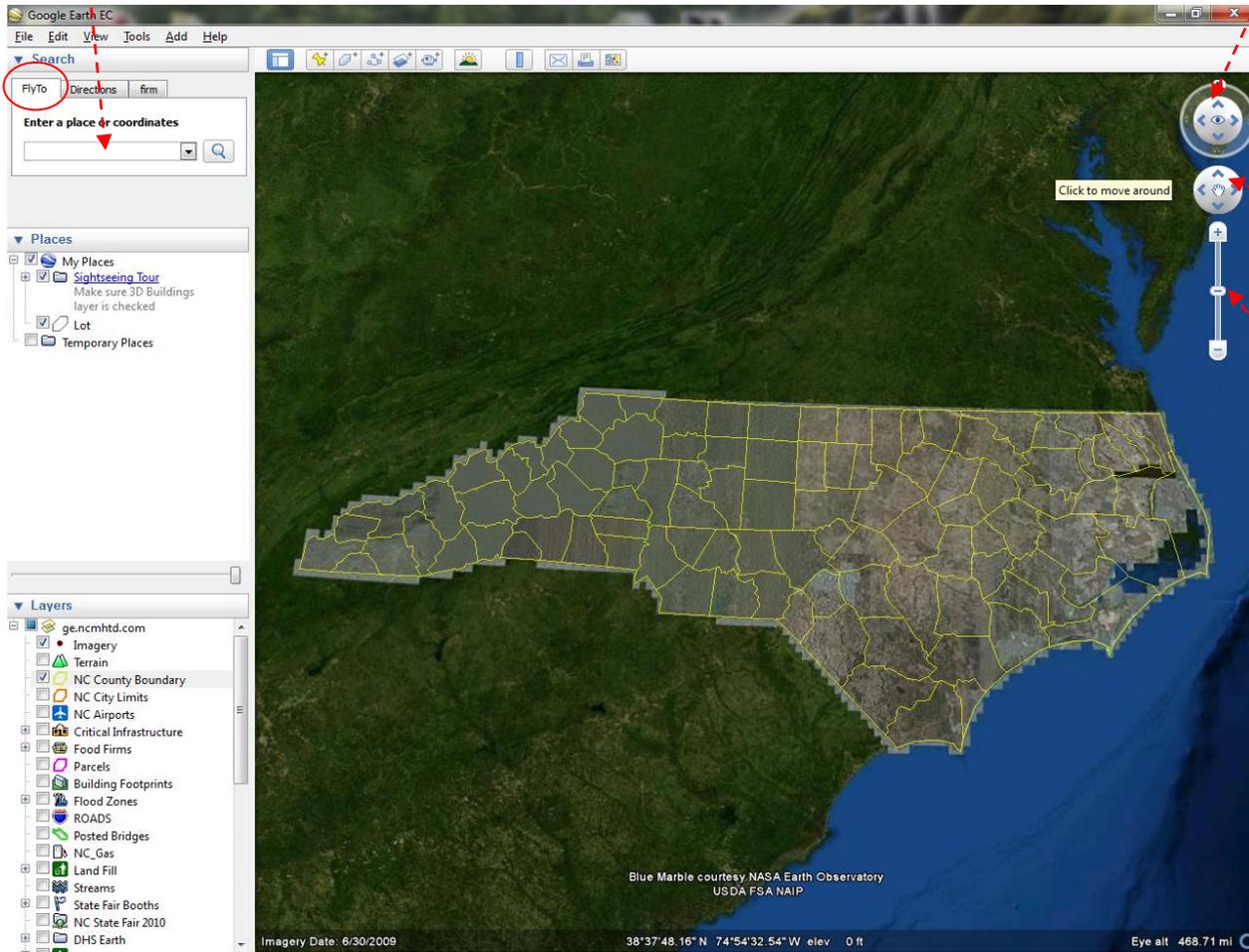


Google EC Tool: Basic User Instructions for Conservation Planners

Prepared for participants of the Google EC Training Session
Conservation Employee Training
Monday September 30th, 2013

Navigation

Navigate to a location by entering an address or entering coordinates in the Search box on the 'Fly To' tab.



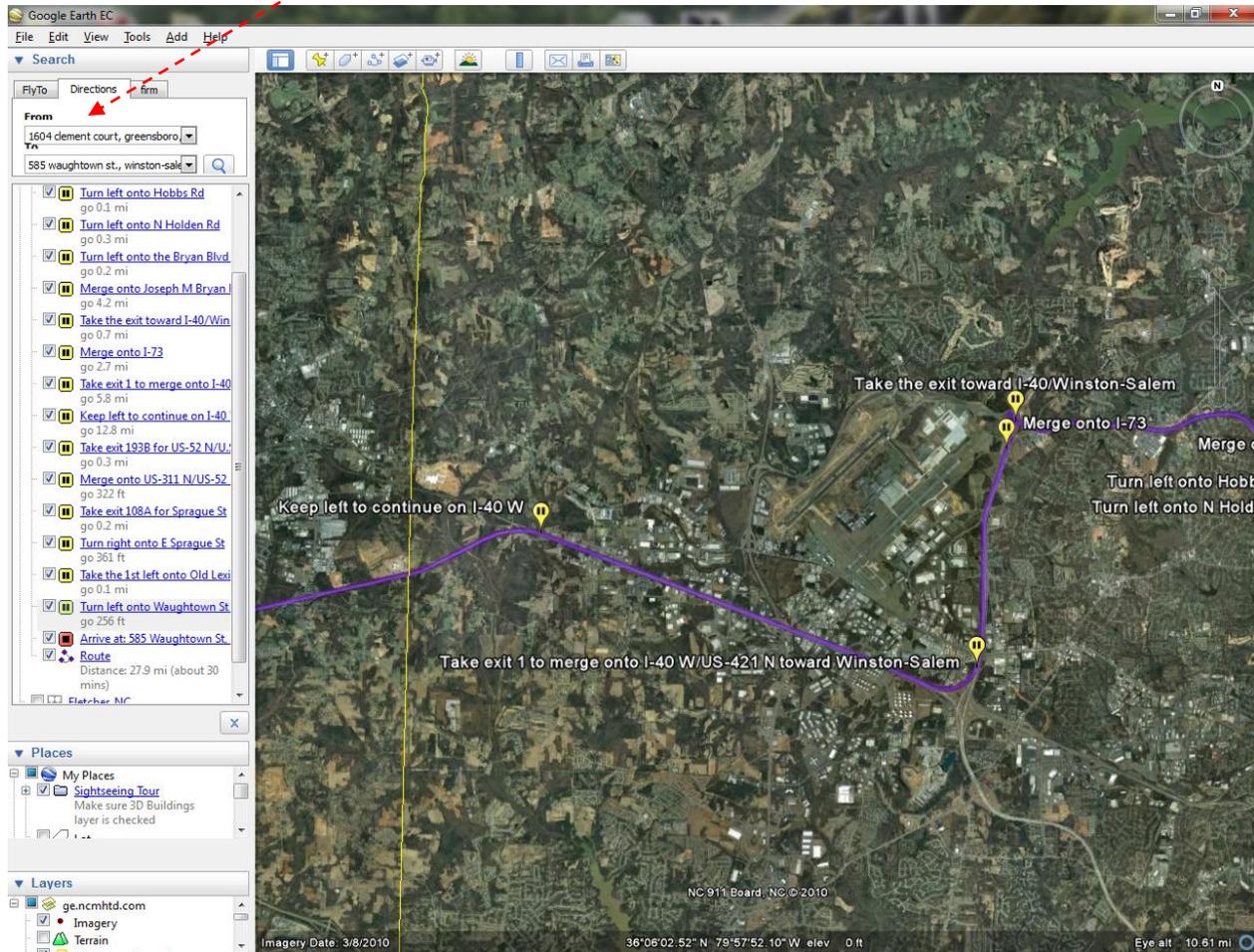
Click and drag to rotate view, or click 'N' to reset North. Also, use the up or down arrows to adjust the angle of the overhead view.

Use the panning tool to move around in the direction of the arrows .

Drag the slider or click the buttons to zoom in or out

Turn-by-turn directions:

Obtain turn-by-turn directions from Point A to Point B using the 'From' and 'To' search boxes on the Directions Tab.

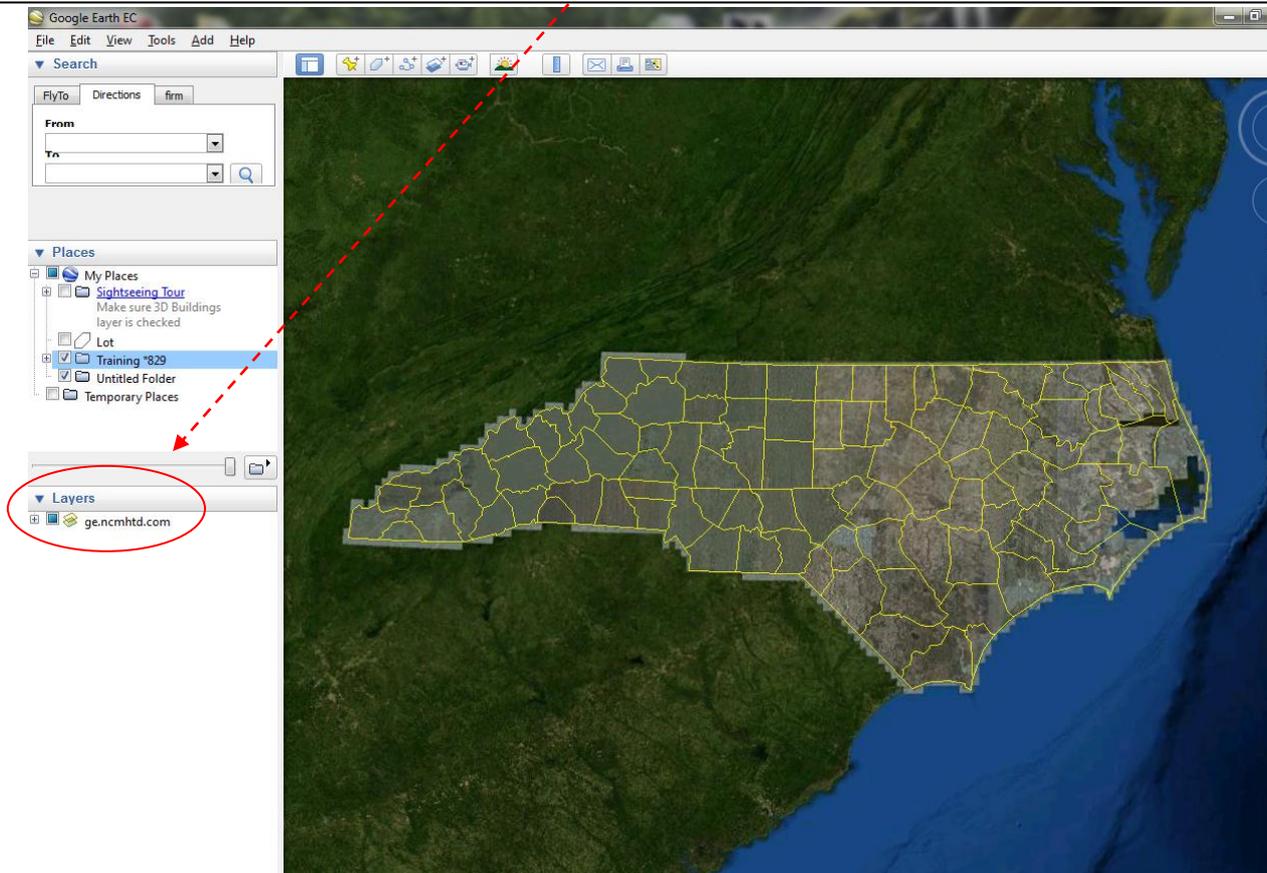


Managing Layers:

The layers you select control what information is visible on the map.

