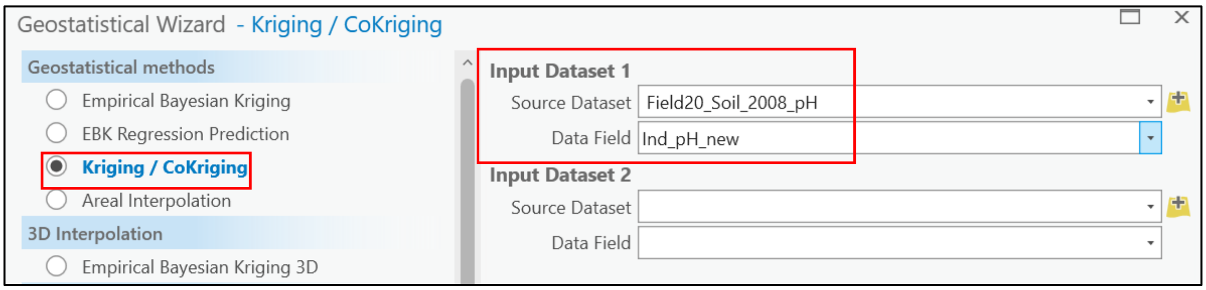
Lesson 3.3: Developing a lime prescription map

Data Source: *dataset3.zip*

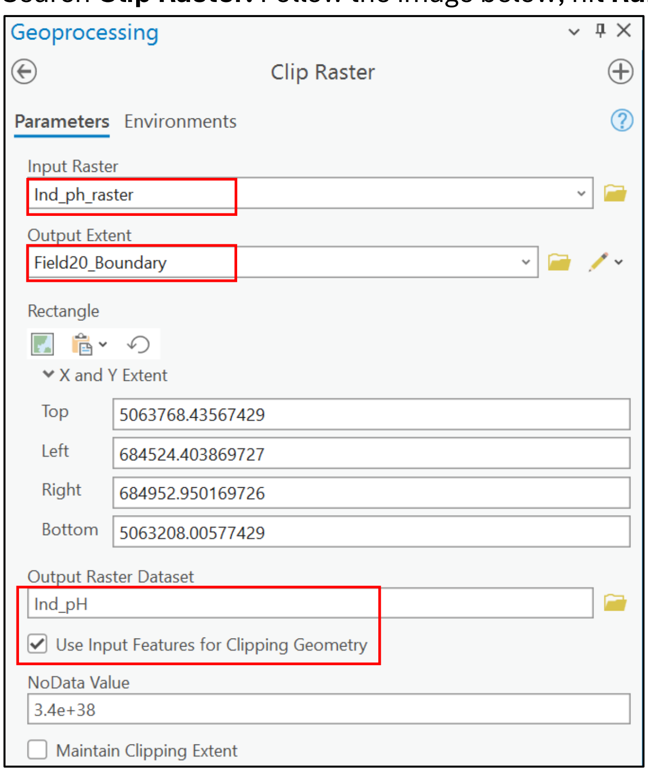
Part 1: Interpolating a soil pH map

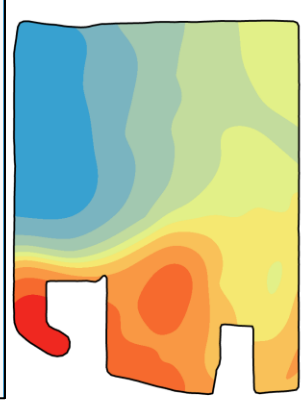
1. Open the previously saved project.
2. Add a subgroup named "**pH**" under the group "**Soil Prescription**".
3. Add *Field20_Soil_2008_pH.shp* to your map.
4. In the **Analysis Tab** select **Geostatistical Wizard.**



   In **Step 2**, **Kriging Type** = **Ordinary** and click Next.
   In **Step 3**, **Model#1** = **Spherical** and click **Next.**
   In **Step 4**, **Neighborhood type** = **Smooth**, and click **Finish**.

