How to Create Maps & Figures in ArcView 9x

In order to follow this set of directions you will need the following…

1) the "**Jenny's Louisiana GIS Instructional CD"**

2) a computer with **ArcGIS** on it (version 9.0 or higher)

This document will show how to create maps & figures of Louisiana from <u>scratch</u>.

The purpose of this set of directions is to teach you the basics of creating a study site map in ArcView.

The data you will need to follow these directions are included in the "**Jenny's Louisiana GIS Instructional CD.**" The finished project file ("Lousiana_Mapping_Project") is also included in case you have trouble with any of the following steps

Step 1) Insert the "Jenny's Louisiana GIS Instructional CD" into the computer

Step 2) Open **ArcMap**.

       -   double click this icon if on the desktop

ArcMap.exe Shortcut 1 KB   or

       -   **Start menu → Programs → ArcGIS → ArcMap**

                                   (this folder might also be called "ESRI")

ArcGIS Desktop

Please wait while Windows configures ArcGIS Desktop
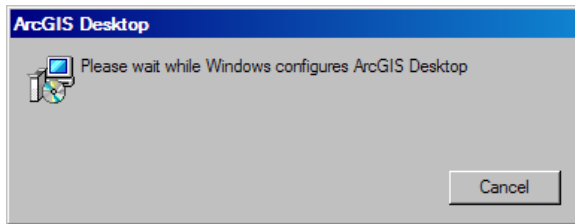
Cancel
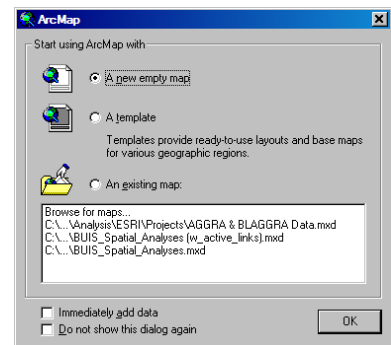
If this window pops up just hit cancel

(it may happen several times while ArcMap is opening, just keep hitting cancel)

ArcMap

Start using ArcMap with

   ⦿ A new empty map

   ○ A template

     Templates provide ready-to-use layouts and base maps for various geographic regions.

   ○ An existing map

Browse for maps...
C:\...\Analysis\ESRI\Projects\AGGRA & BLAGGRA Data.mxd
C:\...\BUIS_Spatial_Analyses (w_active_links).mxd
C:\...\BUIS_Spatial_Analyses.mxd

☐ Immediately add data
☐ Do not show this dialog again   OK

Step 3) When ArcMap Opens you will get this screen

       -   Select the first option (**A new empty map**) → click Ok

Step 4) this icon to add data ⬇

Untitled - ArcMap - ArcView

File   Edit   View   Insert   Selection   Tools   Window   Help

       -   a window like this one will appear

Add Data

Look in: 📁 Catalog

C:_
C:_\Databases
C:_\Projects
C:_\Projects\AGGRA_&_BLAGGRA
C:_\Projects\Buck Island 2004 WBD Spatial analysis (Mayor et al. 2006 data)
C:\Documents and Settings\Jennifer Lentz\Desktop
C:\Documents and Settings\Jennifer Lentz\Desktop\New Folder
C:\Program Files\ArcGIS\ArcGlobeData
Database Connections

Address Lo
Coordinate
GIS Serve
Interoperat
Scalar Ref
Search Re
Toolboxes
Tracking C

Name: _____   Add
Show of type: Datasets and Layers (*.lyr)   Cancel
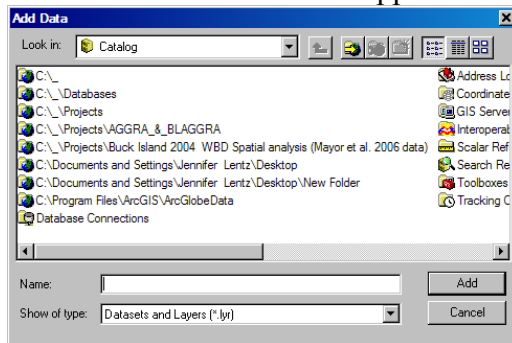
if your CD drive is **NOT** listed…click this icon ➡

Connect to Folder

Choose the folder to which you want to connect:

D:\

☐ Desktop
  ☐ Jennifer Lentz on GIGIT
    ⊞ C-Drive (C:)
    ⊞ LAGISDVD_2007_V1 (D:)
    ⊞ Removable Disk (E:)
    ⊞ memory_card on 'Hp001e0bf5cfe5' (Z:)
    My Safe
  ⊞ My Documents
  ⊞ My Network Places
  My Safe
 ⊞ Media Burners, Players, etc

OK   Cancel

-   Then select the drive with the CD in it → click Ok
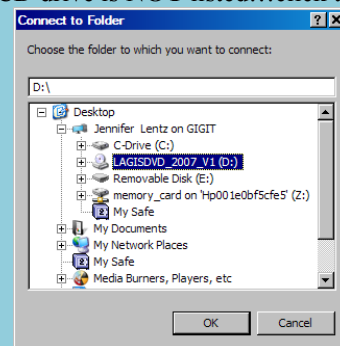
       -   if the CD drive is listed double click on it

(if the CD drive is not listed follow these directions, then continue with the instructions below)

       -   Double click on the "**ArcView_data_Files**" folder

       -   then double click on the "**Satellite_Images**" folder

       -   double click the "**Lousiana Landsat TM (2005)**" folder

       -   Select "**landsat5tm_la_lsu_2005.sid**" and click "**Add**"

Step 5) You should see the following in ArcMap
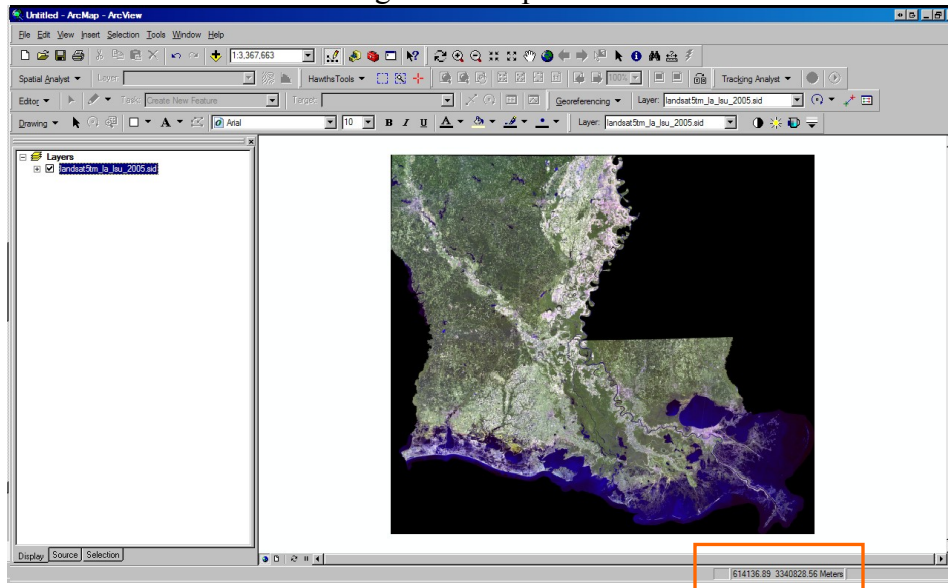
- This box shows the geographic coordinates of wherever you move your curser,
   in this case the coordinate system is in UTMs which are usually displayed in meters

