

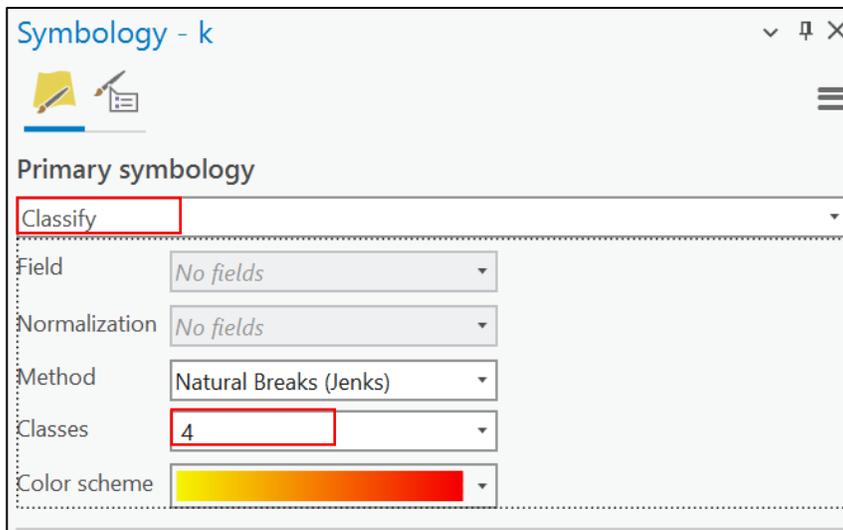
Lesson 3.2: Developing a K fertilizer prescription map

Data Source: *dataset3.zip*

Part 1: Creating a K₂O prescription map using the **Reclassify** tool.

1. Open the previously saved project.
2. Add a subgroup named “**K2O**” under the group “**Soil Prescription**”.
3. Understand the formulas used to estimate K₂O prescription.

If $k < 100$ (ppm)	K ₂ O rate = 80 kg/ha
If $100 \leq k < 200$ (ppm)	K ₂ O rate = 60 kg/ha
If $200 \leq k < 500$ (ppm)	K ₂ O rate = 40 kg/ha
If $k > 500$ (ppm)	K ₂ O rate = 0 kg/ha
4. Search **Raster and Imagery (Options)**.
5. Under **Raster Dataset**, change **Maximum number of unique values to display** to **100,000**.
6. Right click on *K* and select **symbology**. Select the below options.



7. Search **Reclassify (Spatial Analyst Tool)**.
8. In the **Reclassify** window, change the following inputs, then hit **Run**:
 - Input Raster :** *K*
 - Reclass Field:** *Value*
 - Start, End, New:** *Change the values to match the values shown below.*

Geoprocessing Reclassify

Parameters Environments

Input raster:

Reclass field:

Reclassification

Reverse New Values

Start	End	New
99.194153	100	100
100	200	200
200	500	500
500	632.395447	632
NODATA	NODATA	NODATA

Classify Unique

Output raster:

Change missing values to NoData

9. Search **Raster to Polygon** and input the following, then hit **Run**.

Geoprocessing Raster to Polygon

Parameters Environments

Input raster:

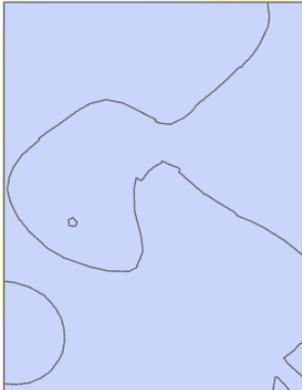
Field:

Output polygon features:

Simplify polygons

Create multipart features

Maximum vertices per polygon feature:



Part 3: Editing the attribute table of a K₂O prescription map

1. Right-click on the layer *K2O_poly* and select **Attribute Table**.
2. Select **Add Field**.

OBJECTID *	Shape *	Id	gridcode	Shape_Length	Shape_Area	K2O
1	Polygon	1	100	40.134152	109.864991	<Null>
2	Polygon	2	200	1675.175068	79320.987842	<Null>
3	Polygon	3	200	130.754011	752.996272	<Null>
4	Polygon	4	632	404.853085	10347.843263	<Null>
5	Polygon	5	200	84.243874	358.860572	<Null>
6	Polygon	6	500	2961.136189	151024.586185	<Null>

Click to add new row.

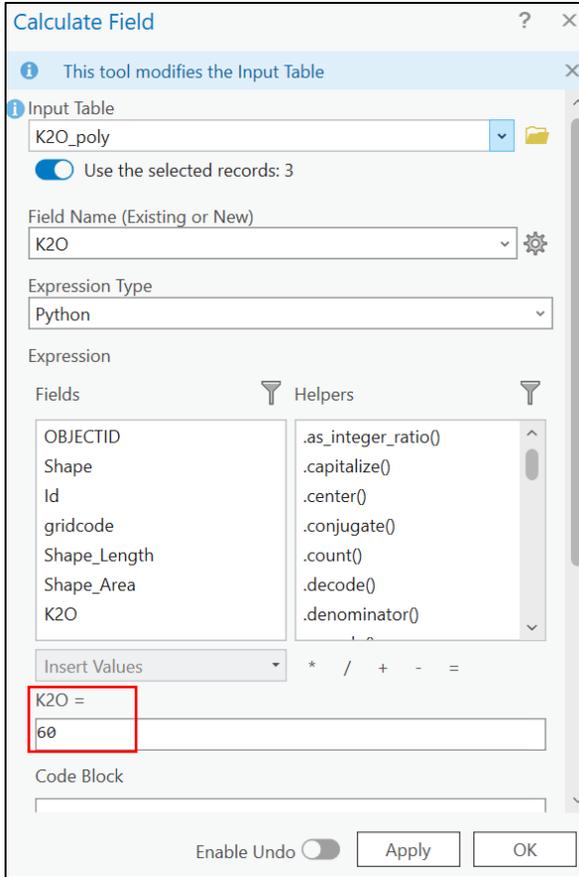
3. Add the following field, then right click on the field and select **Save**:

