free space on hard drive
  - DirectX9 and 3D capable with 64/256MB of VRAM

  - See http://earth.google.com/support/bin/answer.py?answer=20701 for more detailed minimum and recommended system requirements by operating system

Section 2: Google Earth

- Has anyone ever used Google Earth before?
- If yes, for what applications?
- Have you ever used Google Earth to store information (points, lines, polygons, attribute data) about a particular area?

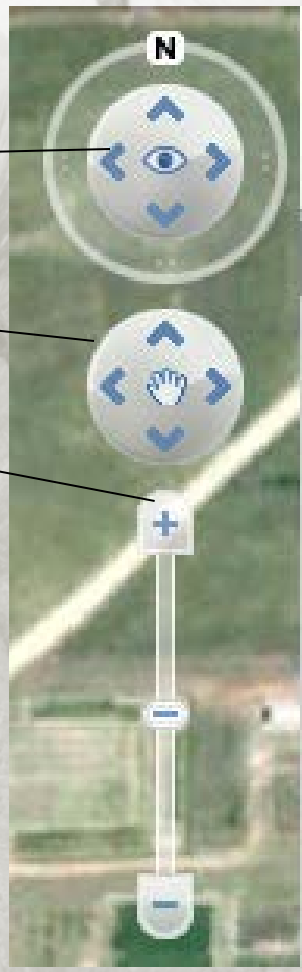
Section 2: Google Earth

- Provides aerial photography as a background with options to add more layers

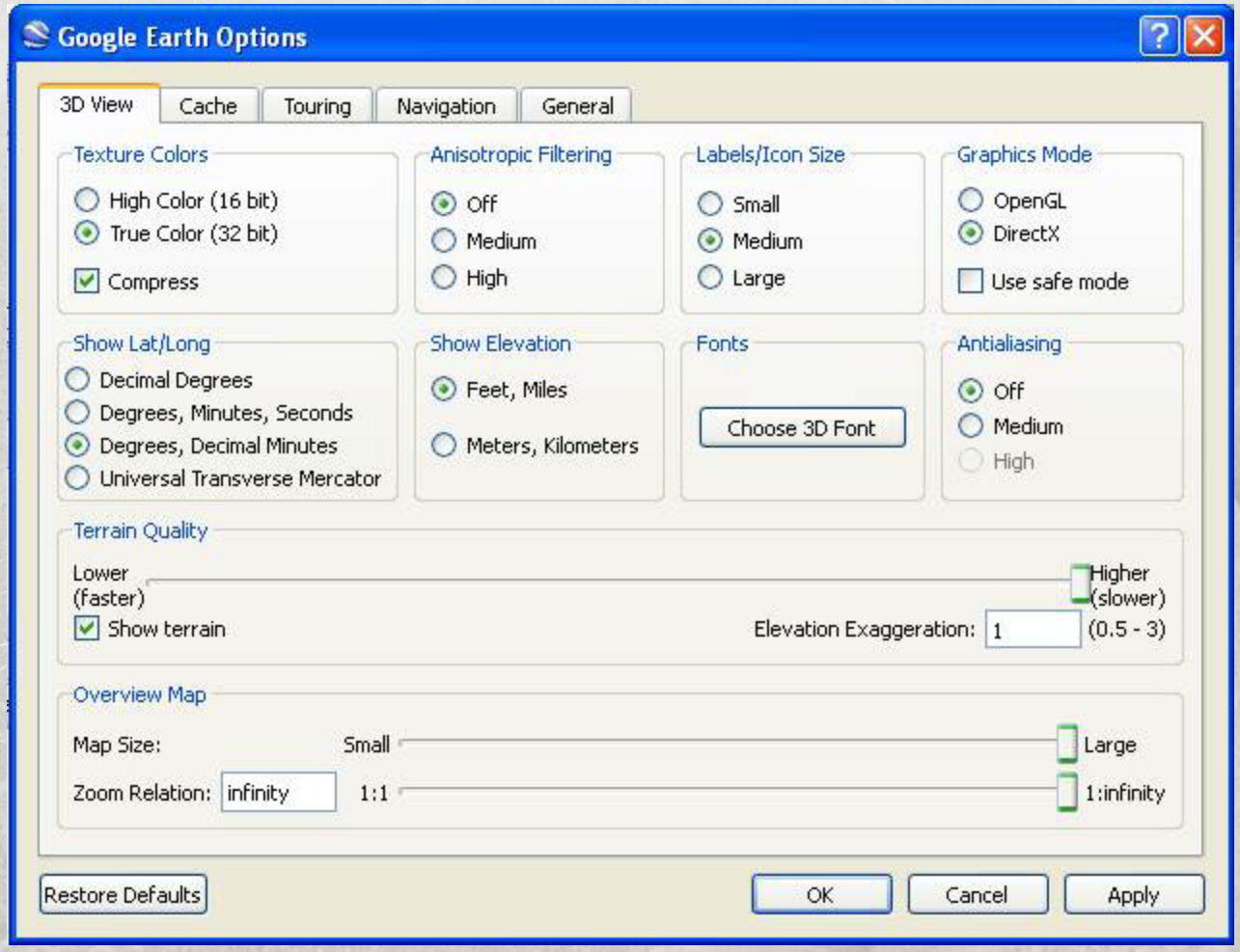
- Google Earth can be used to:
  - Locate property or areas of interest
  - Store location and description information
    - Create placemarks or points for an area of interest
    - Create paths or lines for roads, streams, etc.
    - Create boundaries for timber stands
  - Make maps

Section 2: Google Earth Navigating

- Use the toolbar (right)
  - To turn the map different directions
  - To move the view
  - To zoom in and out
- Other options include:
  - Using the mouse, click (left mouse button)the the screen and drag
  - Using the scroll button on the mouse (if applicable)
  - Using the arrow keys and “Ctrl” on the keyboard
- Explore the toolbar and practice clicking the various tools

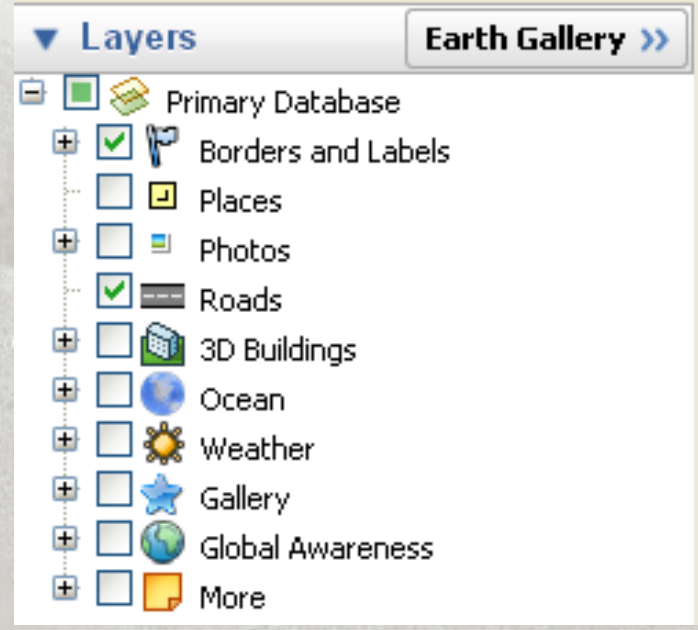


Section 2: Google Earth Coordinates and Units



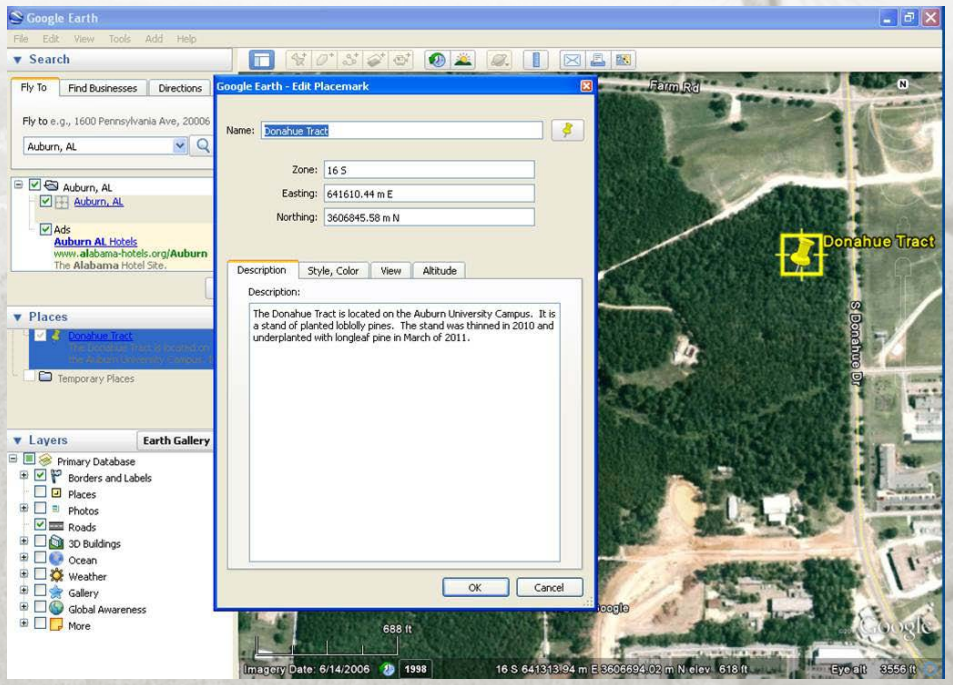
Section 2: Google Earth Layers

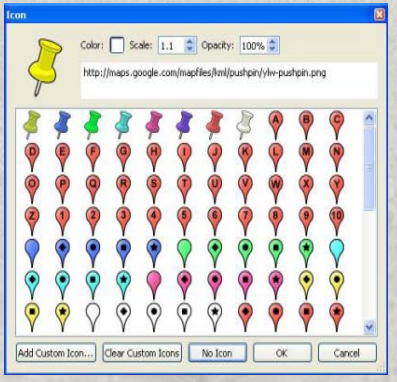
- Turn on basic layers for navigation:
  - Boarders and labels
  - Roads
- Explore other layers for additional information



Section 2: Google Earth - Points

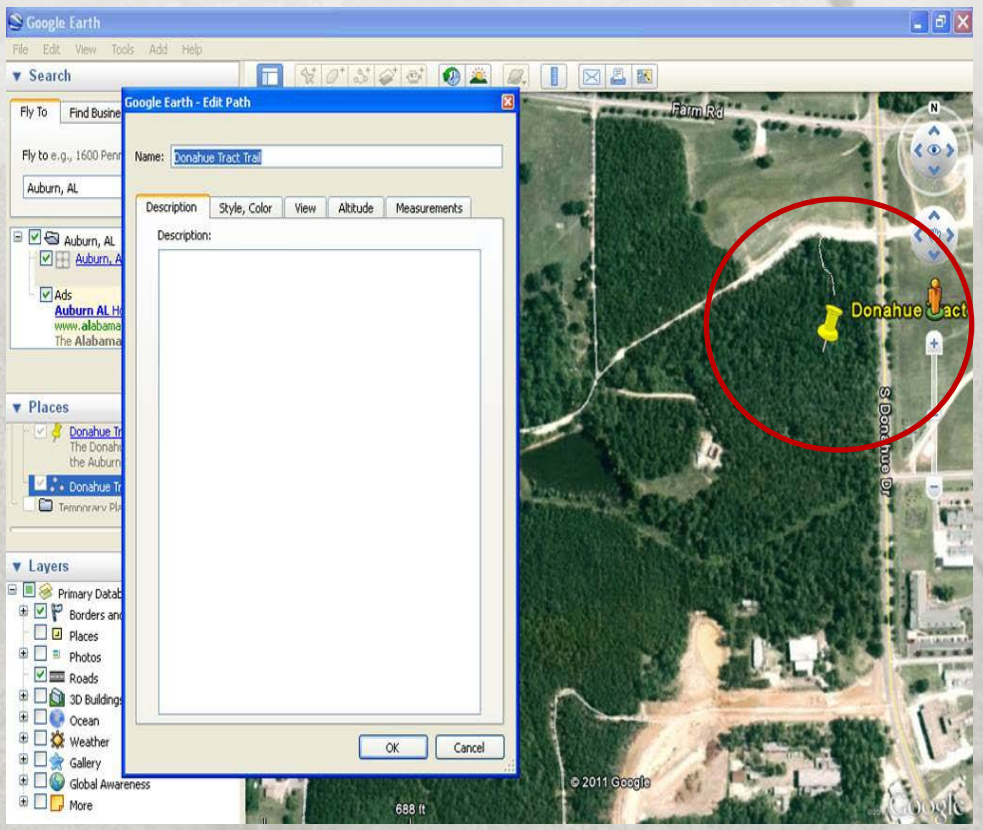
- Create placemarks or points
  - Timber stand
  - Tree stand
  - Building
- Change the shape and color
- Store descriptive information





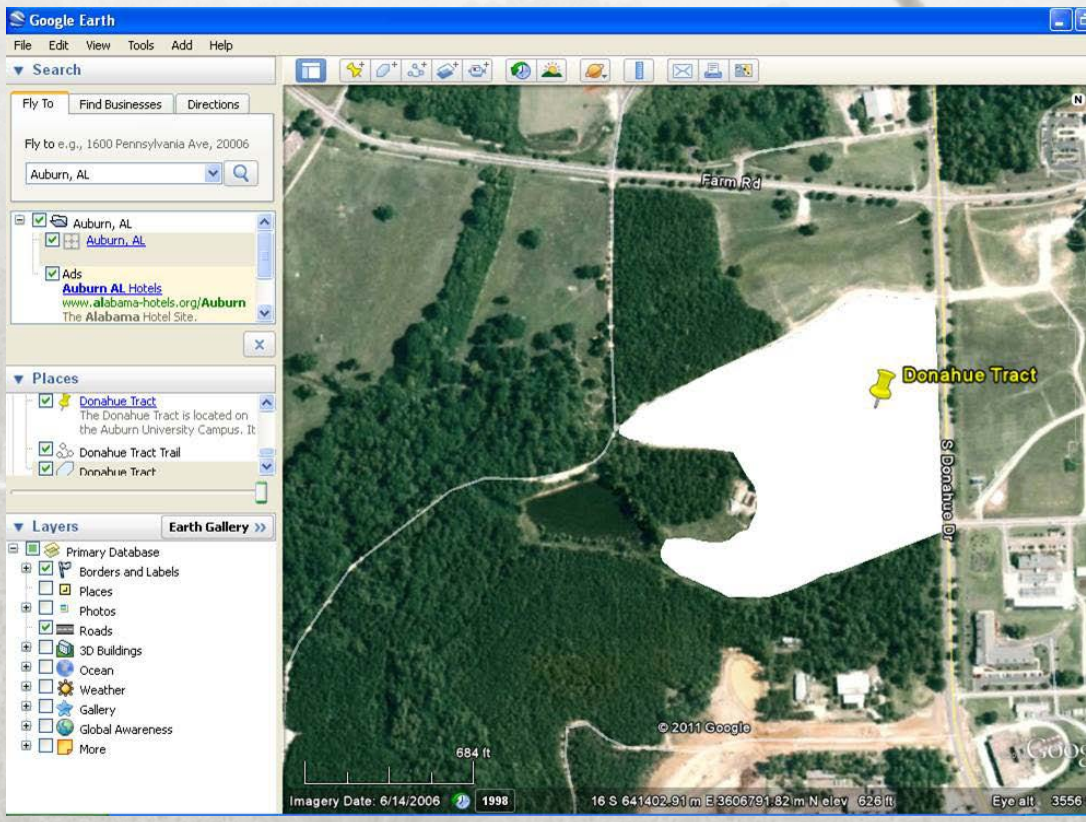
Section 2: Google Earth - Lines

- Create paths or points
  - Roads
  - Trails
  - Streams
- Change the shape and color
- Store descriptive information



Section 2: Google Earth - Polygons

- Create polygon
  - Timber stands
  - Food plots
  - Pastures
- Change the shape and color
- Store descriptive information



Section 2: Google Earth Data Storage and Sharing

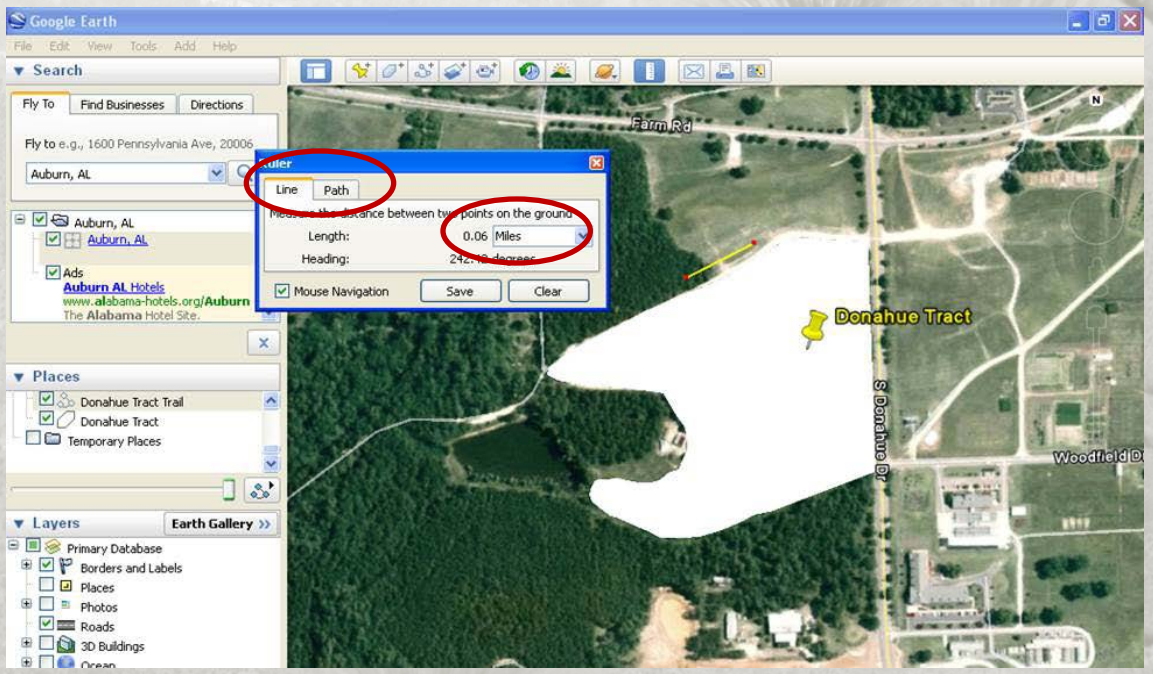
- Points, lines, and polygons can be saved as .kml or .kmz files. Keyhole Markup Language (user preference).

