

Google[™] Earth for Genealogists

Rick Sayre, CGSM and Pamela K. Sayre, CGSM, CGLSM

E-mail: Rick@MemoryLaneGenealogy.com or Pam@MemoryLaneGenealogy.com

In this two-hour seminar and demonstration, you'll see how to put the power of Google Earth to work for you. View your genealogy in a new way. Learn to mark and map the sites of historical buildings, cemeteries, or other features that no longer exist. View your ancestors' communities on period maps or land plat maps overlaid on modern maps. See examples showing how GPS and Google Earth can help solve research problems.

Introduction

Modern mapping and software tools have the capability to radically transform our ability to display, store, and share family history information. Google Earth features allow users to mark a place anywhere in the world and tag that place with information and even a photograph. Images such as maps can be uploaded and overlaid on today's terrain, and Google Earth also allows this information to be shared. In essence, genealogists can display and share their family history across the whole world. Some exciting examples include:

- ⇒ Post the locations contained in your genealogy program on Google Earth. Each location could have an annotation, picture, or some other piece of information.
- ⇒ Plot your ancestors' locations over time, showing a migration path.
- ⇒ Recreate a neighborhood with pictures of houses that may not exist today.
- ⇒ Overlay maps (fire insurance maps, plat maps, panoramic maps—to name a few) from times past, and compare the area to today's geography.
- ⇒ Display a family cemetery on Google Earth with pictures of tombstones and family information. Locate the graves accurately by uploading GPS-generated coordinates.
- ⇒ Plan a genealogy research trip with all relative data loaded onto Google Earth.

Understanding the Tools

When you install the Google Earth program on your computer, you'll be able to view high-resolution aerial and satellite imagery, photos, terrain, road and street names, and other features added by other Google Earth users. Download the program from earth.google.com, and view or download the *Google Earth User Guide* at earth.google.com/userguide/v4.

Google Earth is not the same as the online application, Google Maps. The differences are shown in the following table.

Google Earth and Google Maps Comparison

	Google Maps	Google Earth
Interface	Web Browser	PC or MAC OS (download)
Data	Pre-rendered	Real-time
View	Fixed 2D	Free-perspective 3D rendering
Imagery Database	Primary	Primary

There are two versions of Google Earth, as described in the following table.

The Flavors of Google Earth

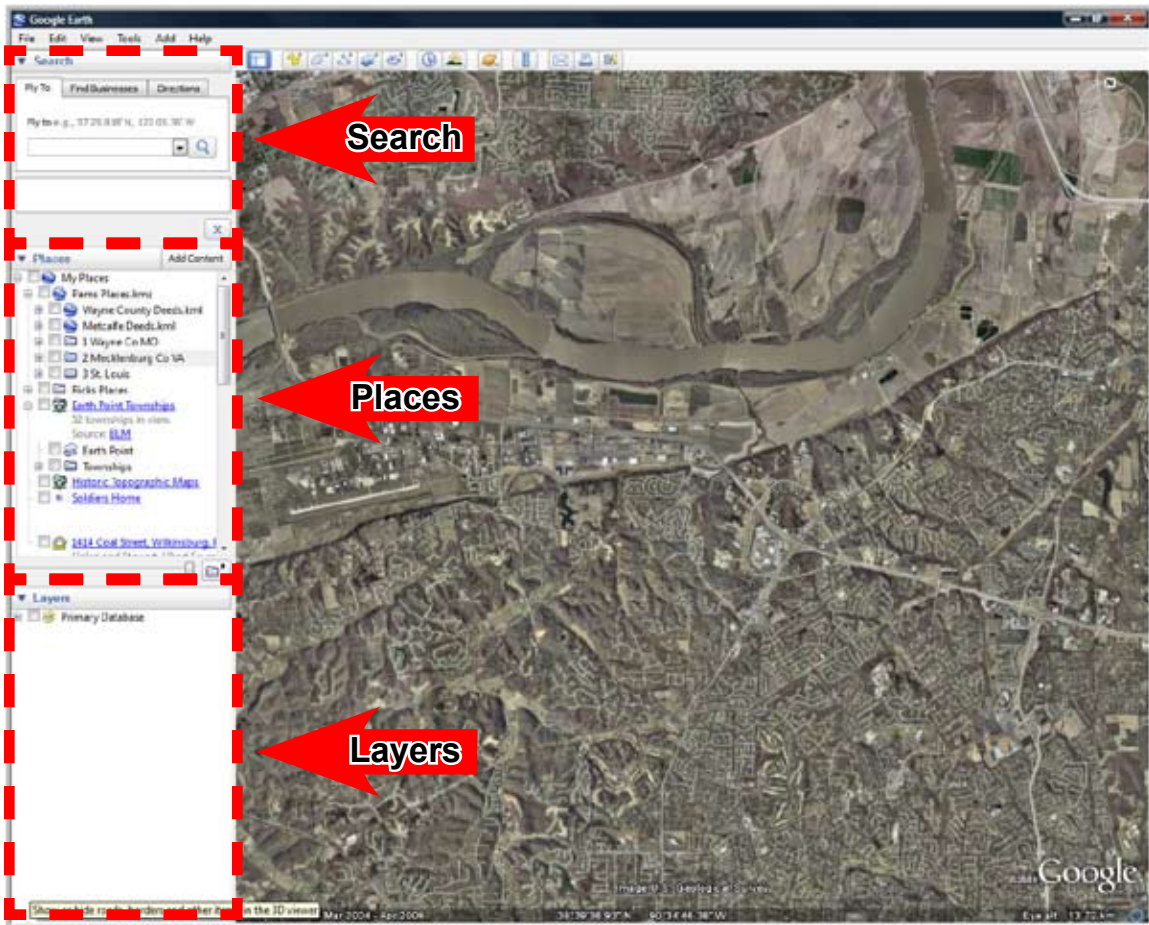
	Google Earth	Google Earth Pro
Cost	Free download	\$400 annual subscription (7-day free trial)
Imagery Database	Primary	Primary
Performance		Fastest
Save or Print Images	1000 pixels	4800 pixels
Tilt/rotate View in 3D	Yes	Yes
Drawing Tools	Yes	Yes
GPS Data Import		Yes
Spreadsheet Import		2500 points
GIS Import		Yes
Real-time GPS Tracking		Yes
Measure Area		Yes
Movie Maker		Yes

