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

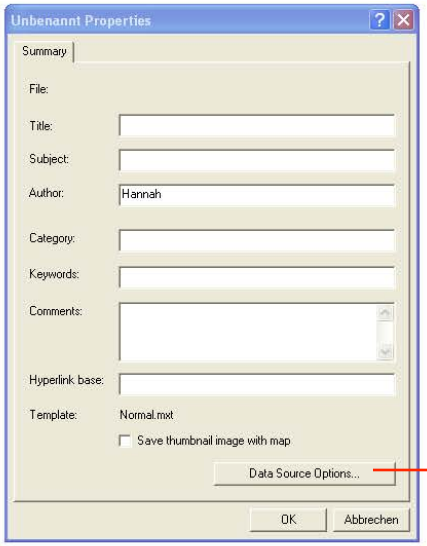
Create a GIS project

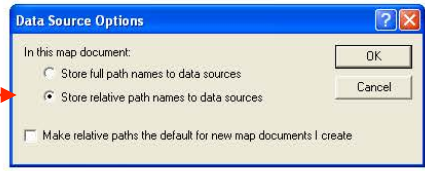
1. Create adequate folder structure:
   /Project /data
   /shapefiles
   /gridfiles
   /TIN
   /legends

2. Open ArcGis
   costumize (select extensions)
   open Tool Box

3. ArcView 3.2 project
   Views: graphical interface
