

## Appendix 3

### Creating a Plant Distribution Map Using PI Data

This is a protocol for making plant maps using ArcView 3.3 and the Excel file <WiAPMS.xls>. This protocol can be changed in a number of different ways and still produce a similar product. The best way to make PI-based maps depends on the particular dataset; however, this procedure works well in most cases. Similar images may be created in PowerPoint or in photo editing software if the dataset is not large or complex.

1. Save the ArcView shapefiles (\*.shp, \*.dbf, \*.sbn, \*.shx, \*.sbx, \*.sbn) to a folder on a local drive.
  - a. We'll refer to this folder as "MapFolder"
2. Open ArcView and create a new project with a new view.
  - a. Click "yes" to add data
3. Add shapefiles from MapFolder
  - a. You can add multiple files at once by holding down "shift" while you click the individual files
4. View window: select the point file
  - a. Make sure both themes have the box checked in order to view them
  - b. Click once on the point layer to activate that theme (raised box around that item)
  - c. If necessary, drag the activated point layer above the polygon layer in order to see the sample points
5. Open theme table
  - a. Theme > Table or
  - b. The open theme table shortcut button
6. Start editing, add variable column
  - a. Table > Start Editing
  - b. Edit > Add Field
    - i. Enter the name of the field (e.g. EWM\_2009)
    - ii. Specifications 'type', 'width', and 'decimal places' do not need to be changed
    - iii. Click "OK"
7. Stop editing, save edits
  - a. Table > Stop Editing, 'Yes' to save edits
8. Export point file

- a. File > Export
  - b. Select 'dBASE'
  - c. Select MapFolder to save file
  - d. Default will be named <table1.dbf>
  - e. Close table
9. Set-working directory
- i. File > Set Working Directory
  - ii. Change working directory to MapFolder
10. Save project, exit ArcView
- a. File > Save Project As > save in MapFolder (for ease of reference, lets call the file EWM\_Map.apr)
  - b. Exit ArcView
11. Open file saved in step 8 with Excel
- a. Open excel; Open a file, when prompted to find the file, navigate to MapFolder
  - b. In "Files of type" option bar select "All files"
  - c. Open <table1.dbf>
12. List information under data field created (EWM\_2009)
- a. Open PI data entry excel file (WiAPMS.xls)
  - b. Copy columns "Sample point, Depth, Comments, & EWM"
  - c. Paste special "values" into new excel workbook
    - i. Edit > Paste Special > Values
  - d. Highlight all data, sort by comments
    - i. Data > Sort > Comments
  - e. Enter the number 5 into EWM column for all unsampled sites (deep, terrestrial, non-navigable, etc) (this is so the legend can code these sites)
  - f. Highlight EWM data column and replace all blanks with 0 (zero), and V (visuals) with 4
    - i. Edit > Replace, replace all
  - g. Highlight all data, re-sort by sampling site
    - i. Data > Sort > Sampling Point
  - h. Copy EWM column, excluding header, paste into the .dbf file (already open, originally created in step 8)
  - i. "Save as" this file as the **original dbf** file's name (the copy you placed in MapFolder, not the original file, obviously)
    - i. i.e. overwrite the ISS original (e.g. Kathan\_Oneida\_1598300\_65mpts.dbf) with the new file you just modified in excel. The name must be EXACTLY the same!!
    - ii. Close excel
13. Reopen project in ArcView
- a. Open existing project

- b. Open MapFolder and click on EWM\_Map.apr (or whatever you chose to name it in step 9)

#### 14. Create legend

- a. Double-click point symbol in the View frame to open the legend window
- b. In “Legend Type” option bar, choose “Unique Value”
- c. In “Values Field” option bar select “EWM\_2009” column (or whatever column you want this map to show)
- d. Apply
- e. You must now choose appropriate symbols and colors for the different variables being expressed by the legend. You can change the symbol by double clicking on it
- f. Typically we use increasing sizes of a green circle for EWM density ratings (values: 1, 2 , 3), a small light green circle for visuals (value: 4), a small black dot for sites sampled, but without EWM, (value: 0), and a small “x” symbol for sites not sampled (value: 5).
- g. You can change the label name of the symbol being represented by clicking on the respective cell under “Label”. (e.g. change “5” to “Not Sampled”, change “4” to Visual)
- h. The color or shading of the polygon can also be changed by double clicking on the theme

#### 15. Set units

- a. View > Properties
- b. Change map units to “meters” and distance units to “kilometers”

#### 16. Layout

- a. View > Layout
- b. Select Landscape or Portrait
- c. Double-click ‘View1’ to change map title
- d. Double-click scale bar to adjust range or units
- e. If you’re going to be switching between maps quickly to look at comparisons between years or species, we suggest making and refining the layout first, then saving it as a Template (Layout > Store as Template) so you can use the same one each time.

