

**INSTRUCTIONS:** Go to the website: [www.Seminole.WaterAtlas.org](http://www.Seminole.WaterAtlas.org)

Go to the Data & Mapping tab > Meta Data. Read the Summary of Data in the Atlas to get an idea of the scope of the WaterAtlas project. If there is known scientific data recorded about a Seminole County water body, it is here! You will download data and make a graph to better understand the trends.

1. Go to the Data & Mapping tab > Data Download tab and follow the steps.
  - Step 1 > Surface Water Quality > Select "Water Atlas" and "Water Body Name" > Submit
  - Step 2 > Select "Seminole County" > Type in "Greenwood Lake" > Submit
  - Step 3 > Give Me All Stations > Next
  - Step 4 > File Type: Excel > File Format: Row >Generate File to Download
  - Step 5 > Download FileSave the Excel file as Greenwood Lake Data.
2. The Excel file shows columns for many water test parameters. Scroll to the right and look at the data sets in the file. One of the most important is dissolved oxygen.
3. Highlight the "sample dates" column and copy to a new worksheet (Excel Menu: insert > worksheet). Paste the dates.
4. Rename the new worksheet: Right click (Mac: Control Click) on the tab at the bottom of the sheet and rename.
5. Return to the data sheet and select the Dissolved Oxygen (DO mg/l) data and paste next to the date column.
6. Notice the dates are not consecutive. Before you make your graph, highlight dates and DO, then Go to Data on the toolbar and sort Col A. The DO will sort with the dates, and you can make your graph.
7. Use the Graph Wizard (Windows) or Chart Wizard (Mac) to make a line graph with your data. In step three be sure to include a title and label x and y. Place the legend at the bottom of the graph and include major gridlines on both the x and the y axis.
8. Go to the Excel menu Graph (Mac: Chart) > Location > as new sheet. You can edit the graph using the Excel menu: Graph (Mac: Chart) > Chart Options.
9. Copy the graph and paste it into a Word document. Research and write a paragraph about why dissolved oxygen is so important to lakes and rivers. Use a browser ([www.google.com](http://www.google.com))

or [www.ask.com](http://www.ask.com)) to get information. Hint: use the history tab in the browser to easily switch between your page on the watershed website and your search page.

10. What is the relationship between dissolved oxygen and temperature? Look it up and write a second paragraph. Give details. (Google)

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11. There are many reasons for changes in dissolved oxygen in a lake. Temperature is only one reason for DO to fluctuate. However, see if you can find a broad relationship. Lake temperatures are generally higher in the summer. Use a highlighter pen and highlight the sections on the graph between June and September of each year. When do the lowest levels of Dissolved Oxygen occur, summer or other seasons? \_\_\_\_\_

12. Now that you have seen archived data, check out current conditions!  
Go to Data & Mapping> Real Time Data. Look over the places where real time or near real time data is being recorded and reported to the Seminole WaterAtlas Website. There are two on Lake Jesup. Choose the one closest to Soldiers Creek, on the west side of the lake.

13. Click on the fish and question mark in the Dissolved Oxygen square and read the text. Write a paragraph about the concentrations of dissolved oxygen needed by fish, and the effects of low dissolved oxygen. Give details.

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14. What is the most likely cause of the daily fluctuation of dissolved oxygen levels?

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