

Mapping My Land:

*applications, tips, and tricks for landowners
that make mapping easy*

Topic 1 of 4:

The “whats” and “whys” of good mapping

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Where are you webbing from?



What we will cover today



- **Part 1 (20 minutes): Why map our land? Understanding the need for good accurate maps.**
 - What exactly is a map?
 - What are the important elements to a good map?
 - How can good maps assist in fulfilling management goals?
 - How can maps helping achieve ATFS standards?
- **Part 2(20 minutes): Important mapping tools – AFF My Land Plan**
 - Overview of My Land Plan (MLP)
 - Overview of the mapping element in MLP
 - Assembling your data for map creation
 - Creating your property in MLP
 - Creating points, lines, and areas depicting your management objectives
 - Editing and saving your map
- **Part 3 (20 minutes): Important mapping tools – other resources**
 - County mapping office
 - NRCS Web Soil Survey
 - USFS Forest*A*Syst
 - NatureServe and/or State Natural Heritage Program

Part 1: Why map our land? Understanding the need for good maps.



- What exactly is a map?
- What are the important elements to a good map?
- How can good maps assist in fulfilling management goals?
- How can maps help achieve ATFS standards?

Quiz: What is a map? Pick the best answer.



- A. A generalization of the real world that allows us to make a statement.
- B. A series of graphic symbols depicting the location, relative size, and arrangement of objects of interest across space.
- C. A visual resource vital for land planning and decision making.
- D. All the above!!!

What are maps



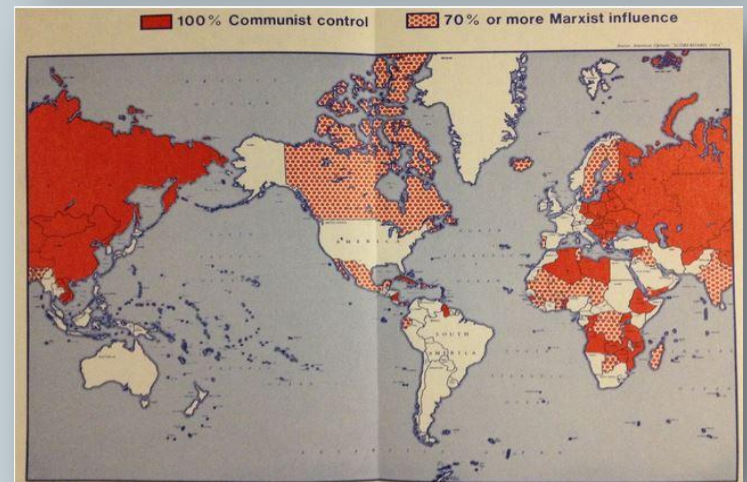
- A series of symbols conveying “spatial” information.
- Generalizations of the real world to make a point.
- A vital resource land planning tool.



<http://www.behance.net/gallery/LAND-LIVING/1466141>



http://www.timberlineforestry.com/html/plans_mapping.html



<http://blogs.brown.edu/hallhoag/2013/01/28/john-birch-society/>

What are the important elements to a good map?



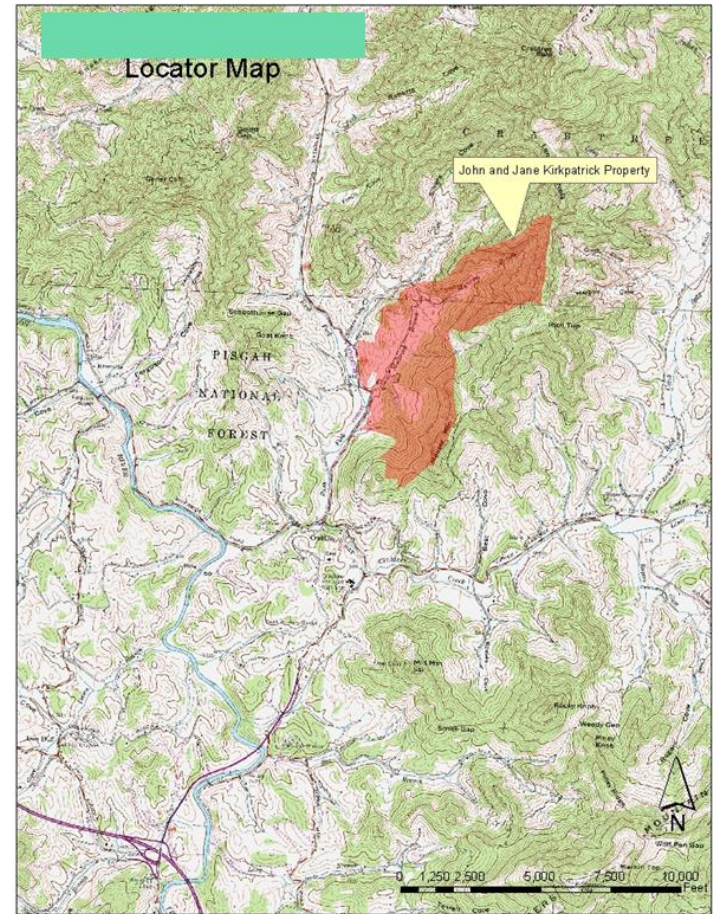
- All maps need to have clear....
 - Purpose a.k.a. “Theme”
 - Symbology
 - Scale
 - Legend

What are the important elements to a good map?



A. Clear....

- A. Theme: Locator
- B. Symbology: simple
- C. Scale: zoomed out (1" = 2500')
- D. Legend: not necessary

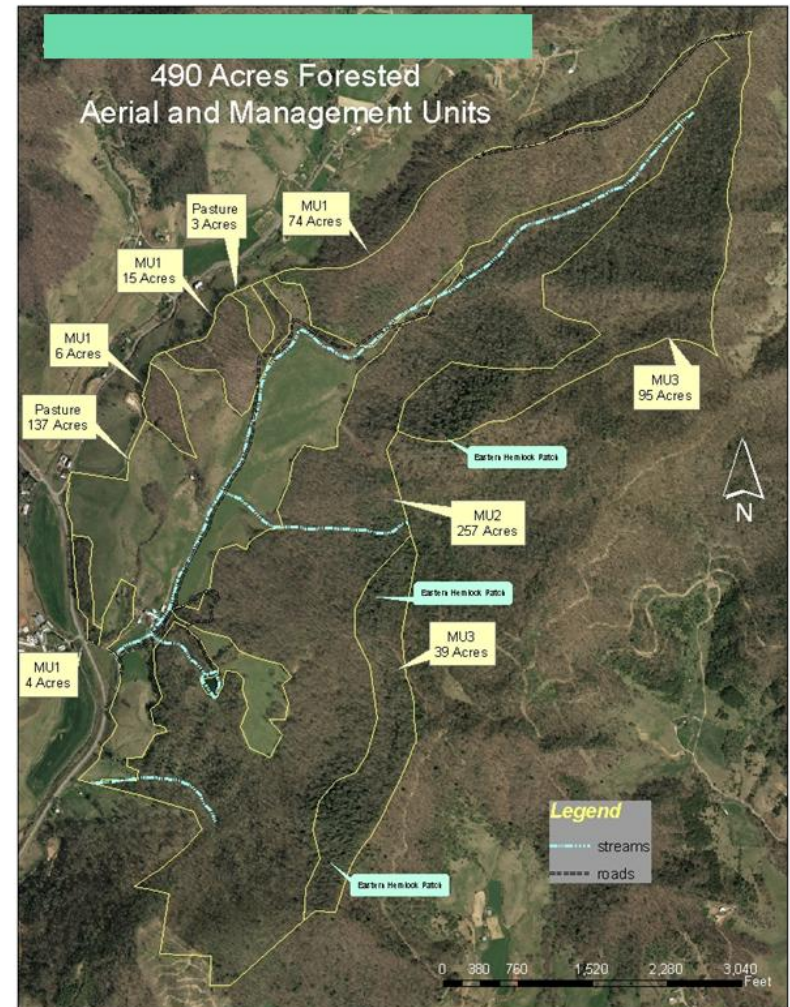


What are the important elements to a good map?