If you want to change this into a different coordinate system…
- **right click** on the image of Louisiana
- Click on **Properties**
- Go to the **General** tab
- Under **Units**, select what you want to be displayed

For example if you click **decimal degrees** & Ok, then the displayed coordinates at the bottom of the page go from UTM to Decimal Degrees

 →

Step 6) Navigating the image

 This button refreshes the map

 Select these tools and then click on the image where you want to either zoom in or out

 These are similar, but they zoom in & out of the whole map…not a specific place

 This button allows you to move the map around the screen

 This button zooms out to show all of the data (so if you have a map of the world and are zoomed in to a state, clicking this button will zoom out to the world view)

 click this button and then click on a part of the map it will tell you the information about that spot

 This tool lets you measure distances

The Following Section will go through the steps for setting up the following Map / Figure Layout

Louisiana Map
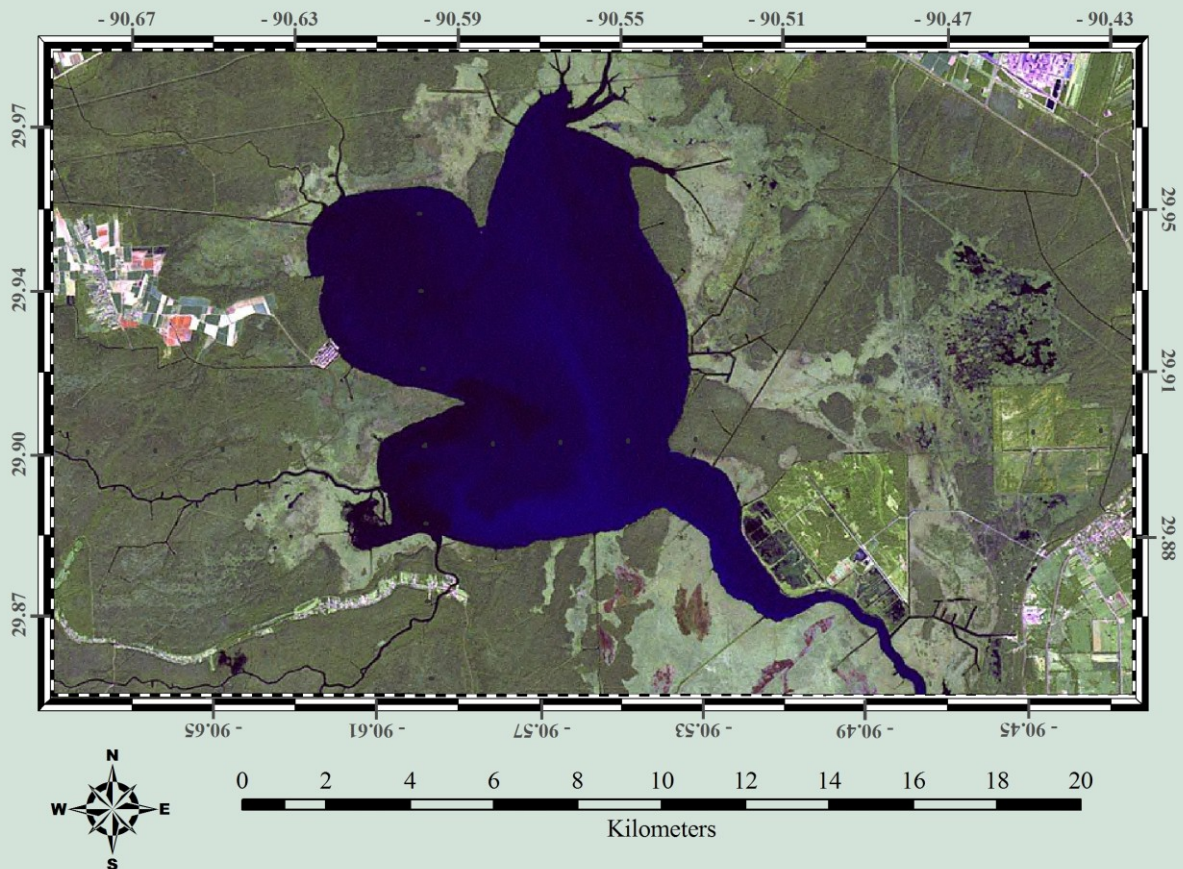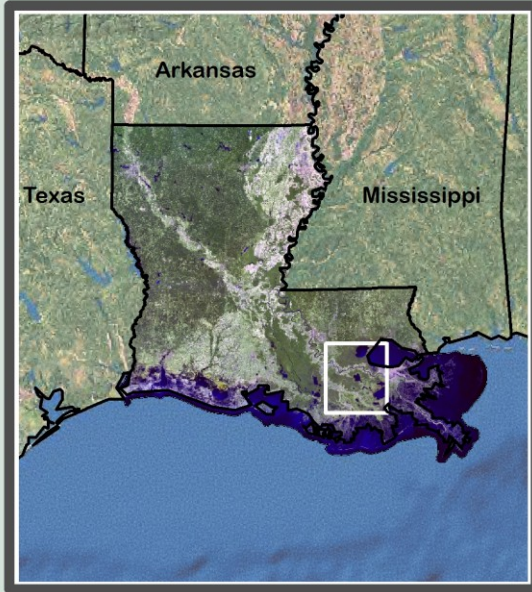
Step 1) Creating the 3 Data Frames for the Figure

- Click on the name "Layer" and re-name it to "Upper Left Corner"
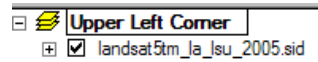
- Click "**Insert**" on the tool bar at the top of the screen → Data Frame
- Re-name this frame as **"Upper Right Corner"**
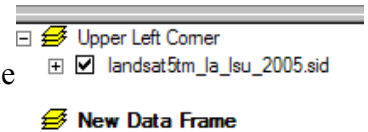
- Insert one more data frame & name it "**Bottom Center**"
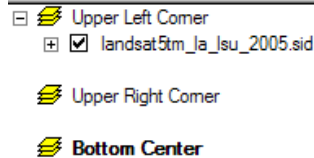
(these names are just to help you keep track of which data goes where on the figure)

Step 2) Switch to Layout View

i. Go to the toolbar at the top of the screen & click **View** → Select **Layout View**

ii. Click on the blank data frame boxes and drag them off to the side

iii. Resize the initial data frame so that its is in the upper left corner

iv. Now do the same with the remaining 2 data frames so they are where their names imply

(i)   (ii)   (iii)   (iv)
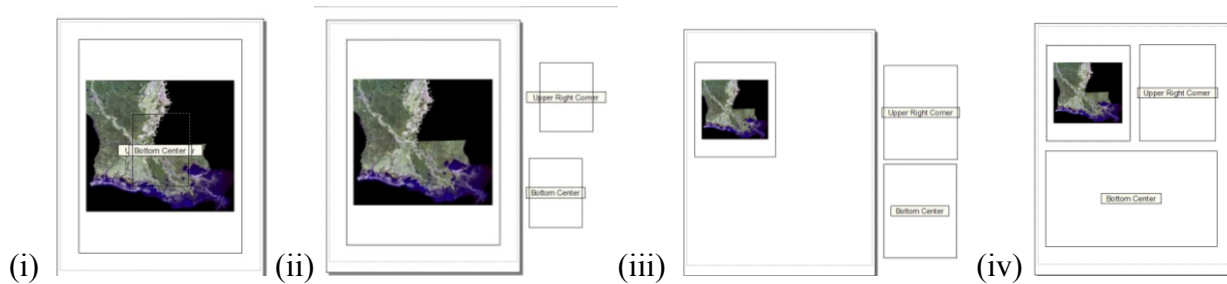
Step 3) Putting the map on all 3 data Frames