- They can be edited and updated.

- They can be email directly from Google Earth or emailed anytime as an attachment.

Section 2: Google Earth Measuring a Distance

- Show ruler
- Choose a line or a path
- Choose the desired units



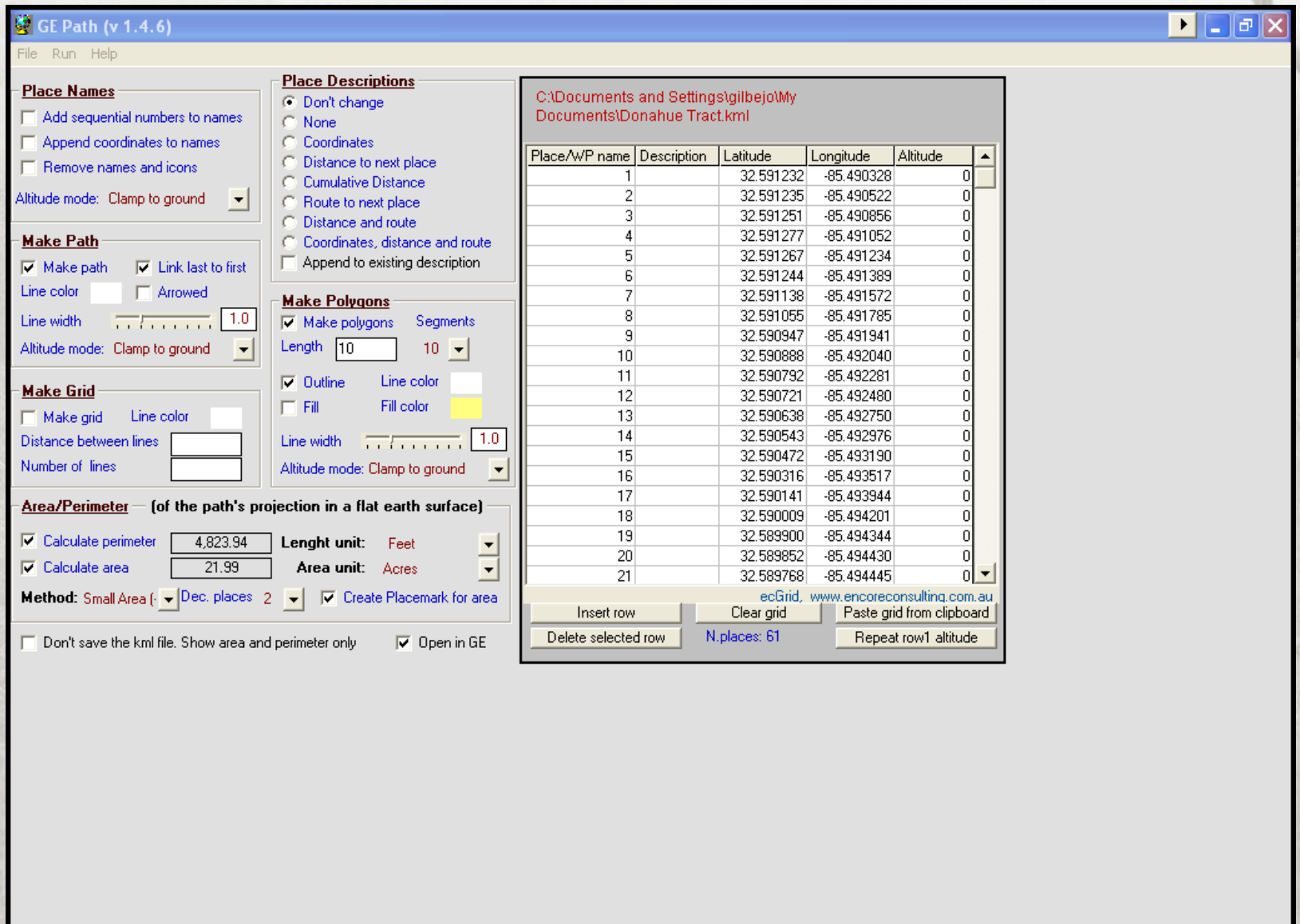
Section 2: Google Earth Calculating Areas

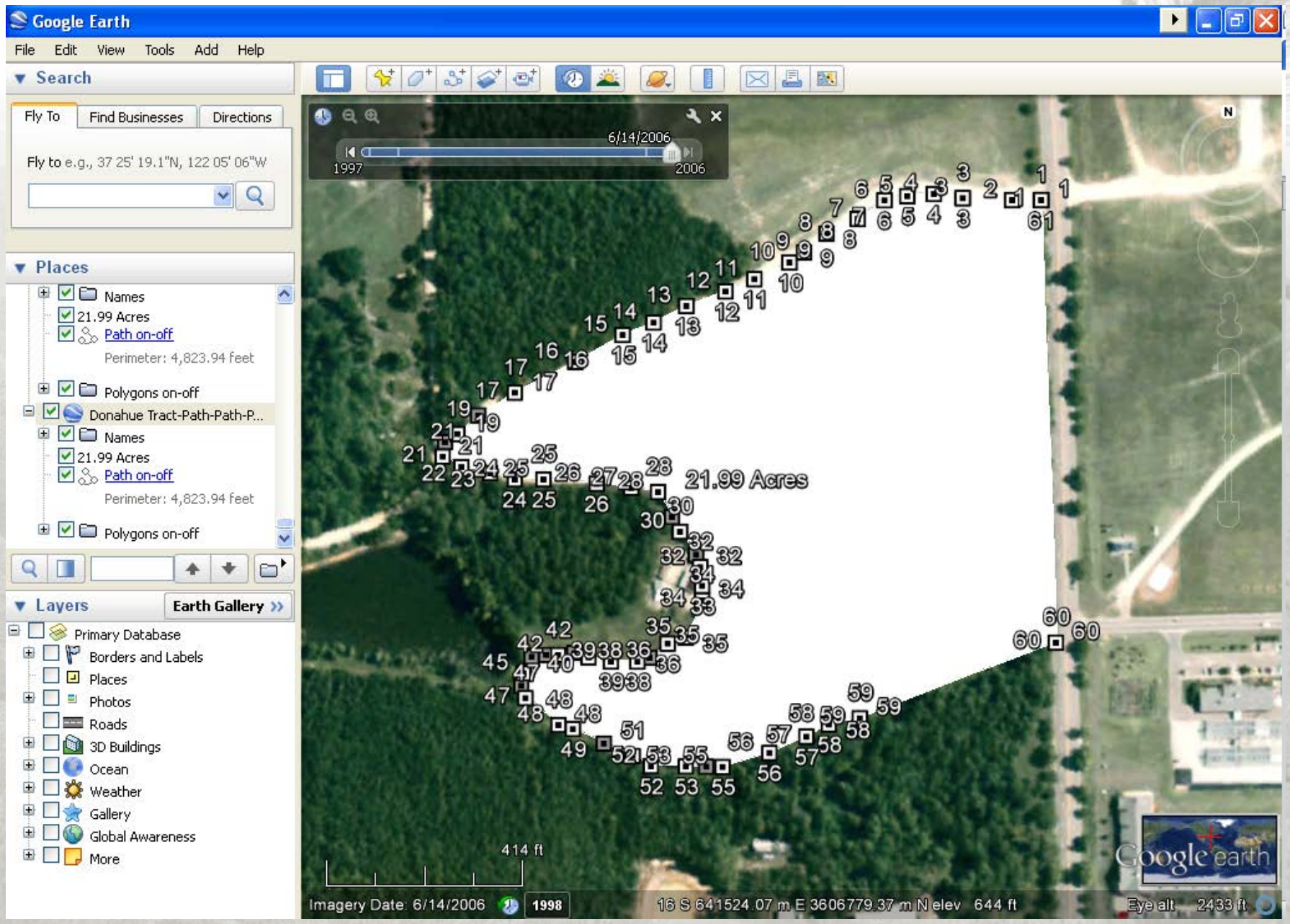
- Areas can be calculated in Google Earth using the ruler if the area of interest is square or rectangular

- Google Earth Pro has an area feature tool, but it requires purchasing a license
  - http://www.google.com/enterprise/earthmaps/earth_pro.html

- GE-Path (Freeware)
  - Download
    - http://www.sgrillo.net/googleearth/gepath.htm
  - See full list of features
  - Files need to be saved using the .klm extension

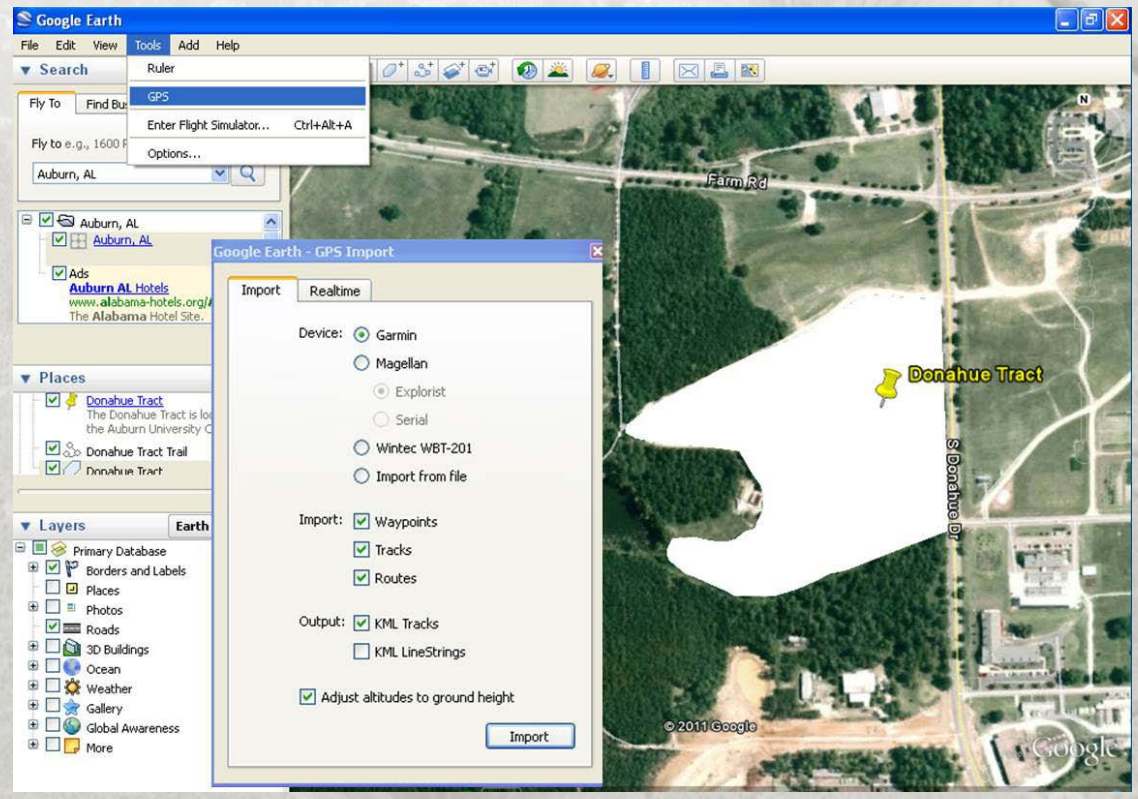
GE-Path 1.4.6


GE Path (v 1.4.6)
File Run Help
Place Names
Add sequential numbers to names
Append coordinates to names
Remove names and icons
Altitude mode: Clamp to ground
Make Path
Make path
Link last to first
Line color
Arrowed
Line width
1.0
Altitude mode: Clamp to ground
Make Grid
Make grid
Line color
Distance between lines
Number of lines
Place Descriptions
Don't change
None
Coordinates
Distance to next place
Cumulative Distance
Route to next place
Distance and route
Coordinates, distance and route
Append to existing description
Make Polygons
Make polygons
Segments
Length
10
10
Outline
Line color
Fill
Fill color
Line width
1.0
Altitude mode: Clamp to ground
Area/Perimeter
(of the path's projection in a flat earth surface)
Calculate perimeter
4,823.94
Lenght unit:
Feet
Calculate area
21.99
Area unit:
Acres
Method: Small Area (-
Dec. places 2
Create Placemark for area
Don't save the kml file. Show area and perimeter only
Open in GE
C:\Documents and Settings\gilbejo\My Documents\Donahue Tract.kml
Place/WP name
Description
Latitude
Longitude
Altitude
1 32.591232 -85.490328 0
2 32.591235 -85.490522 0
3 32.591251 -85.490856 0
4 32.591277 -85.491052 0
5 32.591267 -85.491234 0
6 32.591244 -85.491389 0
7 32.591138 -85.491572 0
8 32.591055 -85.491785 0
9 32.590947 -85.491941 0
10 32.590888 -85.492040 0
11 32.590792 -85.492281 0
12 32.590721 -85.492480 0
13 32.590638 -85.492750 0
14 32.590543 -85.492976 0
15 32.590472 -85.493190 0
16 32.590316 -85.493517 0
17 32.590141 -85.493944 0
18 32.590009 -85.494201 0
19 32.589900 -85.494344 0
20 32.589852 -85.494430 0
21 32.589768 -85.494445 0
ecGrid, www.encoreconsulting.com.au
Insert row
Clear grid
Paste grid from clipboard
Delete selected row
N.places: 61
Repeat row1 altitude


Google Earth
File Edit View Tools Add Help
Search
Fly To
Find Businesses
Directions
Fly to e.g., 37 25' 19.1"N, 122 05' 06"W
Places
Names
21.99 Acres
Path on-off
Perimeter: 4,823.94 feet
Polygons on-off
Donahue Tract-Path-Path-P...
Layers
Earth Gallery
Primary Database
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
6/14/2006
1997
2006
21.99 Acres
414 ft
Imagery Date: 6/14/2006
1998
16 S 641524.07 m E 3606779.37 m N elev 644 ft
Eye alt 2433 ft
Google earth

Section 2: Google Earth Additional Options

- Review adding GPS data
- View the map in Google Maps
- View aerial photographs over time

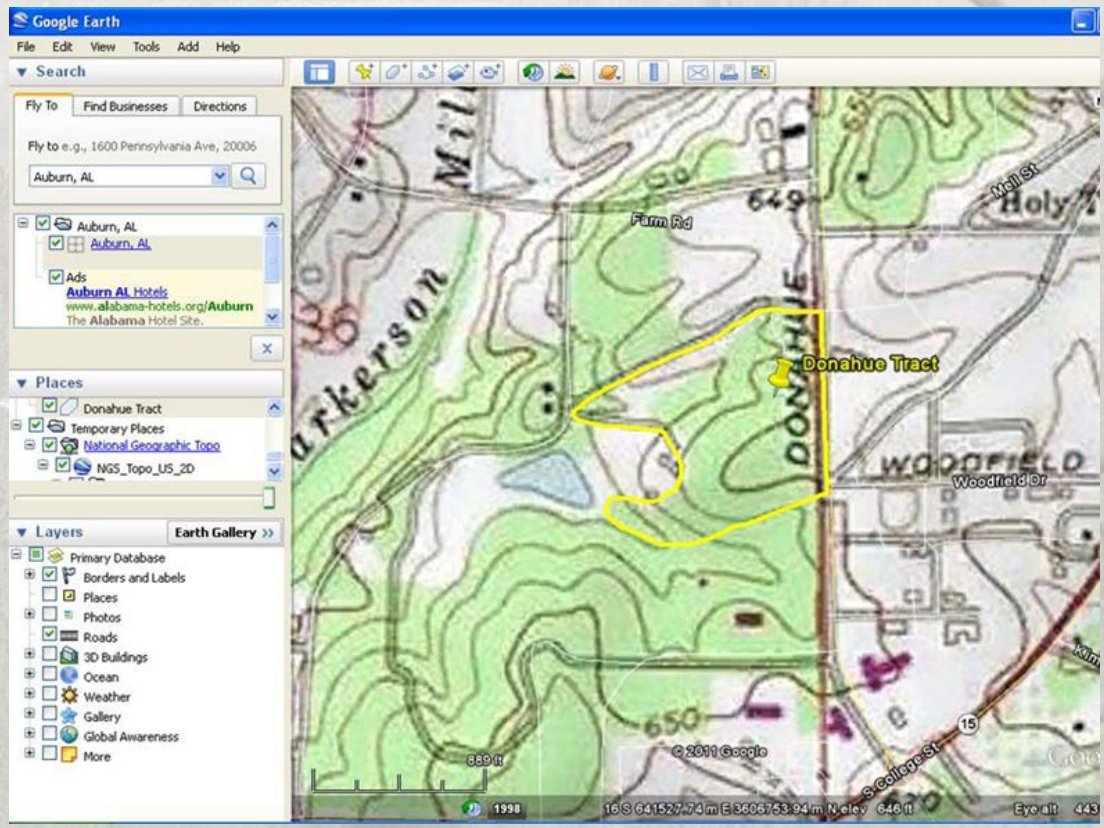


© 2011 Google

Section 2: Google Earth Topographic Map

- Visit http://www.gelib.com/ng-topo.htm

- Keywords: Google Earth, topographic map, overlay



© 2011 Google

Section 2: Google Earth Data Storage and Sharing

- Maps can be printed.
- An image of the map can be saved (.jpeg).
- Images of the maps can be sent to others through email or posted online.