The Interface

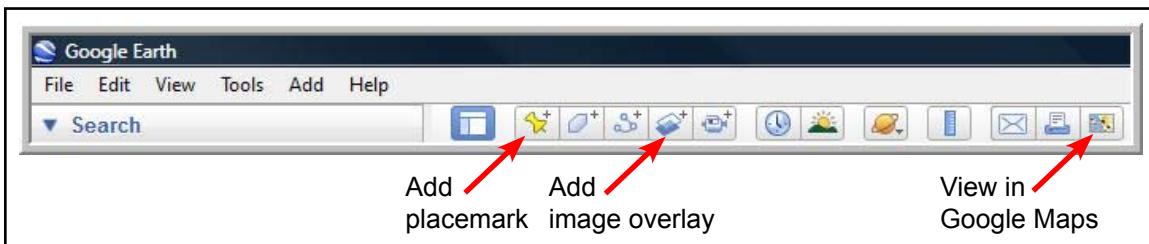
The Google interface, seen in the screenshot on the next page, includes three areas: Search, Places, and Layers. In addition, a toolbar at the top provides icons for various functions such as adding a placemark, adding an image overlay, recording a tour, or viewing in Google Maps.

Use the *Search* area to look for an address, town, or other geographic feature or place and fly directly to that location on the map image.

A *layer* is a feature provided by Google that displays when the box next to that choice is selected. For instance, you can turn on roads, borders and labels, and numerous other layers. The Gallery layers mark the locations of Google Book Search results, David Rumsey historical maps, and even YouTube videos linked to Google Earth locations. Many layers await your experimentation. Layers are permanent features of Google Earth and are available at any time.



Google Earth Interface

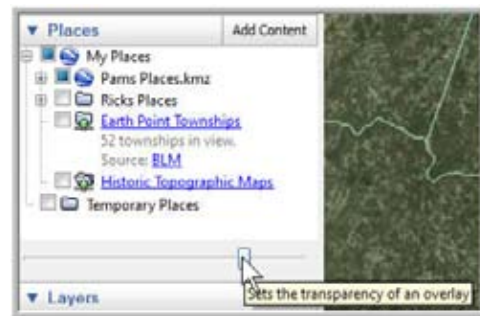


Google Earth Toolbar

An *image overlay* is a map, polygon, photo, or other item that you, the user, add to Google Earth. It may be something you create, such as a hand-drawn plat map, or a third-party overlay such as the EarthPoint Township Grid. Image overlays must be saved to the My Places section of Places to be available the next time you use Google Earth.

