How to Measure Acreage of Land Use

(by sub-category or master category)

Acquire data

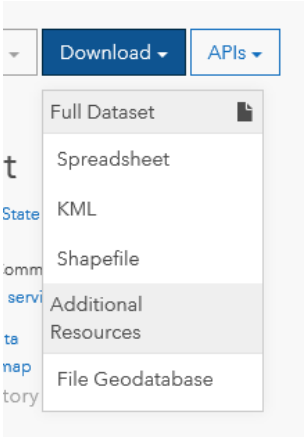
First, download the shapefile of the dataset from the Washington State Open Data website at geo.wa.gov and add it to ArcMap.

1. Locate the General Land Use dataset on geo.wa.gov

2. Select 

from the 

drop down menu on the right hand side to begin downloading the shapefile of the dataset to your computer.



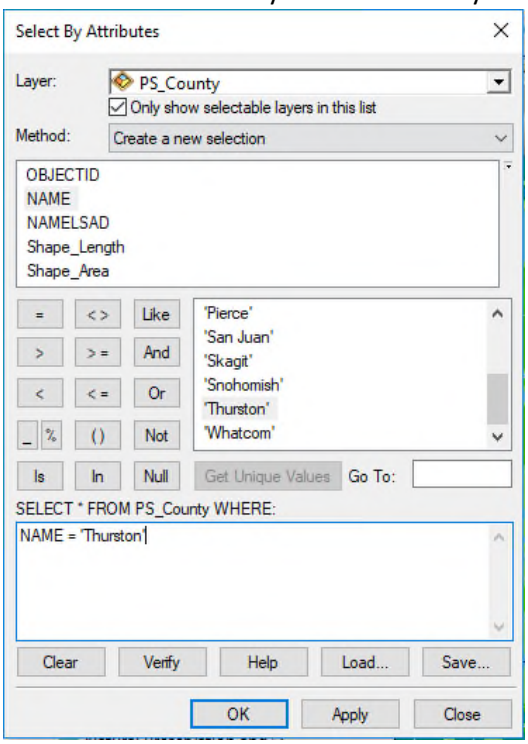
3. Add shapefile to a new ArcMap document. 

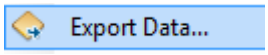
4. Optionally, symbolize shapefile using the desired color for each land use category of interest.

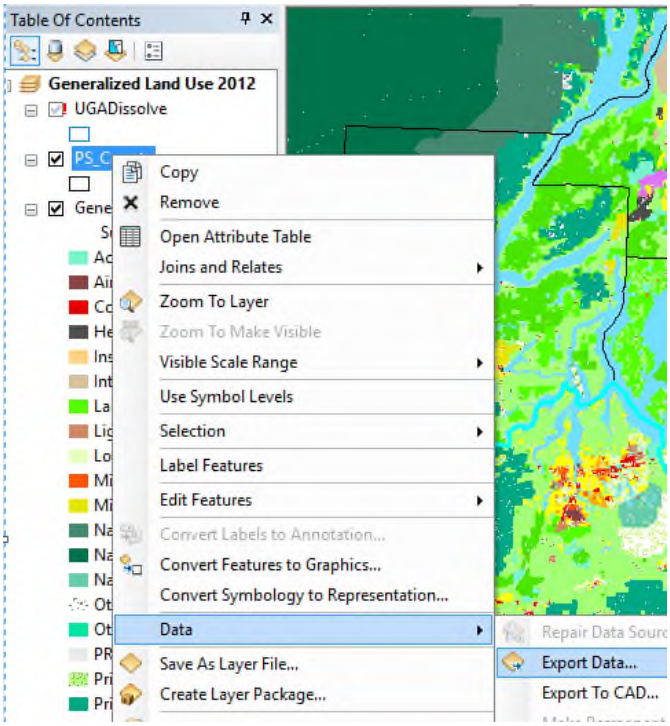
Calculate acreage for land use categories in areas of interest

Next, we will select the land use categories we are interested in within an area of interest. For the purposes of this tutorial, we are interested in the acreage of land within each land use subcategory within Thurston County. A county boundary layer can be downloaded from geo.wa.gov in the same way as the General Land Use layer, or from elsewhere online.

