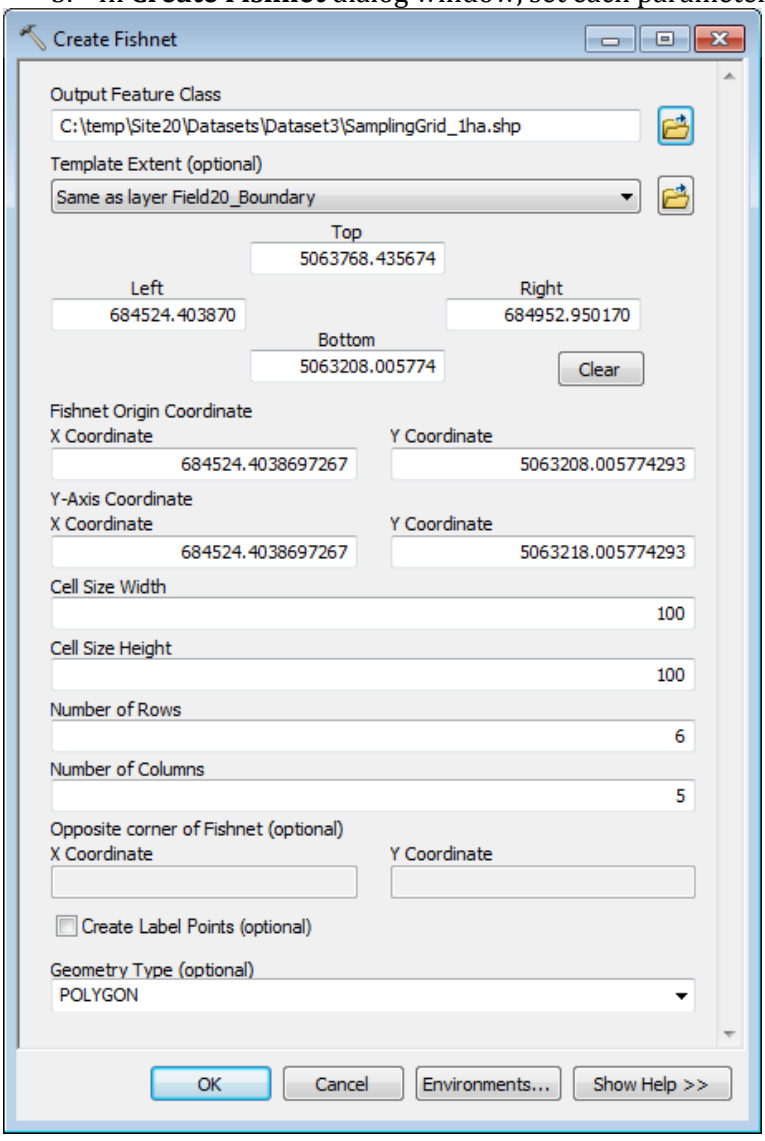
Tutorial Set 2: Data interpolation

Exercise Site20_2-3 Creating a systematic soil sampling grid

Learning objective: Creating systematic 1 ha-soil-sampling-grids
Techniques: 1. ArcToolbox - Data Management Tools - Feature Class - Create Fishnet
2. Feature to Point
Data Source: Dataset2

Part 1: Creating systematic grids

1. Open previously save project and launch **ArcToolbox**.
2. Go to **ArcToolbox > Data Management Tools > Sampling > Create Fishnet**.
3. In **Create Fishnet** dialog window, set each parameter as follows.



Output Name = *SamplingGrid_1ha.shp*

Template Extent = *Field20_Boundary*

Cell Width = 100 (m)

Cell Height = 100 (m)