Section 2: Google Earth Developing a Database

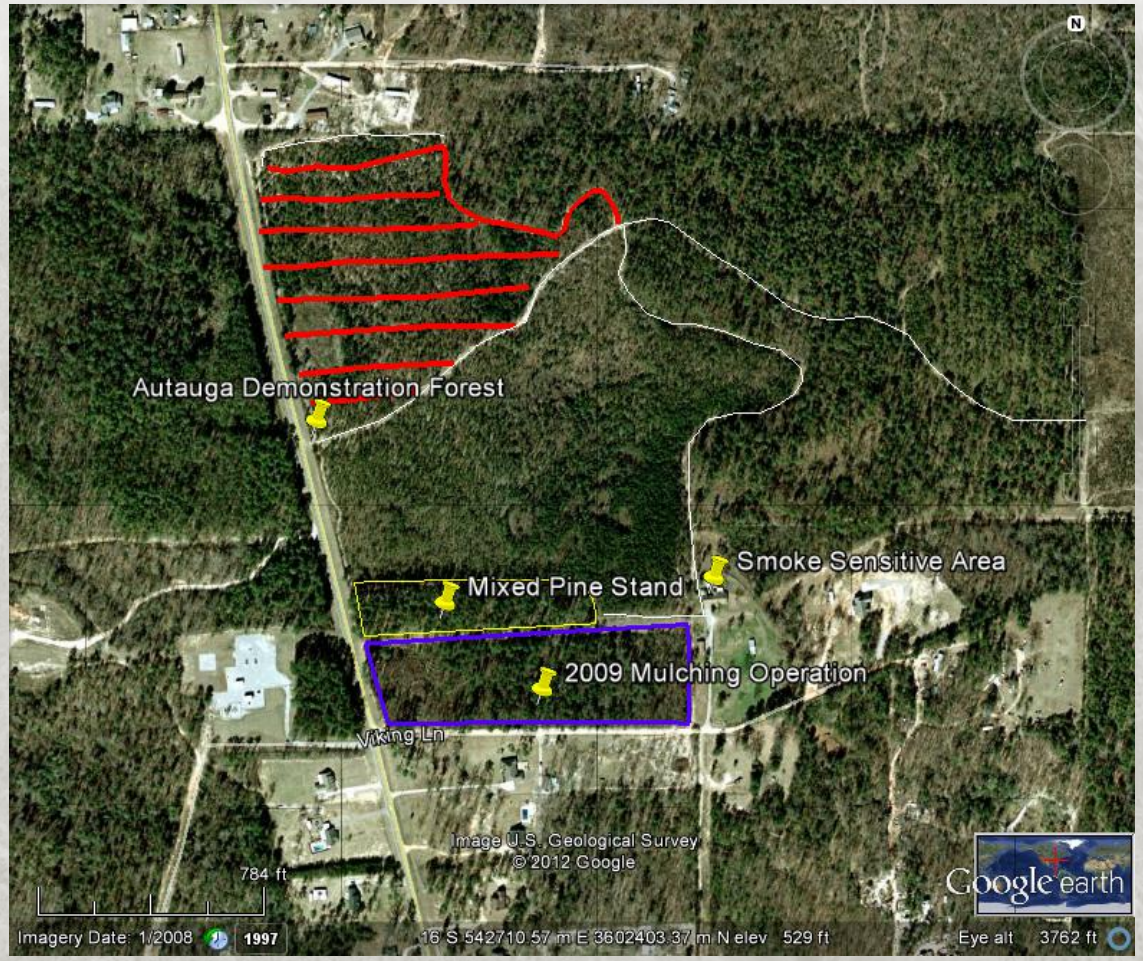
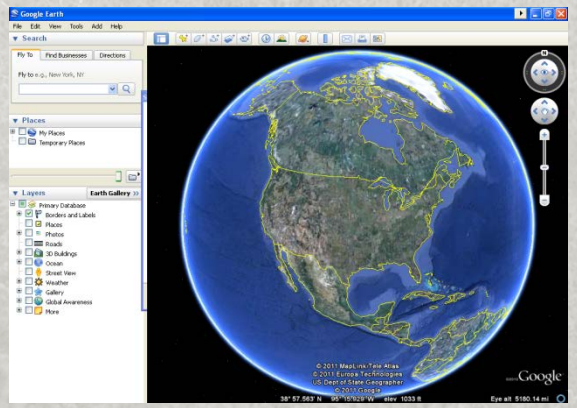


Image US Geological Survey © 2012 Google

Section 2: Google Earth

- What are some applications you could see this program being used for?

- What would you use it for?



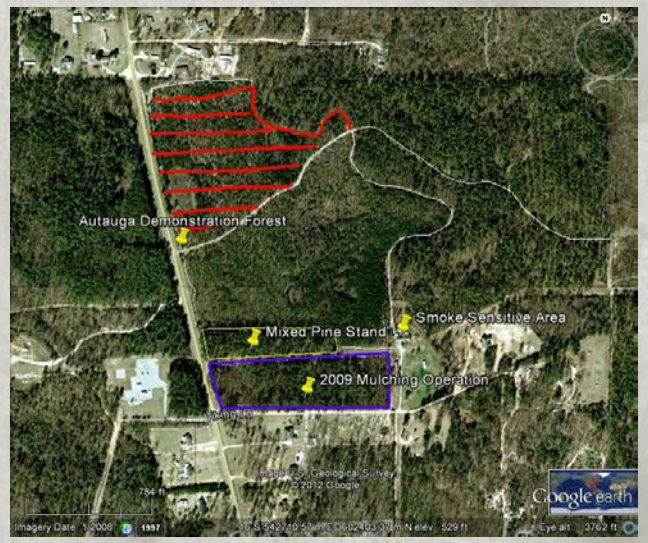


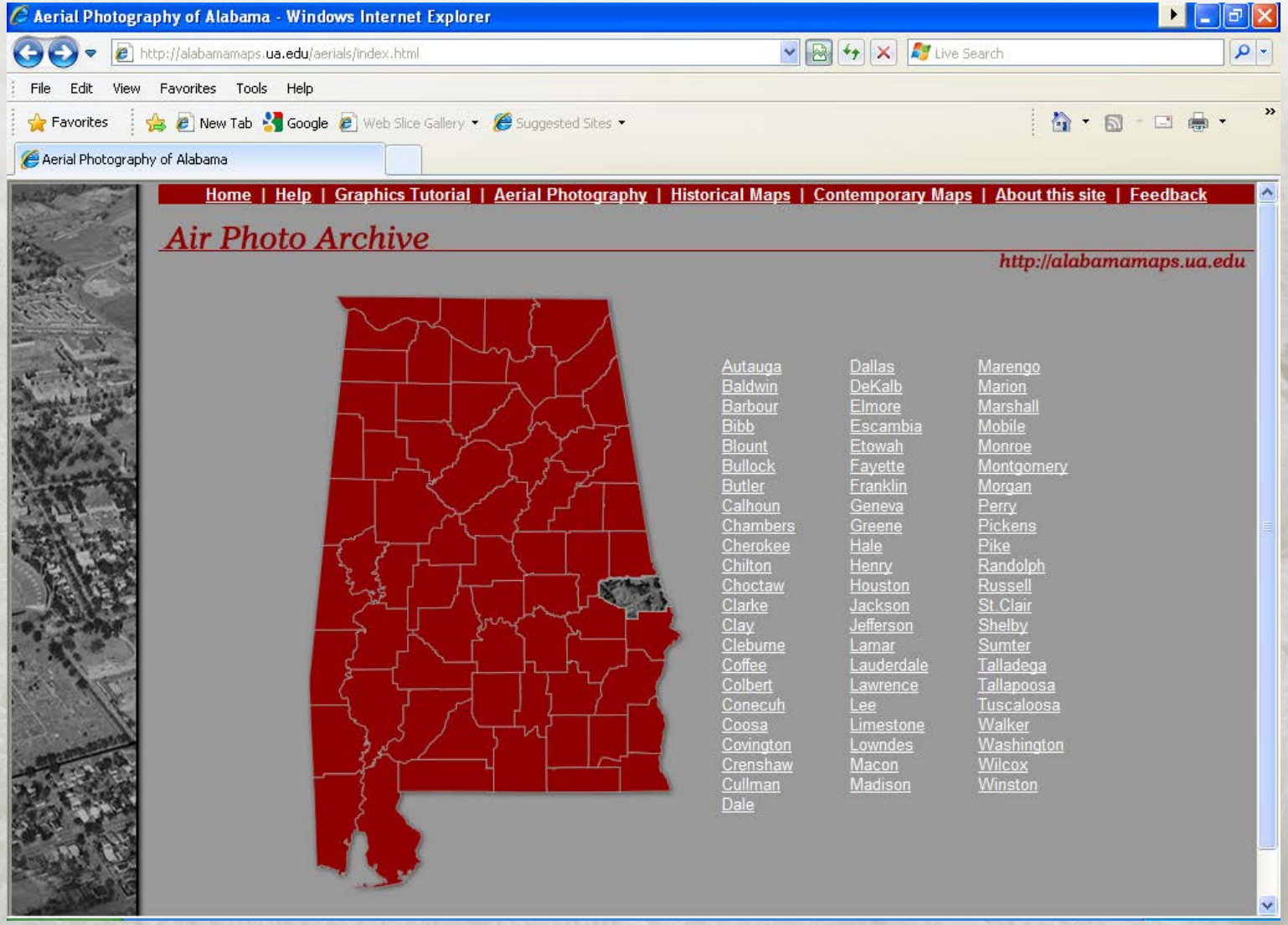
Image U.S. Geologic Survey
© 2012 Google

Section 2: Google Earth Help and Tutorials

- Help
  - http://earth.google.com/support/?hl=en

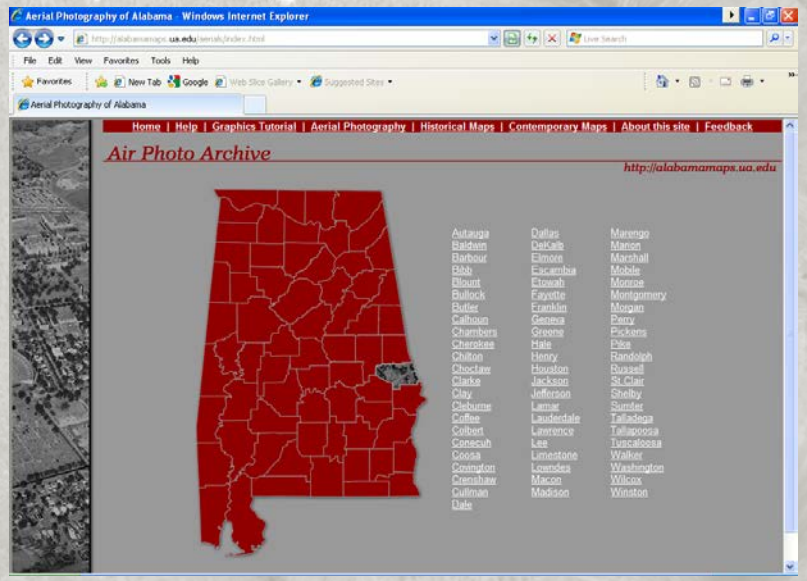
- Tutorials
  - http://www.google.com/earth/learn/

Section 3: Alabama Historic Aerial Photo Archive



Section 3: Alabama Historic Aerial Photo Archive

- Online application
- View historical aerial photographs
- Order digital copies



Section 3: Alabama Historic Aerial Photo Archive

- Keywords: Alabama, historic, aerial photographs
- Aerial Photography Index (main website)
  - http://alabamamaps.ua.edu/
- Aerial Photography Archive
    - http://alabamamaps.ua.edu/aerials/index.html
- Help is available at
    - http://alabamamaps.ua.edu/help/historical.html

Aerial Photography of Alabama - Windows Internet Explorer

http://alabamamaps.ua.edu/aerials/index.html

File Edit View Favorites Tools Help

Favorites | New Tab | Google | Web Slice Gallery | Suggested Sites

Aerial Photography of Alabama

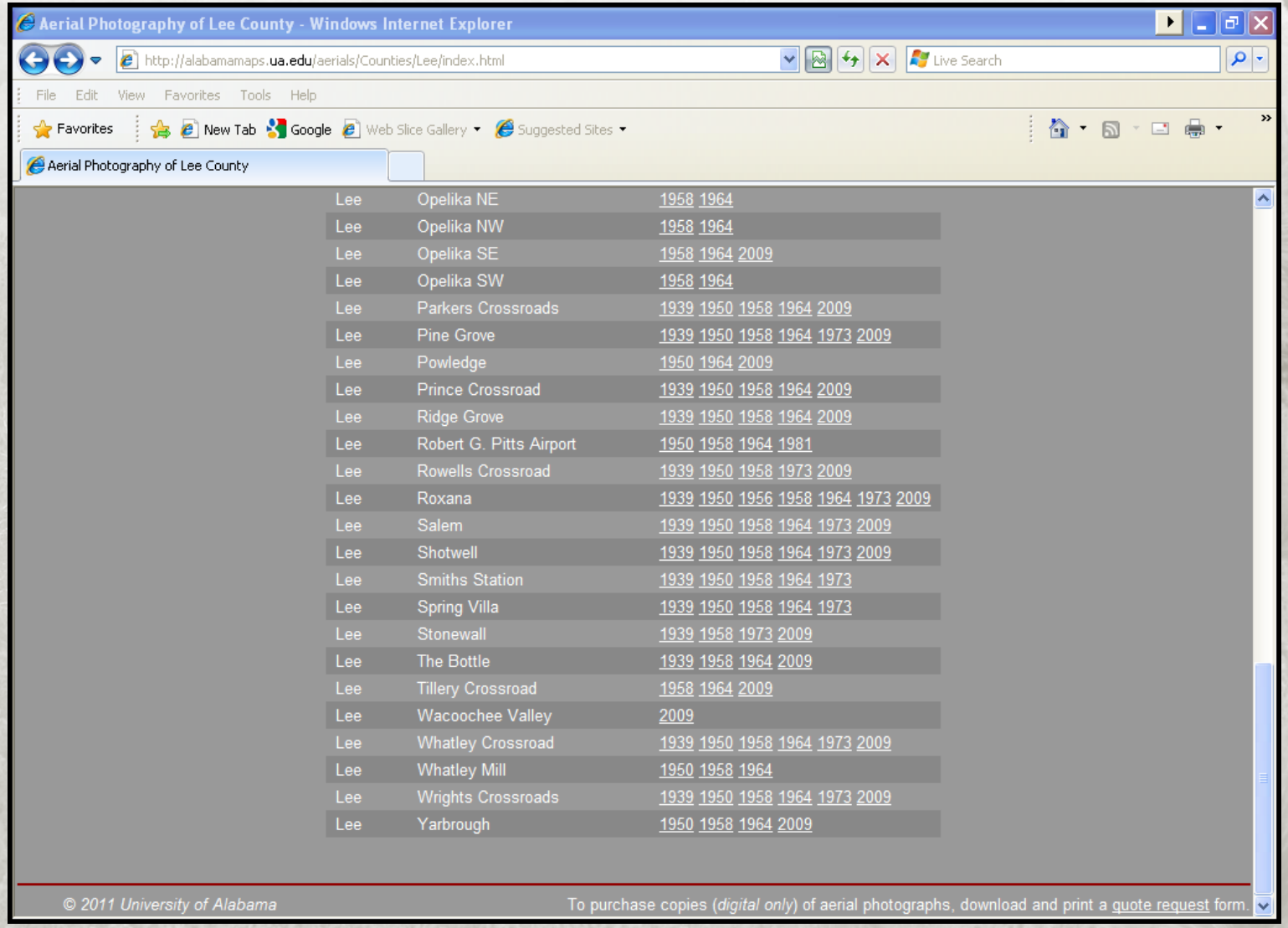
Home | Help | Graphics Tutorial | Aerial Photography | Historical Maps | Contemporary Maps | About this site | Feedback

Air Photo Archive

http://alabamamaps.ua.edu

Autauga	Dallas	Marengo
Baldwin	DeKalb	Marion
Barbour	Elmore	Marshall
Bibb	Escambia	Mobile
Blount	Etowah	Monroe
Bullock	Fayette	Montgomery
Butler	Franklin	Morgan
Calhoun	Geneva	Perry
Chambers	Greene	Pickens
Cherokee	Hale	Pike
Chilton	Henry	Randolph
Choctaw	Houston	Russell
Clarke	Jackson	St.Clair
Clay	Jefferson	Shelby
Cleburne	Lamar	Sumter
Coffee	Lauderdale	Talladega
Colbert	Lawrence	Tallapoosa
Conecuh	Lee	Tuscaloosa
Coosa	Limestone	Walker
Covington	Lowndes	Washington
Crenshaw	Macon	Wilcox
Cullman	Madison	Winston
Dale		

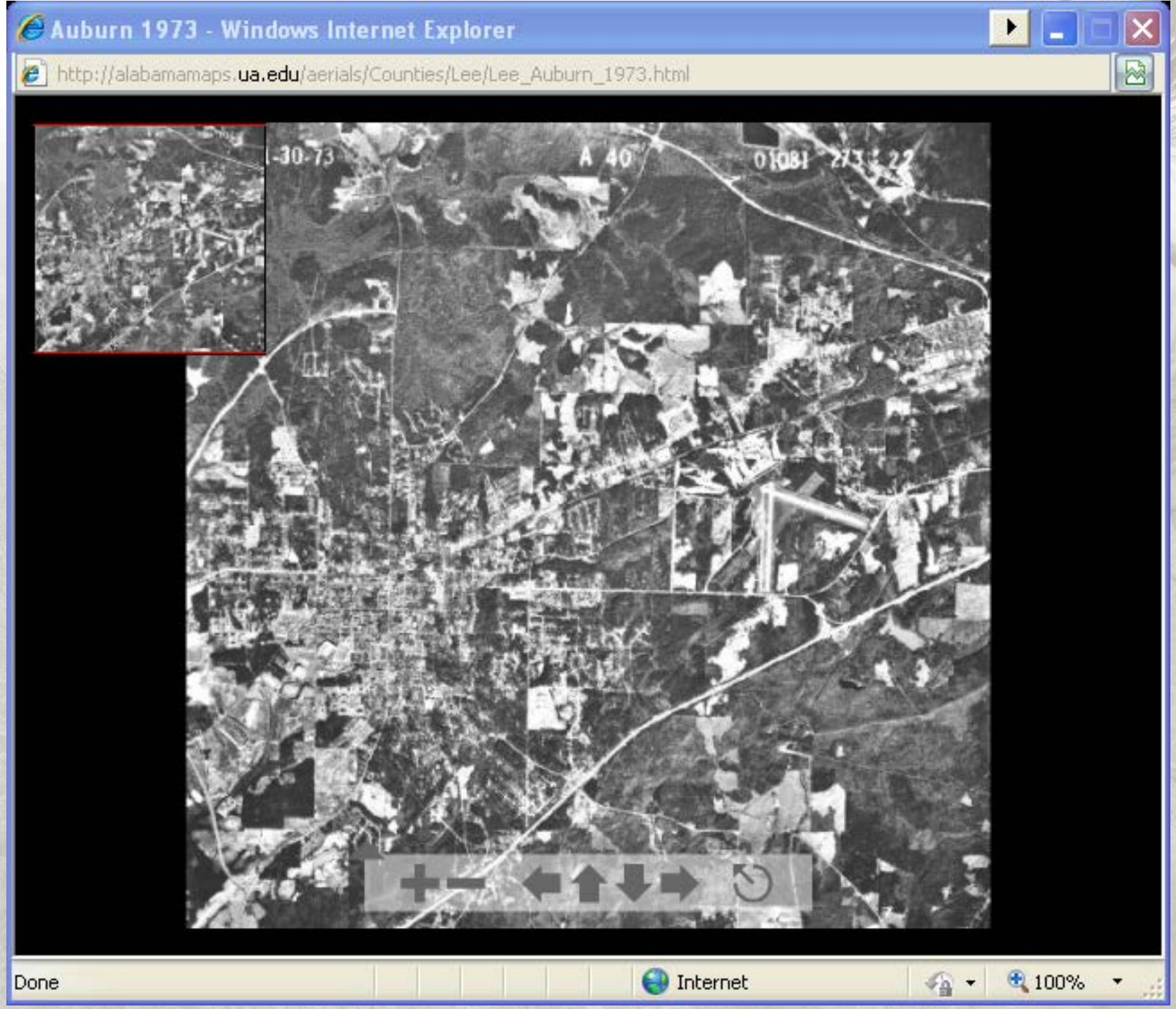
Section 3: Alabama Historic Aerial Photo Archive Finding a Nearby Location and Year



Lee	Opelika NE	1958 1964
Lee	Opelika NW	1958 1964
Lee	Opelika SE	1958 1964 2009
Lee	Opelika SW	1958 1964
Lee	Parkers Crossroads	1939 1950 1958 1964 2009
Lee	Pine Grove	1939 1950 1958 1964 1973 2009
Lee	Powledge	1950 1964 2009
Lee	Prince Crossroad	1939 1950 1958 1964 2009
Lee	Ridge Grove	1939 1950 1958 1964 2009
Lee	Robert G. Pitts Airport	1950 1958 1964 1981
Lee	Rowells Crossroad	1939 1950 1958 1973 2009
Lee	Roxana	1939 1950 1956 1958 1964 1973 2009
Lee	Salem	1939 1950 1958 1964 1973 2009
Lee	Shotwell	1939 1950 1958 1964 1973 2009
Lee	Smiths Station	1939 1950 1958 1964 1973
Lee	Spring Villa	1939 1950 1958 1964 1973
Lee	Stonewall	1939 1958 1973 2009
Lee	The Bottle	1939 1958 1964 2009
Lee	Tillery Crossroad	1958 1964 2009
Lee	Wacoochee Valley	2009
Lee	Whatley Crossroad	1939 1950 1958 1964 1973 2009
Lee	Whatley Mill	1950 1958 1964
Lee	Wrights Crossroads	1939 1950 1958 1964 1973 2009
Lee	Yarbrough	1950 1958 1964 2009

Section 3: Alabama Historic Aerial Photo Archive

- Use the Archive to find historic aerial photos for your property or an area of interest.
- See how many years of photos you can find for your property or and area of interest.
- Create a photo timeline for your property.