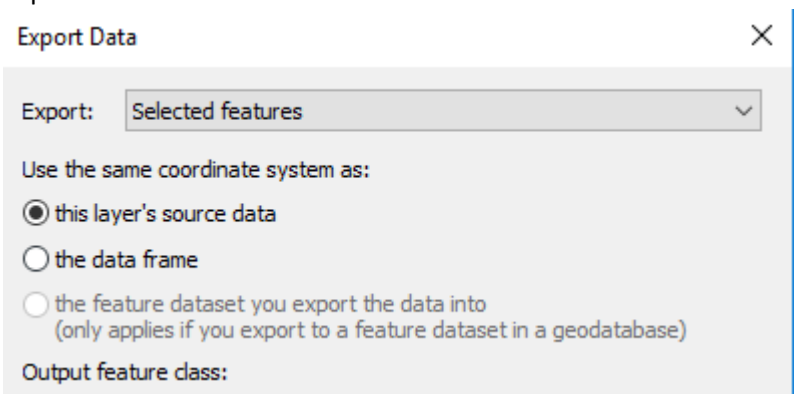
1. Select Thurston County from the County Boundary layer using Select by Attributes.



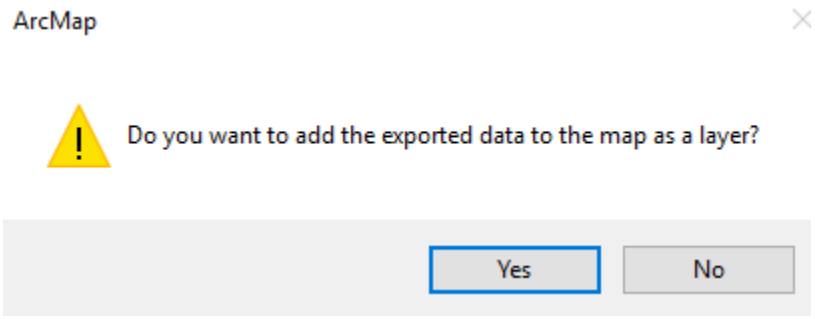
2. Right click on the county layer and select 



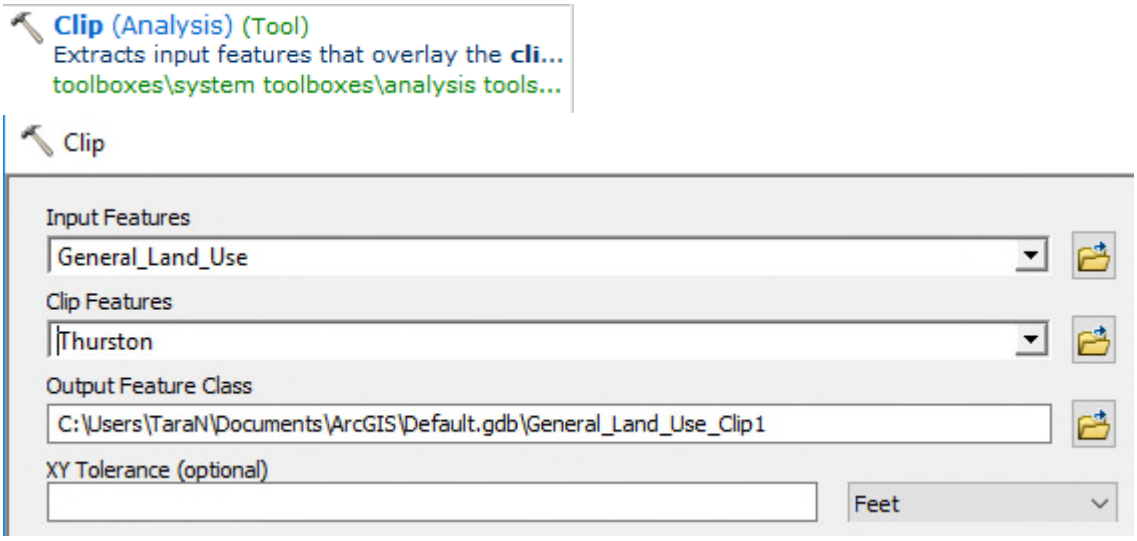
3. Export selected features.