   Tables: dbf or xls
   Layouts: maps

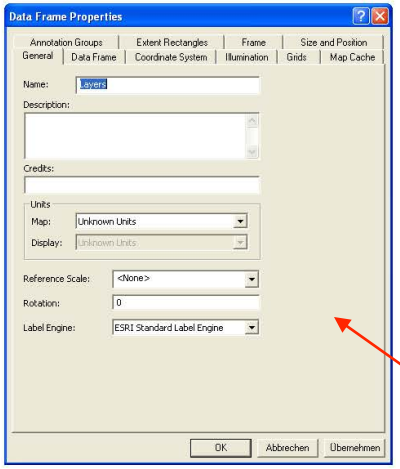
Properties



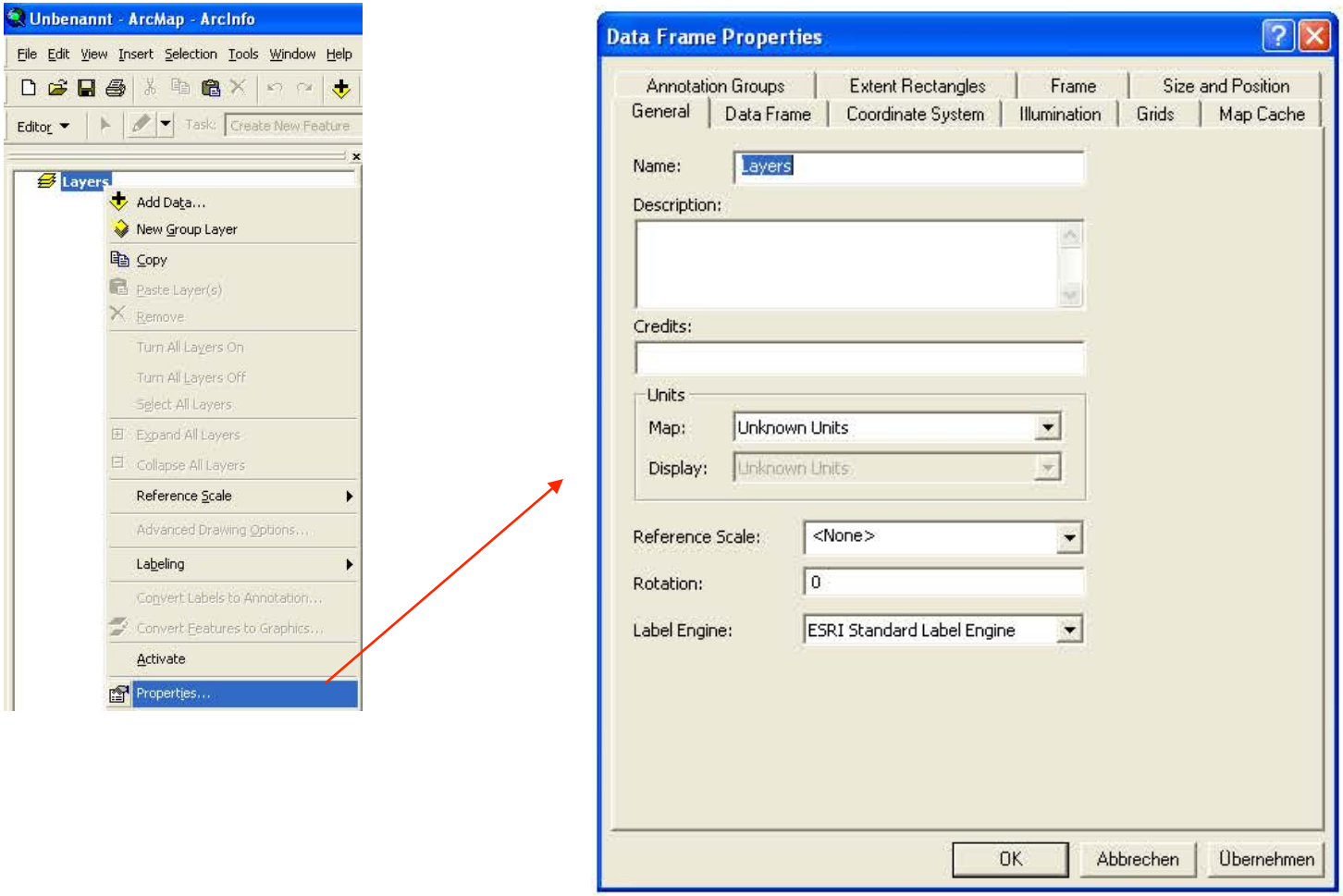


File → **Document Properties**

Right click ‘Layers‘ → Properities → **Data Frame Properties** → Tab ‘General‘



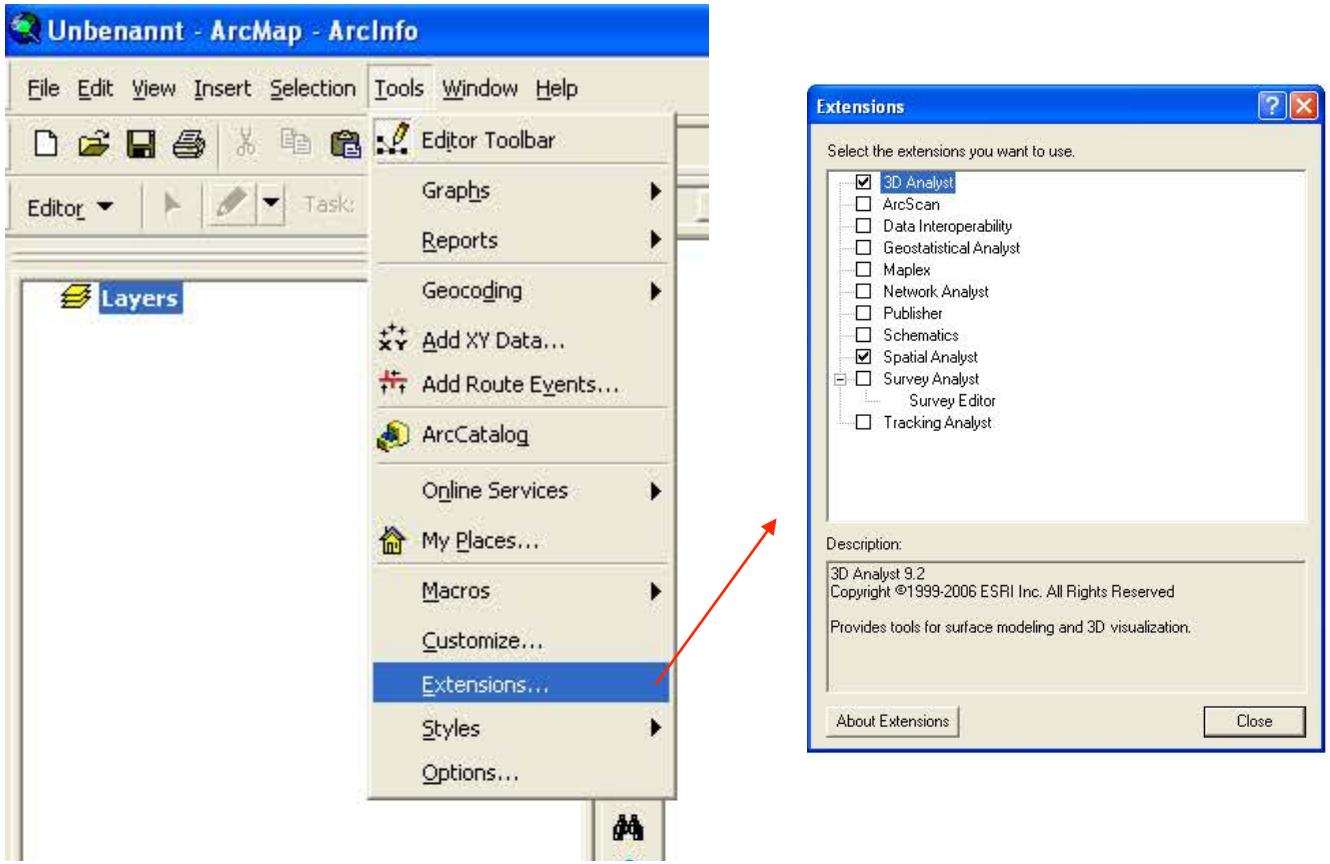
Coordinate System



Rechtsklick Layers → Properities → **Data Frame Properties** → Tab ‘Coordinate System‘

