

# Iowa Geoscience Education Information Network Technical Appendix

\*\* You may find the power point lectures and notes a helpful starting point as well!

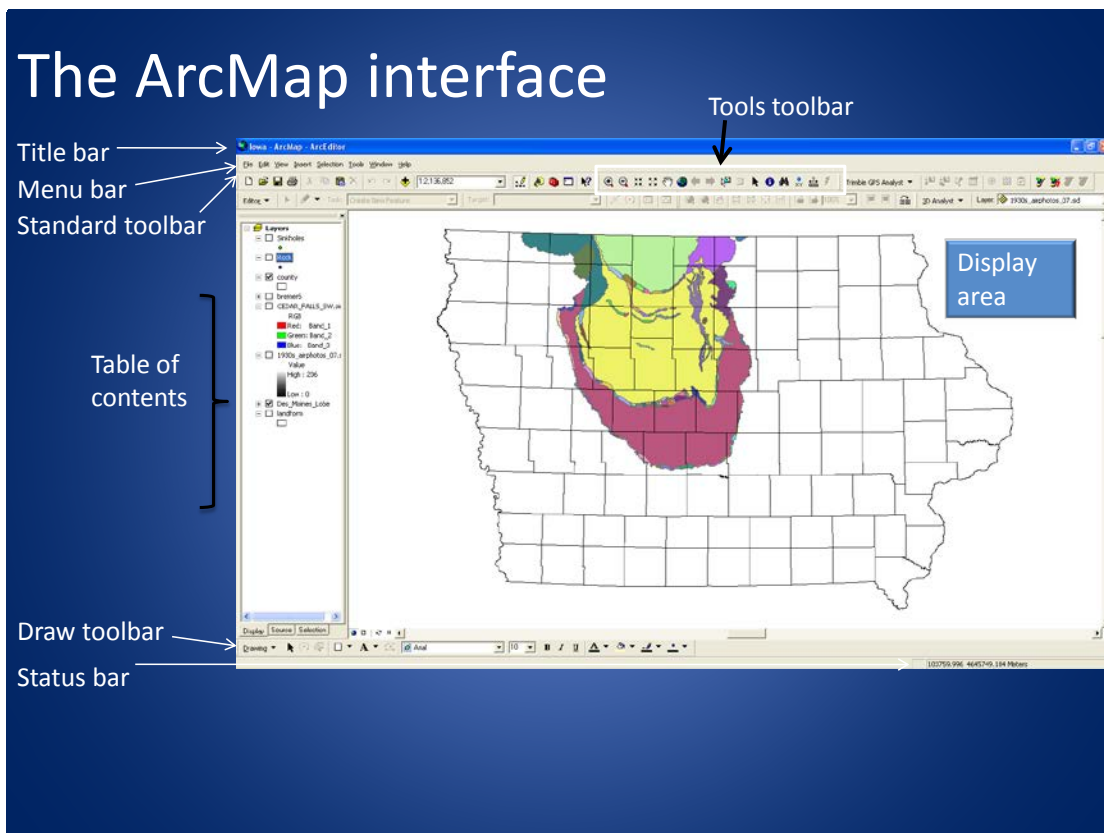
## 'The Basics'

### #1 – Opening ArcMap

Start ArcMap

- A) *Start > Programs > ArcGIS > ArcMap*
- B) You should see a dialog box asking you to open a new map or select an existing map
- C) Please open a new map

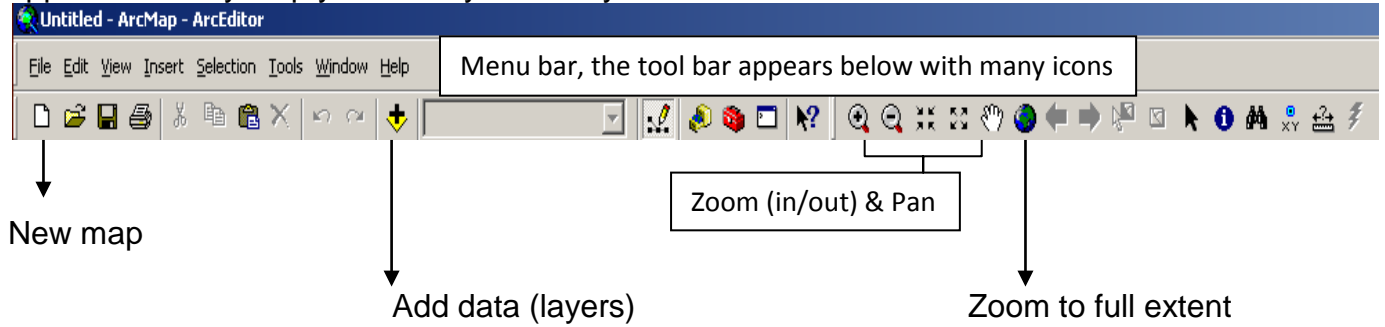
You are now looking at the ArcMap interface window. ArcMap allows you to view maps in Data view or Layout View. Data view enables you to examine, query, edit, symbolize, and prepare your data for map output. Layout view provides tools for creating your final map (e.g. inserting a scale bar, adding a legend, north arrow, title, and much more!) When you work in ArcMap, you are working with a map document (.mxd). This document contains data frames, layers, and many map elements including symbols.