Layer data comes from a Server Connection called 'ge.ncmhtd.com' that is maintained by the NCDA&CS Emergency Programs Division. You will have selected this Server during initial set-up of Google EC on your computer.

For more information visit: http://www.ncmhtd.com/ge_wms.aspx

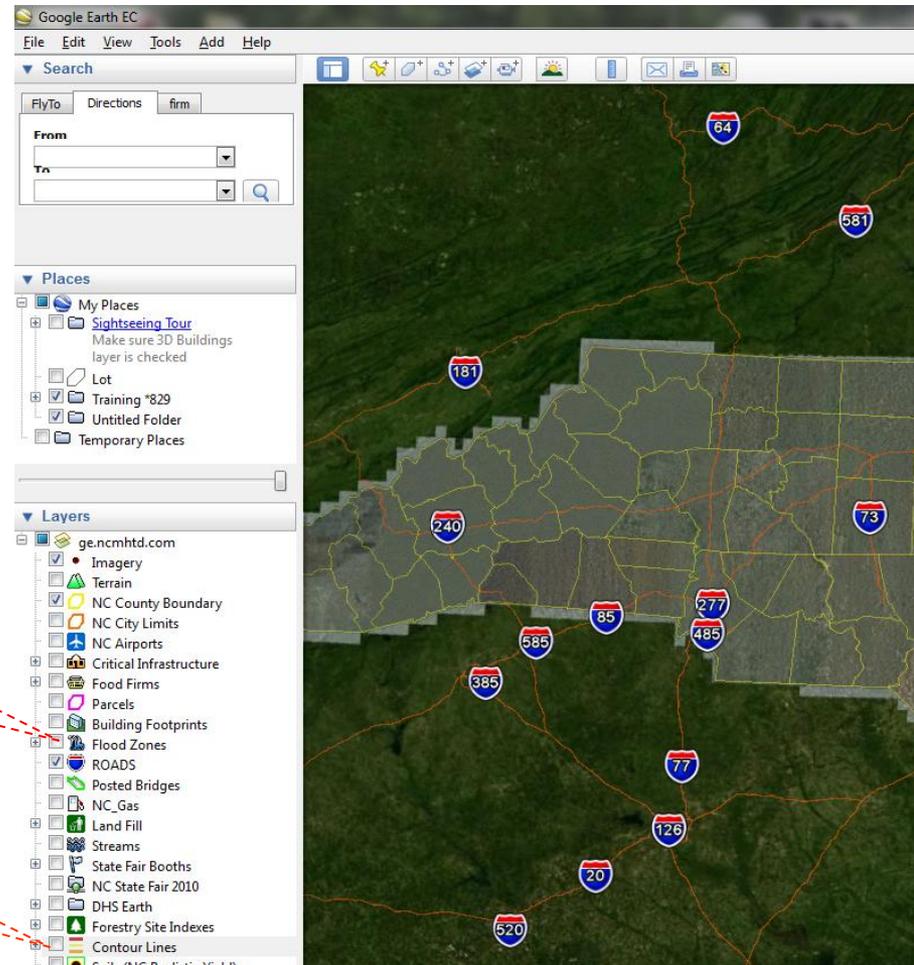
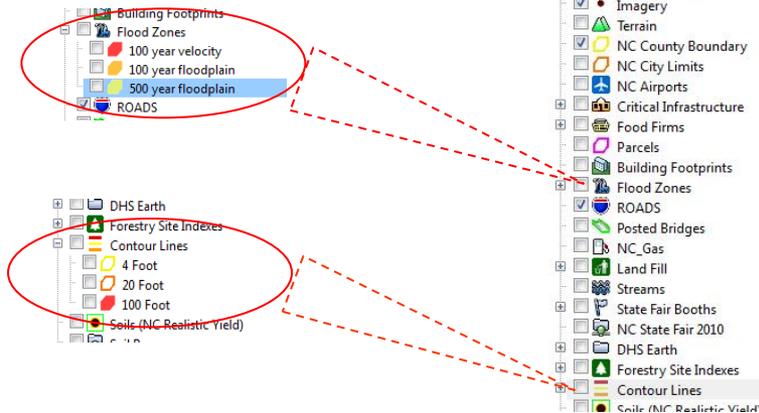


Managing Layers:

A '+' in the tree to the left of any layer indicates that there is further information associated with it.

Many of these layers are expandable. For example, clicking on the '+' next to the layer 'Flood Zones' expands three options: 100 year velocity, 100 year floodplain, and 500 year floodplain.

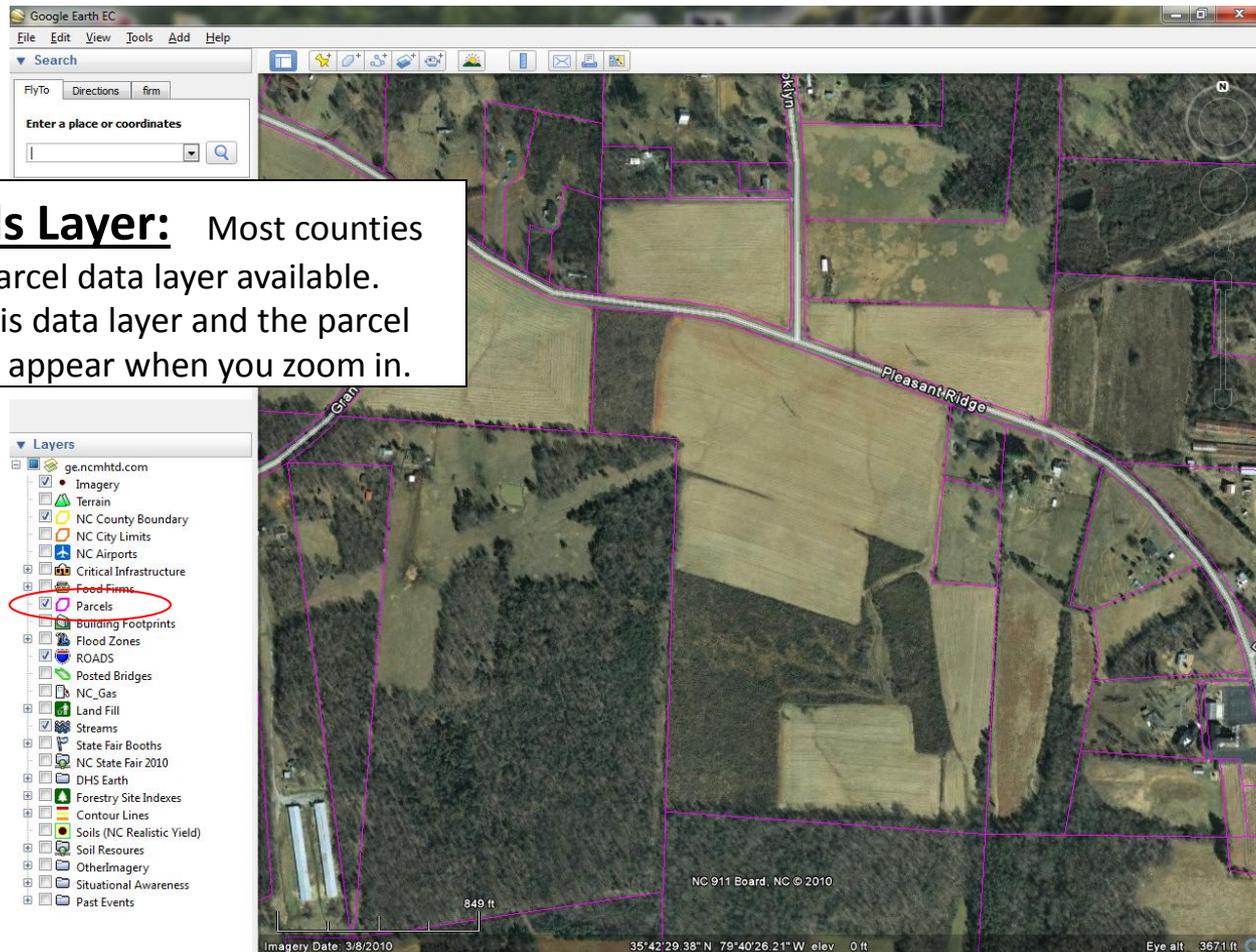
Also, clicking the box next to 'Contour Lines' gives the option to select 4 ft., 20 ft. or 100 ft. contours. *More than one option can be selected at the same time.*



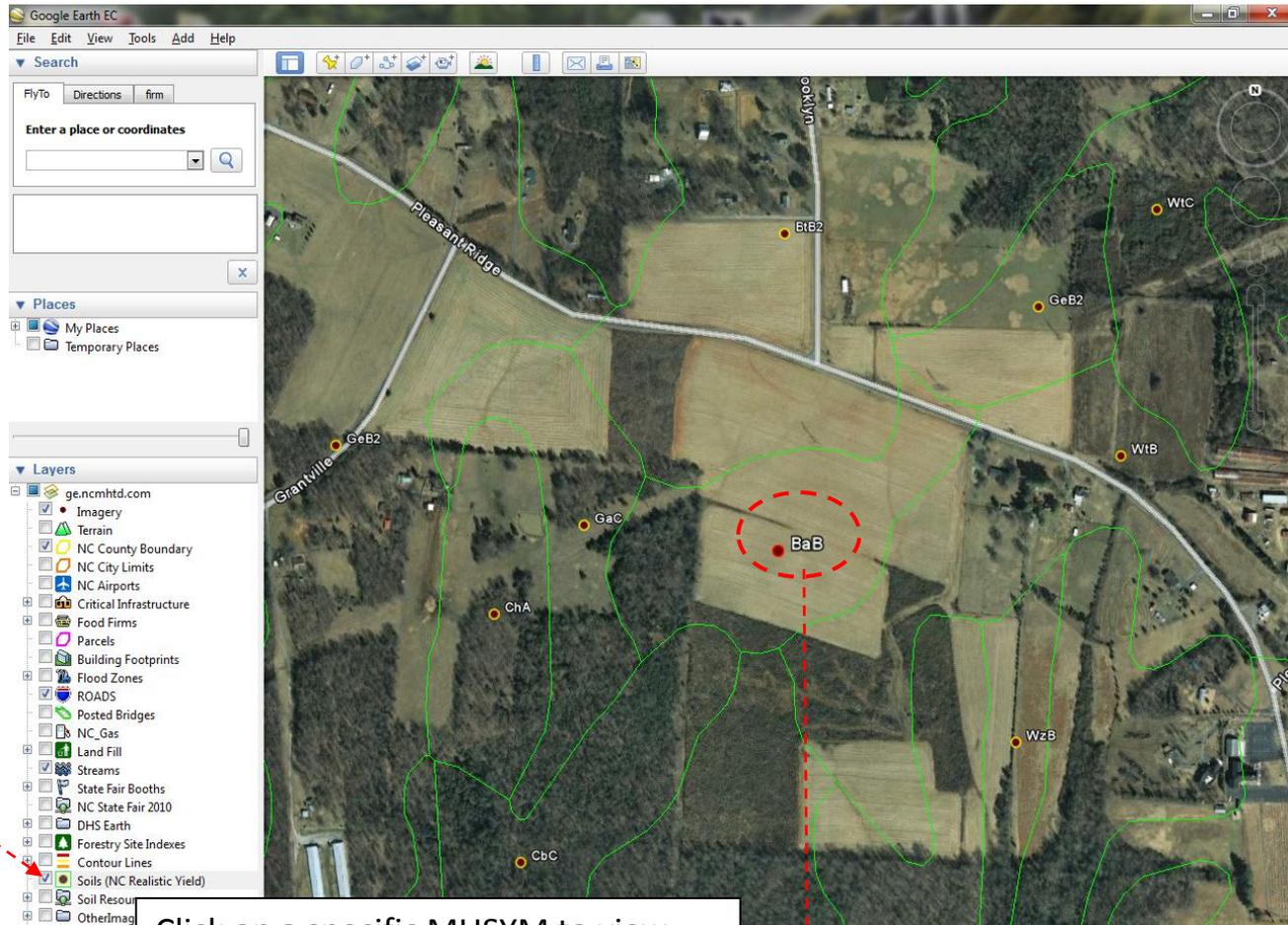
Base layers typically include: Imagery, County Boundaries, Roads and Streams.

