

Erstellen eines ArcGIS Projektes (erst ArcGIS incl. Extensions Spatial Analyst und evtl. 3D Analyst installieren)

1. Ordnerstruktur erstellen:

/Projekt /daten
 /shapefiles
 /gridfiles
 /TIN
 /legends

2. ArcView öffnen

Extensions wählen

Tool Box öffnen

3. Projekt

Views: Grafische Bearbeitungsoberflächen

Tables: Tabellen (dBase oder xls Format)

Layouts: Fertige Karten zum Ausdrucken

Create a GIS project

1. Create adequate folder structure:

/Project /data

/shapefiles

/gridfiles

/TIN

/legends

2. Open ArcGis

customize (select extensions)

open Tool Box

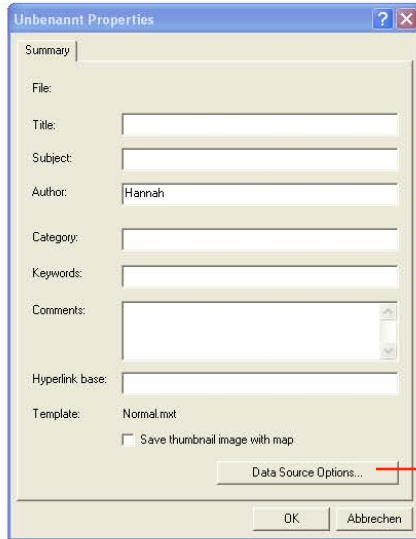
3. ArcView 3.2 project

Views: graphical interface

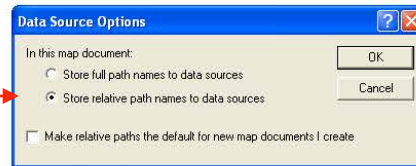
Tables: dbf or xls

Layouts: maps

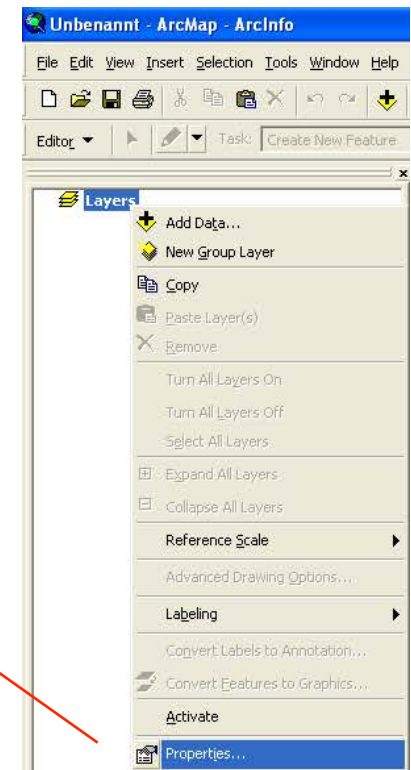
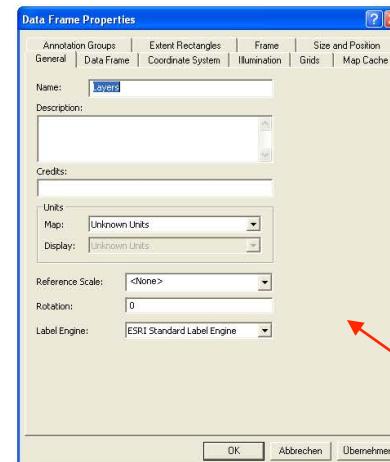
Properties