## #2 – Getting to know the ArcGIS icons and tools

As in most software there are multiple ways to get to the same endpoint, the icons characterized below are shortcuts to common tasks.

*Trick*– If you hold the mouse cursor over any icon for a second or two a text window will appear that may help you identify the tool you need.



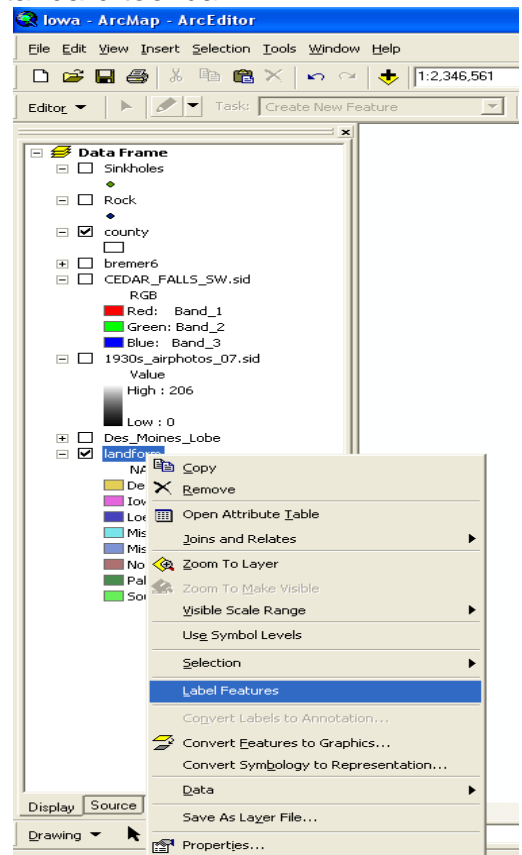
## #3 – Adding layers (data)

A) Please add two data layers to the existing counties of Iowa...

B) To do this click... File < Add data < (Find your GIS data on your hard drive) < select desired layer (data)

*\*\*Try adding the Iowa counties layer 1<sup>st</sup> in all of your map projects!!!*

\*Notice that the icon for add data is a yellow square with a black plus sign in the center, another way to add data is to click this icon on the standard tool bar.



#### #4 - Setting/changing the display scale and layer name

A) If you look to the right on the status bar you will see a numbers with a spatial unit...