Once you have located the area of interest turn on or off specific layers to access the type of information you need. Click the box next to any layer to display that information on the map. *Note: many of the layer features are not visible until you reach a certain zoom level.*

Parcels Layer: Most counties have a parcel data layer available. Check this data layer and the parcel lines will appear when you zoom in.



Soils Layers: Choose the layer 'Soils (NC Realistic Yield)' to view a soils map with soils polygons and Map Unit Symbols (MUSYM).



Click on a specific MUSYM to view the Realistic Yields of common crops.

Realistic Yield Expectations will appear in a pop-up window for the specific MUSYM that was selected (data source: <http://nutrients.soil.ncsu.edu/yields/index.php>).

Google Earth EC

File Edit View Tools Add Help

Search

FlyTo Directions firm

Enter a place or coordinates

Places

My Places Temporary Places

Layers

- gencmhtd.com
- Imagery
- Terrain
- NC County Boundary
- NC City Limits
- NC Airports
- Critical Infrastructure
- Food Firms
- Parcels
- Building Footprints
- Flood Zones
- ROADS
- Posted Bridges
- NC_Gas
- Land Fill
- Streams
- State Fair Booths
- NC State Fair 2010
- DHS Earth
- Forestry Site Indexes
- Contour Lines
- Soils (NC Realistic Yield)
- Soil Resoures
- OtherImagery
- Situational Awareness
- Past Events

musym: BaB
 mukey: 117424
[View NC Yield in Browser](#)
[Query other soils in NC Realistic Yieild Expectation Model](#)
[Explanation](#)

Realistic Yields for BaB: *Badin-Tarrus complex, 2 to 8 percent slopes* in Randolph County

Crop	Yield	Nitrogen Factor	Realistic Nitrogen Rate (lbs/acre)	Estimated Phosphorus Removal (lbs P ₂ O ₅ /acre)
Barley (Grain)	70 Bushels	1.47	103	27
Corn (Grain)	114 Bushels	1.08	123	50
Corn (Silage)	20.9 Tons	10.7	224	71
Cotton	654 Pounds	0.073	48	20
Sorghum (Silage)	17.8 Tons	7.5	134	53
Oats (Grain)	89 Bushels	1.1	98	22
Peanuts	0 Pounds	0	0	0
Rye (Grain)	52 Bushels	1.93	101	17
Small Grain (Silage)	9.5 Tons	10.8	103	51
Sorghum (Grain)	52 CWT	1.67	87	39
Soybeans (Double Cropped)	36 Bushels	0	0	29
Soybeans (Full Season)	43 Bushels	0	0	34
Soybeans (Double Cropped - Manured)	36 Bushels	3.87	140	29
Soybeans (Full Season - Manured)	43 Bushels	3.87	165	34
Tobacco (Burley)	0 Pounds	0.073	0	0

Imagery Date: 3/8/2010

35°42'20.55" N 76°40'20.22" W elev 0 ft

Eye alt 3757 ft

Soils layers: Under 'Layers', choose the other soils layer called 'Soil Resources'. Click on the MUSYM in a soils polygon to view a simple description of the soil and its components.

The screenshot shows a GIS application with a map of agricultural fields. A red dashed circle highlights a soil polygon labeled 'GeB2'. A red dashed arrow points from this circle to a pop-up window. Another red dashed arrow points from the 'Soil Resources' layer in the 'Layers' panel to the same pop-up window. The pop-up window displays a soil profile diagram for 'Georgeville silty clay loam, 2 to 8 percent slopes, moderately eroded' with various horizons and depths.

Georgeville silty clay loam, 2 to 8 percent slopes, moderately eroded

Components within map unit 117443

Georgeville (94%)

Typic Kanhapludults

0cm
A
10cm
E
BH
15cm
Btd
25cm
71cm
Btd
104cm
Btd
135cm
BC
160cm

Interfluvies / Summit

Block Diagrams: [Go NCS Job Aids](#)
note that these diagrams may be from multiple survey areas

1: [SC-2012-03-14-34](#)

Click on the hyper-linked Map Unit Name and brief description to view Map Unit Composition, Map Unit Data and Map Unit Aggregated Data.

Soils: View of Map Unit Composition, Data, Aggregated Data

(source: California Soil Resource Lab http://casoilresource.lawr.ucdavis.edu/soil_web/ssurgo.php).

Map Unit Composition
Map units consist of 1 or more soil types, commonly referred to as "components".

Component Name	Geomorphic Position	Area Fraction	Component Type
Soil Type 1 Georgeville	interfluvies / Summit	90%	Major Soil Type

Note: links to horizon data marked with an * are approximate.

Map Unit Data [What is a Map Unit?](#)
Cartographic information about this map unit.

Map Unit Name: Georgeville silty clay loam, 2 to 8 percent slopes, moderately eroded
Map Unit Type: [Consociation](#)
Map Unit Symbol: GeB2
Map Unit Area: acres (49587ac. total in survey area)
[Raw Map Unit Data](#)
[Raw Component Data \(All Components\)](#)

Map Unit Aggregated Data
Generalized soils information within this map unit.

Farm Land Class: All areas are prime farmland
Available Water Storage (0-100cm): 16 cm
Max Flood Freq: None
Drainage Class (Dominant Condition): [Well drained](#)
Drainage Class (Wettest Component): [Well drained](#)
Hydric Conditions: Not hydric
[Annual] Min. Water Table Depth: n/a
[April-June] Min. Water Table Depth: n/a
Min Bedrock Depth: n/a
[Raw Aggregated Map Unit Data](#)

Associated Point Data
Links to any NSSL point data within this map unit.

Under Map Unit Composition, click on the Component Name to view information on Soil Taxonomy, Land Classification, Soil Suitability Ratings, Hydraulic and Erosion Ratings, Geomorphology and Plants.

Soils: Taxonomy, Land Classification, Suitability Ratings, Hydraulic and Erosion Ratings, Geomorphology, Plants.

California Soil Resource Lab

[Back to Google Earth](#) http://casoilresource.lawr.ucdavis.edu/soil_web/ssurgo.php - SoilWeb

Soil Taxonomy

[ULtools](#)
Order: [Udults](#) [[Map of Suborders](#)]
Greatgroup: [Kanhapludults](#)
Subgroup: [Typic Kanhapludults](#)
Family: [Fine, kaolinitic, thermic Typic Kanhapludults](#)
Soil Series: [Georgeville](#) [[Link to OSD](#)] [[Link to SM Tool](#)]

Data: [[Lab Data](#)] [[Nitrate Groundwater Pollution Hazard Index](#)]
Raw Data [[Component](#)] [[All Horizons](#)]

Land Classification

Series Index	NOT RATED
Land Capability Class [non-irrigated]	2-e
Land Capability Class [irrigated]	-
Ecological Site Description	n/a
Forage Suitability Group	n/a

Soil Suitability Ratings

Waste Related	Engineering
Urban/Recreational	Irrigation
Wildlife	Runoff

Hydraulic and Erosion Ratings

Wind Erodibility Group	7
Wind Erodibility Index	38
T Erosion Factor	5
Runoff	Medium
Drainage	Well drained
Hydric Rating / Hydrologic Group	No [Group B]
Parent Material:	residuum weathered from metavolcanics and/or argillite
Total Plant Available Water (cm):	28.4

Geomorphology

Landscape	uplands
Landform	interfluvies [Summit]

Plants

Symbol	Scientific Name	Common Name	Range Prod.
AREL3	<i>Arrhenatherum elatius</i>	tall oatgrass	
LONIC	<i>Lonicera</i>	honeysuckle	
VITIS	<i>Vitis</i>	grape	
UNKNOWN	unknown scientific name	switchcane	
PANIC	<i>Panicum</i>	panicum	
DESMO	<i>Desmodium</i>	ticktrefoil	
SCSC	<i>Schizachyrium scoparium</i>	little bluestem	
LESPE	<i>Lespedeza</i>	lespedeza	
UNKNOWN	unknown scientific name	unknowns	