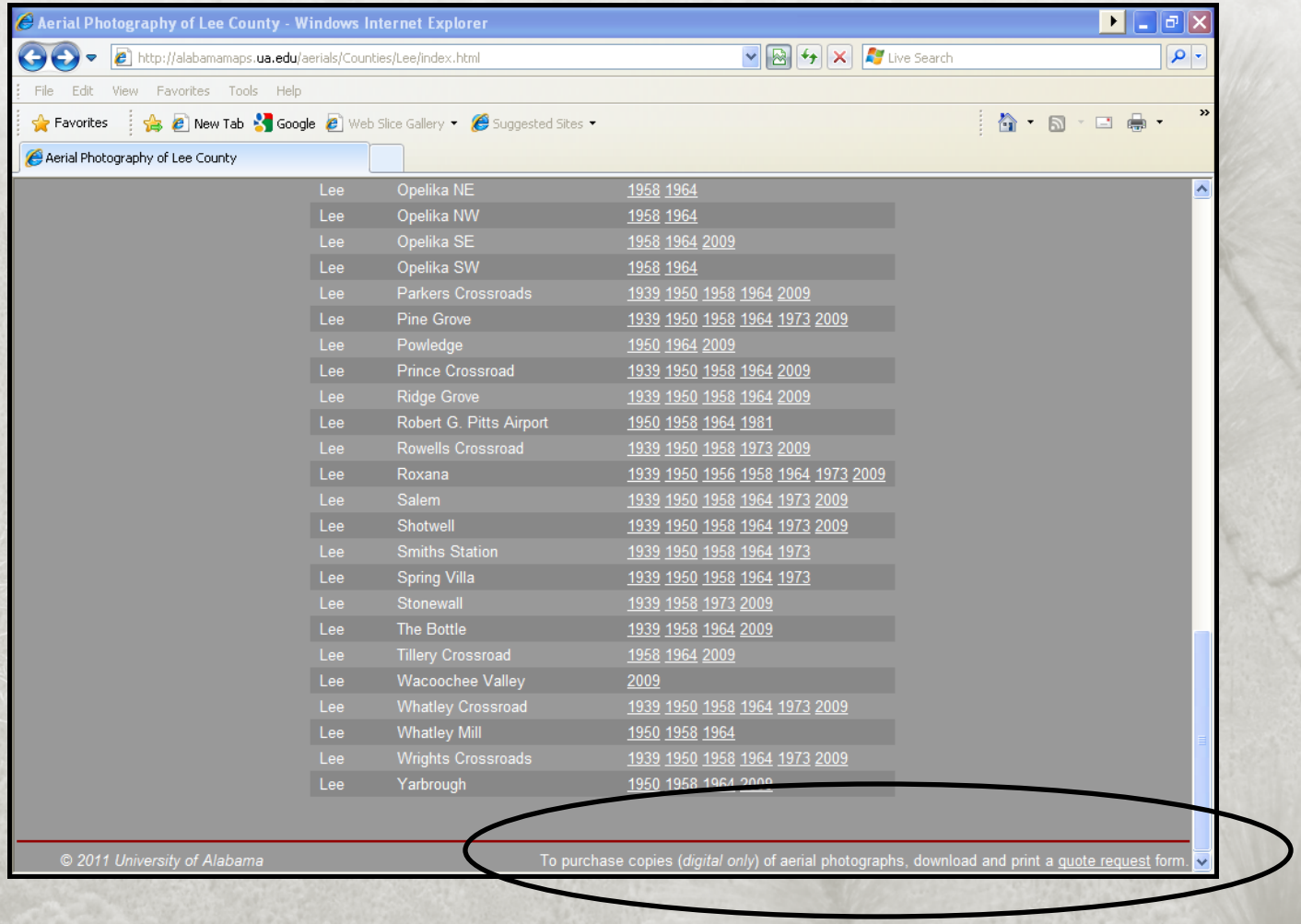

Auburn 1973 - Windows Internet Explorer
http://alabamamaps.ua.edu/aerials/Counties/Lee/Lee_Auburn_1973.html
-30-73
A 40
01081
Done
Internet
100%


Auburn 1973 - Windows Internet Explorer
http://alabamamaps.ua.edu/aerials/Counties/Lee/Lee_Auburn_1973.html
Done
Internet
100%


Auburn SE 1958 - Windows Internet Explorer
http://alabamamaps.ua.edu/aerials/Counties/Lee/Lee_Auburn_SE_1958.html
Done
Internet
85%


Auburn SE 1939 - Windows Internet Explorer
http://alabamamaps.ua.edu/aerials/Counties/Lee/Lee_Auburn_SE_1939.html
Done
Internet
85%

Section 3: Alabama Historic Aerial Photo Archive
To Purchase Digital Copies –Download a Quote Request



Section 3: Alabama Historic Aerial Photo Order Form

- Fill out the required information
- Follow the directions for purchasing digital copies of the aerial photographs
- If you are unable to find an area of interest, send an email alabama.maps@ua.edu with a location description and coordinates requesting if historical aerial photographs are available and what years are available.
  - You can get coordinates from your GPS unit or using the tutorial information from Google Earth.

Section 4: NRCS Geospatial Data Gateway

- Online application to search for data
- Requires a Geographical Information System (GIS) or a viewer
- For more advanced users
- Search for data (examples include aerial imagery, topographic maps, elevation information, soils, land use land cover, geology, climate data, etc.

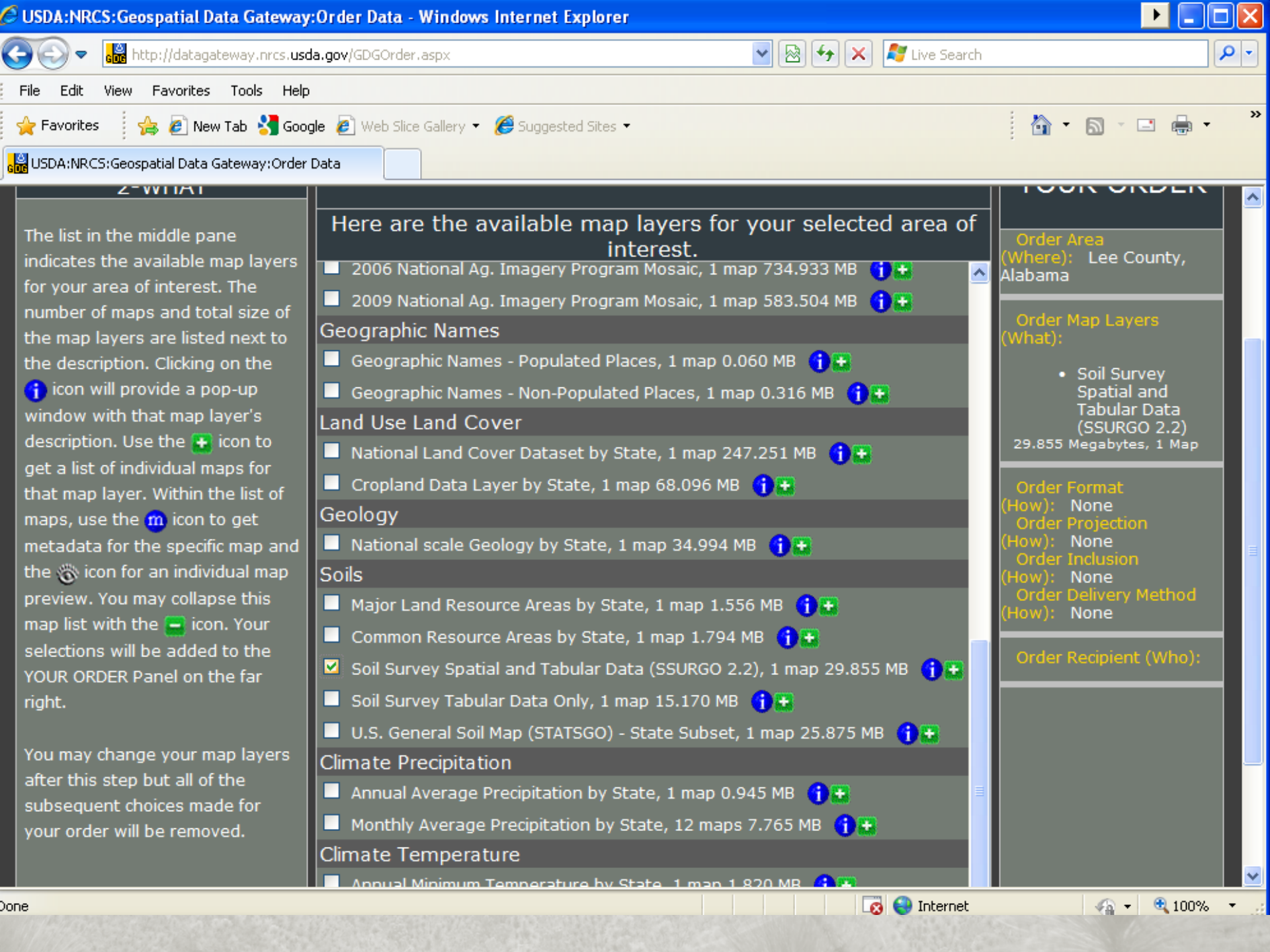
NRCS Geospatial Data Gateway

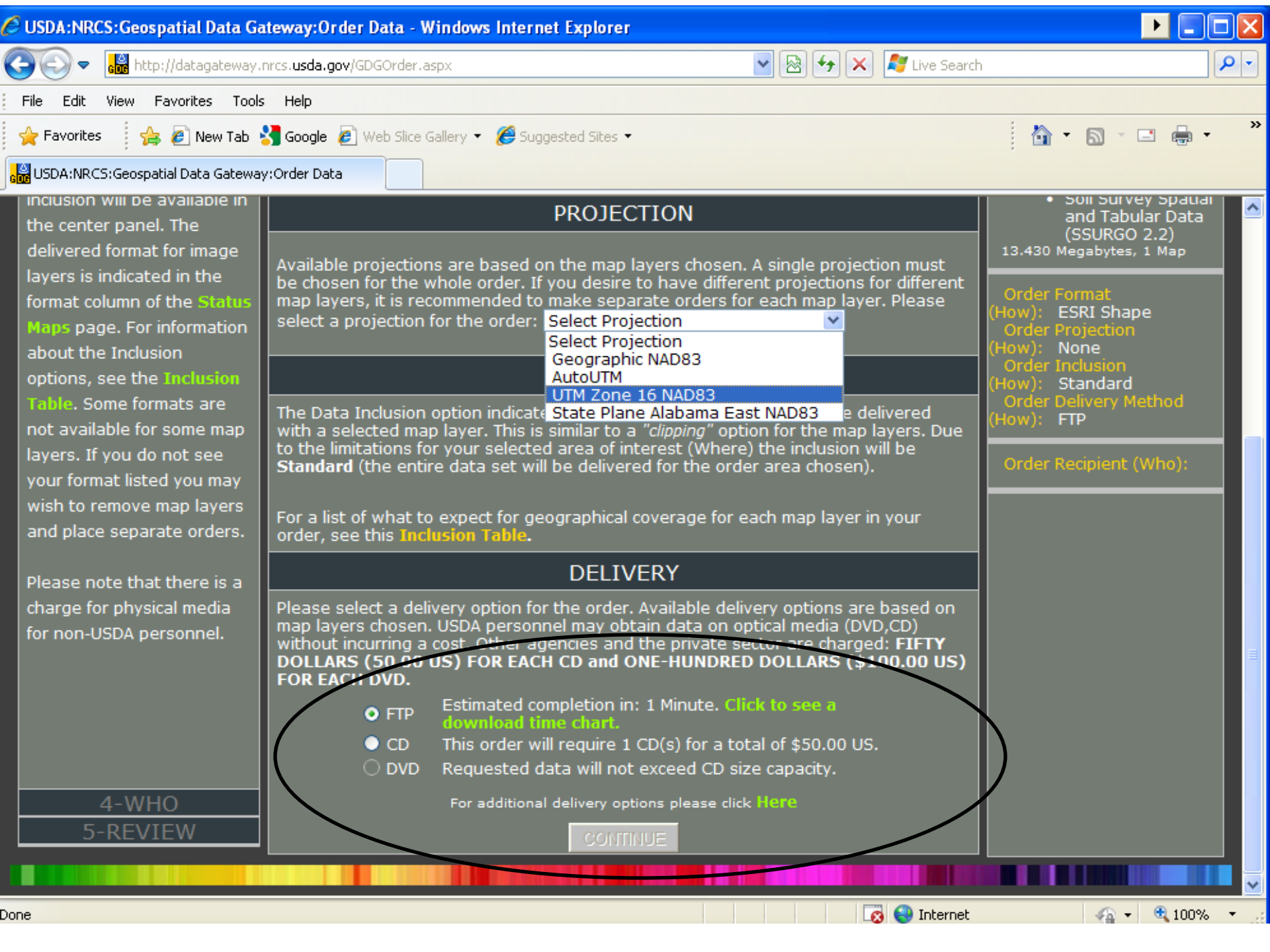
- For more advanced users that have a GIS software package or view, the NRCS Geospatial Data Gateway is provides a wide variety of data options.

- Homepage
  - http://datagateway.nrcs.usda.gov/

- Keywords: NRCS, Geospatial, Data, Gateway

- Frequently Asked Questions
  - http://datagateway.nrcs.usda.gov/GDGHome_FAQ.aspx


USDA:NRCS:Geospatial Data Gateway:Order Data - Windows Internet Explorer
http://datagateway.nrcs.usda.gov/GDGOrder.aspx
Live Search
File Edit View Favorites Tools Help
Favorites New Tab Google Web Slice Gallery Suggested Sites
USDA:NRCS:Geospatial Data Gateway:Order Data
2-WHAT
The list in the middle pane indicates the available map layers for your area of interest. The number of maps and total size of the map layers are listed next to the description. Clicking on the icon will provide a pop-up window with that map layer's description. Use the icon to get a list of individual maps for that map layer. Within the list of maps, use the icon to get metadata for the specific map and the icon for an individual map preview. You may collapse this map list with the icon. Your selections will be added to the YOUR ORDER Panel on the far right.
You may change your map layers after this step but all of the subsequent choices made for your order will be removed.
Here are the available map layers for your selected area of interest.
2006 National Ag. Imagery Program Mosaic, 1 map 734.933 MB
2009 National Ag. Imagery Program Mosaic, 1 map 583.504 MB
Geographic Names
Geographic Names - Populated Places, 1 map 0.060 MB
Geographic Names - Non-Populated Places, 1 map 0.316 MB
Land Use Land Cover
National Land Cover Dataset by State, 1 map 247.251 MB
Cropland Data Layer by State, 1 map 68.096 MB
Geology
National scale Geology by State, 1 map 34.994 MB
Soils
Major Land Resource Areas by State, 1 map 1.556 MB
Common Resource Areas by State, 1 map 1.794 MB
Soil Survey Spatial and Tabular Data (SSURGO 2.2), 1 map 29.855 MB
Soil Survey Tabular Data Only, 1 map 15.170 MB
U.S. General Soil Map (STATSGO) - State Subset, 1 map 25.875 MB
Climate Precipitation
Annual Average Precipitation by State, 1 map 0.945 MB
Monthly Average Precipitation by State, 12 maps 7.765 MB
Climate Temperature
Annual Minimum Temperature by State, 1 map 1.820 MB
YOUR ORDER
Order Area (Where): Lee County, Alabama
Order Map Layers (What):
• Soil Survey Spatial and Tabular Data (SSURGO 2.2)
29.855 Megabytes, 1 Map
Order Format (How): None
Order Projection (How): None
Order Inclusion (How): None
Order Delivery Method (How): None
Order Recipient (Who):
Done
Internet
100%


