

Note:

- Within the [Soil Texture National Calculation](#) folder, the user will have access to files that will aid in determining soil texture.
- User will need to download the 'Soil_Cal (version 1).xlsx' on their computer to use the other documents.
- The user will use the NATSGO geodatabase along with the MapunitRaster file organized by MUKEY.
- Files Needed:
 - Map_Unit Raster (Provides MUKEY)
 - Horizon (Provides Textural Data)
 - Component (Provides Composition % for each component)

Procedure for Joining Soil Tables to Soil Raster:

1. Clip *Component File* to contain only the following attributes:
 - a. OBJECTID,
 - b. Comp % - Low Value,
 - c. Comp % - Representative Value,
 - d. Mapunit Key,
 - e. Component Key.
2. Clip *Horizon File* to contain only the following attributes:
 - a. OBJECTID,
 - b. Designation,
 - c. Bottom Depth - Representative Value,
 - d. Thickness - Representative Value,
 - e. Total Sand - Representative Value,
 - f. Total Silt - Representative Value,
 - g. Total Clay - Representative Value,
 - h. Component Key,
 - i. Chorizon Key.
3. Within the clip horizon file account for null values with if statement.
4. Account for all components with a thickness > 40 cm.
5. Account for components that extend both above and below 40 cm.
6. Identifies components with a base below 40 cm.
7. Remove any negative numbers from the previous column.
8. Identifies components that have a bottom above 40 cm.
9. Paste special values columns M and N to O and P.
10. Calculate the Total Sand - Representative Value, Total Silt - Representative Value, and Total Clay - Representative Value that is fractional based on the thickness a component covers within the top 40 cm.
11. Copy columns from the Clip Component File.
12. Obtain the sum of Total Sand - Representative Value, Total Silt - Representative Value, and Total Clay - Representative Value from all component keys.
13. Sum sand, silt, and clay values.
14. Normalize sand, silt, and clay values so that they equal one.
15. Adjust sand, silt, and clay values based on the Comp% for each component.
16. Sum adjust Comp% for each MUKEY.
17. Obtain the sum of Total Sand - Representative Value, Total Silt - Representative Value, and Total Clay - Representative Value from all MUKEYs.

18. Check to see if they add up to 100%.
19. Join the Excel sheet with final values for Total Sand - Representative Value, Total Silt - Representative Value, and Total Clay to a raster layer that has MUKEYs.