ESRI WISCONSIN USERS GROUP

2004 Conference ~ November 4th & 5th

ESRI Wisconsin Users Group

ArcGIS Tips and Tools

ArcGIS ESRI

ArcGIS Tips and Tools

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Geoprocessing Wizard Toolbox

The Geoprocessing Wizard Toolbox from ArcGIS 8.3 has been replicated as a toolset in ArcGIS 9.0. The Geoprocessing Wizard Toolbox can be downloaded from the ESRI Support website:
http://support.esri.com/index.cfm?fa=downloads.geoprocessing.gateway

You will be downloading a file named: **Geoprocessing_Wizard_Tools.tbx.**

The file should be copied to the following directory:

C:\Program Files\ARCGIS\ArcToolbox\Toolboxes

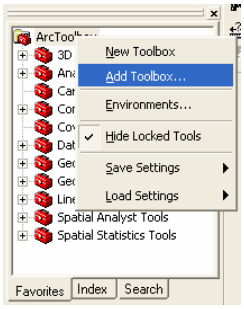
* (This will be copied into the root **ArcGIS** folder – the exact location will depend where on your harddrive the software was loaded. For some, the ArcGIS folder will be found under the Program Files directory, for others it may be under a different folder name. (Example - Apps, Software,)

(Always, save a copy on a disk or in another directory on your computer for backup should you reload ArcGIS or remove the program)

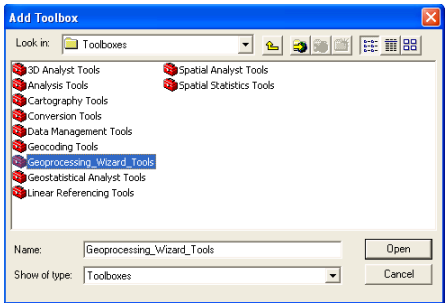
The Geoprocessing Wizard Toolbar has the same 5 tools that the original Wizard had in previous ArcView releases.

To load the toolbox in ArcMap:

- Right-click the ArcToolbox folder inside the ArcToolbox window and select *Add Toolbox*.
- Click the Look in dropdown arrow and click *Toolboxes*.



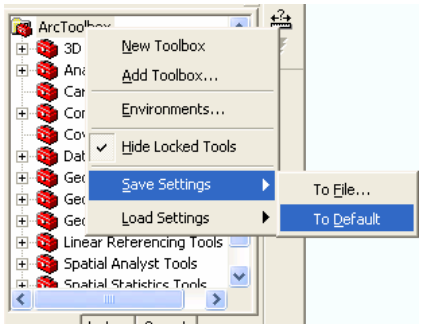
- Click the *Geoprocessing_Wizard_Tools*.
- Click *Open*.



The Geoprocessing Wizard Toolbox is added to ArcToolbox . The toolbox is added as a **shortcut** that points to the toolbox stored on disk. (If you give the map document to someone, the toolbox is not in the map document, but stored in the default location)

The Geoprocessing Wizard Toolbox will not automatically be loaded every time ArcMap is opened unless the toolbox settings are saved.

- Right-click the ArcToolbox folder inside the ArcToolbox window and select *Save Settings*.



There are two options here. One is to *save it as a file*, which will save the settings out to an .XML file, which can be loaded at a later time. The other is to *save it to default*, which will cause the Geoprocessing toolbox to open with ArcMap each time it is opened.

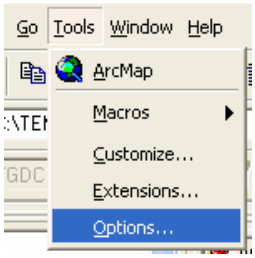
Tip: Even though the Geoprocessing Wizard is no longer included in ArcGIS 9.0 as a wizard, the operations are still available in ArcToolbox as individual tools. The tools are accessible in the following toolboxes in ArcToolbox:

Dissolve:	Data Management toolbox > Generalization > Dissolve
Merge:	Data Management toolbox > General > Append
Clip:	Analysis Toolbox > Extract > Clip
Intersect:	Analysis Toolbox > Overlay > Intersect
Union:	Analysis Toolbox > Overlay > Union

Interchange Files

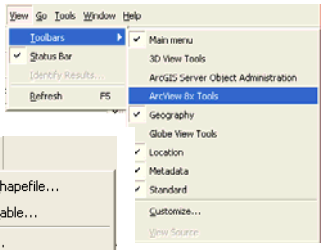
Configure ArcCatalog to recognize ArcInfo interchange files

By default ArcCatalog does not list ArcInfo Interchange files (.e00) in the catalog tree.