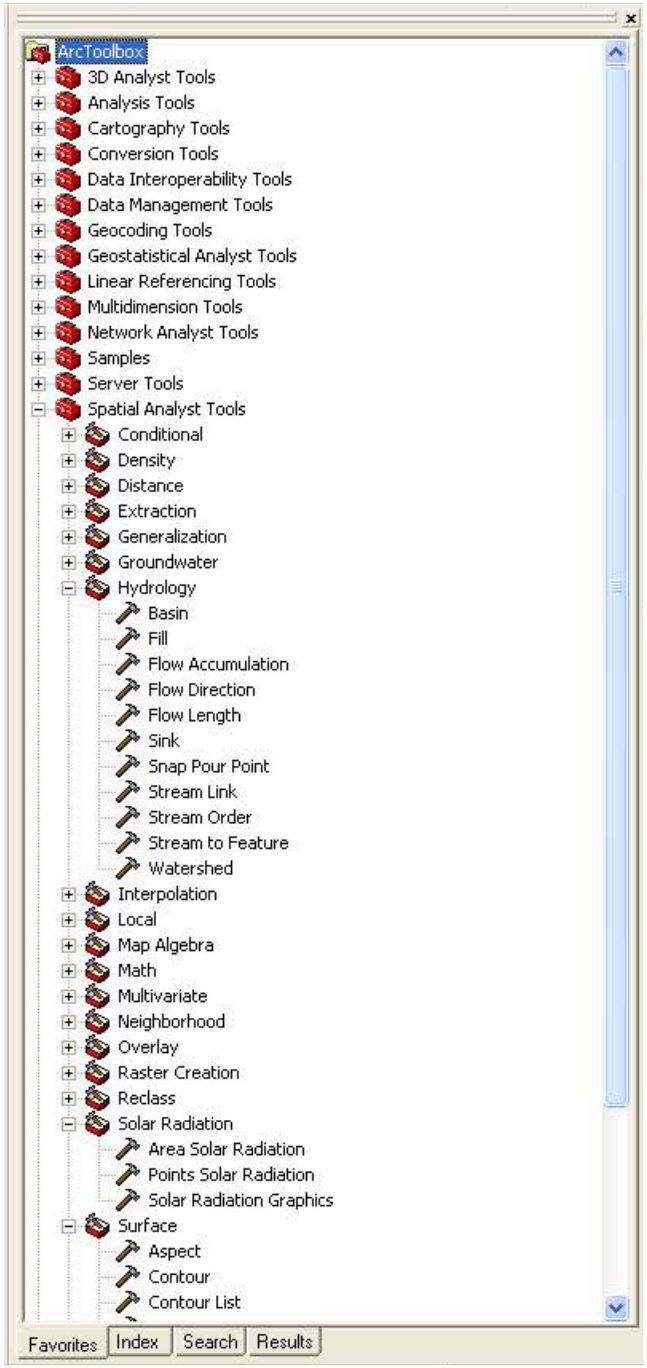
Select extensions

Tools → Extensions

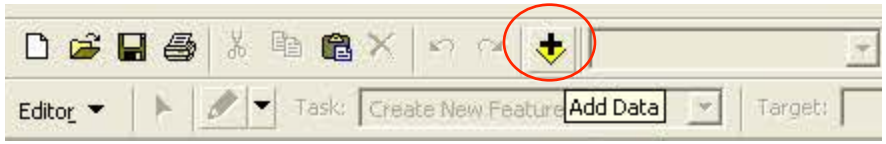


Show/Hide Toolbox

Window → ArcToolbox

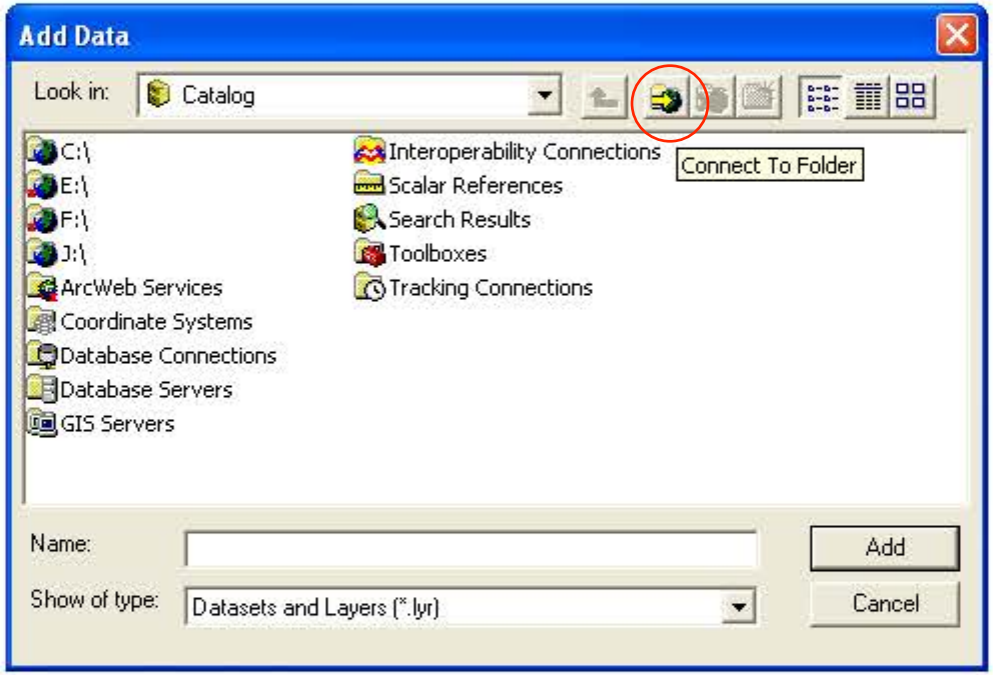


Add data (Grid, Shapefile, etc.)



File → Add Data

