

Getting Started with ArcMap: Relating Attributes from Tables

Welcome to the Essential ArcGIS Task Sheet Series. This series supplements the Iowa State University GIS Geospatial Technology Training Program short course series, “Essential ArcGIS Tutorial Series.” The task sheets are designed to provide quick, easy instructions for performing specific tasks in GIS.

Relate defines relationships between two tables of different features. this allows a layer’s attributes to be accessed using the associated attributes of another table. This task sheet will cover how to relate attributes from tables.

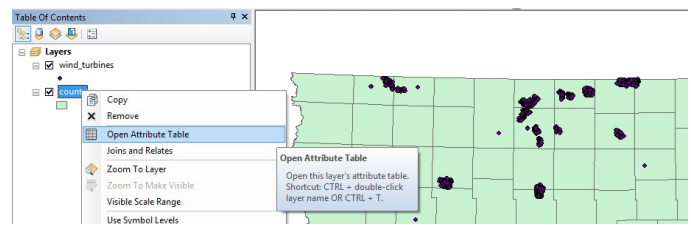
1. Download Data

- Download the data used in this task sheet by navigating to www.extension.iastate.edu/communities/gis/quicktasksheets/data. Click on the publication number that matches this task sheet. In this case, the publication number is **PM2082-09x**. This data originated from the Iowa Natural Resource Geographic Information Systems Library (NRGIS Library) under **State-wide Data > Infrastructure > wind_turbines** and can also be found at: <https://programs.iowadnr.gov/nrgislibx/> or www.igsb.uiowa.edu/nrgislibx/.

- Add the **county** and **wind_turbines** shapefiles to a blank ArcMap Document.

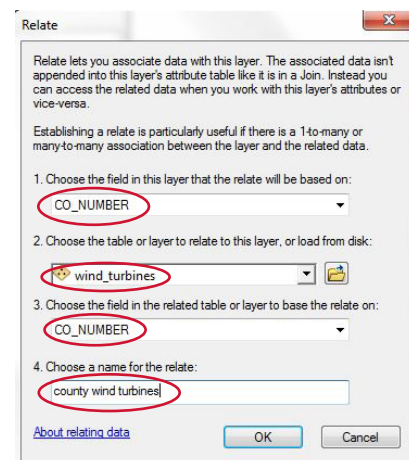
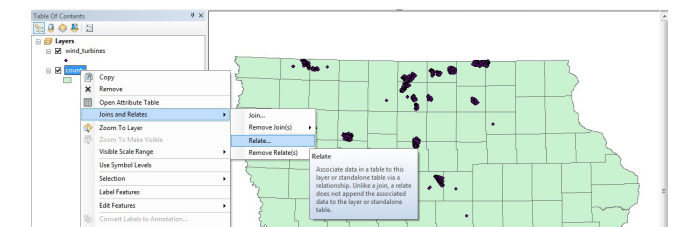
2. Relating Features

- Open the attribute table from both the **wind_turbines** layer and the **county** layer by right-clicking the layer from the **Table of Contents** and selecting **Open Attribute Table**. The attribute table of each layer can be opened simultaneously.
- Examine the contents of each table to find a unique field that the tables can be matched based on. In this case the **CO_NUMBER** field contains numbers that represent each county. *Note: Using the COUNTY field will not work because all caps is used by the wind_turbines layer and not the county layer.*
- Right-click on the **county** layer and select **Joins and Relates > Relate...**
- From the **Choose the field in this layer that the relate will be based on:** drop-down menu, select **CO_NUMBER**.
- From the **Choose the table or layer to relate to this layer, or load from disk:** drop-down menu, select



FID	Shape*	CO_NUMBER	COUNTY	TRS_S_L	UTM_X	UTM_Y	loc_id
0	Point	15	BOONA VISTA NE SE NW, Sec. 21, T20N, R30W		308505.1	4730333.43	41
1	Point	2	BOONA VISTA NW SW NE, Sec. 21, T20N, R30W		308710.6	4730276.1	41
2	Point						
3	Point						
4	Point						
5	Point						
6	Point						
7	Point						
8	Point						
9	Point						
10	Point						
11	Point						
12	Point						
13	Point						
14	Point						
15	Point						
16	Point						
17	Point						