Rumsey Historical Maps Layer

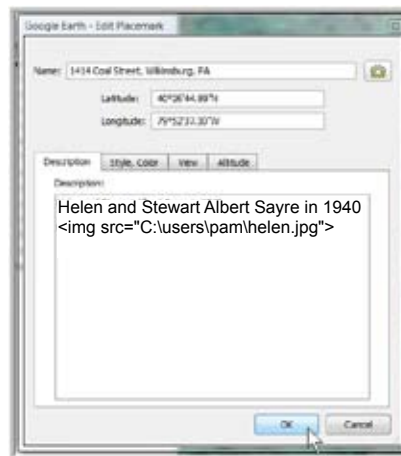
David Rumsey is a serious collector of historical maps, and he has digitized and placed thousands of them on his website (www.davidrumsey.com). A few of these maps are available as a layer in Google Earth. In the Layers area of the screen, choose the Gallery option and expand it. Check the box beside Rumsey Historical Maps—Map Finder, and icons display where the historical maps are overlaid on the modern Google Earth map. Zoom in and use the transparency adjustment to modify the overlay from completely transparent to opaque.



Set Transparency

Add a Placemark and Photo

You may want to add a placemark to mark the spot of an ancestor's former residence and add a photo to the placemark. Click the Add Placemark icon, choose an icon to your liking, and type a name for the placemark, such as "1414 Coal Street." Then type a description and add a line of code similar to the one below that points to the photo you want to include with the placemark:



Add Placemark Screen & Resulting Placemark/Photo

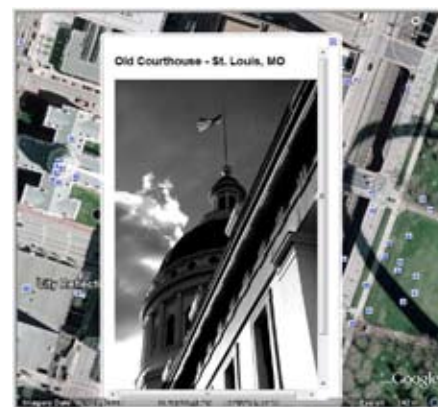
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When you click the placemark icon, the text and photo appear. For more information about how to add placemarks and photos, refer to the *Google Earth User Guide*.

View Panoramio Photos

In Layers under Geographic Web, turn on Panoramio to view photos submitted by people all over the world. If you are zoomed out, you'll see small blue squares. As you zoom in and hover over a square, a label appears. Click to see a photo and description similar to the sample to the right.



View Panoramio Picture

You can upload your photos to Panoramio and give the URL to friends and family to share the photos. You can also submit photos for inclusion in the Google Earth Panoramio layer. Generally, they do not select photos with people. For more information, see the Panoramio Acceptance Policy for Google Earth at www.panoramio.com/help/#GE_2.

Importing Imagery into Google Earth

You can import images into Google Earth in three main ways:

1. Add an image overlay.
2. Place a photo in a specific geographic location so users can fly into and navigate it.
3. Open GIS-related files in the correct geographic location (Google Earth Pro only).

Graphic File Formats Compatible with Google Earth Overlay

Files saved as any of the following graphics format can be used as overlays on Google Earth: BMP, DDS, GIF, JPG, PGM, PNG, PPM, TGA, TIFF.

Overlay a Historical Map

Whether you download a historical map from a website such as the Library of Congress or scan one at home, you can easily overlay the map on Google Earth and geo-reference it by visually arranging it to match

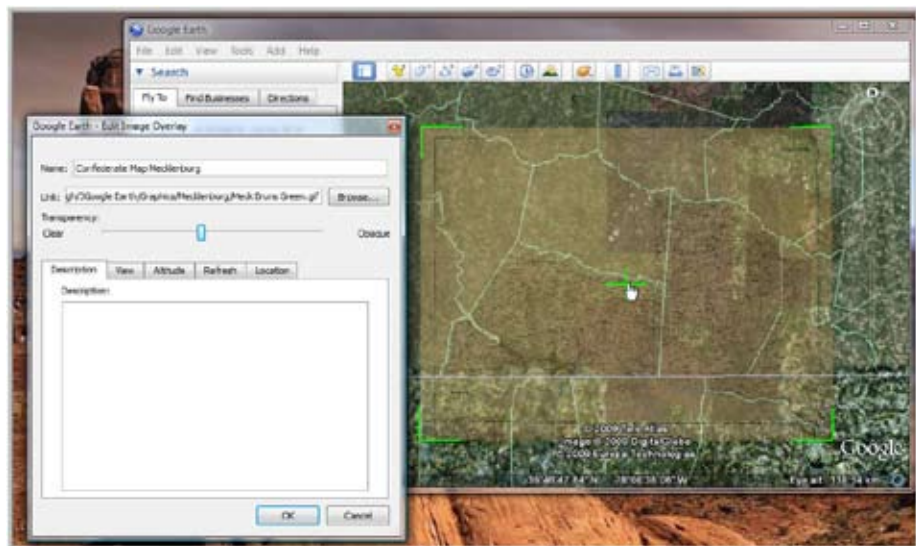
the modern map as exactly as possible. Click