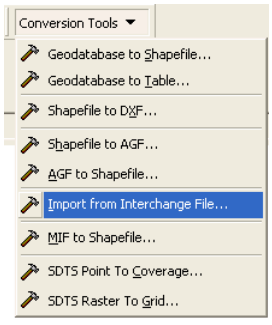


- Open ArcCatalog
- Click on *Tools* from the menu, select *Options*.
- Select *File Types* tab.
- Click *New Type* button.
- At the File Extension Line, type *e00*.
  *Make sure to use the number zero, not the letter O.
- At the File Description Line, type *ArcInfo Interchange File*.
- Optional – Click on the *change icon* button to change to different icon representation.
- Click *O.K.*
- Click *Apply>O.K.*

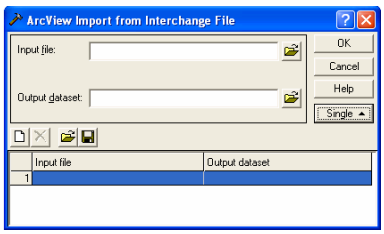
Import ArcInfo interchange files in ArcGIS



- Open ArcCatalog.
- Click on *View* from the menu>select *Toolbars>Arcview 8.x toolbar.*
- The Conversion Tools toolbar will appear, and contains many conversion options, including import from interchange file.



- *.e00 files can be imported individually or in batches.



Cartography

Transparency – Vector & Raster

In ArcView 3.x, there was a transparent symbol in the Symbol Palette. In ArcGIS 9.0, a user needs to load a special toolbar to symbolize features as transparent. In addition, a user can change the brightness of an image using this same toolbar.

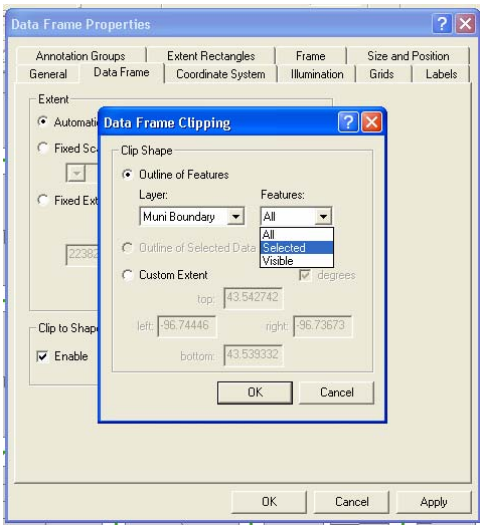
Go to *View* > *Toolbars* > *Effects* to load the Effects Toolbar

- Choose *Lakes* under *Layer*
- Click the *Transparency* button  and move the slider bar to 50%

  You will see the municipal boundary through the lakes now
- Check on the MrSID in your TOC
- Choose *MrSID* under *Layer* in the Effects Toolbar
- Click on the Brightness button  and adjust up and down. You will see the image change directly in the view.

Clipping Data Frames

A user can clip a data frame to specified extents for more refined mapping.



- Double click your *Data Frame* > Click the *Data Frame tab* > Check *Enable* under Clip to Shape > *Specify shape*
- Under Clip Shapes, select *Outline of Features*
- Choose *Layer and Features*

  Notice that you can also draw a custom graphic in your

view and clip to that graphic as well.

- Click *OK* > *OK*

This feature allows the user to make clean maps without having to go through a clipping process.

Transparency – Legend

Legends can display transparent fills, like the one applied earlier, but a few extra steps are needed.

- In Arcmap, click *Tools* > *Customize*
- Click the *Commands tab* > *Categories* =*Page Layout* > *Commands*= *Eye Dropper*
- Click the *Eye Dropper*, drag and drop it onto a toolbar 
- Make sure you are in View mode
- Click the *Eye Dropper Tool* you just added and click on a *Lake* in your View
- Name your new color *Lakes* > *OK*
- In Layout View, click the *Select Elements tool*  > *right click the legend* >*Convert to Graphics*
- On the Draw Toolbar, click *Drawing* > *Ungroup*
- Do the above step one more time (this ungroups all the legend elements)
- Select the Lakes polygon in the legend (now a graphic)
- Click the *Fill Color button*  in the drawing toolbar and select the recently saved *Lakes fill* color

Your legend now better represents the transparent color in your map

Templates

Templates are used to set up default legends, text, scalebars, logos, etc in ArcMap layouts. Once set up, they can be used over and over, eliminating the need to add and position standard layout elements.

- Make sure you are in the layout mode.
- Add layout elements such as a north arrow or scalebar using the Insert menu item.
- Go to *File* > *Save As*
- Navigate to C:\Program Files\ARCGIS\bin\Templates
- Create a *new folder* > *give it your name* > *double click on the new folder*
- Set the *Save As Type* = *.mxt*
- Name your new template "Base"
- Save
- Click on your *Change Layout* button 
- Select the tab with your name

  Your newly created template is now shown. You can create new templates in this same way and simply apply them using this button.

