

CE 547 -GIS in Water Resources Engineering

University of New Mexico – Spring 2016

Vanessa Garayburu

Assignment 4: Basin Delineations

Part 1: Working with the data

I downloaded the files from UNM learn and converted the interchange files to coverages. I added them to ArcMap and then created a mosaic of the 3 figures for a continuous elevation dataset. I used the Fill tool to fill the spurious pits to create a DEM.

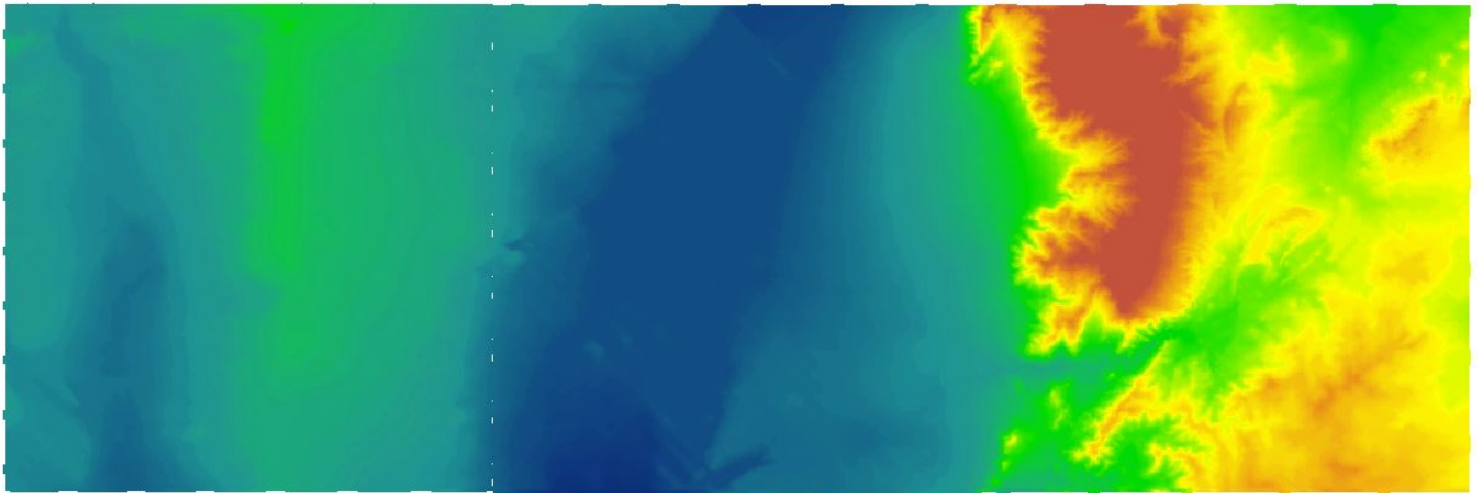


Figure 1: Shows the mosaic of the coverage images

Part 2: Hydrologic Modeling

I determined the Flow Direction of water in each cell by using the Flow Direction tool in the Spatial Analyst Tools. Then I chose the Flow Accumulation Tool to calculate the number of upslope cells flowing to a location. Moreover, I defined streams using a drainage area $> 1 \text{ km}^2$ (or 278 cells) and converted it to polylines. Finally I created the stream network and defined the outlets and to delineate the watersheds I used Raster Calculator and then exported the sub basins into polygons.

Delineation of the Rio Puerco Watershed