USDA:NRCS:Geospatial Data Gateway:Order Data - Windows Internet Explorer
http://datagateway.nrcs.usda.gov/GDGOrder.aspx
Live Search
File Edit View Favorites Tools Help
Favorites New Tab Google Web Slice Gallery Suggested Sites
USDA:NRCS:Geospatial Data Gateway:Order Data
inclusion will be available in the center panel. The delivered format for image layers is indicated in the format column of the Status Maps page. For information about the Inclusion options, see the Inclusion Table. Some formats are not available for some map layers. If you do not see your format listed you may wish to remove map layers and place separate orders.
Please note that there is a charge for physical media for non-USDA personnel.
4-WHO
5-REVIEW
PROJECTION
Available projections are based on the map layers chosen. A single projection must be chosen for the whole order. If you desire to have different projections for different map layers, it is recommended to make separate orders for each map layer. Please select a projection for the order:
Select Projection
Select Projection
Geographic NAD83
AutoUTM
UTM Zone 16 NAD83
State Plane Alabama East NAD83
The Data Inclusion option indicate e delivered with a selected map layer. This is similar to a "clipping" option for the map layers. Due to the limitations for your selected area of interest (Where) the inclusion will be Standard (the entire data set will be delivered for the order area chosen).
For a list of what to expect for geographical coverage for each map layer in your order, see this Inclusion Table.
DELIVERY
Please select a delivery option for the order. Available delivery options are based on map layers chosen. USDA personnel may obtain data on optical media (DVD,CD) without incurring a cost. Other agencies and the private secto are charged: FIFTY DOLLARS (50.00 US) FOR EACH CD and ONE-HUNDRED DOLLARS ($100.00 US) FOR EACH DVD.
FTP Estimated completion in: 1 Minute. Click to see a download time chart.
CD This order will require 1 CD(s) for a total of $50.00 US.
DVD Requested data will not exceed CD size capacity.
For additional delivery options please click Here
CONTINUE
Soil Survey Spatial and Tabular Data (SSURGO 2.2)
13.430 Megabytes, 1 Map
Order Format (How): ESRI Shape
Order Projection (How): None
Order Inclusion (How): Standard
Order Delivery Method (How): FTP
Order Recipient (Who):
Done
Internet
100%

Other Sources of Data

- Alabama Cooperative Extension Service: Alabama Water Quality Information Systems
  - http://www.aces.edu/waterquality/gis_data/index.php
  - http://www.aces.edu/waterquality/gis_data/gis_data_viewers.htm
- GIS Data Depot
  - http://data.geocomm.com/
- Landsat
  - http://www.landsat.com/alabama-free-gis-data.html

Section 5: USDA National Agroforestry Center (NAC) CanVis

- Requires downloading a program or requesting a CD or DVD
- Create visual simulations of potential management options using digital photographs
- Excellent online tutorials and help menus

Section 5: USDA NAC CanVis

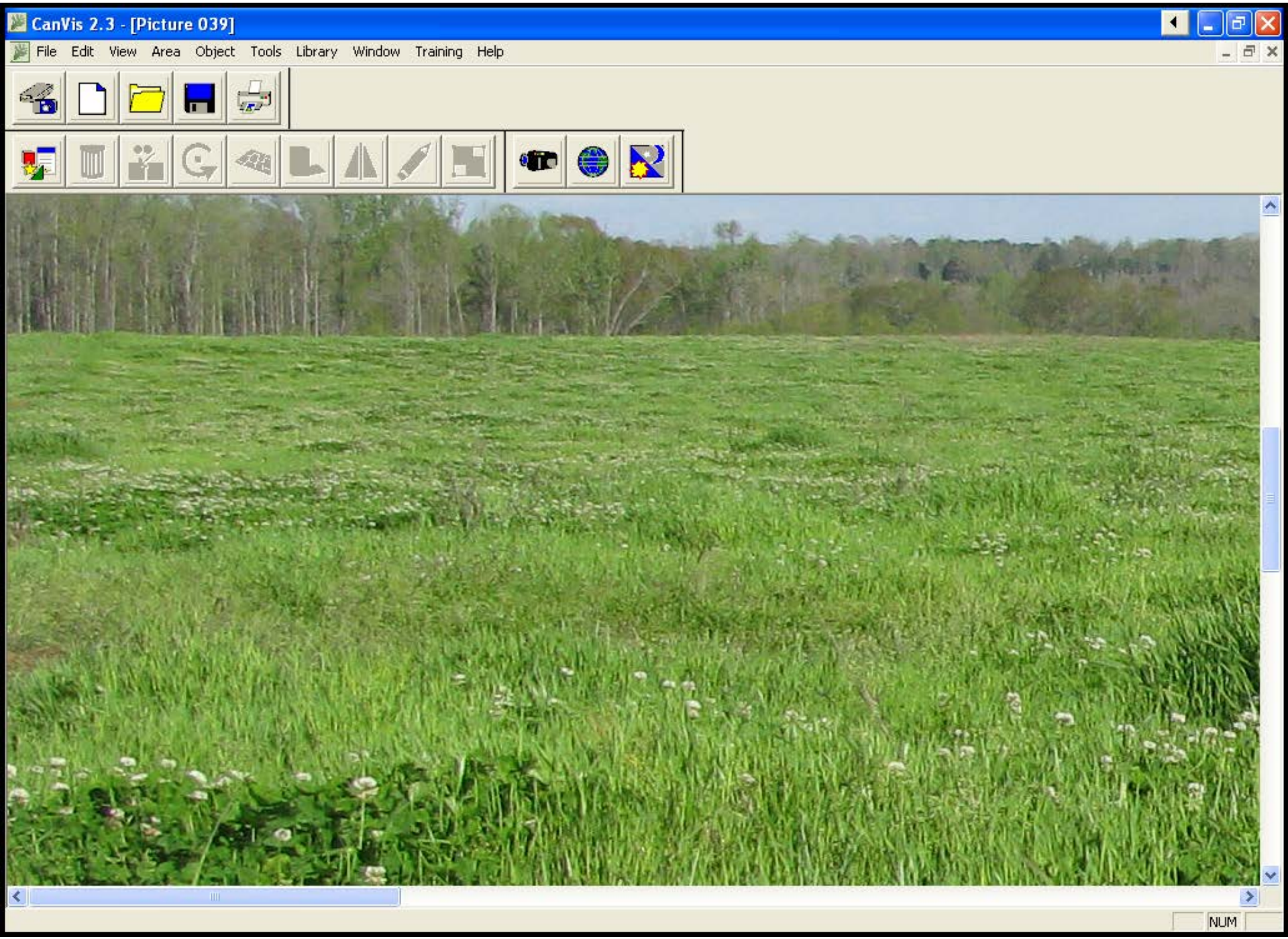
- Keywords: National, Agroforestry, CanVis, visual simulation
- See http://www.unl.edu/nac/simulation/index.htm
- For users with an interest in creating visual simulations of potential management options using digital photographs, CanVis provides a variety of options.

Section 5: USDA NAC CanVis

- CanVis is a free program that requires either downloading the program or ordering a CD or DVD.

- Download
  - http://www.unl.edu/nac/simulation/download.htm

- Order
  - http://www.unl.edu/nac/simulation/order.htm


CanVis 2.3 - [Picture 039]
File Edit View Area Object Tools Library Window Training Help
NUM

Section 5: USDA NAC CanVis Image Editing Software

- With CanVis users can:
  - Edit digital photographs
  - Add trees, shrubs, grasses and groundcover, etc.
  - Remove trees, shrubs, buildings, etc. from a photograph
  - Use a series of photographs to show a simulation before and after a potential management option like planting trees, planting shrubs, thinning a stand, adding a fence, etc.

Section 5: USDA NAC CanVis Examples

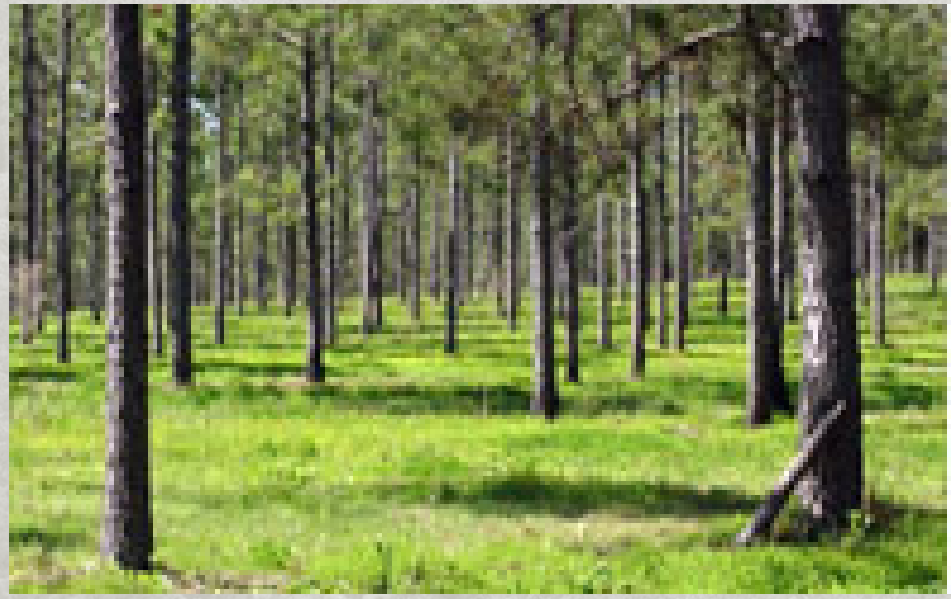
- A picture can really make a difference when making decisions and planning management options.

- Example simulations can be found at http://www.unl.edu/nac/simulation/examples.htm

Section 5: USDA NAC CanVis Examples

http://www.unl.edu/nac/simulation/examples.htm

Section 5: USDA NAC CanVis Examples



http://www.unl.edu/nac/simulation/examples.htm

Section 5: USDA NAC CanVis
Example of a potential future silvopasture stand

Image create using CanVis 2.3

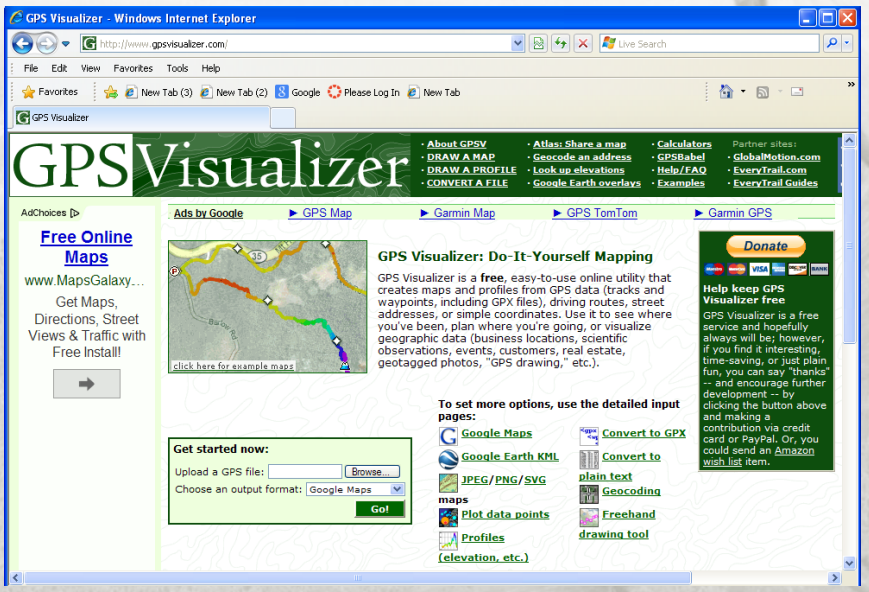
Section 5: USDA NAC CanVis Help Guide, Training Movies, and Publications

- CanVis is downloaded with a detailed guide and training movies

- Publications are available at the bottom of the page at http://www.unl.edu/nac/simulation/products.htm#canvis and http://www.unl.edu/nac/publications.htm

Plenty of Additional Options

- Global Positioning System (GPS) Visualizer
- DRN GARMIN/DNR GPS
- Forest*A*Syst
- Use your favorite search engine



GPS Visualizer

- http://www.gpsvisualizer.com/
- Keywords: GPS visualizer
- Online Application
  - Plot points
  - Freehand Drawing Utility
  - Upload GPS data
  - File conversions
  - Create maps

GPS Visualizer - Windows Internet Explorer

http://www.gpsvisualizer.com/

File Edit View Favorites Tools Help

Favorites | New Tab (3) | New Tab (2) | Google | Please Log In | New Tab

GPS Visualizer

GPS Visualizer

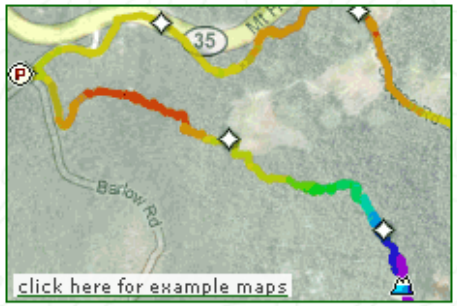
· About GPSV · DRAW A MAP · DRAW A PROFILE · CONVERT A FILE

· Atlas: Share a map · Geocode an address · Look up elevations · Google Earth overlays

· Calculators · GPSBabel · Help/FAQ · Examples

Partner sites: · GlobalMotion.com · EveryTrail.com · EveryTrail Guides

Ads by Google ► GPS Map ► Garmin Map ► GPS TomTom ► Garmin GPS



GPS Visualizer: Do-It-Yourself Mapping

GPS Visualizer is a **free**, easy-to-use online utility that creates maps and profiles from GPS data (tracks and waypoints, including GPX files), driving routes, street addresses, or simple coordinates. Use it to see where you've been, plan where you're going, or visualize geographic data (business locations, scientific observations, events, customers, real estate, geotagged photos, "GPS drawing," etc.).

Get started now:

Upload a GPS file: Browse...

Choose an output format: Google Maps

Go!

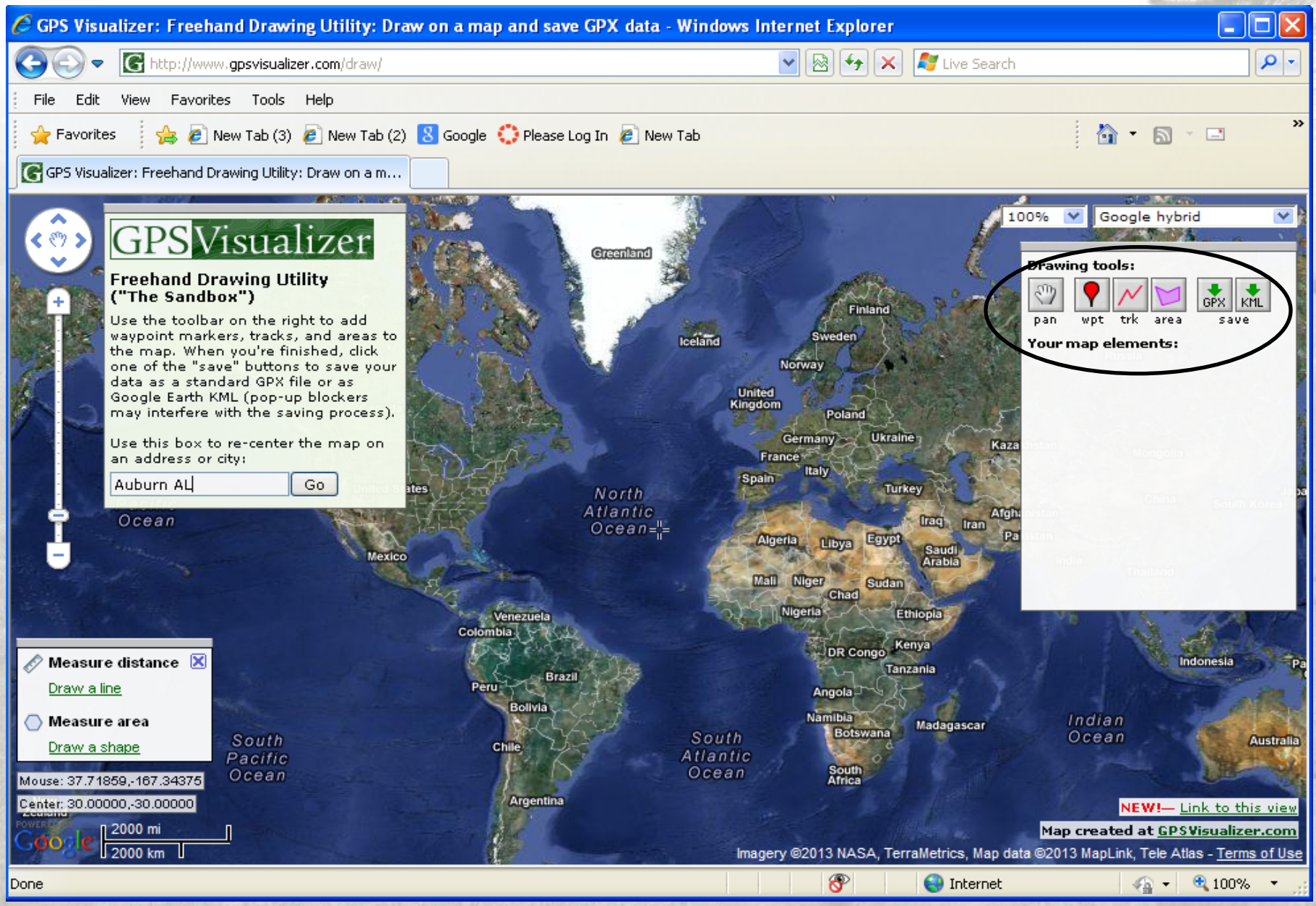
To set more options, use the detailed input pages:

- Google Maps
- Google Earth KML
- JPEG/PNG/SVG maps
- Plot data points
- Profiles (elevation, etc.)
- Convert to GPX
- Convert to plain text
- Geocoding
- Freehand drawing tool