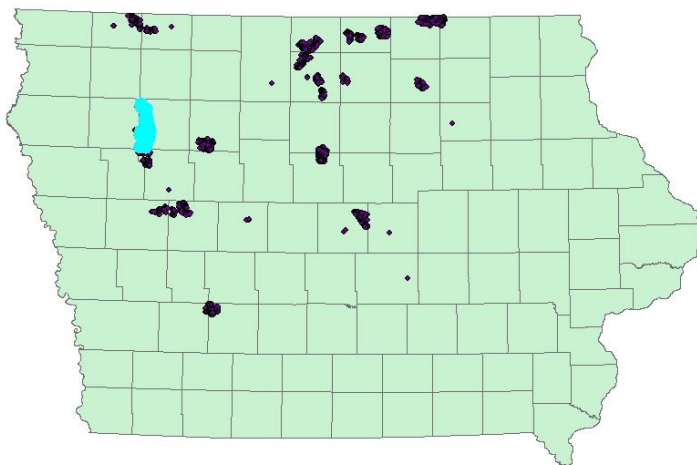
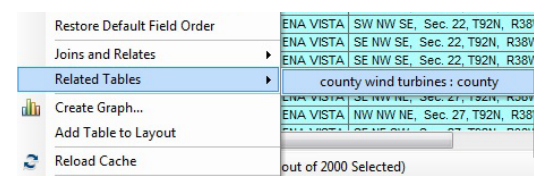
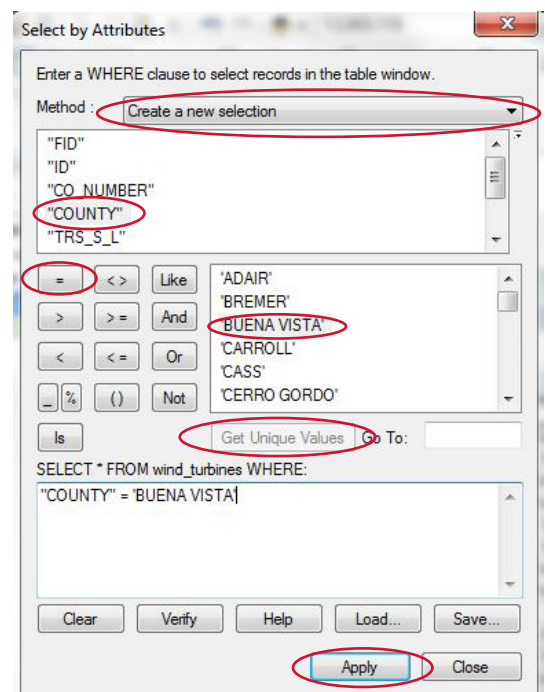
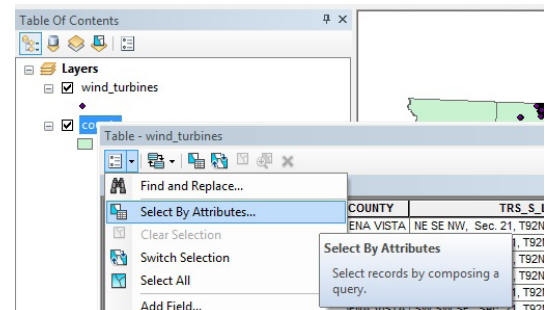
FID	Shape*	AREA	PERIMETER	COUNTY	COUNTY_ID	CO_NUMBER	TO_FIPS	ACRES_SF	ACRES	FIP
0	Polygon	1523795000	193975.5	2	1	30	119	376536.4	376538	1911
1	Polygon	1034539000	130929.6	3	2	72	143	256639.1	256640.2	1914
2	Polygon	1045942000	131290.5	4	3	30	59	258456.8	258457.9	1905
3	Polygon	1042278000	130956.8	5	4	32	63	257551.4	257552.5	1906
4	Polygon	1707055000	172890.3	6	5	3	5	421808.4	421810.2	1900
5	Polygon	2522198000	208208.3	7	6	55	109	623246.1	623248.8	1919
6	Polygon	1785824000	170177.5	8	7	96	191	441284.9	441286.8	1919
7	Polygon	1226171000	140643.2	9	8	45	89	302992.2	302993.5	1908
8	Polygon	1029180000	120966.8	10	9	95	189	256774.9	256779	1918
9	Polygon	1215618000	144008.6	11	10	66	131	300384.5	300385.6	1913
10	Polygon	1040056000	130963	12	11	98	195	257002.9	257004	1919
11	Polygon	1993075000	220581.3	13	12	84	167	492497.5	492499.6	1916
12	Polygon	1484768000	154085.1	14	13	71	141	368892.7	368894.2	1914
13	Polygon	1482958000	153944.1	15	14	21	41	368445.4	368446.9	1904
14	Polygon	1474373000	153531.3	16	15	74	147	364324	364325.5	1914
15	Polygon	1483331000	154119.3	17	16	41	81	366557.6	366559.1	1908
16	Polygon	1487907000	154230.9	18	17	17	33	367668.3	367669.9	1903