- Select the "**landsat5tm_la_lsu_2005.sid**" layer in the "Upper Left Corner" data Frame and drag in down into the "**Upper Right Corner**" data frame

- Then drag it down into the "**Bottom Center**" data frame

You should have something like this →
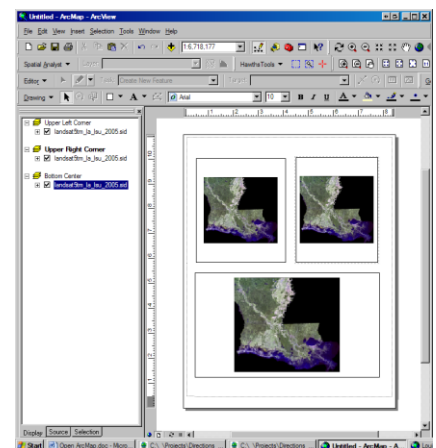
Step 4) Add other data to the **"Upper Left Corner"** data frame

    i. Click the Add data button
- navigate to the CD
- Double click on the "**ArcView_data_Files**" folder
- then double click on the "**Satellite_Images**" folder
- double click the "**WSI_Earth-99_2k**" folder
- Select "**WSI-Earth99-2k.sid**" and click "**Add**

    ii. Drag the name of this layer under the name of the Landsat layer

(i)   (ii)
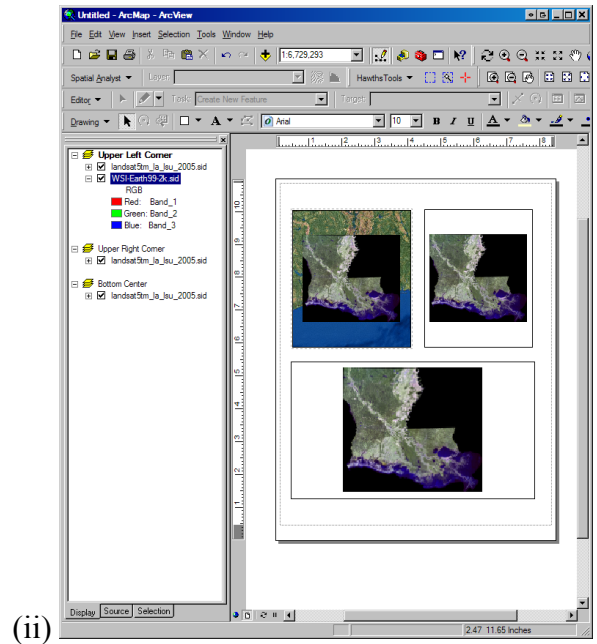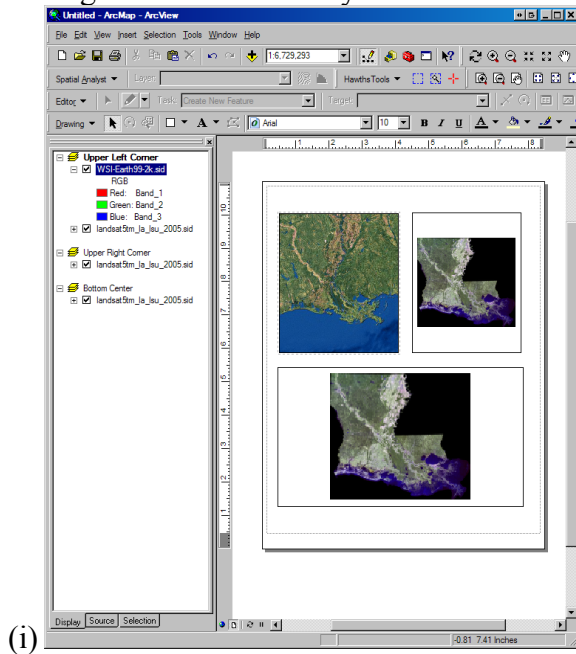
    iii. Right Click on the WSI layer → Properties → Display Tab
- Set the transparency to 30%
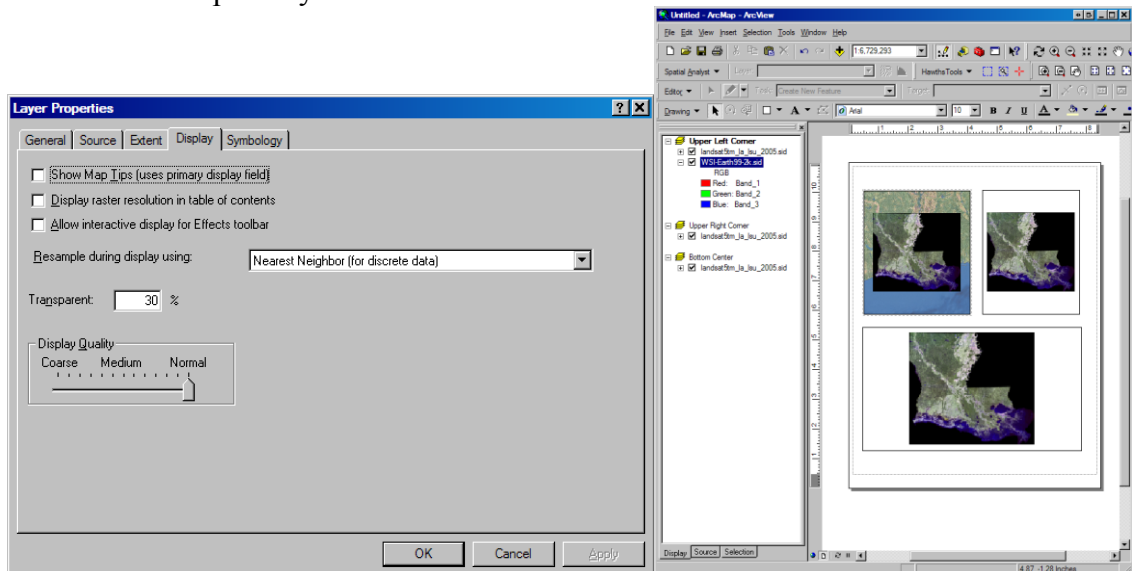
iv. Right Click on the landsat layer → Properties → Symbology Tab