# of Rows = 6

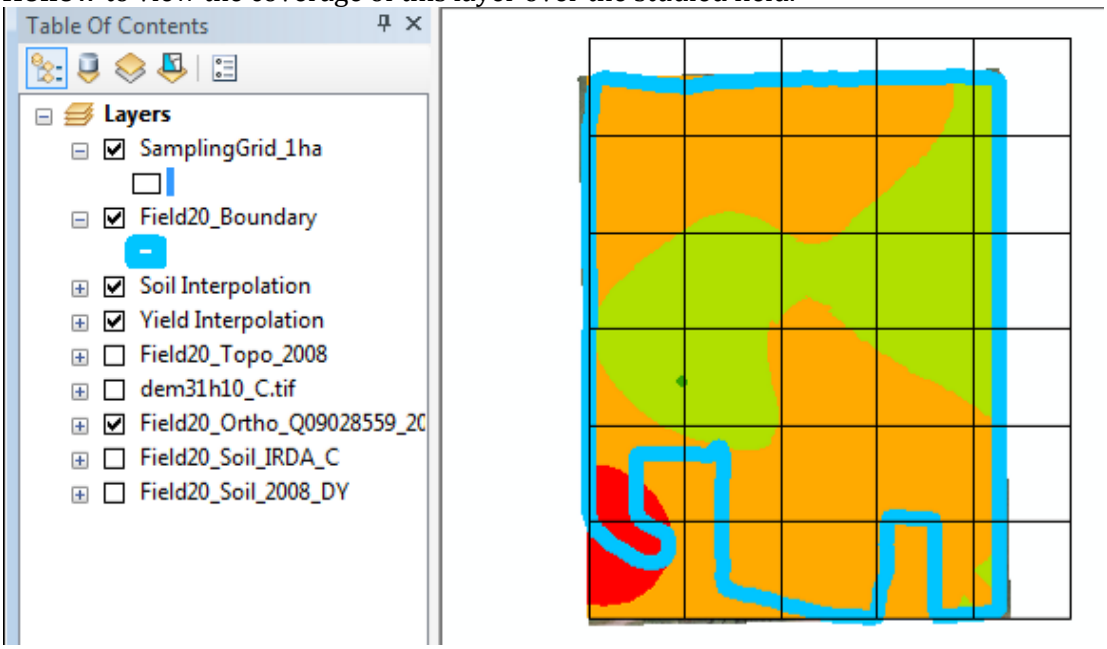
# of Columns = 5

# of rows and columns are estimated based on the size of the study field (e.g., ~ 500 m x 600 m)

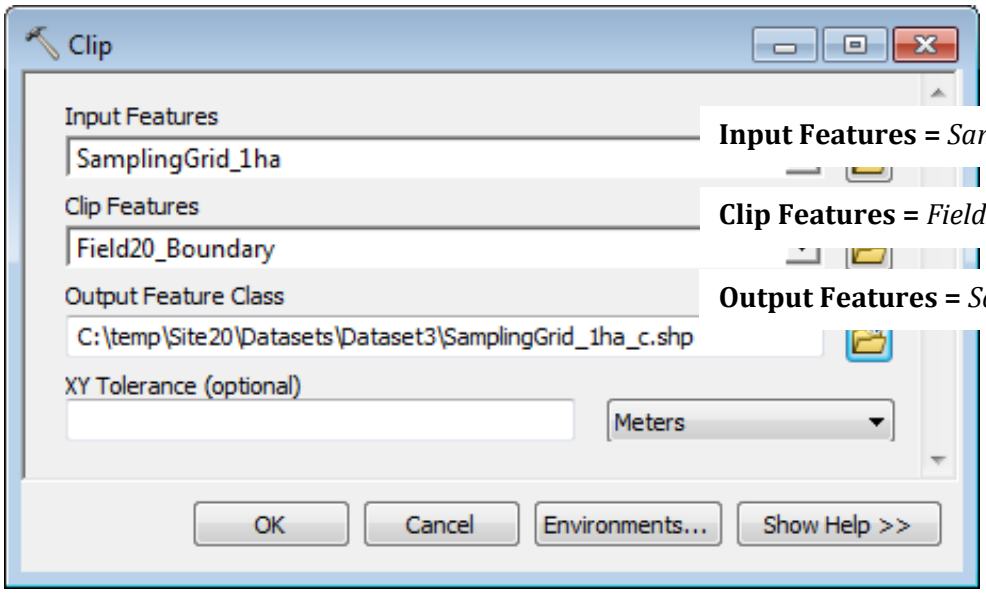
Geometry Type = Polygon

Click **Ok**

4. ***SamplingGrid_1ha.shp*** is added to **Table of Contents**. Change the displayed symbol to **Hollow** to view the coverage of this layer over the studied field.



5. Clip this sampling grid so that it has the same boundary shape as ***Field20_Boundary.shp***.
Go to **ArcToolbox > Analysis Tools > Extract > Clip**.
In **Clip** dialog window, set the parameters as follows and then click **OK**.