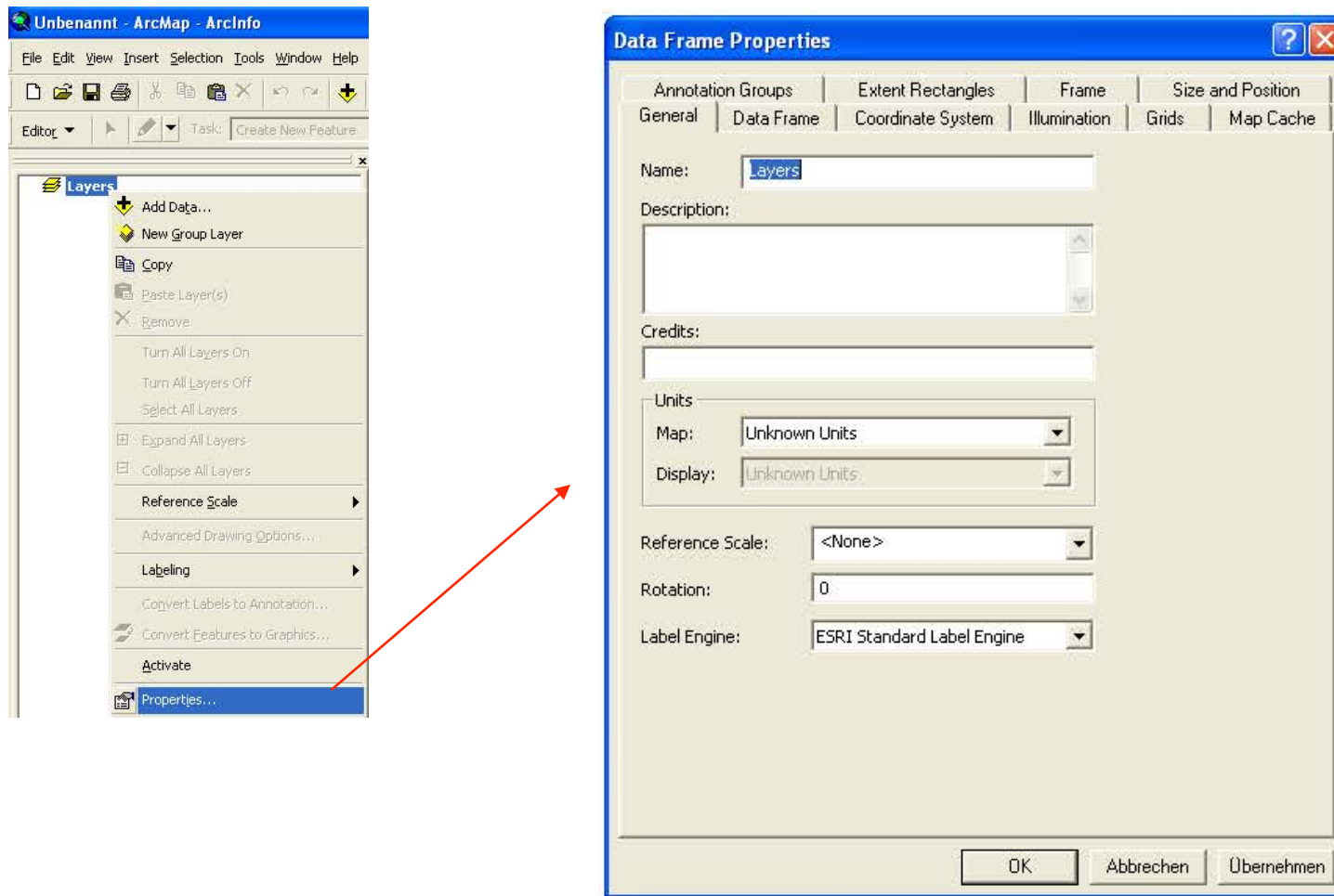
File → **Document Properties**



Right click 'Layers' → Properties → **Data Frame Properties**
→ Tab 'General'



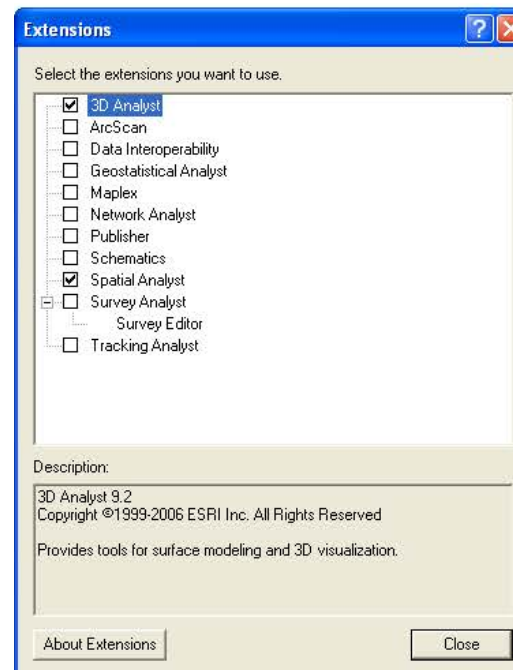
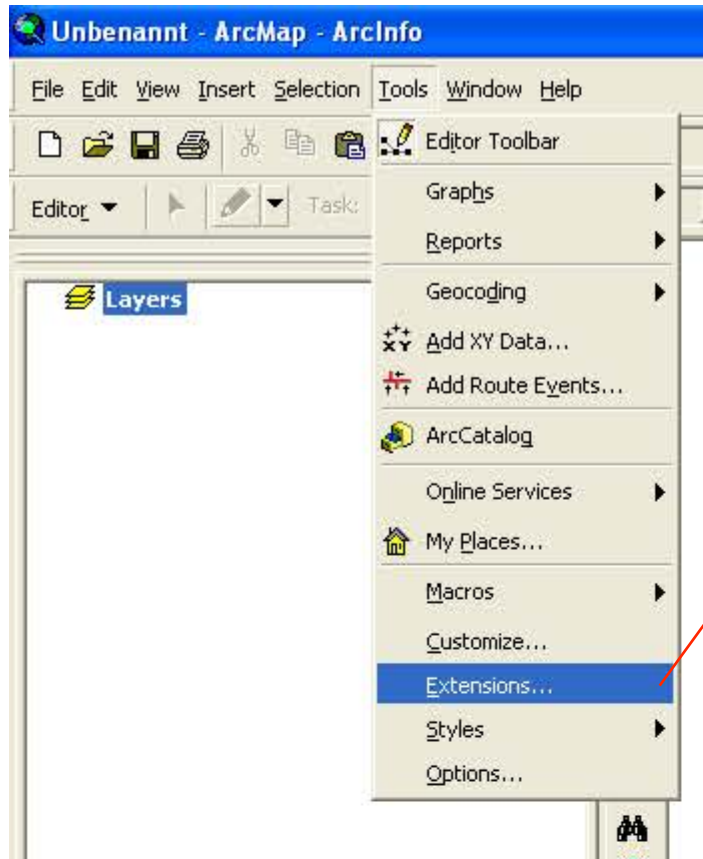
Coordinate System