- Click to Display the Background Value
- Click the down arrow in these 2 boxes & set them to "No Color"
- Hit **Apply** and then **Ok**
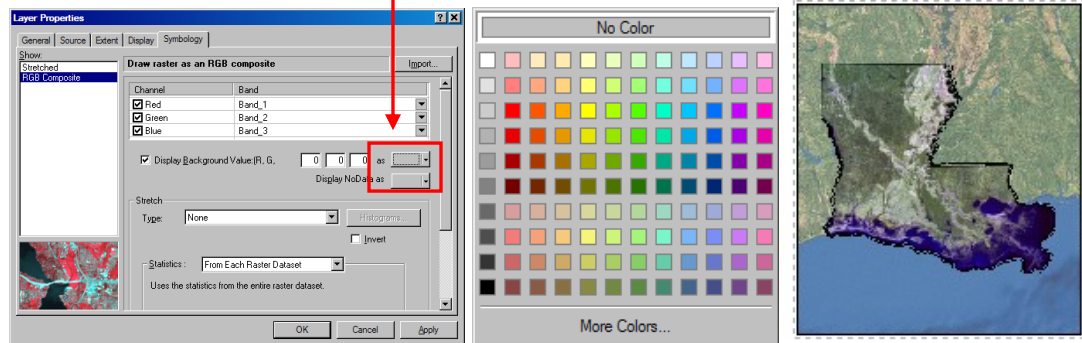
v. Click the add data button, & navigate back to the "**ArcView_data_Files**" folder

- double click on the "**Lousiana_database.mbd**" folder

- select "**US_States_borders**" & click Add
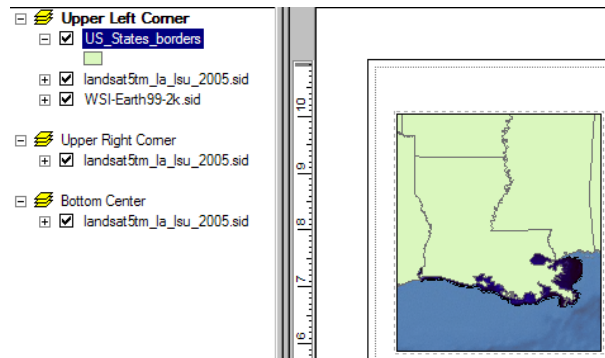
vi. Double click on the green box under the US States layer name

- click the arrow for the **Fill color** box, select "**No Color**"

- change the **Outline Width** to **1.5** & change the **Outline Color** to **Black** → click Ok
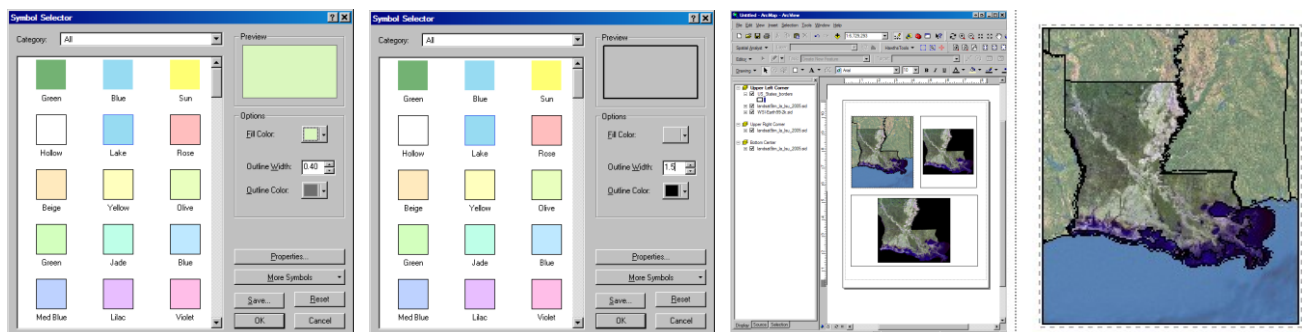
vii. Name the States

- Go to **Insert** on the top tool bar → **Text**

- Wherever the text box appears, type in a State Name & click enter

- Then select the text box and drag it to the appropriate state

- Repeat this for the other States

- If you want to change the font & size, double click on the text box, then click **change symbol** & select the font & size you want, then click ok
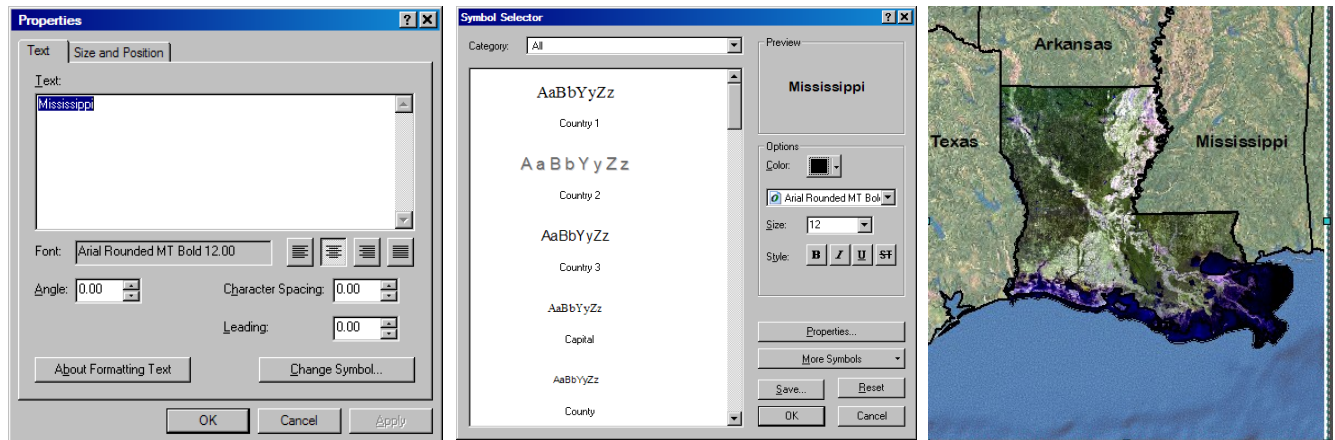
viii. Last add the **"Region-border"** shape file (also in the "**Lousiana_database.mbd**" folder)

- double click on the box below this layer's name

- change the fill color to "No Color" and the Outline Size & Color to 1.5 & white
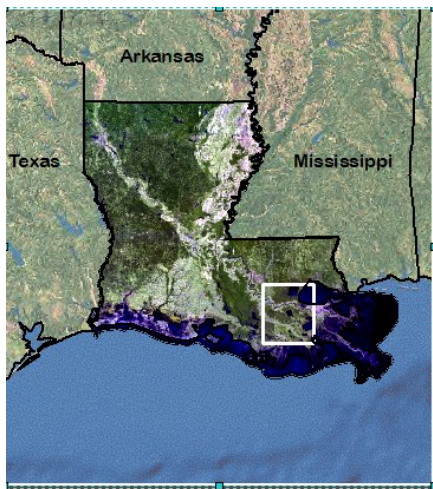
this white box shows where on this map the map to the **right** (in the **Upper Right Corner** data frame) is located

Step 5) Designing the **"Upper Right Corner"** data Frame

   i.   Right click on the layer name for the "**Upper Right Corner**" data frame → click **Activate**

   ii. drag the "**Region border**" layer from under the **Upper left Corner** data frame heading to Under the **Upper Right Corner** Data Frame heading
        (this is just a fast way of copying the data)