the Add Image Overlay icon and browse to the file you want to add. When it displays,

use the green crosshairs at the edges and center to drag and stretch the map

until it fits along one or more geographic features that are still the same today as when

the historical map was made. In the example to the right, a Confederate map of three southern Virginia counties has been overlaid by matching the old map to the modern boundary of Mecklenburg County and the Roanoke River. Use the transparency adjustment to dim the old map.



Overlay Historical Map

Note: This process works for maps that cover a relatively small area. Larger maps must be geo-referenced with a professional GIS program such as ArcGIS.

More Tools

Every day, more programs offer the ability to export or generate Google Earth-compatible data. Here are a few of those programs:

Sitefinder (www.goldbug.com/map/sitefinder.html)

Deedmapper™ (www.directlinesoftware.com)

Family Atlas™ (www.familyatlas.com)

Google Sketchup (sketchup.google.com)

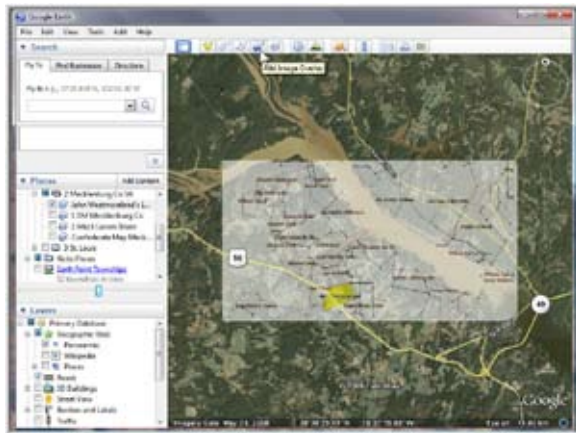
Map My Family Tree™ (www.progenygenealogy.com/map-my-family-tree.html)

Picasa™ (picasa.google.com)

Content from some online sites such as Flickr™ (www.flickr.com) can be exported to Google Earth. Others, including Panoramio (www.panoramio.com) and Wikipedia (www.wikipedia.org), appear automatically in Google Earth's Geographic Web layer.

Overlay a Deedmapper Plat Map

If you use Direct Line Software's DeedMapper program to plat deed maps, you can save the plots as a KML file and open it in Google Earth as overlays. If you don't have background maps for DeedMapper, you can save a JPG file and add the image as an overlay in Google Earth. Users of DeedMapper contribute deeds that they have entered in the program. These files are available free for download to anyone, but you must have DeedMapper installed to use the files. For instructions, refer to help in DeedMapper and the *Google Earth User Guide*.



DeedMapper Overlay on Google Earth

Learning All About Google Earth

Many resources are available for learning about all the features of Google Earth. A good starting step is to peruse the online *Google Earth User Guide* at earth.google.com/intl/en/userguide/v5 to see all the exciting things that the program can do, from tilting and viewing the terrain to adding content and drawing paths and polygons. The *User Guide* is also easily accessed from within Google Earth help.

The selected bibliography in this syllabus provides some printed resources by third parties that may be helpful. Look for them in a local bookstore or library or at an online bookseller. The web resources section at the end of this syllabus offers helpful websites, both within the official Google Earth domain and from interested third parties who contribute much in the way of content for Google Earth.

The best way to learn about this wonderful tool is to experiment and try it out. It's easy to overlay maps and add placemarks and photographs. Next, you may want to learn how to record a tour of ancestral migration routes to share with other family members. Work your way up to creating 3-D buildings in Google SketchUp. There's plenty of interest for genealogists and map-lovers alike in Google Earth.

Some Key Terms

GIS: Geographic Information System, a mapping system that uses computers to collect, store, manipulate, analyze, and display data.

Mashup (web application hybrid): “a web application that combines data from more than one source into a single integrated tool; an example is the use of cartographic data from Google Maps to add location information to real-estate data from craigslist.org, thereby creating a new and distinct web service that was not originally provided by either source.” [definition from en.wikipedia.org/wiki/Mashup_%28web_application_hybrid%29]

Layer: Feature in Google Earth for displaying information over the viewing area—for example, points of interest and map, road, terrain, and building data.

Overlay: User-created images placed over the view of the earth in Google Earth.

