

Introduction to Google Earth

Since its release to the public in 2005, Google Earth (GE) has revolutionized the way we can visualize information. We now can easily view satellite imagery, map information, and 3D features of the earth. By allowing us to explore previously inaccessible geographic data, organize our own data and share it with others, GE can help us tell our story more effectively. While GE does not allow for complex spatial analysis of Geographic Information Systems (GIS), it is a tool that anyone at USAID can learn to use to view the landscapes of the countries where we work, to show actual locations of our projects, and to display descriptions of these projects to better visualize what we are doing and where.

The Google Earth software program has recently been installed on your local computer. To open GE, click the “Start” button on your desktop, go to “Programs”, and click on “Google Earth” from the list of software programs.

The satellite imagery, roads, borders, and other permanent layers of data you will see in GE are not stored on your computer. They are hosted on Google’s servers. The software dynamically downloads only the data you are viewing. Most of the data was acquired within the last 5 years. To ensure that you are viewing the most updated data from Google’s servers, you must have a connection to the internet. (If you have a laptop with GE installed but are not connected to the internet, you can work in offline mode if you already have “cached” data sets to view.) Viewing data layers in GE requires either a .kml or .kmz file. You can create these files and easily share them with others via an attachment in an email or download them from the Internet. Google Earth comes with navigation tools and access to a selection of data layers that you can turn on and off.

Here are a few steps to get started with Google Earth:

1 – Navigate the Globe

The tools necessary to navigate within GE are located in the upper right-hand corner of the viewing window. These tools will disappear from view if your cursor is not close by but will immediately reappear when GE senses the cursor is close.

There are three navigation tools as shown in Figure 1. The Sliding Zoom allows you to zoom in and out and will show your perceived elevation. The Panning Tool allows you to move in any direction. The Aspect Control allows you to tilt your view so that you can experience the three-dimensional nature of data sets in GE.

You can also use your computer mouse to zoom in and out. If you left click and hold, you can pan around inside GE.

