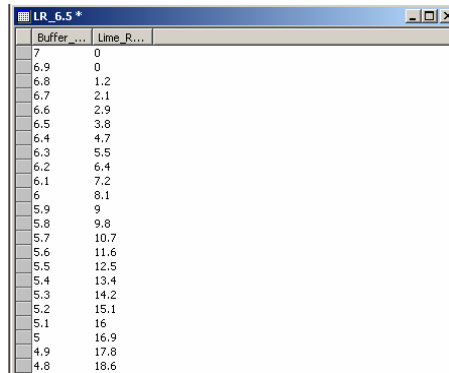## Lesson 5 - Creating Prescription Maps

Exercise 5-2

Objective: Create a lime prescription map based on the North Central Region recommendations.

1. **File-Open *Project_5-1.map*.**

2. From the **File** menu, select **Import-Table**. In the **Import Table** dialog box, choose ***CSV Files (*.asc,*.tab,*.txt)*** in the **Files of type** box and navigate to the ***LR_6.5.txt*** file to open. Click **Open**. In the popup **Import CSV File** dialog box, click **OK**.

3. Double-click the ***LR_6.5.txt*** table component in the **Project** pane. *This table shows the relationship between buffer pH and lime requirement*:


4. Double-click the ***Soil_Analysis*** table component in the **Project** pane. *Since several points under the column heading of **pH_ Buf** do not have buffer pH test results, **0** is placed by default and should be replaced by **7***.

5. In **Selection Toolbar,** select the ***pH_Buf*** field in the **Target box,** *Equal to* in the **Operator box,** and enter ***0*** in the **Argument box**. Click the **Select** button. All rows containing ***0*** in the ***pH_Buf*** column will be selected.

6. In **Transform Toolbar**, select the ***pH_Buf*** field for the **Target box,** *Fill with* for the **Operator box,** and enter ***7*** in the **Parameter box**. Click **Apply**. All ***0*** values for ***pH_Buf*** will be substituted with ***7***.

7. Click the **Select None** icon to unselect the selected rows in the table.
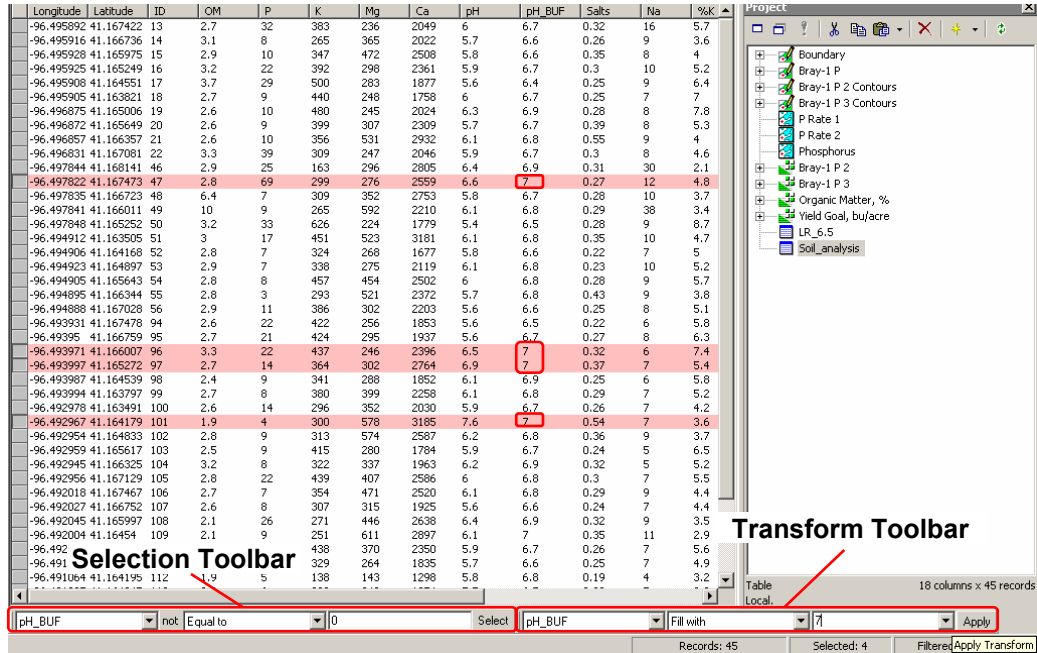
8. From **Table** menu select **Relations**. In the popup **Table Relations** dialog box, click the **New Relation** icon.
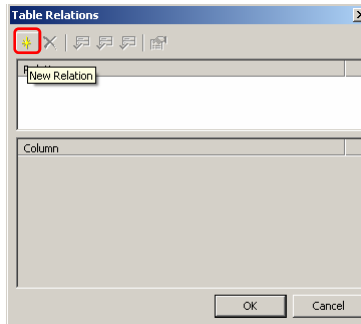
9. In the popup **Add Relation** dialog box, select the *LR_6.5* table from the list of **Make key fields in** box. Click the *pH_Buf* field in the left list of names and the *Buffer_pH* field in the right list of names. Click **OK**. The table will be related using these two columns.
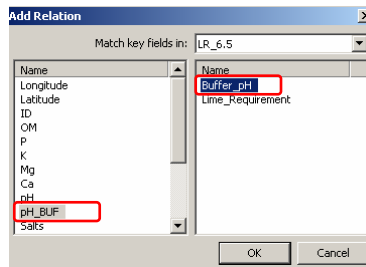
10. Back in the **Table Relations** dialog box, check *Lime_Requirement* in the **Columns** box and click **OK**.