- f. Check printed map for color accuracy before you export (step 17). Sometimes the colors may look different on screen, but may print with the same hue and value, making interpretation impossible. You can set a custom color if necessary.

17. Save as JPEG

- a. Have the final layout window active
- b. Select File > Export
- c. In “List Files of Type” option bar, select JPEG
- d. Click ‘Options’ button
  - i. Set resolution to highest number
  - ii. Likely 144 DPI and Quality = 100
- e. Type file name, choose location in which to save the JPEG
- f. Click OK

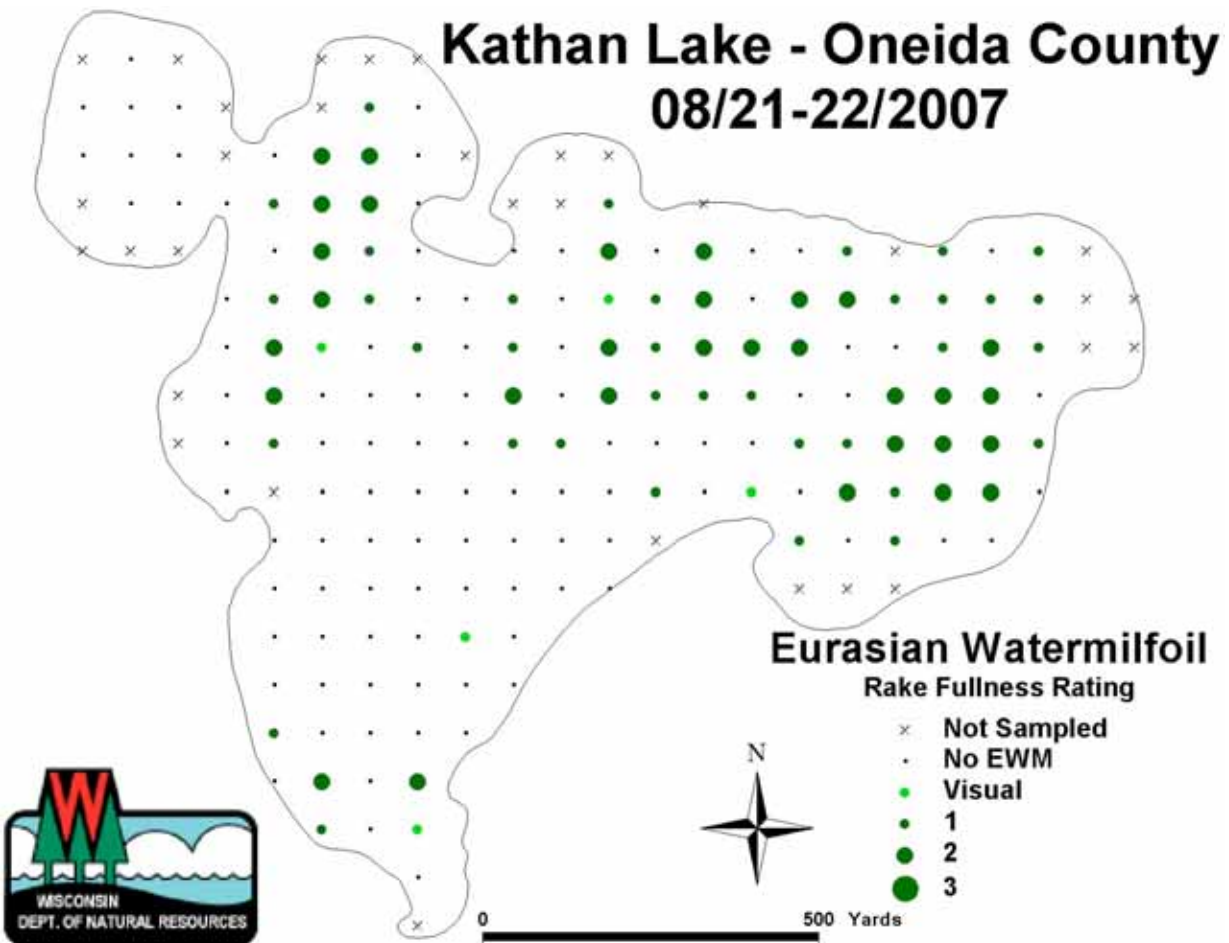


Figure 1: Example of a PI-based plant distribution map for Kathan Lake, Oneida County