

## **How to create a high resolution Google Earth ground cover.**

1. ArcMap, will automatically export a raster layer to Geographic projection but creates low resolution output.
2. You need to install Google Earth Pro.
3. Google Earth Pro has a 10mb raster resolution size limit. Resample your raster in PhotoShop to try and get as close to this limit as possible.
4. Georeferencing a map in ArcMap.
  - a. Set the data frame Coordinate System to WGS 84.
  - b. Georeference the map or raster.
  - c. When done adding control points, do not "Update Georeferencing," unless you just want a georeferenced raster to keep around. You need to Rectify the raster. I would recommend saving the output to png format. (Because that is what Google Earth Uses).
5. Back in Google Earth Pro, select File from the Menu bar. Next select Import and select the graphic you just rectified.
6. Google Earth Pro will fly to the location of your rectified graphic. Once it arrives a window will pop up, select the option "SCALE."
7. The Google Earth – New Image Overlay window opens. I would recommend changing the Name to something more descriptive than the file name. In the large "Description" box I would recommend deleting the path to the file name. That is just for your reference, and will be irrelevant if you pass this kmz file on to someone else. Unless you decide otherwise I would leave the transparency to opaque. When done click OK.
8. Right click on the newly created "Place" in the table of contents and select "Save Place As." If the file name has an extension, such as filename.jpg, remove the .jpg extension... and you will have finally created a Google Earth ground cover kmz file.

## **More insights**

This is from a Google Earth tutorial:

[https://developers.google.com/kml/documentation/kml\\_tut](https://developers.google.com/kml/documentation/kml_tut)

### Ground Overlays

Ground overlays enable you to "drape" an image onto the Earth's terrain. The <Icon> element contains the link to the .jpg file with the overlay image. Here is the example ground overlay in the KML Samples file, which shows Mount Etna erupting in 2001:

```

<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://www.opengis.net/kml/2.2">
  <Folder>
    <name>Ground Overlays</name>
    <description>Examples of ground overlays</description>
    <GroundOverlay>
      <name>Large-scale overlay on terrain</name>
      <description>Overlay shows Mount Etna erupting on July 13th, 2001.</description>
      <Icon>
        <href>http://developers.google.com/kml/documentation/images/etna.jpg</href>
      </Icon>
      <LatLonBox>
        <north>37.91904192681665</north>
        <south>37.46543388598137</south>
        <east>15.35832653742206</east>
        <west>14.60128369746704</west>
        <rotation>-0.1556640799496235</rotation>
      </LatLonBox>
    </GroundOverlay>
  </Folder>
</kml>

```

## More Comments

Google Earth displays the image found between the tags <Icon></Icon> in the example above the image source is from the web.

A kmz file produced by Google Earth Pro consists of a folder named files and a kml file named doc.kml – all zipped together. The folder contains the graphic (raster) that gets displayed. I toyed with the idea of removing the graphic from the folder and putting it on the web and redirecting the path in the kml to the web, but decided against it. Here is the code in one of these doc.kml files.

```

<?xml version="1.0" encoding="UTF-8"?><kml xmlns="http://www.opengis.net/kml/2.2"
xmlns:gx="http://www.google.com/kml/ext/2.2"
xmlns:kml="http://www.opengis.net/kml/2.2" xmlns:atom="http://www.w3.org/2005/Atom">
  <GroundOverlay>
    <name>Mojave 1915 USGS Topo 1:125:000</name>
    <Icon>
      <href>files/Mojave19151_scaled.png</href>
      <viewBoundScale>0.75</viewBoundScale>
    </Icon>
    <LatLonBox>
      <north>35.5215582806</north>
      <south>34.9628022806</south>
      <east>-117.9613538456</east>
      <west>-118.5343658456</west>
    </LatLonBox>
  </GroundOverlay>
</kml>

```