3. Selecting Related Features

- Open the attribute table for both the **wind_turbines** layer and the **county** layer by right-clicking the layer from the **Table of Contents** and selecting **Open Attribute Table**. Resize the windows from each attribute table to get a full view of each.
- Select the **Select By Attributes** icon in the attribute table for the **county** shapefile.
- From the **Method:** drop-down menu, make sure **Create a new selection** is selected.
- Double click on **"COUNTY"** from the box below **Create a new selection**.
- Click the **=** icon.
- Click the **Get Unique Values** icon and double-click **Buena Vista** from the box above and click **Apply**.
- From the **wind_turbines** attribute window, click on the **Table Options** icon > **Related Tables** > **county wind turbines : county**. Features of the **wind_turbines** layer will be selected based upon the county it was related to from the **county** layer.

FID	Shape	ID	CO_NUMBER	COUNTY	TRS_S_L	UTM_X	UTM_Y	Shape	AREA	PERIMETER	COUNTY	COUNTY ID	CO_NUMBER	CO_FPS	ACRES
1	Point	1	11	BUENA VISTA	NE SE NW, Sec. 21, T92N, R38W	308958.1	4112.4	Polygon	152795000	93975.5	2	1	69	119	37679
2	Point	2	11	BUENA VISTA	NW SE NW, Sec. 21, T92N, R38W	308716.1	4112.4	Polygon	152452000	17292.6	3	2	72	140	205616
3	Point	3	11	BUENA VISTA	NE SW NE, Sec. 21, T92N, R38W	308900.2	4112.4	Polygon	154592000	13790.5	4	3	30	59	25453
4	Point	4	11	BUENA VISTA	SW SW SE, Sec. 21, T92N, R38W	308953.9	4112.4	Polygon	154222000	30968.9	5	4	32	63	21215
5	Point	5	11	BUENA VISTA	SW SW SE, Sec. 21, T92N, R38W	308958.2	4112.4	Polygon	179795000	17299.3	6	5	3	5	42180
6	Point	6	11	BUENA VISTA	SE SW SE, Sec. 21, T92N, R38W	308948.2	4112.4	Polygon	252276000	20068.3	7	6	65	129	82234
7	Point	7	11	BUENA VISTA	SE SW SE, Sec. 21, T92N, R38W	308959.0	4112.4	Polygon	176554000	17177.5	8	7	98	191	44128
8	Point	8	11	BUENA VISTA	SW SE SE, Sec. 21, T92N, R38W	308955.0	4112.4	Polygon	128711000	14863.2	9	8	45	89	30296
9	Point	9	11	BUENA VISTA	SW SW SE, Sec. 22, T92N, R38W	308927.4	4112.4	Polygon	153918000	17098.8	10	9	95	189	26575
10	Point	10	11	BUENA VISTA	NE SW SW, Sec. 22, T92N, R38W	308973.0	4112.4	Polygon	121061000	14008.6	11	10	66	131	30335
11	Point	11	11	BUENA VISTA	SW NE SW, Sec. 22, T92N, R38W	308964.4	4112.4	Polygon	154005000	13969.0	12	11	95	195	28216
12	Point	12	11	BUENA VISTA	SE NE SW, Sec. 22, T92N, R38W	310141.2	4112.4	Polygon	190207000	22591.3	13	12	84	167	48249
13	Point	13	11	BUENA VISTA	SW NE SW, Sec. 22, T92N, R38W	31020.8	4112.4	Polygon	144470000	14469.1	14	13	71	141	30655
14	Point	14	11	BUENA VISTA	SE NE SW, Sec. 22, T92N, R38W	310401.0	4112.4	Polygon	142050000	15344.1	15	14	21	41	38644
15	Point	15	11	BUENA VISTA	SW NE SE, Sec. 22, T92N, R38W	310679.0	4112.4	Polygon	144423000	15351.3	16	15	74	147	3643
16	Point	16	11	BUENA VISTA	SE NE SE, Sec. 22, T92N, R38W	310202.8	4112.4	Polygon	140310000	15419.3	17	16	41	81	36653
17	Point	17	11	BUENA VISTA	NW NW NE, Sec. 27, T92N, R38W	310492.8	4112.4	Polygon	148790000	15423.9	18	17	17	33	28756
18	Point	18	11	BUENA VISTA	NW NW NE, Sec. 27, T92N, R38W	310311.2	4112.4	Polygon	139832000	14499.0	19	18	24	47	22554



Contact

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