



Please note:





- This presentation was used as speaker's notes for the 2008 Petroleum User Group Conference on Feb. 27, 2008 in Houston, TX. This material is not intended as course material nor reference material, but simply as speaker's notes. This presentation may be used by an individual, but not posted on any website nor used in a public setting nor for profit. The .PDF version of this document does not display any of the animations that were in the original talk, so some of the slides may not display well. For permission/access to the entire power point presentation in its complete form, please contact info@TeachMeGIS.com.

ArcGIS Resources You Already Own (or can get for free)

That You Might Not Know About



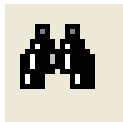
 A seminar for the “regular guy”

-  **ArcMap Tools**
 - Basic Tools
 - Graphics/Layouts Tools
 - Table Tools
 - Other Tools
-  **GIS Reference Tools**
 - ArcWeb Explorer
 - ColorBrewer
 - TypeBrewer
 - Free Online Courses
 - EPSG
-  **GIS Extensions / Tools / Free Software**
 - EDN – Map Book
 - ESRI Mapping Center
 - TerraServer Download
 - ArcGIS Explorer
 - ArcWeb Explorer
-  **GIS Data**
 - ArcGIS Online Beta
 - Geography Network
 - SONRIS
 - TNRIS
 - Other Data