Rechtsklick Layers → Properties → **Data Frame Properties** → Tab
'Coordinate System'

Select extensions

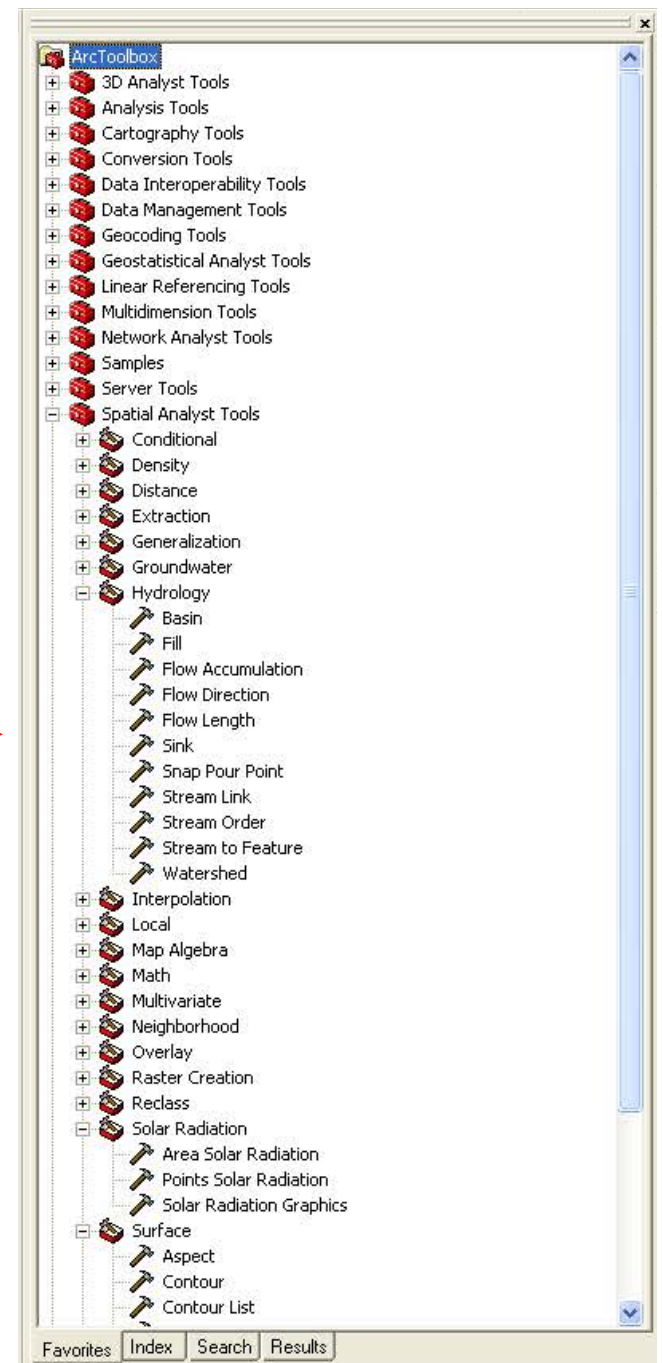
Tools → Extensions



Show/Hide Toolbox



Window → ArcToolbox

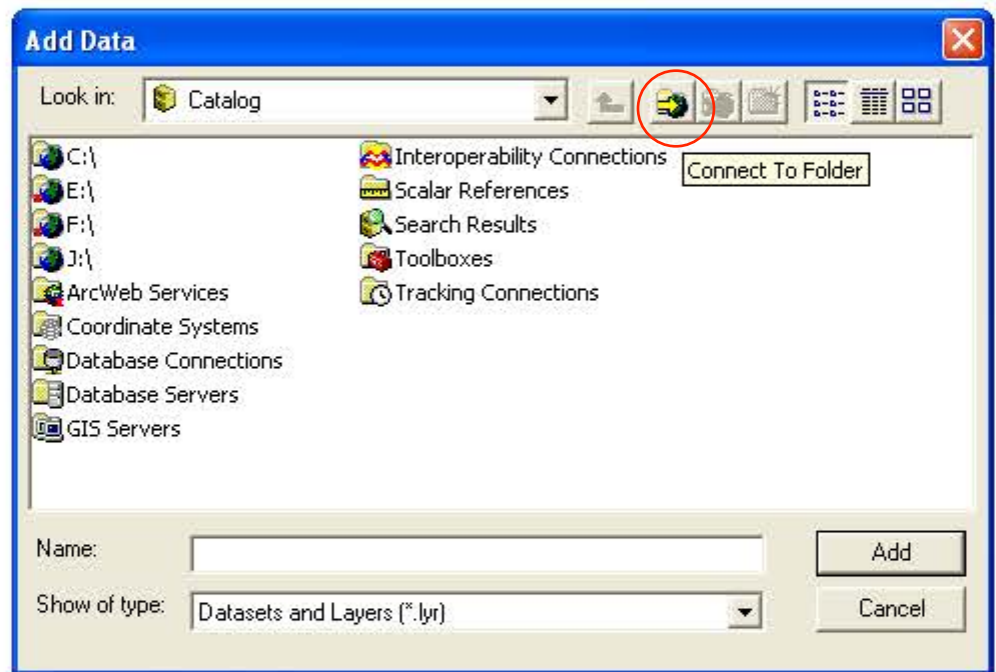


Add data (Grid, Shapefile, etc.)



