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Software: ArcGIS 10 (ArcMap, ArcCatalog)

Lesson 6: How to attach biomass and percent cover to random points

Background

This tutorial will guide you through the process of attaching attributes from a polygon shapefile to a shapefile of random points previously created by Hawth's Analysis Tools. If you do not have a shapefile of random points created prior to beginning this tutorial, refer to "How to Create 200 Random Points using Hawth's Analysis Tools." This tutorial is not specific to a certain number of random points, 200 is the example that will be displayed in the steps to follow. Also, the example within this tutorial is applied to invasive tamarisk polygons within the Landsat scene of Row 32, Column 34 (LaJunta, CO). The random points generated in the previous tutorial are within the boundaries of these tamarisk polygons and need to include two attributes associated with polygon that contains them: *biomass for 900m^2* and *percent cover*. Operations within this document will all be managed in *ArcGIS version 10*, specifically *ArcMap 10,* and *ArcCatalog 10*.

Preparing Data for Attachment

1. Open *ArcMap 10* and choose a **Blank Map** template.

2. Click **Ok**.

3. To load the polygon data you are interested in click the **add data** icon and browse to the shapefile whose attributes you would like to attach to the random points. In this example the shapefile is labeled biomass.shp.
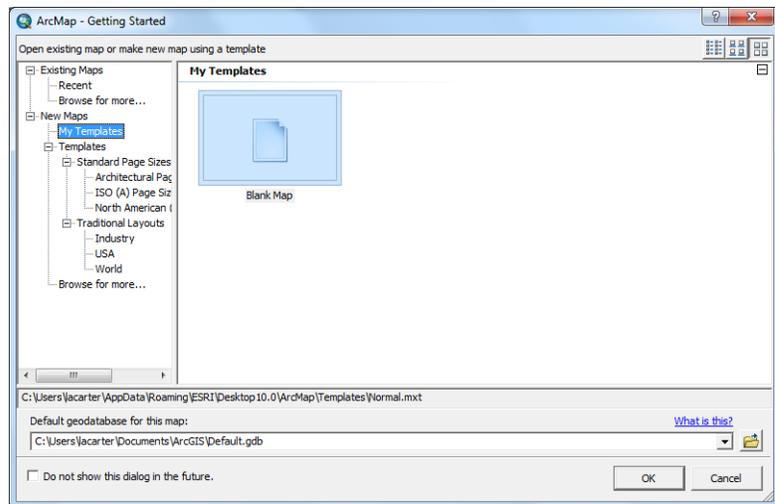
4. The layer will appear in the table of contents on the left side of the screen and the spatial display of biomass.shp appears on the right.

5. For the first time it is a good idea to start with a practice run. So, before you add the data for your random points previously created, you will first make a copy and work off of that.

6. Open *ArcCatalog 10* and navigate to where you previously stored the random point shapefile from Hawth's Tools.
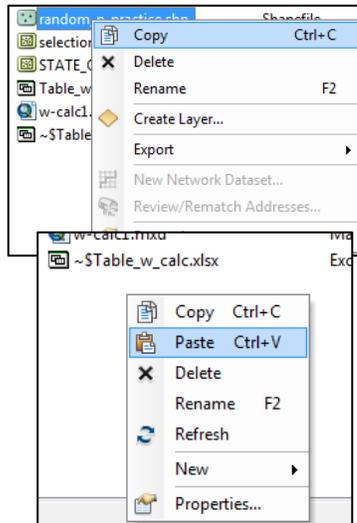
7. Right click the file random_points.shp, and click **Copy**.

