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# EXERCISE 2a

# Riparian Band Method 1

Introduction

In this exercise, we will create a classified raster that has elevation bands corresponding to different riparian zones, or inundation frequency zones. Using a relative elevation model and set rules/estimates for how high up water will reach on an annual, five-year, and decadal timeframe, we will create a raster file that gives us information on which locations floodwater should reach and how frequently. This will be useful in other parts of our training materials, in both sorting vegetation into different riparian classes and in sorting large woody debris (LWD) into their separate inundation frequencies.

Objectives

* Create a raster file with relative elevation from the estimated water surface for Phase I of Whychus Canyon

Required Data:

* **Stage0\_REM**– A relative elevation model that was created using a Geomorphic Grade-line methodology and that is created specifically for use with Whychus Canyon Phase I.

Prerequisites

* **ArcGIS Pro**
* **ArcGIS Pro Spatial Analyst Extension**

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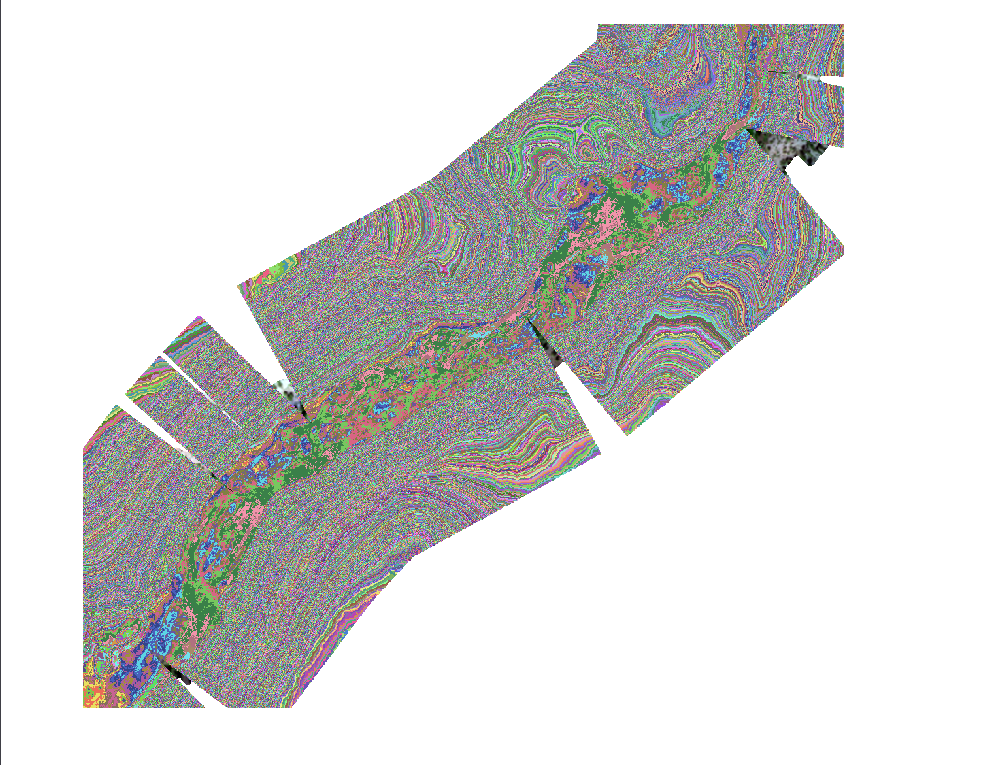
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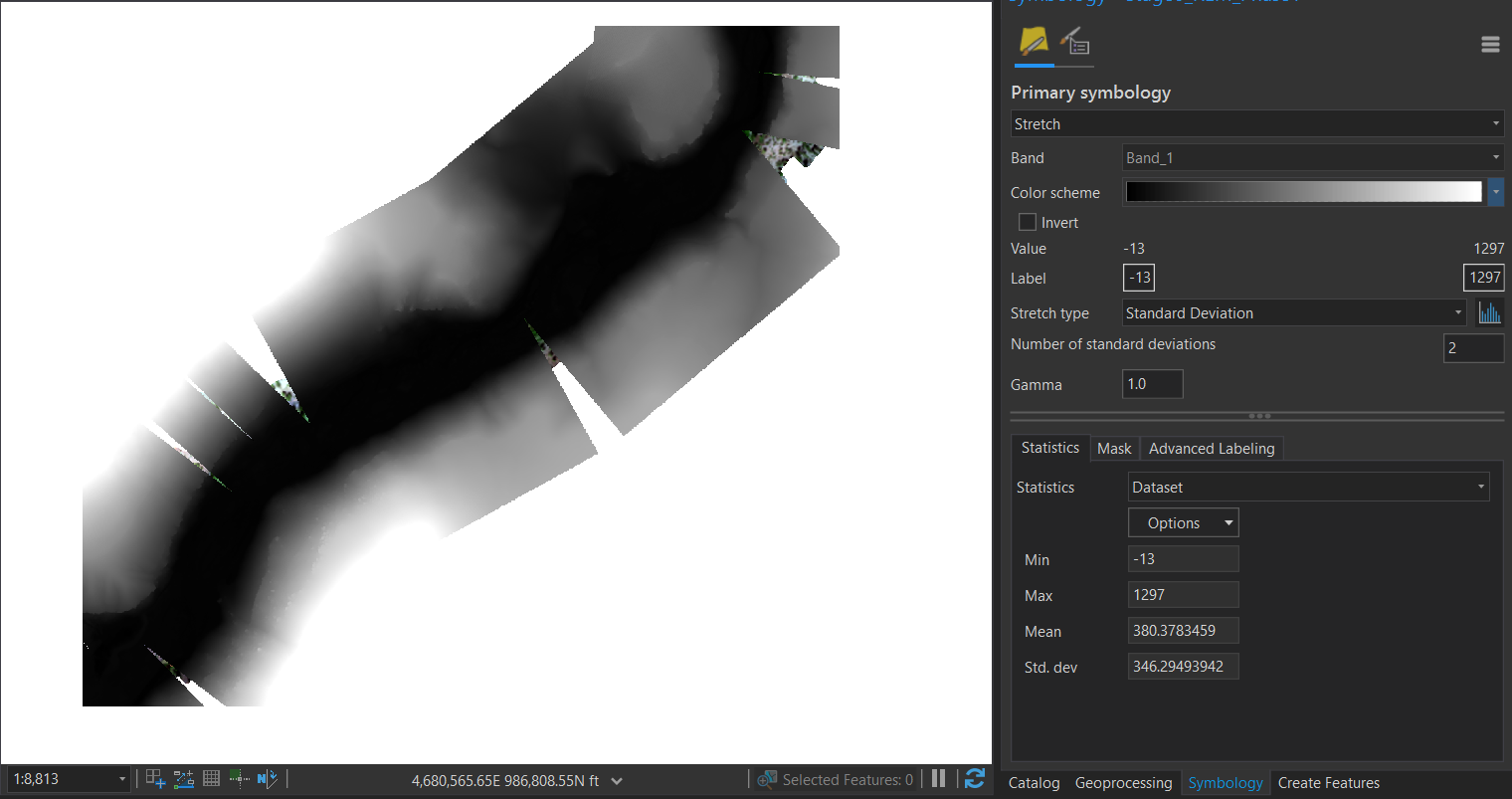
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1. Load and examine your data
   1. Load in the Geomorphic Grade-line Relative Elevation Model (GGL REM)
      1. Use your Add Data tool to add the GGL REM (**Stage0\_REM\_Phase1.tif**).