File → Add Data

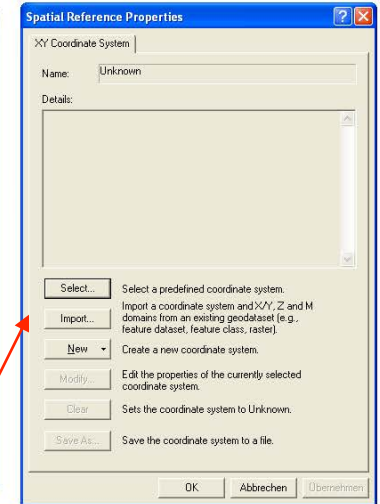
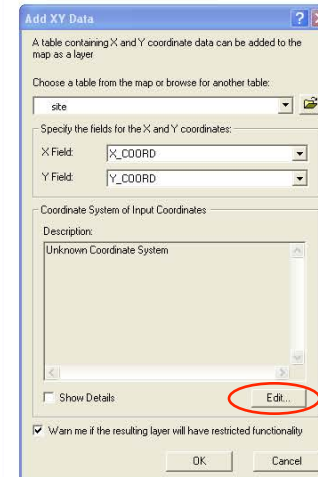
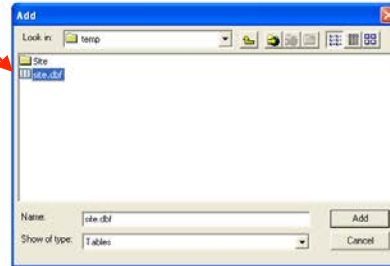
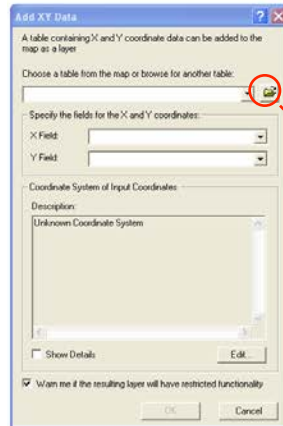
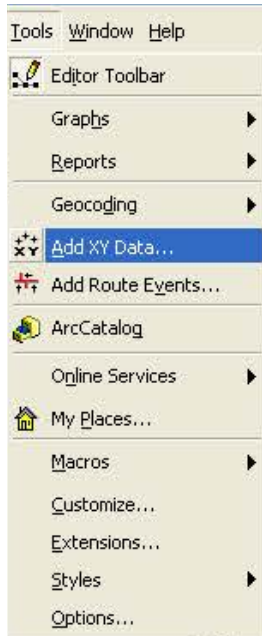
if necessary: Connect To Folder



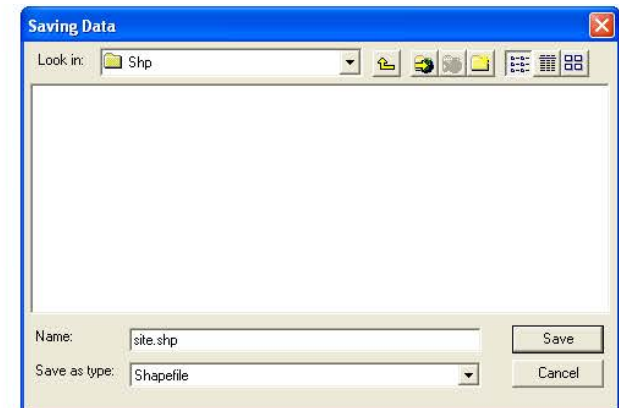
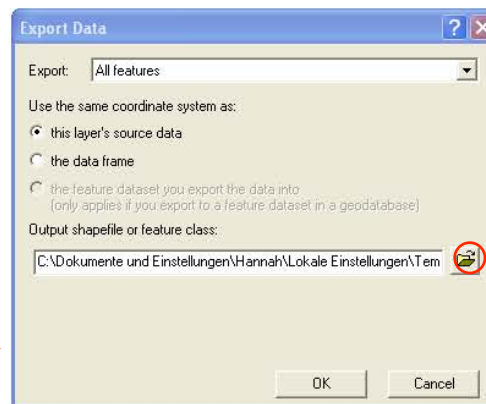
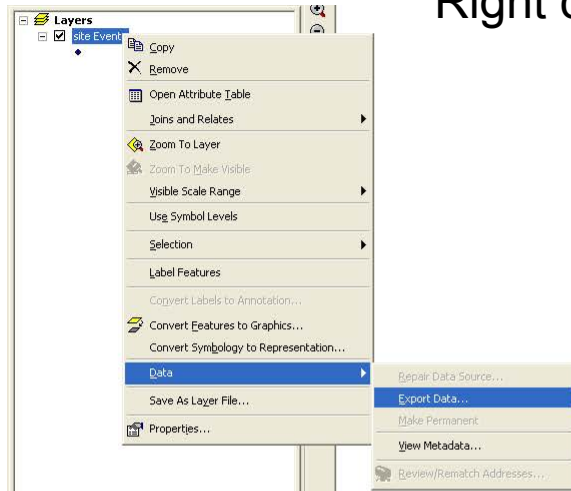
Add XY Data