   - If you get this error message just click OK
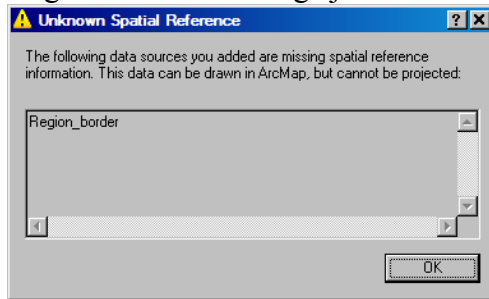
   - Make sure the Region_border layer is listed above the landsat layer name, other wise you wont be able to see this layer because it will be "under" the Louisiana image
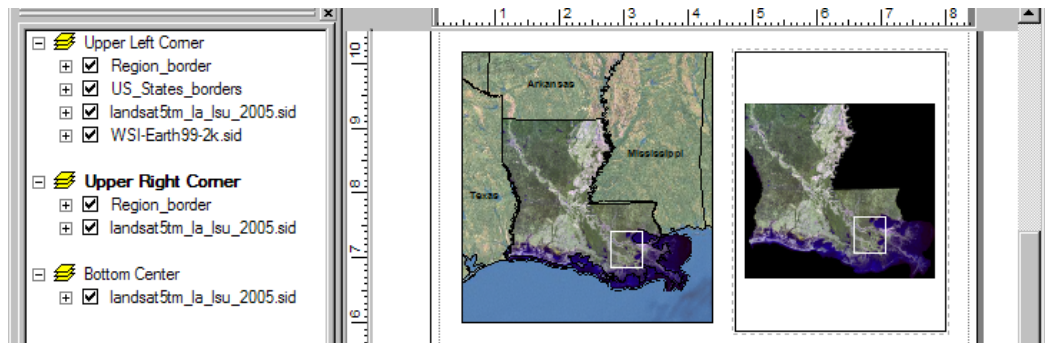
   iii. Right click on the layer name for the "**Upper Right Corner**" data frame

   - click **Properties** → select the **Data Frame** tab

   - Under **Clip to Shape** select **Enable**, click **Specify Shape** → select the **Region_border**

   - Click **Apply** & then click **Ok**

   - Select this tool → use it to draw a box around the remaining map
     (it should zoom to the Region_border area & fill the data frame window)
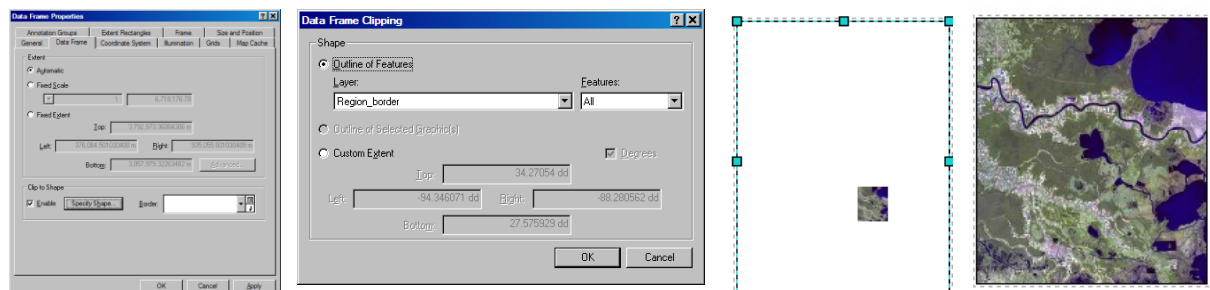
iv. Add the "**Lake_des_Allemande_border**" layer

- double click on the box below this layer's name

- click **Properties** ➔ **Outline** ➔ under **Category** select **Border**

- select **Single Nautical Dashed** ➔ Ok ➔ Ok

- change the fill color to "No Color" and the Outline Size & Color to 2 & White

-
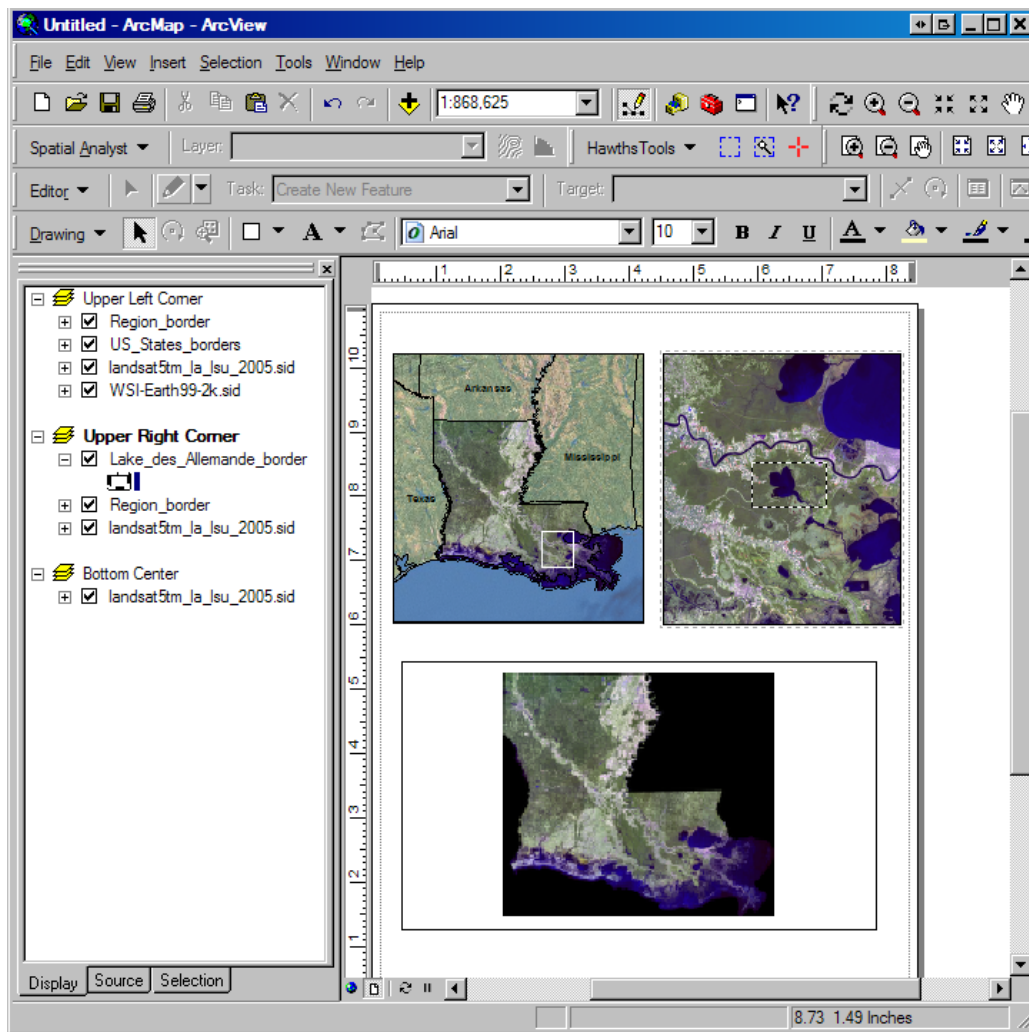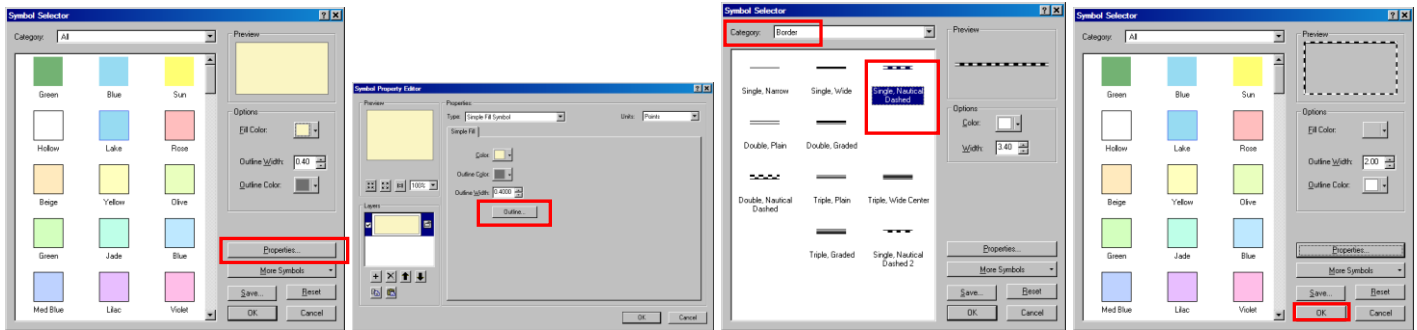
Step 6) Designing the **"Bottom Center"** data Frame

