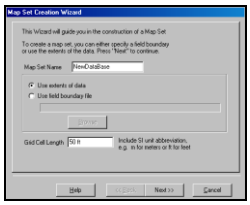
Appendix B

Creating Your Own Ag Database

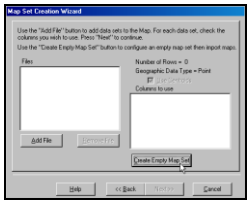
<…being updated for use with Geo-Business data; March, 2003>

B.1 Creating Your Own Database (Empty Map Set)

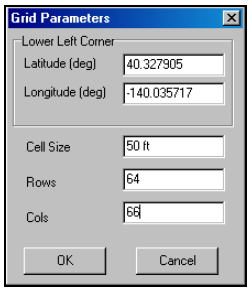
 Click on the *Create a new file* button or from the main MapCalc menu, select **File→ New**.



Specify a name for your new data base (e.g., **NewDataBase**) then press **Next**.



Click on **Create Empty Map Set** button to pop-up the Grid Parameters dialog box.



Specify the **Latitude** and **Longitude** of the lower-left corner of the analysis grid (e.g., Lat= **40.327905**, Lon= **-140.035717**). *Note*: MapCalc Evaluation and Learner versions require Lat/Lon WGS84 datum. Academic and Professional versions accept data in a variety of geographic references.

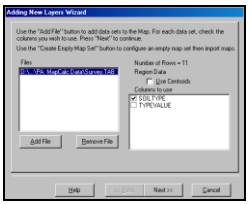
Enter the **Cell Size** (e.g., **50** feet) and the number of **Rows** and **Columns** comprising the analysis grid area (e.g., **64** rows and **66** columns). Click **OK** to create the empty database.

Data can be entered into the new MapCalc database via several import procedures (see below).

Note: The MapCalc Evaluation and Learner versions can configure analysis grids up to 100 rows by 100 columns. Grid configuration for MapCalc Academic and Professional versions are not software limited but storage and processing requirements are exponential. Interactive processing of grids larger than 500 x 500 is not recommended—use batch process through scripts for large grid configurations.

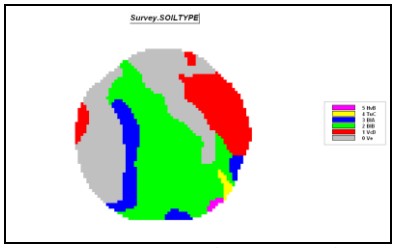
B.2 Importing Data via Add New Layers

To import an ESRI *.shp* or MapInfo *.tab* polygon file, select **Map Set→ Add New Layers** to pop-up the *Adding New Layers* wizard.



Press the **Add File** button and specify a file (e.g., **Survey.tab**), select the

data column(s) to use (e.g., **SOILTYPE**) and click **Next**. Click **Finish** to create the map.



Imported Soil Survey Map from a MapInfo .tab file

If you have a field boundary map in *.shp* or *.tab* format you can use it to directly derive the database configuration. Instead of creating an *Empty Map Set* (section B.1, step 2) press the Add New Layers button as described above. The Latitude and Longitude coordinates will be automatically assigned based on the extent of the boundary file.

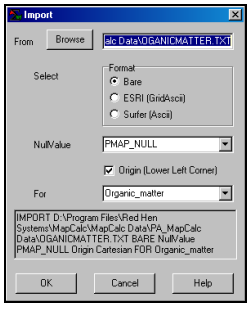
B.3 Importing Data via the Map Analysis Tool

Importing data via the **Map Analysis** tool accepts grid files for individual maps in three standard formats—

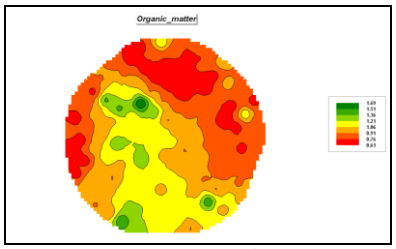
Bare	Bare ASCII matrix of values, row major order
Grid	Grid ASCII format (ESRI Software)
Surfer	Surfer ASCII format (Golden Software)

…See section B.5, Exporting Data via Map Analysis Tool for descriptions of these standard grid file formats.

The grid files must have the same configuration as the active database-- *#Rows*, *#Columns*, *Cell Size* and lower-left *Registration Coordinates*.



