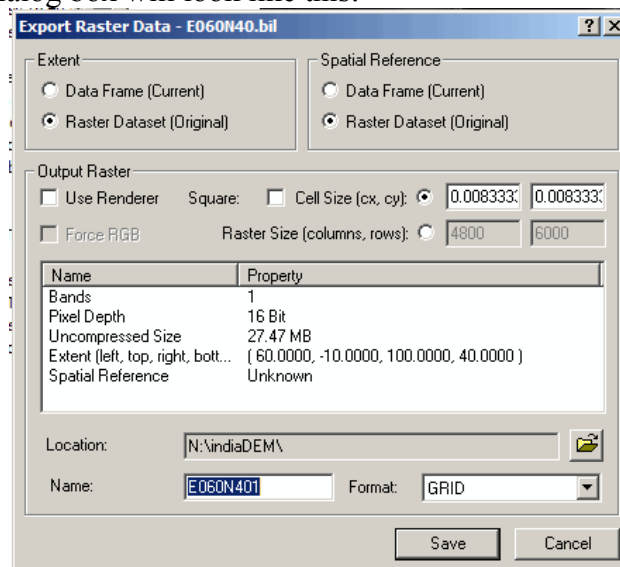# Importing GTOPO30 files into ARCGIS 9.x

The GTOPO30 website provides digital elevation models of the world. A few calculations are necessary to make the file compatible with the functions in the Spatial Analyst extension.

Requirements:
- ArcGIS 9.x with Spatial Analyst Extention
- GTOP30 data files (available at http://edc.usgs.gov/products/elevation/gtopo30/gtopo30.html)

1) Go to the website above. Choose the area for which you want coverage. Extract the downloaded files to a folder. If you are using Winzip, make sure that the smart tar extraction option is turned off.
(Options→Configuration→Miscellaneous→uncheck TAR file smart CR/LF conversion)

2) Open the folder where the file is now stored. There will be several files. Change the extension of the data file from DEM to BIL

3) Open ArcMap with a new, empty map. Choose the Add Data button ![Add Data button] and select the BIL. Choose "No" when asked if you want to build pyramids. Choose "OK" when it tells you the data is missing spatial information.

4) Right click on the .BIL. Choose "Data…" and "Export Data..." Export data as Grid. The dialog box will look like this:
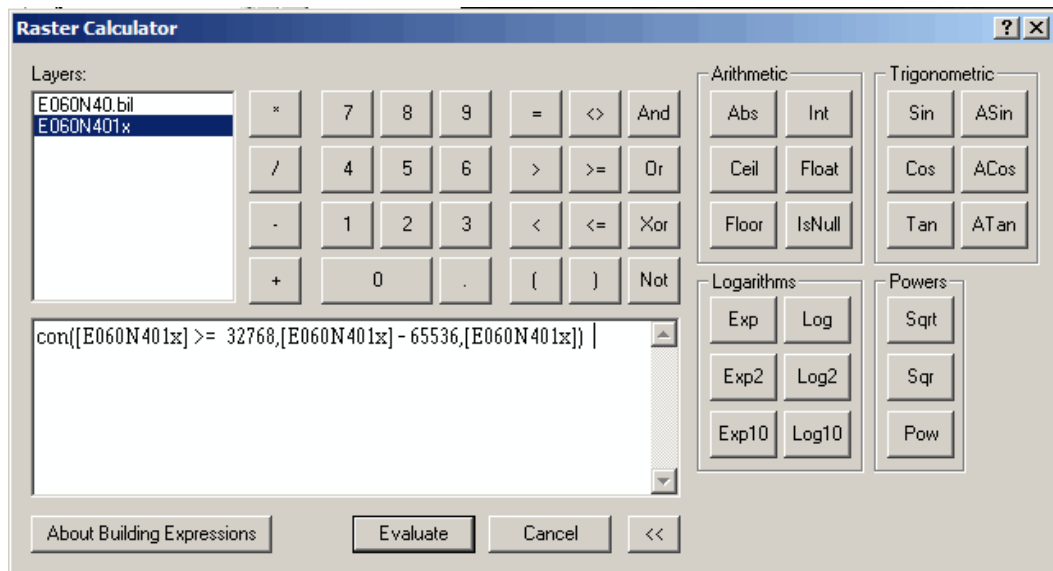
Save new file in the same folder as the .BIL. Choose a new name for the grid file.
Click Save.

5) In Explorer, navigate back to the folder where you stored the downloaded data.
   Your newly-exported grid file will appear as a new folder. Choose the .prj file
   and rename it to PRJ.ADF. Move this file into the new grid's folder

6) Return to your ArcGIS map. If you haven't already, add the grid to the map.
   (What appeared as a folder in Explorer will appear as a grid file in ArcGIS.)

7) Turn on the Spatial Analyst Extension (Tools→Extensions→check Spatial
   Analyst). Add the Spatial Analyst toolbar (View→Toolbars→Spatial Analyst).