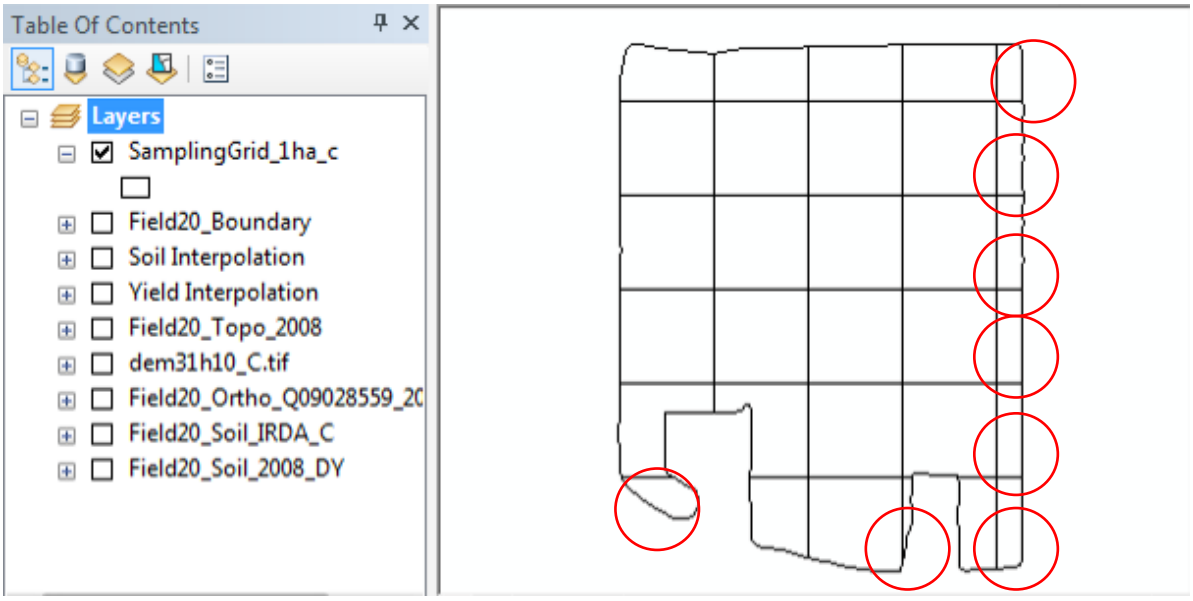
Input Features = *SamplingGrid_1ha*

Clip Features = *Field20_Boundary*

Output Features = *SamplingGrid_1ha_c*

Click **OK**

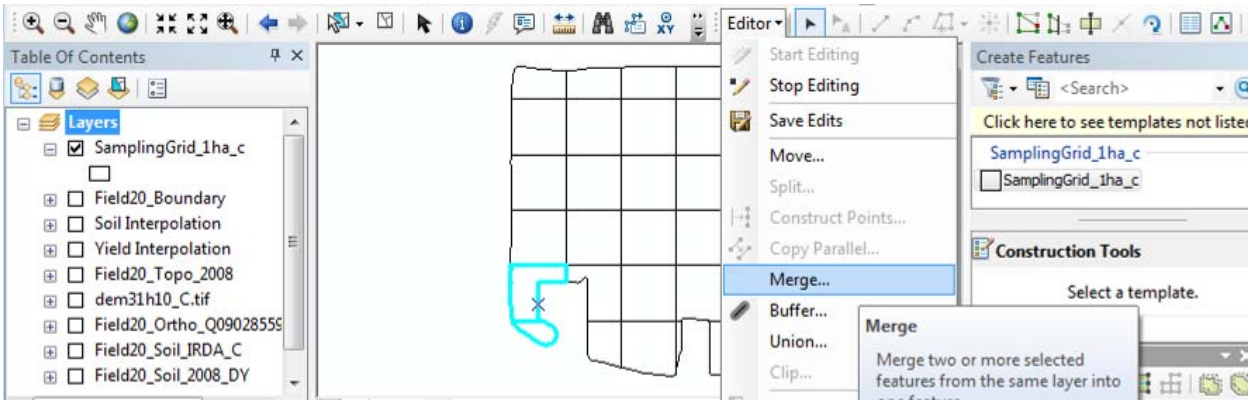
6. ***SamplingGrid_1ha_c.shp*** is added to **Table of Contents**.
Remove the previously unclipped grid and only keep the new clipped grid. As seen below, some grids that are too small (e.g., the circled area), and they should be manually merged to the adjacent grids.