A. Clear....

- A. **Theme:** Aerial and Management Unit Locations
- B. **Symbology:** more complexity
- C. **Scale:** zoomed in as close as possible (1" = 750')
- D. **Legend:** necessary

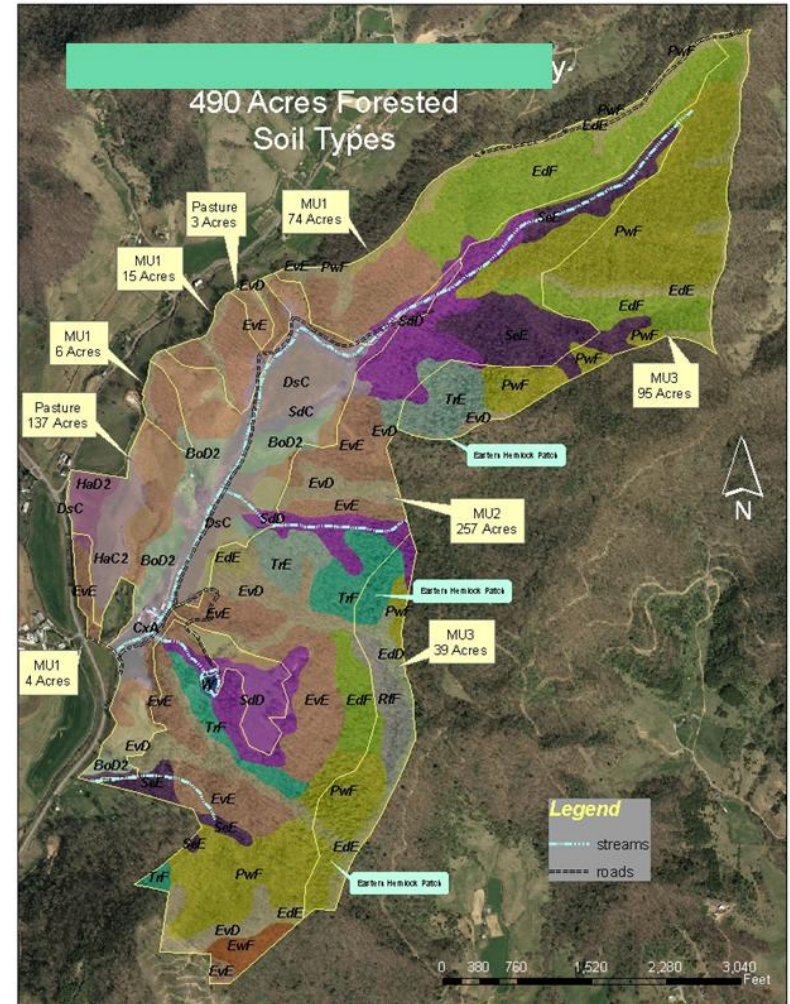


What are the important elements to a good map?



A. Clear....

- A. **Theme:** Aerial, Management Units and Soil Series
- B. **Symbology:** much more complex
- C. **Scale:** zoomed in as close as possible (1" = 750')
- D. **Legend:** necessary

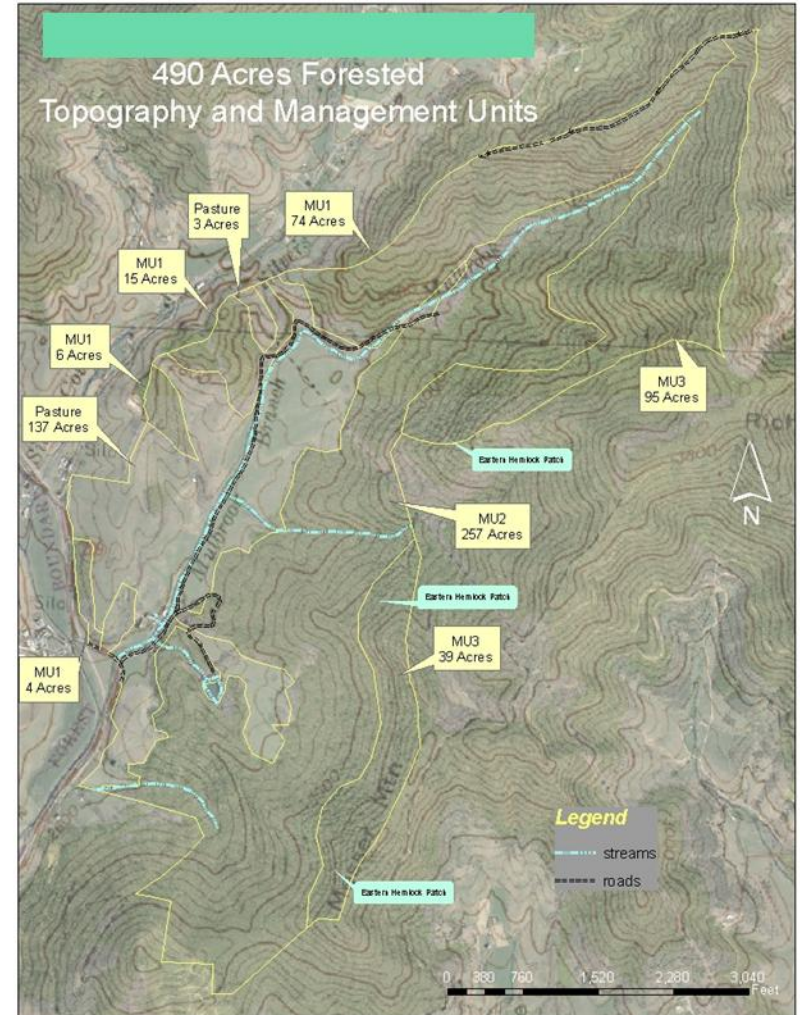


What are the important elements to a good map?



A. Clear....

- A. **Theme:** Aerial, Management Units and Topography
- B. **Symbology:** maybe too complex
- C. **Scale:** zoomed in as close as possible (1" = 750')
- D. **Legend:** necessary