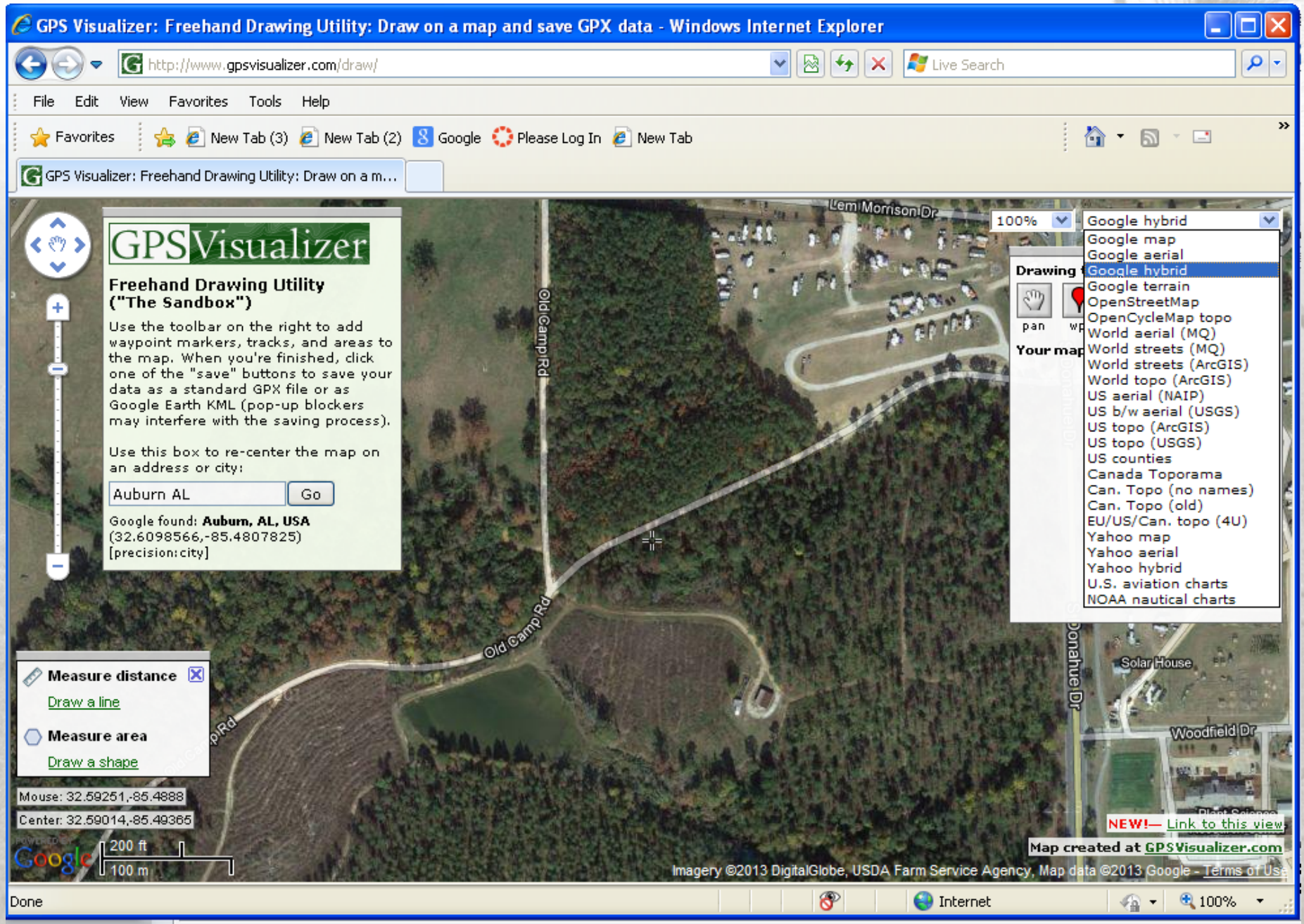
Donate

Help keep GPS Visualizer free

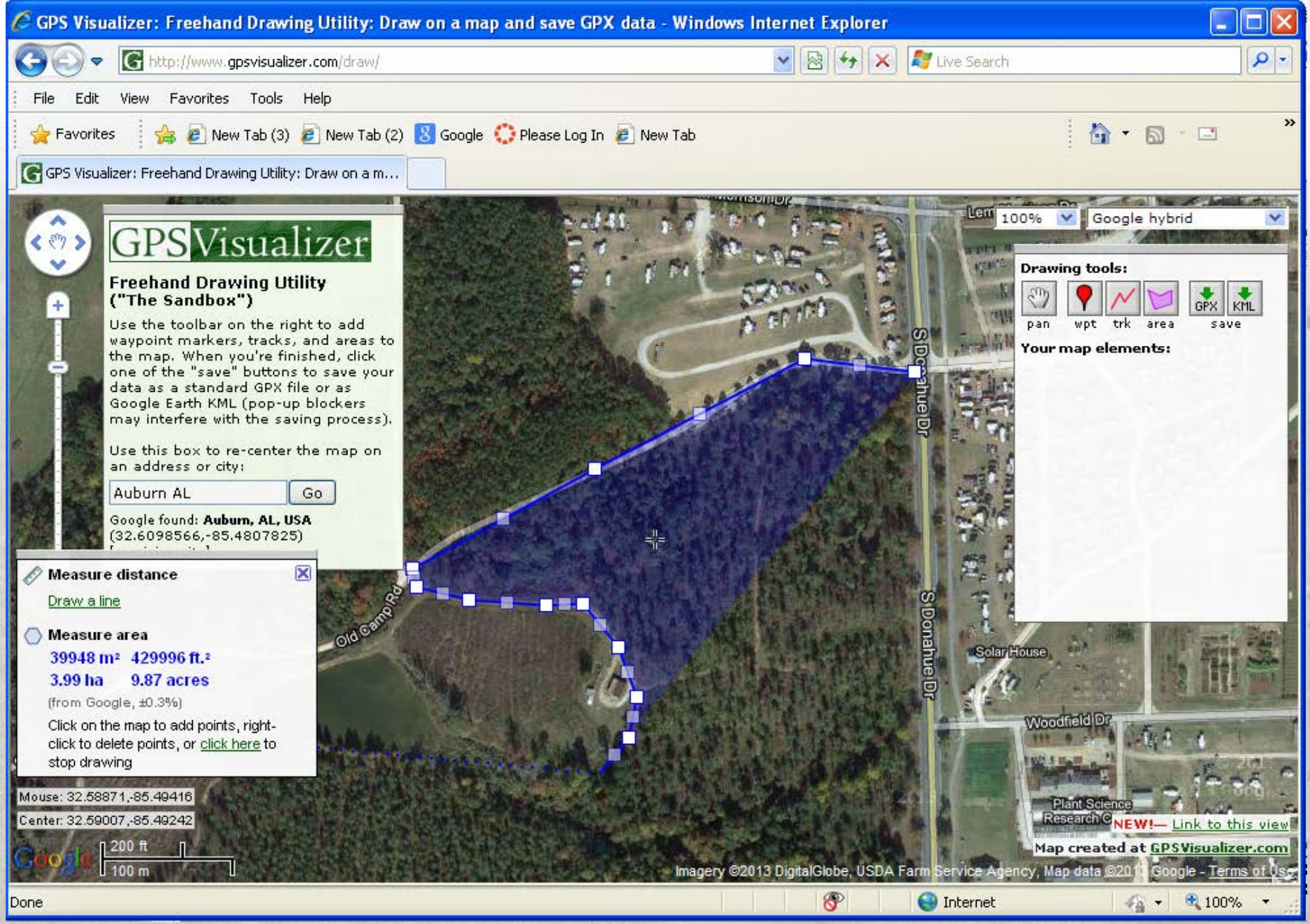
GPS Visualizer is a free service and hopefully always will be; however, if you find it interesting, time-saving, or just plain fun, you can say "thanks" -- and encourage further development -- by clicking the button above and making a contribution via credit card or PayPal. Or, you could send an Amazon wish list item.



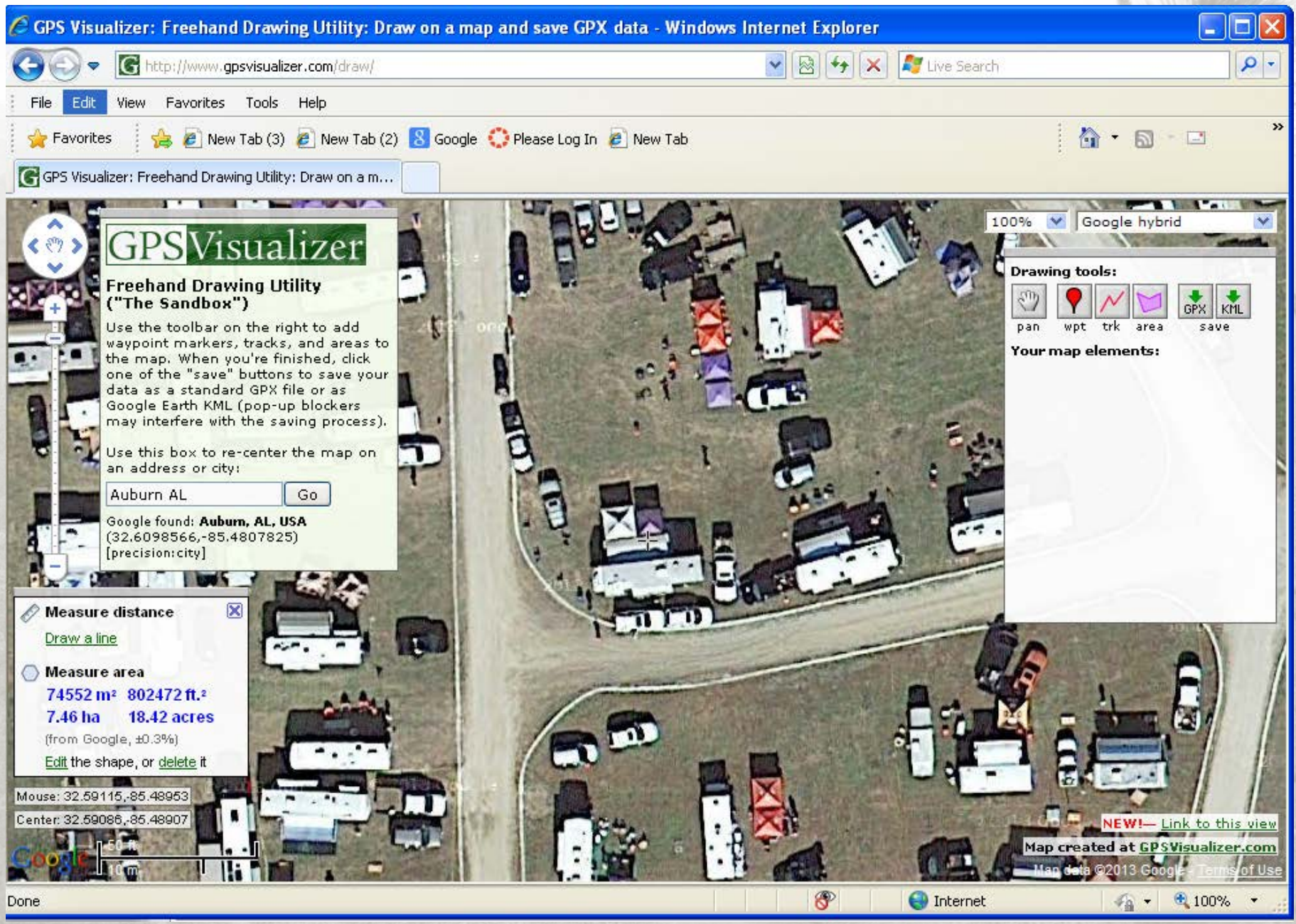
Imagery ©2013 NASA, TerraMetrics,
Map data ©2013 MapLink, Tele Atlas



Imagery ©2013 DigitalGlobe, USDA Farm Service Agency, Map data ©2013 Google



Imagery ©2013 DigitalGlobe, USDA Farm Service Agency, Map data ©2013 Google



Imagery ©2013 DigitalGlobe, USDA Farm Service Agency, Map data ©2013 Google

DNR Garmin/DNR GPS

Minnesota Department of Natural Resources

- http://www.dnr.state.mn.us/mis/gis/tools/arcview/extensions/DNRGarmin/DNRGarmin.html
- Keywords: DNR Garmin GPS Minnesota
- Download a program

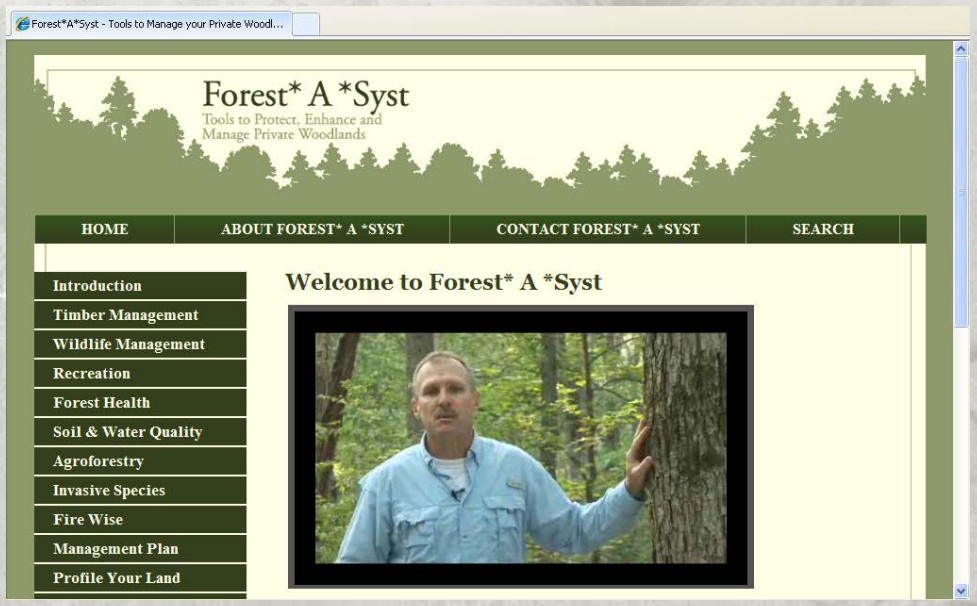
DNR Garmin/DNR GPS Screenshot

Functionality Highlights

Upload/Download Waypoints,Tracks,Routes	Save as .gdb, .shp, .txt, etc
Calculate shape attributes	Calculate Area, Perimeter, Length-coming soon
Calculate CEP	Determine Circular Error Probability rings for Error estimation
Convert points, lines, polygons	
Image Hotlinking	
Real-time tracking	
Set projections	
USB Connectivity	

Forest*A*Syst

- http://www.forestasyst.org/
- Online application
- Profile your land (aerial photography, soils, forest cover, and ecological information)
- Resources and contacts



Forest* A *Syst

Property Searches and Information

Property Searches and Tax Information

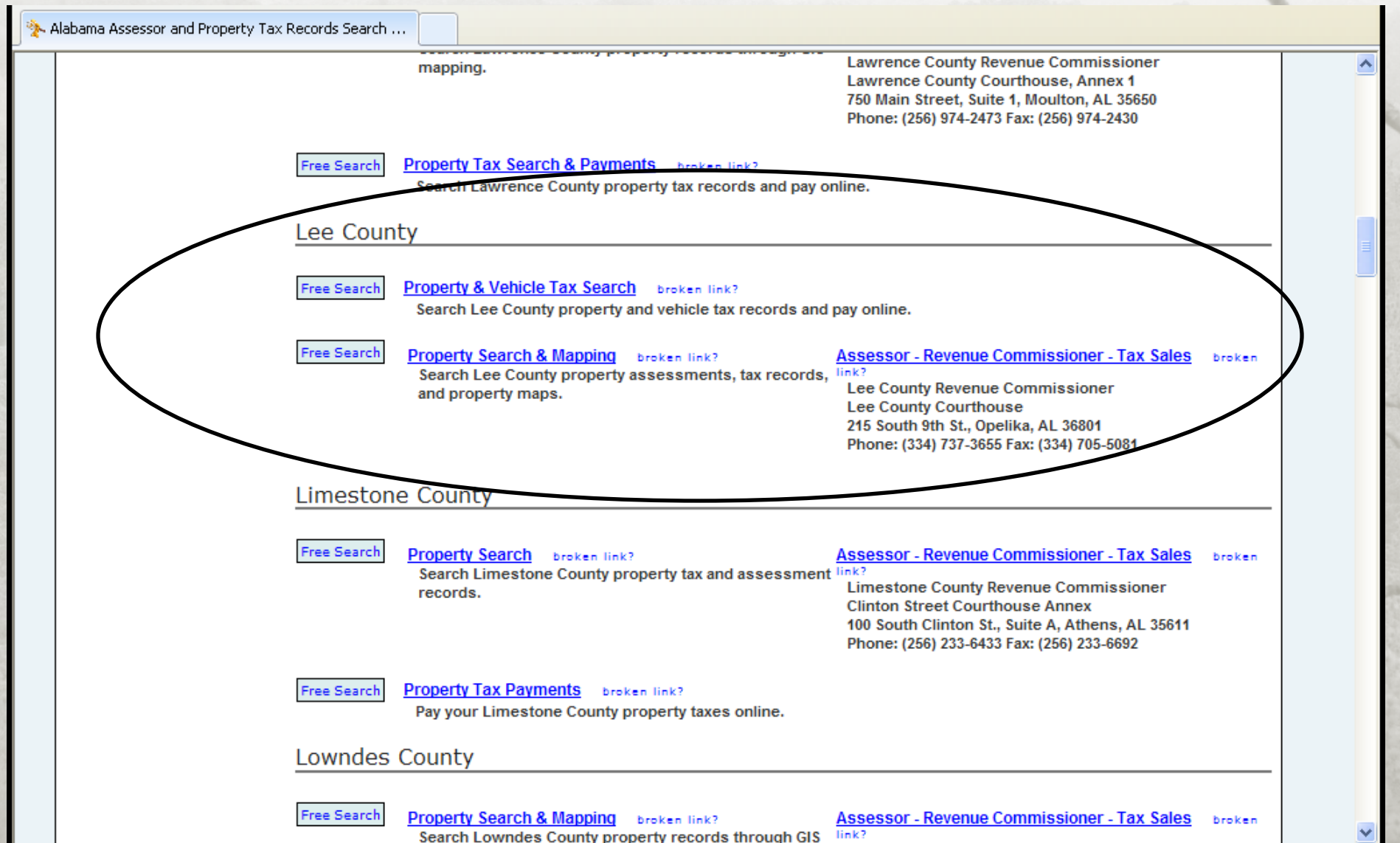
Alabama Assessor and Property Tax Directory

- http://publicrecords.onlinesearches.com/Alabama-Assessor-and-Property-Tax-Records.htm

- Key words: Alabama Tax Assessor Directory

- Search by County
  - Property search
  - Tax records
  - GIS mapping

Alabama Assessor and Property Tax Records Search



Lee County, AL Online Assessment and Appraisal Record Search

Lee County

ALABAMA

http://www.leecountyrevenuecommissioner.com/

Lee County, Alabama

Search Page

Welcome to the Lee County, Alabama online Assessment and Appraisal record search. This search engine provides property tax and appraisal information of record in Lee County, Alabama. This information is updated frequently for the current tax year, but may not reflect actual, up-to-date courthouse records.

To begin your search, choose the link below.