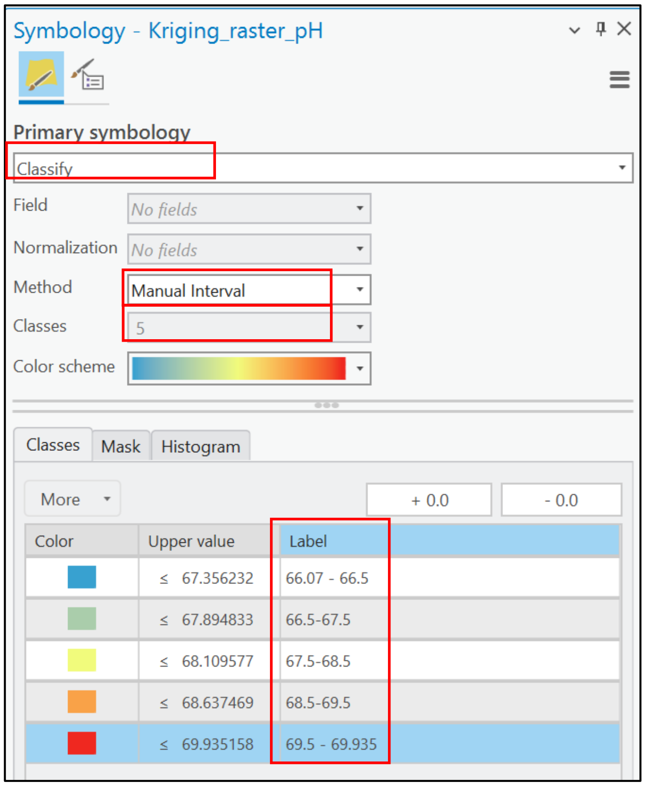
5. Right click on the kriging layer, select **Export Layer > to Raster.** Name the layer *Ind_pH_raster*. In the **Environments** tab, change the extent to *Field20_boundary.shp*. Hit **Run.**
6. Search **Clip Raster.** Follow the image below, hit **Run**.





Part 3: Changing pixel values of a raster from “floating” to “integer”.

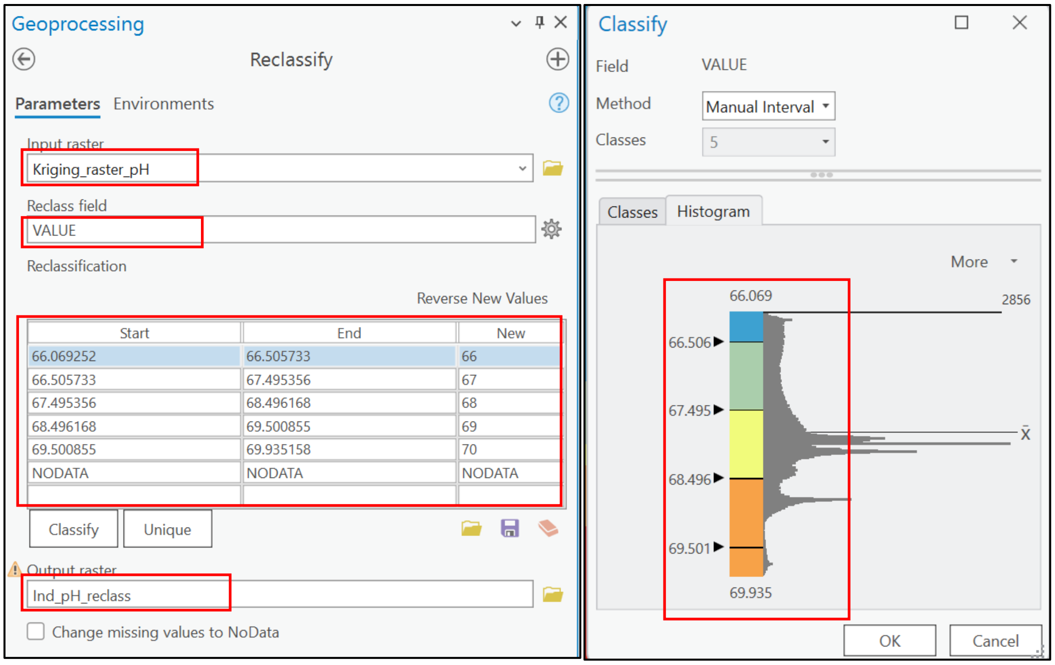
1. Right-click on *Ind_pH* and select **Symbology.**
2. Under **Primary Symbology** select **Classify.** Then select **5 Classes.** Then select **Manual Interval.**
3. Under the **Label Column** change the values to the ones shown below.