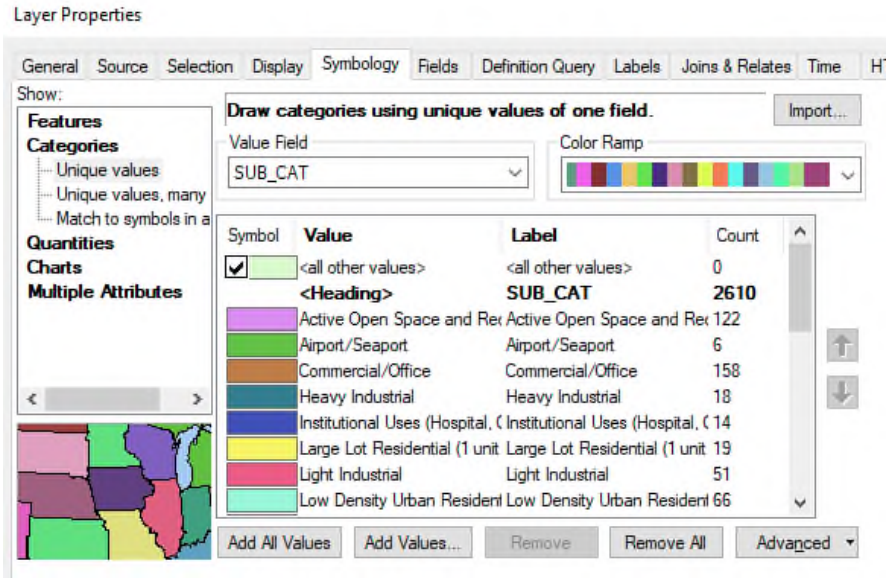
4. Add exported data to the map as a layer. The new layer shows the county boundaries of Thurston County.



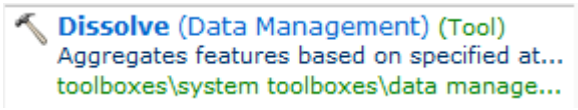
5. Clip the General Land Use layer to the new Thurston County boundary layer using the clip tool from the ArcGIS Toolbox. A new layer will be added to the map showing land use in Thurston County.



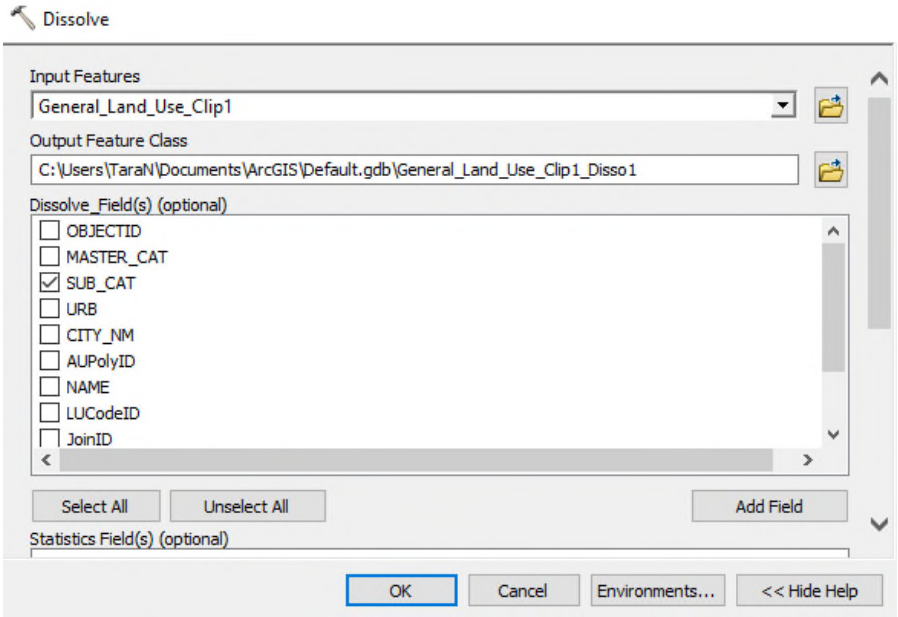
6. Optionally, symbolize the new Thurston County land use layer using the desired colors for each land use category of interest.