Printing & Exporting Maps

Here are some useful tips when printing or exporting maps

1. Download all patches from the ESRI website
2. To prevent clipping during printing, make your page size slightly bigger. Make sure to uncheck scale map elements in the print/page setup dialog box. Or, uncheck "Use Printer Page Settings" and choose "Scale Map to Fit Printer Paper" when printing.
3. Using picture markers, hatch or transparency fills may not export correctly. Try increasing your resolution or exporting to a .eps file then use Acrobat to convert to a PDF.
4. Exporting layouts as EMFs (Enhanced Metafile) produce the best image by retaining the color and clarity of an image.

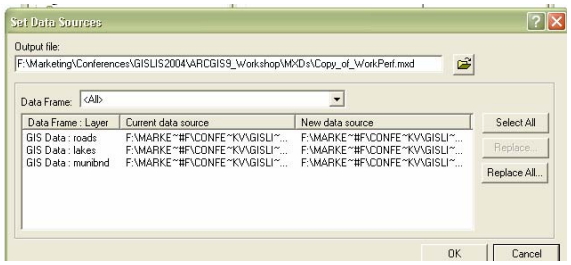
Work Performance Tips

ArcGIS brings new ways to manage everyday work activities. Here are several tips that will help the day to day GIS user.

Find & Replace Pathnames

ArcGIS 9 allows a user to replace pathnames in batch, unlike in 8.x

- Open ArcCatalog
- Browse to the folder that contains the .mxd you want to change the pathnames in
- Right click the .mxd, Select *Set Data Source(s)*



  A list of pathnames for the associated data layers appears. You can Choose a new data source for a single layer or multiple layers.

- Click *Select All,* then click *Replace All*
- Set your "replace with" pathname to the location where the data is stored. The mxd now points to the data layers in this location
- Go to *View* > *Refresh*
  You will see a copy of the .mxd.

Grouping/Ungrouping Layers

ArcGIS 8.x did not allow ungrouping of layers and the grouping function did not always maintain the desired order of layers.

- In the *Table of Contents*, highlight all the features in your table of contents by holding down the *shift key* and selecting each one
- Right click in the *Table of Contents* and Select *Group Layers*
- Right click the *new group layer* > *select Ungroup*
  (This was not an option in 8.3)

Data Frame Focus

In layout mode, the focus button allows a user to work with features as if you were in data view.

- Make sure you are in *layout view* by clicking on the *Layout View button* 
- If you try selecting a graphic or annotation using the *Select Elements tool* 

  You can't do it because the graphics and/or annotation are associated with the data view

- Click the *Focus Data Frame* button (or double click the dataframe) 

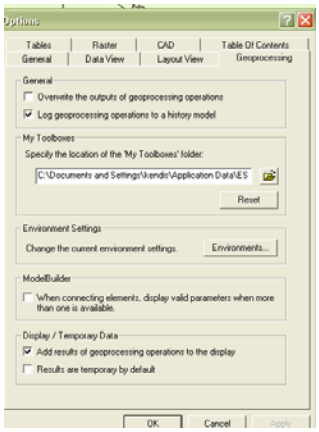
  The outline of the dataframe change to a thicker outline

- It is now possible to select and move the graphics because the layout view is acting as the data view.
- *Return to layout view* by clicking anywhere *outside the data frame* or click the *Focus Data Frame* button again

New Layer Visibility

Several personal preferences can be set directly in ArcMap. Often times, you will be adding large datasets that take a long time to draw in ArcMap. This can be frustrating as the ArcMap default is to activate a feature class as soon as it's added. You can change this however.

- Go to <*Tools*<*Options*
- Choose *General* > Uncheck *New Layer Visibility*



Cancel Drawing

There may be cases where you have large amounts of data that take a long time to load.

- Click the Escape (Esc) button when you want to stop drawing

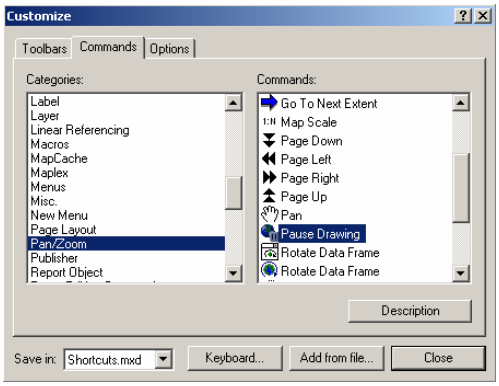
Pausing the Drawing in ArcMap

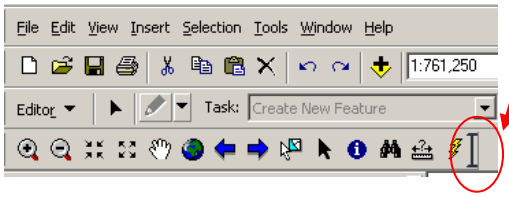
This command is added to an ArcMap pulldown menu or toolbar to suspend (temporarily) all drawing in the ArcMap display. When you pause the display drawing you can still work in the program.