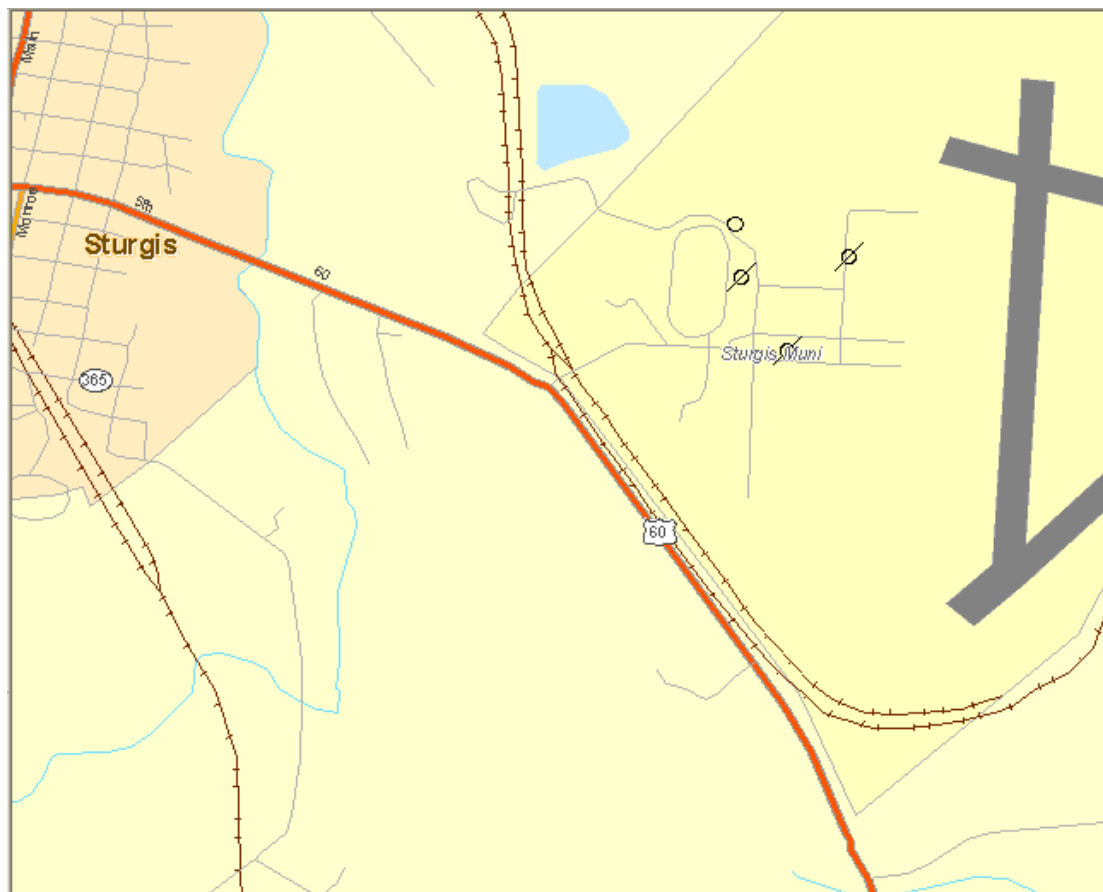




Basic Tools



- Find
- ESRI Streetmap

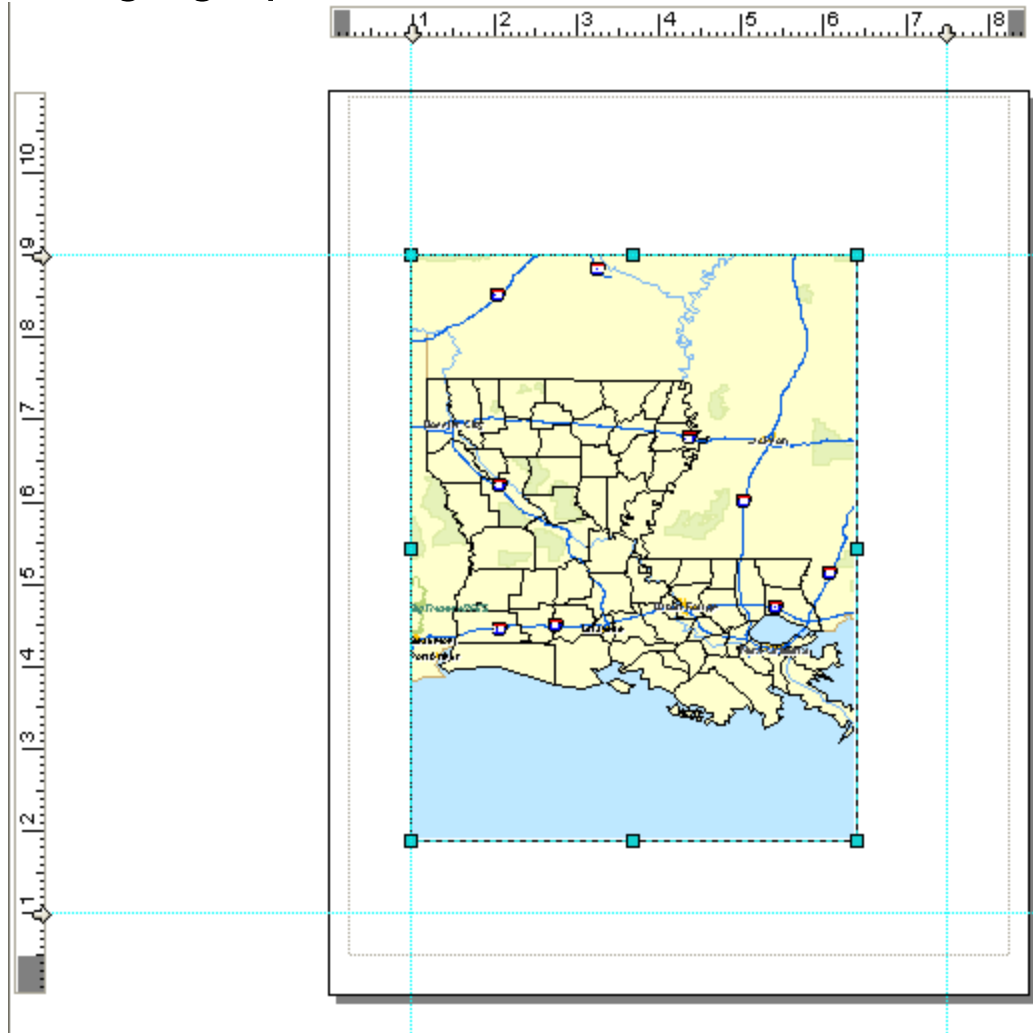




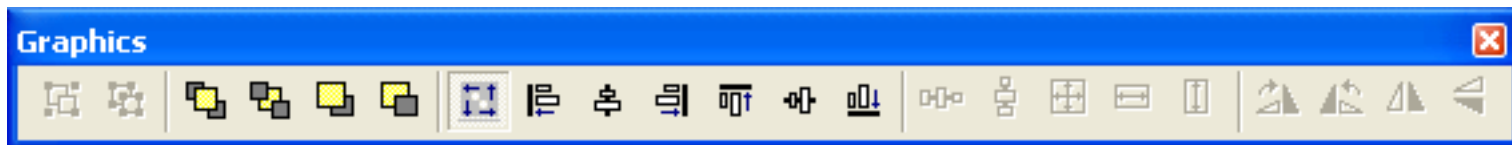
Graphics/Layouts

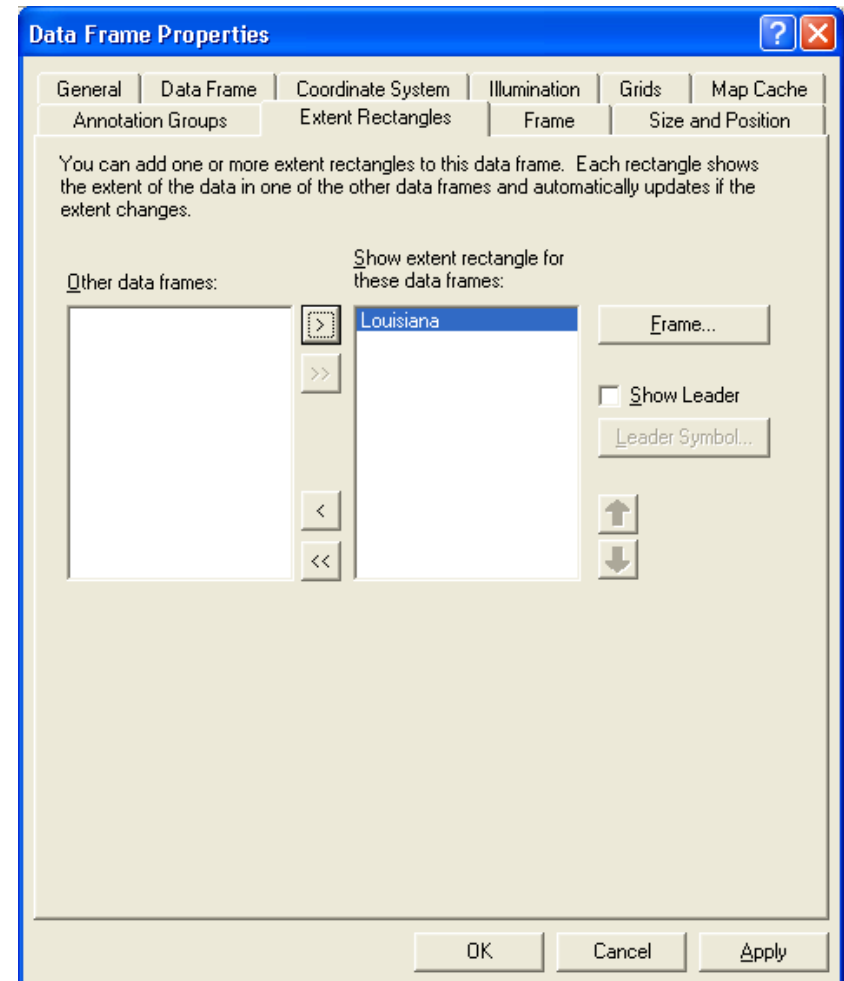
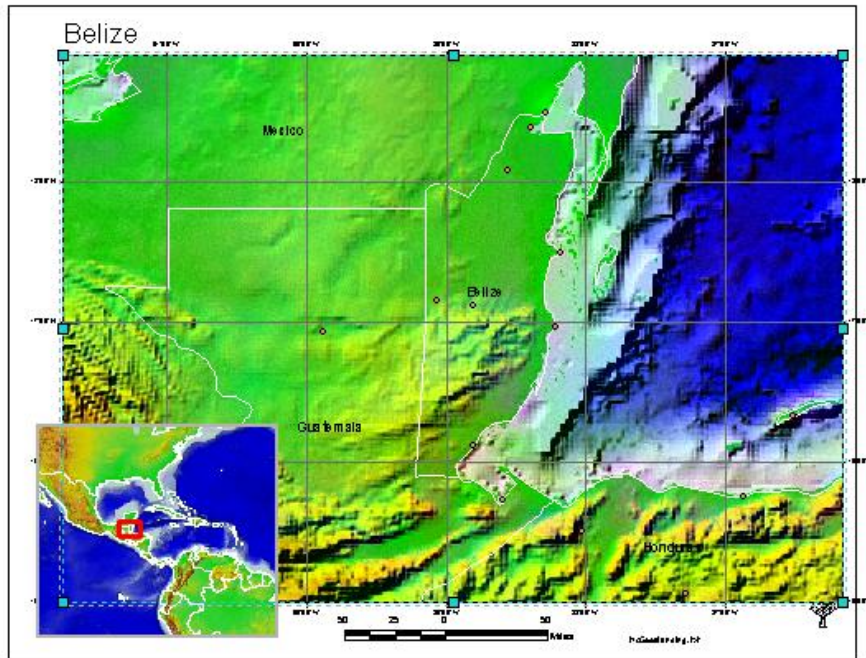
- Using guides
- Aligning graphics to the page
- Adding an inset map
- Clipping a data frame

- 🌐 Use guides to help you align graphics

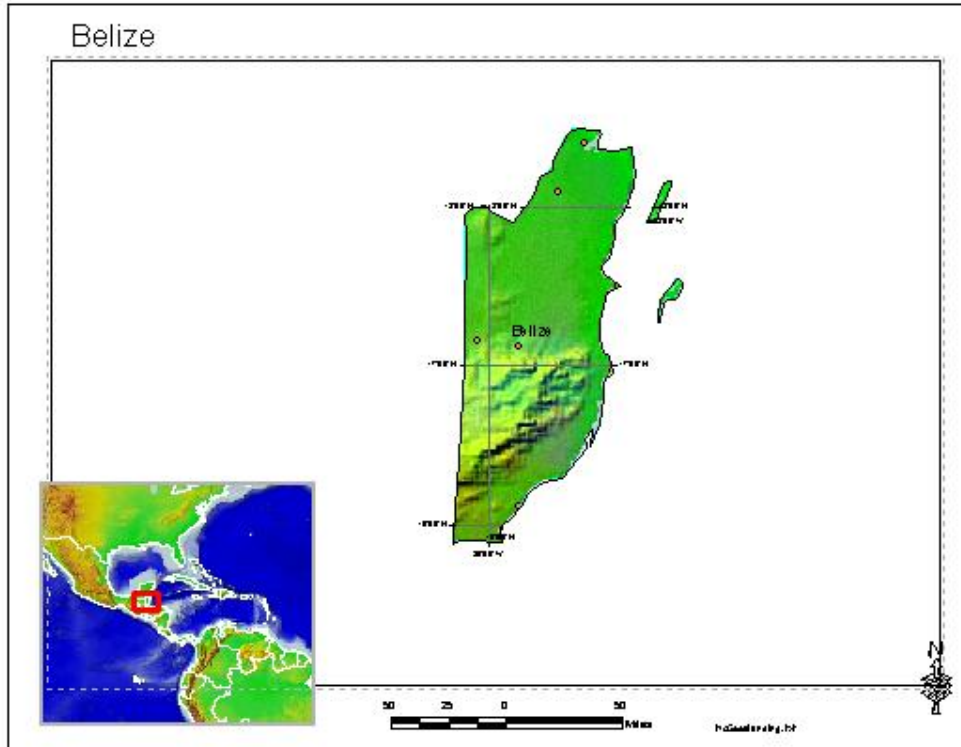


- 🌐 Use the Graphics Toolbar to align graphics to the page





Clipping the Data Frame



Data Frame Properties

Annotation Groups | Extent Rectangles | Frame | Size and Position
General | Data Frame | Coordinate System | Illumination | Grids | Map Cache

Extent

☒ Automatic

☐ Fixed Scale
1:3,169,138

☐ Fixed Extent
Top: 18.912708542 dd
Left: -91.392498142 dd Right: -86.513574045 dd
Bottom: 14.999012087 dd Advanced...

Clip to Shape

☒ Enable Specify Shape... Border: [dropdown] [icon]

Data Frame Clipping

☐ Current Visible Extent

☒ Outline of Features
Layer: cntry00 Features: Selected

☐ Outline of Selected Graphic(s)

☐ Custom Extent ☒ Degrees
Top: 18.912709 dd
Left: -91.392498 dd Right: -86.513574 dd
Bottom: 14.999012 dd

OK Cancel



Tables

- Calculate Geometry
- VBA Functions in the Calculator
- Summarize
- Spatial Join
- Extract values to Points
- Domains

Calculate Geometry

- New with ArcGIS 9.2
- For Shapefiles, or for calculating area/lengths in other units

SQKM	SQMI	COLOR_MA	Area	Perimeter
16911282	6529445	1	2931.5	
61909.1	23903.1	3	25.	
2143319	827535.44	7	660.5	
467.76	180.6	5	0.1	
102280.63	39490.54	8	19.	
1474.69	569.38	3	0.2	
333144.53	128627.09	7	62.6	
45689.43	17640.69	6	7.1	
64324.77	24835.79	3	9.5	
243299.52	93937.94	5	33.6	
64712.64	24985.55	2	9.	
42509.49	16412.91	6	6.1	
206851.78	79865.48	4	28.1	
615.37	237.59	2	0.0	
69351.05	26776.44	1	9.3	
210465.91	119070.00	5	40.6	

Calculate Geometry

Property: Area

Coordinate System

☒ Use coordinate system of the data source:
PCS: NAD 1983 UTM Zone 15N

☐ Use coordinate system of the data frame:
GCS: North American 1983

Units: Square Meters [sq m]

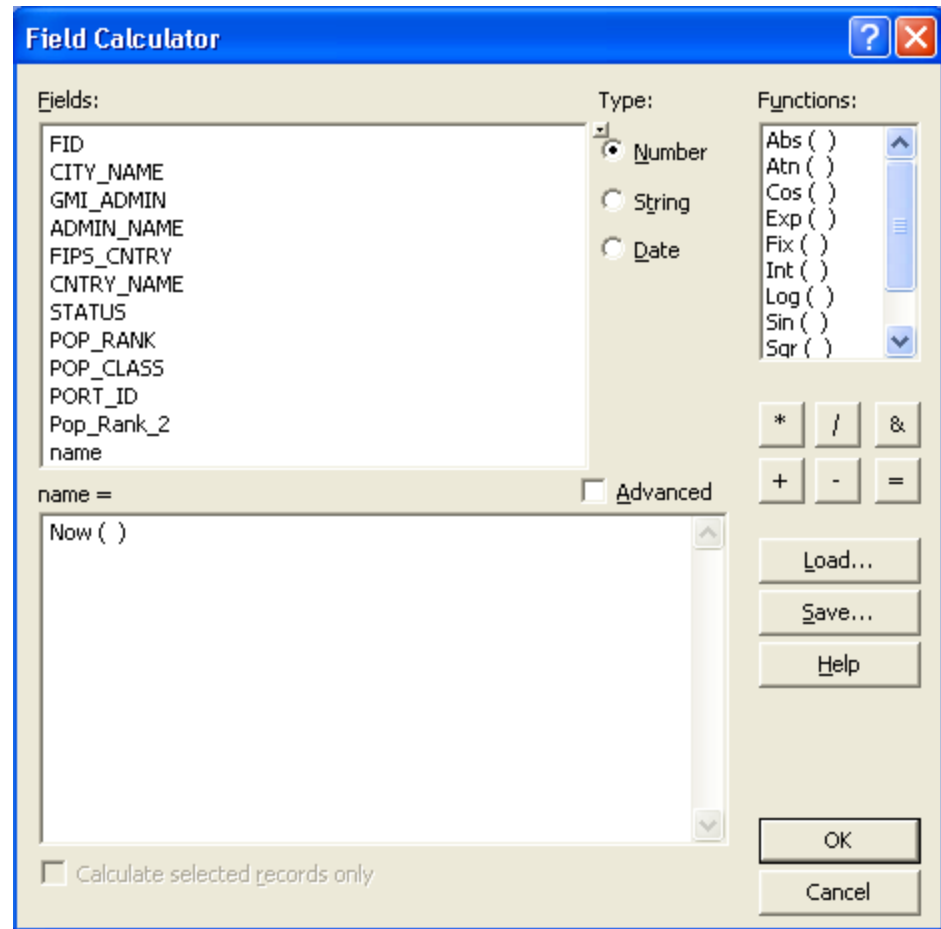
☐ Calculate selected features

Help

Acres US [ac]
Ares [a]
Hectares [ha]
Square Decimeters [sq dm]
Square Feet US [sq ft]
Square Kilometers [sq km]
Square Meters [sq m]
Square Miles US [sq mi]

