**Arcpy GIS processing scripts**

These scripts should be able to run on any machine with ArcGIS installed. The scripts require a separate shapefile for each subbasin. The raster data for the apriori grids, PRISM, and NLCD are already available for the entire CONUS on the Q:drive. The DEM script requires the user to specify the raster file to use when calculating elevation/slope (specific to each RFC).

* *extract\_basin\_apriori\_grid\_values.py*: arcpy tools to extract raster by basin shapefile, convert to points shapefile, and output .txt for each of the SACSMA and monthly PET variables. [P:\NWS\GIS\Models\python](file:///P:\NWS\GIS\Models\python)
  + modified to also create a single summary csv file for each basin using all of the individual txt files
  + usually takes several minutes to process one basin
* *extract\_basin\_DEM\_statistics.py*: arcpy tools to extract elevation and slope summary for multiple basin shapefiles and write to a .csv file (using csv write) [P:\NWS\GIS\Models\python](file:///P:\NWS\GIS\Models\python)
  + optional: run the merge\_elevation\_slope\_summary.py script to create a single csv file with all of the basins elevation and slope statistics and convert units from cm to ft  [P:\NWS\Python\Elevation\_Slope](file:///P:\NWS\Python\Elevation_Slope)
* *extract\_basin\_prism\_values.py*: arcpy tools to extract prism data from raster for multiple basin shapefiles and write output to separate .csv file for each basin [P:\NWS\GIS\Models\python](file:///P:\NWS\GIS\Models\python)
  + optional: run the PRISM\_summary\_table.py to create a single .csv summary file (precip in inches) containing all basins in specified RFC [P:\NWS\Python\PRISM](file:///P:\NWS\Python\PRISM)
* *extract\_basin\_nlcd\_grid\_count.py*: arcpy tools to extract nlcd pixel counts for each basin polygon and create a summary table (join attributes) for each basin [P:\NWS\GIS\Models\python](file:///P:\NWS\GIS\Models\python)
  + optional: run the \_calculate\_basin\_summary.py to create a single .csv summary file containing the data for all the basins available [P:\NWS\Python\NLCD](file:///P:\NWS\Python\NLCD)
* extract\_basin\_aquifer\_recharge \_values.py: script uses arcpy tools to extract aquifer recharge estimates raster ([Q:\GISLibrary\rech48grd](file:///Q:\GISLibrary\rech48grd)) by individual basin polygons and calculates basin mean value. IMPORTANT: script fails to loop through a list of basins (server too slow?) -> run each basin one at a time and script will append each basin value to existing csv file. [P:\NWS\GIS\Models\python](file:///P:\NWS\GIS\Models\python)