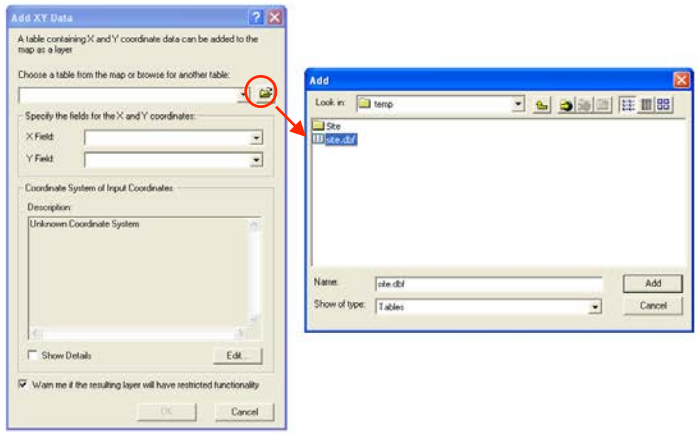
if necessary: Connect To Folder

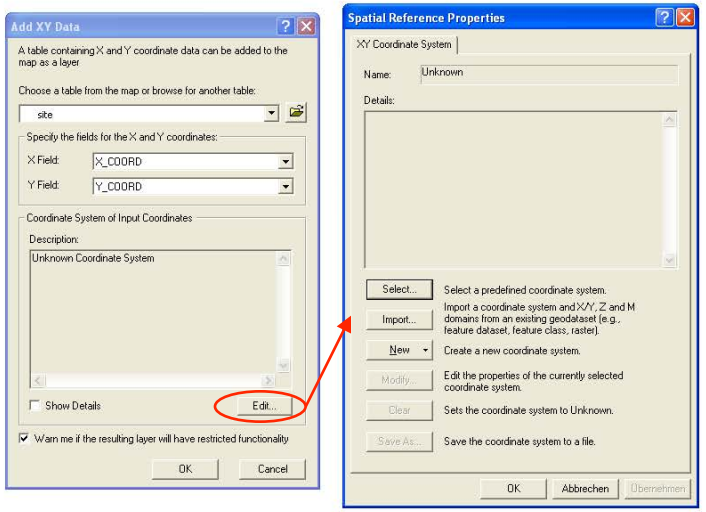


Add XY Data

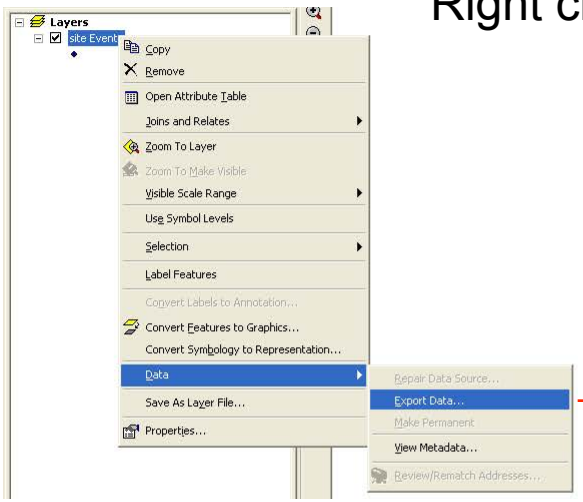
http://hal.geo.univie.ac.at/karto/lehr/fachbereiche/geoinfo/agi10/tutorials/nuetzliches/xykoordinaten.html