VBA Functions in the Calculator

- 🌐 [field1] & " " & [field2]
- 🌐 Left ([field1],2)
- 🌐 Now()



Labeling with a Time Stamp

 [Well_Prod] & " " & now()

Label Expression

Expression

Label Fields

Double-click to add a field into the expression

Show Type ▾

FID
CITY_NAME
GMI_ADMIN
ADMIN_NAME
FIPS_CNTRY
CNTRY_NAME
STATUS
POP_RANK

Append Show Values... ☒ Display coded value description

Expression

Write the expression in the language of the selected parser. ☐ Advanced

[CITY_NAME] & " " & now()

Verify Reset Help Load... Save...

Parser: VBScript ▾

OK Cancel

How many wells are in each field?

The screenshot displays the ArcGIS Desktop interface with the Summarize tool and its results.

Summarize Dialog Box:

- 1. Select a field to summarize:** oilgaswells.FIELD_NAME
- 2. Choose one or more summary statistics to be included in the output table:**
 - ☒ oilgaswells.FID
 - ☐ First
 - ☐ Last
 - ☒ oilgaswells.WELL_SER
 - ☒ oilgaswells.WELL_NAME
 - ☒ oilgaswells.WELL_NUM
 - ☒ oilgaswells.API_NUM

Attributes of Sum_Output Table:

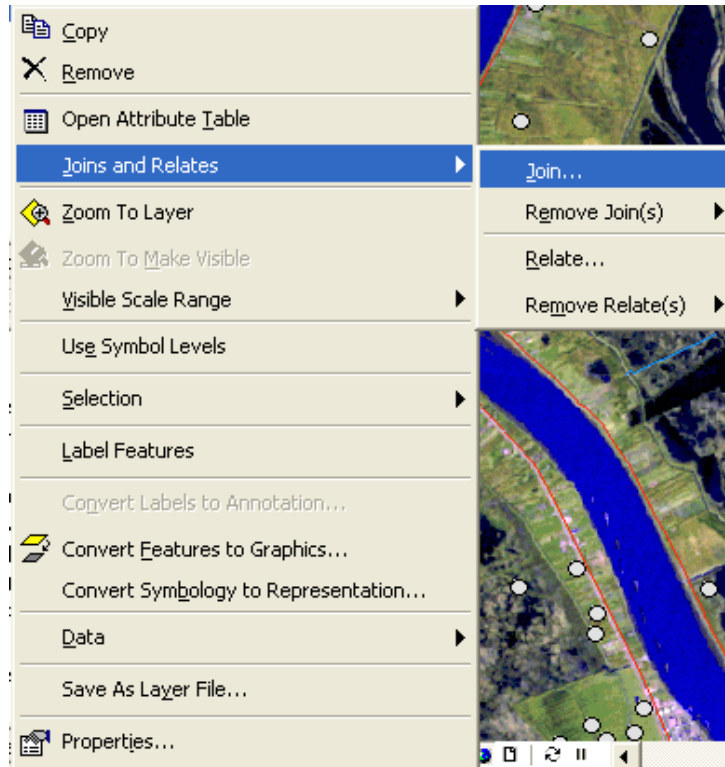
OID	FIELD_NAME	Count_FIELD_NAME
0		448
1	Edgerly	1
2	Hog Bayou	1
3	Jennings	4
4	Johnsons Bayou	1
5	Miscellaneous	2
6	Monroe	1
7	VINTON	1
8	Vinton	3
9	Wildcat-so la lafayette dist	1
10	abbeville	346
11	ada	2
12	adams bay	7
13	adams bay, south	1
14	addis, west	25
15	alabama bayou	8
16	alliance	23
17	alligator lake	4
18	alsen	15
19	amelia	21

Main Data Table (oilgaswells):

Operator	oilgaswells.FIELD_NAME	oilgaswells.Drill Year	oilgaswells.OperatorC
	jefferson island	1995	
	jefferson island	1995	
	jefferson island	1998	
	jefferson island	1994	
	jefferson island	1996	
	jefferson island	1994	
	jefferson island	1994	
	jefferson island	1999	
	jena, south	1954	
	Jennings	1957	
	Jennings	1917	
	Jennings	1927	
	Jennings	1938	
	jennings	1925	
	jennings	1927	
	jennings	1924	
	jennings	1925	
	jennings	1925	
	jennings	1929	

The Summarize tool has been applied to the 'oilgaswells' feature class, summarizing by 'FIELD_NAME'. The resulting 'Sum_Output' table shows the count of wells for each field name. The main data table shows the original records with fields: Operator, oilgaswells.FIELD_NAME, oilgaswells.Drill Year, and oilgaswells.OperatorC.

Which wells are on sandy soil?



Join Data

Join lets you append additional data to this layer's attribute table so you can, for example, symbolize the layer's features using this data.

What do you want to join to this layer?

Join data from another layer based on spatial location

1. Choose the layer to join to this layer, or load spatial data from disk:

soils

2. You are joining: Polygons to Points

Select a join feature class above. You will be given different options based on geometry types of the source feature class and the join feature class.

Each point will be given all the attributes of the polygon that:

☒ it falls inside.

If a point falls inside more than one polygon (for example, because the layer being joined contains overlapping polygons) the attributes of the first polygon found will be joined.

☐ is closest to it.

A distance field is added showing how close the polygon is (in the units of the target layer). A polygon that the point falls inside is treated as being closest to the point (i.e. a distance of 0).

3. The result of the join will be saved into a new layer.

Specify output shapefile or feature class for this new layer:

C:\NCT\NCT\1-Training\1_TrainingManuals\2_ICT_CustomCou

About Joining Data

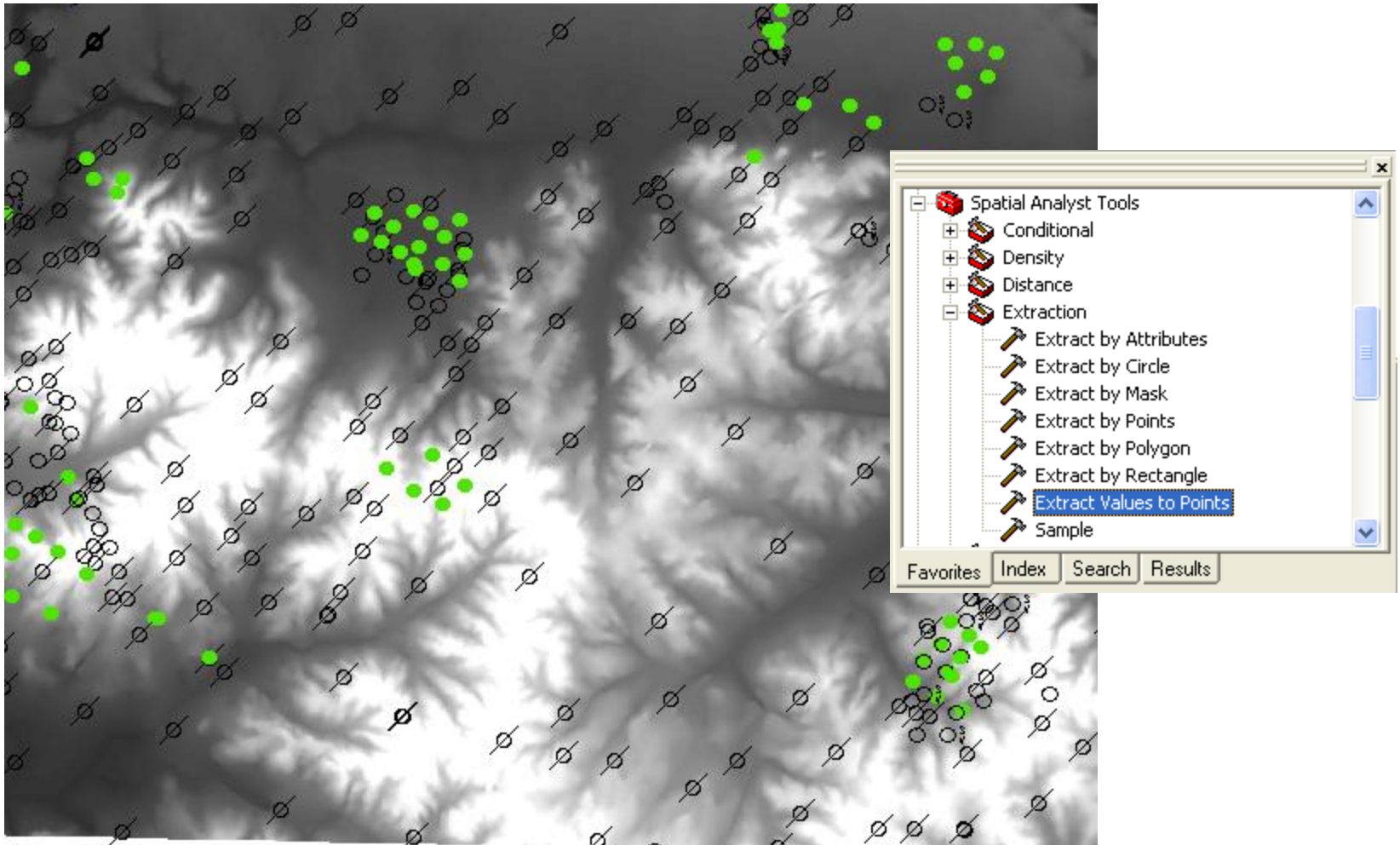
OK

Cancel

- [illegible]