7. To examine the acreage in each land use category in Thurston County, we use the Dissolve tool.



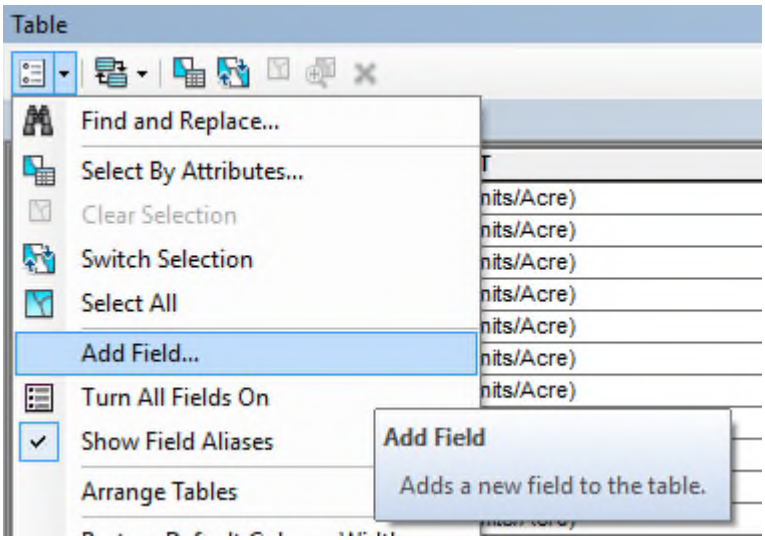
8. Dissolve the Thurston County land use layer by the SUB_CAT field to combine features with the same land use subcategory type. (If you are interested in master categories rather than subcategories, select MASTER_CAT instead of SUB_CAT for the dissolve field)



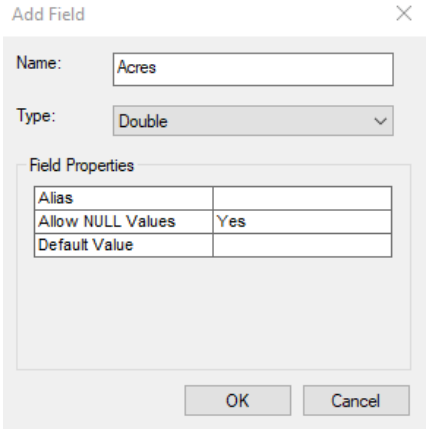
9. Open the attribute table of the new dissolved layer that has been added to the map. It now has only one row for each subcategory.