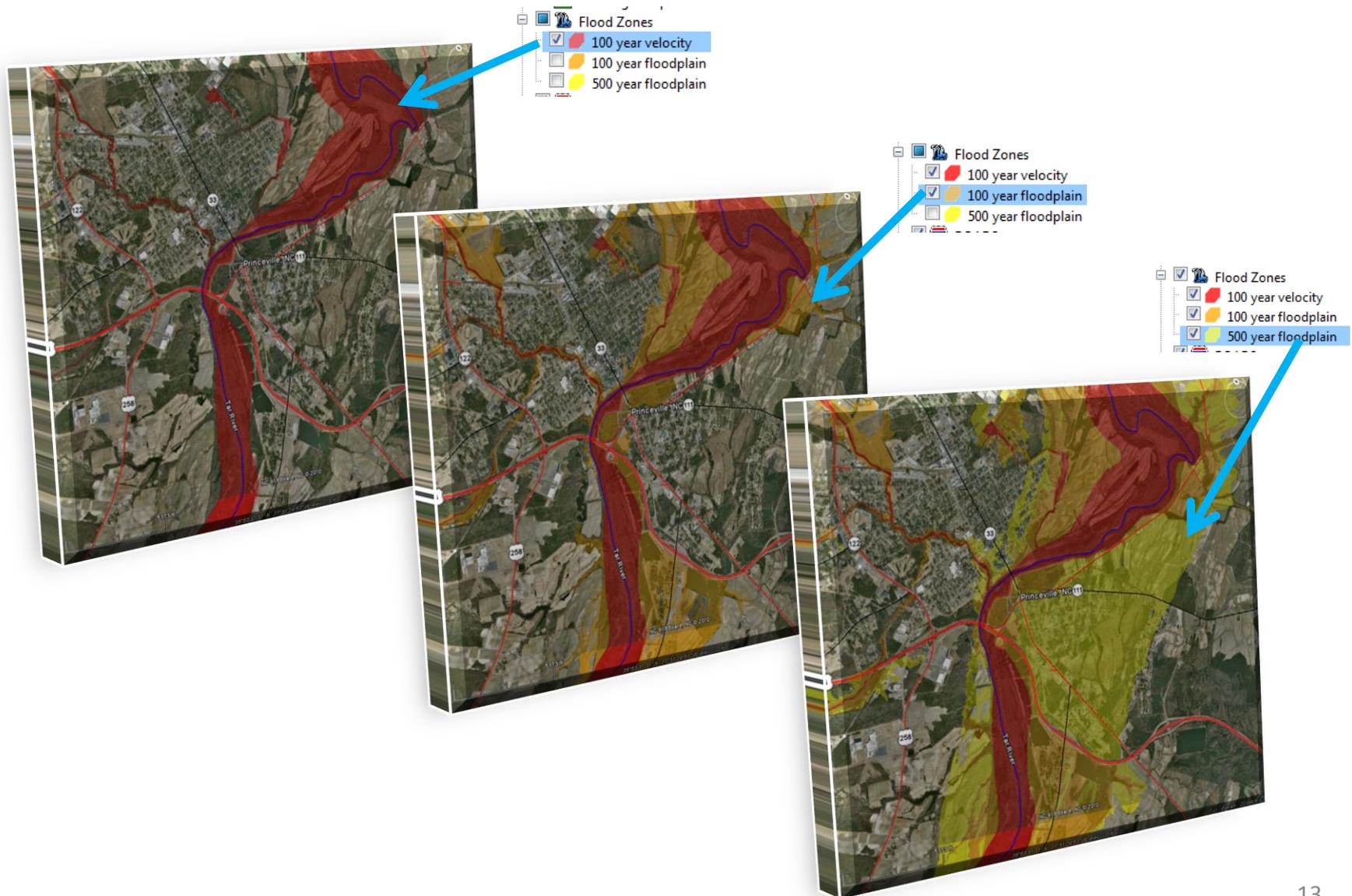
Organic Matter (%) **Percent Clay** **Percent Sand** **K_{sat} (mm/hr)** **pH (1:1 H₂O)** **K_r Factor**

Click on any of the hyper-linked items to link to additional information.

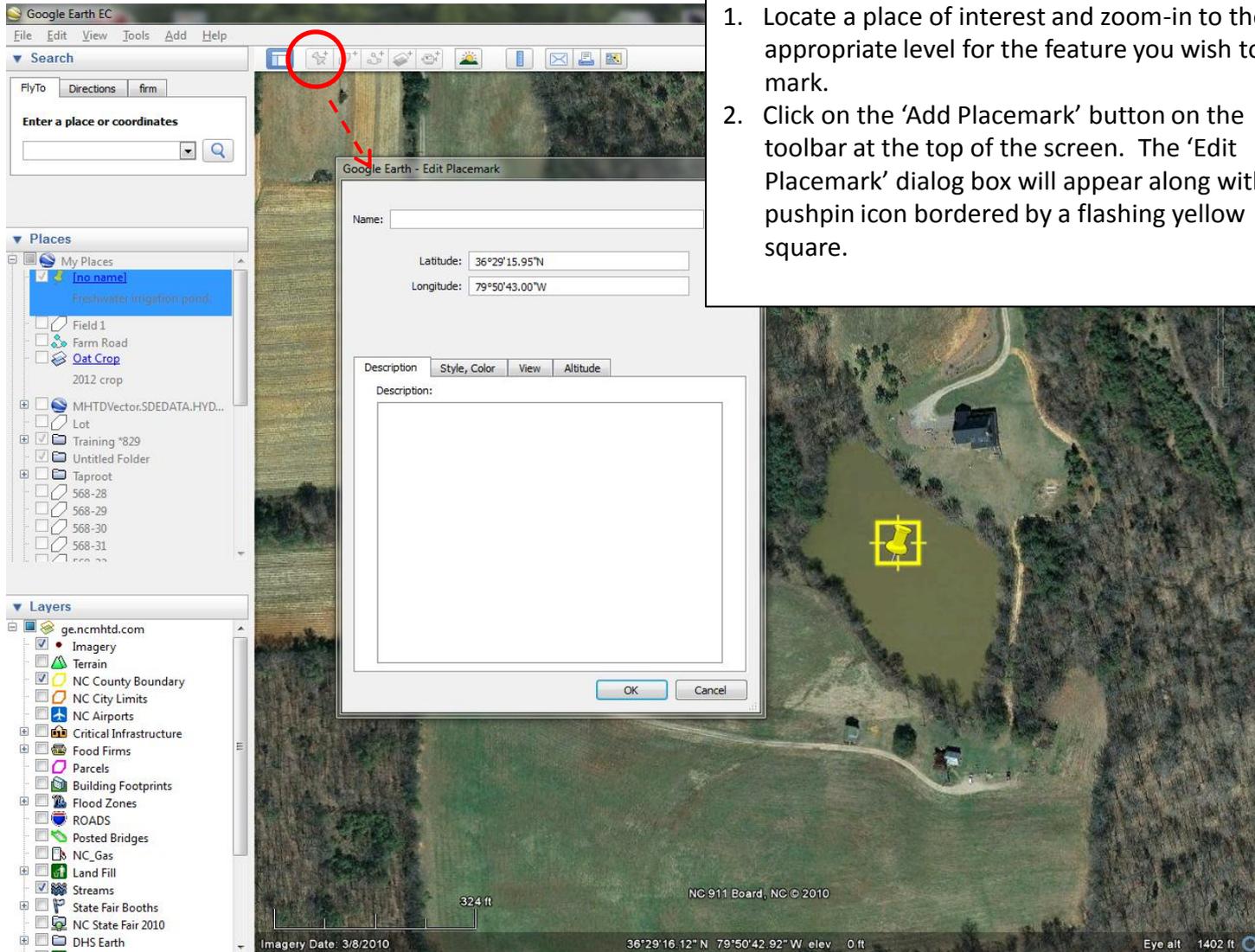
The **Contour Lines** Layer: When you check this layer the 100 ft., 20 ft. and 4 ft. contour lines will appear at different zoom levels.



The **Flood Zones** Layer: When this layer is checked the 100 yr. velocity., 100 yr. floodplain and 500 yr. floodplain zones appear. Check them individually or simultaneously.



Add a Placemark



1. Locate a place of interest and zoom-in to the appropriate level for the feature you wish to mark.
2. Click on the 'Add Placemark' button on the toolbar at the top of the screen. The 'Edit Placemark' dialog box will appear along with a pushpin icon bordered by a flashing yellow square.

Add a Placemark

Google Earth EC

File Edit View Tools Add Help

Search

FlyTo Directions firm

Enter a place or coordinates

Places

- 849-10
- 849-11
- 35' lines 849-11
- 35' lines for 849-
- Temporary Places

Layers

- ge.ncmhtd.com
- Imagery
- Terrain
- NC County Bound
- NC City Limits
- NC Airports
- Critical Inf
- Food Firm
- Parcels
- Building F
- Flood Zon
- ROADS
- Posted Bri
- NC_Gas
- Land Fill
- Streams
- State Fair E
- NC State F
- DHS Earth
- Forestry S
- Contour L
- Soils (NC F
- Soil Resou
- Otherimg

Google Earth - New Placemark

Name: Untitled Placemark

Latitude: 36°29'16.06"N

Longitude: 79°50'44.89"W

Description Style, Color View Altitude

Description:

Click the pin to change the placemark icon.

Untitled Placemark

Color: Scale: 1.1 Opacity: 100%

<http://maps.google.com/maps/files.html#pushpin/vw=pushpin.png>

OK Cancel

3. Position the push-pin icon (inside the flashing yellow square) over the feature.
4. In the New Placemark dialog box enter a name.
5. Add an (optional) description.
6. Optionally, change the icon, style, color, view or altitude using the appropriate tab.
7. Click 'OK' to save.

Add a Placemark

Be sure to save to My Places if you would like to save this placemark for future sessions.

To edit the placemark after it is saved simply right-click and choose 'properties'.

Google Earth EC
File Edit View Tools Add Help

Search
FlyTo Directions firm
Enter a place or coordinates

Places
My Places
Buck's Pond
Freshwater irrigation pond...

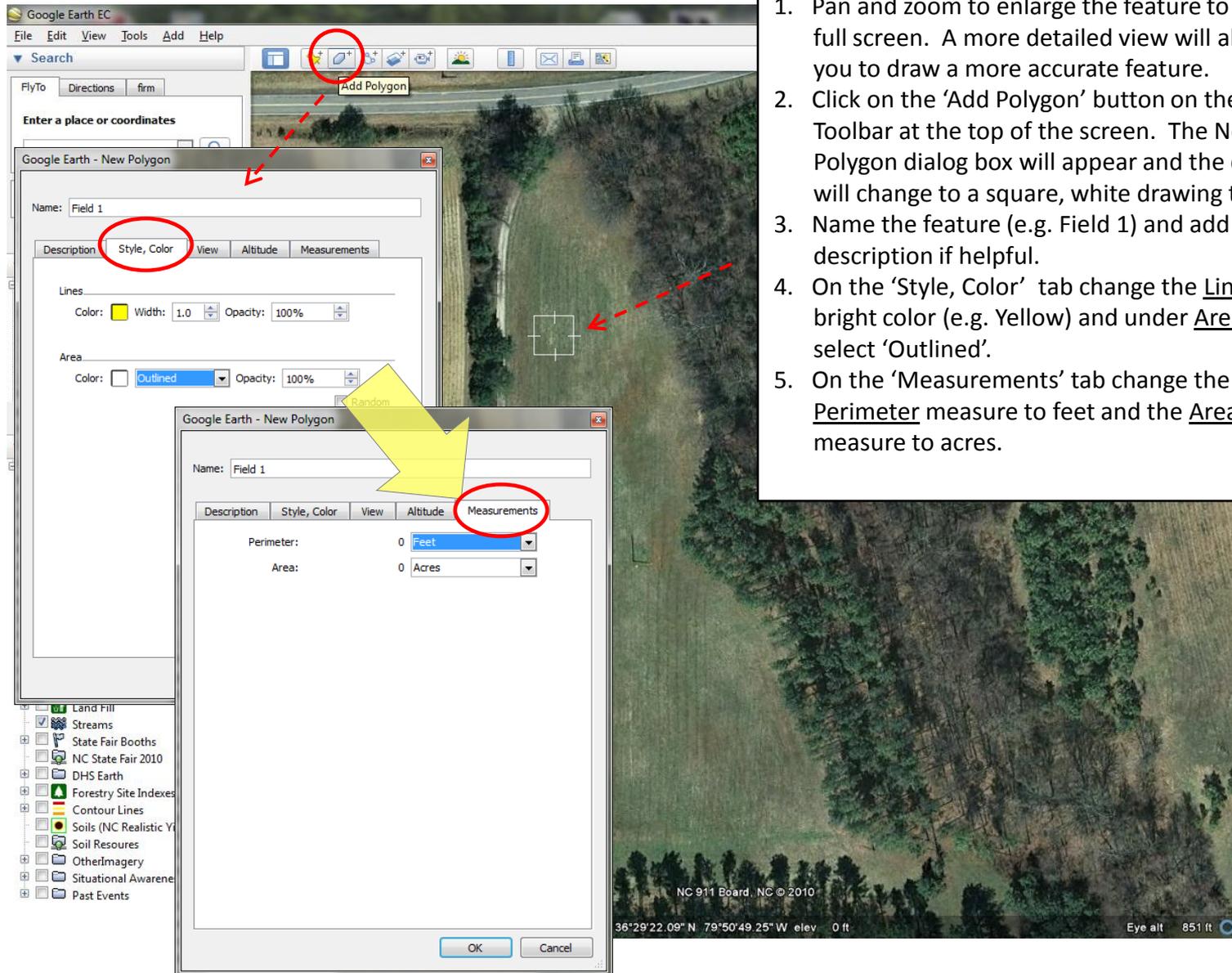
Layers
ge.ncmhtd.com
Imagery
Terrain
NC County Boundary
NC City Limits
NC Airports
Critical Infrastructure
Food Farms
Parcels
Building Footprints
Flood Zones
ROADS
Posted Bridges
NC_Gas
Land Fill
Streams
State Fair Booths
NC State Fair 2010
DHS Earth
Forestry Site Indexes
Contour Lines
Soils (NC Realistic Yield)
Soil Resources
Other Imagery
Situational Awareness
Past Events