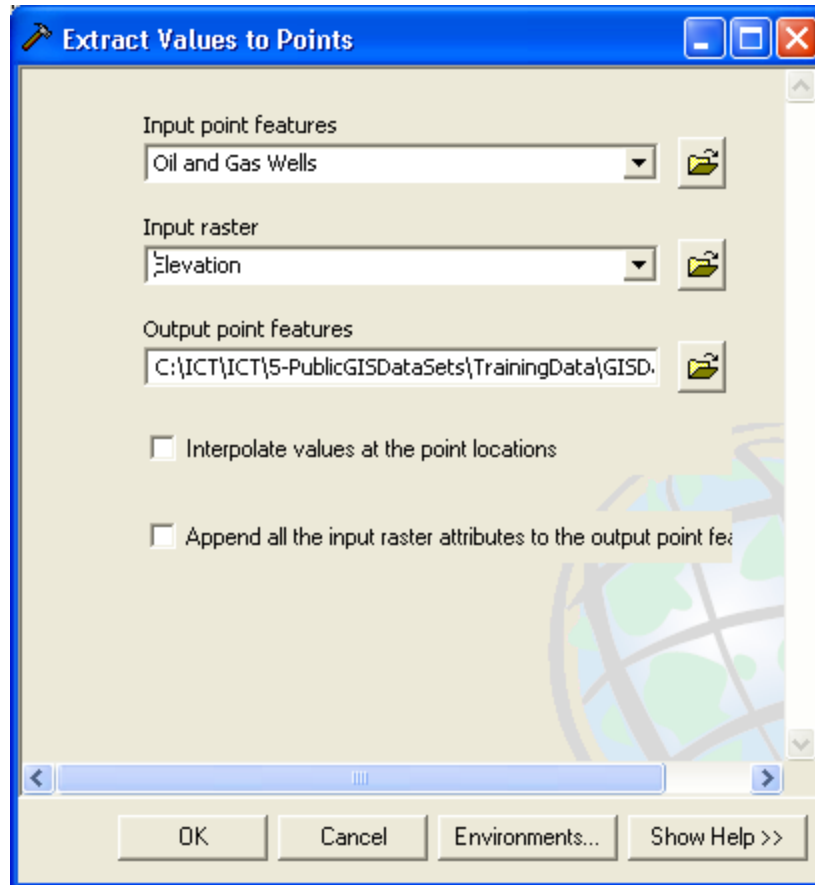
Extract Values to Points

Is this surface elevation correct?



Extract Values to Points

- Requires a Spatial Analyst Example
- Make sure raster and point layer are in the same projection



Attributes of Extract_Wells_L1

	COUNTY	TOPO	ELEV	RASTERVALU	SEC	LTR	NUM	TD	TDFM
	HENDERSO	WILSO	376	377.200012	6	P	22	275	333MC
	HENDERSO	WILSO	365	369.299988	6	P	22	226	332CPI
	HENDERSO	WILSO	388	386	10	P	22	172	332VWL
	HENDERSO	WILSO	385	387.100006	10	P	22	172	332VWL
	HENDERSO	WILSO	387	385.899994	10	P	22	0	000
	HENDERSO	WILSO	387	387.100006	10	P	22	171	332VWL
	HENDERSO	WILSO	382	382.200012	10	P	22	255	333SG
	HENDERSO	WILSO	383	383.200012	10	P	22	171	332VWL
	HENDERSO	WILSO	382	379.899994	13	P	22	174	332VWL
	HENDERSO	WILSO	380	381	13	P	22	0	000
	HENDERSO	WILSO	381	384.299988	13	P	22	0	000
	HENDERSO	WILSO	383	384.799988	13	P	22	0	000
	HENDERSO	WILSO	381	384.200012	13	P	22	0	000
	HENDERSO	WILSO	383	387.100006	13	P	22	0	000
	HENDERSO	WILSO	384	386.100006	13	P	22	178	332VWL
	HENDERSO	WILSO	378	379.799988	13	P	22	175	332VWL
	HENDERSO	WILSO	382	380.5	13	P	22	174	332VWL

Record: 0 Show: All Selected Records

- Domains are used to constrain a column in the attribute table.
- Domains can only be created in Geodatabase Feature Classes

Attributes of soils

HYDRIC	MUKIND	MUNAME	GGSA_DEF	CAT	MUS
N	(LA345)	SACUL-BOWIE-KULLIT	Uplands and Terraces	1	Western Tertiary Uplands - Uplands
N	(LA239)	SACUL-DARLEY-EASTWOOD	Uplands and Terraces	1	Western Tertiary Uplands - Uplands
N	(LA241)	WRIGHTSVILLE-KOLIN-GORE	Uplands and Terraces	5	Western Pleistocene Terraces - Terraces
N	WATER	WATER	Water	31	Water
N	(LA236)	MORELAND-SEVERN-NORWOOD	Recent Alluvium	22	Red River Valley Alluvium - Backswamps
N	WATER	WATER	Water	31	Water
N	(LA247)	ARMISTEAD-GALLION-NORWOOD	Recent Alluvium	21	Red River Valley Alluvium - Natural Levee
N	(LA241)	WRIGHTSVILLE-KOLIN-GORE	Uplands and Terraces	5	Western Pleistocene Terraces - Terraces
N	(LA343)	GUYTON-AMY-OUACHITA	Uplands and Terraces	6	Western Pleistocene Terraces - Floodplai
N	WATER	WATER	Water	31	Water
N	(LA334)	EASTWOOD-ANGIE-BOWIE	Uplands and Terraces	1	Western Tertiary Uplands - Uplands
N	(LA343)	GUYTON-AMY-OUACHITA	Uplands and Terraces	6	Western Pleistocene Terraces - Floodplai
N	(LA342)	SACUL-SAVANNAH-SAWYER	Uplands and Terraces	1	Western Tertiary Uplands - Uplands
N	(LA242)	SHATTA-PRENTISS-CAHABA	Uplands and Terraces	5	Western Pleistocene Terraces - Terraces
N	(LA343)	GUYTON-AMY-OUACHITA	Uplands and Terraces	6	Western Pleistocene Terraces - Floodplai
N	(LA243)	GORE-MCKAMIE-FORBING	Uplands and Terraces	5	Western Pleistocene Terraces - Terraces
N	(LA260)	DARLEY-SACUL-BOWIE	Uplands and Terraces	1	Western Tertiary Uplands - Uplands
N	(LA232)	SACUL-RUSTON-SMITHDALE	Uplands and Terraces	1	Western Tertiary Uplands - Uplands
N	(LA257)	EASTWOOD-WOLFENBARGER	Uplands and Terraces	1	Western Tertiary Uplands - Uplands

Record: 18 Show: All Selected) Options

Dropdown menu for GGSA_DEF:

- <Null>
- Coastal Prairies
- Flatwoods
- Gulf Coast Marsh
- Loess Uplands and Terraces
- Recent Alluvium
- Uplands and Terraces
- Water
- Undefined

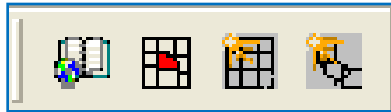
 Editing Tools

 Samples

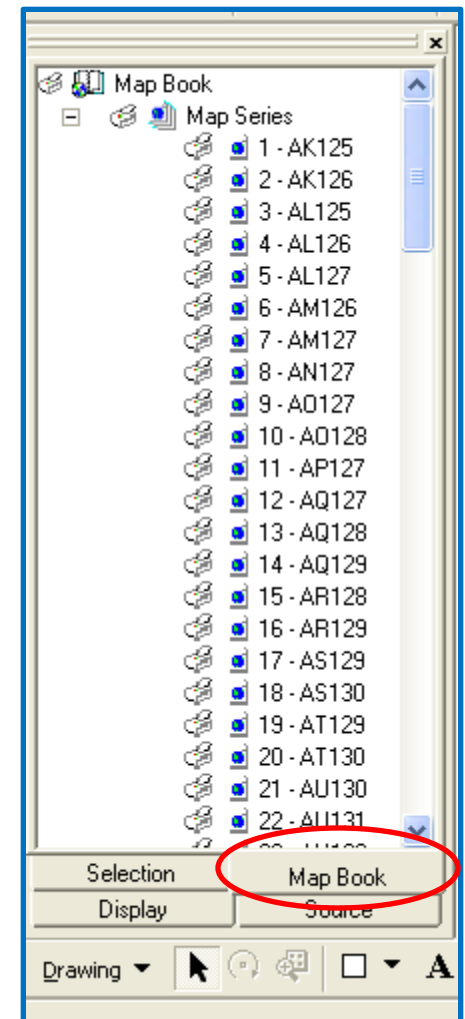


GIS EXTENSIONS / TOOLS

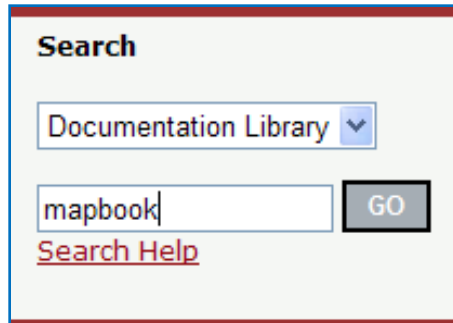
- ESRI's Map Book can create a map series from a single map or aerial image with a point, line, or polygon layer set as an index.
- Downloading this extension adds a Map Series toolbar which has four useful tools in creating a Map Book.



- This extension also creates a “Map Book” tab in ArcMap which displays the Map Series once created.
- From the new tab the user is able to double-click one page to see it individually in layout view, enable and disable map pages, also batch export and print these maps.