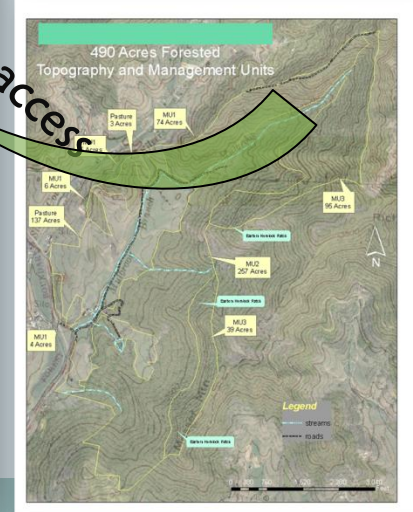
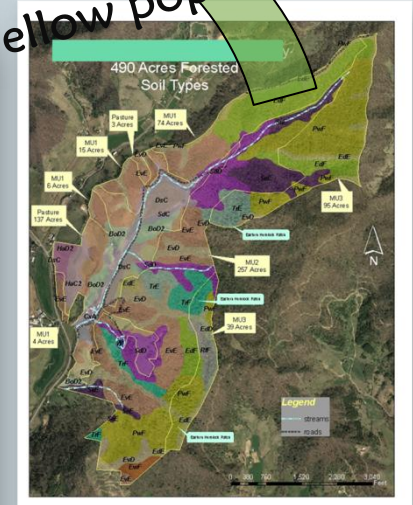
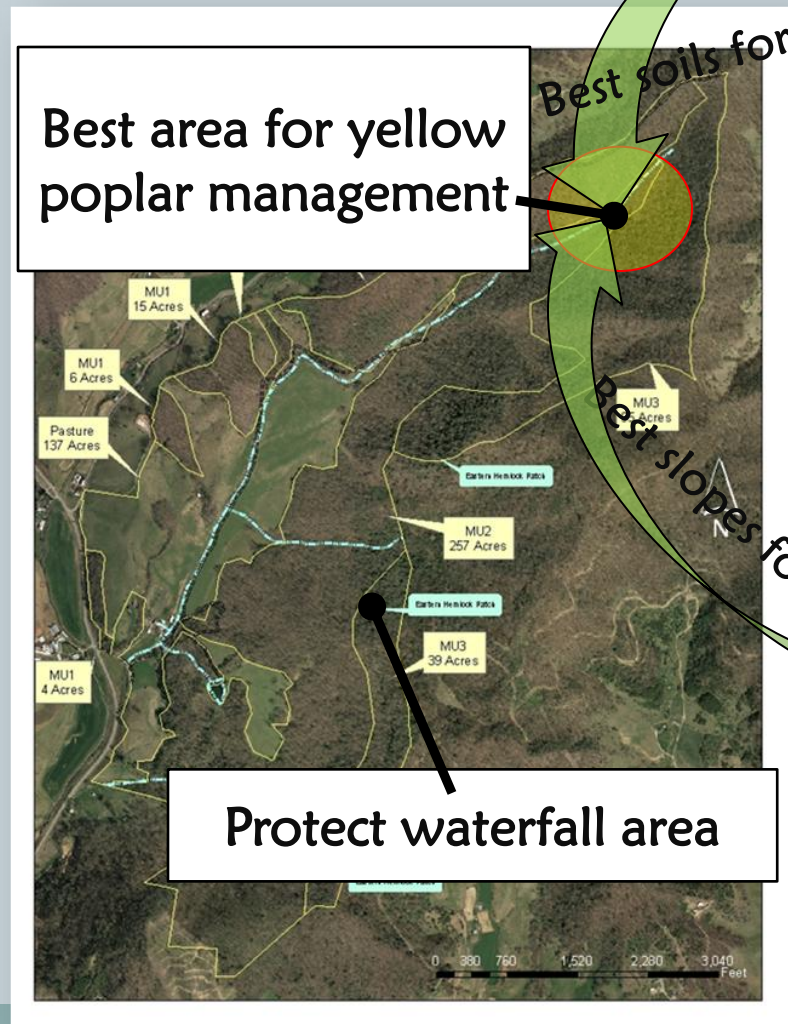


How are management objectives achieved through maps.



Planning tool that helps to identify and share with others:

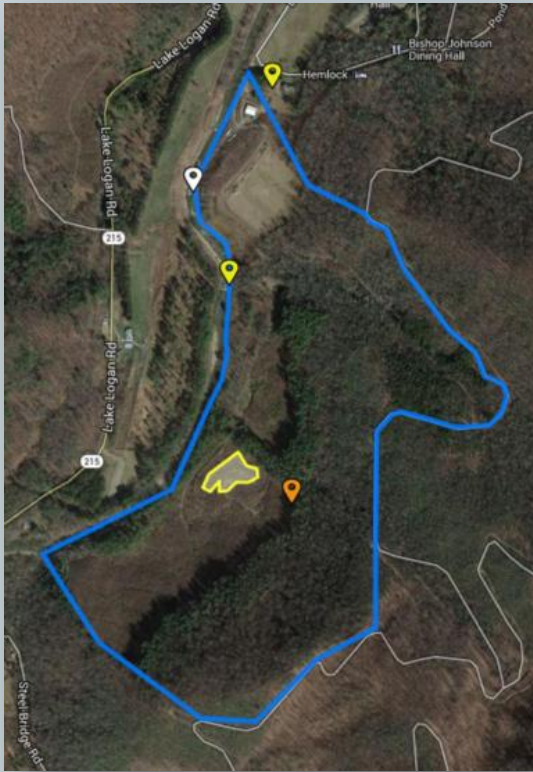
- 1) Best places to do certain activities and when
- 2) Places to preserve / protect
- 3) How best to access your resources



What is the purpose of a good map?