Figure 1 – Navigation Tools inside Google Earth

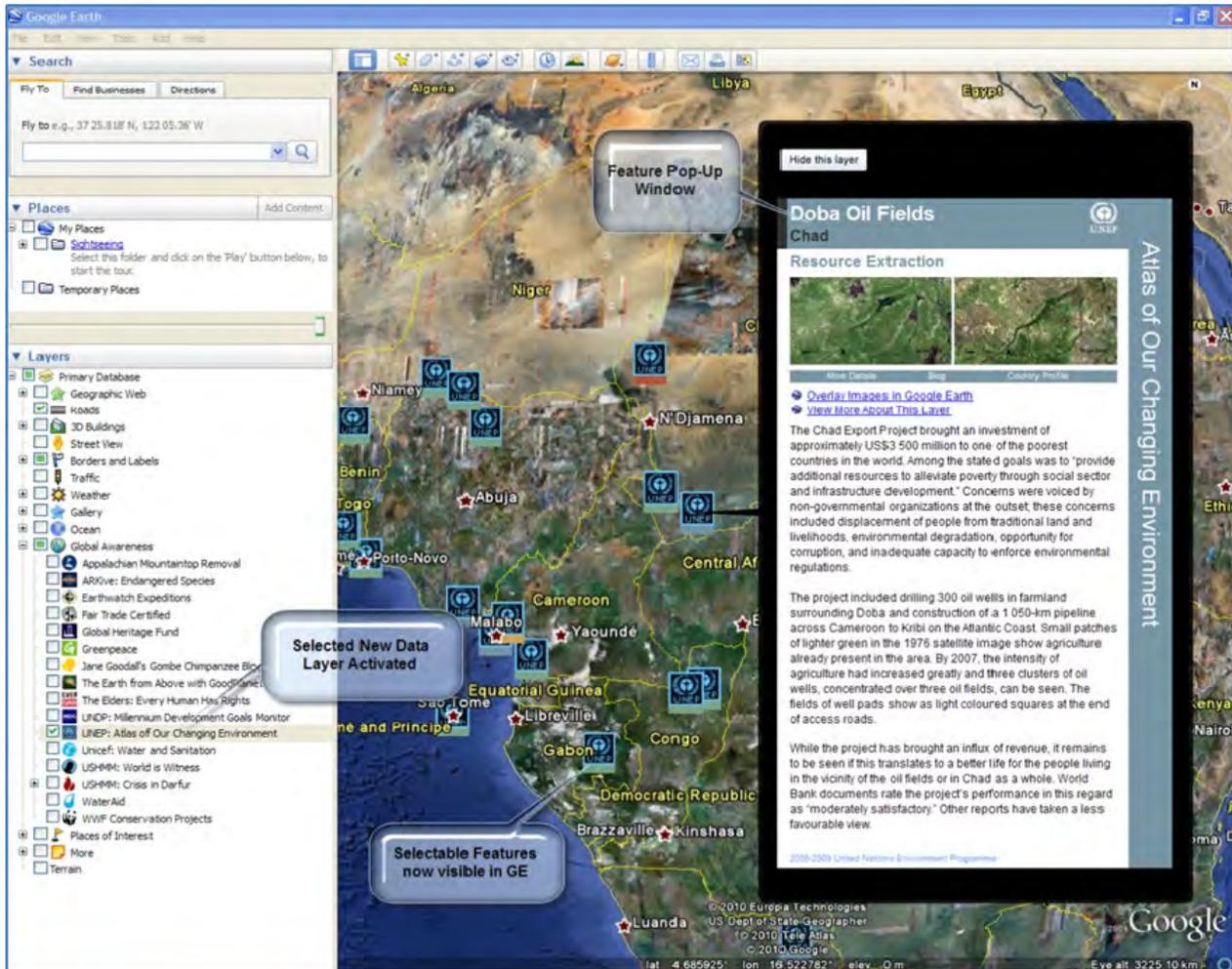


2 - Access Different Data Layers in Google Earth

When GE first starts, a “LAYERS” window pane is included in the bottom left-hand corner. GE includes permanent data layers in this window pane that you can select to turn on or off when you first open the program. For example, *Figure 2* shows that the UNEP *Atlas of our Changing Environment* has been selected. Once selected, the UNEP symbols will appear on the map image, indicating the places in the world that UNEP analyzed for the Atlas. Zoom in to any of these

UNEP symbols and double click. You will see a pop-up box (sometimes referred to as a “balloon”) with specific information about the point feature at this location. In the example shown below, you can see information about the Doba Oil Fields in Chad.

Figure 2 – Selecting a new layer to view



If you want to load a new data layer into GE, go to the File menu (at the top of your browser), select the open option and navigate to the directory that contains the relevant .kml or .kmz file. (You must already have these files stored in a directory folder that is accessible to your computer.) This is shown in *Figure 3* below.

Once loaded, the new data layer will appear in the PLACES window pane and can be turned on and off by “checking” and “un-checking” the box associated with the data layer. Data layers displayed in the PLACES window pane can be grouped in folders. To see all the data layers inside these folders, expand the folder by clicking on the “+” sign to the left of the folder.

Example: To see recent information collected after the Haiti earthquake:

- a) Download the .kmz files below to your computer.
- b) Store them in a file folder on your computer
- c) Open them into your PLACES window pane from the GE File menu.