- Right click on the layer name for the "**Bottom Corner"** data frame → click **Activate**

- drag the "Lake_des_Allemande_border" from the above data frame into this one

- Right Click on this new border layer and click zoom to layer

- Use this tool Select this tool ⊕ to zoom in such that the map fills this data frame window
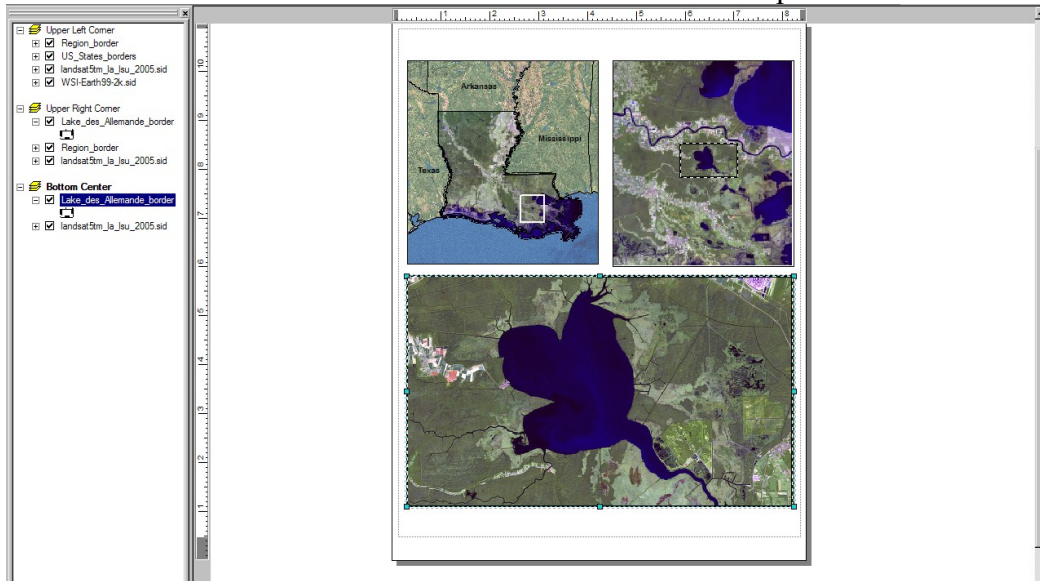
You Should have something close to this

Step 11) Last, Adding in the Scale Bar & North Arrow

- Go to **Insert** on the top toolbar → **North Arrow**

- select a north arrow → Ok

- Go to **Insert** on the top toolbar → **Scale Bar** →select a scale bar

- Click **Properties** → select the units you want the bar to be in → Ok
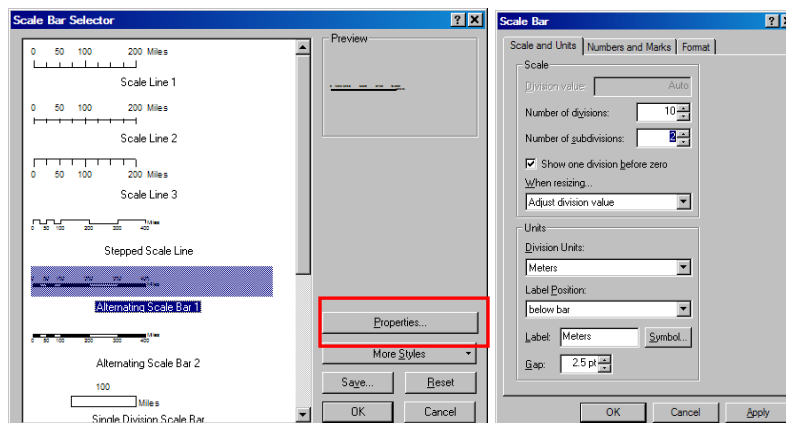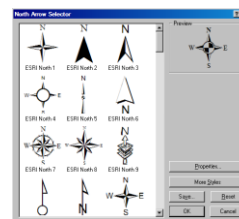
You're your Done!
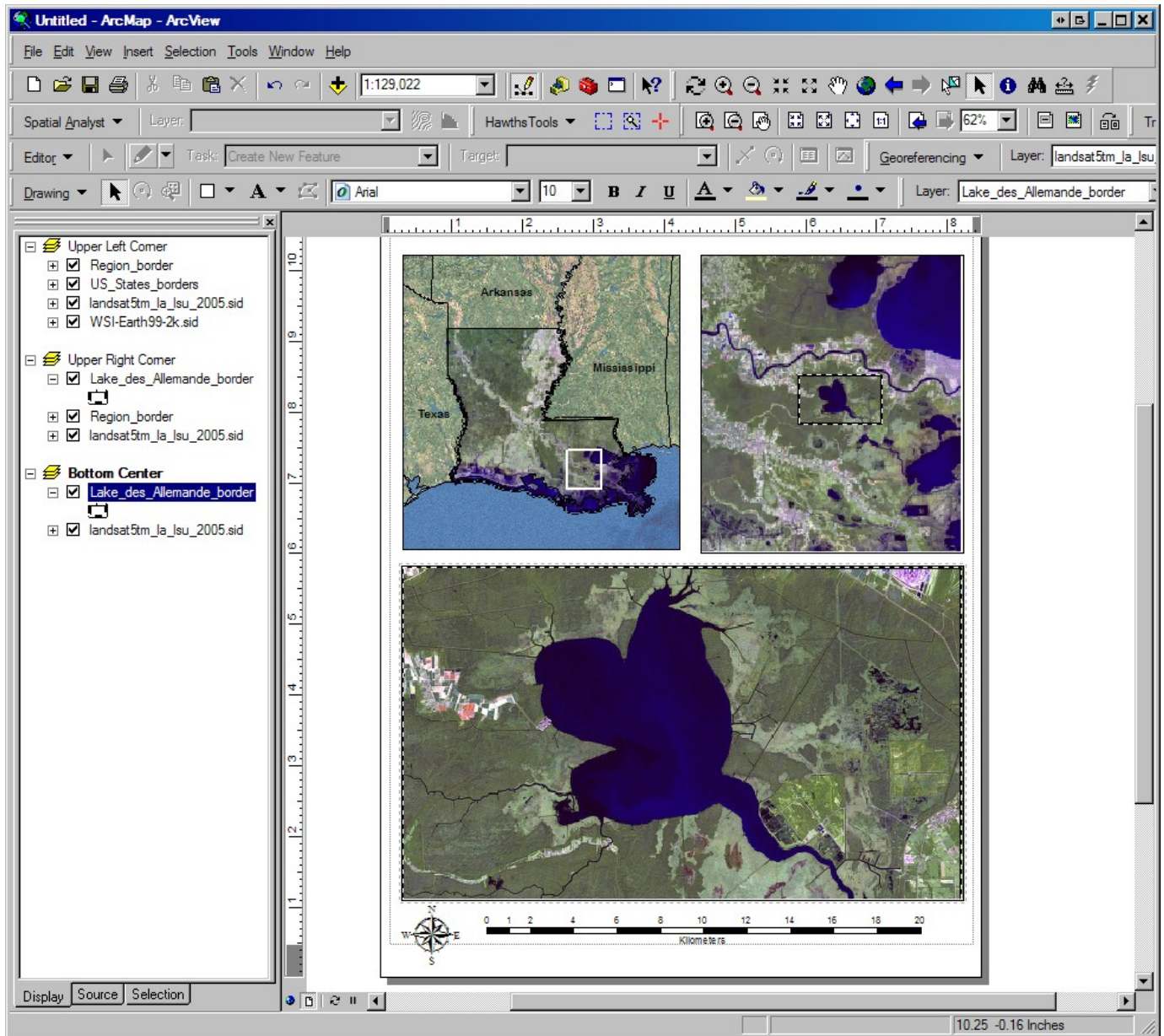
You Can Print This Map (File → Print) & **Save this Map** (File → Export Map)