<http://hal.geo.univie.ac.at/karto/lehr/fachbereiche/geoinfo/agi10/tutorials/nuetzliches/xykoordinaten.html>

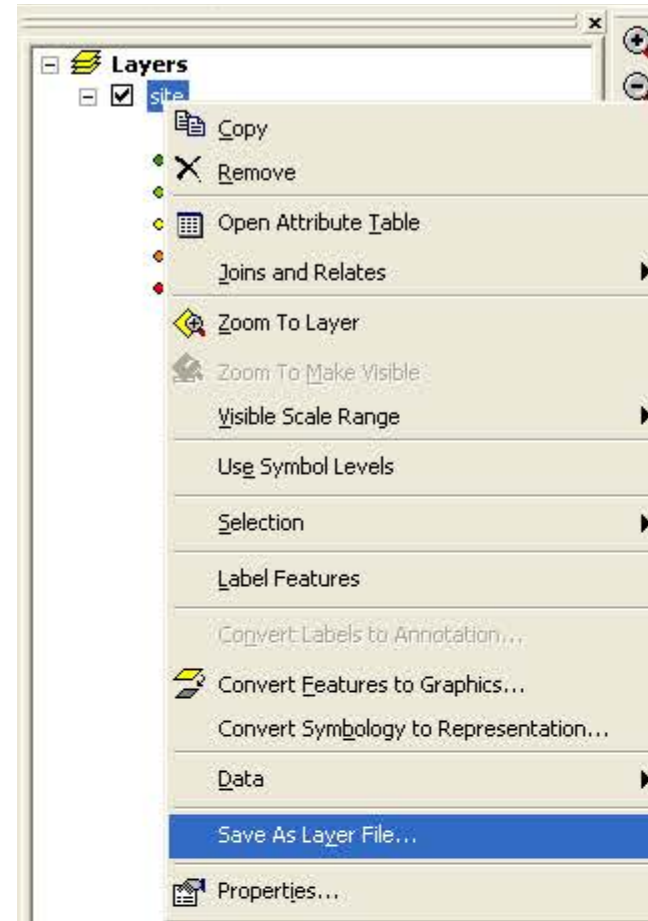
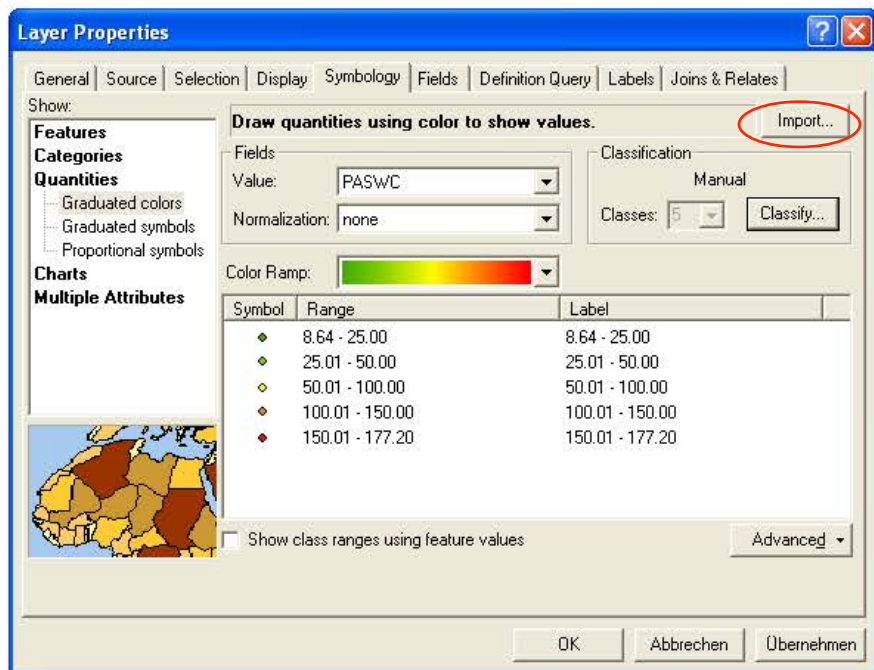
Tools → Add XY Data