For example, add data in *Bare* format to the *NewDataBase* (see B.1 above) by entering **Map Analysis→ Import** and completing the *Import* dialog box as—**ORGANICMATTER.TXT**, **Bare**, **Organic_matter.**.



Imported Organic Matter data Map from a Bare matrix (.txt)

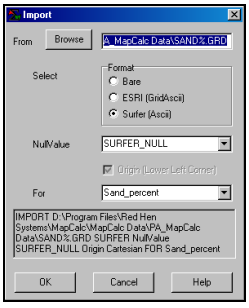
B.4 Importing Data via the File Tool

Importing data via the **Map Analysis** tool accepts grid files for individual maps in four standard formats—

Bare	Bare ASCII matrix of values, row major order
Grid	Grid ASCII format (ESRI Software)
Surfer	Surfer ASCII format (Golden Software)
MIG	Binary Grid format (MapInfo)

…See section B.5, Exporting Data via Map Analysis Tool for descriptions of these standard grid file formats.

The grid files must have the same configuration as the active database-- *#Rows*, *#Columns*, *Cell Size* and lower-left *Registration Coordinates*.



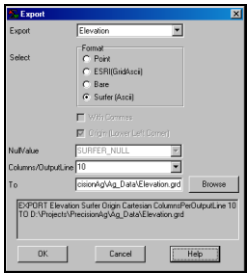
For example, add data in *Surfer* format to the *NewDataBase* (see B.1 above) by entering **File→ Import→** and completing the *Import* dialog boxes as shown—**%SAND.grd**, **Surfer (Ascii)**, **Sand_percent**.

B.5 Exporting Data via Map Analysis Tool

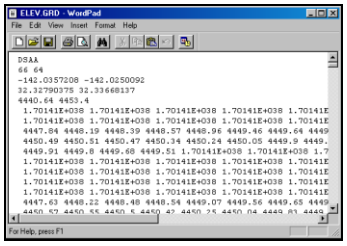
Exporting data via the **Map Analysis** tool creates a grid file for individual maps in four standard formats—

Point	Column, Row, Value (nulls skipped)
Grid	Grid ASCII format (ESRI)
Bare	Bare ASCII matrix of values, row major order
Surfer	Surfer ASCII format (Golden Software)

Select **Map Analysis→ Import/Export→ Export** to pop-up the *Export* dialog box.



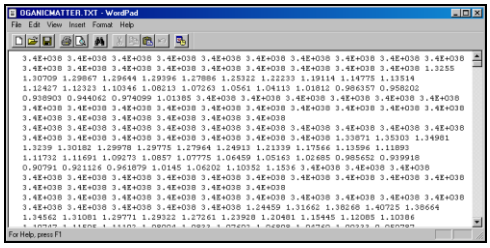
Select the **Elevation** map, specify **Surfer (Ascii)** and Browse/Name the file for export (Elevation.grd). Press **OK** to create the file.



The file generated is a standard text file and can be viewed using any word processing package.

Export formats in the Map Analysis tool include **Point** (each record contains *a Column Row Value* triplet), **Bare** (each record contains all of the values for one row of the grid starting at the top left corner), Surfer GS Ascii and ESRI GridAscii that include header lines with the matrix of data (see below).

Bare Ascii no header lines—



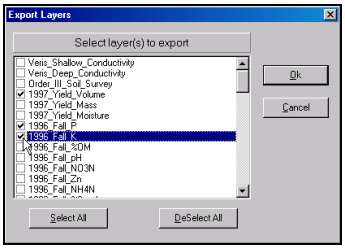
…Data separated by spaces and organized as rows in row-major matrix—contains no geo-referencing information. File must contain a value for each cell location ordered left to right, top to bottom.

