Lab II ENVR 4305 Fall 2019 (18 pts) Name_____

Using Google Earth Pro for GIS

(Lab material is mostly copied from online google earth help and outreach material but reprinted here to reduce paper waste)

Part I: Read in Excel Data into Google Earth Pro

Add longitude and latitude from a CSV file

1. On your computer, open Google Earth Pro.
2. Click File > Import**.**
3. Browse to the location of the "texas_swimming" CSV file and open it (to see the file you will need to change the file type to *.txt, *.csv).
4. In the box that appears, next to Field Type, choose Delimited.
5. Next to Delimited, choose Comma.
6. Use the preview pane to ensure your data has imported correctly and click Next**.**
7. Next to "This dataset does not contain latitude/longitude information," leave the box unchecked.
8. Select the fields in your spreadsheet that contain the latitude and longitude data and click Next**.** For this dataset, select the latitude panel to be the data that is 30.264°; the longitude panel to be -97.771.
9. Leave the default type of each field in your dataset.
10. Click Finish**.** Google Earth begins geocoding your data.
11. To use a style template, click Yes**.**
12. Click OK**.**
13. Create a new style template, using a single color in the color table of your choice. Then click OK. Ask TA or instructor for help if needed.
14. Name a new style template as "texas_swimming.kst" and click Save.
15. Click on the left panel to activate texas_swimming.csv to see the data you uploaded.
16. Congratulations! You have uploaded a text file into Google Earth Pro of swimming holes in the state of Texas.
17. Scroll over your swimming location data points and note that in addition to the location, if you click on each swimming location you get additional information such as the name, etc.

Part II: Read in KML Air Quality Data into Google Earth Pro

1. Click file → open. Choose file type to be "all data." Import KML file.
2. Select to open both of the Fig-9-OZNE KML **files**. A preview of the list will open in Google Earth.
3. These files are the typical kml files used widely in Google Earth.

Part III: Importing GIS data into Google Earth Pro

Unselect the data from parts I and II of this laboratory.

Follow the directions below (or open the following link in a web browser window which includes visual directions:
https://www.google.com/earth/outreach/learn/importing-geographic-information-systems-gis-data-in-google-earth/

1. On your computer, open Google Earth Pro.
2. Download the following datasets for use in this exercise from WTClass or obtain from Instructor or TA:
   "Rivers_in_SEAsia_shapefile.zip" and "LandCover_in_SEAsia_grid.zip" **Un zip both files** into a folder on your computer.

3. Select Import from the File menu. Select your data's file type from the *Files of type* menu. For this example, choose *ESRI Shape (*.shp)* from the file type menu, select Rivers_in_Southeast_Asia.shp, and click Open.

4. A message will appear, stating that the file contains more than 2500 features and could cause application performance degradation. When you see this message, you can choose to import just a sample, restrict to your current view, or import all.

5. Click the Import all button. A message will appear, asking if you would like to create a Style Template. Click Yes → create new template → ok. In the

next *Style Template Settings* dialog box, you will create a style template for the rivers, which will include colors, labels, and icons.

6. Under the *Name* tab, choose the field in the shapefile that you would like to use for the name labels for the data in Google Earth. You can use the preview table to view which field contains the content you would like to use for the labels.

7. For this example, select "NAM" in the drop-down menu. This is the field in the shapefile that contains the names of the rivers. Under the Color tab, select Use single color, and click on the color swatch to the right. This causes the color settings to appear.

8. In the *Select Color* dialog box, choose a color for the river dataset. For this example, select a blue color, and click OK. Under the Height tab, keep Clamp features to ground selected. This will keep the rivers clamped to the ground, following the terrain.

9. Click OK to finish your style. A dialog box will appear, asking if you would like to save the style template you just created. If you wish to save it for future use, click Save. Otherwise, click Cancel. For this example, click Save.

10. You will need to click the box labeled "rivers in SE Asia" to see your data.

11. Once you have imported your vector dataset, you can optimize your files and limiting the number of points displayed at higher altitudes, by using the Regionate tool. Save your imported vector dataset as a KML (save file → type kml (not kmz) , then choose Regionate under the Tools menu.

12. For the Input file, browse for your saved KML file. Then choose an Output folder where you want to save the regionated files. This will make lots of kmz files so make sure you save somewhere other than the desktop.

13. Check "Open regionated files when done" and click Regionate. Now, as you zoom in, you'll see increasingly more points

Part IV: Importing Import GeoTIFF into Google Earth Pro

1. To import a GeoTIFF, select *Import...* from the *File* menu. Select the appropriate file format from the file type menu at the bottom, select the file you want to import, and click Open. For this example, select file type *GeoTIFF (*.tif)*, select the glc2000n.tif file, and click Open.

2. In the *New Image Overlay* dialog box that appears, give a name to your raster overlay, and click OK. Because the raster dataset in georeferenced to a coordinate system, it is automatically placed in the appropriate location. The land cover GeoTIFF has been imported into Google Earth and is located in the Places panel.

3. If your imported image is larger than the maximum size supported by the hardware, you will be given several choices:

- Click Create Super Overlay..**.** to import large images and have them automatically split into tiles and scaled according to your zoom level.
- Click Scale to rescale to the maximum size supported.
- Click Crop to view only a full resolution subset of the image.

4. Chose any of the above. In addition to importing GIS data into Google Earth Pro, you can also use many other tools and software programs to convert GIS data to KML files for use in Google Earth. GIS software, like ESRI ArcGIS and MapInfo, have tools to export GIS data into KML format for use in Google Earth.