ES341 – MANAGING SPECIAL FILE TYPES IN ARCGIS

I. Data File Formats

a. DEM Data *.dem
b. DRG Data *.tif *.tfw
c. Shapefile (vector, *.shp, *.dbf, *.shx)
d. ARC/INFO export file (*.e00) interchange format (vector or raster)
e. Arc/Info GRID (raster)
f. ArcGIS geodatabase (*.mdb)
g. OrthophotoQuads (MrSID, *.sid *.sdw)

II. Common File Compression Formats for GIS Data

a. *.zip Format

i. GIS data files are generally compressed with a zip utility. If needed, you may download a free unzip utility from the uunet archive. Spatial Data Library data sets use the statewide projection standard endorsed by the Oregon Geographic Information Council.

After downloading the file:

- UNZIP the file with WINZIP or PKUNZIP.
- Load the data set into a software program that recognizes the file formats.

b. What is .tar.gz format?

i. Under Unix, tar archives are the most common means of distributing bundles of files, and gzip is the most common compression program.
ii. A .tar.gz file is simply a bundle of files packaged with tar, and subsequently compressed with gzip.
iii. Unlike the *.zip format, Windows XP can not decompress *.tar.gz files; but the Winzip software tool does
    1. WinZip 7.0 is available on the all the workstations in the NS218A computer
    2. You can download new version of Winzip at www.winzip.com
    3. Another free download site is at http://www.oldversion.com/WinZip.html

III. Importing USGS *.dem digital elevation files into ArcGIS raster Grids

The U.S. Geological Survey digital elevation models are in an agency-specific grid data format with a *.dem extension. ArcMap can NOT directly open these files, they must first be imported into a proprietary ArcGIS raster (grid) format. The command sequence below will import USGS dem's into ArcMap.

Use ArcToolbox from ArcCatalog or ArcMap
Go to the following tool:
Conversion Tools
To Raster
DEM to Raster
Input file (*.dem)
Output Raster File (browse to folder and name)
Output Type – default
Z-factor – default to 1

IV. Importing From Interchange File (*.e00 ArcInfo Export Files)

ArcInfo interchange files (*.e00) are an export format for both raster and vector map coverages. Some GIS data web sites have *.e00 files available for download. Below are some tips for working with *.e00 files in ArcGIS.

Using ArcCatalog to Import *.e00 files

(1) ArcCatalog doesn't show ArcInfo .e00 files by default, but it is easy to configure ArcCatalog to show them.
   a. From the Tools pulldown menu, choose the Options command, click the File Types tab, then click the New Type button.
      i. In the dialog that appears, type "e00" into the File extension field (be sure to use zeros, not the letter "O"), type a description such as "Export File" into the Description of type field, click Change Icon and choose an icon, then click OK.
      ii. Click OK on the Options dialog box. ArcCatalog will refresh and show you .e00 files.

(2) In ArcCatalog
   a. Pull-down Click the View menu, point to Toolbars, and click ArcView 8x Tools.
      i. You will now have a toolbar displayed in the workspace entitled “conversion tools”
         1. the “Import from Interchange” tool is the one that will import *.e00 files into a layer coverage
         2. display the layer coverage in ArcCatalog workspace
         3. rt-click on layer coverage – export – “to shapefile”
            a. this will convert the layer (via the e00) into a shapefile
            b. you are now ready to work with the shapefile layer in ArcMap

V. About MrSID rasters

About the MrSID rasters: MrSID Encoder is a high-quality, high-performance compression methodology for reducing the size of large raster datasets. All ArcGIS users can display MrSID compressed raster files of any size. ArcMap and ArcCatalog recognize the *.sid image/raster extension. The files are georegistered similar to the *.tiff drgs, with an accompanying *.sdw world file that provides registration information for ArcMap to properly position the *.sid images in projected coordinates.

The Oregon Geospatial Clearninghouse has digital orthophoto quads (DOQs) available for the state of Oregon in the Custom Lambert (1983_NAD) projection.

All users of ArcGIS can also encode individual, decompressed rasters smaller than 50 MB. The raster file size limit is not based on file storage size, but rather, on the number of pixels.

The 50 MB size rule will be evaluated as follows:
image width * image height * number of bands * bytes per pixel, cannot be greater than 50 million

The MrSID Encoder is developed and supported by LizardTech, Inc. Additional products that allow you to compress images of a larger size are available from LizardTech.

How to export a MrSID raster dataset

Exporting a MrSID raster

In ArcCatalog, right-click the raster dataset, point to Export, then click Raster to MrSID.

Exporting a MrSID raster using the ArcGIS 8.x conversion tool

A tool on the Customize dialog box can be added to a toolbar in ArcCatalog or ArcMap to export MrSID files.

Click Tools on the Main menu and click Customize.
Click the Commands tab.
Click ArcGIS 8.x Conversion Tools in the Categories list.
Drag and drop the Raster to MrSID tool from the Commands list onto a toolbar.
Click Close.
Click this tool to export a raster dataset to a MrSID file.

VI. ArcGIS Grid Raster Files

About the ESRI Grid format - A grid is a raster data storage format native to ESRI. There are two types of grids: integer and floating point. Use integer grids to represent discrete data and floating-point grids to represent continuous data.

Raster conversion

You can convert data to a raster dataset, from a raster dataset to a vector dataset, from a raster dataset to a text file, or from a raster dataset format to another format.

There are a number of core geoprocessing tools that allow you to convert to and from raster data, which are shown in the table below.

Converting data to a raster dataset Toolset	Tool	Description
To Raster	ASCII to Raster	Converts an ASCII file representing raster data to a raster dataset
To Raster	Feature to Raster	Converts features to a raster dataset
To Raster	Float to Raster	Converts a file of binary floating-point values representing raster data to a raster dataset
To Raster	Polygon to Raster	Converts polygon features to a raster dataset
To Raster	Polyline to Raster	Converts polyline features to a raster dataset
To Raster	Point to Raster	Converts point features to a raster dataset

Converting a raster dataset to a vector dataset Toolset	Tool	Description
From Raster	Raster to Point	Converts a raster dataset to point features
From Raster	Raster to Polygon	Converts a raster dataset to polygon features
From Raster	Raster to Polyline	Converts a raster to polyline features

Converting a raster dataset to a text file Toolset	Tool	Description
From Raster	Raster to ASCII	Converts a raster dataset to an ASCII file representing raster data
From Raster	Raster to Float	Converts a raster dataset to a file of binary floating-point values representing raster data

Converting from a raster dataset format to another format Toolset	Tool	Description
Raster	Copy Raster	Converts or makes a copy of a raster dataset into the same or another valid raster format: ESRI Grid, ERDAS IMAGINE, TIFF, or geodatabase raster
To Raster	DEM to Raster	Converts a DEM in USGS format to a raster dataset
To Raster	Raster to Other Format (Multiple)	Converts one or more raster dataset formats supported by ArcGIS to a BMP, GIF, Grid, IMAGINE, JPEG, JPEG 2000, PNG TIFF, or geodatabase raster dataset format