Right click Point Data → Data → Export Data

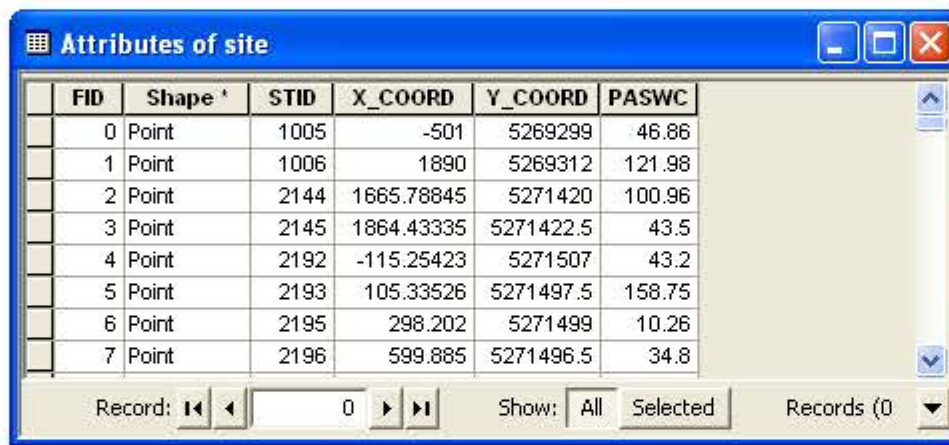


Edit Symbology



Legends may be saved (right click of layer
→ save as Layer File) and used in other
projects too (Import)!

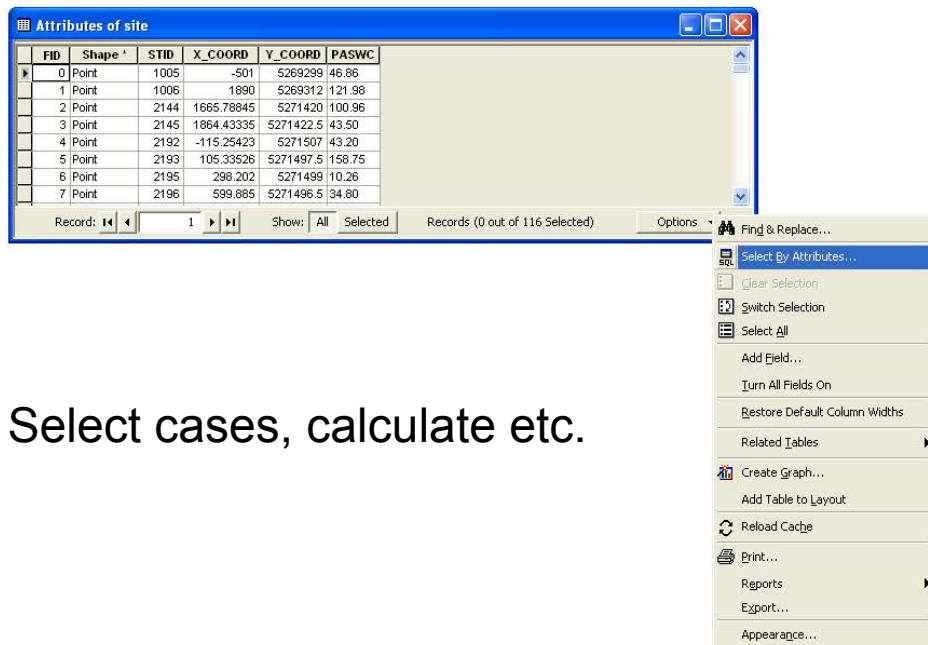
Shapefile: contains topology and a data table



Attributes of site

	FID	Shape *	STID	X_COORD	Y_COORD	PASWC
	0	Point	1005	-501	5269299	46.86
	1	Point	1006	1890	5269312	121.98
	2	Point	2144	1865.78845	5271420	100.96
	3	Point	2145	1864.43335	5271422.5	43.5
	4	Point	2192	-115.25423	5271507	43.2
	5	Point	2193	105.33526	5271497.5	158.75
	6	Point	2195	298.202	5271499	10.26
	7	Point	2196	599.885	5271496.5	34.8

Record: 0 Show: All Selected Records (0)

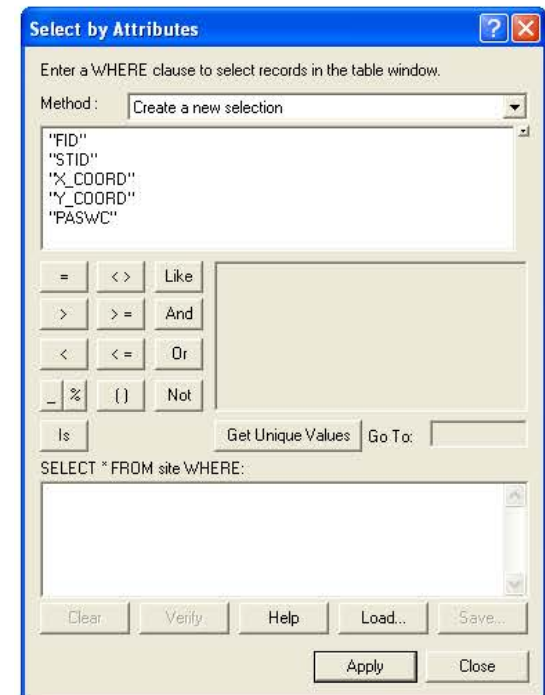


Attributes of site

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	0	Point	1005	-501	5269299	46.86
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	5	Point	2193	105.33526	5271497.5	158.75
	6	Point	2195	298.202	5271499	10.26
	7	Point	2196	599.885	5271496.5	34.80

Record: 1 Show: All Selected Records (0 out of 116 Selected) Options

- Find & Replace...
- Select By Attributes...
- Clear Selection
- Switch Selection
- Select All
- Add Field...
- Turn All Fields On
- Restore Default Column Widths
- Related Tables
- Create Graph...
- Add Table to Layout
- Reload Cache
- Print...
- Reports
- Export...
- Appearance...