- 🌐 The Map Book extension can be obtained on the ESRI Developer Network at: <http://edn.esri.com/>
- 🌐 Using the site's search feature type “mapbook” to find the correct link.



Search


Documentation Library ▼

mapbook GO

[Search Help](#)

[DS Map Book](#)

- 🌐 Choose the link called DS Map Book, the description “includes the code.”
- 🌐 Download the visual basic files and follow the directions included in the download (Map Book Generation.doc) to launch the extension.



VB6

[Download the VB6 files](#)

- ESRI Mapping center is a free information-based site that gives detailed tips and useful downloads to create functional and great looking maps.
- In the *Blog* tab search articles by category.
- Ask a Cartographer* gives the option to send an e-mail to receive advice or a suggestion.
- A thematic map library located on the *Maps* tab gives you the chance to see how these new map tips will help you create the desired look.

Show Postings For:

- [About the categories](#)
- [ArcGIS Methods](#)
- [Cartographic Effects](#)
- [Cartographic Design](#)
- [Symbolology](#)
- [Cartographic Representations](#)
- [Data Modeling](#)
- [General Information](#)
- [Labeling](#)
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- [Map Elements](#)
- [Maplex](#)
- [Page Layout](#)
- [Publishing](#)

Mapping Center Blog

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- [Terms of Use](#)
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- [Join](#)

🌐 This resources is located at: <http://mappingcenter.esri.com>

🌐 *ArcGIS Resources* tab offers free downloads for styles, tools, expressions, and data.



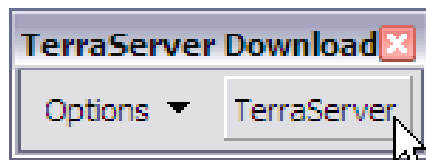
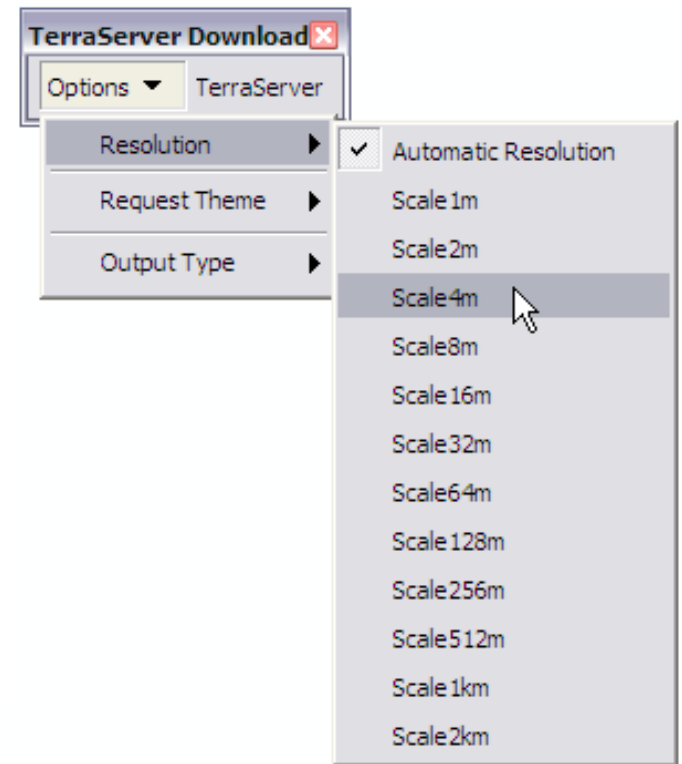
🌐 *Other Resources* has a list of data and presentations available to view from past conferences around the world.

🌐 In order to “Ask A Cartographer” or post on the blog an ESRI global account login is required.



TerraServer Download

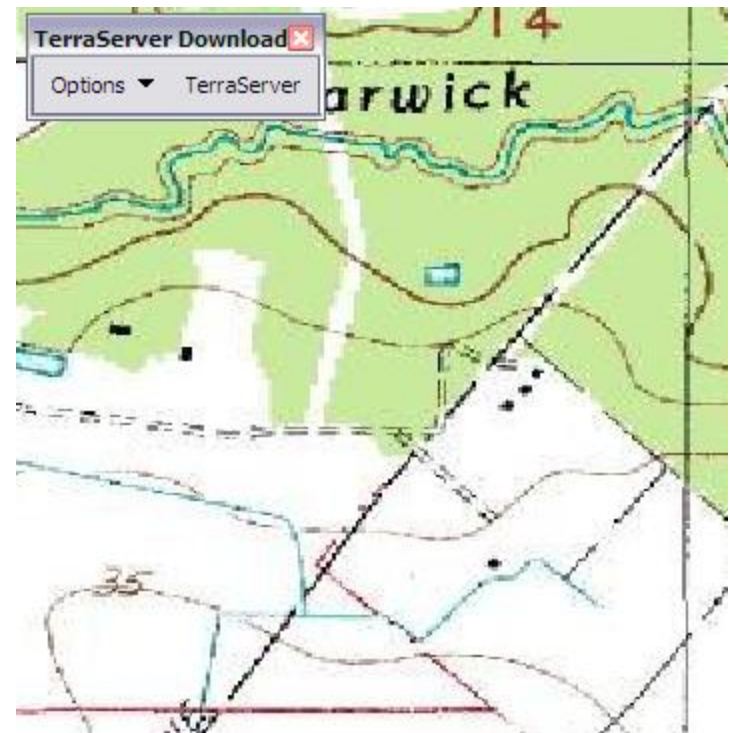
- Acquire DOQQ or DRG images for the visible extent of your map with the click of a button
- Choose image theme and resolution
- Choose output type (Raster Dataset or Raster Catalog)
- Downloads images straight from the TerraServer website!

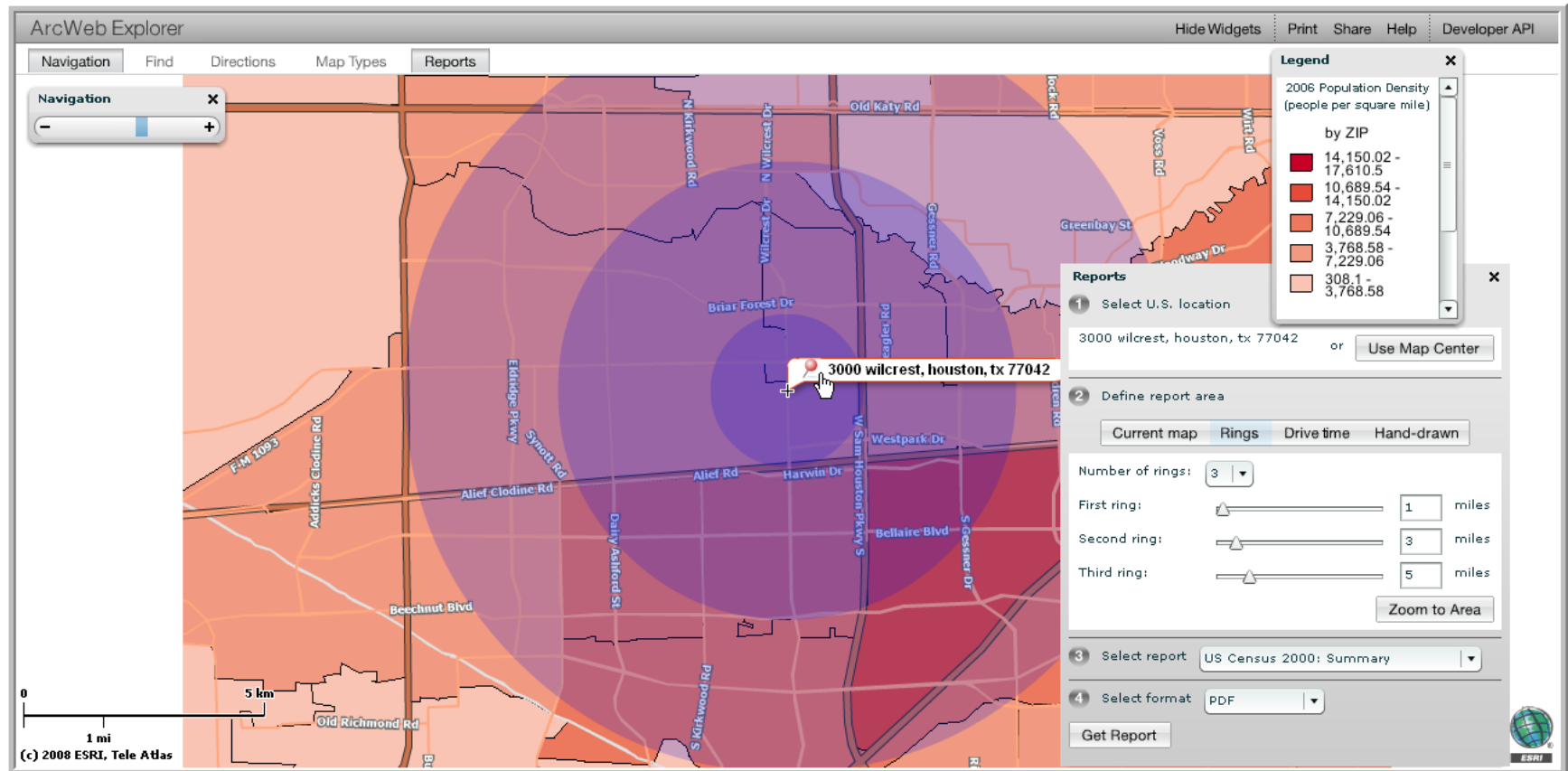


Download data from the TerraServer site.