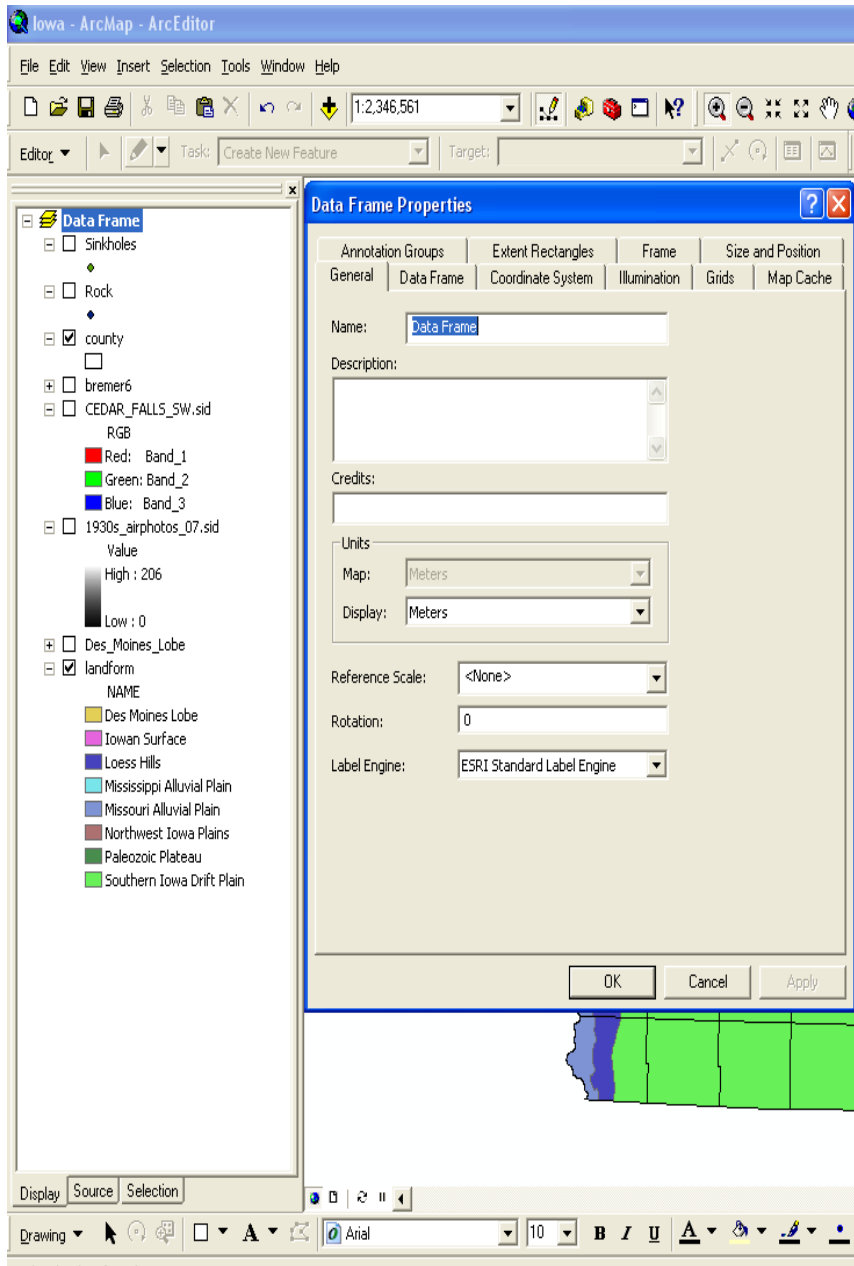
**Question: The current display unit is in...?**

B) Please change the current units to degrees, minutes, seconds...

C) To change the units use the *Power of Right Click on the Data frame > Properties > General > Units > Display... and change...*

D) Changing the layer name

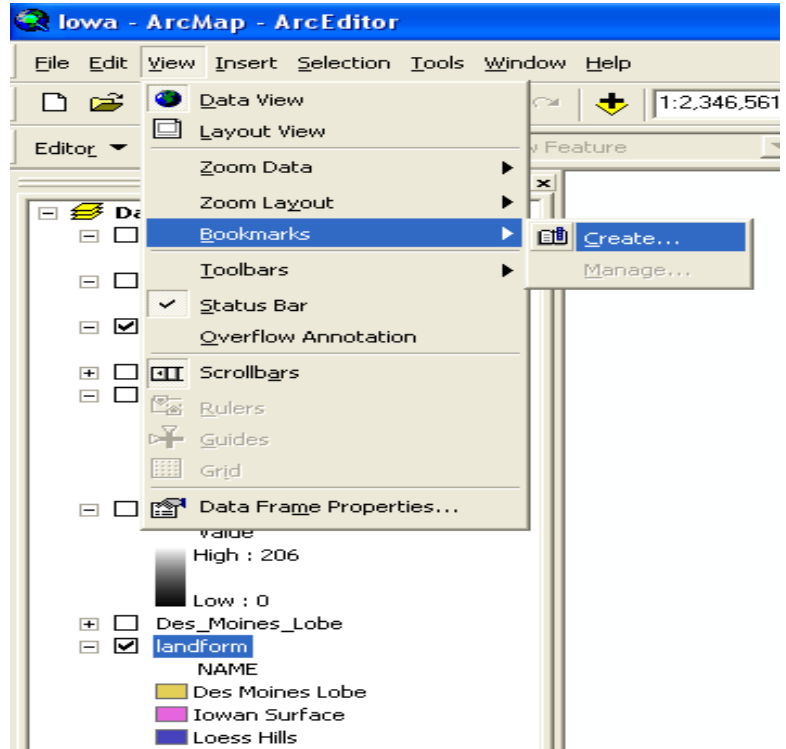
slowly left click the word Layers twice, this should highlight that word and allow you to change it to something more meaningful



## #5 - Bookmarks

A) From the Menu bar View < Bookmarks < Create

Please test your new bookmark by zooming out then selecting the bookmark  
Did it work? Let me know either way...