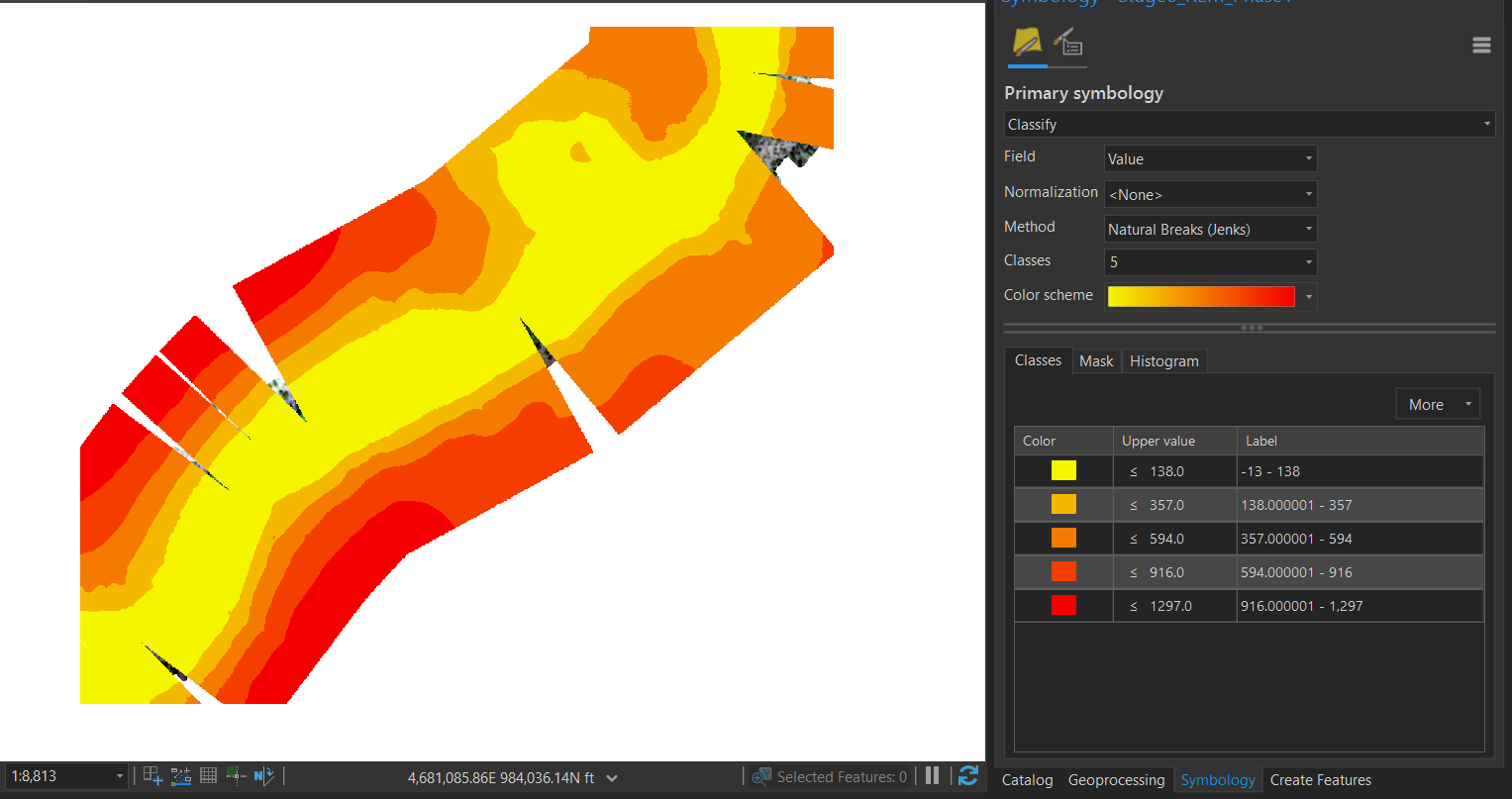


* + 1. Notice that the GGL REM is symbolized strangely (it does not look like an elevation model). Fix this by going to the layer symbology.
    2. Under “Primary Symbology”, it will say “Unique Values”. Change this to “Stretch”.

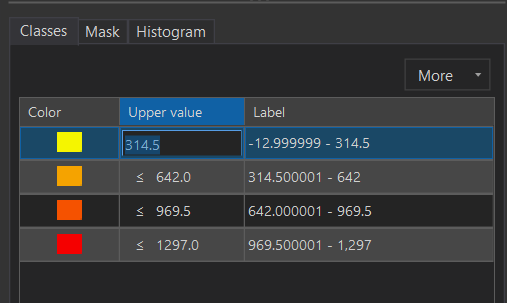


* + 1. Now you should see something that looks a little more like an elevation model.