OBJECTID_1 *	Shape *	SUB_CAT	Shape_Length	Shape_Area
1	Polygon ZM	Active Open Space and Recreation	1916178.440352	474175618.124272
2	Polygon ZM	Airport/Seaport	94409.400666	56295564.193284
3	Polygon ZM	Commercial/Office	1310557.984231	192668172.992873
4	Polygon ZM	Heavy Industrial	74010.618776	16585622.006307
5	Polygon ZM	Institutional Uses (Hospital, Campus)	94780.023444	24890748.756972
6	Polygon ZM	Large Lot Residential (1 unit per 10 acres to 1 unit per 19.9 acres)	336774.561529	217906382.01904
7	Polygon ZM	Light Industrial	820264.46663	205570908.691051
8	Polygon ZM	Low Density Urban Residential (1.1-3 Units/Acre)	2439338.07101	363511811.614207
9	Polygon ZM	Mixed Use	927552.364039	119007588.656019
10	Polygon ZM	Mixed Use/Planned Neighborhood (3.1-12 Units/Acre)	195437.754192	80159930.708258
11	Polygon ZM	National Forest	62438.479528	40699692.111449
12	Polygon ZM	Natural Preservation and Conservation	1105827.673518	464334454.456956
13	Polygon ZM	Primary Agricultural Area	1248588.32027	671667880.434232
14	Polygon ZM	Primary Forest Area	4764730.820667	6050050660.827577
15	Polygon ZM	Primary Mineral Area	12341.68802	2072291.878203
16	Polygon ZM	PROW	2553186.389849	12641178.779629
17	Polygon ZM	Public	128320.927446	14061459.99782
18	Polygon ZM	Residential (12+ Units/Acre)	1062100.88168	181474466.084871
19	Polygon ZM	ROW	21496905.19823	674311887.397676
20	Polygon ZM	Rural Transition (1 unit per 5 acres to 1 unit per 9.9 acres)	12308544.959331	7657230448.363113
21	Polygon ZM	Traditional Single Family Residential (3.1-12 Units/Acre)	7594214.101201	1210051301.506566
22	Polygon ZM	Undesignated	1880001.464101	37642124.744423
23	Polygon ZM	Undeveloped Military Lands	335353.282135	805837627.399868
24	Polygon ZM	Urban Edge (1 unit per acre up to 1 unit per 4.9 acres)	69228.584865	12428568.384629
25	Polygon ZM	Very Large Lot Residential (1 unit per 20 acres or more)	954880.343698	611206395.05375
26	Polygon ZM	Water	4255510.29331	1364628329.163775

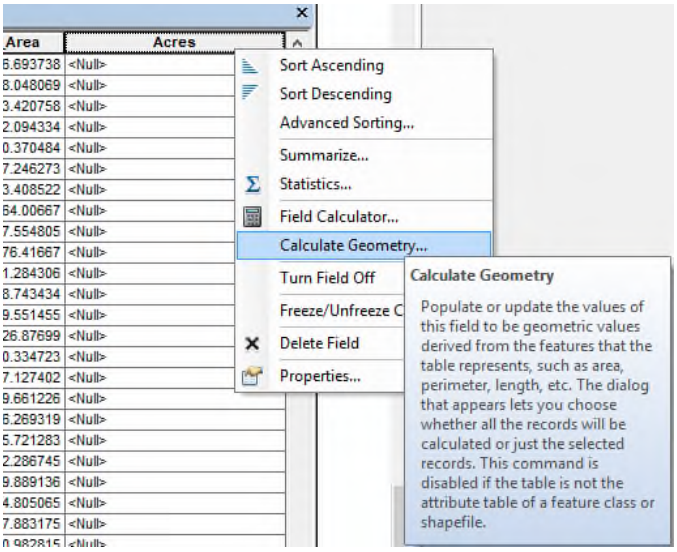
10. Select add field in the drop down menu at the top left of the attribute table.