## #6 – Helping yourself

A) Do not be afraid to use the Help tab on ArcMap's menu bar! Be self sufficient/ a trouble shooter!



## Making and designing maps (digital cartography)

### #1 - Changing symbol properties

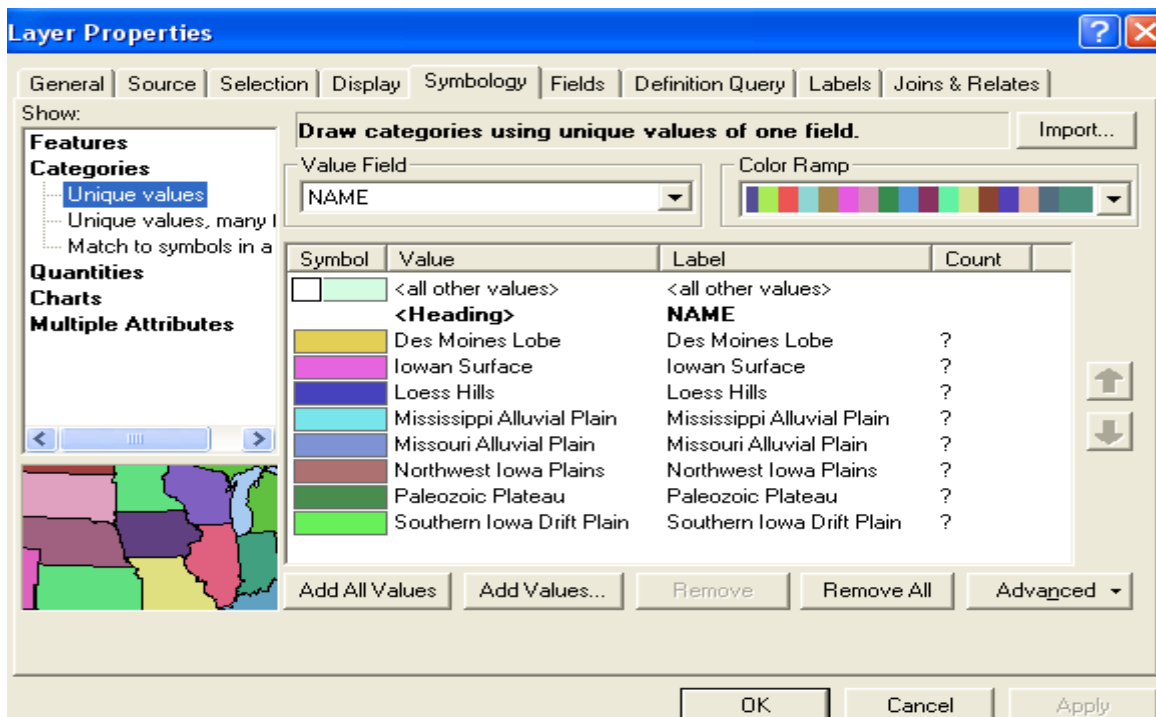
- A) First you see that there are boxes with checkmarks to the layers you have just added.
- B) Please uncheck the box for landform this should make the public prairie layer a bit easier to see...
- C) Now please Left click the colored box for the public prairie layer to open the symbol properties box, then *change the color to Green and the line width to 2* and click OK.

### # 2 - Labeling map layers

- A) Power of Right Click < Counties (or the layer that you need labels) < Label features  
Not helpful? Then try this Power of Right Click < Counties < Properties < Labels < Label field, select Counties\_ and click OK