Assessment and Real Property Appraisal

Current Year Real Estate Tax Info

Lee County Property Maps

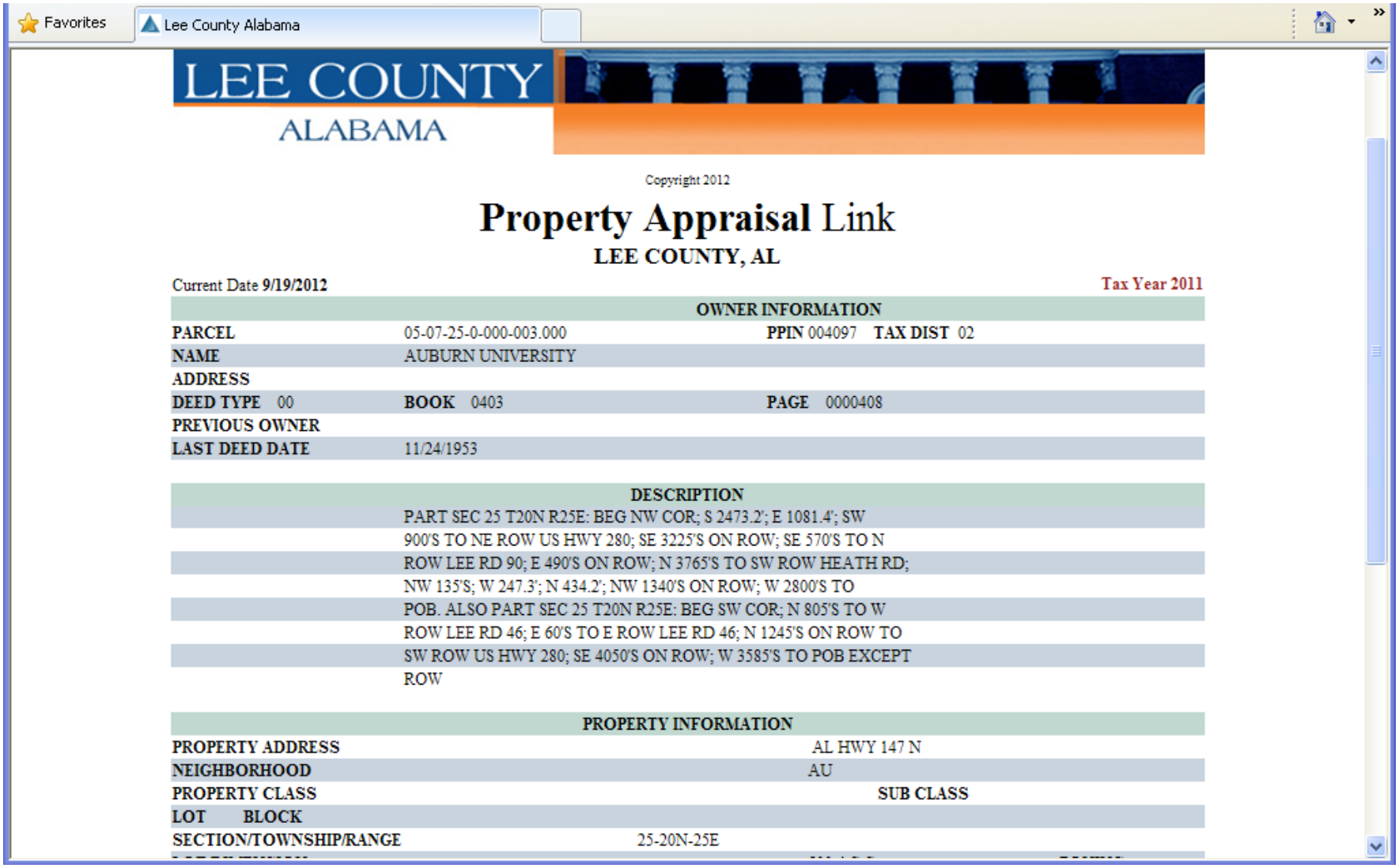
Pay Property Tax Online

Another Service From:
Oline W. Price, ACTA
Revenue Commissioner

Lee County, AL Online Assessment and Appraisal Record Search

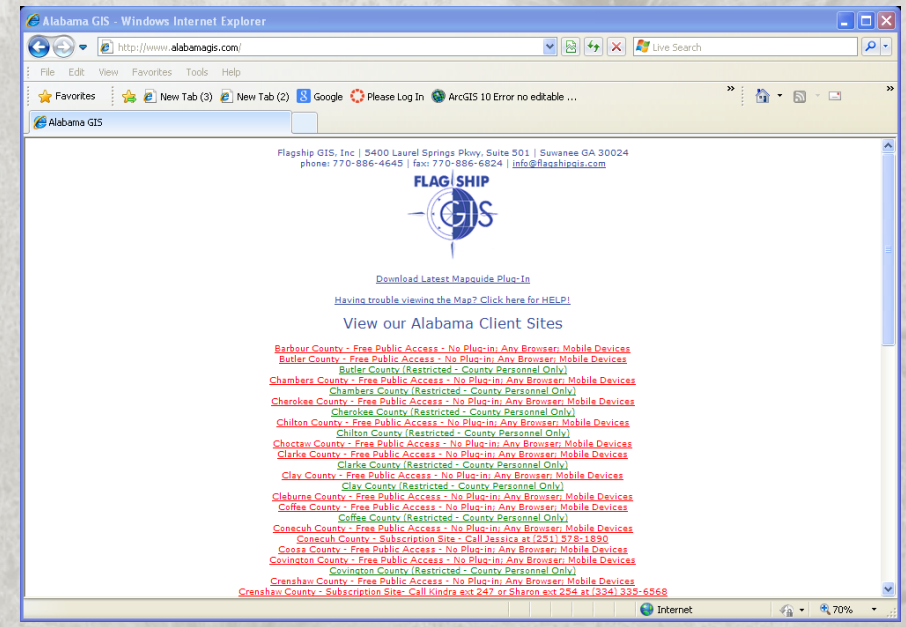
Lee County, AL Online Assessment and Appraisal Record Search

Lee County, AL Online Assessment and Appraisal Record Search

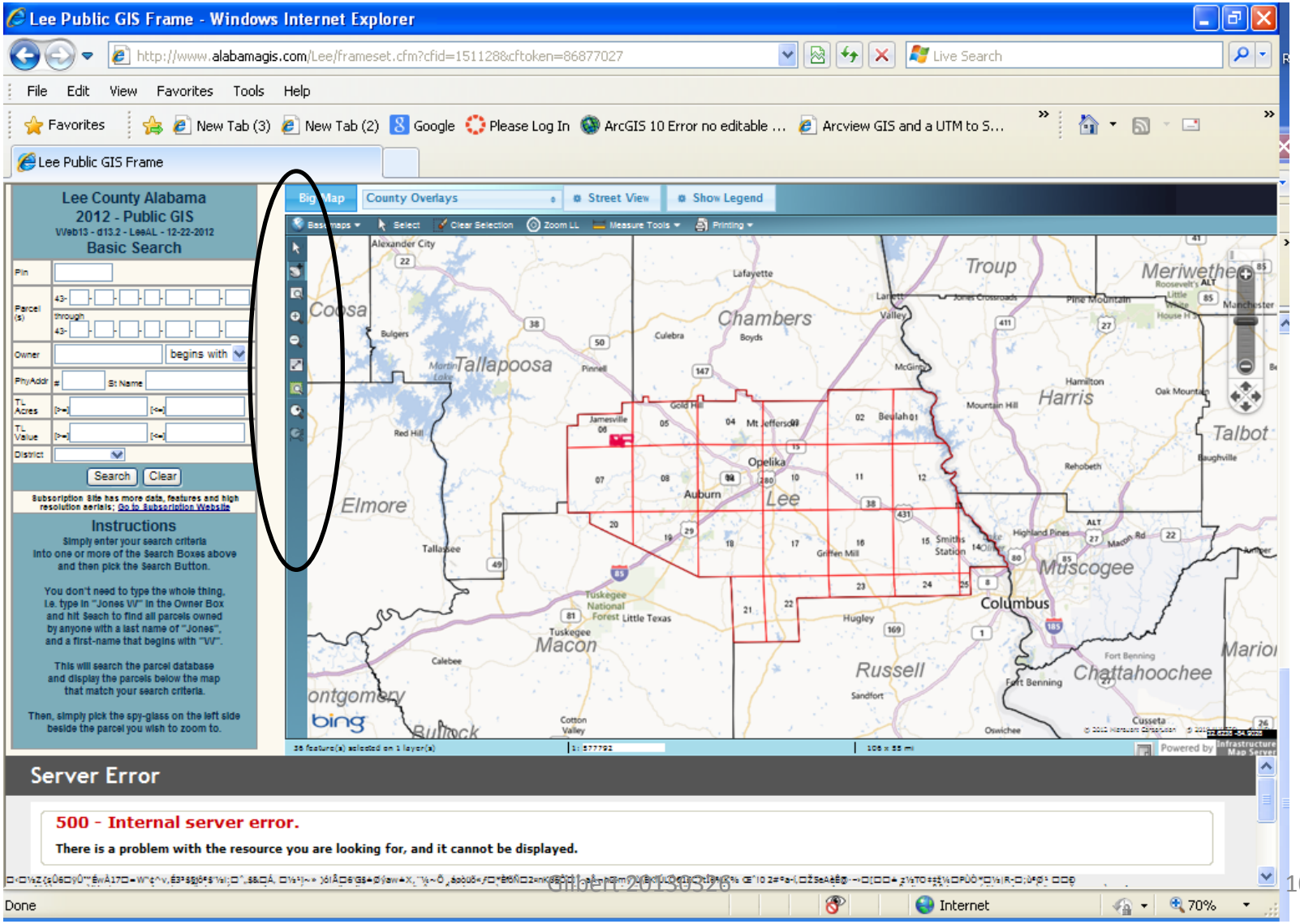


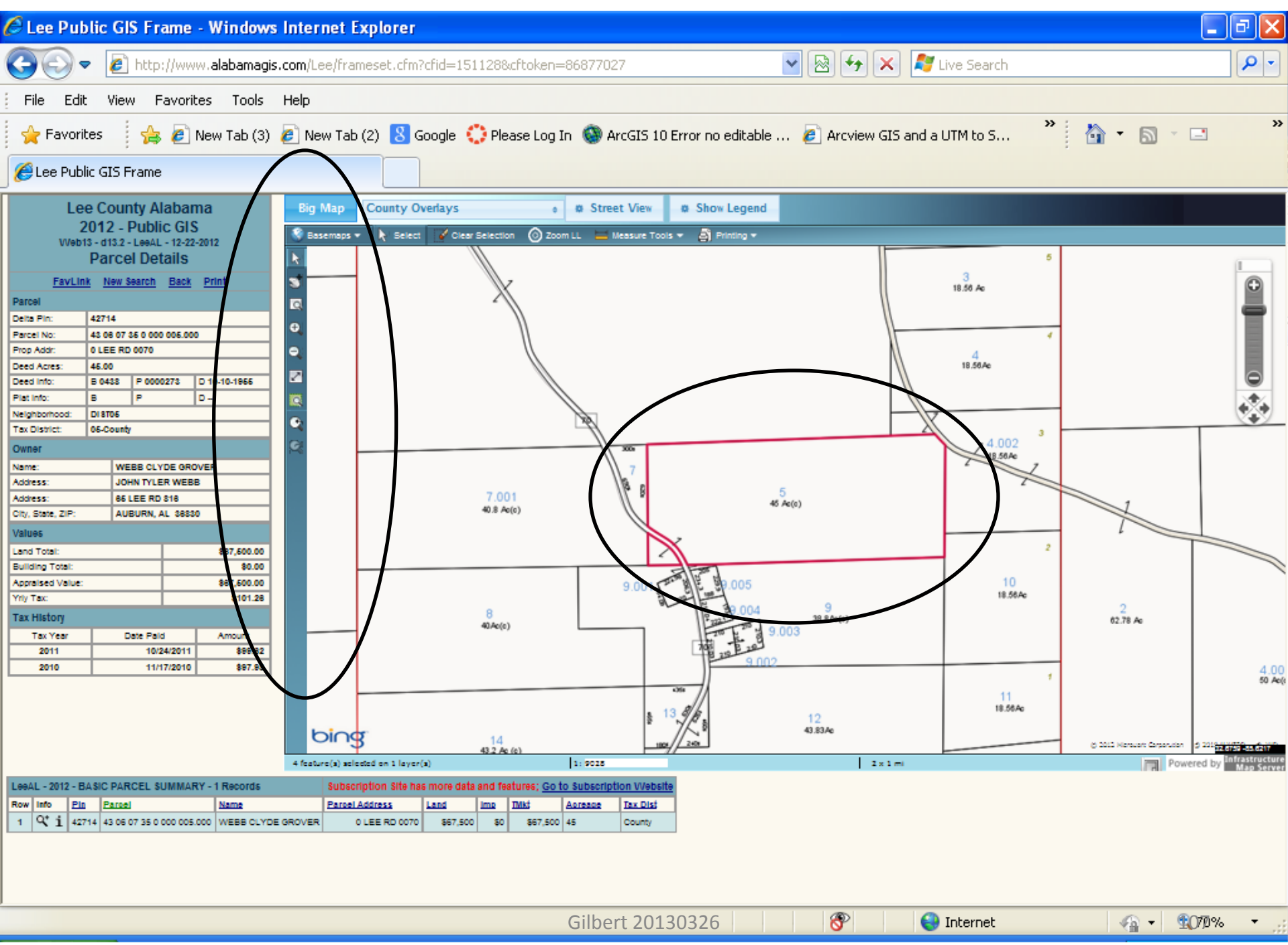
Alabama GIS

- http://www.alabamagis.com/
- Keywords: Alabama GIS
- Flagship GIS, Inc.
- Free public access and subscription levels



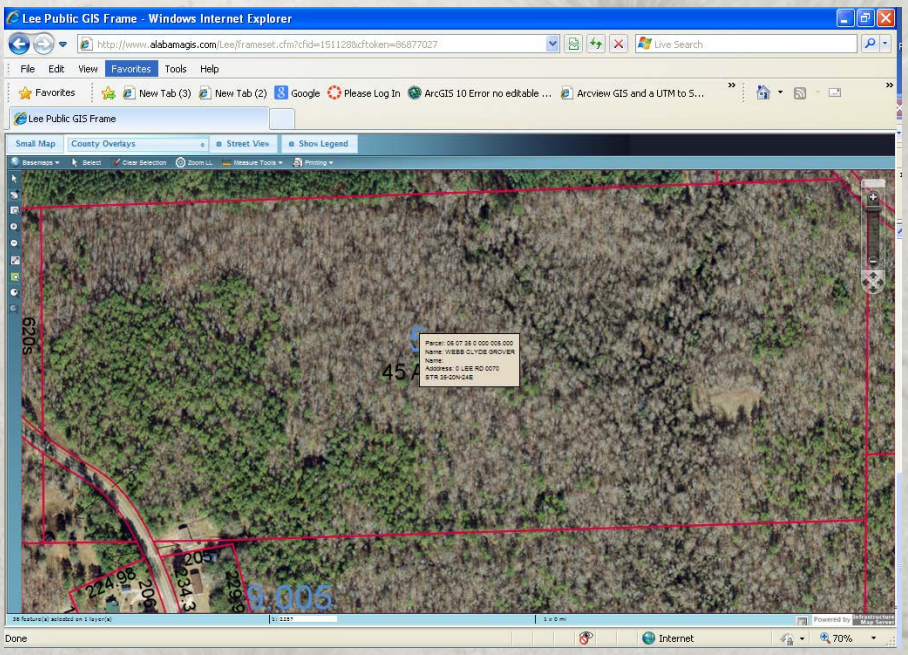
Lee County Flagship GIS




Lee Public GIS Frame - Windows Internet Explorer
http://www.alabamagis.com/Lee/frameset.cfm?cfid=151128&cftoken=86877027
Live Search
File Edit View Favorites Tools Help
Favorites
New Tab (3)
New Tab (2)
Google
Please Log In
ArcGIS 10 Error no editable ...
Arcview GIS and a UTM to S...
Lee Public GIS Frame
Lee County Alabama
2012 - Public GIS
VWeb13 - d13.2 - LeeAL - 12-22-2012
Parcel Details
FavLink New Search Back Print
Parcel
Delta Pin: 42714
Parcel No: 43 06 07 35 0 000 005.000
Prop Addr: 0 LEE RD 0070
Deed Acres: 45.00
Deed Info: B 0438 P 0000273 D 1-10-1966
Plat Info: B P D
Neighborhood: DI 8T06
Tax District: 06-County
Owner
Name: WEBB CLYDE GROVER
Address: JOHN TYLER WEBB
Address: 86 LEE RD 818
City, State, ZIP: AUBURN, AL 36830
Values
Land Total: $67,500.00
Building Total: $0.00
Appraised Value: $67,500.00
Yrly Tax: $101.28
Tax History
Tax Year Date Paid Amount
2011 10/24/2011 $88.82
2010 11/17/2010 $87.83
Big Map
County Overlays
Street View
Show Legend
Basemaps
Select
Clear Selection
Zoom LL
Measure Tools
Printing
3
18.56 Ac
4
18.56Ac
4.002
18.56Ac
7.001
40.8 Ac(c)
5
45 Ac(c)
7
9.005
9.004
9.003
9.002
8
40Ac(c)
9
10
18.56Ac
2
62.78 Ac
11
18.56Ac
12
43.83Ac
13
14
43.2 Ac (c)
bing
4 feature(s) selected on 1 layer(s)
Powered by Infrastructure Map Server
LeeAL - 2012 - BASIC PARCEL SUMMARY - 1 Records
Subscription Site has more data and features; Go to Subscription Website
Row Info Pin Parcel Name Parcel Address Land Imp TMkt Acreage Tax Dist
1 42714 43 06 07 35 0 000 005.000 WEBB CLYDE GROVER 0 LEE RD 0070 $67,500 $0 $67,500 45 County
Gilbert 20130326
Internet
100%

Lee County Flagship GIS

- Select backgrounds
- Print a map
- Save a digital copy
- Measure distances
- Measure areas