Select by Attributes

Enter a WHERE clause to select records in the table window.

Method: Create a new selection

"FID"
"STID"
"X_COORD"
"Y_COORD"
"PASWC"

= < > Like
> > = And
< < = Or
_ % { } Not

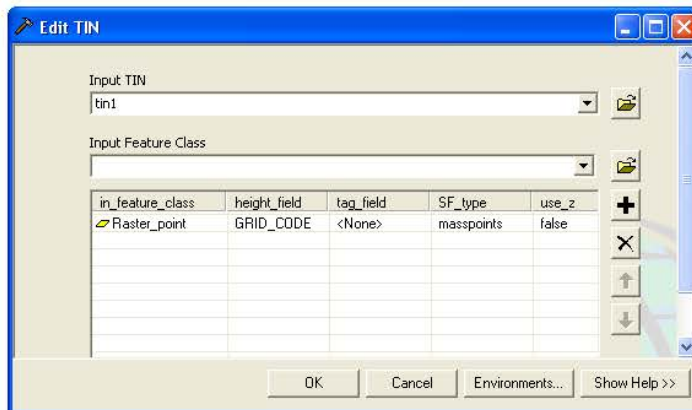
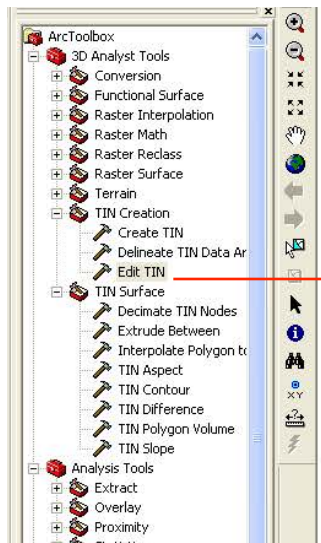
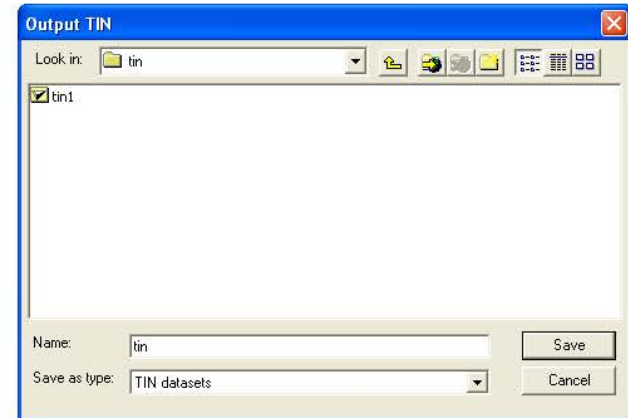
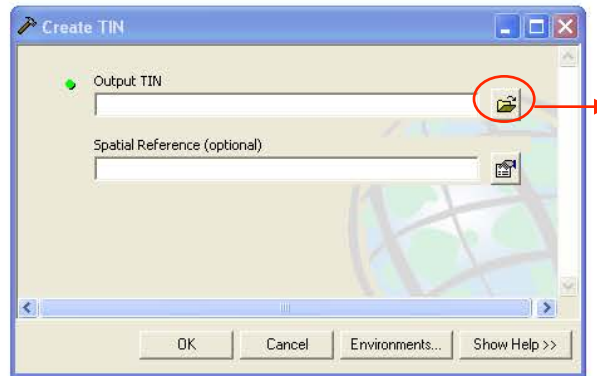
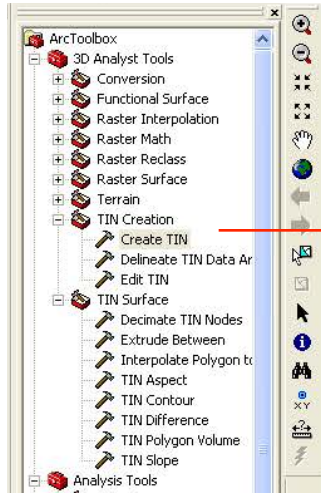
Is Get Unique Values Go To:

SELECT * FROM site WHERE:

Clear Verify Help Load... Save... Apply Close

Select cases, calculate etc.