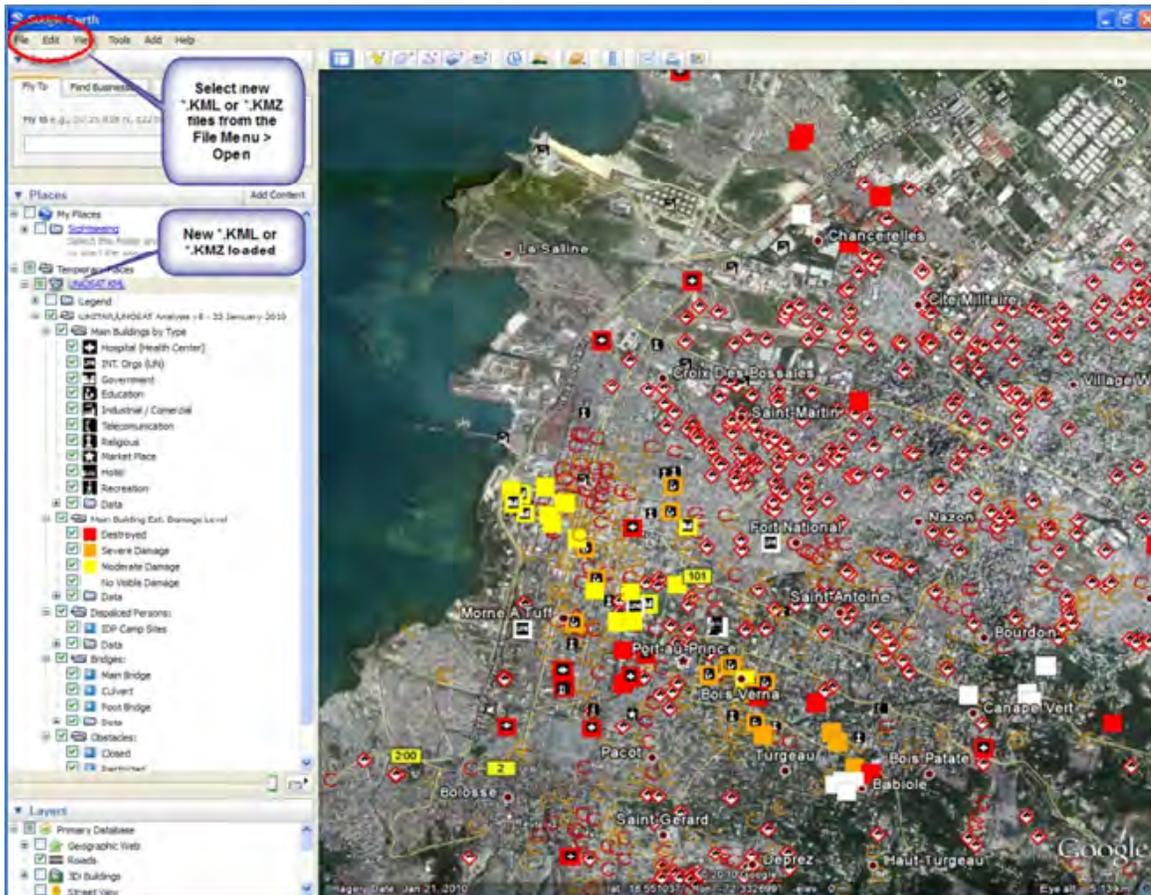
1. UNOSAT Haiti.kmz

UNOSAT's product on the Port-au-Prince illustrating IDP settlements, damaged buildings, and road obstructions

2. Haiti Earthquake.kmz

The Google-produced KMZ of continuously updated imagery from GeoEye, NOAA, Digital Globe, etc

Figure 3 – Opening a new *.kml or *.kmz layer from the File Menu



Once you have loaded the “UNOSAT .KML” into your PLACES window pane, turn it on and off by checking and unchecking the associated small box to the left. You will see the data layers appear and disappear in the viewer window pane on the right. You can also turn the “Legend” layer on and off separately from the “UNITAR/UNOSAT Analysis” layer.

With the UNITAR/UNOSAT Analysis layer turned on, zoom into one of the symbols that represents IDP Camp Site locations. Keep zooming in until you see images of the blue tarp coverings scattered around the city. Pan around to get a sense of the earthquake damage to buildings in Port-au-Prince.

Add the “Haiti Earthquake” layer to your PLACES window pane the same way you opened the previous layer. Notice that the viewer on the right automatically zooms out to the extent of the datasets included in this layer. Turn off (uncheck) the “UNOSAT.KML layer” and expand the “UNITAR/UNOSAT Analysis” layer by clicking the “+” button to the left.

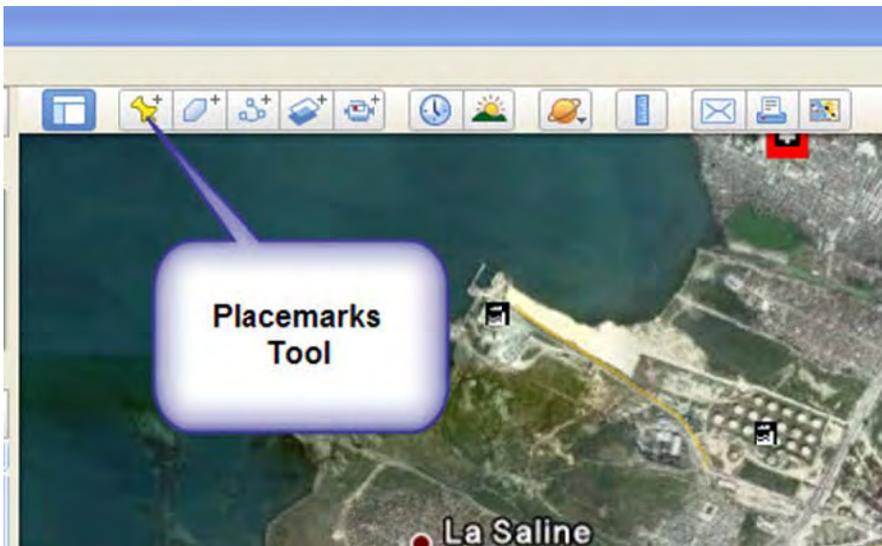
Experiment with turning on and off the various datasets within the “Imagery”, “Earthquake Data”, and “Map Overlays” folders in the PLACES window pane. Notice what happens in the viewer window each time you do this.

3 - Create Place Marks in Google Earth

GE allows anyone to create new data within the viewer, using Placemark tools available in the Tools menu. You can draw, annotate, save, and share new points, lines, and areas. These PlaceMarks can be accurately created using coordinates visible in the bottom center of the viewer.

You can choose from different styles of symbols. Any new PlaceMarks are automatically stored in the GE Temporary Places area of the PLACES window pane. To make them permanent, right click on the new layer and SAVE AS to a specified directory. Once completed, a new .kml or .kmz file is created. This file can be shared as an email attachment. Anyone who receives a GE file can view it immediately by double clicking, which cause causing the GE software program to start. Figure 4 shows the PlaceMarks Tool bar.

Figure 4 – Toolbar including the PlaceMark Tools (Points, Areas, and Lines)



Further Information

These instructions describe the most basic functionality of GE. You can do much more with the software, and new data sets are being created and published daily. The [detailed tutorial](#) prepared by Google Earth, shows you how to:

1. annotate with placemarks, paths, and polygons
2. add photos and image overlays
3. add 3D sketchup models
4. use snapshot views
5. import GPS data
6. import GIS data into Google Earth Pro*
7. create a narrated tour
8. embed GE into websites

* Google Earth Pro is a more advanced version of GE at a cost of \$400 per license, installed on individual computers.