Surfer GS Ascii five header lines—
DSAA (ASCII)
66 64 (NCOLS NROWS)
-142.0357208 -142.0250092 (LON Low/High)
32.32790375 32.33668137 (LAT Low/High)
4440.64 4453.4 (Z Low/High)
…Data separated by spaces and organized as rows in row-major matrix (see Bare above)

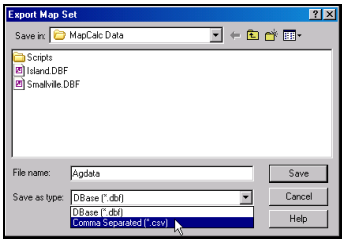
ESRI GridAscii six header lines—
NCOLS 66
NROWS 64
XLLCORNER -142.0357208 (LON)
YLLCORNER 32.32790375 (LAT)
CELLSIZE 0.000162298
NODATA_VALUE 3.4E+038
…Data separated by spaces and organized as rows in row-major matrix (see Bare above)

B.6 Exporting Data via File Tool

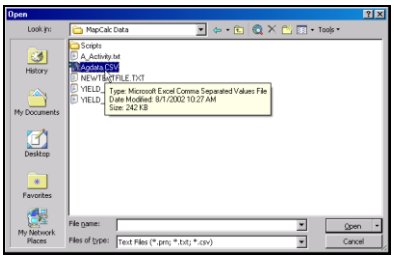
From the Main Menu select **File → Export → Data** to access the wizard for exchanging data.



Press the *DeSelect All* button then click on the boxes next to the **1997_Yield_Volume**, **1997_Fall_P** and **1997_Fall_K** map layers. Press *OK* to begin the export.

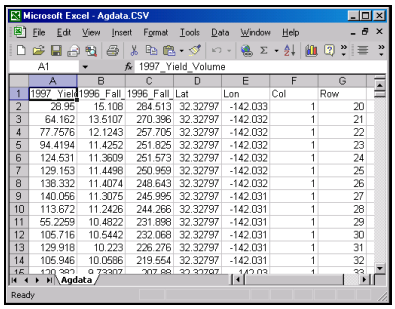


Specify "**CSV**" as the type and **Save** the file. This procedure stores the file in the default data folder.



Access *Excel* by clicking on **Start → Programs → Microsoft Excel → File → Open →** browse to the *…\MapCalc Data* folder → specify **Text Files (*.prn, *.txt, *.csv)** as the file type → click on the **AgData.csv** file → and press the *Open* button.

The exported file containing the specified map layers will be opened in *Excel*.

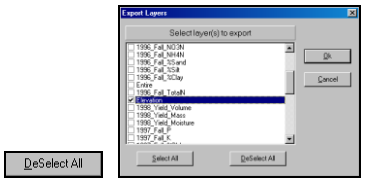


In addition to .CVS format, there are several other standard export formats—

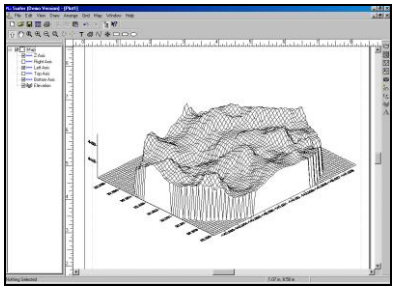
.DBF supports most spreadsheet and database software
.TAB supports MapInfo desktop mapping software
.SHP supports ArcView desktop mapping software
.ACS supports Spatial Analyst software
.GRD supports Surfer software (GS ASCII).

B.7 Seamless Data Exchange with Surfer

Select **File→ Export→ Send to Surfer→ Wireframe** to automatically transfer the data and launch Surfer provided it is installed on your computer…



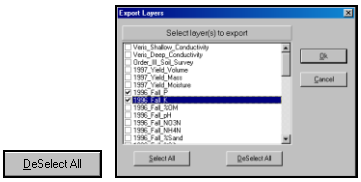
Press the **Deselect** button, then check the **Elevation** map and press **OK**.



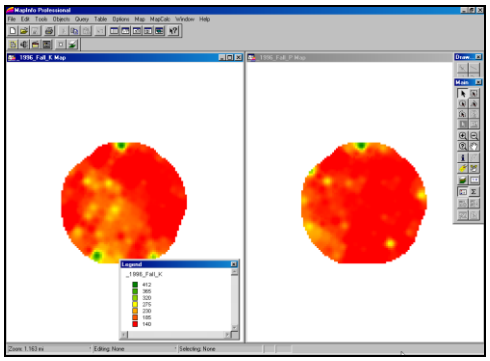
Surfer will be executed and the Elevation data automatically transferred.

B.8 Seamless Data Exchange with MapInfo

Select **File→ Export→ Send to MapInfo→ Wireframe** to automatically transfer the data and launch Surfer provided it is installed on your computer…



Press the **Deselect** button, then check the **1996_Fall_P** and **1996_Fall_K** maps. Press **OK**.



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