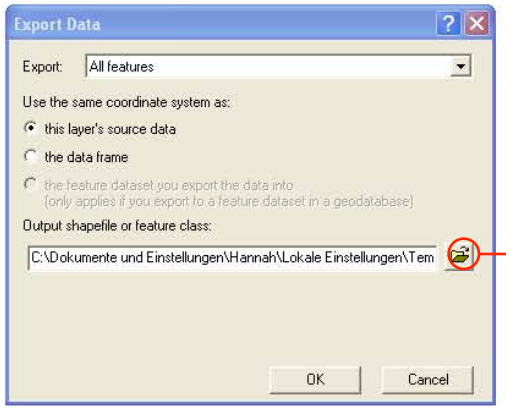
Tools → Add XY Data

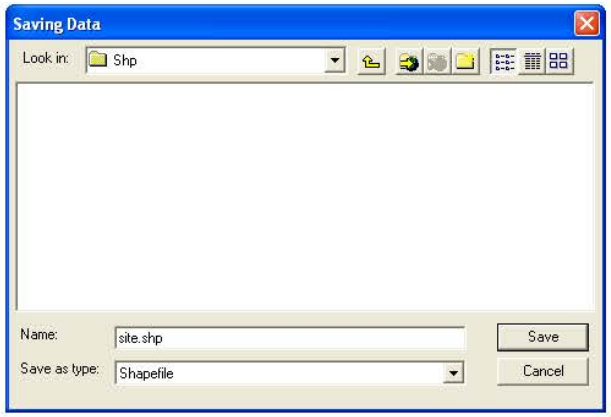




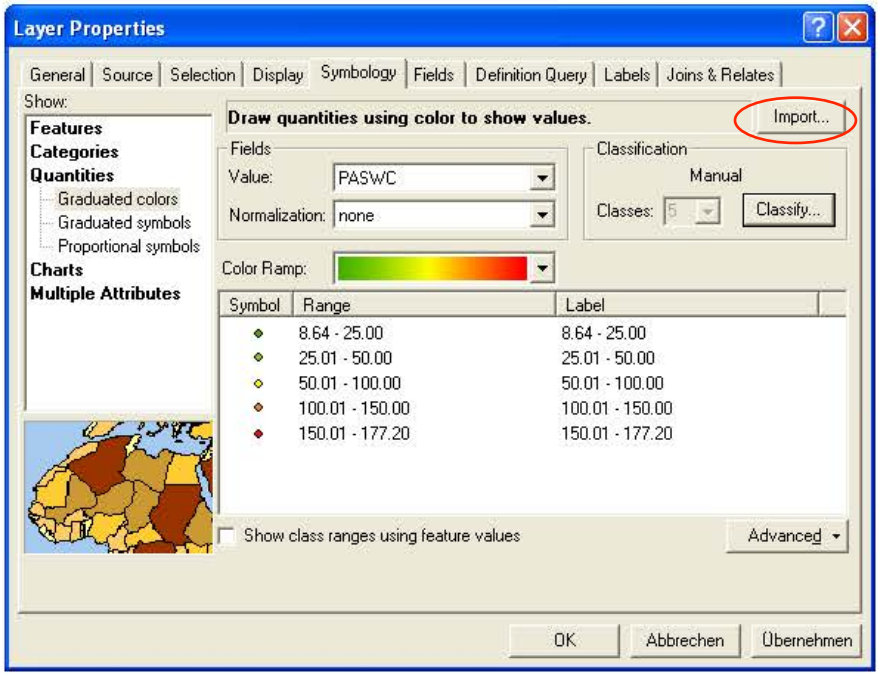
Right click Point Data → Data → Export Data