When you have an extensive symbology and/or a display with a large, slow drawing image, this allows you to make changes to the symbology for a number of layers without having the map redraw each time you okay the symbol changes for each layer.

- In ArcMap, right click in the blank area of a toolbar bar at the top of the ArcMap window.
- Scroll down to the bottom of the context menu and select *Customize*.
- Click on the *Commands* tab.
- Click on the *Pan/Zoom* in the Categories list and click and drag *Pause Drawing* from the Commands list onto a toolbar.

  Note: *As you hover over a toolbar you will be able to drop the Pan/Zoom tool when you see the* I





Tip: Remove a tool by opening the Customize window (as outlined in the above steps) and dragging the tool from the toolbar back to the Customize dialog.

Removing Buttons

- Open your customize dialog box (see above)
- Click and drag the Pause Drawing button into the white space of the customize dialog box

Create a circle with a specific radius

- Open ArcMAP.
- To add the toolbar, click on View menu>Toolbars>Advanced Editing.
- Add an editable polygon shapefile.
- Click on the *Editor Toolbar* >select *Start Editing*.
- Click on the *Circle Tool* on the *Advanced Editing Toolbar*.

- Click on the map to specify the *center of the circle*.
- Hit the *'R' key* on the keyboard.
- Specify radius of the circle, hit the return key.

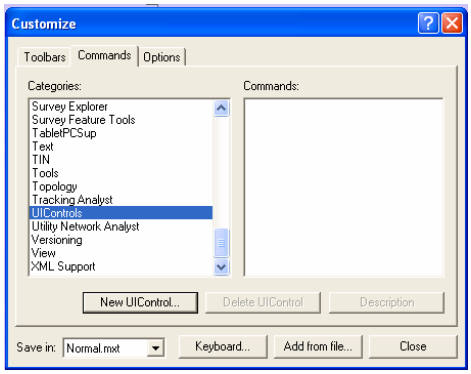
*Be sure to set up the map units in the Data Frame Properties. The radius will be drawn in the units that the map is set in. (Feet, Meters, Inches.)

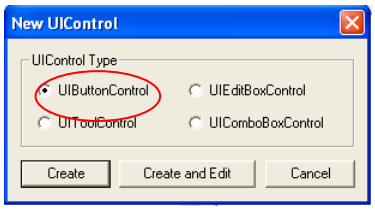
*Clicking on 'R' on the keyboard before clicking on the screen to specify center of circle will cause ArcMap to close. This is a known bug.

Calculating the area for a polygon graphic in ArcMap

The first step will be to create a new UIButton Control.

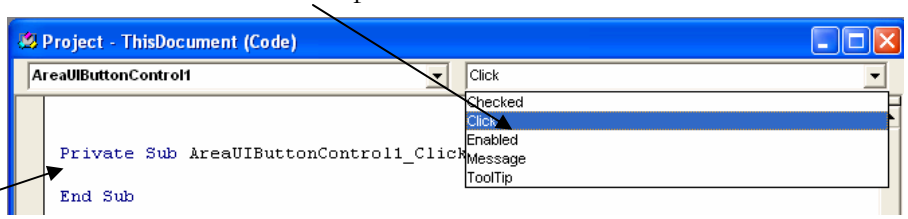
- Open existing .MXD you want to work in, or create new.
- Click the *Tools menu* and click *Customize*.
- Click the *Commands* tab.
- Click the *Save* in dropdown arrow>click *<name of mxd here>.mxt*.
- Click *UIControls* in the Categories list.





- Click *New UIControl.*
- Click *UIButtonControl.*
- Click *Create* to create the control without attaching code to it. *In this example we want to create a button.*

- Click the *newly created UIControl*, click it again to activate in-place editing, and type a new name for the control.
- Click and drag the newly created *UIControl* and drop it on a toolbar or menu.
- On the toolbar or menu, right-click the *command* to set its *image, caption, and other properties.*
- Right-click the *new command* on the toolbar or menu, then click *View Source.*
- The Visual Basic Editor appears, displaying the control's code in the Code window.
- Click the *Procedures Box* dropdown arrow and select *Click.*



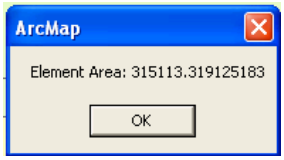
- Type code for the event procedure. *This needs to be placed between the existing lines of* ***Private Sub*** *and* ***End Sub.*** In many cases the code can be copied and pasted into the code.