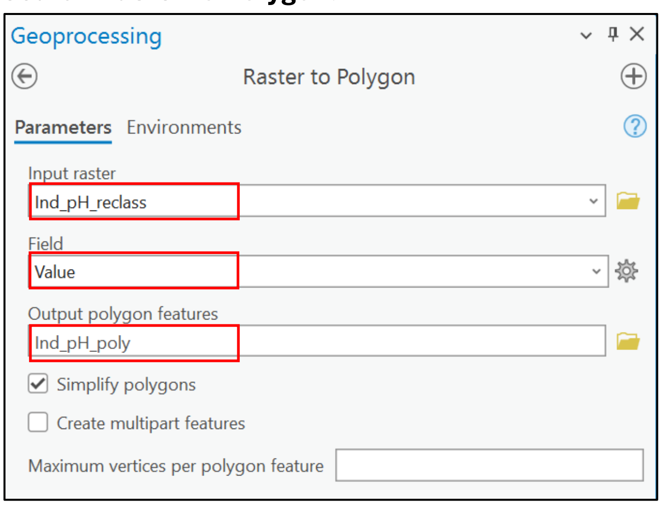
How to determine the number of classes for Lime Index?

The **Label Values** selected here should start at the integer of the dataset’s minimum value+0.5 and finish at the dataset's maximum value. In the example above, the minimum value is approx. 66.07 (blue box), in this case, the first break value should be 66.5, while the maximum break value approx. 69.935. Be aware that these break values are dataset-dependent, as each dataset has different minimum and maximum values. They WILL change for other fields!

4. Search **Reclassify.**
5. Input the following**.** Under **Reclassification,** choose the **Classify** button. In the window that pops up select the **histogram tab**. **Adjust the histogram bars** to match the label values that you added above.



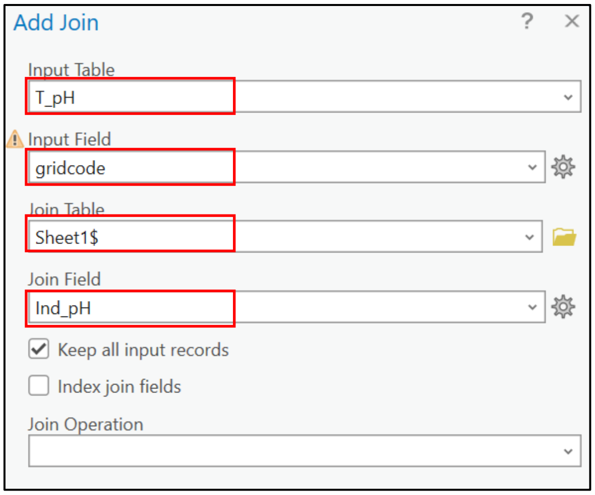
6. Search **Raster to Polygon.**



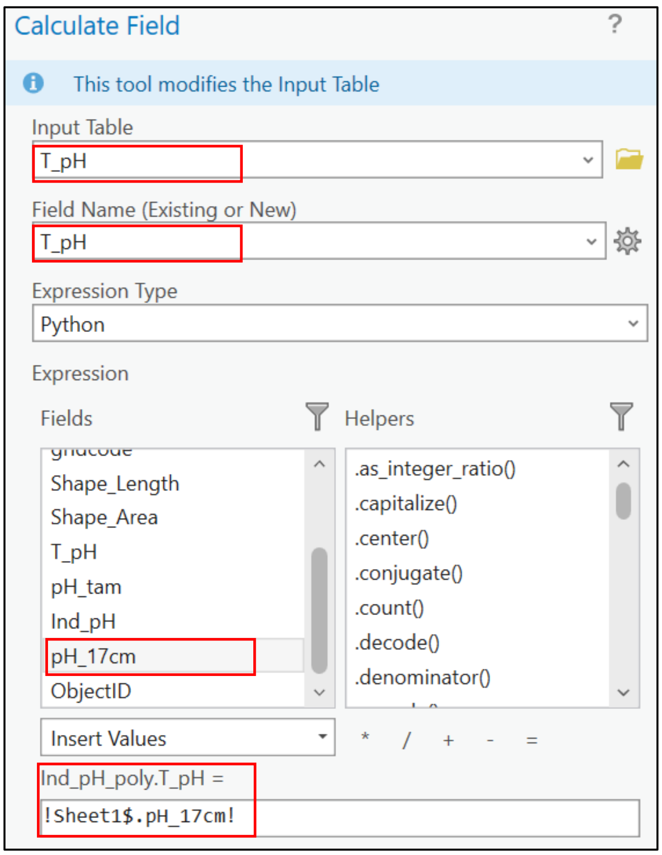
7. Right-click on the new polygon file and select **Attribute Table.**
8. Add a **New Field.** Name the field **T_pH** and select the type to be **Double. Save** the field.
9. **Rename** the polygon layer to **T_pH** for target pH.