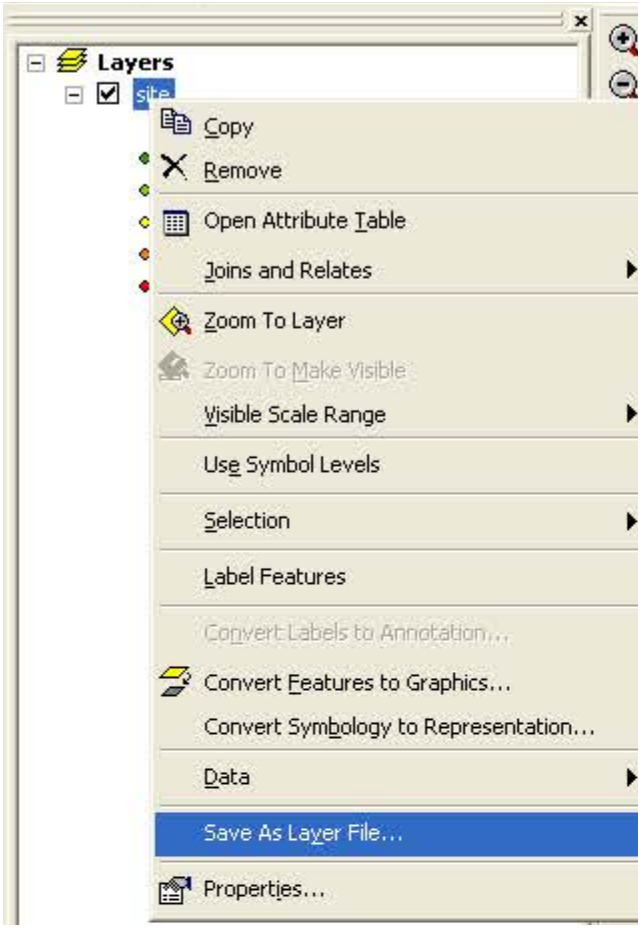






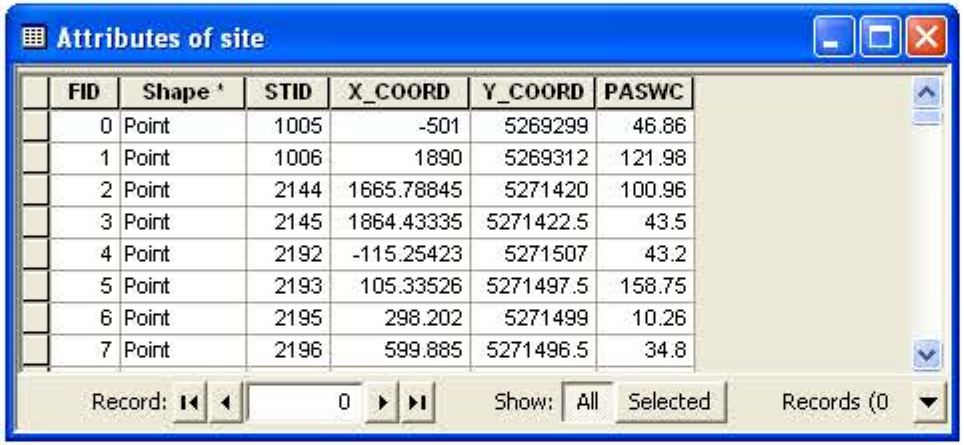
Edit Symbology

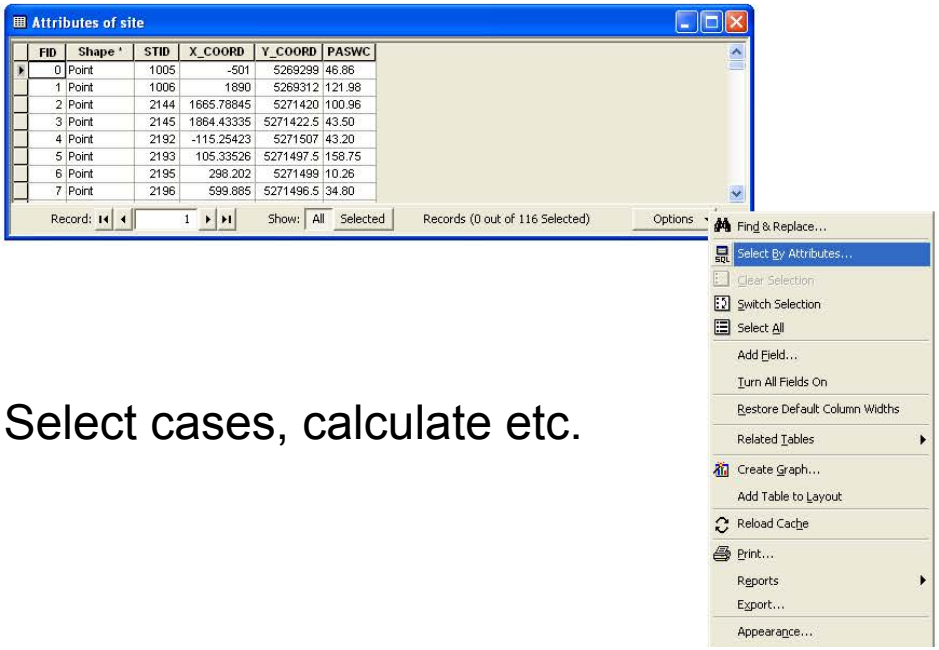


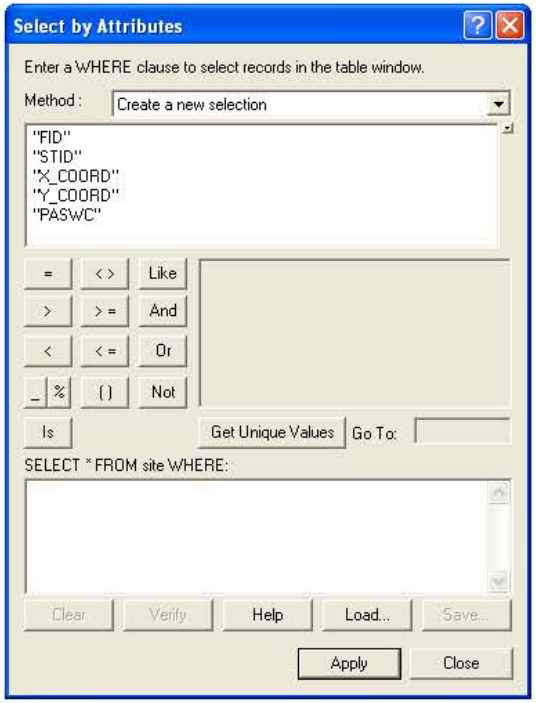


Legends may be saved (right click of layer → save as Layer File) and used in other projects too (Import)!