Placemarks: Much like bookmarks in a web browser, the Google Earth Places panel allows you to save and organize places that you visit.

Geotagging or Geocoding: “is the process of adding geographical identification metadata to various media such as websites, RSS feeds, or images and is a form of geospatial metadata. This data usually consists of latitude and longitude coordinates, though it can also include altitude, bearing, and place names.” [definition from en.wikipedia.org/wiki/Geotag]

Georeferencing: matching points, usually on a map without latitude and longitude, to the modern Google Earth map. An example is the DavidRumsey.com historical maps that appear as a layer on Google Earth; they have been georeferenced to fit over the modern maps.

JPEG2000: A relatively new graphics file format that enables sharp, crisp viewing. A special viewer is required for this file format. The Library of Congress website offers information about several viewers, including freeware IrfanView (www.irfanview.com). Irfanview also enables saving of JPEG2000 files in other graphic formats.

KML (Keyhole Markup Language): an XML-based language for managing the display of data in Google Earth.

KMZ: The compressed version of KML (see above), analogous to the ZIP format for compressing files.

Selected Bibliography

1. Chopra, Aidan. *Google SketchUp for Dummies*. Hoboken, NJ: Wiley, 2007.
2. Crowder, David A. *Google Earth for Dummies*. Hoboken, NJ: Wiley, 2007.
3. Kashuba, Melinda. “Earth bound—applying Google Earth to family history research.” *Digital Genealogist*, Mar/Apr 2007.
4. Kashuba, Melinda. *Walking with Your Ancestors: A Genealogist’s Guide to Using Maps and Geography*. Cincinnati: Family Tree Books, 2005.
5. Knowles, Anne Kelly and Amy Hillier. *Placing History: How Maps, Spatial Data, and GIS Are Changing Historical Scholarship*. Redlands, CA: ERSI Press, 2008.

6. Knowles, Kelly Anne, editor. *Past Time, Past Place: GIS for History*. Redlands, California: ERSI Press, 2002.
7. Moffat, Riley Moore. *Map Index to Topographic Quadrangles of the United States, 1882–1940*. Santa Cruz, CA: Western Association of Map Libraries, 1985.

Web Resources

(Items in Arial bold font are official Google Earth sites)

1. *Earth Point Tools for Google Earth*. www.earthpoint.us/townships.aspx. This website maps the U.S. Public Land Survey System onto Google Earth via Township, Range, and Section grids. Two handy conversion tools on the website convert township, range, and section to latitude and longitude, and vice versa.
2. *Frank Taylor weblog: Google Earth Blog: The Amazing Things About Google Earth, 2005–2009*. www.gearthblog.com/index.html. [This blog is not officially affiliated with Google.]
3. **Google Earth Community**. bbs.keyhole.com. An online forum about many topics of interest to Google Earth users.
4. **Google Lat Long Weblog: News and Notes by the Google Earth and Maps Team, 2007–2009**. google-latlong.blogspot.com.
5. *Historic Topographic Maps*. www.gelib.com/historic-topographic-maps.html. Download and install this subset of the USGS Historic Topographic Maps catalogued by Riley Moffatt (see no. 7 above in Selected Bibliography).
6. *Jonathan Crowe weblog: The Map Room: A Weblog About Maps, 2003–2009*. www.mcwetboy.net/maproom. Visit the blog, use RSS feeds, or subscribe to a daily digest of the previous day's posts.
7. *Leszek Pawlowicz weblog: Free Geography Tools: Exploring the world of free tools for GIS, GPS, Google Earth, neogeography, and more, 2007–2009*. freegeographytools.com.
8. **The Sightseer: Google Earth's Monthly Newsletter**. bbs.keyhole.com. Visit the online forum to access the latest copies of *The Sightseer* or subscribe to an e-mail version.
9. *Snow Hill Genealogy*. snowhillgenealogy.googlepages.com/civilwarburials. This site explains how a project was completed to mark the burial location and transcribe and photograph each headstone of African American Civil War soldiers and sailors buried in three cemeteries in what is now Lawnside, New Jersey. Links lead to placemarks and photos on Google Maps. Click "View in Google Earth" to display and navigate the graves in Google Earth.
10. Trimble Worldwide. *GPS Tutorial*. www.trimble.com/gps.
11. Missouri, University of Library Systems. Digital Library. *Plat Books of Missouri*. Digital images. digital.library.umsystem.edu/cgi/i/image/image-idx?c=platic; : 2009.
12. *Using Google Earth Weblog, 2006–2009*. googleearthuser.blogspot.com.