CODE:

```
        Dim pApp As IApplication
Set pApp = Application

'-- Get the map document
Dim pDoc As IMxDocument
Set pDoc = ThisDocument

'-- Get the graphics container for the active view
```

```
Dim pAv  As IActiveView
Set pAv = pDoc.ActiveView
Dim pGc As IGraphicsContainerSelect
Set pGc = pAv.GraphicsContainer

'-- Make sure only one element is selected
Dim pElem As IElement
If pGc.ElementSelectionCount > 1 Then
  MsgBox "Only one element can be selected"
  Exit Sub
End If

'-- Get the area for the selected element
Dim pPoly As IPolygon
Dim pArea As IArea
Set pElem = pGc.SelectedElement(0)
If TypeOf pElem.Geometry Is IPolygon Then
  Set pArea = pElem.Geometry
  '-- Send the area to the status bar
  pApp.StatusBar.Message(0) = "Element Area : " & pArea.Area
  '-- or a message box
  MsgBox "Element Area: " & pArea.Area
End If
```

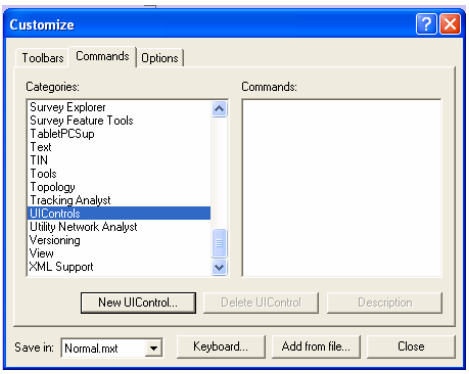
- Click Save in the Visual Basic Editor.
- Click the Close button in the Visual Basic Editor.
- Select a polygon graphic and click the newly created button.
- The area will be reported in a pop-up window.



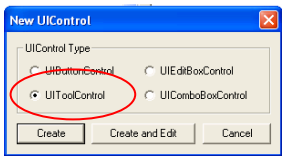
*After getting the area, it can be calculated into acres with a simple calculation.
Divide by 43,560 for acres in square feet.
Divide by 4046.8659 for acres in square meters.

Count the features within an area

The first step will be to create a new UITool Control.

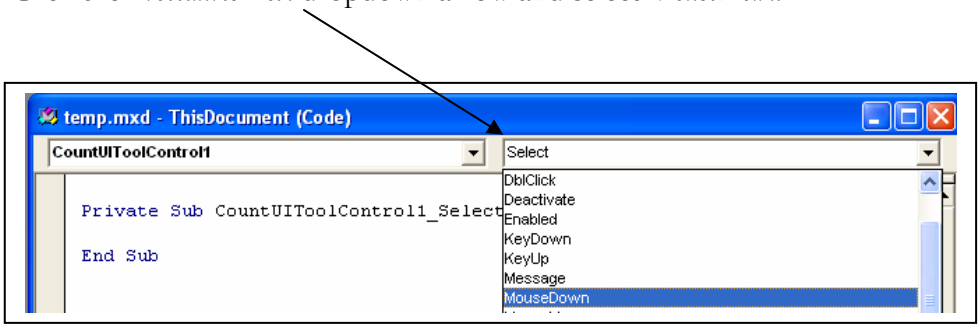


- Open existing .MXD you want to work in, or create new.
- Click the *Tools menu* and click *Customize*.
- Click the *Commands* tab.
- Click the *Save* in dropdown arrow>click *<name of mxd here>.mx*t.
- Click *UIControls* in the Categories list.



- Click *New UIControl.*
- Click *UIToolControl.*
- Click *Create* to create the control without attaching code to it.
  - *In this example we want to create a tool, to click and drag a rectangle around the features to be counted.*
- Click the *newly created UIControl*, click it again to activate in-place editing, and type a new name for the control.
- Click and drag the newly created *UIControl* and drop it on a toolbar or menu.
- On the toolbar or menu, right-click the *command* to set its *image, caption, and other properties.*
- Right-click the *new command* on the toolbar or menu, then click *View Source.*
- The Visual Basic Editor appears, displaying the control's code in the Code window.

- Click the *Procedures Box* dropdown arrow and select *MouseDown*.



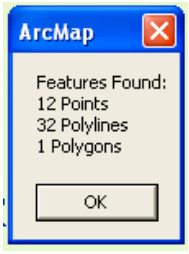
- Type, or copy and paste code between the *Private Sub* and *End Sub* existing lines of code.