8. Right click within the same folder location and click **Paste.**

9. Rename the new file random_p_practice.

10. Close *ArcCatalog 10* and open *ArcMap 10* back up with the map you already added the polygon shapefile to.

11. Click the **add data** icon ◆▾ again and browse to the file random_p_practice.shp. Click **Add**.

12. Check the shapefile random_p_practice to make sure the points are within the polygon boundaries by clicking the uniform **zoom** icon ⚏ . The below figure is a section of the tamarisk polygon shapefile (biomass.shp) with random_p_practice.shp.
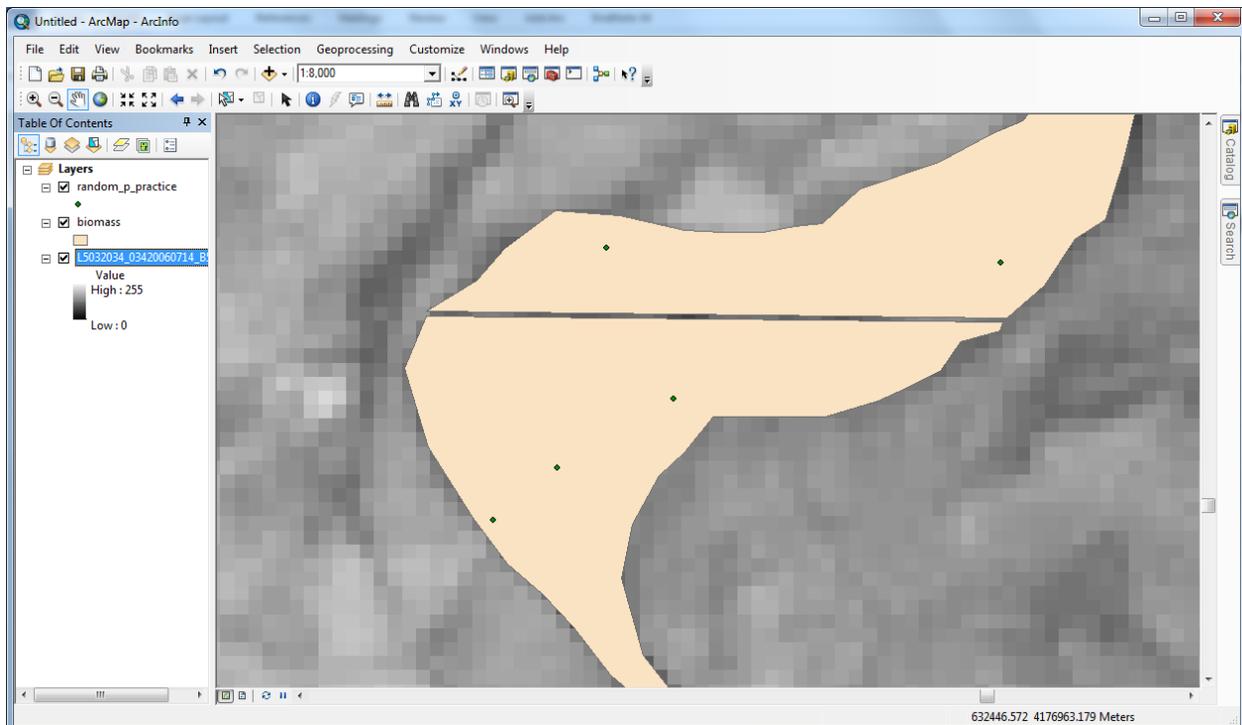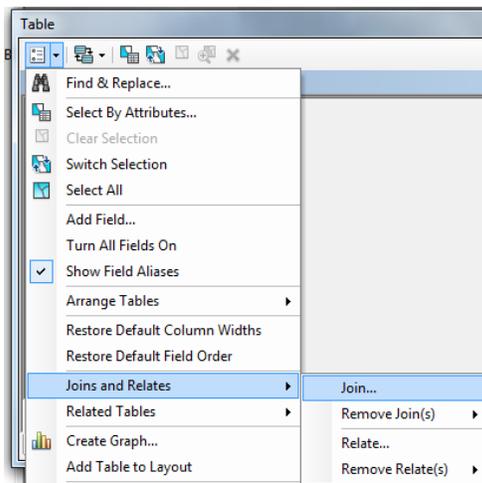
Attaching 900m^2 biomass and Percent Cover

1. Right click on the layer name **random_p_points** in the table of contents and select **Open Attribute Table**.

2. The attribute table will open in a new window and will only contain 3 columns: **FID**, **Shape**, and **Id**, looking like the image to the right.

3. In the upper left-hand corner click on the **table options** icon
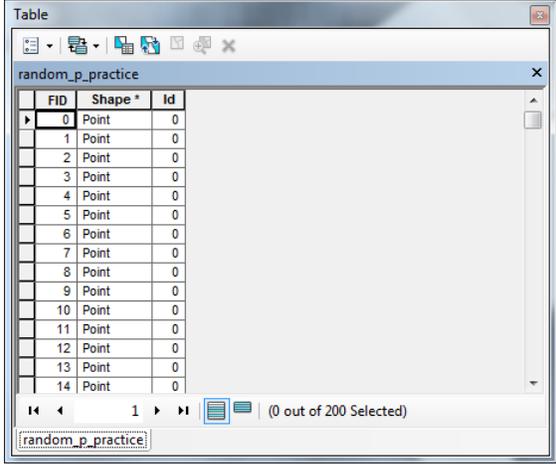
4. Scroll down to **Joins and Relates** and click on **Joins**.