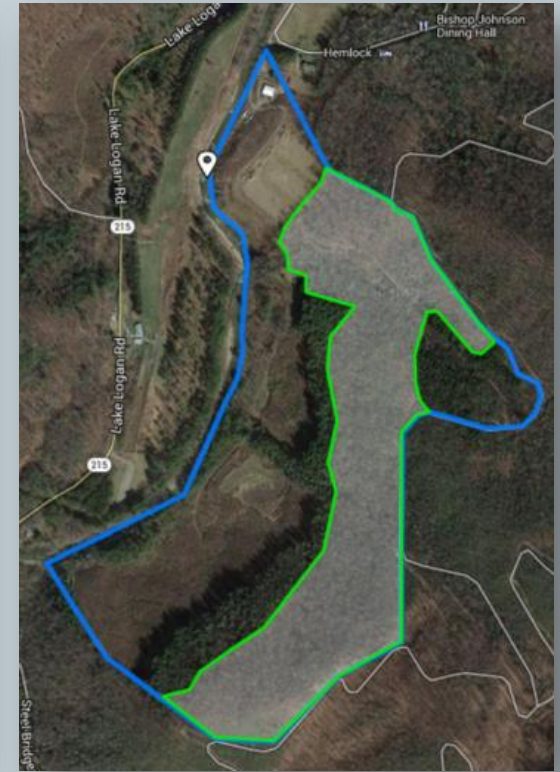
- To tell a story about your land



My favorite places



My current forest revenue

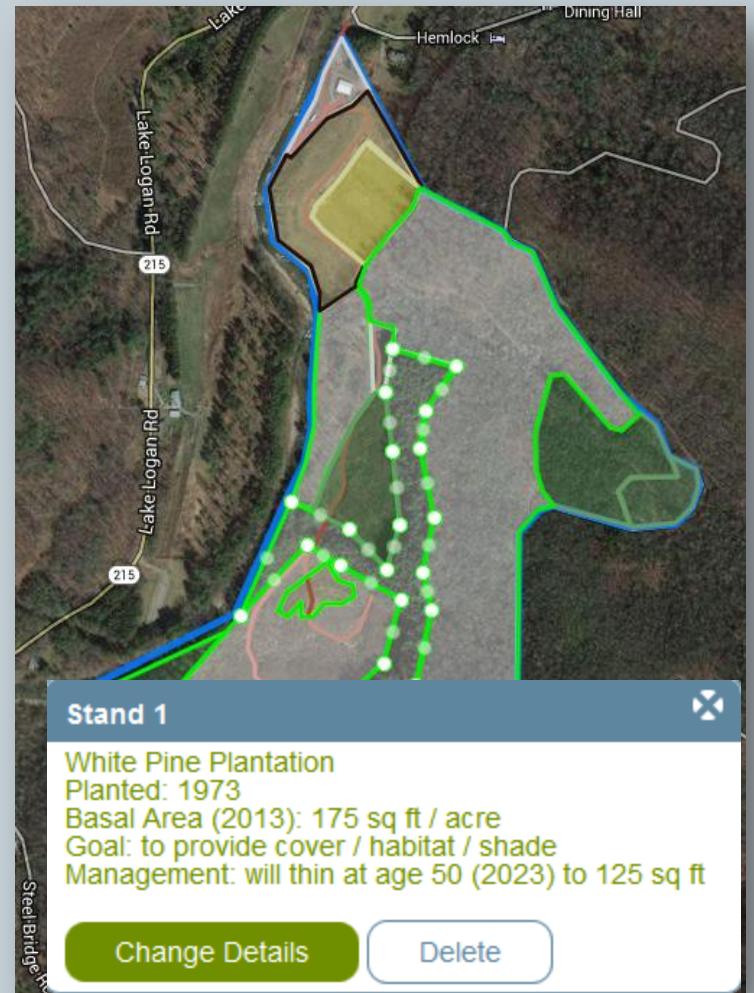


Grand-kids college fund

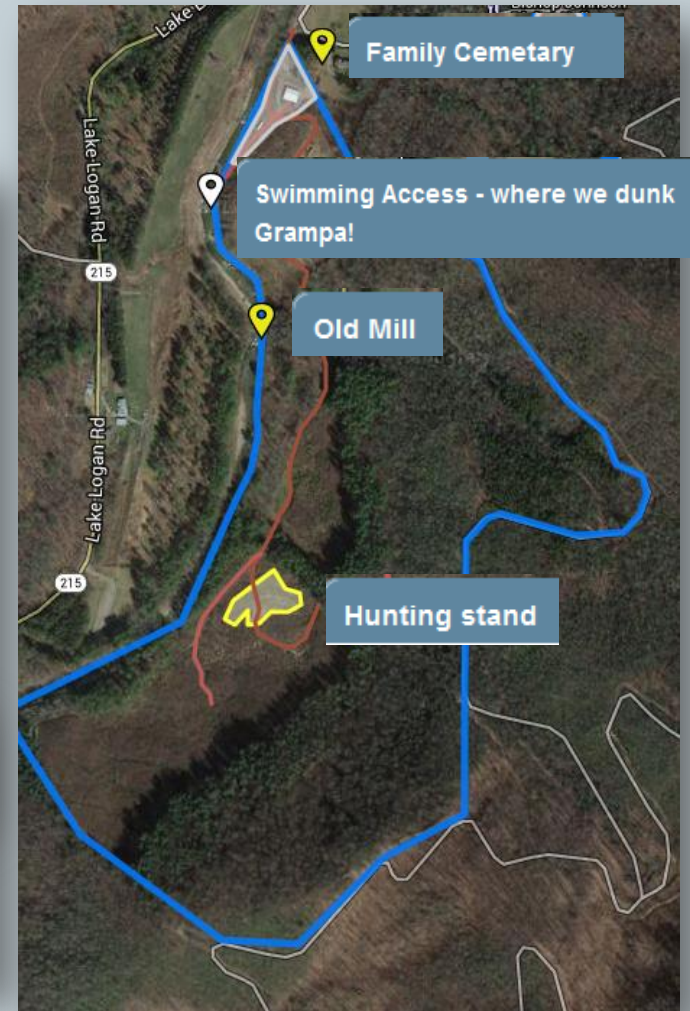
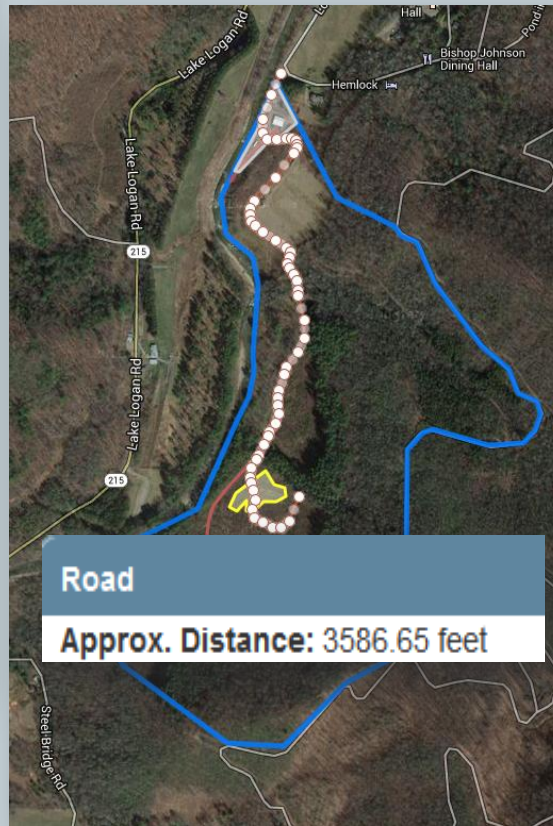
How can ATFS standards be met using maps?



- **Standard 1: Commitment to Practicing Sustainable Forestry**
- **Indicator 1.12**
 - *”include a tract map accurately depicting significant forest-related resources.”*
 - *“address the following resource elements: forest health, soil, water, wood and fiber production, threatened and endangered species, special sites, invasive species, integrated pest management, and high conservation value forests.”*



Maps accurately depicting your resources



Soil Map

Scale (not to scale)

DeA	Dellwood cobbly sandy loam, 0 to 3 percent slopes, occasionally flooded	5.2	4.6%
-----	---	-----	------

From the NRCS Web Soil Survey, you can get detailed soils information for your map

DeA: Dellwood Soil Series

Approx. Acreage: 5.14 acres

Haywood County Area, North Carolina
 DeA—Dellwood cobbly sandy loam, 0 to 3 percent slopes, occasionally flooded
 Map Unit Setting

Landscape: Valleys
 Elevation: 1,200 to 2,000 feet
 Mean annual precipitation: 45 to 70 inches
 Mean annual air temperature: 46 to 57 degrees F
 Frost-free period: 116 to 170 days

Map Unit Composition
 Dellwood, occasionally flooded, and similar soils: 90 percent
 Minor components: 5 percent

Description of Dellwood, Occasionally Flooded Setting
 Landform: Flood plains
 Down-slope shape: Linear
 Across-slope shape: Convex
 Parent material: Gravelly and cobbly sandy alluvium
 Properties and qualities
 Slope: 0 to 3 percent
 Depth to restrictive feature: 8 to 20 inches to strongly contrasting textural stratification
 Drainage class: Moderately well drained
 Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
 Depth to water table: About 24 to 48 inches
 Frequency of flooding: Occasional
 Frequency of ponding: None
 Available water capacity: Very low (about 1.1 inches)

Interpretive groups
 Farmland classification: Farmland of local importance
 Land capability (nonirrigated): 3s
 Hydrologic Soil Group: B

Typical profile
 0 to 8 inches: Cobbly sandy loam
 8 to 16 inches: Extremely gravelly sand
 16 to 80 inches: Extremely gravelly coarse sand

Minor Components
 Nikwasi, undrained
 Percent of map unit: 5 percent
 Landform: Depressions on flood plains
 Down-slope shape: Linear, concave
 Across-slope shape: Concave

[Change Details](#) [Delete](#)