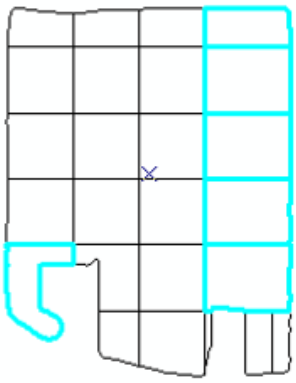
7. In ArcMap, go to **Table of Content** and make sure that only ***SamplingGrid_1ha_c.shp*** is visible (unselect the rest). Now, right click on the **Standard Toolbar** to add the **Editor** tool. Go to **Editor > Starting Editing** to edit ***SamplingGrid_1ha_c.shp***.

Edit Tool

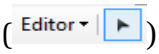
8. Use **Edit** Tool to select the two adjacent grids and go to **Editor > Merge** to merge them.



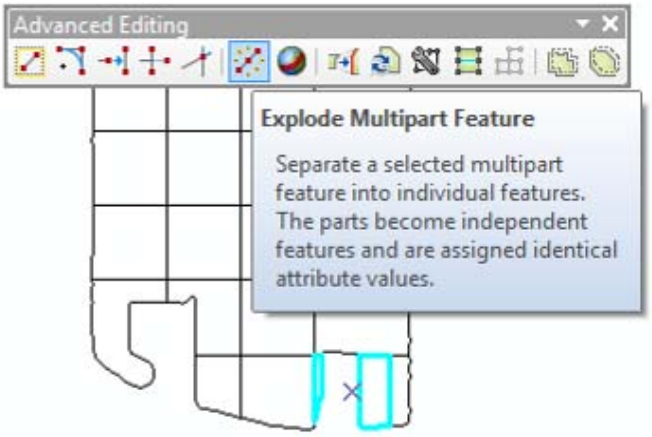
9. Repeat previous step until the following result (e.g., the highlight grids) is achieved.



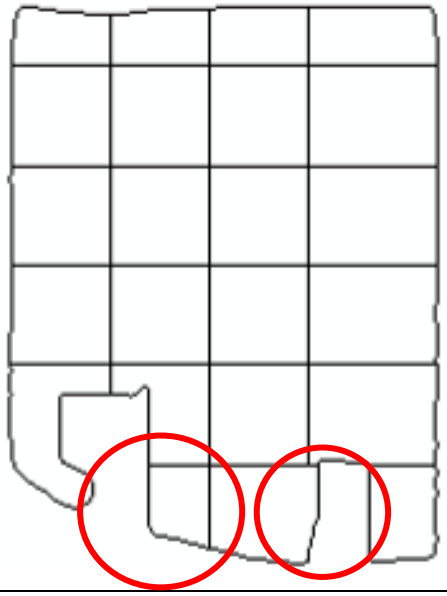
10. **>More editing tools>Advanced Editing** is required to modify the latest feature that contains two parts.

    First, use the **Edit Tool** (

) to select this feature, and then click **Explode Multipart Feature** to convert this two-parts feature into two single-part features.



11. Again, merge these two features to their adjacent features. The final sampling grid map should look like the map below. **Save Edits** and **Stop Edits** using Editor toolbar.

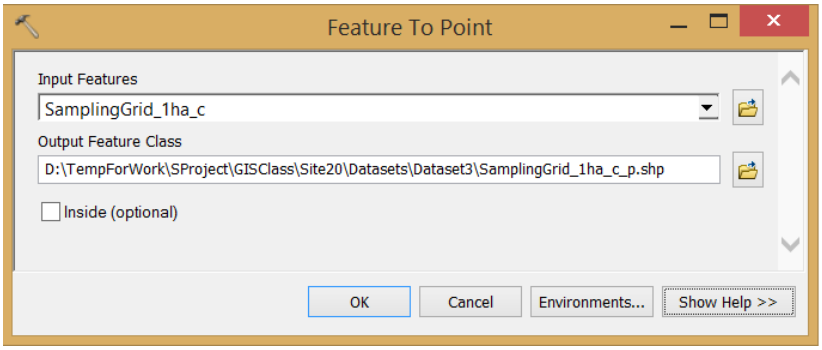


Part 2: Creating centroids of polygon features

1. Launch **ArcToolbox**.
   Go to **Data Management Tools** > **Features** > **Feature to Point**

   Input Features: ***SamplingGrid_1ha_c.shp***
   Output Feature Class: ***SamplingGrid_1ha_c_p.shp***

   Click **OK**



2. A new shapefile ***SamplingGrid_1ha_c_p.shp*** is added to the map. This point shapefile can be used as guidance for center-grid soil sampling.

14. Save the project.