Buck's Pond

Cut
Copy
Delete
Rename
Save Place As...
Share / Post...
Email...
Directions from here
Directions to here
Snapshot View
Properties

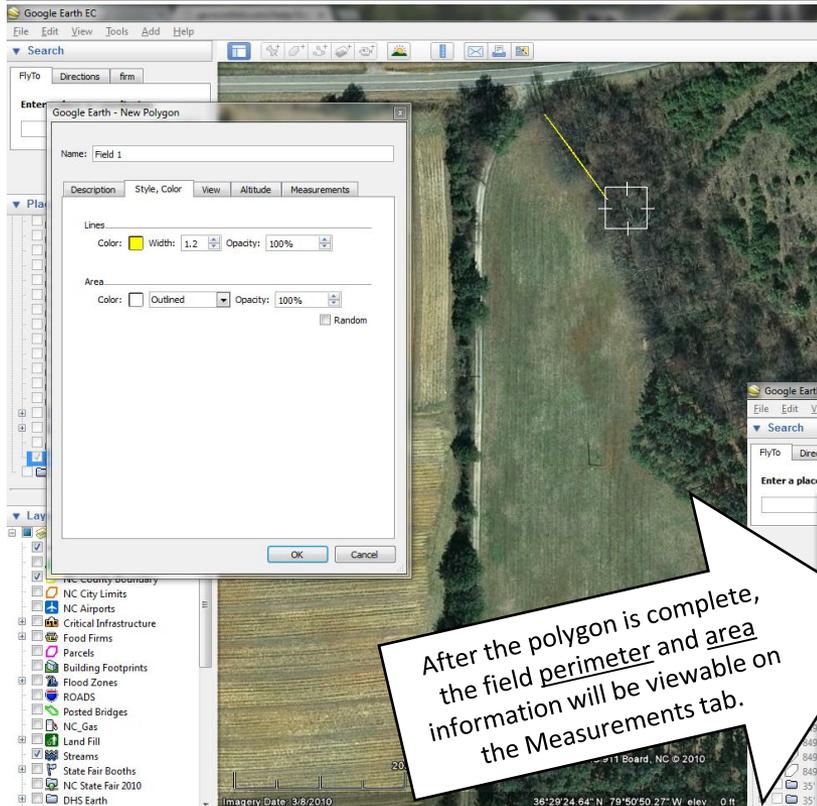
Imagery Date: 3/8/2010
334 ft
NC 911 Board, NC 02
36°29'16.05" N 79°50'44.89" W elev. 0 ft
Eye alt: 1446 ft

Add a Polygon



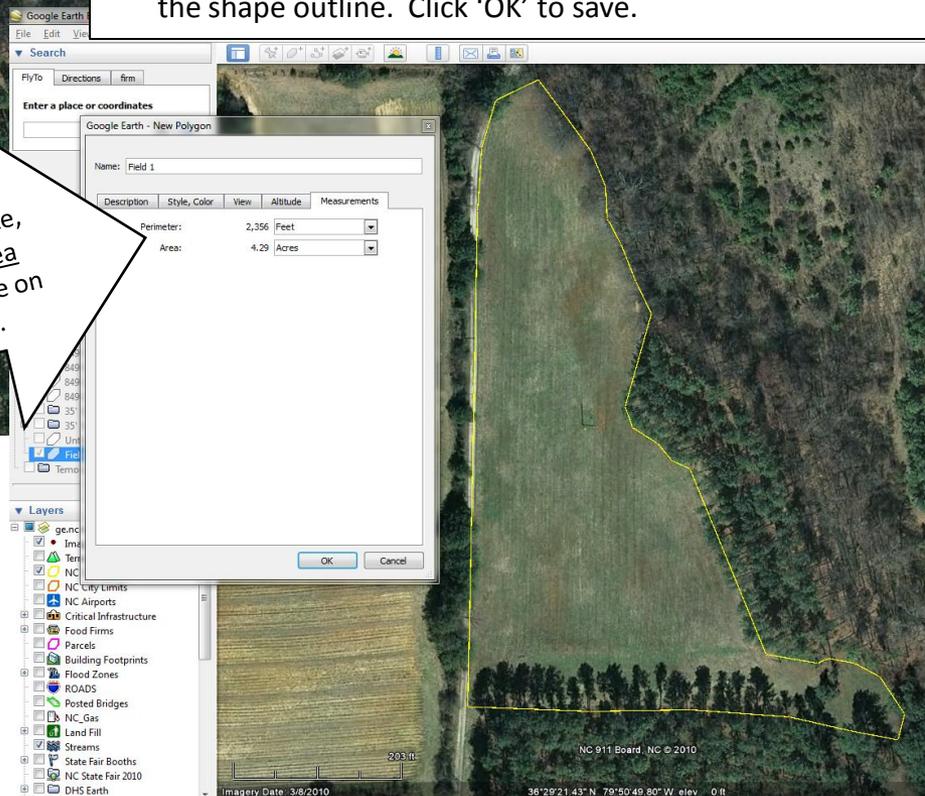
1. Pan and zoom to enlarge the feature to the full screen. A more detailed view will allow you to draw a more accurate feature.
2. Click on the 'Add Polygon' button on the Toolbar at the top of the screen. The New Polygon dialog box will appear and the cursor will change to a square, white drawing tool.
3. Name the feature (e.g. Field 1) and add a description if helpful.
4. On the 'Style, Color' tab change the Lines to a bright color (e.g. Yellow) and under Area select 'Outlined'.
5. On the 'Measurements' tab change the Perimeter measure to feet and the Area measure to acres.

Add a Polygon – e.g. Farm Field

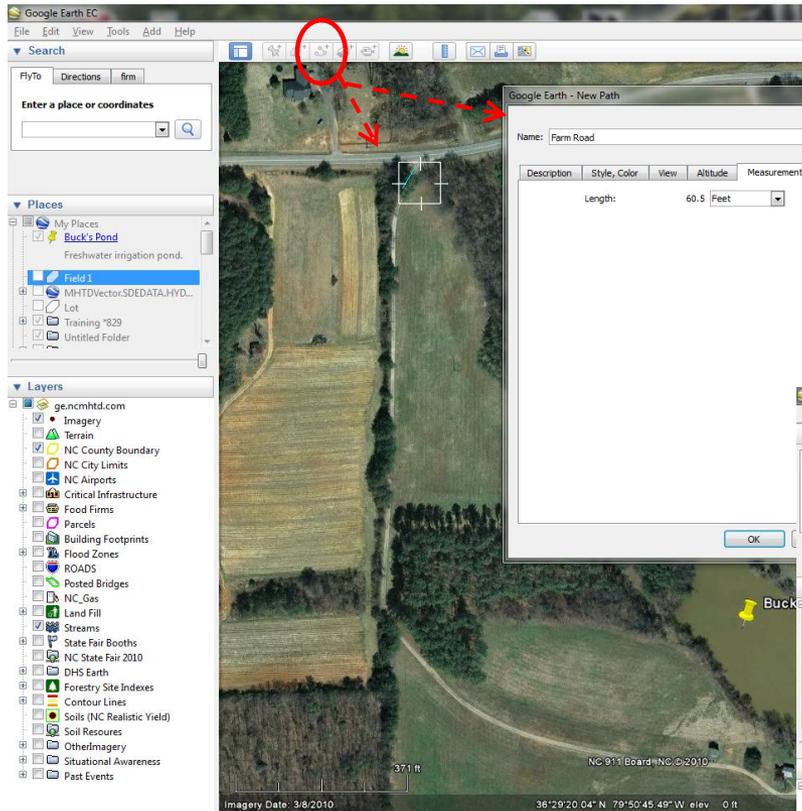


7. With the New Polygon dialog box still open, click on a starting point, move the mouse to a new point along the feature and click. Repeat. A line will connect the two most recent points each time the left mouse button is clicked.
8. Continue adding points, following the shape of the field. *Note: use the Pan tool or keyboard arrows to move the field of view while drawing a feature.*
9. To complete the polygon double-click on the last point of the shape outline. Click 'OK' to save.

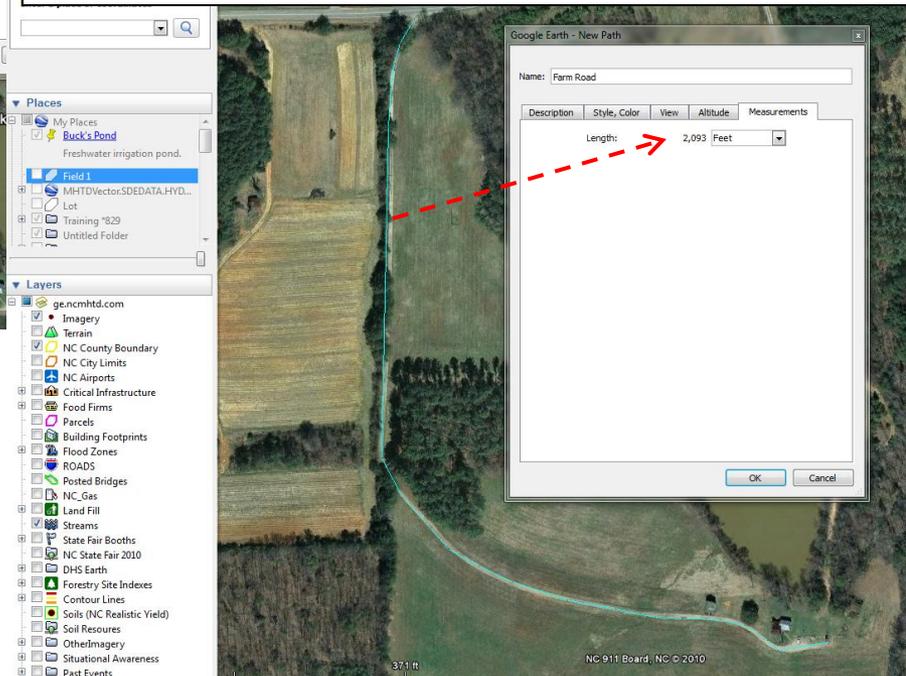
After the polygon is complete, the field perimeter and area information will be viewable on the Measurements tab.