CODE:

```
Dim pMxDoc As IMxDocument
Set pMxDoc = ThisDocument

Dim pEnv As IEnvelope
Dim pRubber As IRubberBand
Set pRubber = New RubberEnvelope

Dim pActiveView As IActiveView
Set pActiveView = pMxDoc.FocusMap
Set pEnv = pRubber.TrackNew(pActiveView.ScreenDisplay, Nothing)

Dim pSpatialFilter As ISpatialFilter
Set pSpatialFilter = New SpatialFilter
Set pSpatialFilter.Geometry = pEnv
pSpatialFilter.SpatialRel = esriSpatialRelIntersects

Dim lPoints As Long, lPolylines As Long, lPolygons As Long
Dim pLayer As IFeatureLayer
Dim pFeatureCursor As IFeatureCursor
Dim pFeature As IFeature
Dim i As Long
For i = 0 To pMxDoc.FocusMap.LayerCount - 1
  If (TypeOf pMxDoc.FocusMap.Layer(i) Is IGeoFeatureLayer) Then
     Set pLayer = pMxDoc.FocusMap.Layer(i)
     pSpatialFilter.GeometryField =
pLayer.FeatureClass.ShapeFieldName

     Set pFeatureCursor = pLayer.Search(pSpatialFilter, True)
     Set pFeature = pFeatureCursor.NextFeature
     Do Until (pFeature Is Nothing)
       Select Case pFeature.Shape.GeometryType
```

```
          Case esriGeometryPoint
            lPoints = lPoints + 1
          Case esriGeometryPolyline
            lPolylines = lPolylines + 1
          Case esriGeometryPolygon
            lPolygons = lPolygons + 1
        End Select
        Set pFeature = pFeatureCursor.NextFeature
      Loop
  End If
Next i

MsgBox "Features Found:" & vbCrLf & lPoints & " Points " & vbCrLf &
_
lPolylines & " Polylines " & vbCrLf & lPolygons & " Polygons "
```

- Click *Save* in the Visual Basic Editor.
- Click the *Close* button in the Visual Basic Editor.
- Click the *button in ArcMap*, click and drag to select area where to count the features.
- A pop-up box will appear with the number of counted items.



Tables

Whether it is a .dbf from a Shapefile or a PC ArcInfo Coverage, an info file from an ArcInfo coverage, or a MS Access table, creating and editing tables is an intricate part of the day to day tasks in GIS.

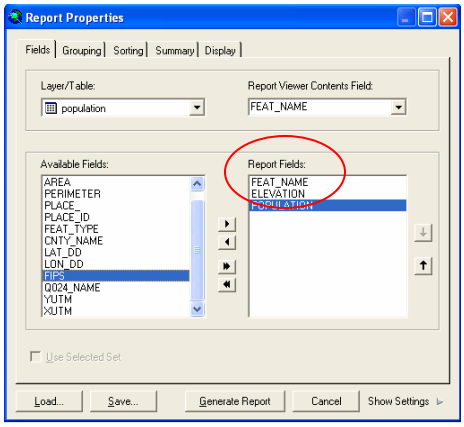
Tables can be manipulated in ArcMap, ArcCatalog, and through the ArcToolbox in ArcGIS. How the tables are accessed and edited will depend on the needs of the task to be accomplished and the preferences of the technician.

Here are a few tips that will make working with tables in ArcGIS a little easier:

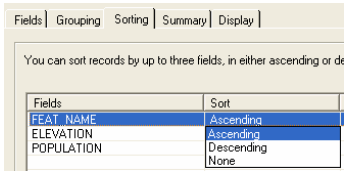
- Some characters in field or table names are not supported.
  - Names must not have a **space**.
  - Names must not have a **hyphen**. **(Example x-coord)**
  - Names must not have **brackets**.
  - Names must not have **special characters**. **(# * / ~)**
  - Names must not start with a **number or underscore**.
- Field names in delimited text files must be edited to remove these unsupported characters before using them.
- Tables that contain **Memo fields** cannot be accessed in ArcGIS.
- Field and table names can be 31 characters for **Geodatabase** feature classes.
- A **dBASE field** name can be up to 10 characters long.
- A **dBASE table** name has no limit to the length.
- Up to 16 letters or numbers can be used in **coverage** field and table names**.**

Generating a report

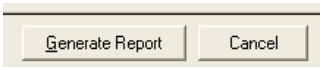
Sometimes all that is needed is a simple report without a lot a frills. In this example, a report will be created that contains the city name, elevation, and population of each city from the Census Data table.



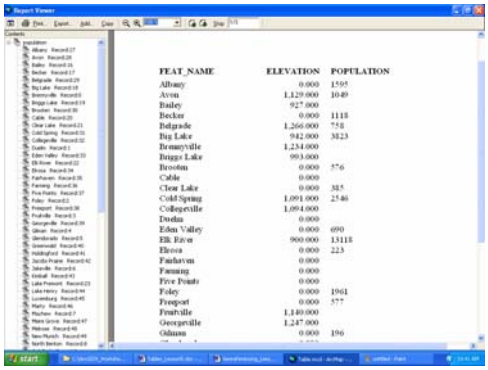
- In the *Tools* dropdown menu>*click Reports*> *Create Report*.
- The *Report Properties* dialog box will open.
- Under the *Fileds Tab*, Click on the *Layer/Table* dropdown box, *select Population*.
- Under *Available Fields*: double click on Feat_Name, Elevation, and Population to bring them over to the *Report Fields* heading.



- Under the *Sorting Tab*, Click under the *Sort* column for Feat_Name, select *Ascending* from the dropdown box.
- Click on the *Generate Report* button.



