

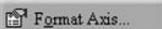
Presenting Your Data

How to graph Secchi data in Microsoft Excel

Here is a simple method for creating a graphic representation of your Secchi Transparency data. The end product can be used in lake association newsletters, PowerPoint presentations and educational posters. All you need to get started is a computer with the Excel spreadsheet program. The entire process takes only a few minutes.

1. Start Excel and open up a blank workbook. Label the first column "Date" and the second "Secchi Depth" and then fill in your data below.
2. Click once on *Date* and drag the mouse over and down to select all the data we've just entered. It should turn gray. Then click *Insert* then *Chart*.
3. In the Chart Window under Standard Types click on *Line*. Then in Chart sub-type click the left-most chart on the middle row (see figure 1). Then click *Next* and click *Next* again in the "Step 2 of 4" window.
4. In the "Step 3 of 4" window (figure 2) under the Titles tab Enter:
 Chart title: (for example "2004 Clary Lake Transparency")
 Category (X) axis: "Date"
 Value (Y) axis: "Secchi Depth in meters"
5. Click on the *Legend* tab at the top and deselect the Show legend box. Click *Next* and then click *Finish*.
6. This creates a default graph which as you can tell from figure 3 needs some modifying. In order to interpret Secchi Disk Transparency the depth on the y-axis should start with 0 meters (the lake surface) at the top and then increase downward.

To make this change right-click on the left axis of the graph and select  *Format Axis...* Click on the *Scale* tab and then at the bottom check the box for **Values in reverse order**. Then above where it says "Category (X) axis crosses at: _____" enter the maximum number on the Y axis, in the case of our example that would be 5, the deepest Secchi reading in your data. Click *OK*.

7. With this change, the Date labels jump into the graph. To pull them out, right click on the x-axis and select  *Format Axis...* Click on the *Patterns* tab then in the bottom right change Tick mark labels to "High". Click *OK*.
8. Now, we're getting close. Click and drag the "Date" title down to the bottom of the graph under the x-axis. Then for best printing change the gray area behind the graph to white by right-clicking on the gray area and select *Format Plot Area...* In the right panel under *Area* select the white box in the bottom right and click *OK*.
9. To save your work so far: click *File* and *Save* and then name your file. Now for the fun part. Click once on your graph. Then click *Edit* and *Copy*. Open up your Word document or PowerPoint presentation click where you would like your graph to appear and click *Edit* and *Paste*. *Voila!*

For 3 tips for a spiffy graph see the next page.

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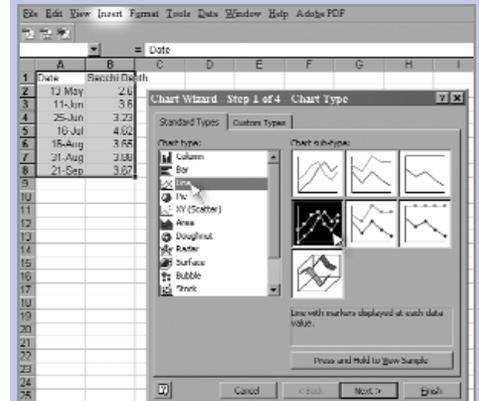


Figure 1

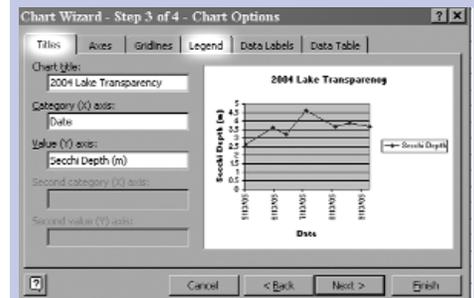


Figure 2

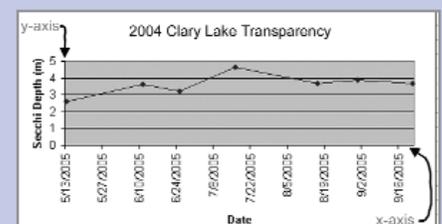
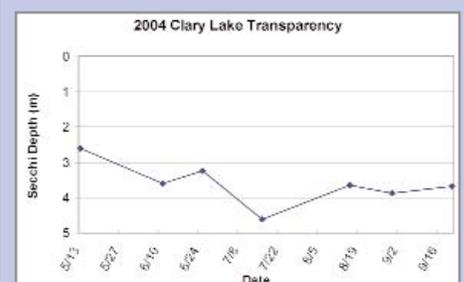


Figure 3

In order to interpret Secchi Disk Transparency graphically the y-axis should start with 0m at the top, representing the surface of the lake, then get deeper. This is the opposite of Excel's default format.