TerraServer Download

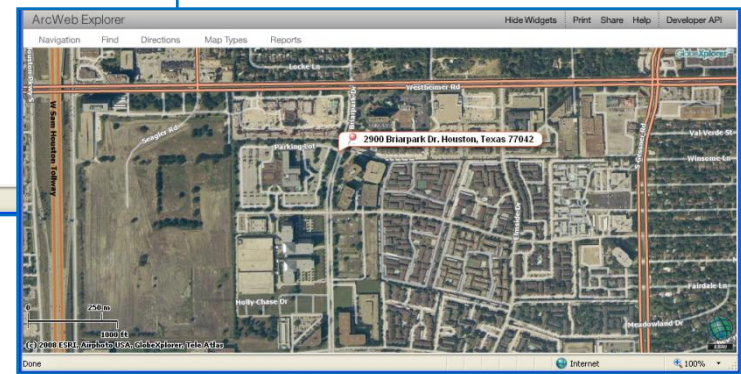
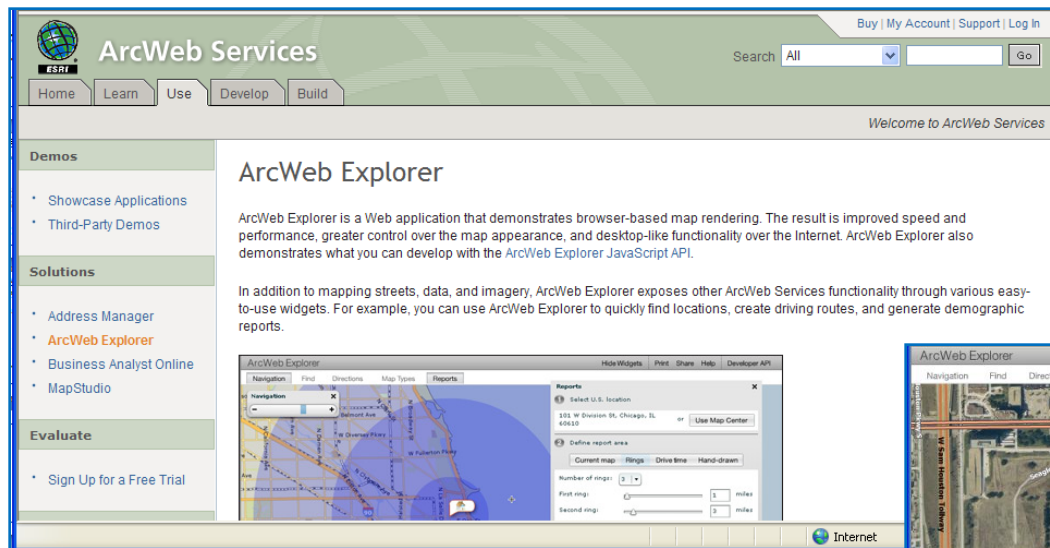
- Download the tool from the ESRI ArcScripts section:
- <http://arcscripts.esri.com/details.asp?dbid=14816>





- 🌐 ArcWeb Explorer users can search the world map for places by name, address, city, state, zip, phone number, or URL.
- 🌐 Able to choose map view type from street, hybrid, satellite, and data view.
- 🌐 Can perform census analysis on map using data map view and choosing criteria.
- 🌐 Able to run reports which can include buffer rings and drive time analysis.
- 🌐 Includes tutorials on uploading shape files and creating map services within the developers guide.

- 🌐 ArcWeb Explorer is accessible free from ArcWeb Services.
- 🌐 Visit www.arcwebservices.com choose the “Use” tab and launch the explorer



- Visit www.esri.com/arcgisexplorer
- Free and freely to distribute
- Download ArcGIS Explorer from www.esri.com/arcgisexplorer to start exploring the world using many of the maps and layers provided by ESRI.
- ArcObject based

A banner for ArcGIS Explorer. The left side has a blue background with the text "ArcGIS Explorer" and "GIS for Everyone" in white. The right side shows a 3D city model with red and yellow buildings.

ArcGIS Explorer
GIS for Everyone



- Use the ArcGIS Explorer Resource Center to access a variety of maps, layers, tasks, and results listed below.

Maps

- Imagery
- Streets
- Shaded Relief
- Political Boundaries
- Protected Areas
- Historical

Layers

- All above
- Transportation
- Physical Features
- Streets
- Political Names
- Boundaries
- Boundaries and Places
- Billboarded Place Labels

Tasks

- Wikipedia Search
- Weather Finder
- Find Nearby
- Business Reports

Results

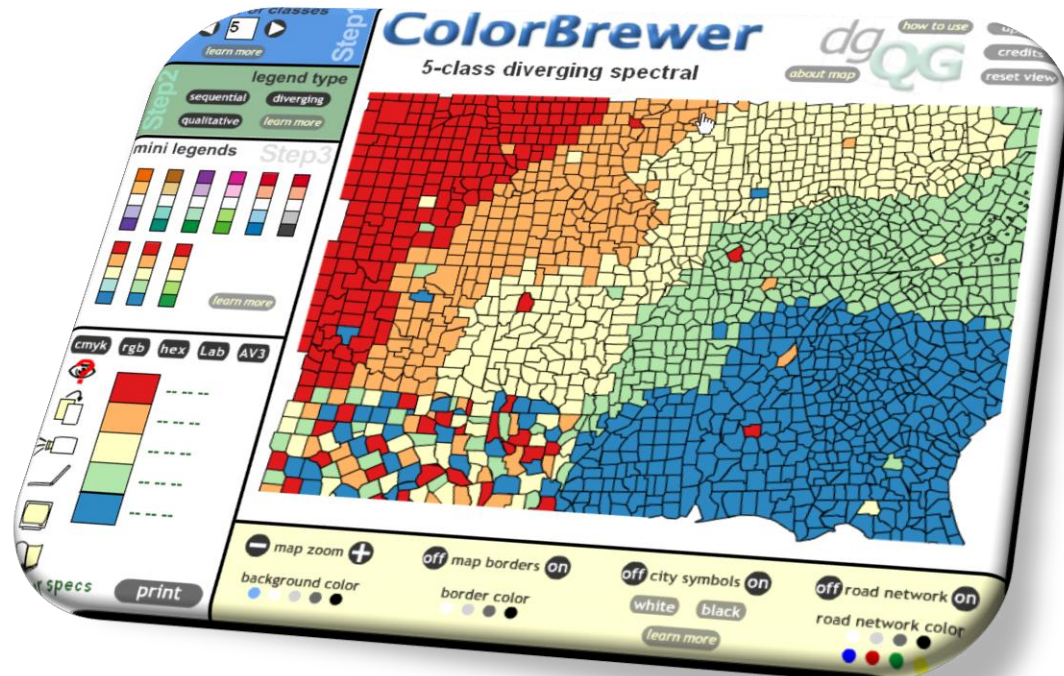
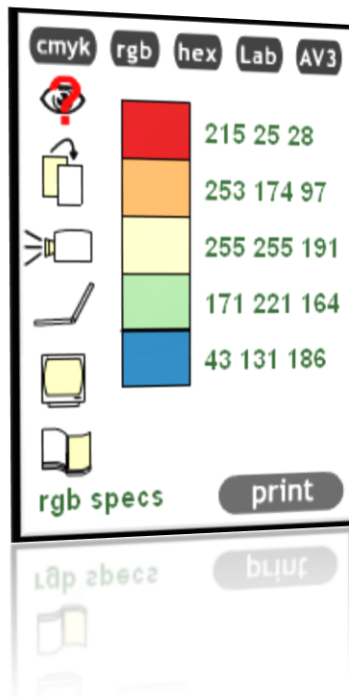
- US State High Points
- US Highest and Lowest Points
- US National Parks
- US State Capitals and Facts
- 2008 ESRI UC Hotels



GIS REFERENCE TOOLS

ColorBrewer

A web tool for selecting colors for maps



- Visit www.colorbrewer.org
- Use Color Brewer to help select good color schemes for your maps.
- 35 basic schemes with over 250 different versions
- Color Diagnostic tool only, you cannot load your own data
- Developed by Cindy Brewer and Mark Harrower at Penn State and funded by the NSF Digital Government Program.

There are 3 steps to selecting your color schemes.

1. Pick the number of classes









2. Choose you legend type



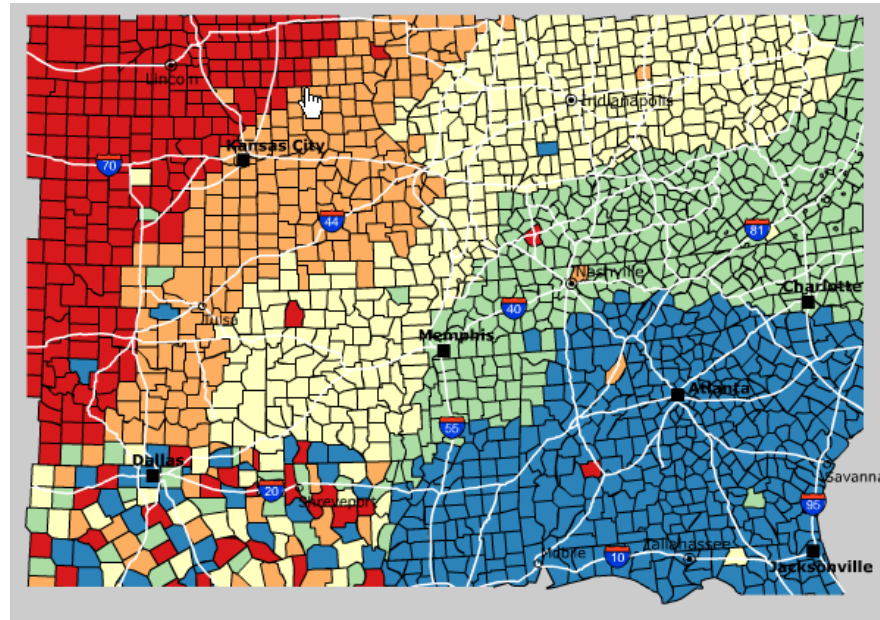
3. Choose one the recommended color schemes.