Add a Path

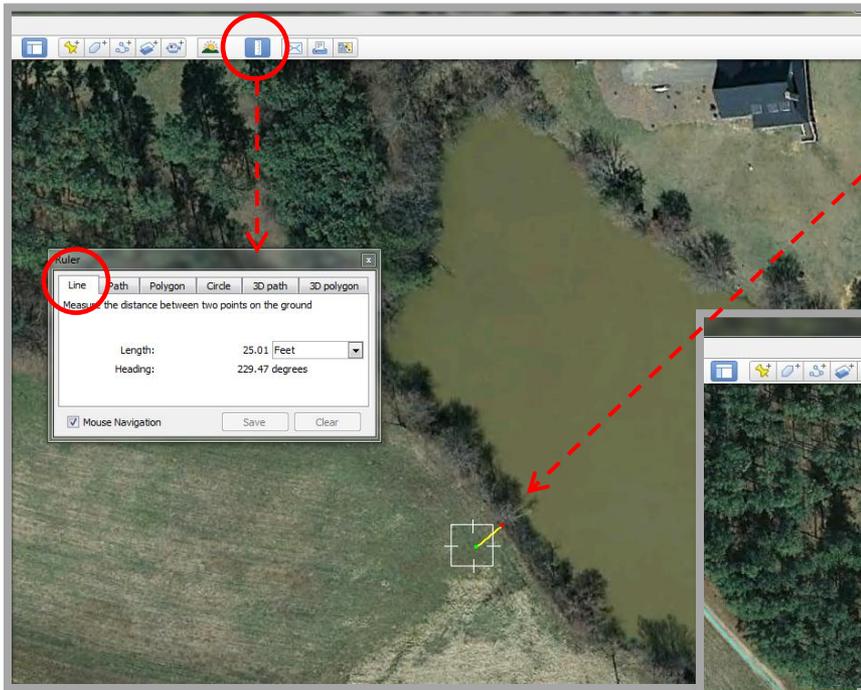


1. Pan and zoom to enlarge the feature to the full screen. A more detailed view will allow you to draw a more accurate feature.
2. Click on the 'Add Path' button on the Toolbar at the top of the screen. The 'New Path' dialog box will appear and the cursor will change to a square, white drawing tool.
3. Name the Path, add an optional description and adjust style, color, and measurement units settings if necessary.
4. To draw a path: click on a starting point, move the mouse to a new point along the feature and click. Repeat. A line will connect the two most recent points each time the left mouse button is clicked.
5. Continue adding points, following the shape of the path. *Note: use the Pan tool or keyboard arrows to move the field of view while drawing a feature.*
6. When path is complete you can view the path length under the 'Measurements' tab. Click 'OK' to save.

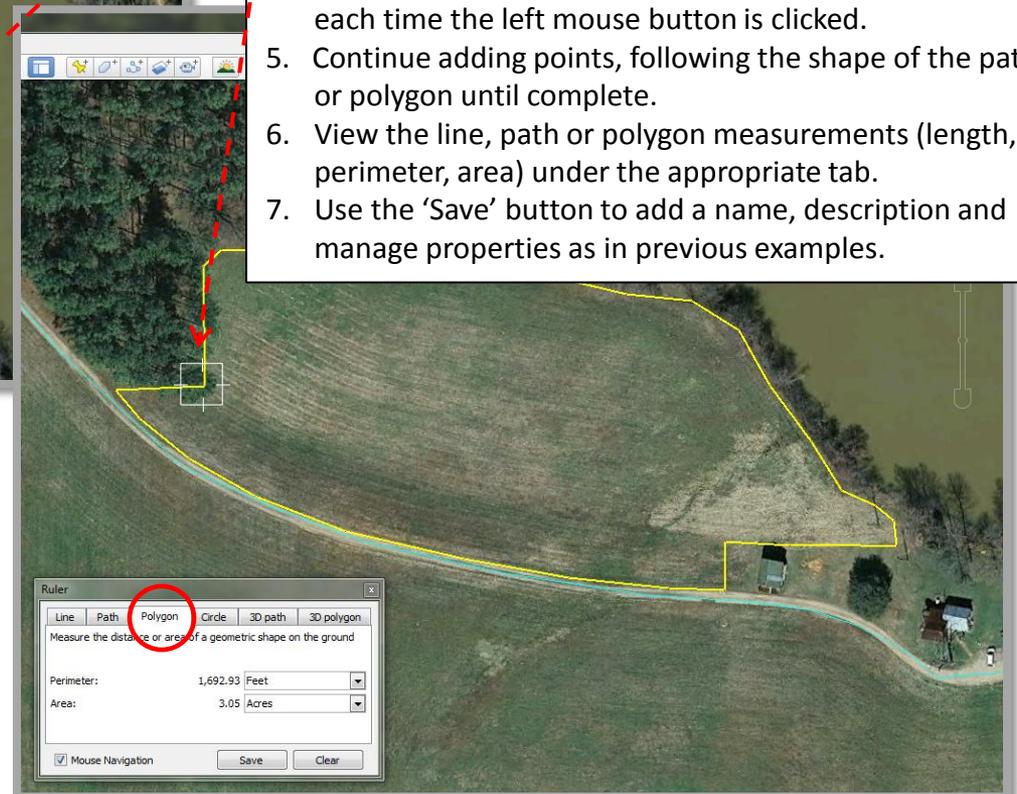


Measure Distance and Area

Measure a line, path, or polygon.

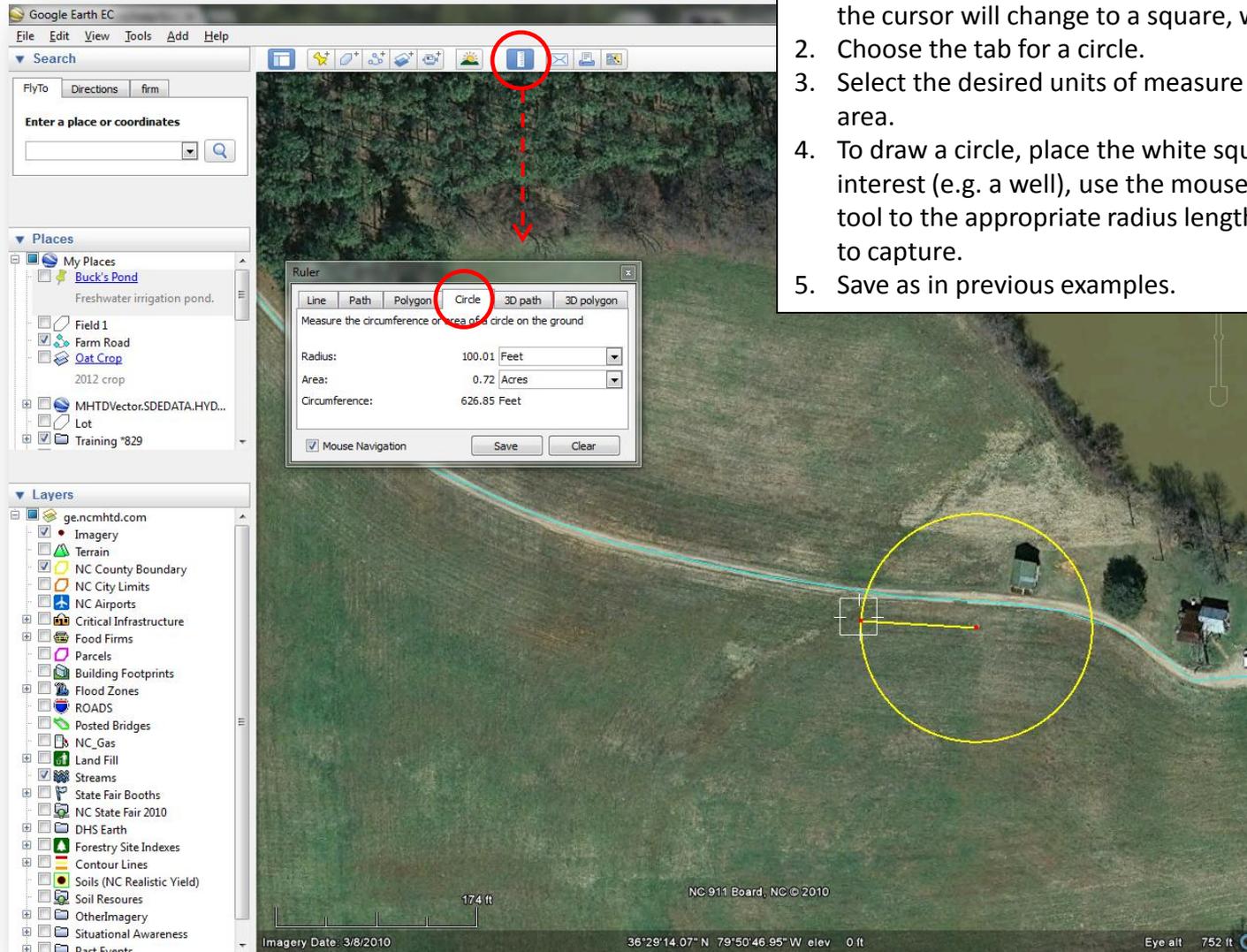


1. Click on the 'Show Ruler' button on the Toolbar at the top of the screen. The 'Ruler' dialog box will appear and the cursor will change to a square, white drawing tool.
2. Choose the appropriate tab for either a line, path or polygon.
3. To draw a line simply left-click once on a start point, elongate the yellow line to the end point, and left-click once more.
4. To draw a path or polygon click on a starting point, move the mouse to a new point along the feature and click. Repeat. A line will connect the two most recent points each time the left mouse button is clicked.
5. Continue adding points, following the shape of the path or polygon until complete.
6. View the line, path or polygon measurements (length, perimeter, area) under the appropriate tab.
7. Use the 'Save' button to add a name, description and manage properties as in previous examples.