Name: K2O

Type: Short

<input checked="" type="checkbox"/>	<input type="checkbox"/>	K2O	K2O	Short
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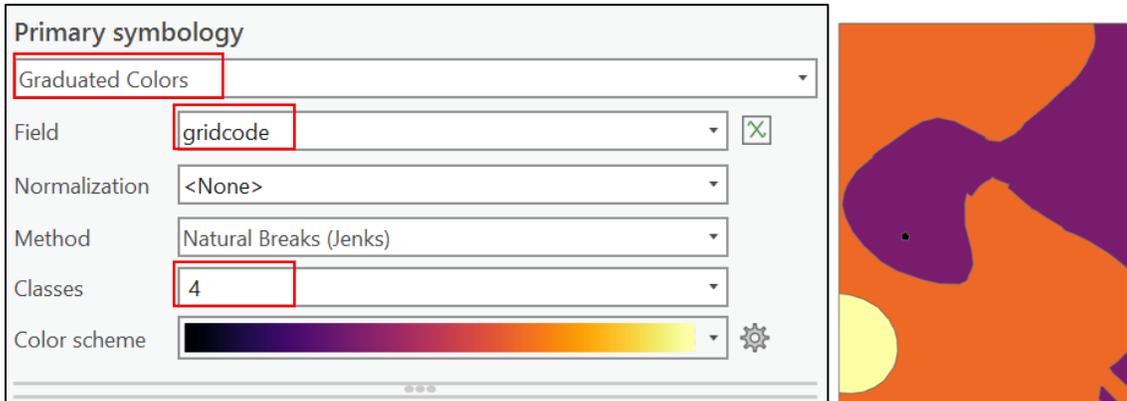
4. In the **Attribute Table**, hold down **ctrl** and select all the rows that have a **gridcode** equal to **200**.
5. With the three rows selected, right click on the **K2O** column, and select **Calculate Field**.
6. In the box under **K2O =** , enter **60**. We are doing this to assign the right amount of K2O to the field, based on the current part per million of potassium present in the soil. The numbers are coming from the equations given at the beginning.



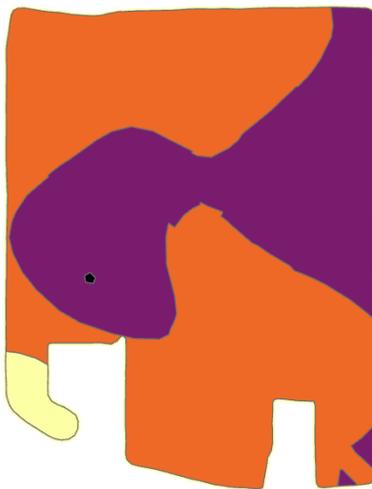
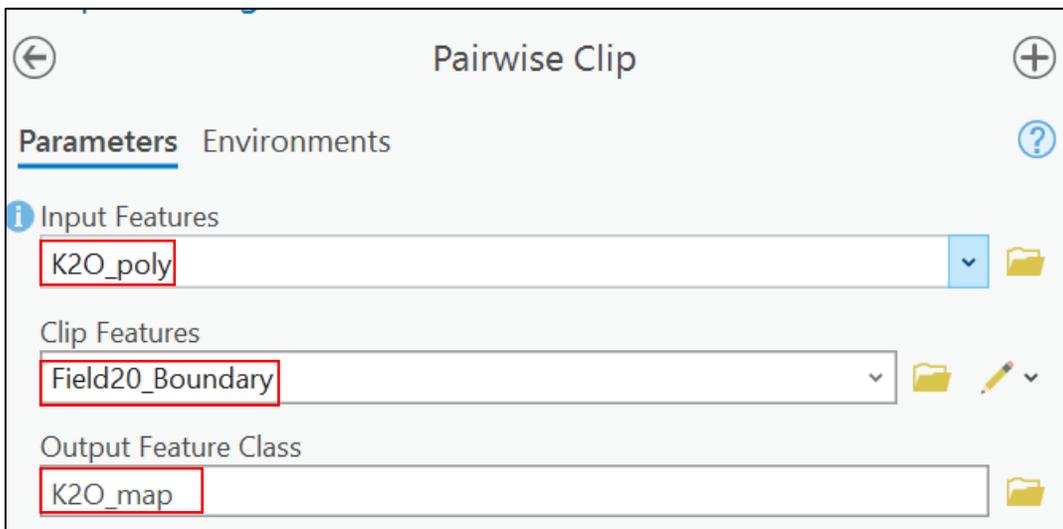
7. Repeat steps 4-6 for the rest of the grid codes:
 gridcode = 100 , **K20 = 80**
 gridcode = 500, **K20 = 40**
 gridcode = 632, **K20 = 0**

	OBJECTID *	Shape *	Id	gridcode	Shape_Length	Shape_Area	K2O
1	1	Polygon	1	100	40.134152	109.864991	80
2	2	Polygon	2	200	1675.175068	79320.987842	60
3	3	Polygon	3	200	130.754011	752.996272	60
4	4	Polygon	4	632	404.853085	10347.843263	0
5	5	Polygon	5	200	84.243874	358.860572	60
6	6	Polygon	6	500	2961.136189	151024.586185	40

8. Right click on *K2O_poly* and select **Symbology**. Fill out the window as shown below.



9. Search **Pairwise Clip**.



Save your project. Done!