Part 5: Joining an external tabular file to shapefile.

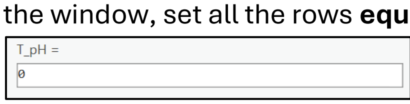
1. In the **Table of Contents**, right-click on ***T_pH*** and select **Joins and Relates** > **Join**
2. In the opened window input the following attributes. Find *Sheet1$* in the *dataset3* folder under *Soil_pH_Management.xl*.



3. In the *T_pH* attribute table, right-click on the **T_pH** column and select **Calculate Field.**
4. In the **Calculate Field** window, double click on *pH_17cm* in the **Fields** tab. This should equate **Ind_pH_poly.T_pH = !Sheet1$.pH_17cm!.** Hit **OK**.



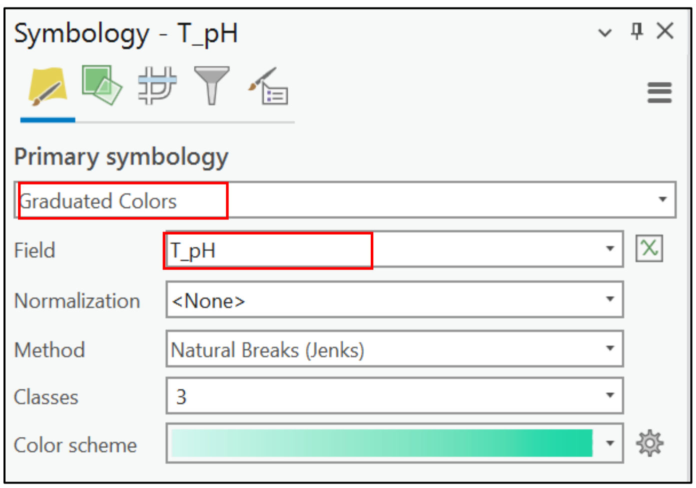
5. Right-click on *T-pH* and remove the join.
6. Back in the *T_pH* attribute table select all the rows in column **T_pH** that are **Null.** To select all the rows, hold down ctrl.
7. Once they are all selected, right-click on the **T_pH** column, and select **Calculate Field.** In the window, set all the rows **equal to zero**.

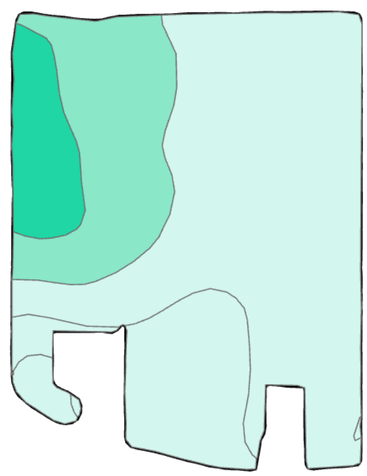


8. Your table should now look like this:

	OBJECTID *	Shape *	Id	gridcode	Shape_Length	Shape_Area	T_pH
1	1	Polygon	1	66	622.647185	17445.336892	3.1
2	2	Polygon	2	67	1095.548931	42524.236308	2.2
3	3	Polygon	3	69	373.980786	3278.525036	0
4	4	Polygon	4	69	10.285111	5.876862	0
5	5	Polygon	5	69	64.176953	207.590405	0
6	6	Polygon	6	70	264.456376	3846.832582	0
7	7	Polygon	7	69	66.182	142.51734	0
8	8	Polygon	8	68	2139.085603	116371.914903	0
9	9	Polygon	9	69	674.520009	28590.624805	0

9. Right-click on *T_pH* in the contents tab and select **Symbology.**
10. In **Symbology**, change the field to **T_pH.**





11. Save your project.