- The *Report View* will open with the generated report.



- Click on the *X* in the upper right corner to close report.
- Click on the *close button* on the bottom of the Report Properties dialog box.
- Click on *NO* to exit without saving. To save this report, click on the yes button and it can be saved out to a .rdf file for later use.

Creating a Table

In ArcGIS a new table can be created either through ArcCatalog or through the ArcToolbox in ArcMap.

- When adding a field type of double, as you would with an acres field for example, there are two parameters that need to be filled in. One is ***Precision*** the other ***Scale***.
    - **Precision** – Is how long in length the *entire* field will be. (Including one place holder for the decimal).
    - **Scale** – Is how many decimal places are needed.

*Although both Double and Float types allow for decimals, Float fields only allow up to seven significant digits for storage, while Double will allow up to 15 digits for storage.

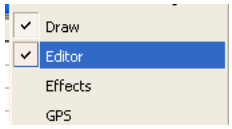
Editing and Calculating Fields in a Table

There are two basic ways that field items can be edited and calculated in ArcMap. Inside of an edit session and outside of an edit session. Editing outside of an edit session consists of opening up the table you wish to make edits on, *right clicking* on a field header and selecting *calculate values*. You will get a message stating that you are about to make a calculation outside of an edit session, do you wish to continue? Although this is the quicker way to calculate fields, especially on extremely large datasets, **there is no way of undoing the edits**. The changes are automatically saved.

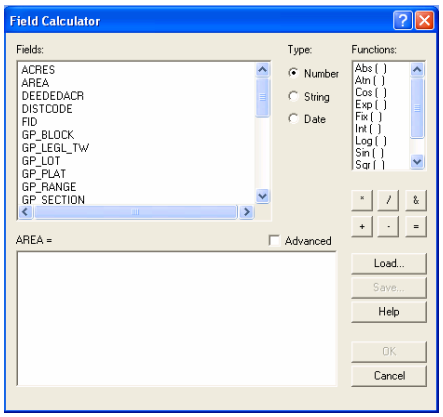
The other way of editing and calculating fields involves working within an edit session. This way of editing allows for the **option of not saving edits** if a mistake was made. Unless you are very confident in your abilities, and make daily back-ups of the data you routinely work with, working within an edit session is highly recommended.

Using VBA statements in table calculations: *Example calculating acreage.*

- Right click on *Shapefile*>go to *Open Attribute Table.*
- Click on the dropdown box of the *Editor toolbar.*
  - If the editor toolbar is not turned on-



    - *Right click* anywhere in the gray area.
    - Check on the *Editor toolbar.*
    - Dock the toolbar towards the top of the screen.
- Click on the *Start Editing* option.
  - The table is now in editing mode.



- Right click on the top of the *Area Field.*
- Go to *Calculate Values.*
- The Field Calculator dialog box will open.
- Check on the *Advanced button.*
- Type the following VBA statement in the first box.

```
Dim dblArea as double
Dim pArea as IArea
Set pArea = [shape]
dblArea = pArea.area
```

- Type *dblArea* in the text box directly below.
- Click *OK.*

Saving VBA statements from table calculations:

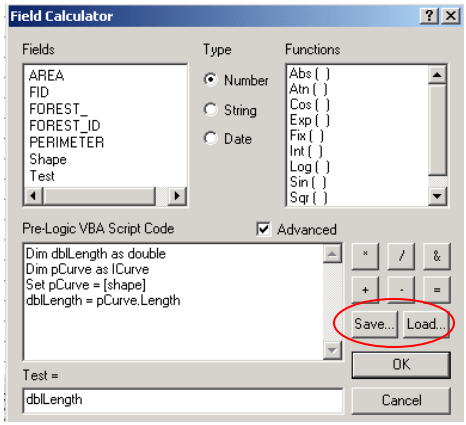
- **Before** clicking on the *OK* from the above step -
- Click on the *Save* button.
- Browse to folder to save file in.

- Name the file (from above for example) *Area.cal* > Click *Save.*

*The saved VBA statement can now be called on to calculate the area of future datasets. For calculations that are done often, this can be a time saver.

Loading VBA statements into table calculations:

Example calculating length.



- Right click on *Line Shapefile*>go to *Open Attribute Table.*
- Click on the dropdown box of the *Editor toolbar.*
- Select *Start Editing.*
- Right click on the *Length field.*
- Select *Calculate Values.*
- In the Field Calculator, click on the *Load* button.
- Browse to folder that contains the saved calculation files. (For this example we are selecting length.cal.)
- Click *Open.*
- Click *OK.*
- Close *attribute of line shapefile.*
- Click on the dropdown box from the *Editor Toolbar*, *select Stop Editing.*
- Do you want to save your edits? Click *Yes.*

Common Calculation Formulas

- Updating **perimeter** for Shapefile:

  Right-click the field heading for the Perimeter field and click Calculate Values.

