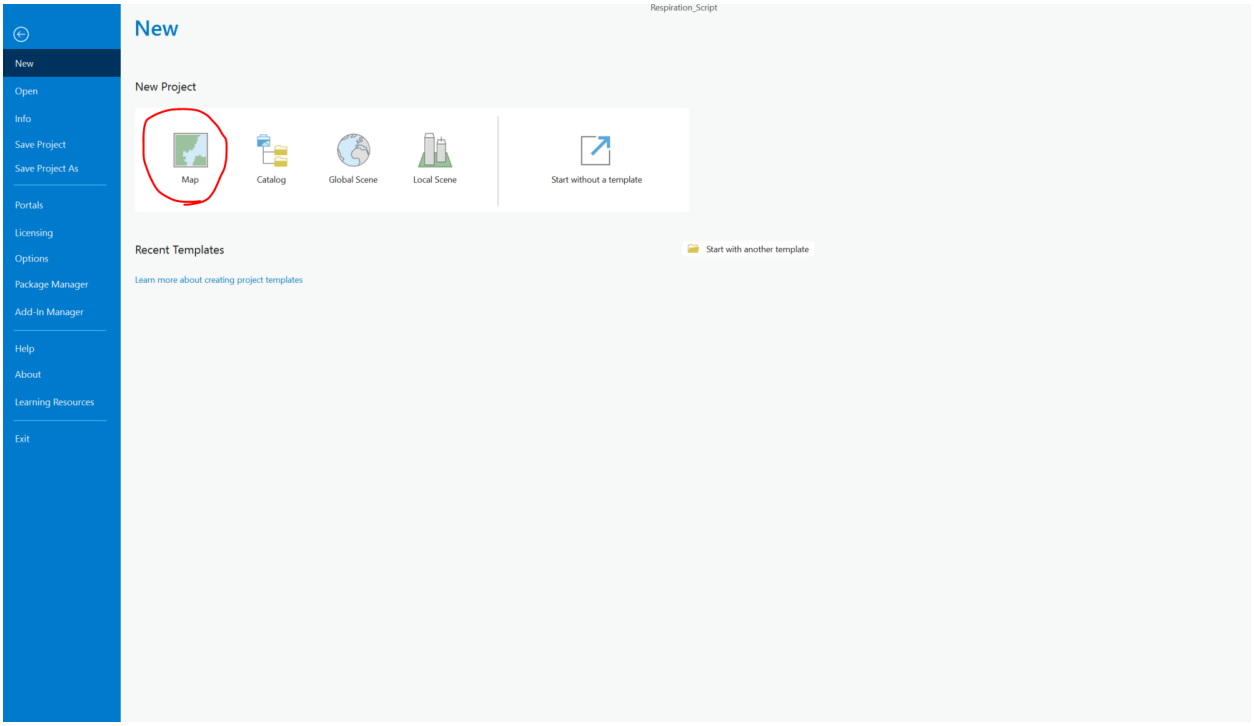
Steps for ArcGIS Pro Python Toolbox

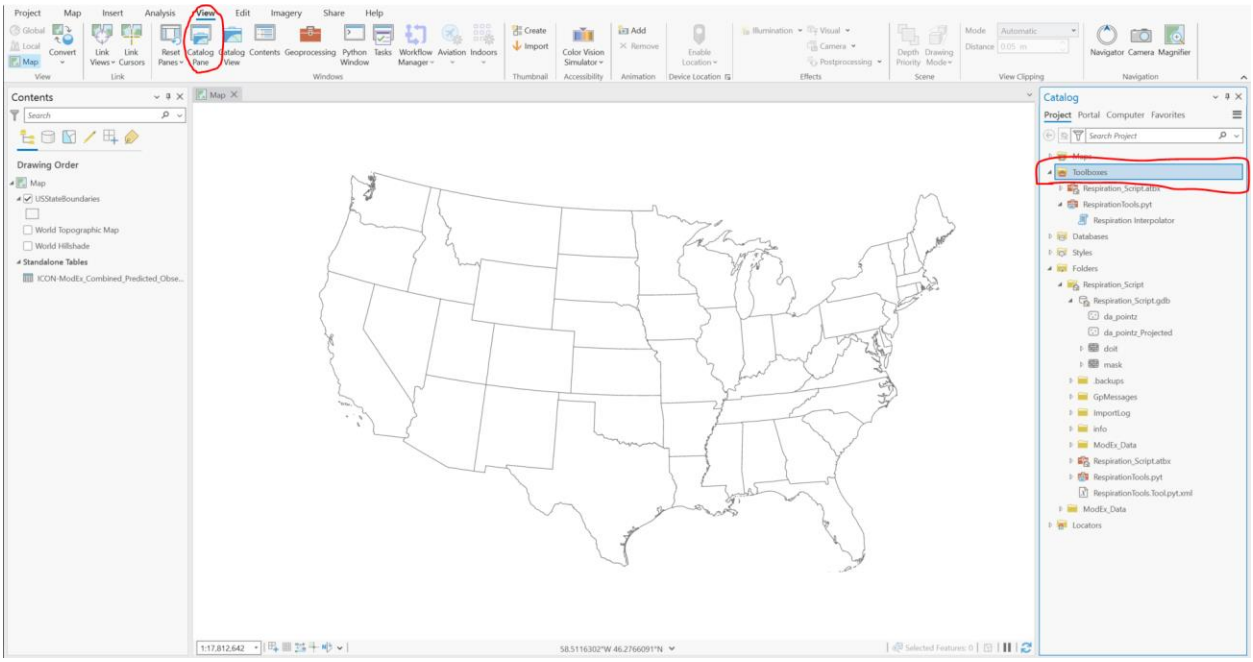
The portion of the script under the 'execute' function can be copied and pasted to a traditional python script for use in ArcMap or online geoprocessing tool using the arcpy library. However, the completed script and instructions below are for using the python toolbox workflow in ArcGIS Pro. This is because Arc Map will not be updated beyond its current version, and future work is likely to be done in Pro.

Open ArcGIS Pro and make sure you have the ***Spatial Analyst extension*** enabled.

Create a new Map and save it with any name you like.



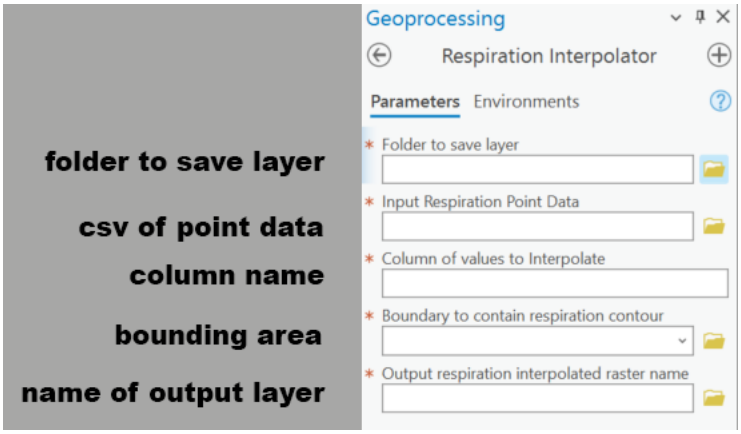
Under the '**View**' tab, open the **'Catalog Pane'.** Right click on the **'Toolboxes'** tab and select **'new python toolbox'** – navigate to the script provided - *RespirationTools .pyt* (python toolbox file).



This will create a script tool called **'Respiration Interpolator'**.

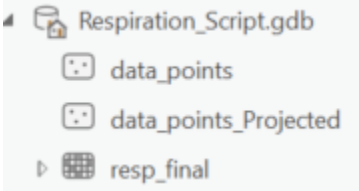
Double click this tool to open.

Input the folder or geodatabase where you want to save the respiration layer, the input csv file, the column name to use for interpolation, the bounding area to render the layer, and a name for the output layer (don't use spaces in the name).



Click **'Run'**

After the tool runs, you will have in your folder or geodatabase, a point feature class layer with a point for each of the sample point csv rows, a projected version that uses unit meters, and the output respiration layer (called *'resp_final'* in this example).



**If you wish to have a copy of the respiration layer in its full extent, simply uncomment line 123 in the script and it will save a second output respiration layer called 'raster_full'.*

**If you wish to render the layer at a finer scale, change the value in line 116 of the script to a meters squared value of your choice. 8046 (5 mile resolution) for CONUS boundary results in a 29 Megabyte file size.*

This tool is using Inverse Distance Weighted Interpolation as it was found to be more accurate at predicted values than Spline, Kriging, or Trend.