5. The joining window will appear. Near the top, click the drop down arrow under *What do you want to join to this layer?*

6. Select **Join data from another layer based on spatial location.**

7. This action will change the information displayed in the window. Under *Choose the layer to join to this layer…* use the drop arrow to select the polygon layer. In this example it is biomass.

8. Select the option *It falls inside* for number 2.

9. At the bottom of the window use the **browse** icon to save the output file that the join will be saved under. Name the new file Rand_biom_join.shp for this example and be sure to select **Shapefile** from the *Save Type As* drop down.

10. Click **Save**

11. When the image looks like the one below, click **Ok**.
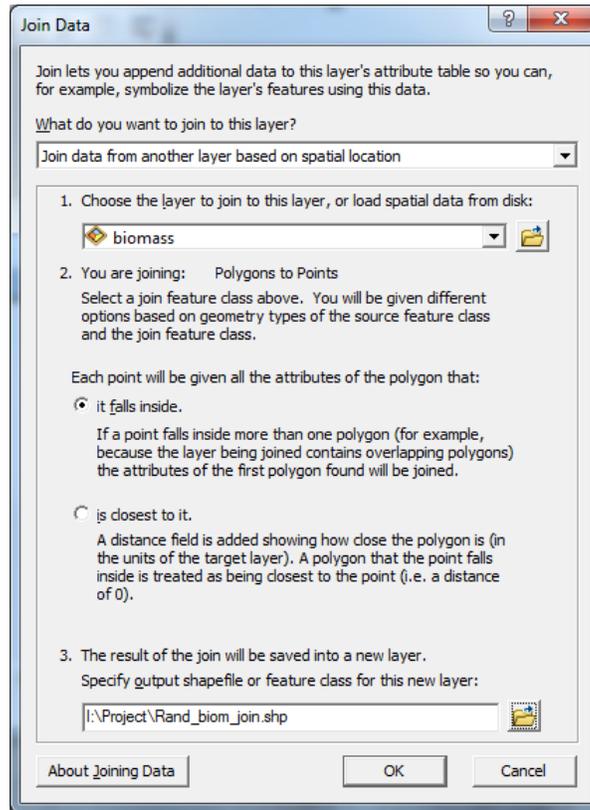
12. The new shapefile will appear in the table of contents on the left side of the screen.

13. In this case, joining the tables will transfer all of the data from the biomass.shp to the designated random points within random_p_practice.shp. Refer to the image below and notice how the first three fields are from the random points and the rest are from the biomass shapefile. This means that there are numerous fields that are unneeded.

14. Remember, because in this example you are only interested in the **900m² biomass** and **percent cover**, you can delete the other fields.

15. To delete a field, right click on **Rand_biom_join** in the table of contents and click **Open Attribute Table**.

16. Right click on the field header such as **Acreage** and select **Delete Field**.

Table

FID	Shape	Name	Pct_Cov	Biomass900
0	Point	tb1	20	2112.433616
1	Point	tb1	20	2112.433616
2	Point	tb1	20	2112.433616
3	Point	tp3	40	2805.597301
4	Point	tp4	40	2805.597301
5	Point	tp6	30	2039.239694
6	Point	tp10	30	3311.831833
7	Point	tp11	40	4556.436636
8	Point	stc1	30	2039.239694
9	Point	stc1	30	2039.239694
10	Point	stc2	30	2039.239694
11	Point	stc2	30	2039.239694
12	Point	stc2	30	2039.239694
13	Point	stc2	30	2039.239694
14	Point	stc2	30	2039.239694
15	Point	stc3	40	4556.436636
16	Point	stc3	40	4556.436636
17	Point	stc6	30	2039.239694
18	Point	stc7	20	1300.717759

Rand_biom_join

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Rand_biom_join

17. Repeat this process for all unnecessary fields within the new table. When you have finished it may look like the image to the left. **Note**: I kept the **Name** field of the polygon layer simply for future reference. Do not remove any fields you may believe to be useful within this shapefile in the future.

Congratulations! You have just successfully attached 900m² biomass and percent cover to a random point shapefile based on spatial location.