CHAPTER 16

Location queries

Location queries differ from attribute queries in that they don't involve selecting data. A location query is a geography query, not a data query. A location query involves selecting geographies within other geographies. It works equally well with points, lines, or polygons.

Exercise goals

Create a location query that selects cities within Tallapoosa County, Alabama, and then create a new shapefile. 1

Exercise file locations

Chapter directions: Follow the exercise as it appears in this book

Files for this exercise were used in chapter 1:

- Alabama County and Equivalent (Current) shapefile
- Alabama Places (Current) shapefile

How to download these files is outlined in chapter 1, steps 1-3.

CD: Use the CD included with this book

All files needed for this exercise are included on the book's CD. Files are organized by chapter.

Personal files: Use files you've gathered from other sources

To complete this exercise, you will need at least two shapefiles of the same area but different geographic types. This might include cities and counties, counties and states, or streets and cities.

1 Add a shapefile

1. Open ArcGIS.
2. Click the Add Data icon .
3. Either open Folder Connections or select the Connect to Folder icon and navigate to the Alabama counties shapefile used in chapter 1 (**tl_2009_01_county**).

2 Create a new shapefile for Tallapoosa County

The goal is to select those places that are in Tallapoosa County. First, we need a shapefile that contains Tallapoosa County only.

1. In the table of contents, right-click the county shapefile layer and open the attributes table and find Tallapoosa County in the list.
2. Click the gray cell at the beginning of the row. The row should become bright blue and also be highlighted on the map.
3. Close the attributes table.
4. In the table of contents, right-click the layer name, select Data, then Export Data. 2

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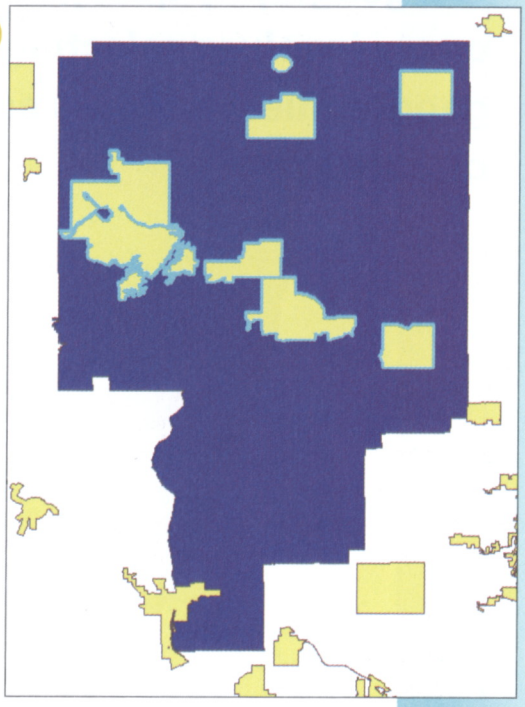
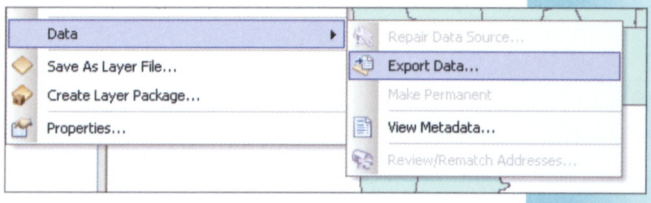
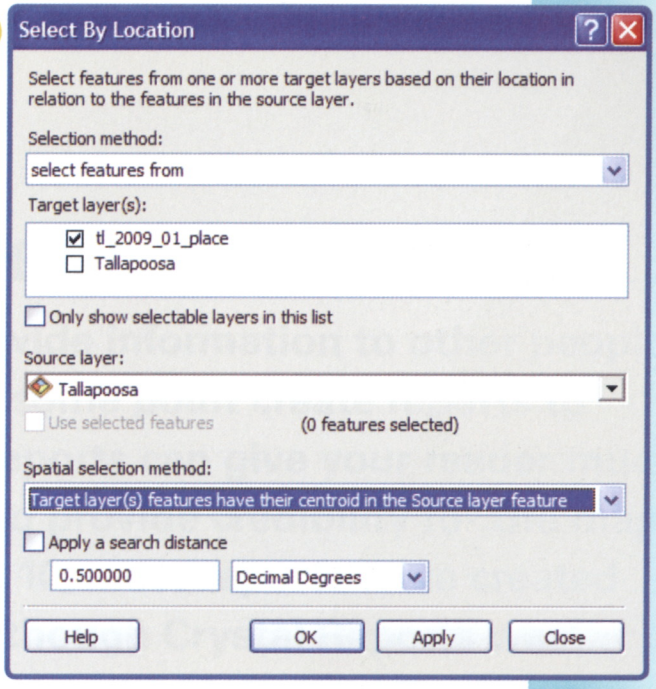


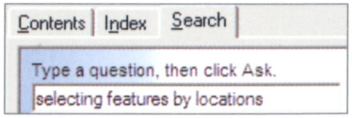
5. For the Export field, choose Selected Features (meaning just the highlighted Tallapoosa County).
6. Navigate to a where you would like to save the new shapefile on your C drive.
7. Name it **Tallapoosa**.
8. If it is not already selected, choose Shapefile as the Save As Type. Save as a Shapefile and click OK.
9. When asked if you would like to add to the map as a layer, click Yes.
10. Remove the shapefile with all the counties by right-clicking and selecting remove. Keep only the Tallapoosa County shapefile.





3 Create a location query

1. Use the Add Data icon again to add the Alabama places shapefile (**tl_2009_01_place**) to the map. This is the same file used in chapter 1.
2. On the Selection menu, choose Select by Location.
3. For the section underneath where it says Target Layer(s), check the check box next to **tl_2009_01_place**.
4. For the source layer, select the Tallapoosa shapefile.
5. For the "Spatial Selection Method" field, select Target Layer(s) features have their centroid in the source layer feature.
6. Click OK. 3
7. Notice that only those places within Tallapoosa county are selected.



WHAT DOES "HAVE THEIR CENTROID IN" MEAN?

A centroid is the physical center point of geometry (in this case a polygon). By using the Have their centroid in method, the physical center of the place must fall within the county boundary, not merely touch it or intersect it. This method is more conservative. You will never get polygons that are only slightly within the boundary because the center point of the polygon must fall within the target boundary.

Another popular tool is Intersect, which would include any place that intersects the county boundary.