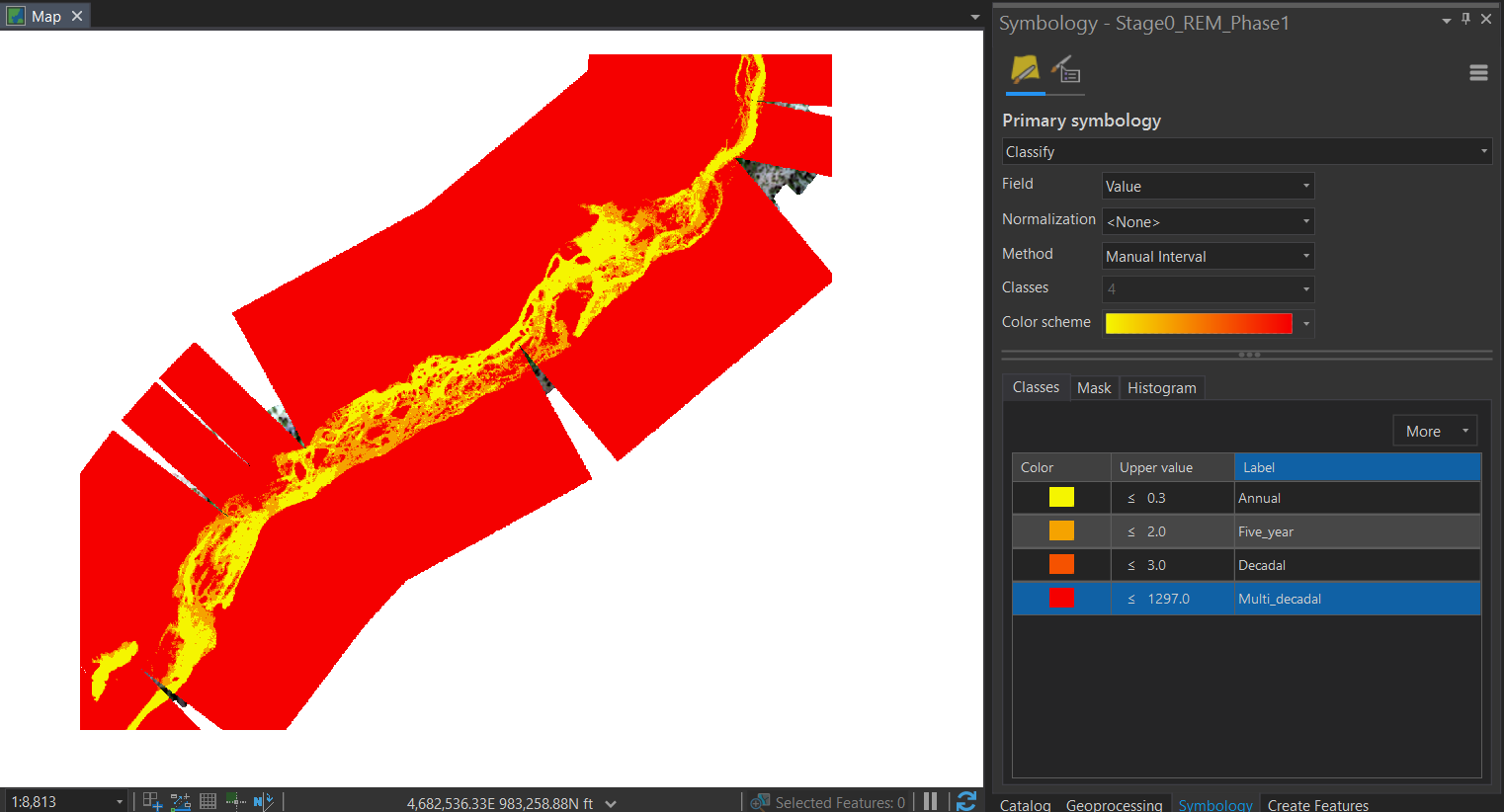
1. Sort your relative elevation model into elevation classes
   1. Re-symbolize your REM
      1. Stay inside the Symbology window.
      2. Under “Primary Symbology,” select “Classify.”



* + 1. This will automatically classify your image into 5 classes. You can change the classification to suit your needs.
       1. Change “Number of Classes” to 4.
       2. Below you will see a table with an “Upper value” for each class.