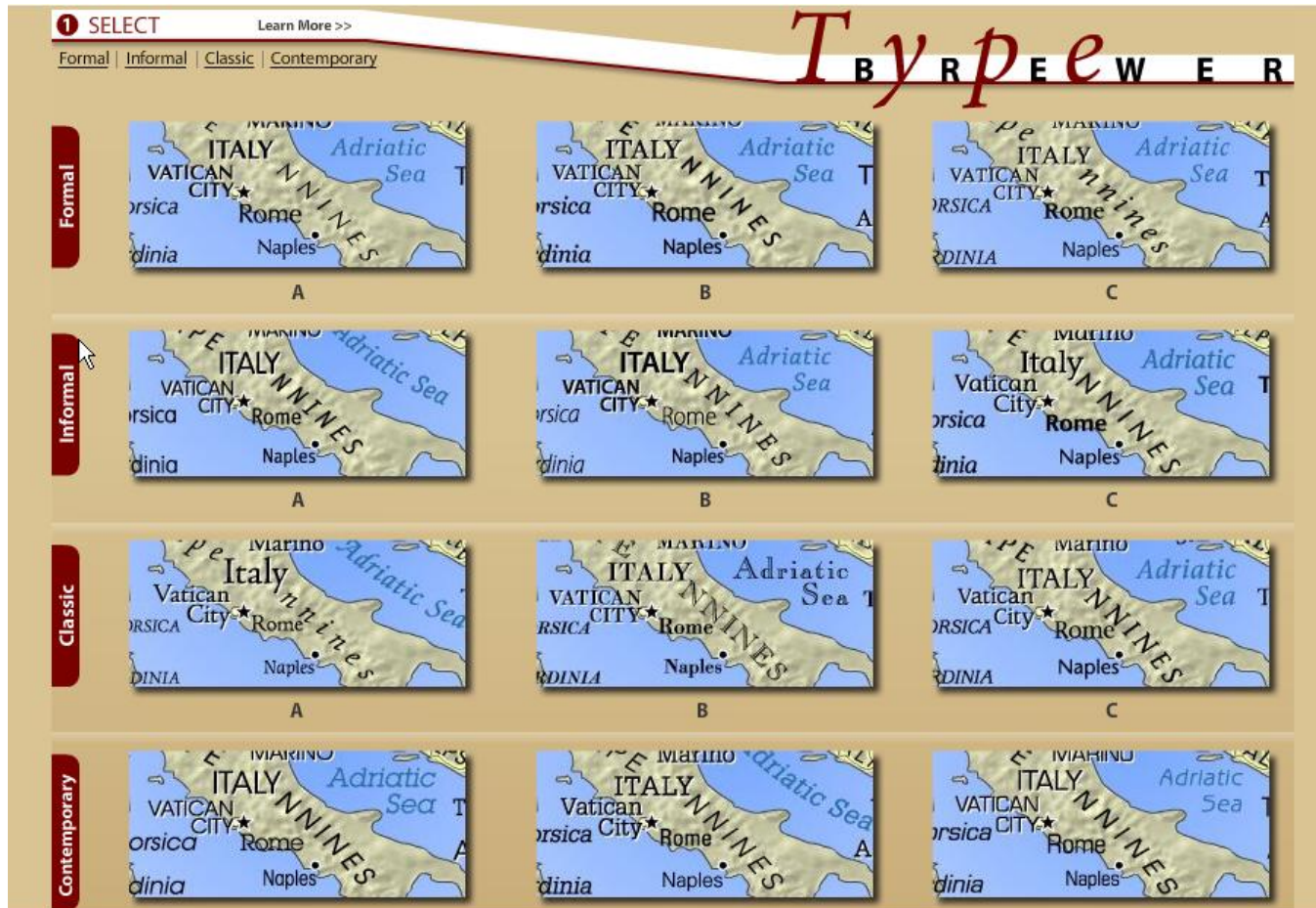
It informs you whether the color scheme you chose is:

-  Color blind friendly
-  Photocopy friendly
-  LCD projector friendly
-  Laptop friendly
-  CRT friendly
-  Color printing friendly

- With Color Brewer you can also change other map elements such as background color, border color, city symbols, and road network color to enhance your color scheme.

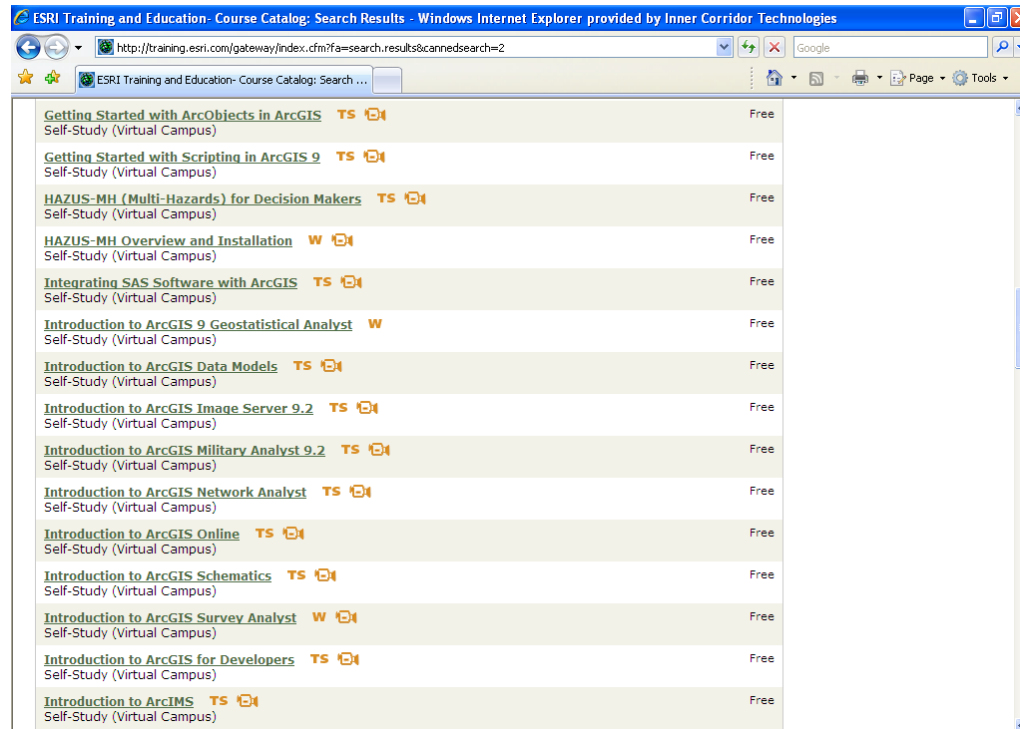


 www.TypeBrewer.org



- 🌐 ESRI provides access to over 50 free online (Training Seminars) courses. All you have to do is create a ESRI Global Account.
- 🌐 Go to <http://training.esri.com/gateway/index.cfm?fa=catalog.gateway> and use the popular searches for free training.
- 🌐 These training courses are also available at
 - www.esri.com > Training > Course Catalog > Free Training (under Popular Searches).

- Most are 1 hour training seminars, with a recorded lecture and software demonstrations.
- There are several Web Courses available which provide a presentation, exercises and an exam.



- 🌐 European Petroleum Survey Group (1986 - 2005)
- 🌐 Consisted of specialists in geodesy, surveying, and cartography as they applied to oil exploration.
- 🌐 The EPSG created the EPSG Geodetic Parameter Data Set – a database of ellipsoids, datums, and coordinate systems.
- 🌐 In 2005, the EPSG was absorbed by the International Association of Oil and Gas Producers (OGP).
- 🌐 The dataset is now maintained by the OGP Surveying and Positioning Committee which meets twice yearly.
- 🌐 <http://www.epsg.org>

Browse Geodetic Datums form - Microsoft Access

Home Create External Data Database Tools Add-Ins

International Association of Oil and Gas Producers

Datum
Browse records

Version: 6.12
Released: 08-Feb-07

Name and code Arc 1960 6210

Datum Type geodetic

Remarks

Information Source

Data Source EPSG **Revision Date** 02-Jun-95

Change ID

Alias Record Navigation

Record: << < > >> No Filter nigeria

Area of Use Kenya; Tanzania; Uganda.

Origin Description Fundamental point: Buffelsfontein. Latitude: 33 deg 59 min 32.000 sec S; Longitude: 25 deg 30 min 44.622 sec E (of Greenwich).

Scope Topographic mapping, geodetic survey.

Realization epoch 1960

Ellipsoid Clarke 1880 (RGS) 7012 [Show ellipsoid detail](#)

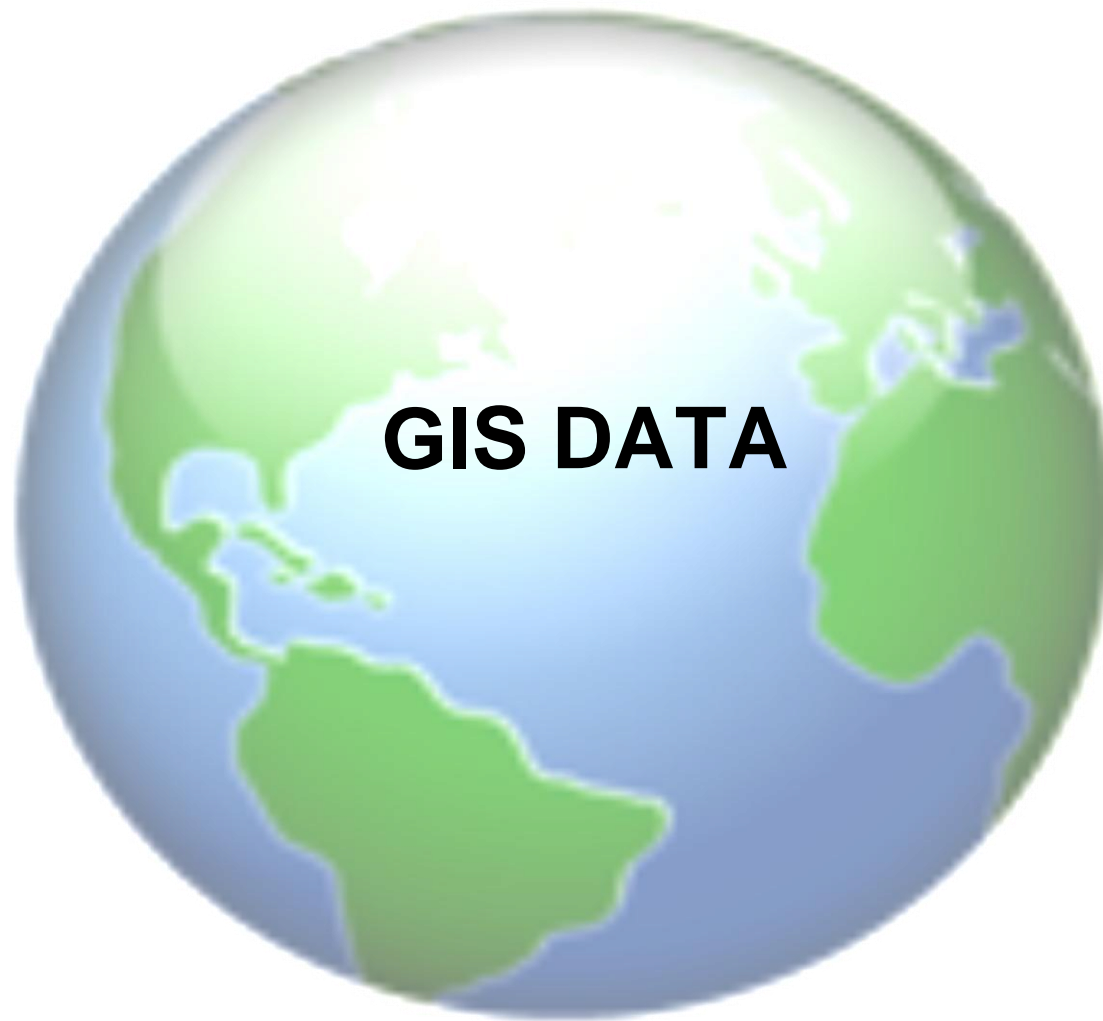
Prime Meridian Greenwich 8901 [Show prime meridian detail](#)