8) Make sure your grid file is reference in the Spatial Analyst toolbar. From the
   Spatial Analyst drop-down menu, select "Raster Calculator".   Enter the following
   formula:

   con([GRID >= 32768,[GRID] - 65536,[GRID])
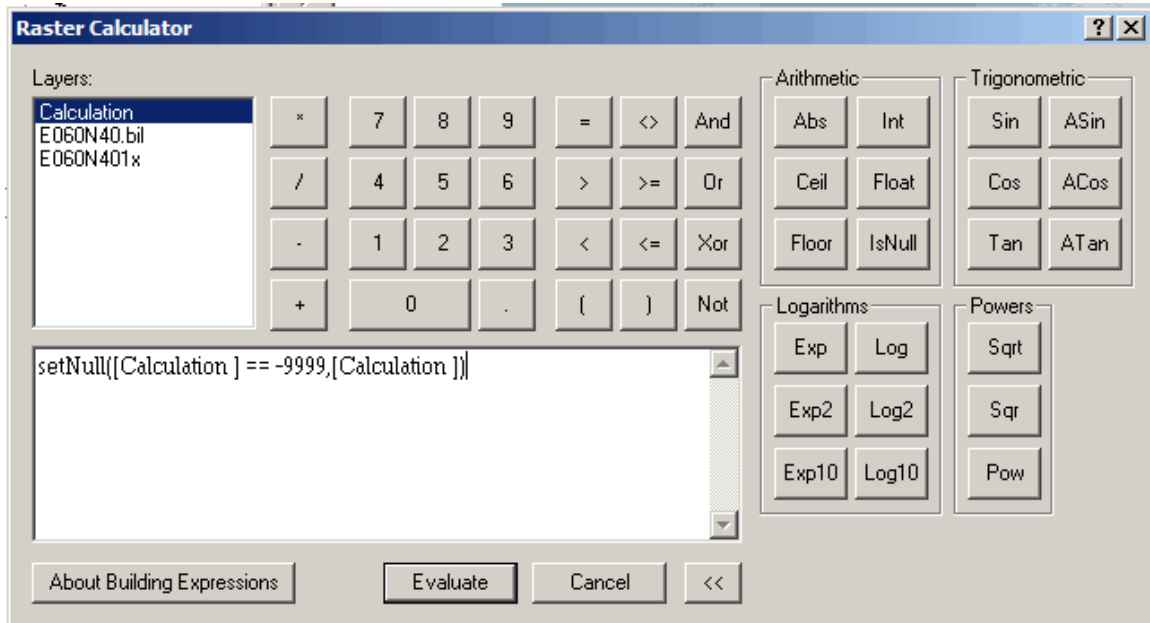   replacing [GRID] with the name of your grid file

For example:

Be sure to have spaces between the functions, such as the greater than or equal to symbol
or the minus sign. The function will not work otherwise! Click "Evaluate". A new
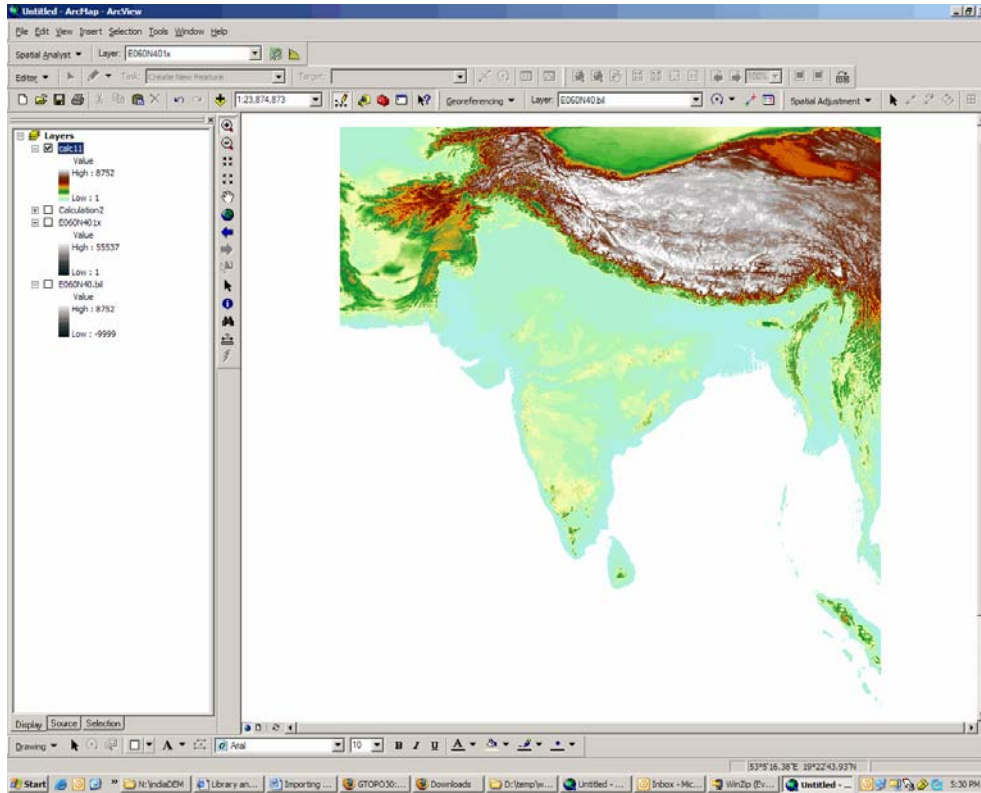image will be added to your map.

9) Open the raster calculator again. Enter the following formula
setNull([NewGrid] = = -9999, [NewGrid]) replacing [NewGrid] with the name of
the grid calculated in the previous step

For example:

Again, make sure there are spaces between the equal signs, and that there are two equal
signs. Click evaluate.

10) Save the result of the calculation from the previous step. Right click on the
second calculation file and choose "Make permanent".
11) Add the new file to your map. Choose a color ramp from Properties.

You now have a pretty picture AND you will be able to use this digital elevation model with Spatial Analyst, such as Contour, Hillshade, etc.

Last Updated: Nov 2006