### # 3 - Expanding the power of symbols

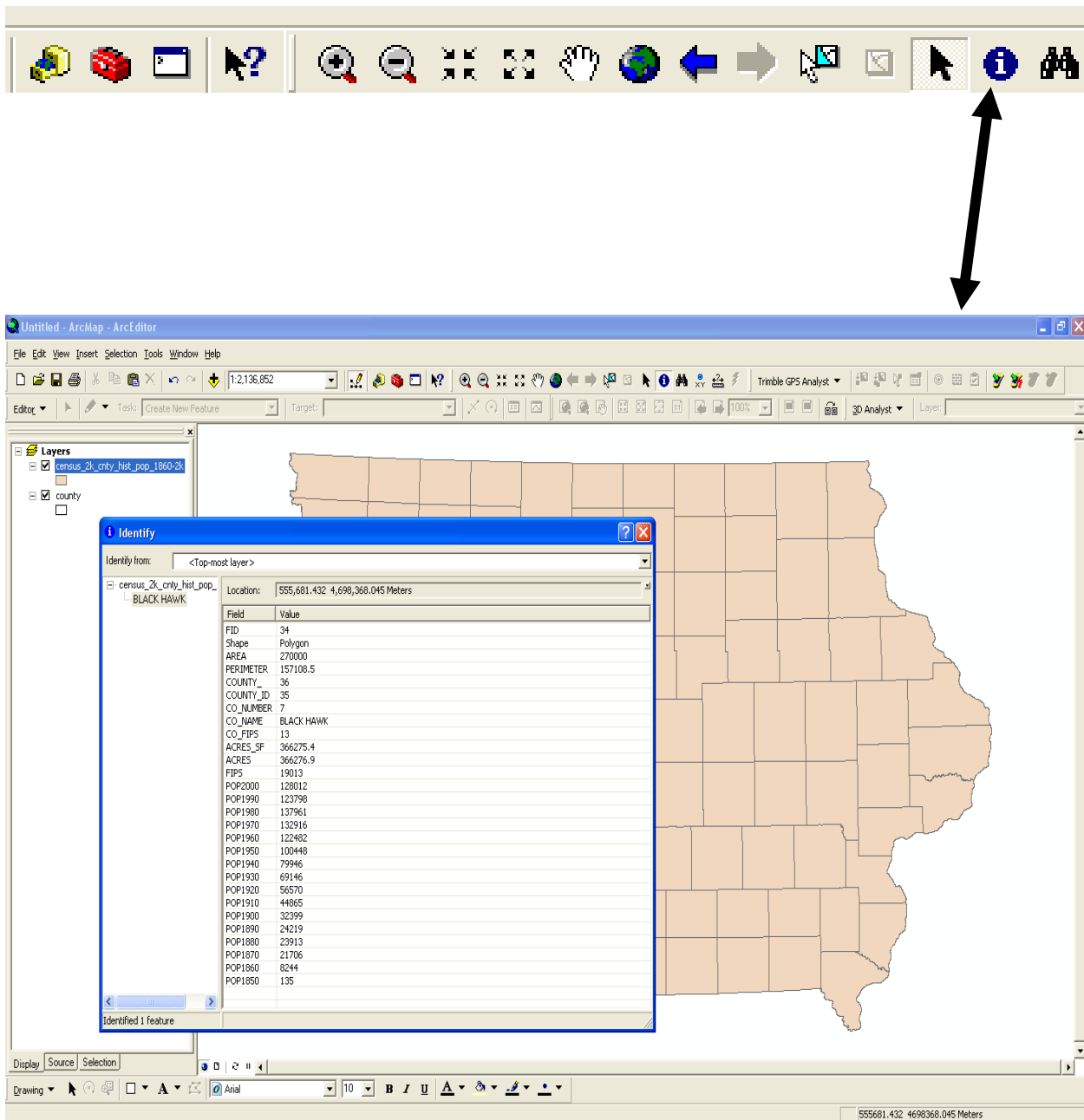
Use the Power of Right Click on the a layer < Properties < Symbology < Categories < Value field < choose Name < click Add All Values < click OK



## 'Queries'

### 1. The identify tool

Need to know about the specific attributes (properties) of a unique feature?  
Use the identify tool



The screenshot shows the ArcMap interface. In the top toolbar, the Identify tool (represented by an 'i' in a blue circle) is highlighted with a black double-headed arrow. Below the toolbar, the main map area displays a map of Iowa with county boundaries. An 'Identify' dialog box is open over the map, showing the following information:

Identify from: <Top-most layer>

- census\_2k\_cnty\_hist\_pop\_1860-2k
  - BLACK HAWK

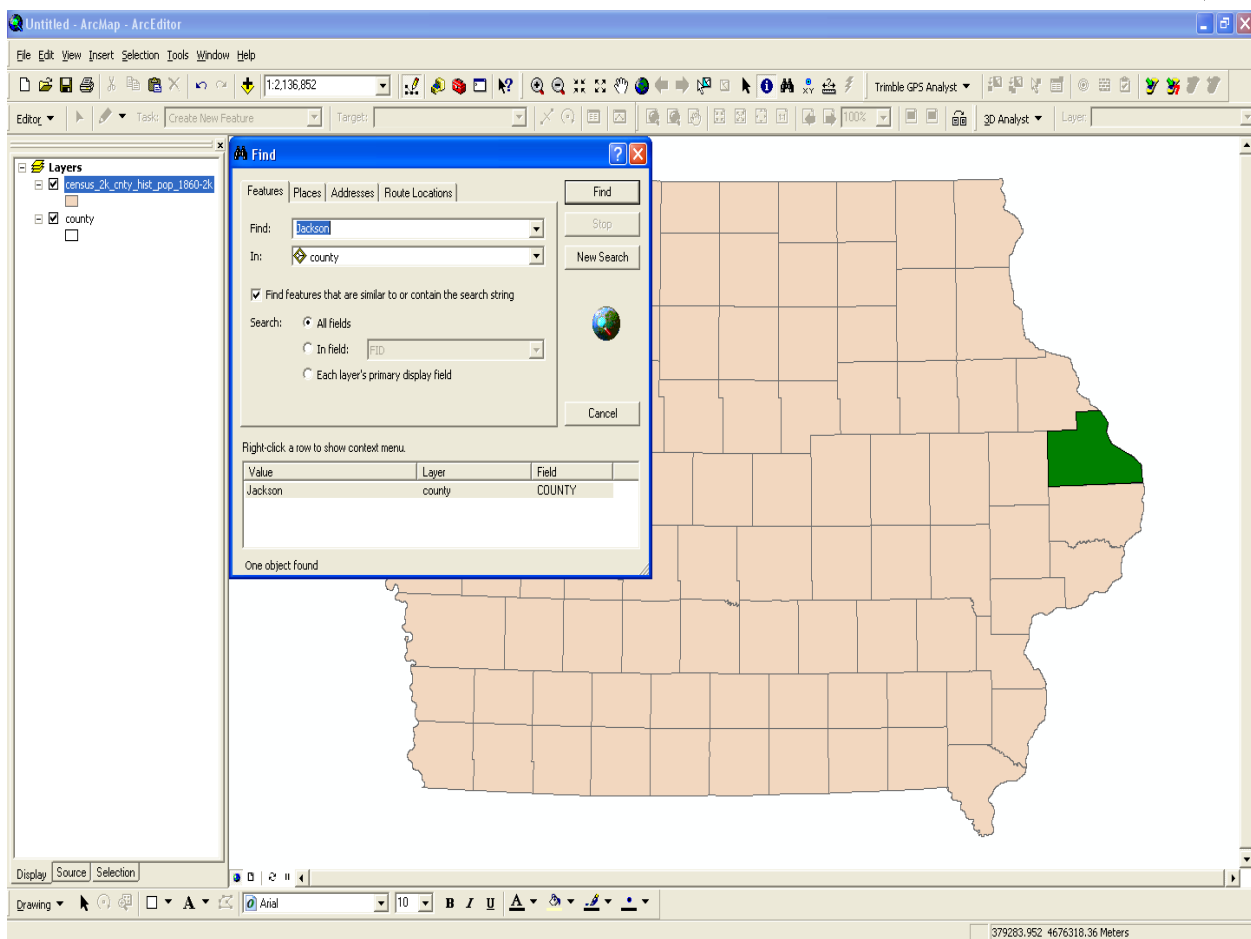
Location: 555,681.432 4,698,368.045 Meters

Field	Value
FID	34
Shape	Polygon
AREA	270000
PERIMETER	157108.5
COUNTY_ID	36
COUNTY_ID	35
CO_NUMBER	7
CO_NAME	BLACK HAWK
CO_FIPS	13
ACRES_SF	366275.4
ACRES	366276.9
FIPS	19013
POP2000	128012
POP1990	123798
POP1980	137961
POP1970	132916
POP1960	122482
POP1950	100448
POP1940	79946
POP1930	69146
POP1920	56570
POP1910	44865
POP1900	32399
POP1890	24219
POP1880	23913
POP1870	21706
POP1860	8244
POP1850	135

Identified 1 feature

## 2. The find tool

Need help finding something? Use your binoculars



### 3. Measuring – find linear distances