2
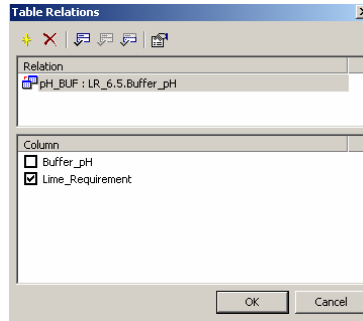
11. In the **Soil_Analysis** table, scroll to the right to observe the new column with the **Lime_Requirement** heading. *This column was taken from the LR_6.5 table.*


12. Right click the **Lime_Requirement** column heading and select **Flatten** to make this column permanent. Close both tables.

13. Right click the **Soil_Analysis** table component in the **Project** pane and click **Copy**. Right click an empty location in the **Project** pane and select **Paste As-Drawing**. In the popup **Paste As Drawing** dialog box click on the **Select None** icon and then check the checkboxes next to *pH* and **Lime_Requirement**. Click **OK**.

14. Right click the **Soil Analysis 2** drawing component in the **Project** pane and select **Rename**. In the popup **Component Name** dialog box, type *Soil pH* in the **Change to** box and click **OK**. Right click the **Soil pH** drawing component and select **Assign Projection.** In the popup **Assign Projection** dialog box, click **OK**. Right click the **Soil pH** drawing component again and choose **Change Projection.** In the popup **Change Projection** dialog box select **Universal Transverse Mercator - Zone 14 (N)**. Click **OK**.

15. Again, right click the **Soil pH** drawing component in the **Project** pane and select **Copy**. Right click any empty location in the **Project** pane and select **Paste As-Surface**. In the popup **Paste As Surface** dialog box choose **Lime_Requirement** in the **Height** box, set *60* by *60* meter **Margins** and *5* by *5* meter **Pixel size**. Specify the **Spherical** variogram model in the **Model** box and click **OK**.

16. Right click the **Soil pH 2** surface in the project pane and select **Rename**. In the popup **Component Name** dialog box, type *Lime Requirement* in the **Change to** box. Click **OK**. Right click an empty location in the **Project** pane and select **Create-Map**. In the popup **Create Map** dialog box, type *Lime Rate* in the **Name** box and check the checkboxes next to *Boundary*, *Soil pH* and *Lime Requirement*. Click **OK**.

17. Double-click the ***Lime Rate*** map component in the **Project** pane. Expand the map using the **Maximize** button and click the **Zoom To Fit** icon. Click inside the boundary to select the field area.