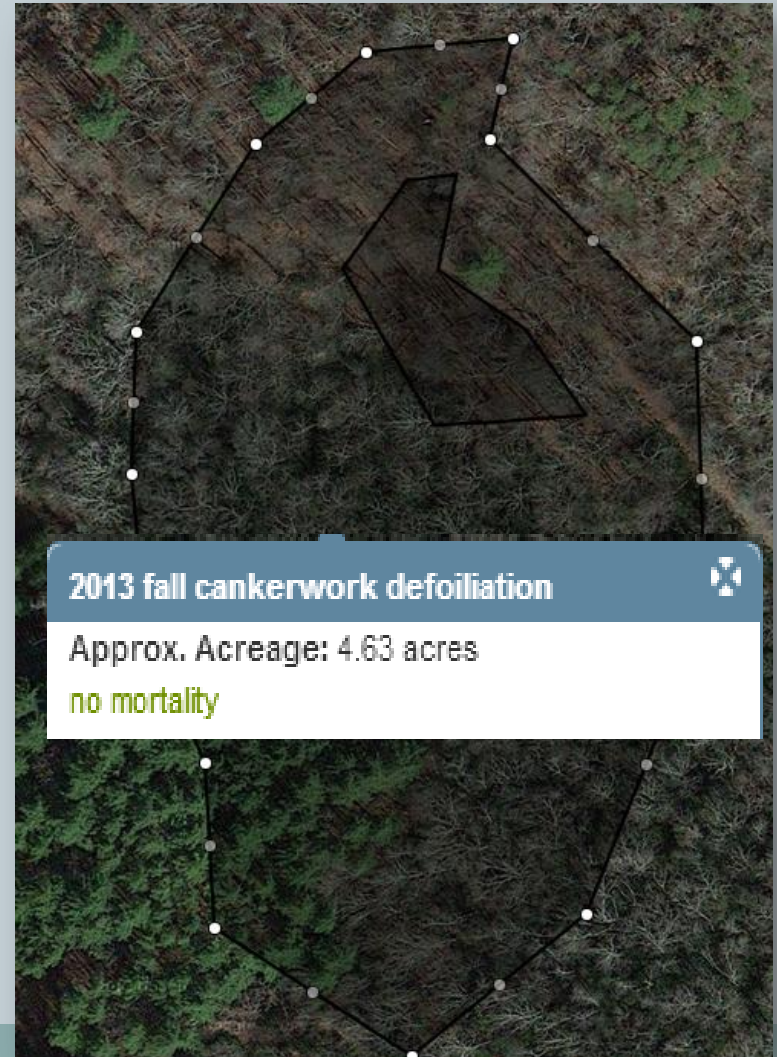
How can ATFS standards be met using maps?



- *Indicator 1.1.3**
- **Forest owner** should monitor for changes that could interfere with the management objectives as stated in **management plan** (e.g., presence of **invasive species**, pest outbreaks, and indications of trespass).



Monitoring changes



How can ATFS standards be met using maps?



- And the goes on...
- **Standard 3: Reforestation and Afforestation**
 - Maps showing where reforestation stocking is adequate
- **Standard 4: Air, Water, and Soil Protection**
 - Show soils with limitations, and vulnerable streams
 - Show compliance with buffers, and other Best Management Practices (BMP) locations
- **Standard 5: Fish, Wildlife, and Biodiversity**
 - Locations of Threatened, Endangered, or habitats of biodiversity concerns

How can ATFS standards be met using maps?



- And the list goes on...
 - Standard 6: Forest Aesthetics
 - ✦ Show recreational / spiritual renewal areas, vistas, springs, fern valleys
 - Standard 7: Protect Special Sites
 - ✦ Show cemeteries, old mine shafts (good for liability as well), iron forges
 - Standard 8: Forest Product Harvests and Other Activities
 - ✦ Show near future harvest operations, major skid routes, and landings

REMEMBER

For just about anything you have in your plan , you can help tell its story on a map!!!

Part 1 Questions



Part 2: Mapping tools – AFF My Land Plan



- Overview of My Land Plan (MLP)
- Overview of the mapping element in MLP
- Assembling your data for map creation
- Finding your property
- Creating points, lines, and areas depicting your management objectives
- Editing and saving your work

My Land Plan – American Forestry Foundation



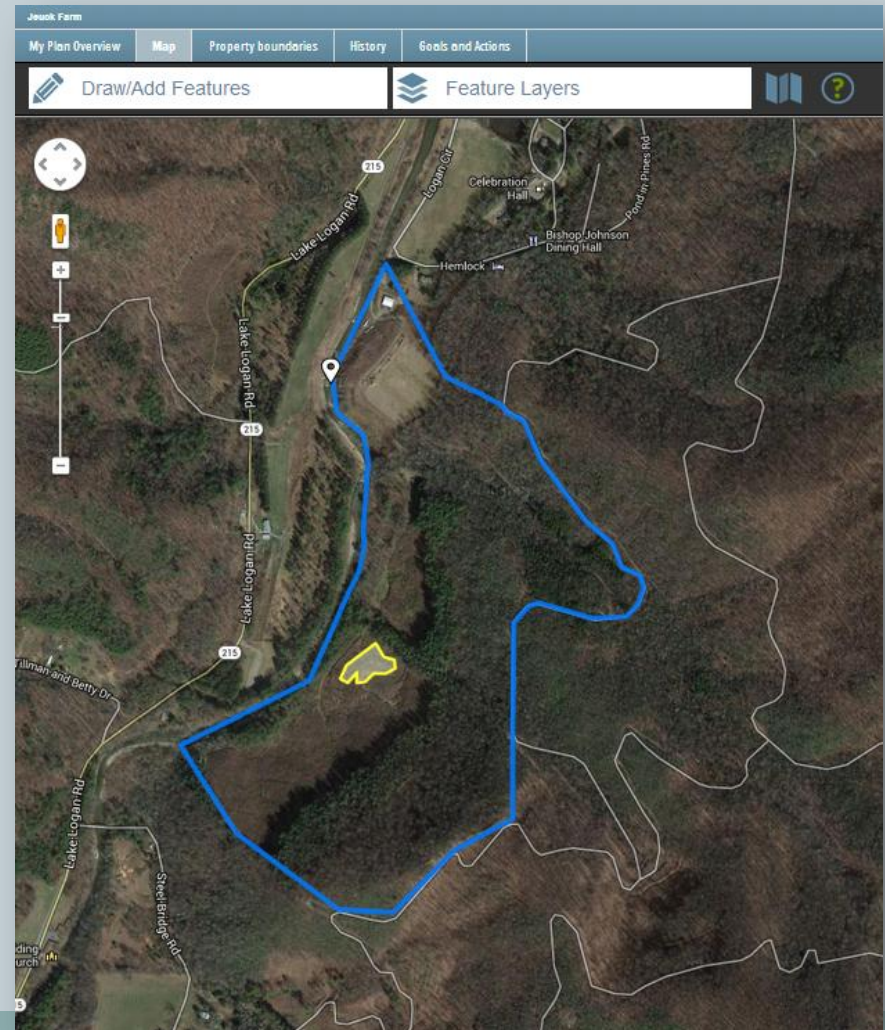
- AFF tools that help landowners:
 - Identify and explicitly state your land ownership goals
 - Explore management options and steps how to reach your land ownership goals
 - Keep a record of activities
 - Find advice from professionals
 - Share your knowledge and experiences with other landowners (peer to peer networking)

The screenshot shows the 'My Land Plan' website. At the top, there's a navigation bar with 'My Plan', 'About Us', and 'Log out'. Below that is a search bar with the text 'Keyword Search'. A main menu includes 'Enjoy it', 'Protect it', 'Make it healthy', 'Profit from it', 'Pass it on', 'Join Us', and 'My Plan'. Under 'My Plan', there are links for 'My Land', 'My Forest Journal', 'Ask a Forester', and 'How-to Videos'. The main content area is titled 'My Plan' and features a 'MY PROPERTIES' section with a dropdown menu for 'JEUCK FARM'. Below this is a satellite map of the property. To the right of the map are sections for 'HISTORY OF JEUCK FARM', 'MY GOALS FOR JEUCK FARM', and 'MY FOREST JOURNAL'. The 'MY GOALS' section lists various objectives like 'Make it a great place to fish', 'Improve turkey hunting', etc. The 'MY FOREST JOURNAL' section has a 'THIS IS MY JOURNAL' link and a 'View all >' link. On the far right, there's a 'RECOMMENDED ARTICLES' section with links like 'Camera Maintenance', 'Using Trail Cameras', etc. At the bottom right, there's a 'MY DETAILS' section with the user's name 'james jeuck', phone number '27695', and email 'jajeuck@ncsu.edu'.

