

## PURPOSE

This is a "Read Me" file associated with the Pascal (Delphi 7) program "MapsProjectA.EXE". The program reads a text file of specific format and writes a bit map file displaying the map defined in the text file, according to a user's preferences. It remembers all user settings through use of a profile file maintained by the program. The program can be renamed and its profile file will be created with the new name. The format of the text file must be as shown in Figure 1. Use a space, spaces, a comma, or a tab to separate values in a line.

```
17541 14 168 182
1 Flow Direction
2 Elevation (m)
3 Slope (%)
4 Slope Shape
5 Land Cover
6 USZ Thickness (in)
7 LSZ Thickness (in)
8 USZ Avail. Water Cap. (%)
9 LSZ Avail. Water Cap. (%)
10 USZ Permeability (in/hr)
11 LSZ Permeability (in/hr)
12 Soil Texture
13 Manning's n
14 Sqrt(S) /Mn
      1 165.00      0.0 1  0  0.00  0.00 0.00 0.00 0.00 0.00 0.00 0.0180      0.3755
      8 380.00      1.7 3 76 43.17 65.61 0.36 0.20 9.98 9.18 4.00 0.2560      31.1714
68    1 4 330.75 0.4030 1 21 11.75 49.50 0.06 0.19 3.19 1.68 3.00 0.0460 13.80049587
69    1 4 322.86 0.5844 3 21 11.75 49.50 0.06 0.19 3.19 1.68 3.00 0.0470 16.26511902
70    1 5 325.87 0.6505 2 21 11.75 49.50 0.06 0.19 3.19 1.68 3.00 0.0470 17.16033621
71    1 6 324.05 0.4147 3 21 10.98 63.87 0.04 0.20 7.81 6.99 1.00 0.0470 13.70153296
72    1 7 335.03 0.1221 1 41 10.98 63.87 0.04 0.20 7.81 6.99 1.00 0.1560 2.239923745
73    1 5 333.00 0.2650 1 21 10.98 63.87 0.04 0.20 7.81 6.99 1.00 0.0470 10.95279802
.
.
.
```

Figure 1. Example Map Data Input File (Maumee.TXT).

In line one, the first number (17541) is the number of cells to be plotted in the map, the second (14) is the number of variables available for plotting, the third (168) is the number of columns in the map, and the fourth (182) is the number of rows in the map. The number of lines (as given by the second parameter in line one) following are numbered in order and each contain a variable name. The next two lines contain the minimum and maximum values for each variable. Finally, the remaining lines (the number given by the first parameter in line one) contain columns. The first column is the cell column (columns numbered from left to right), the second is the cell row (rows numbered from top down), the third is the value of the first variable named in the above list at this cell location, the fourth is the value of the second variable, and so on. There should be entries for every cell in the map.

## USE

The user can invoke the program from within Windows (e.g., by double-clicking with the mouse on the program executable from within Windows Explorer) or from the command line (e.g., in the Start/Run dialog box or from a DOS window). If run from Windows, the user may configure all preferences for making the map within the application's user's interface. (The quickest way to understand user preference choices is to run it from Windows.) If run from the command line,

the user can set all preferences within the command line, but must specify them all, in any order. They are: LOAD (filename of text file to plot), MAP (name of variable to map and central portion of color scale to use in percent from 1 to 99, separated with a comma and ending with the percent sign), SAVE (filename of map file to make), COLOR (name of color scale to use in mapping), INVERT (if "Yes" or "True", inverts the color scale), PIXEL (number of pixels to use per map cell, 1-9), RANGE (the smallest and largest values to use in the color scale, separated with a comma, both of which are non-negative), FACT (a multiplicative factor to apply to variable values before plotting, and UNIT (a label to be applied to the color scale). These nine parameters must be specified with a blank between them and with no blanks in their values (unless double-quote marks are used around them). For example, type the following as one contiguous line at a DOS prompt:

```
MapsProjectA Load=Maumee.TXT Map="Elevation (m)", 95%
Save=Maumee.BMP Color=Terrain Invert=Yes Pixel=1 Fact=1
Range=165, 380 Unit=m
```

By using this command with the Maumee.TXT file provided, you can generate the bitmap graphic shown in Figure 2.

#### EXTENSION

There is an optional parameter that may also be used, MULT. If MULT is "1" then a single map is made; equivalent to not specifying MULT at all. If MULT is greater than one, then it must be specified with a base date in MSDOS format, separated from the first number with a comma). In this case the number specifies the number of files to process beginning with the base date; e.g., if the parameters specified on the command line include LOAD=A SAVE=B RANGE=500, 1000

MULT=5, 07/15/2008 then the following files are read:

A20080715001.TXT, A20080715002.TXT,

A20080715003.TXT, A20080715004.TXT, and

A20080715005.TXT and these are respectively created:

B20080715001500+00100+01.BMP, B20080715002500+00100+01.BMP,

B20080715003500+00100+01.BMP, B20080715004500+00100+01.BMP, and

B20080715005500+00100+01.BMP. In the latter, the filenames consist of the base name defined by SAVE (B) followed by the rearranged date defined by MULT (200807150) followed by a three-digit number from 001 through the number defined by MULT (005) followed by the range minimum defined by RANGE (500+00 where the first three characters are the number with the last three characters it's exponent of 10) followed by the range maximum defined by RANGE (100+01) followed by ".BMP". This "batch mode" is useful when processing multiple maps with the same preferences.

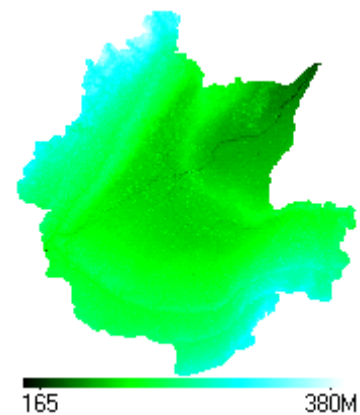


Figure 2. Maumee Watershed Elevation.