Final Graph

Enhance Your Graph

Add graphics to improve readability and interpretation of your Secchi data graph. In Excel we will add a blue gradient background to represent transparency, simplify the date labels and overlay the data points with an image of a Secchi Disk, available on the VLMP website.

1 Gradient Background

Right click on chart background and select *Format Plot Area...*
 Under the color options click *Fill Effects...*
 Under the Gradient tab Select *Two Colors*
 Set *Color 1:* to *white*
 Set *Color 2:* to *blue*
 Set *Shading Styles:* to *horizontal*
 Click *OK*
 And click *OK* again

2 Date Format

Right click on x-axis
 Select *Format Axis...*
 Click on the *Number* tab
 Set the *Category:* to *Date* and the *Type:* to *3/14* (month/day)
 Then click on the *Alignment* tab and set the *Orientation* to 0 degrees (this will deselect the Automatic vertical setting)
 Click *OK*

3 Secchi Disk Image as Data Point

- First go to www.MaineVolunteerLakeMonitors.org/pub and follow the instructions to save the *SecchiDisk.jpg* file to your computer's Desktop
- In your Excel graph file:
 On the menu bar click *Insert* then *Picture* and then *From File...*
 Select *Desktop* (where we saved the image from the VLMP website)
 Select the file *SecchiDisk.jpg* and click *Insert*
- The next step is to resize the Secchi Disk image in Excel to be the size that looks best on your graph.
 To do this click once on the Secchi Disk image so that it is bound by nine boxes.
 Click on one of the boxes in the corner and drag the mouse to change the image to the desired size. (Figure 6)
 Now click on the Secchi Disk image to make sure it is selected then click *Edit* then *Copy* from the menu bar.
- The next step is to paste the image onto the graph's data points. To do this click once on one of the data points so that all data points are highlighted.
 Then from the menu bar click *Edit* then *Paste*. (If only one Secchi Disk appears, Undo the paste, then click on an empty cell outside of the graph and then repeat this step.

I suggest saving a backup copy of your basic Secchi graph file before making these enhancements, just in case...

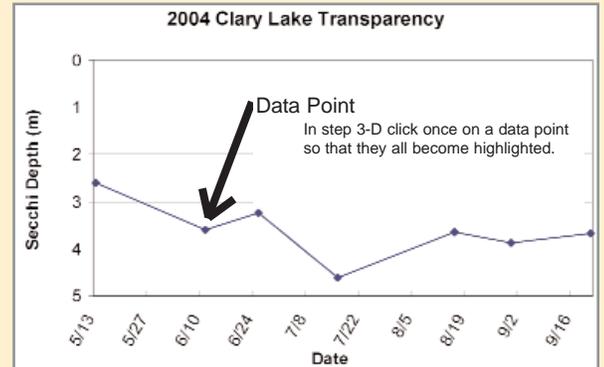


Figure 4

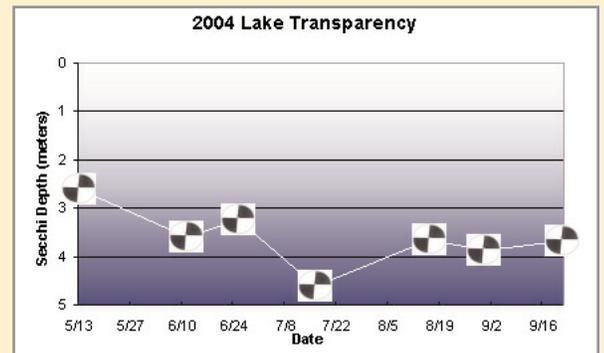


Figure 5

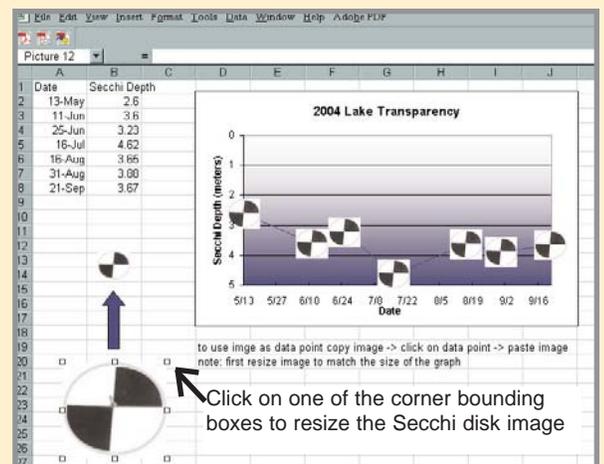


Figure 6