Mapping Component of My Land Plan



- Essential portion of MLP
- Depict areas / acreages you want to manage
- Easy to use interface
- Automatically stores all you do
- Turn on/off layers to emphasize the topic of each map
- Easy to clip out maps and paste into your hardcopy management plan document



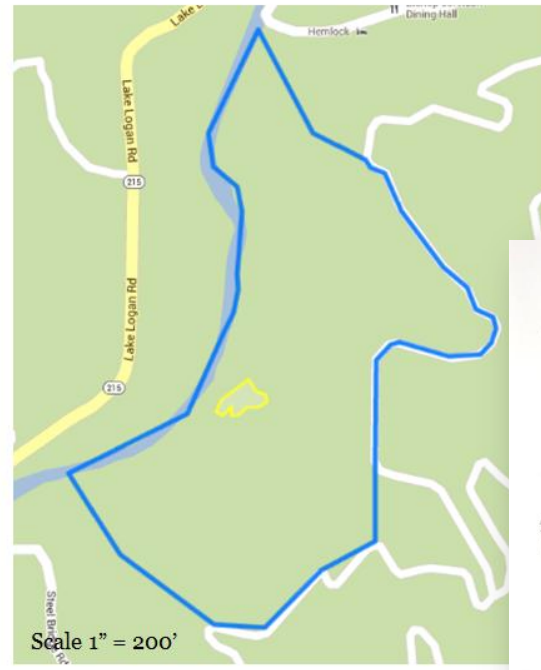
How do I begin mapping?



- Assemble the basic map information:

- Property boundary (parcel map)
- Depictions of management units from:
 - ✦ current forest management plan
 - ✦ desired land ownership goals
- These are all you need to get started

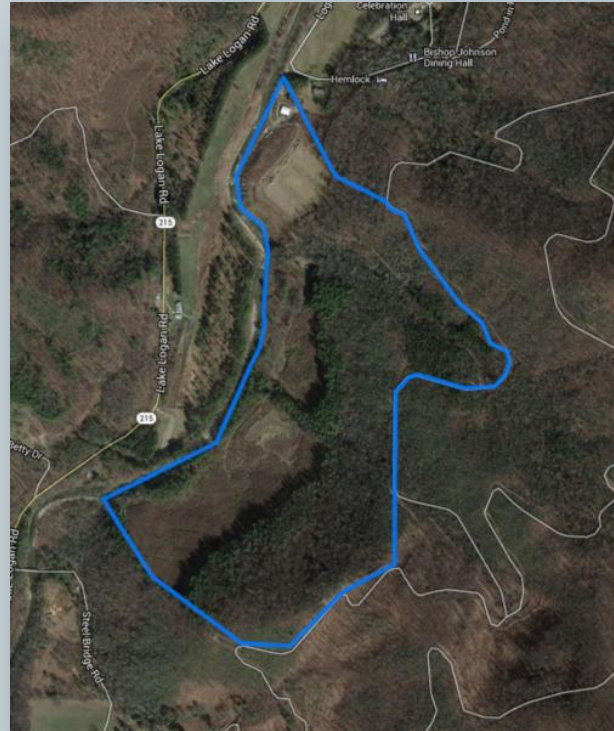
Haywood County Mapping Office – Parcel Map
PIN 694-2033-209 J.A. Jeuck



Other important sources of data:



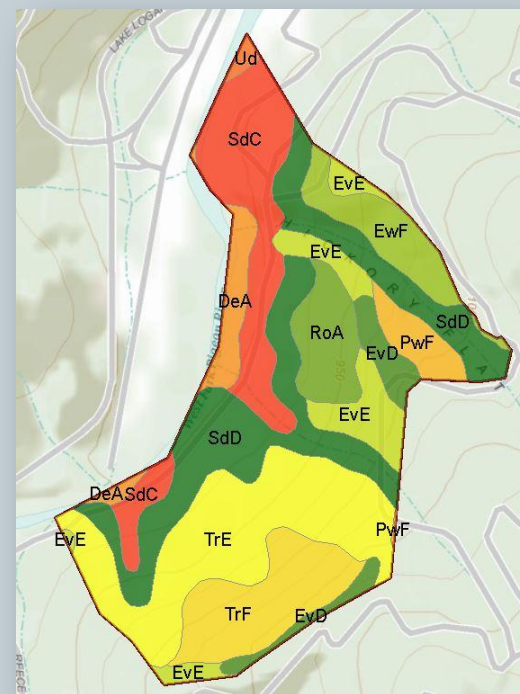
- Aerial photography
- Transportation
- Both are in MLP



Other data that can be useful: SOILS



- Soils are most important – informs you of what the potential for forest growth and limitations.
- Sources:
 - Hardcopy of the NRCS County Soil Survey, found at:
 - ✦ NRCS Office
 - ✦ Your county library.
 - ✦ Online versions found at http://soils.usda.gov/survey/printed_surveys/
 - Web Soil Survey - Official USDA soil information as viewable maps and tables for more than 2300 soil surveys:
 - ✦ <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>
 - County GIS and Mapping Site



Other data that can be useful: TOPOGRAPHY



- Soils and water are tied to the topography, affecting access and disturbance limitations
- Hardcopy Sources:
 - County mapping office
 - County library
 - Order online from USGS store (<http://store.usgs.gov>)
- Online sources:
 - Free topo map download (<http://store.usgs.gov>)



My Land Plan Demo



Show of hands:
How many have used
My Land Plan?

Pros and Cons of MLP



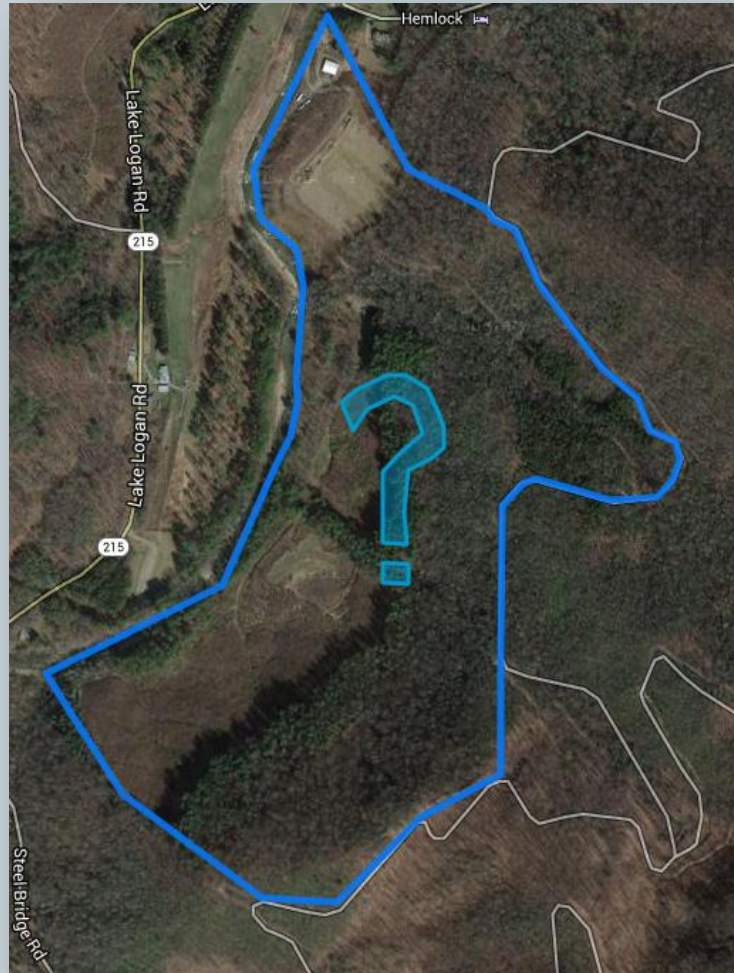
- **Pros:**

- Very easy interface
- Maps objects very easy to create / edit / delete
- Calculates acres automatically
- Text labels easy to edit
- Can have numerous projects
- Maps and other plan information all in one place
- No need to save – done automatically