The Following Section will go through the steps for adding the locations of your sampling sites to this Map / Figure Layout
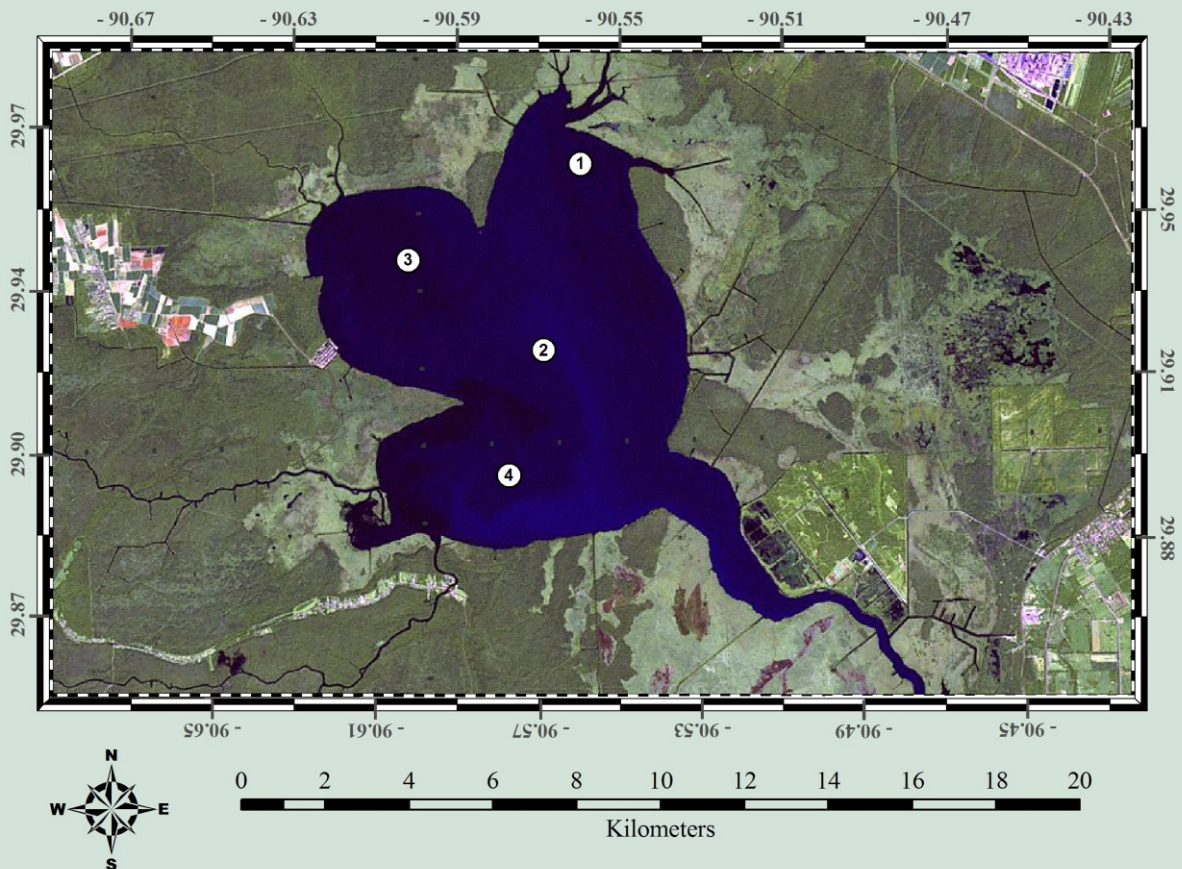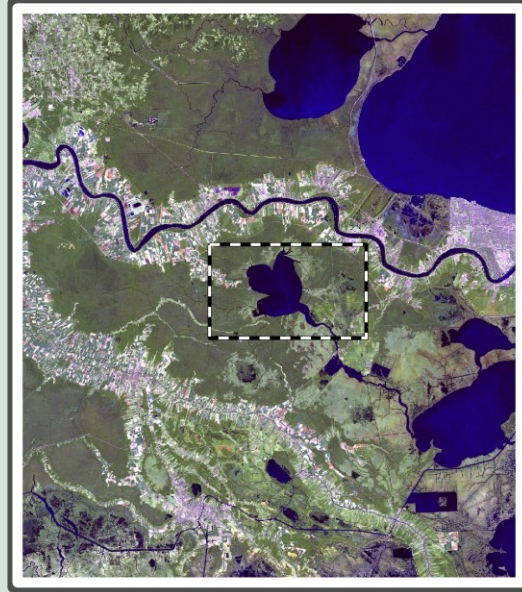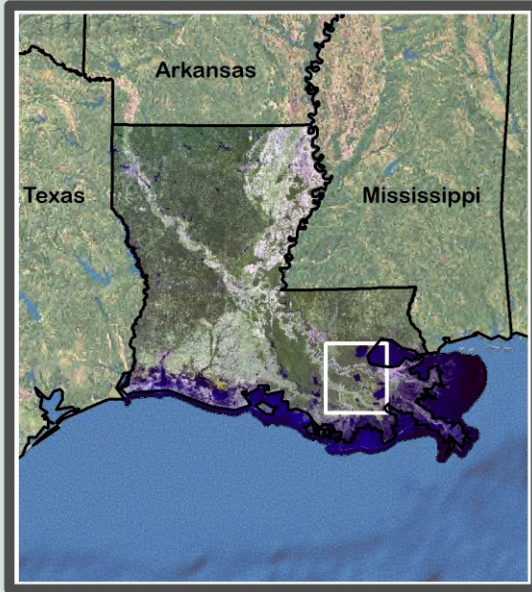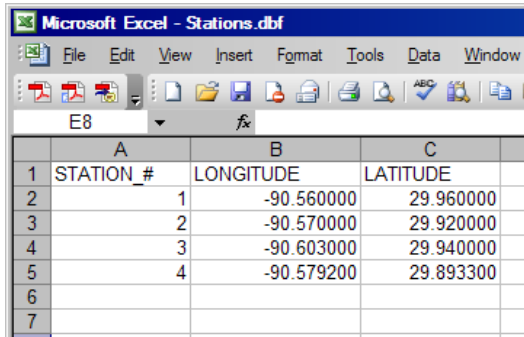
Step 1) Open Excel (any version <u>prior</u> to 2007)