Record Navigation

Record: << < 19 of 518 > >> No Filter tanz

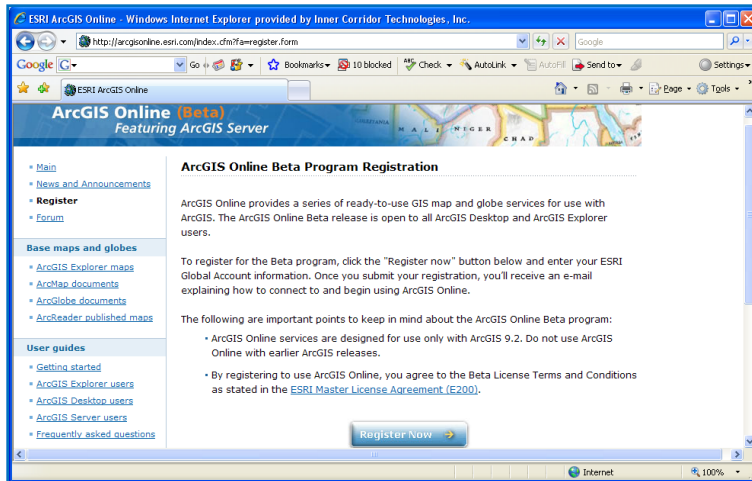
[Close form](#) [Edit or add a Datum](#)

The area(s) in which this datum can be validly used



- 🌐 The ArcGIS Online Beta subscription is currently free to all users.
- 🌐 Within ArcGIS Online 2D and 3D versions of shaded relief, geographically themed, aerial imagery, and many other types of maps can be found and utilized in your project.
- 🌐 With ArcGIS Online you will always have recent data, as ESRI updates it twice a year.
- 🌐 Easily add your own data to these maps and share them across an internet connection.
- 🌐 Visit www.arcgisonline.esri.com


- Registration is easy with ESRI's ArcGIS Online. A member can access the site by logging in with an ESRI Global Account or by creating a Global Account if one does not already exist.



User name

Password

☐ edit my account



- After registering to become a free subscriber the next step is to connect with the ESRI server. Instruction can be found on the ESRI website, and will be e-mailed to you following the registration process.

- 🌐 The Geography Network brings organized access to geographic information and is managed and supported by ESRI.
- 🌐 It brings together users and providers to create a community of shared geographic information and services.



- 🌐 Web services including: ArcWeb, Map Studio
- 🌐 Static Maps, Map Files, Dynamic Data
- 🌐 Downloadable data, offline data, clearinghouse data
- 🌐 Publishing Participation

Free Resources:

- Geography Network Explorer : allows user to specify location and search additional criteria for data.

Also:

- USGS National Elevation Dataset shaded relief
 - Census 2000 TIGER/ Line data
 - Various Dynamic data
 - Mapping applications
-
- Access is easy at :

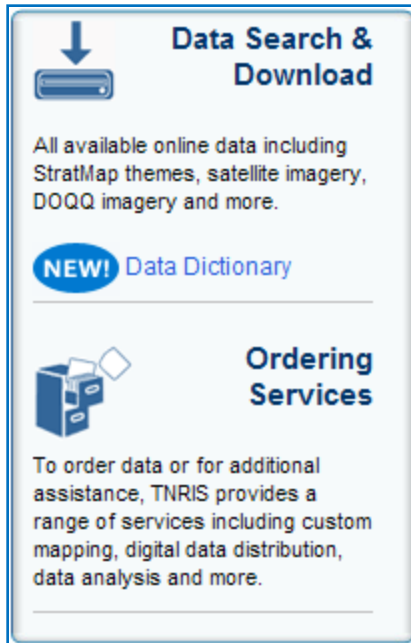
<http://www.geographynetwork.com/>

The screenshot shows a web interface for searching geographical data. It is divided into two main sections, numbered 1 and 2. Section 1, titled 'Type place name & press Go:', contains a text input field with 'Dallas, TX' and a green 'GO' button. Below this is a prompt 'or draw search area' followed by a red square icon and a set of map navigation controls (crosshair, zoom in, zoom out, pan, and a globe icon). A world map is displayed below the controls. Section 2, titled 'Choose content type:', features a dropdown menu with 'Map Files' selected. Below this is another dropdown for 'Choose content theme:' with 'Geologic & Geophysical' selected. There is also a text input for 'Optional Keyword (e.g., river):'. At the bottom right of section 2 is a green 'SEARCH' button with a hand cursor. At the bottom left of the entire form is a checkbox labeled 'Search NSDI Clearinghouse'.

- 🌐 Strategic Online Natural Resources Information System
- 🌐 SONIS is a no-cost data provider for the state of Louisiana.
- 🌐 Select from either SONRIS "Classic", which has a form-based query capability, or SONRIS "Lite", an HTML-based capability designed for low-bandwidth users.
- 🌐 Visit sonris-www.dnr.state.la.us



- 🌐 Database Access: lease data, mineral reports, well history and reports, oil and gas production data, and much more.
- 🌐 Document Access to Electronic Images: access to scanned images and documents in electronic format.
- 🌐 GIS Access to Interactive Maps:
 - select layers and backgrounds to be placed on the geographically referenced map.
 - Some of these include townships, oil and gas fields, wells, active leases, and coastal permits.
 - The map can then be saved, extracted, or printed.



Data Search & Download

↓

All available online data including StratMap themes, satellite imagery, DOQQ imagery and more.

NEW! Data Dictionary

Ordering Services

To order data or for additional assistance, TNRIS provides a range of services including custom mapping, digital data distribution, data analysis and more.



www.tnris.org



Texas Natural Resources Information Systems



Data Catalog has a search/download feature that is able to get aerial images by county quadrangle.



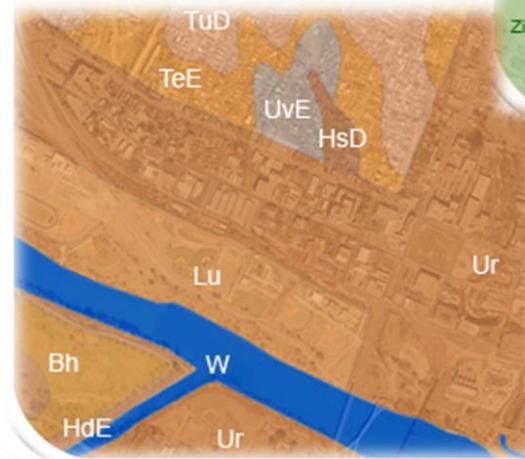
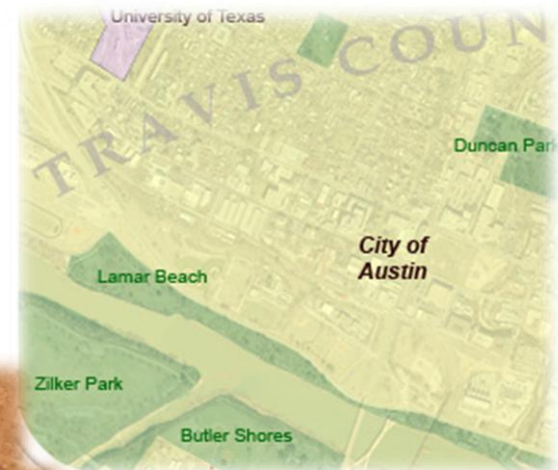
Download statewide datasets including: natural regions, bathymetry, LandSat, StratMap, and many more.



Strategic Mapping Program (StratMap)

Download Texas data for

- Transportation
- Political Boundaries
- Hydrography
- Elevation
- Soil Surveys
- Digital Imagery



-  Geoscience Australia
-  Alaska State Geospatial Data Clearinghouse
-  KYGIS
-  BLM.gov
-  Colorado Oil and Gas Conservation Commission





Please note:

- This presentation was used as speaker's notes for the 2008 Petroleum User Group Conference on Feb. 27, 2008 in Houston, TX. This material is not intended as course material nor reference material, but simply as speaker's notes. This presentation may be used by an individual, but not posted on any website nor used in a public setting nor for profit. The .PDF version of this document does not display any of the animations that were in the original talk, so some of the slides may not display well. For permission/access to the entire power point presentation in its complete form, please contact info@TeachMeGIS.com.