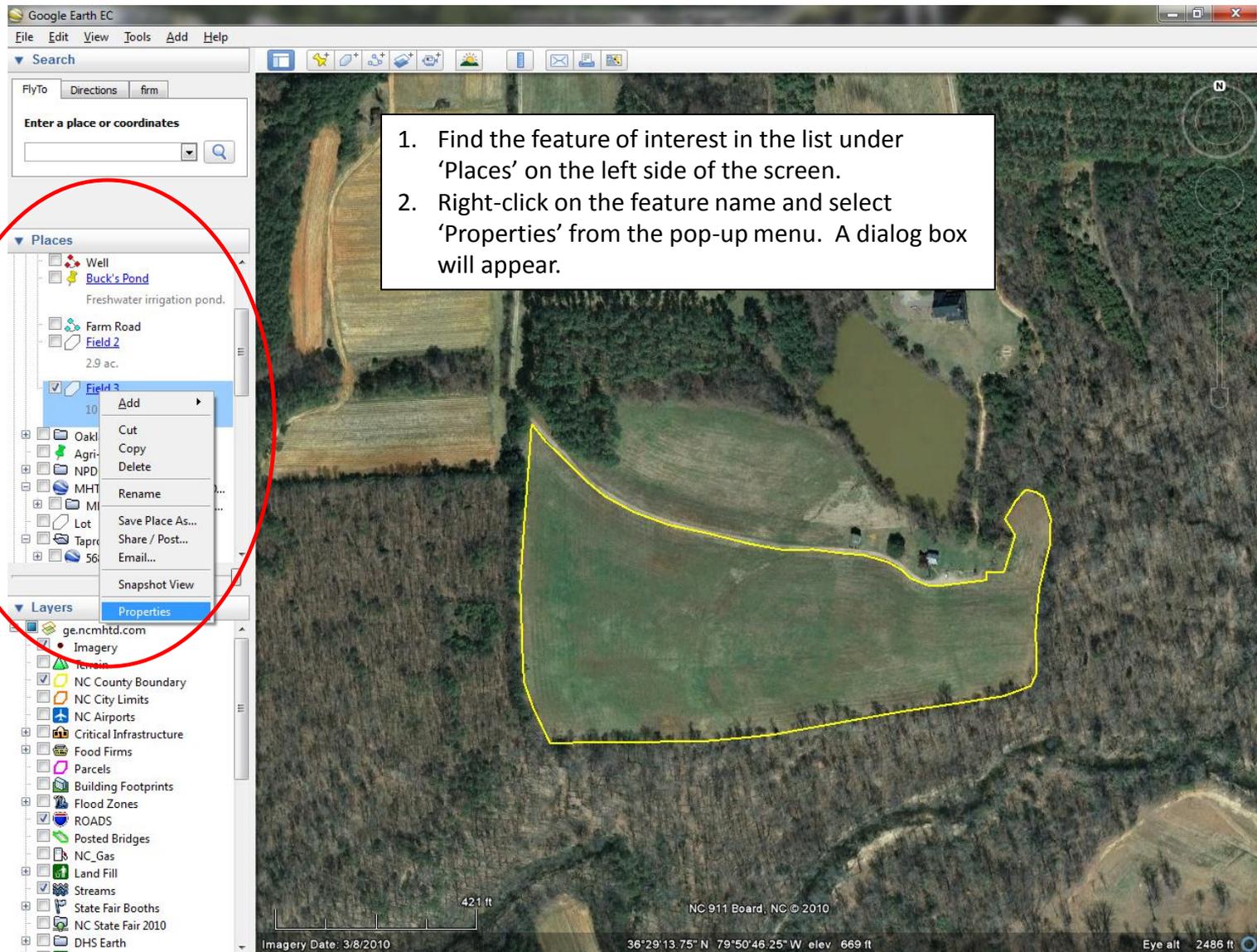
Measure Distance and Area

Measure a circle radius.



1. Click on the 'Show Ruler' button on the Toolbar at the top of the screen. The 'Ruler' dialog box will appear and the cursor will change to a square, white drawing tool.
2. Choose the tab for a circle.
3. Select the desired units of measure for the radius and area.
4. To draw a circle, place the white square on the feature of interest (e.g. a well), use the mouse to move the drawing tool to the appropriate radius length, and then left-click to capture.
5. Save as in previous examples.

Edit a Feature



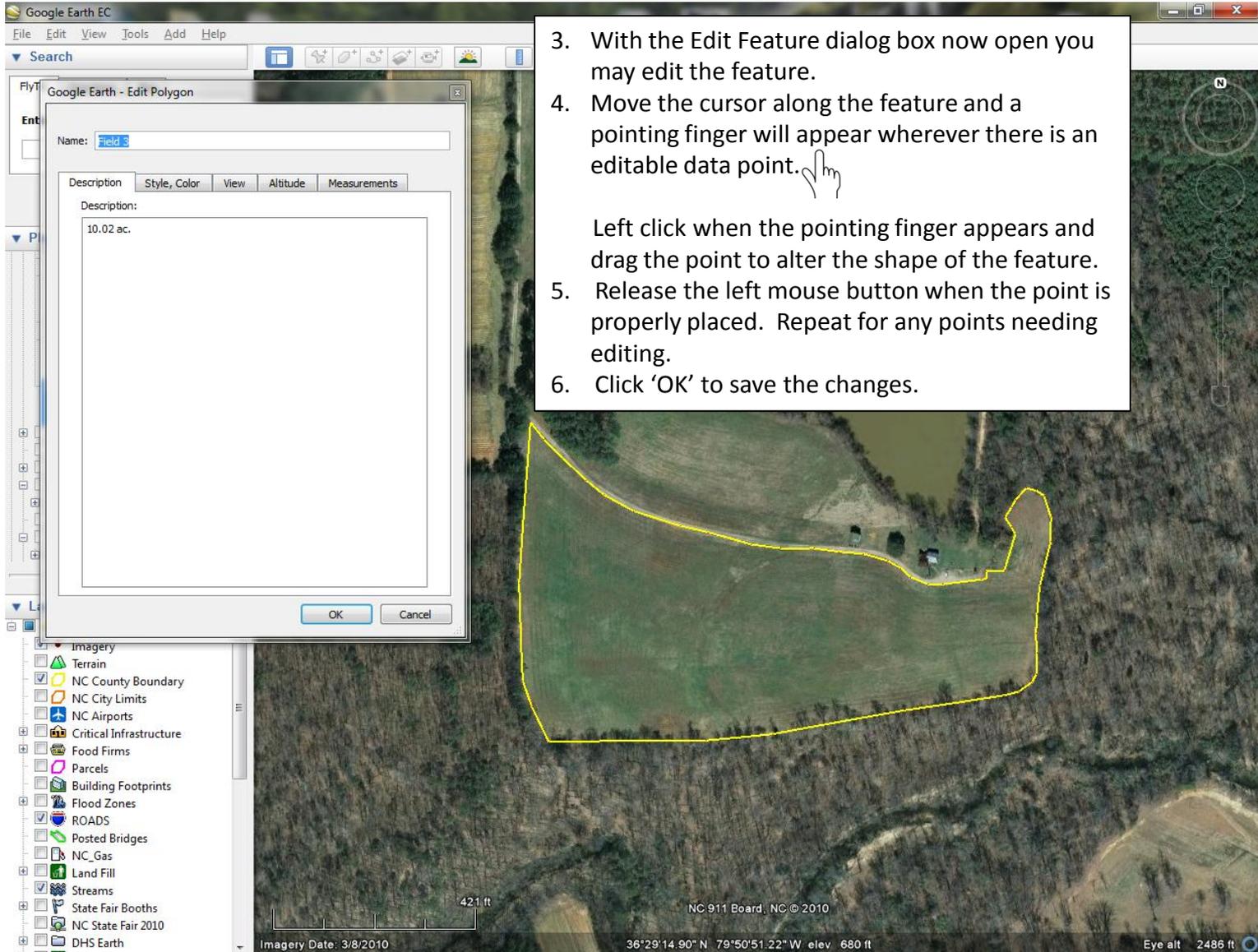
The screenshot shows the Google Earth EC interface. The 'Places' list on the left is circled in red. A context menu is open over 'Field 3', with 'Properties' selected. The main map shows a yellow-outlined field. A text box with instructions is overlaid on the map.

1. Find the feature of interest in the list under 'Places' on the left side of the screen.

2. Right-click on the feature name and select 'Properties' from the pop-up menu. A dialog box will appear.

Imagery Date: 3/8/2010
421 ft
NC 911 Board, NC © 2010
36°29'13.75" N 79°50'46.25" W elev 669 ft
Eye alt 2486 ft

Edit a Feature – Line, Path or Polygon

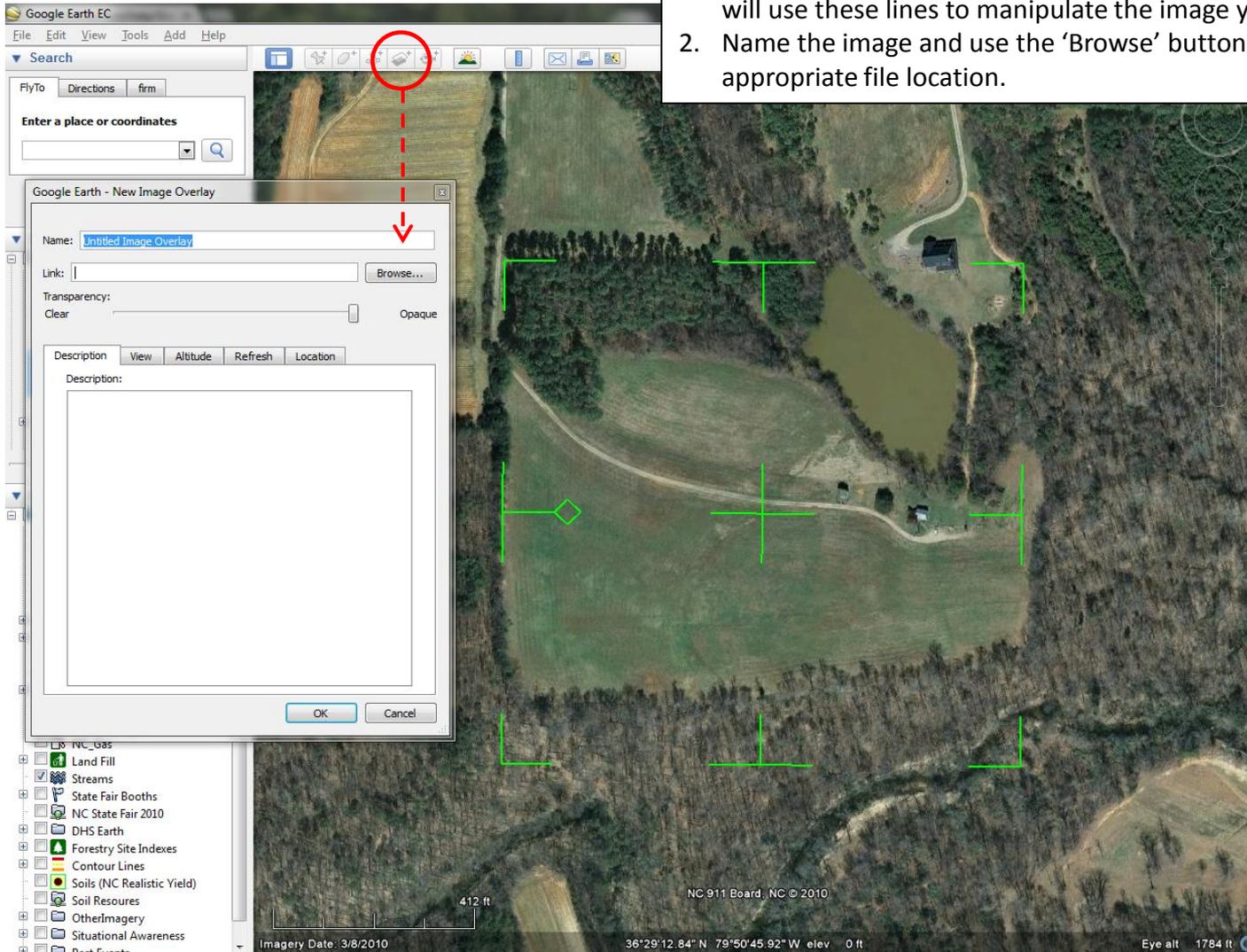


The screenshot shows the Google Earth EC interface. The 'Edit Polygon' dialog box is open, displaying the name 'Field 3' and a description of '10.02 ac.'. The dialog box has tabs for 'Description', 'Style, Color', 'View', 'Altitude', and 'Measurements'. The 'Description' tab is selected. The background shows a satellite map of a rural area with a yellow-outlined polygon representing a field. A pointing hand cursor is visible over one of the vertices of the polygon.