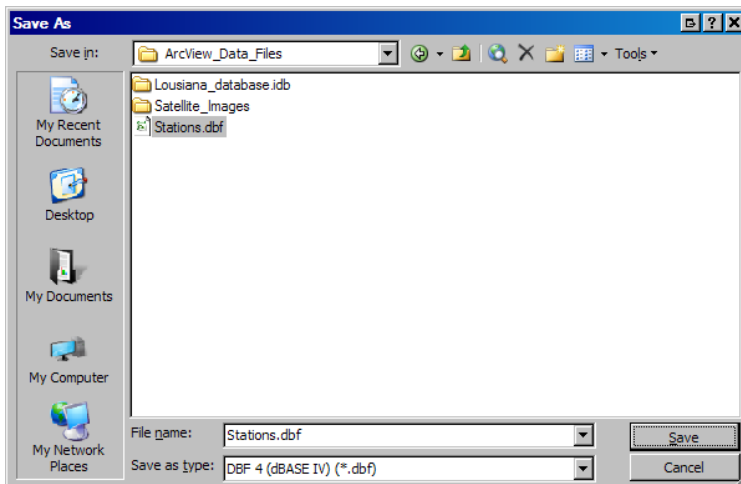Step 2) Type the locations of your stations data in a format similar to this one

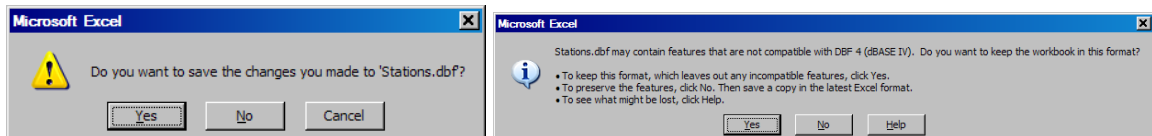

Step 3) Highlight the Latitude & Longitude Columns

- Right Click on these columns → select **Format Cells**

- select **Number** & make sure you have several decimal places (I recommend 3+)

- click Ok
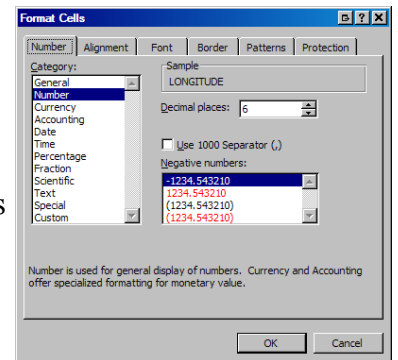
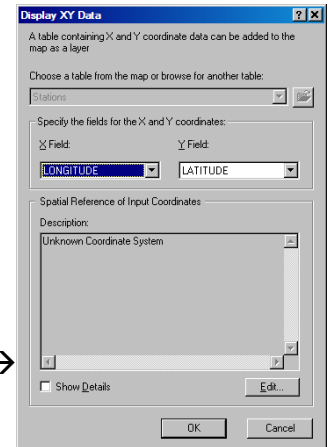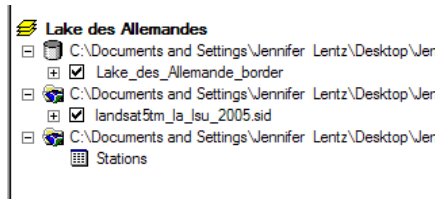Step 4) Save the file as a **DBF 4** (Excel 2007 no longer offers this file type) → Click Save

Close this file & click ok to these 2 messages (this file must be closed before you can open it in ArcView)

Step 5) Click the Add Data button in ArcView and add this dbf file

Step 6) Right click on the Stations Layer name & select **Display X,Y Data** →

Step 7) Change the symbols for the stations so that they reflect the station numbers
- double click on the symbol for the stations
  → change the fill color to white & the size to 12

- Right Click on the Stations Events Layer → select **Label features**

- Right Click on the Stations Events Layer → **Properties** → **Labels Tab**
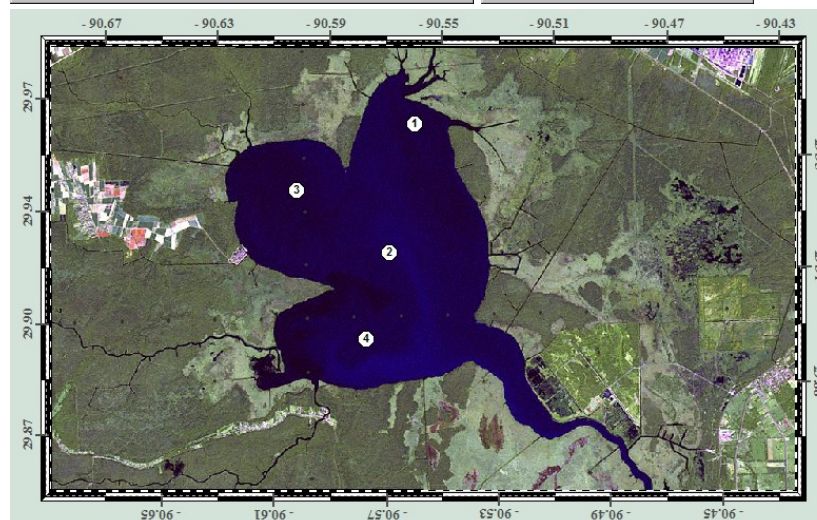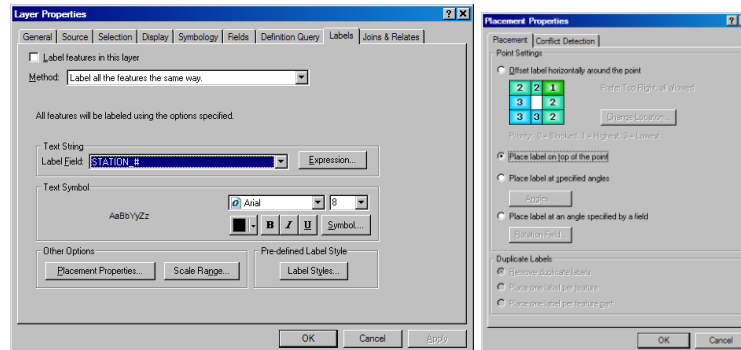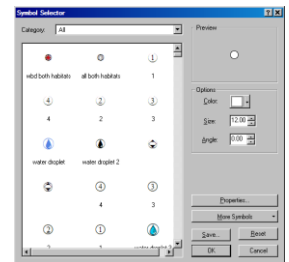
And You're All Done! Hope you found these instructions helpful :-D