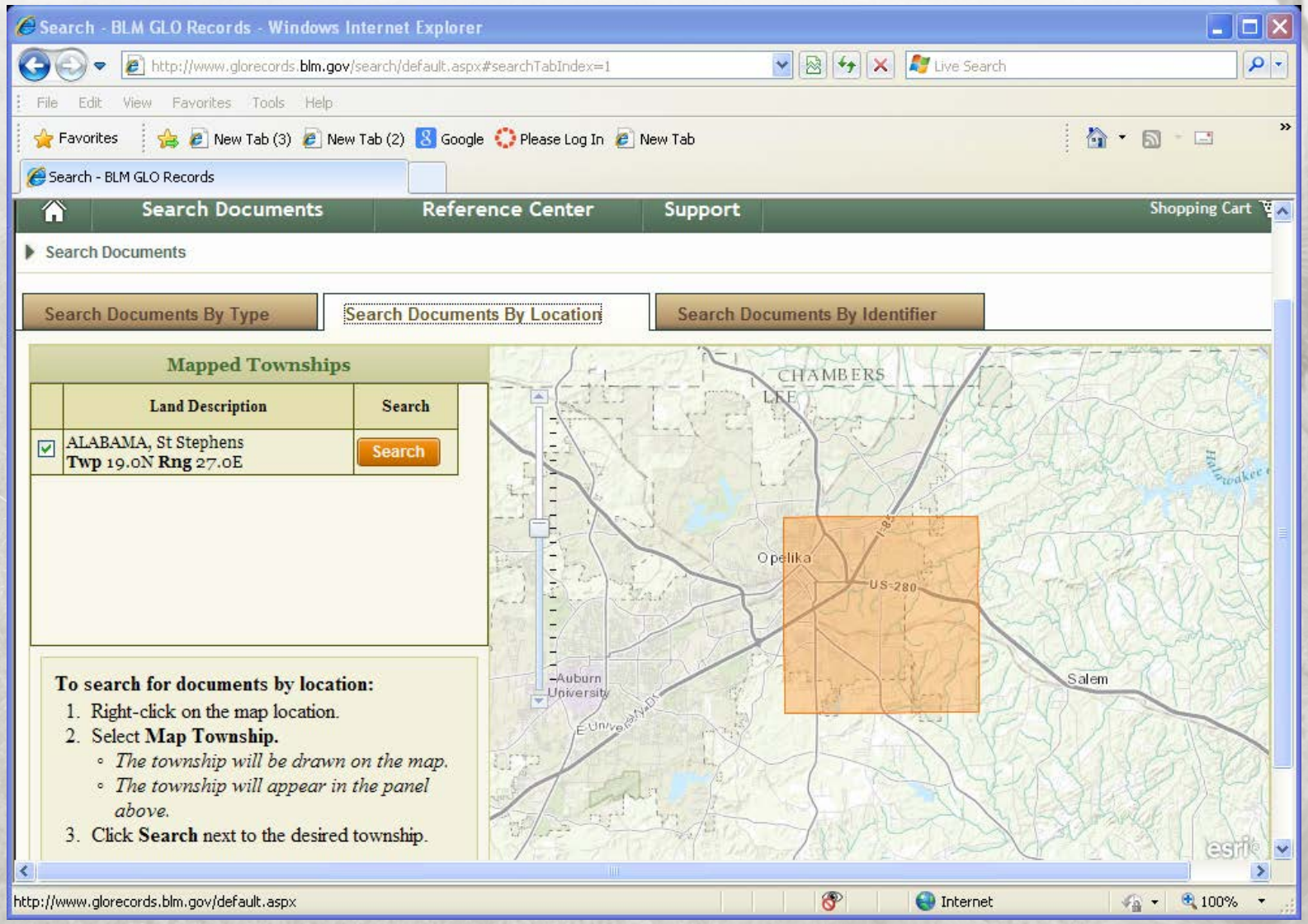


US Dept of the Interior
Bureau of Land Management
General Land Office Records

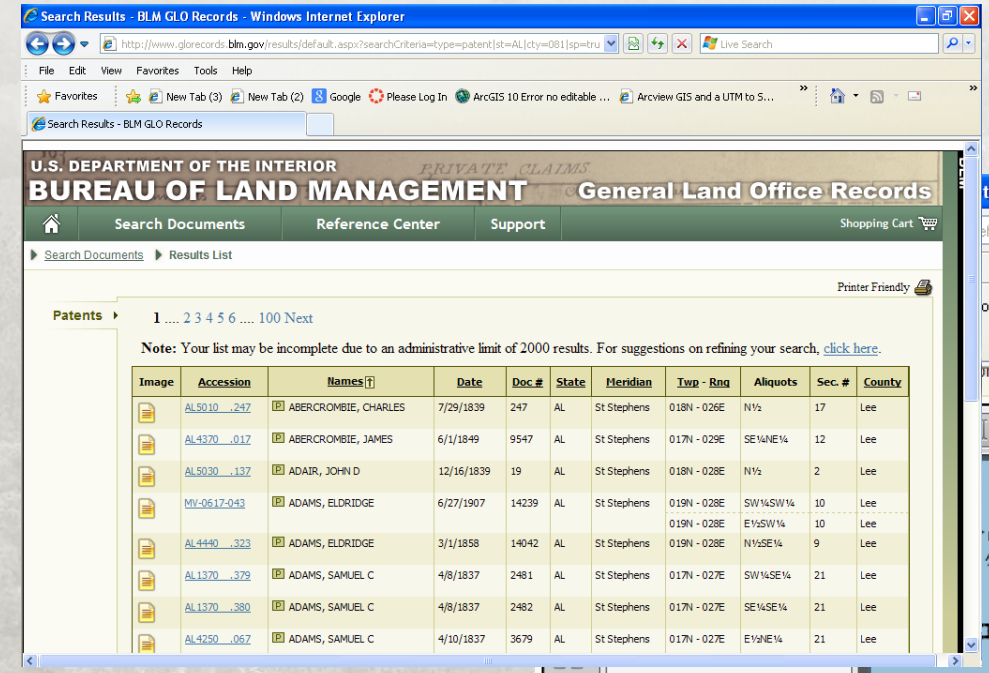
- Online application

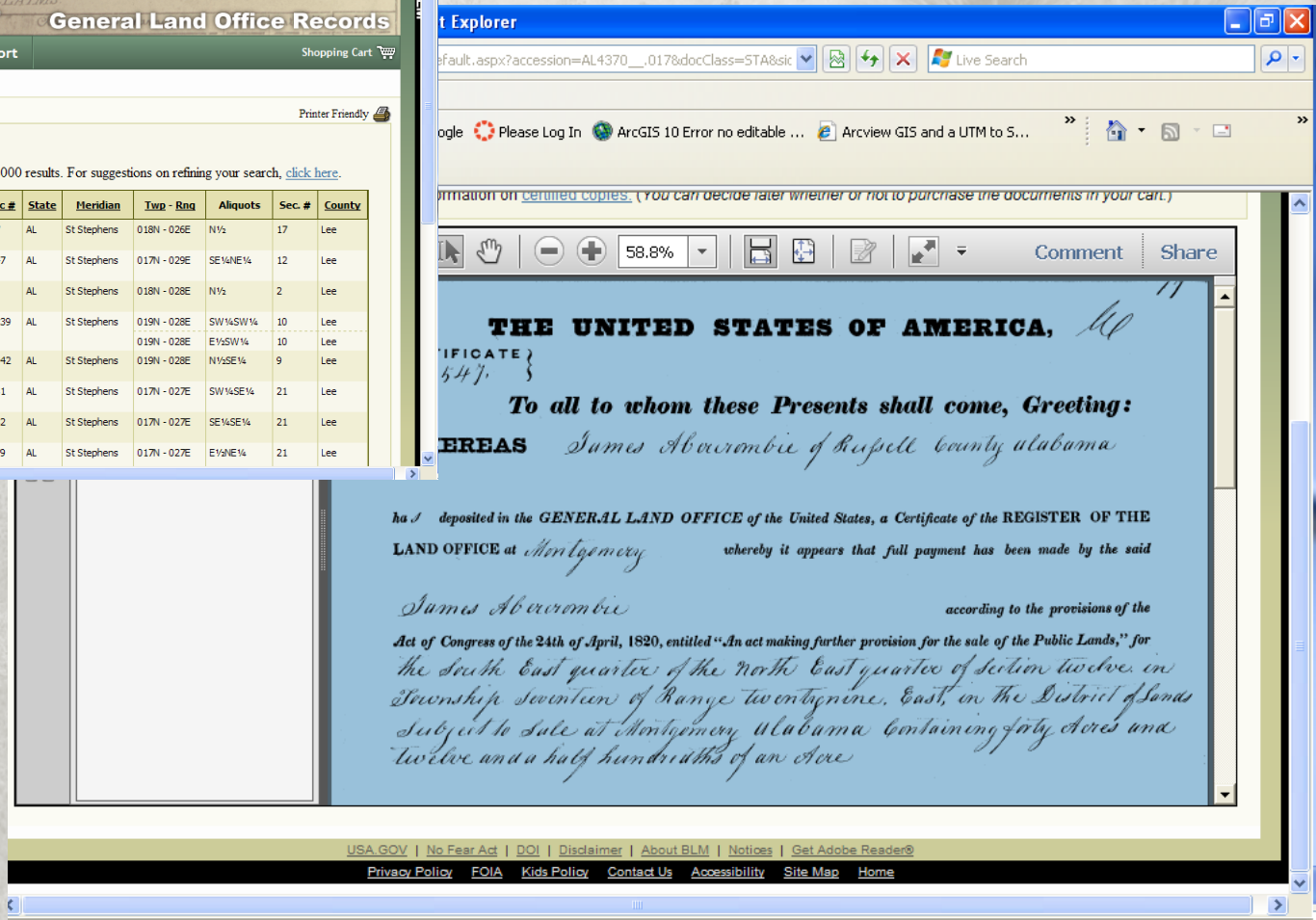
- Information about:
  - Land Patents
  - Survey Plats and Field Notes
  - Land Status Records
  - New Mapping Feature*

Search Documents by Location



Example Land Patent for Lee County





Data Management

Data Management and Record Keeping

- Can be very overwhelming!
- Definitely time consuming
- Spending time early in the process can help you in the long run (entropy!)
- Planning for the future

Data Management and Record Keeping

- Determining information needs
  - Questions to answer
  - File types
  - Conversions
- Organization
  - Paper and digital storage
  - Linking data
  - Backup data
  - Security
  - Planning for the future

Determining Information Needs

Initial Questions?

- What question(s) are you trying to answer?
  - What are your objectives? Management plan?
- What records or data do you currently have?
  - Forest inventory
  - Operations (harvests, site prep, plantings, treatments like herbicide, prescribed fire, etc. – periodic or annual?
  - Equipment
  - Costs and revenues(taxes)
  - Maps
  - Current, historical, gaps
- Which records are currently pertinent to your questions?
- What are the forms of the current data (paper, digital, combination) and where are they stored?

Initial Questions Continued?

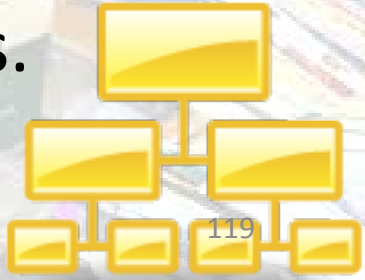
- Who created the data, when, and how was it created?
  - Metadata or data about data
- Do you need to collect more information?
- How are you storing this information or archiving it into the future?
  - Paper, digital, combination
- How do you answer your questions?
  - Calculations, maps , etc.

Initial Questions Continued?

- How can you share the data or results?
- What about security?
- How will you update over time? How often?
- Can this be transferred to others?

Build a Diagram or Flowchart

- Take the initial questions and start to build a flowchart of the process.
- This helps to organize your thoughts and create a plan.
- It can always be updated or changed.
- Review the chart with the decision makers.



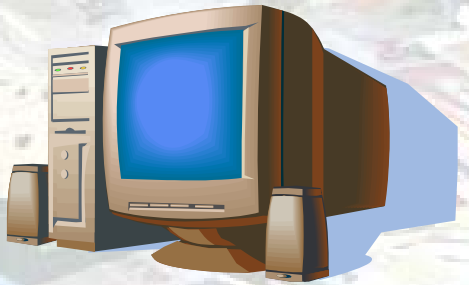

Organization

Understanding File Structures

- What information do you keep?
  - Depends on the questions and objectives
  - Now and into the future

- How do you store all of this information?
  - Shoeboxes, good filing cabinet(s)
  - Digital storage

- Storing and filing can be two very different things!



Recalling or Finding Information

- Storing and filing data are really just the first steps.
- You got to be able to find and utilize the information for it to really be useful.
  - Careful filing and labeling is essential!
- If all else fails, search and/or view file properties.

Should I be Concerned about Security?

- Record keeping can include very detailed and sensitive information.

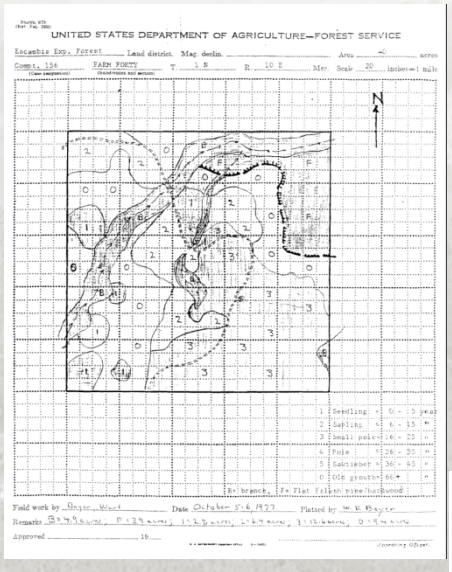
- Organization can play a key role in maintaining the appropriate security.
  - Passwords
  - Permissions
  - Versions like “read only”

Planning for the Future

- Moving or sharing data
- Converting data to digital form
- Updating or adding data
- Expanding the database to answer more or different questions
- Archiving
- Audits

Conversion to Digital Form

- Hand-drawn maps
  - Scanned
  - Georeferenced
  - Digitized
- Tabular data entered into a spreadsheet
- GPS data collection
- Building metadata



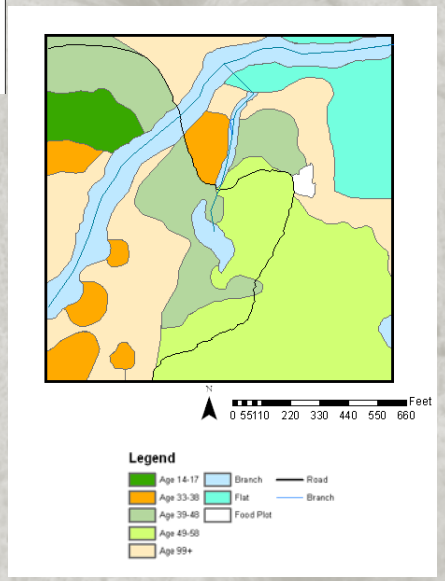
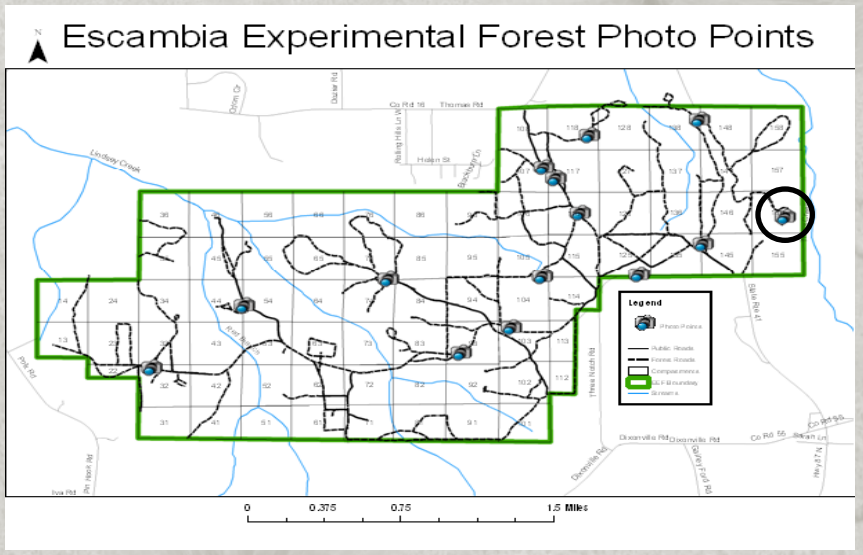


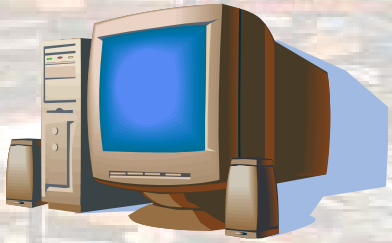
Photo Points

- Variety of years
- See how the property has changed over time
- See responses to treatments like thinnings, prescribed fire, herbicide, precommercial thinning, etc.

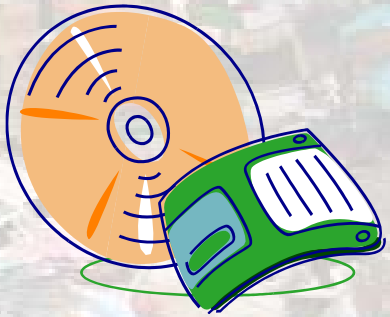


Farm 40

Backup Your Data!!



- Store data in more than one location!



- Be aware: papers can be lost, computers crash, CDs and DVDs scratch, jump or flash drives die, and online data storage can be hacked

- Backup your information periodically, using different sources, and date the backups

Question and Answer Session

- Creating maps with aerial photography, soils information, and topographic backgrounds
- Storing points, lines, polygons, and descriptive information for areas of interest
- Creating visual simulations
- Alabama Assessor and Property Tax Directory
- US Dept of the Interior BLM Land Record Searches
- Finding data online
- Data management and record keeping
- Short courses and future information

Short Course Design

- 1 day, hands-on short course to introduce attendees of online mapping and spatial resources using the booklet "Online Mapping and Spatial Resources for the Private Forest Landowner"

- Each topic will begin with introductory information and include instructor led examples and hands-on exercises.

- All examples and exercises will focus on real-world forestry and other natural resource applications.

Future Booklets and Courses

- Advanced Spatial Resources for Private Landowners and Conservation Professionals
  - Utilize resources and tools available online and often free with examples that can be utilized to create data layers, digitizing, file conversion, overlay analyses, and detailed reporting

- Integrating GPS and GIS for Private Forest Landowners

*Booklets and courses are dependent on funding, support, and interest.

For More Information

- Contact the Longleaf Pine Stand Dynamics Lab
  - http://www.lpsdl.auburn.edu/
  - Mr. John Gilbert gilbejo@auburn.edu 334-329-0236
  - Dr. John Kush kushjoh@auburn.edu 334-844-1065
  - Dr. Rebecca Barlow at rjb0003@auburn.edu (334)844-1019