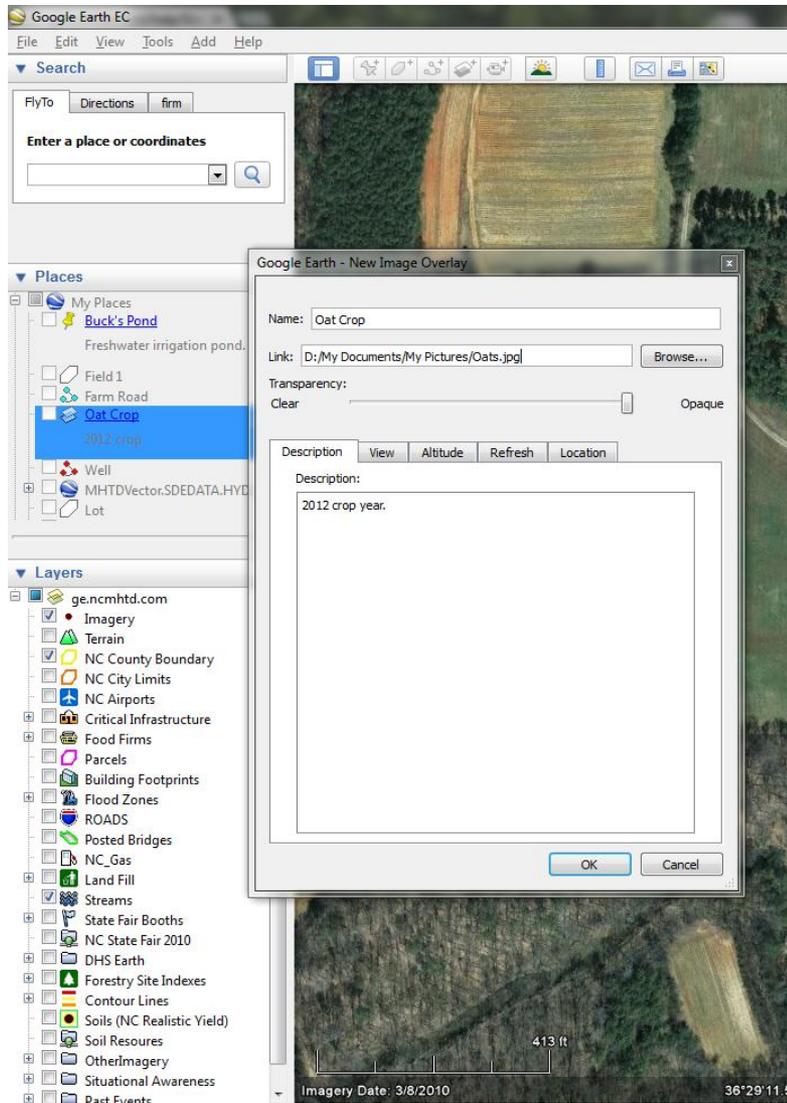
3. With the Edit Feature dialog box now open you may edit the feature.
4. Move the cursor along the feature and a pointing finger will appear wherever there is an editable data point. 
- Left click when the pointing finger appears and drag the point to alter the shape of the feature.
5. Release the left mouse button when the point is properly placed. Repeat for any points needing editing.
6. Click 'OK' to save the changes.

Add an Image Overlay

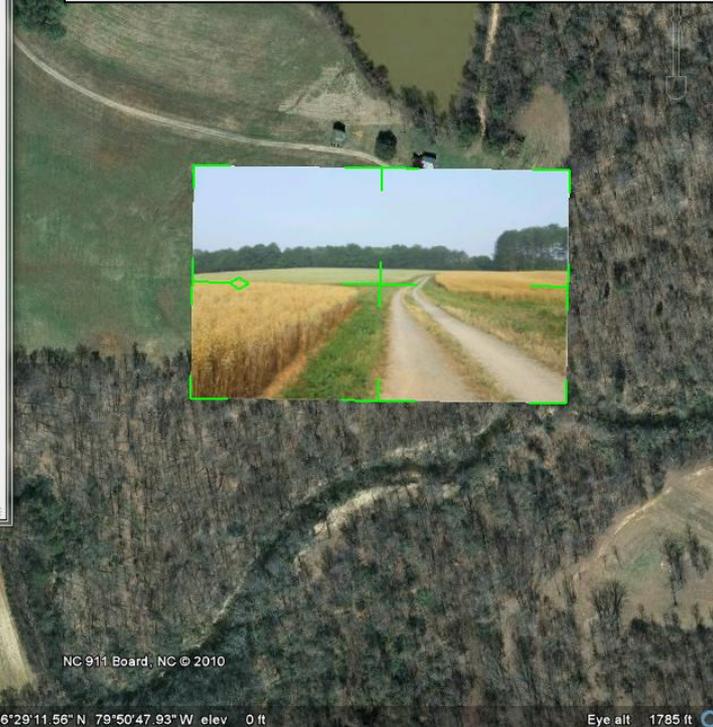
1. Click on the 'Add Image Overlay' button on the Toolbar at the top of the screen. The 'New Image Overlay' dialog box will appear along with a rectangular pattern of green lines. You will use these lines to manipulate the image you import.
2. Name the image and use the 'Browse' button to link to the appropriate file location.



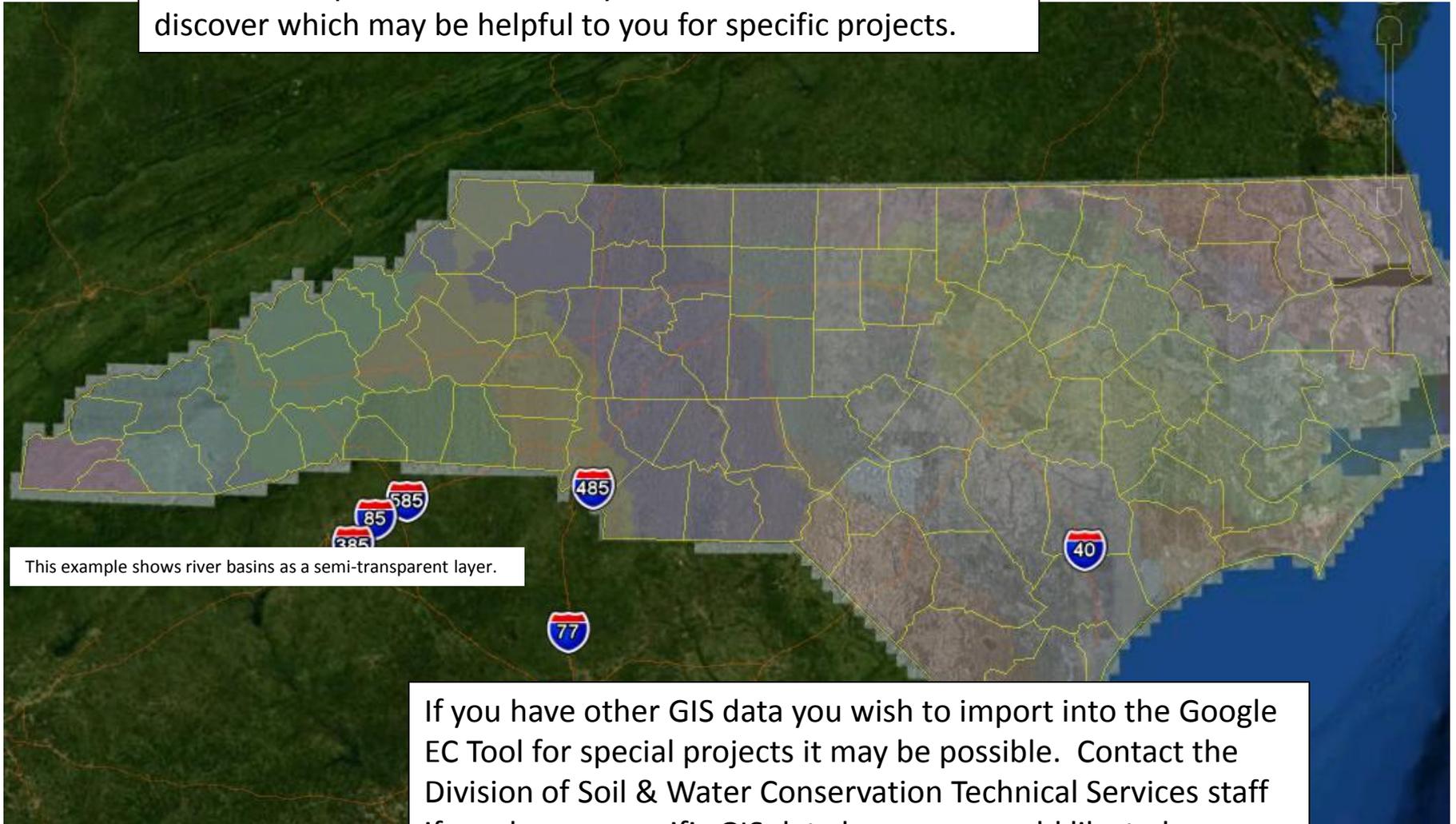
Add an Image Overlay



3. Place the image and size it using the green lines. Click on the cross-hair lines in the center of the image to position it. Use the lines on the corners, sides, top or bottom of the image to stretch, skew or re-size it. To maintain scale use the shift key while adjusting from any of these points. Use the small diamond on the left side to rotate the image. To adjust image transparency use the Transparency slider in the dialog box.
4. Use 'OK' to save the image overlay. Be sure to save it to 'My Places' to save it permanently.
5. To edit the image after it is saved, right-click on the image name (in the 'Places' window) and select 'Properties'.



Be sure to explore all the data layers that are available to discover which may be helpful to you for specific projects.



This example shows river basins as a semi-transparent layer.

If you have other GIS data you wish to import into the Google EC Tool for special projects it may be possible. Contact the Division of Soil & Water Conservation Technical Services staff if you have a specific GIS data layer you would like to have available in Google EC.