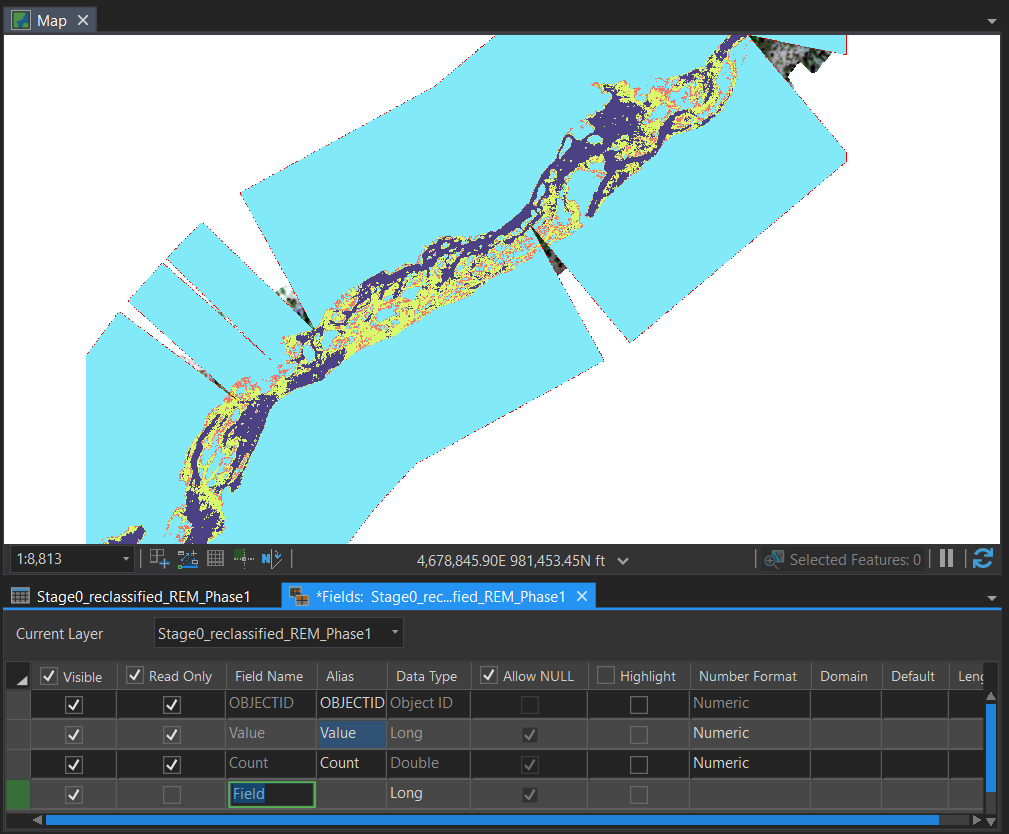


* + - 1. Change the first Upper value to 0.3. Change its label to “Annual.”
      2. Change the second Upper value to 2. Change its label to “Five\_year.”
      3. Change the third Upper value to 3. Change its label to “Decadal.”
      4. Leave the fourth Upper value as is. Change its label to “Multi\_decadal.”

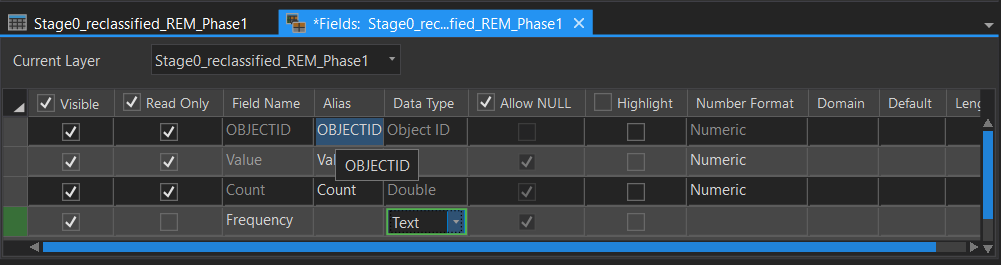


* 1. Reclassify your raster
     1. Navigate to the “Reclassify (Spatial Analyst)” tool in Geoprocessing.
     2. Select “Stage0\_REM\_Phase1” as your input raster.
     3. Leave the classification table alone – it should automatically set to the correct defaults.
     4. Name your output raster “Stage0\_reclassified\_REM\_Phase1.”
     5. Run the tool!

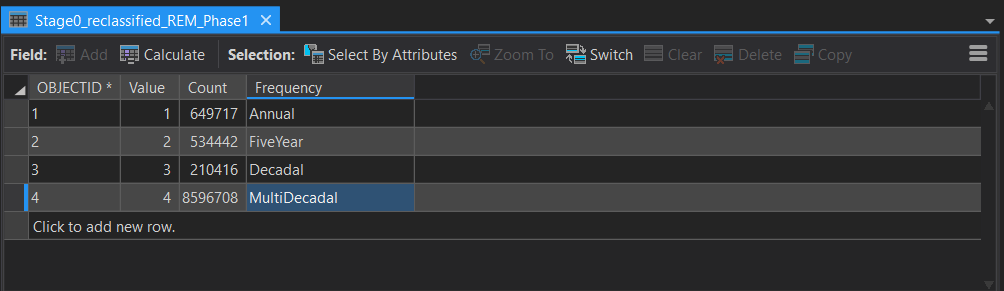
1. Fix some details
   1. Edit attribute table
      1. Right-click on your new, reclassified, raster.
      2. Open the attribute table
      3. Select the Add Field button for your attribute table.



* + 1. Name your new field “Frequency” with a “Text” data type.



* + 1. You have a new row field with four empty rows
       1. Label the first row as “Annual.”
       2. Label the second row as “FiveYear.”
       3. Label the third row as “Decadal.”
       4. Label the fourth row as “MultiDecadal.”



There are some noticeable triangles that have been taken out of the REM. If is important to you to fill in the REM, then you can use the same method that we used in our inundation classification exercise: creating a polygon from the raster and using the Create Features tool in order to fill in holes.

* + 1. Save to your Outputs folder as “Phase1\_REM\_Elevation\_Bands.tif.”

Congratulations! You have created a riparian elevation band classification for Whychus Canyon Phase I.