18. Click the ***Lime Requirement*** tab. From the **Surface** menu choose **Transfer Selection**. In the popup **Transfer Selection** dialog box, click **OK**. From the **Edit** menu, choose **Select Inverse**. Press the **Delete** button on the keyboard.

19. From the **View** menu select **Display options**. In the popup **Display options** dialog box, select **Blues to Reds** in the **Palette** box. Click the **Apply** icon and **OK**.
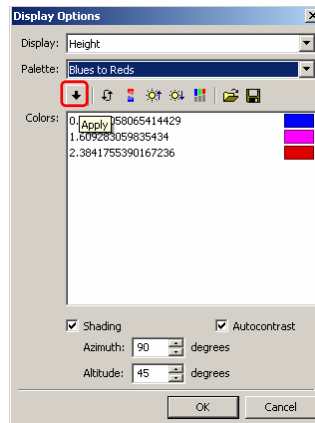

As a result, the following lime requirement map will appear. The blue area requires little or no lime.
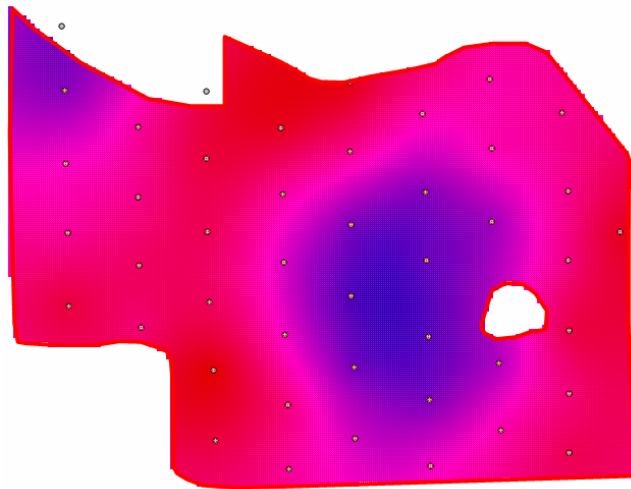

20. Click the ***Boundary*** tab and the **Select None** icon.

21. Click the ***Soil pH*** tab, the **Point Size** icon, and select *11*.

Point Background icon

Point Size icon
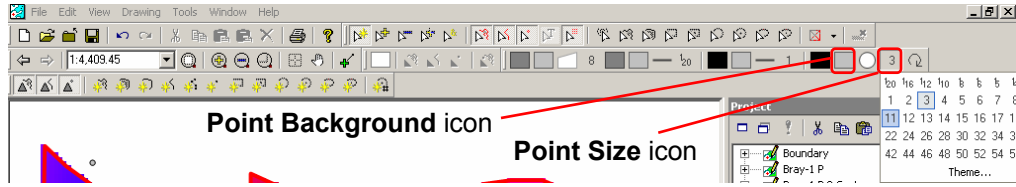
22. Click the **Point Background** icon and select **Theme**. In the popup **Format** dialog box, set the value of **Align to** equal *-1* to set the divider with 0.1 pH precision. Click **Tally**. Select **Blues to Reds** from the drop-down menu in the **Palette** box. Click the **Apply** icon and **Reverse** icon. Click **OK**.


