
Elevation Toolbox without Spatial Analyst Extension

27th April 2020

Summary

Although Esri provides a number of geoprocessing tools in ArcGIS Pro that process elevation data, the tools require a license for the ArcGIS Spatial Analyst extension. There are open source Python libraries that can be used to calculate slope, aspect, and hillshade rasters as well as contour lines from elevation rasters. The topic of elevation data processing is discussed in “Learning Geospatial Analysis with Python: Understand GIS fundamentals and perform remote sensing data analysis using Python 3.7, 3rd Edition” by Joel Lawhead. ArcGIS Pro actually ships with a number of the same open source Python libraries that Joel Lawhead references in his code samples, namely NumPy and GDAL. The goal of this project was to determine if some of the geoprocessing tools for elevation rasters could be emulated in ArcGIS Pro without a license for Spatial Analyst extension.