Shapefile: contains topology and a data table

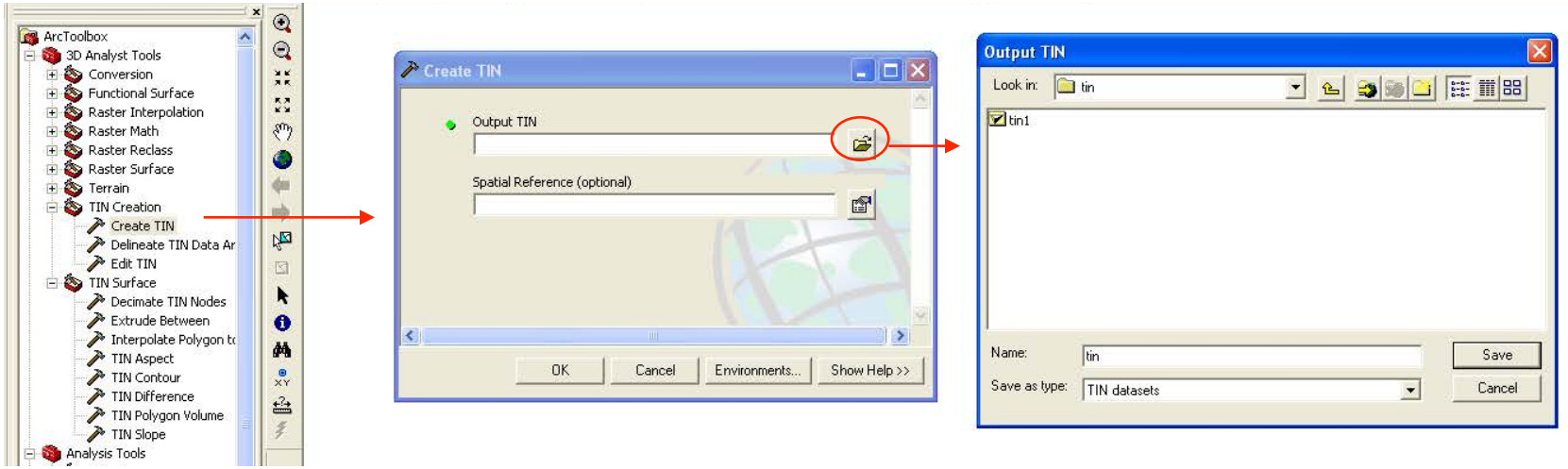


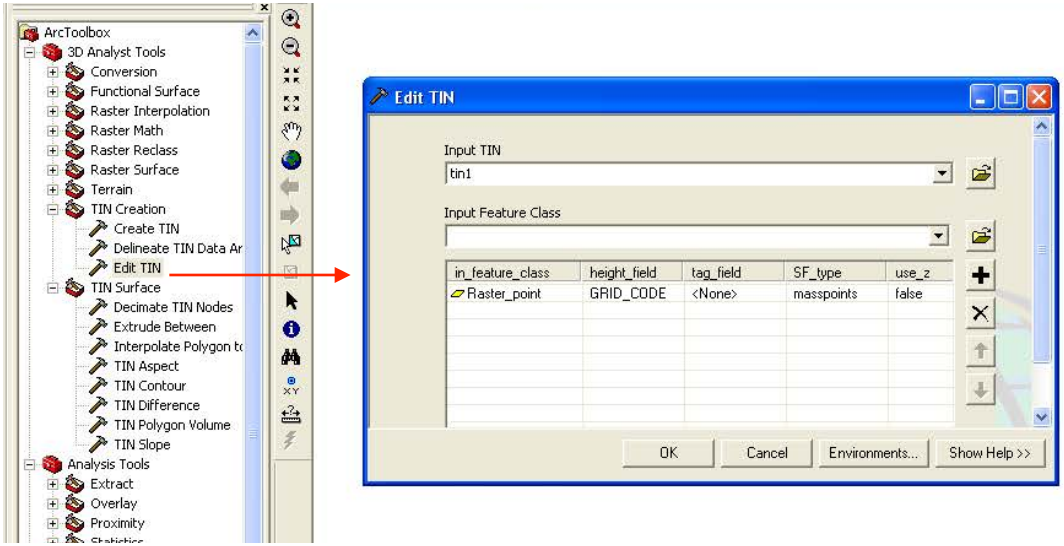




Select cases, calculate etc.

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

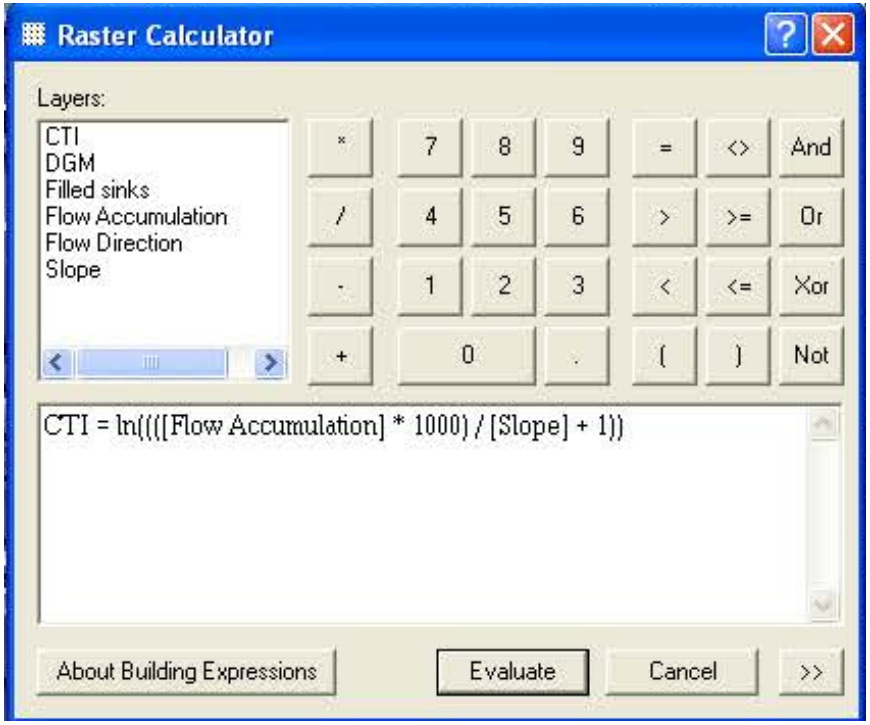
Calculate Flow direction from the filled surface grid theme