  Type the following VBA statement in the first box.

  ```
  Dim dblPerimeter as double
  Dim pCurve as ICurve
  Set pCurve = [shape]
  dblPerimeter = pCurve.Length
  ```

  Type dblPerimeter in the text box directly below.

- Updating **area** for Shapefile:

  Right-click the field heading for the Area field and click Calculate Values.

  Type the following VBA statement in the first box.

  ```
  Dim dblArea as double
  Dim pArea as IArea
  Set pArea = [shape]
  dblArea = pArea.area
  ```

  Type dblArea in the text box directly below.

- To add the **x coordinate** of points:

  Right-click the field heading for the X field and click Calculate Values.

  Type the following VBA statement in the first box.

  ```
  Dim Output As Double
  Dim pPoint As IPoint
  Set pPoint = [Shape]
  Output = pPoint.X
  ```

  Type dblX in the text box directly below.

- To add the **Y coordinate** of points:

  Right-click the field heading for the Y field and click Calculate Values.

  Type the following VBA statement in the first box.

  ```
  Dim dblY As Double
  Dim pPoint As IPoint
  Set pPoint = [Shape]
  dblY = pPoint.Y
  ```

  Type dblY in the text box directly below.

Some common field calculations:

- ***[Field Name] & [Field Name] & [FieldName]***
  Concatenates multiple fields into one.
  Example: [Township] & [Range] & [Section]

- ***[Field Name] & " " & [Field Name] & " " & [Field Name]***
  Adds spaces between the values being concatenated.

- ***LCase ([Field_Name])***
  Makes all characters in a field lowercase.

- ***UCase ([Field_Name])***
  Makes all characters in a field uppercase.

- ***Left ([Field_Name] , 3)***
  Truncates the left-most characters in a field.

- ***Right ([Field_Name] , 4)***
  Truncates the right-most characters in a field.

- ***Mid ([Field_Name], 4 , 3)***
  Returns the mid three characters starting at the fourth placeholder.

- ***LTrim (Field_Name)***
  Trim leading blanks from a string.

- ***RTrim (Field_Name)***
  Trim trailing blanks from a string.

- ***NOW( )***
  Calculates the current date into a field.

Shortcuts

ArcGIS 9 ArcMap has many shortcuts that make accessing commands, navigating and selecting a snap for keyboard enthusiasts.

Selecting items in the table of contents.

- ***Ctrl + click*** selects or deselects multiple layers or data frames
- ***Shift + click*** selectsall layers or data frames between two layers or data frames, within the same table of contents level

Navigate the table of contents with the computer keyboard.

- ***Esc*** or click the map puts the keyboard focus on the map
- ***F3*** or clicking inside the table of contents puts the keyboard focus on the table of contents
- ***Home*** selects the first item in the table of contents
- ***End*** selects the last item in the table of contents
- ***Up/Down arrows*** move through the items in the table of contents
- ***Left/Right arrows*** or the **+** and **–** keys expands or contracts selected items. ***Left/Right arrows*** and **+** and **–** keys also switch between the tabs at the bottom of the table of contents when they have keyboard focus.
- ***Spacebar*** turns drawing of the selected layer(s) on or off.
- ***F2*** renames the selected item.
- ***Double Click*** on an item or ***F12*** opens the selected item's properties dialog box.
- ***Alt and click*** a data frame to activate it or ***F11*** activates a selected data frame.
- ***Shift + F10*** opens the context menu for the selected item.

Using mouse shortcuts in the table of contents

- ***Ctrl + Click*** an expansion control (=/- to expand or contract all the items at that level. If any items are currently selected, only the selected items are expanded or collapsed.
- ***Ctrl + Click*** a check box to turn all the layers on or off at that level. If any items are currently selected, only the selected items are turned on or off.
- When dragging layers, hovering over an expansion control with the drop pointer expands or collapses any item.

Docking and undocking

- Hold down ***Ctrl*** while dragging a toolbar or dockable window to prevent it from docking.

Thumbnails

A thumbnail is a snapshot describing the geographic data contained in a data source or layer, or a map layout. Thumbnails are not updated automatically; they will go out of date if features are added to a data source or if the symbology of a layer changes. You must create and update thumbnails manually. Thumbnails are stored in the item's metadata.

- From the top of the toolbars in ArcMap, click on the *ArcCatalog* button. 
- In the Catalog tree, click the layer you want to create a thumbnail.
- Click the *Preview* tab.
- Click the *Zoom In* button on the Geography toolbar and zoom to an area that represents the layer's contents.
- Click the *Create Thumbnail* button. 
- The thumbnail records what you currently see in the Geography view.

You also have the option of having ArcMap save a thumbnail of the current view extent when saving the map document.

- Click on >*File*>*Map Properties*.
- Check on *Save thumbnail image with map*.