PowerBI Visualization Steps

*This document outlines the steps required to produce visualizations of statistics on elevation and precipitation in PowerBI.*

Prerequisites:

1. User must have the yieldStats.pbit file saved on their machine.
2. User must have PowerBI, version … installed.
3. User must have their .csv file formatted with the columns with the relevant data named exactly as follows:
4. “NormalizedYield” , for the normalized yield
5. V.T.R(inch), for total rainfall during vegetative stage.
6. R.T.R(inch), for total rainfall during reproductive stage.
7. M.T.R(inch), for total rainfall during maturity stage.

This file needs to be saved in the same folder as the template file.

Step 1: Open up the “yieldStats.pbit” file in PowerBI. Everything should be configured so that when the file is open, the visuals should already be set up. If this does not happen, or you wish to perform visuals with differently named .csv file (With columns satisfying the prerequisites), follow the steps below.

Step 2: Click “Get Data” tab on the top of the page.

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Choose your data format and file.

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On the right of the page under the “Fields” pane, right-click on your file and choose “Edit Query”. This will open up the Power Query editor.

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Step 3: Click on the “Add Custom Column” option from the table drop-down menu. Name the new column “Elev\_Cat”.

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Then, use the following expression as the column formula:

= let minimumElevationRow = Table.Min(#"Changed Type", "MEAN\_Eleva"),min = minimumElevationRow [MEAN\_Eleva],maximumElevationRow = Table.Max(#"Changed Type", "MEAN\_Eleva"),max = maximumElevationRow[MEAN\_Eleva] in each if [MEAN\_Eleva] < (max + (2\*min))/3 then "Low" else if [MEAN\_Eleva] < ((2\*max) + min)/3 then "Mid" else "High"

Click “OK”. Then, in the formula editor at the top of the page, remove the first “each” keyword.

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Click the check mark to update the formula.

This will create three elevation categories by dividing the range of the elevation into three equal intervals. Then, each row is categorized (in the newly-created “Elev\_Cat” column) .

Step 4: Repeat Step 3 to create three more columns for precipitation categories, using the following three expressions for the column formulas:

For the “Veg\_Precip\_Cat” column:

= let minimumRow = Table.Min(#"Changed Type", "V.PET(inch)"),min = minimumRow [#"V.PET(inch)"],maximumRow = Table.Max(#"Changed Type", "V.PET(inch)"),max = maximumRow[#"V.PET(inch)"] in each if [#"V.PET(inch)"] < (max + (2\*min))/3 then "Low" else if [#"V.PET(inch)"] < ((2\*max) + min)/3 then "Mid" else "High"

For the “Rep\_Precip\_Cat” column:

= let minimumRow = Table.Min(#"Changed Type", "R.PET(inch)"),min = minimumRow [#"R.PET(inch)"],maximumRow = Table.Max(#"Changed Type", "R.PET(inch)"),max = maximumRow[#"R.PET(inch)"] in each if [#"R.PET(inch)"] < (max + (2\*min))/3 then "Low" else if [#"R.PET(inch)"] < ((2\*max) + min)/3 then "Mid" else "High"

For the “Mat\_Precip\_Cat” Column:

= let minimumRow = Table.Min(#"Changed Type", "M.PET(inch)"),min = minimumRow [#"M.PET(inch)"],maximumRow = Table.Max(#"Changed Type", "M.PET(inch)"),max = maximumRow[#"M.PET(inch)"] in each if [#"M.PET(inch)"] < (max + (2\*min))/3 then "Low" else if [#"M.PET(inch)"] < ((2\*max) + min)/3 then "Mid" else "High"

Step 5: Click the save icon to save the query changes.

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Step 6: Now, for each visual, click on the visual and then update the fields in the “Visualizations” pane by dragging and dropping the appropriate fields from the “Fields” pane. Each visual should have its settings look like the following screenshots.

**ByElevationFilterByCropType**

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Additionally, for this page, click on the Slicer and update its “Visualizations” pane to this:

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**ByVegPrecipitation**

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**ByRepPrecipitation**

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**ByMatPrecipitation**

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After these steps are completed, the visualizations are now configured for your dataset.