Tutorial Set 2: Data interpolation

Exercise Site20_2-3 Creating a systematic soil sampling grid

Learning objective: Techniques:	Creating sy 1. ArcToolb Fishnet	stematic 1 ha-soil oox - Data Manager	pling-grids t Tools - Feature Class - Create	
Data Source:	Dataset2	o Point		
Part 1: Creating system	atic grids			
1. Open ArcMap (no	t the saved pr	oject) with Field20)_Bou	Indary.shp and launch ArcToolbox.
2. Go to ArcToolbox	> Data Mana	agement Tools > Sa	ampl	ing > Create Fishnet.
3. In Create Fishnet	dialog windo	w, set each parame	ter as	s follows.
🔨 Create Fishnet			×	
Output Feature Class			*	
C:\temp\Site20\Datasets\Da	taset3\SamplingGrid_	1ha.shp 🛃		Output Name = SamplingGrid_1ha.shp
Template Extent (optional)				Tomplato Extent - Same as laver
Same as layer Field20_Bound	ary T			Field20 Boundary
	5063768.435674			Tiend20_Doundary
Left		Right		
684524.403870		684952.950170		
	Bottom			
	5063208.005774	Clear		
Fishnet Origin Coordinate				
X Coordinate	Y Coordi	nate		
684524.4038	697267	5063208.005774293		
Y-Axis Coordinate				
X Coordinate	Y Coordi	nate		
684524.4038	697267	5063218.005774293		
Cell Size Width		100		
Cell Size Height		100		Cell Width = 100 (m)
Cell Size Reight		100		
Number of Rows		100		Cell Height = 100 (m)
Tamber of Rons		6		
Number of Columns				# of Rows = 6
		5		
Opposite corner of Fishnet (op	otional)			# of Columns = 5
X Coordinate	Y Coordi	nate		
				# of rows and columns are
Create Label Points (option	nal)			estimated based on the size of the
Geometry Type (optional)				study field (e.g., ~ 500 m x 600 m)
POLYGON		•		
			_	unchecked Create Label Doints
1				Coometry Type - Delycer
ОК	Cancel Envi	ronments Show Help >:	>	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.



 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.

🔨 Clip					
Input Features SamplingGrid 1ba	Input Features = SamplingGrid_1ha				
Clip Features	Clip Features = Field20_Boundary				
Output Feature Class	Output Features = SamplingGrid_1ha_c				
C:\temp\Site20\Datasets\Dataset3\SamplingGrid_1ha_c.shp XY Tolerance (optional) Meters					
OK Cancel Environments Show Help >> Click OK					

6. *SamplingGrid_1ha_c.shp* is added to **Table of Contents**.

Remove the previously unclipped grid (SamplingGrid_1ha) from ToC 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.



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*.



8. Use **Edit** Tool to select the two adjacent grids (by Select Feature>Select by Rectangle)



9. After the following selection, go to Editor > Merge to merge them.



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** (Editor >) 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

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

🔨 Fea	ture To Po	oint		_ □	×
Input Features					_ ^
SamplingGrid_1ha_c				•	6
Output Feature Class					
D:\TempForWork\SProject\GISClass\Site20\D	atasets\Dataset	t3\SamplingGr	id_1ha_c_p.sł	ıp	6
Inside (optional)					
c	K Ca	ancel Env	vironments	Show	Help >>

- 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.
- 3. Save the project.

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