- **Cons**

- Currently does not interface with or export to Google-based Apps (Google Earth, Google Maps)
- Only one map object per layer
- Currently does not have scale bar or north arrow
- Currently text labels cover the mapping object selected with no way to move it off

Part 2 Questions



Part 3: Important mapping tools – other resources



- County mapping office
- NRCS Web Soil Survey
- USFS Forest*A*Syst
- NatureServe and/or State Natural Heritage Program

County mapping office



- Google <Your County, State> GIS
 - ✦ i.e. “Buncombe County NC GIS”
- They provide searches based on your tax record name (according to tax records), or your Property ID Number (a.k.a. “PIN”)
 - ✦ Both can be found on your latest property tax bill
- You can print out your property boundaries along with other good information (varying based on the county)

County mapping office



Buncombe County GIS



Point of Interest Buffer Property Sale Report Print

868406568900000

RANCLAND INCORPORATED

View	Zoom to Parcel Sales Report Deed Plat
PROPCARD	PROPERTY CARD
PINNUM	868406568900000
OWNER	RANCLAND INCORPORATED
CONDOBUILDING	
DEEDBOOK	1505
DEEDPAGE	0151
PLATBOOK	0000
PLATPAGE	0000
SUBNAME	
SUBLOT	
SUBBLOCK	
SUBSECT	
HOUSENUMBER	00575
NUMBERSUFFIX	
DIRECTION	
STREETNAME	DAVIS CREEK
STREETTYPE	RD
ACREAGE	63.74000167
ACCOUNTNUMBER	007999281
DEEDDATE	19880104
CITY	
CAREOF	C/O MAX COGBURN JR
ADDRESS	70 PISGAH VIEW RANCH ROAD
CITYNAME	CANDLER
STATE	NC
ZIPCODE	28715
CLASS	320
TOTALMARKETVALUE	370900
APPRAISEDVALUE	33900
TAXVALUE	33900
LANDUSE	A
NEIGHBORHOODCODE	UHMC
LANDVALUE	370900
BUILDINGVALUE	0
IMPROVEMENTVALUE	0
APPRAISALAREA	6
shape_Length	11860.1701222573
shape.area	2810790.90834175



County mapping office



Haywood County
North Carolina



Search for a Parcel | Find an Address | Select Viewable Layers | Results | General Help | Comments

Zoom to Scale

- Map Layers [\(Click For Legend...\)](#)
- 20 Foot Topo
 - 2012 Flood Hazard Areas
 - 5 Foot Topo
 - Aerial Photos - 2004
 - Aerial Photos - 2010
 - Census Tract
 - Conservation_easements
 - Convenience Centers
 - Counties
 - Elementary School Zones
 - EMS Districts
 - Farmland_preservation
 - Federal Land Labels
 - Federal Lands
 - Fire Districts
 - Greenway
 - High School Zones
 - Highways Only
 - Law Enforcement
 - Major Water Bodies
 - Middle School Zones
 - Municipal Boundaries
 - Parcel Annotation
 - Parcels
 - Parks and Recreation
 - Road Maintenance
 - Sanitary Districts
 - Sewer Lines
 - Soil Map
 - States
 - Structures
 - Survey Monuments
 - Township Labels
 - Townships
 - Transportation
 - USGS Quadrangles
 - Valid Sales
 - Voting Precincts
 - Water Labels
 - Water Lines



County mapping office



Haywood County



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843709.625, 722517.094

1 598ft

NRCS Web Soil Survey (websoilsurvey.nrcs.usda.gov/)

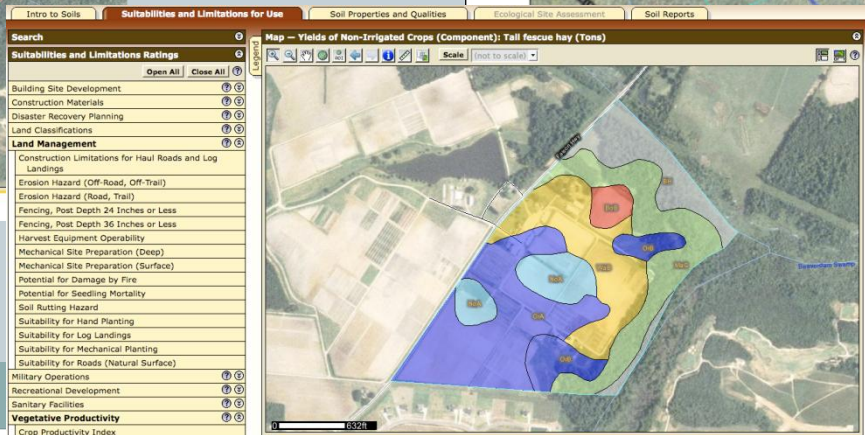
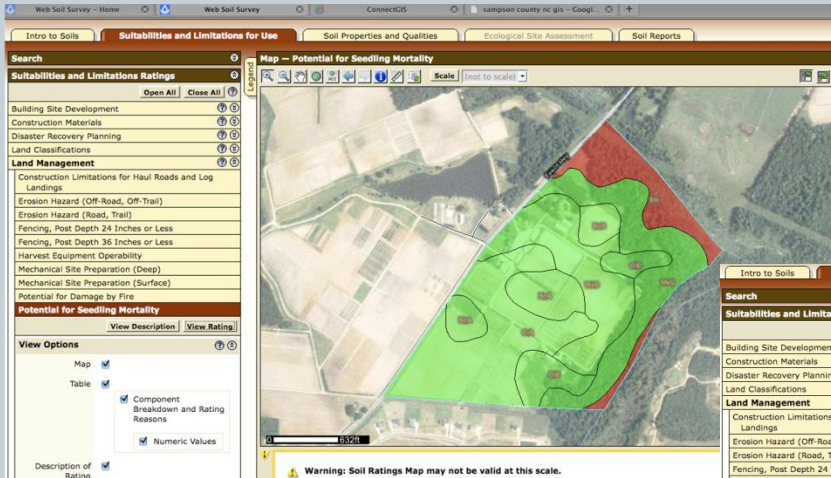


- NRCS Web Soil Survey:
 - ✦ Look up soil suitability maps for your property
 - ✦ Create a personalized soil survey for your property

USDA United States Department of Agriculture
NRCS Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Haywood County Area, North Carolina
Fowler Forest, HCC +/- 20 acres



Forest*A*Syst

<http://www.forestasyst.org/>



- Assists in forest planning and offers quick information on local contacts, and vegetation classes plus lots of videos that compliment MLP

The screenshot shows the website's header with the title "Forest*A*Syst" and the tagline "Tools to Protect, Enhance and Manage Private Woodlands". Below the header is a navigation menu with links for HOME, ABOUT FOREST* A *SYST, CONTACT FOREST* A *SYST, and SEARCH. A left sidebar contains a vertical list of menu items: Introduction, Timber Management, Wildlife Management, Recreation, Forest Health, Soil & Water Quality, Agroforestry, Invasive Species, Fire Wise, Management Plan, Profile Your Land, Glossary, and Contact a Professional. The main content area features a video player with a play button and a "Welcome to Forest* A *Syst" heading. Below the video is a "START FOREST*A*SYST" button and a link to "Click here to start the Forest Landowner's Assessment Guide".