DGM:



TINs are nets of triangular facets defined by nodes and edges that cover a surface. TINs are constructed from a set of known values, sometimes called "spot heights" that are used as initial nodes in the triangulation. Lines where the shape of the surface abruptly changes, such as ridge-lines, streams, or roads can be incorporated into TINs as breaklines, and areas that share a value can be incorporated as fill polygons. The values at locations between nodes can be derived for a TIN using linear interpolation from the nearest nodes. TINs are usually used to represent terrain surfaces in engineering applications, as the spot heights can be irregularly distributed to accommodate areas of high variability in the surface and their values and exact positions are retained as nodes in the TIN. (Source: ArcGIS Desktop Help)

Surface analyses for raster or TIN: contour lines, aspect, slope (percent or degree!), curvature

Hydrologic modelling:

- Fill sinks

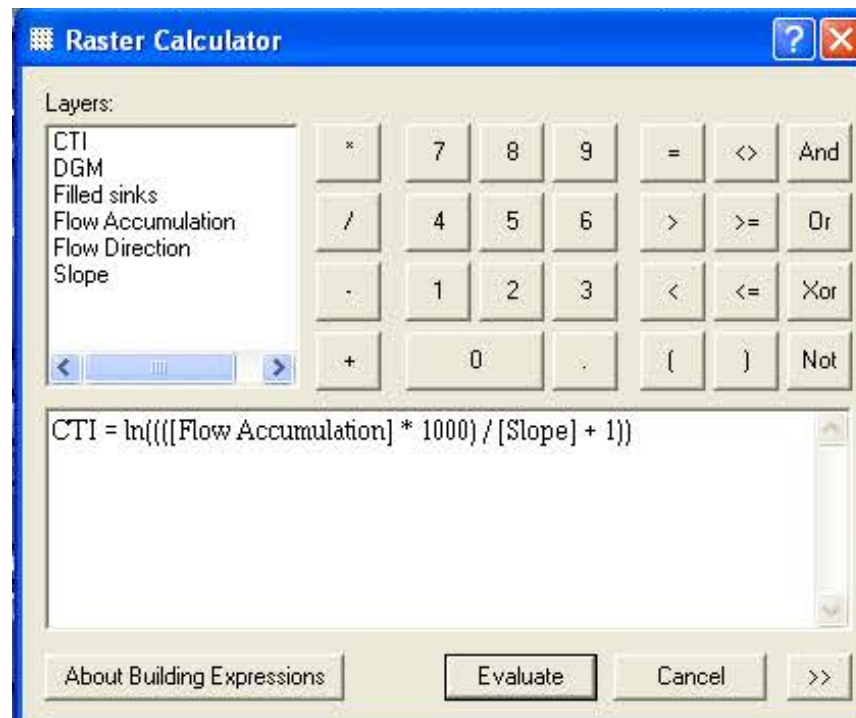
- Calculate Flow direction from the filled surface grid theme

- Calculate flow accumulation from the flow direction grid theme

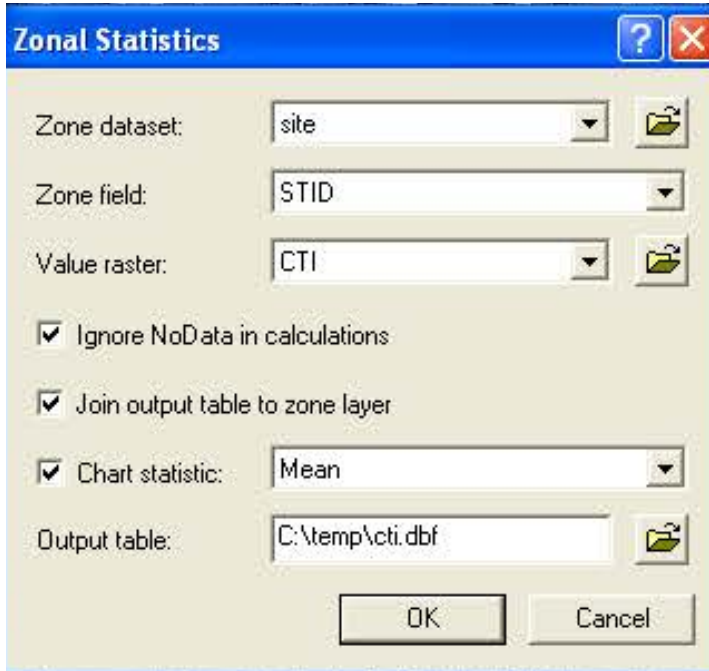
Calculation of the Compound Topographic Index:

$$CTI = \ln (A/\tan \beta)$$

Analysis – Raster Calculator:



Add grid values to the table of a point shapefile: Spatial Analyst → Zonal statistics (ArcGIS)



The screenshot shows the 'Zonal Statistics' dialog box in ArcGIS. The title bar is blue with a question mark and a close button. The dialog has a light beige background. It contains the following fields and options:

- Zone dataset:** A dropdown menu showing 'site' and a folder icon to the right.
- Zone field:** A dropdown menu showing 'STID'.
- Value raster:** A dropdown menu showing 'CTI' and a folder icon to the right.
- ☒ **Ignore NoData in calculations**
- ☒ **Join output table to zone layer**
- ☒ **Chart statistic:** A dropdown menu showing 'Mean'.
- Output table:** A text box containing 'C:\temp\cti.dbf' and a folder icon to the right.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

Export tables → use for statistics...