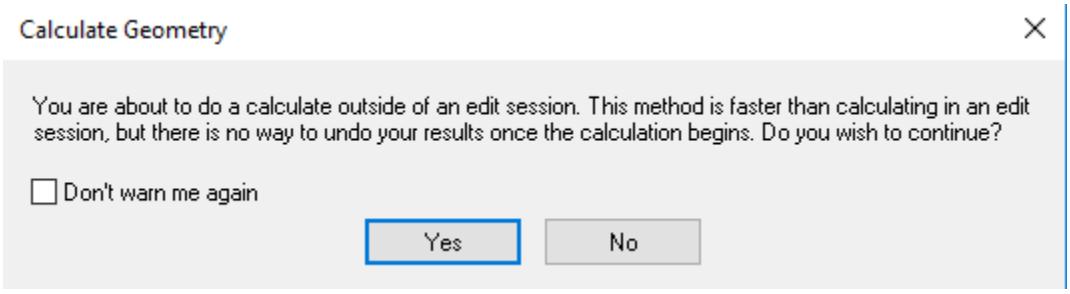
11. Enter Acres in the Name field and select Double as Type in the drop down menu.



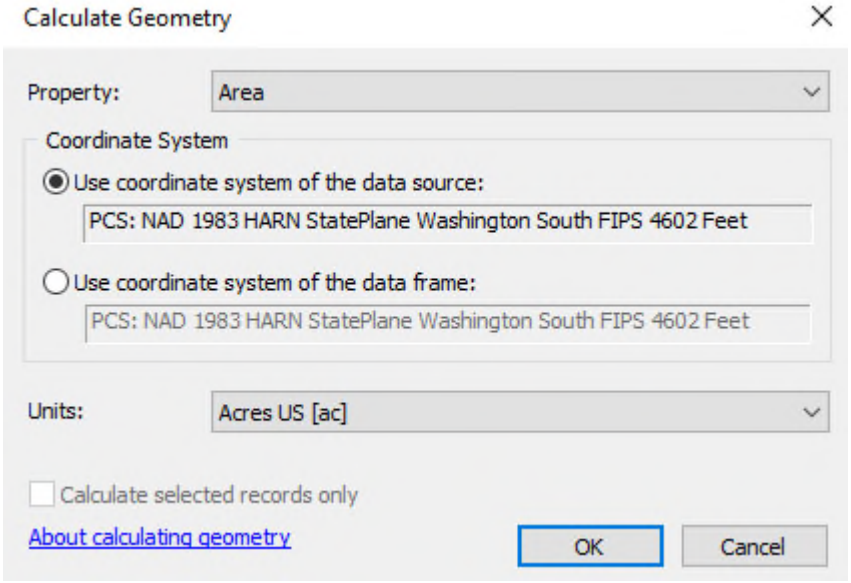
12. Right click the column heading in the newly added field and select Calculate Geometry.



13. Click Yes when you are asked if you wish to continue.



14. Select Area in the Property drop down menu and Acres US from the Units drop down menu.



15. The Acres field is automatically populated with the total acreage in each land use subcategory in Thurston County.

SUB_CAT	Acres
Active Open Space and Recreation	10885.61788
Airport/Seaport	1292.373493
Commercial/Office	4423.070332
Heavy Industrial	380.755013
Institutional Uses (Hospital, Campus)	571.415251
Large Lot Residential (1 unit per 10 acres to 1 unit per 19.9 acres)	5002.462205
Light Industrial	4719.277571
Low Density Urban Residential (1.1-3 Units/Acre)	8345.116292
Mixed Use	2732.049235
Mixed Use/Planned Neighborhood (3.1-12 Units/Acre)	1840.226156
National Forest	934.340104
Natural Preservation and Conservation	10659.694945
Primary Agricultural Area	15419.434507
Primary Forest Area	138890.607463
Primary Mineral Area	47.573466
PROW	290.202694
Public	322.807995
Residential (12+ Units/Acre)	4166.097153
ROW	15480.132797
Rural Transition (1 unit per 5 acres to 1 unit per 9.9 acres)	175786.526111
Traditional Single Family Residential (3.1-12 Units/Acre)	27779.066614
Undesignated	864.147734
Undeveloped Military Lands	18499.560394
Urban Edge (1 unit per acre up to 1 unit per 4.9 acres)	285.321811
Very Large Lot Residential (1 unit per 20 acres or more)	14031.42424
Water	31327.681077