Calculate flow accumulation from the flow direction grid theme

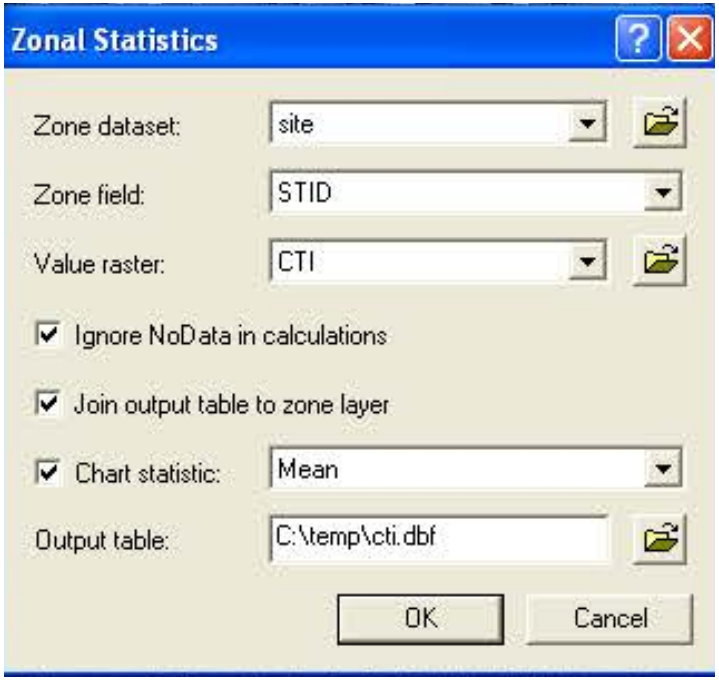
Calculation of the Compound Topographic Index:

$$CTI = \ln (A/\tan ß)$$

Analysis – Raster Calculator:



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



Export tables → use for statistics…