Haywood County, North Carolina

Ecoregions:

Central Appalachian Broadleaf Forest-Coniferous Forest-Meadow Province

Forest Cover Types:

White-red-jack pine

Forests in which eastern white pine, red pine, or jack pine, singly or in combination, comprise a plurality of the stocking. Common associates include hemlock, aspen, birch, and maple.

Spruce-fir

Forests in which spruce or true firs, singly or in combination, comprise a plurality of the stocking. Common associates include white cedar, tamarack, maple, birch, and hemlock.

Loblolly-shortleaf pine

Forests in which loblolly pine, shortleaf pine, or southern yellow pines, except longleaf or slash pine, singly or in combination, comprise a plurality of the stocking. Common associates include oak, hickory, and gum.

Oak-pine

Forests in which hardwoods (usually upland oaks) comprise a plurality of the stocking, but in which pine or eastern redcedar comprises 25-50 percent of the stocking. Common associates include gum, hickory, and yellow-poplar.

Oak-hickory

Forests in which upland oaks or hickory, singly or in combination, comprise a plurality of the stocking except where pines comprise 25-50 percent. In which case the stand is classified as oak-pine. Common associates include yellow-poplar, elm, maple, and black walnut.

Maple-beech-birch

Forests in which maple, beech, or yellow birch, singly or in combination, comprise a plurality of the stocking. Common associates include hemlock, elm, basswood, and white pine.

Contacts

- State Forestry Department
- Local Cooperative Extension Office
- State Land Grant Universities
- Duke University, Nicholas School of the Environment
- North Carolina State University, College of Natural Resources
- Local USDA Service Center
- National Agroforestry Center
- Rind Consulting Forester
- Local Conservation Districts and Commissions
- Seed/Seedling Suppliers
- Local Resource Conservation and Development Councils

Find Your Property

Use the Zoom and Pan controls on the left-hand side of the map below to locate your property. (It may be helpful to use the Satellite or Hybrid View.) Once located, place the cursor anywhere within the boundary of your property and click once. A red balloon marker will appear. Then click the Submit Property Location button below. This will allow you to print an aerial photograph (8.5 x 11) and obtain the soil map of your property.

Drag ended

The map interface shows a satellite-style map of a region in North Carolina. A red location pin is placed on a property boundary. The map includes navigation controls on the left (compass, zoom in/out, pan) and a "Map | Satellite" toggle on the right. The map data is attributed to Google, with a copyright notice for 2013. The property location is near Lake Logan and Highway 115.

Latitude: 35.406399076088618

Longitude: -82.95132166984495

Closest matching address: 290-298 Logan Circle, Pisgah National Forest, Cant

[Jump To Address](#)

[Submit Property Location](#)

NatureServe (<http://www.natureserve.org>) or Your State Natural Heritage Program



- Maintain listing of all threatened and endanger species typically by county.
- Most state have similar Natural Heritage Programs
- Some states (like NCNHP) will have a mapping service that will look out 2 miles around your property and give you a report of T&E species habitats in that region.

The screenshot shows the NatureServe website homepage. At the top left is the NatureServe logo. To its right is a banner image of purple flowers. Further right is a Google Custom Search bar and a 'Donate' button. Below the banner is a navigation menu with links: Home, About Us, Projects, Visit Local Programs, Get Data, Products & Services, Publications, and Support Us. The main content area is divided into three columns. The left column is titled 'Get Data' and lists: NatureServe Explorer, InfoNatura, Local Program Data, Data for Download, Custom Data Services, and Data Links. Below this is a 'Select Language' dropdown and a 'Powered by Google Translate' logo. The middle column is titled 'Get Data' and contains the text: 'Our Data: NatureServe and its network of member programs are a leading source for reliable scientific information about species and ecosystems of the Western Hemisphere. This site serves as a portal for accessing several types of publicly available biodiversity data.' It also includes sections for 'NatureServe Explorer' and 'InfoNatura'. The right column is titled 'Donate Now' and features an image of an owl and the text: 'WHO will save my home? • Make an online donation now • Become a partner'. At the bottom left of the page are social media icons for Facebook, Twitter, LinkedIn, and YouTube.

The screenshot shows the North Carolina Natural Heritage Program website. At the top is the 'NCDENR' logo and the text 'Natural Heritage Program'. Below this is a navigation menu with links: NHP HOME, CONTACT, DATA SERVICES, RESOURCES, PROVIDE DATA, and ACTIVITIES. There is also a search bar and a 'Text' link. The main content area features a large image of a white flower with the text: 'NORTH CAROLINA Natural Heritage Program SCIENCE GUIDING CONSERVATION'. Below the image is the 'Mission' statement: 'To provide science and Incentives to inform conservation decisions and support conservation of significant natural areas in our state.' This is followed by a paragraph: 'The North Carolina Natural Heritage Program is part of the Office of Conservation, Planning, and Community Affairs within the N.C. Department of Environment and Natural Resources. The program serves as an information clearinghouse in support of conservation of the rarest and most outstanding elements of natural diversity in the state. These elements of natural diversity include plants and animals which are so rare or the natural communities which are so significant that they merit special consideration as land-use decisions are made.' Below this is a 'Learn More...' link. On the right side, there is a 'Data Services' section with links: 'Our Map Viewer provides information on Natural Heritage Program data within 2 miles of user-selected locations.', 'Our Database Search summarizes Natural Heritage Program data by county, topo map, or statewide.', and 'Have GIS? Download Natural Heritage Program shapefiles.'. Below this is a 'Contribute Data' section with links: 'Publications' and 'Legislation'. At the bottom right is an image of a person in a hat and backpack examining a plant in a field. At the bottom of the page is the 'NORTH CAROLINA Natural Heritage Program SCIENCE GUIDING CONSERVATION' logo and the text: 'North Carolina Natural Heritage Program • 1601 Mail Service Center • Raleigh, NC 27699-1601'.

What we covered today



- **Part 1: Why map our land? Understanding the need for good accurate maps.**
 - What exactly is a map?
 - What are the important elements to a good map?
 - How can good maps assist in fulfilling management goals?
 - How can ATFS standards be met using maps?

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 - Finding your property
 - Creating points, lines, and areas depicting your management objectives
 - Editing and saving your map

- **Part 3: Important mapping tools – other resources**
 - County mapping office
 - NRCS Web Soil Survey
 - USFS Forest*A*Syst
 - NatureServe and/or State Natural Heritage Program

Mapping My Land:

applications, tips, and tricks for landowners that make mapping easy

Topic 2 of 4: My Land Plan Project - completes a mapping project from data assembly, identification of key mapping elements that illustrate planning objectives, and clipping final map creation for your management plan

Topic 3 of 4: Data Sources for My Land Plan – details of online data resources: County GIS, Web Soil Survey, Natural Heritage. How you can extract the information most important to your management.

Topic 4 of 4: Leveraging the power of Google Earth – Not only a great application for exploring the world, Google Earth can be powerful tool in mapping your land. This topic will cover the basic elements of Google Earth, how to create and store new project data, and how to share your data with others. A must for the landowner wanting to get the most out of mapping your land.

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