Apply icon

Reverse icon
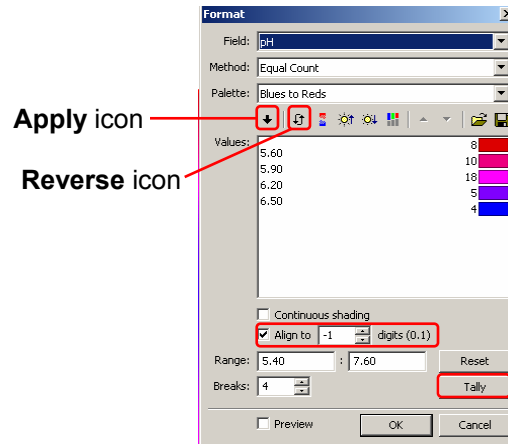
The lime requirement map with the soil pH values should appear as shown below:
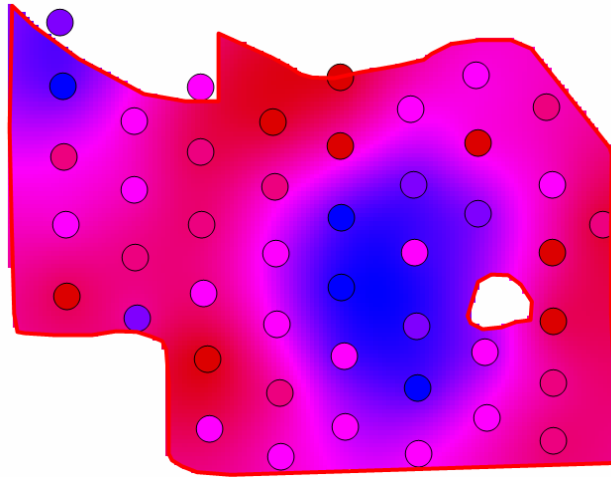
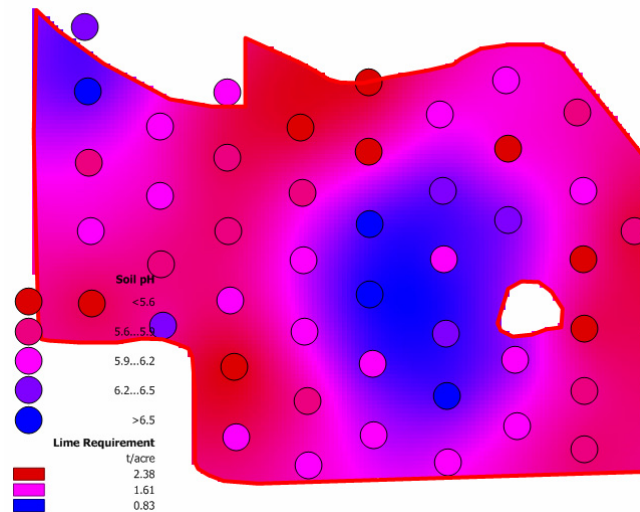23. From the **View** menu select **Legend**. In the popup **Legend** dialog box check the checkboxes next to *Show legend* and *Customize legend*. Select **Transparent** from the drop-down menu in the **Style** box. Choose **Left Bottom** from drop-down menu in the **Align** box. Click the **Delete Element** icon to remove the boundary element.

24. Click the **Flatten Element** icon to start modifying the legend. First, click the **Points: pH** line in the box on the right and click the **Delete Element** icon to get it removed. Then, click the **Lime Requirement** in the legend box to be selected and click the **Flatten Element** icon again. Click the **Heights** line in the legend box and type *t/acre* in the **Text** box on the left side. Click the first number under *t/acre* and type *2.38* in the **Text** box. Click the second number under *t/acre* and type *1.61* in the **Text** box. Finally, click the third number under *t/acre* and type *0.83*. Click **OK**. *By changing the numbers presented in the legend we can round the numbers to three significant digits.*
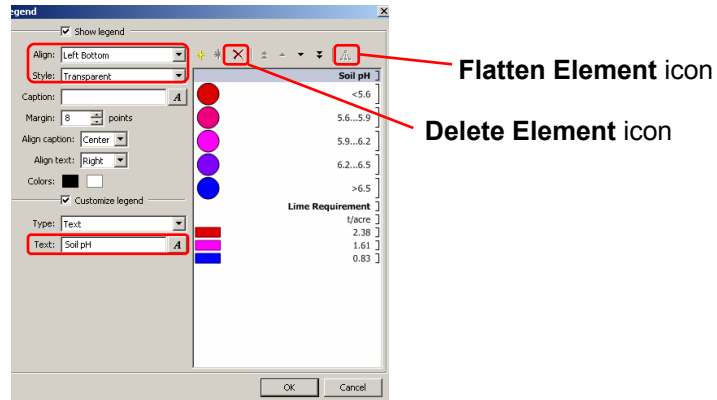
The final lime requirement map with soil pH measurements and legend displayed is shown below.

25. **File-Save As *Project_5-2.map*.**