



Dear Friend of LAKEWATCH, June 29, 2009 Florida LAKEWATCH
records show that **Irma in Orange County has been sampled by LAKEWATCH volunteers for a total of 22 months**. The raw data are enclosed in this Data Report as tables and graphs. As you look through the Data Report, you may ask “What do these numbers mean?” or “How can this information be useful to me?” We’ve provided you with the following summaries that describe two common ways in which your LAKEWATCH data can be used.

The first summary, the Trophic State Summary describes how and why Irma is classified into one of four categories called Trophic States. The second summary, Florida Lake Regions Summary, places Irma into one of forty-seven Florida Lake Regions.

In addition to these summaries the following handouts are available upon request or can be downloaded from our web page if you would like more information about how to interpret the data, trophic states or lake regions:

- *Explanation of the Florida LAKEWATCH Data Packet* — leads you through the tables and graphs and shows you how to spot trends and patterns;
- *Trophic State: A Waterbody's Ability to Support Plants, Fish, and Wildlife*— explains the four trophic states used by the Florida LAKEWATCH program ;
- *Florida Lake Regions: A Classification System* — explains the development of 47 Florida Lake Regions and discusses why it's important for you to know which Lake Region your lake is in.

We realize that this is a lot of reading material. However, being familiar with this information can help you become more effective in the water management arena. For example, you can communicate more effectively with water management professionals; develop management goals for your water body; establish a baseline of water chemistry for future reference; or document changes that might be occurring.

We encourage you to share information from your data packet with others so they can become better informed. We can provide data in printed form, on computer disk, or via e-mail. Please don't hesitate to call us with your questions or comments.

Sincerely,

Daniel J. Willis
Florida LAKEWATCH Regional Coordinator

Enclosures

Trophic State* Summary

Irma has been sampled in the Florida LAKEWATCH program for a total of **22** months. To determine the trophic state classification for **Irma** we calculated averages from **October 17, 1994** to **March 20, 2009** for each of the four LAKEWATCH water chemistry parameters (total chlorophyll, total phosphorus, total nitrogen, and water clarity) and compared those averages with the four Trophic State ranges*. The results are as follows:

- total chlorophyll for Irma is 18 $\mu\text{g/L}$ which falls in the **eutrophic** range.
- total phosphorus for Irma is 55 $\mu\text{g/L}$ which falls in the **eutrophic** range.
- total nitrogen for Irma is 761 $\mu\text{g/L}$ which falls in the **eutrophic** range.
- water clarity for Irma is 4.7 feet which falls in the **eutrophic** range.

How LAKEWATCH Determines Your Waterbody's Trophic Classification

It's possible that one or more of the four water chemistry parameters used above fell into different trophic ranges. (For example, a waterbody may have water clarity in the *oligotrophic* range, and its total nitrogen levels may be in the *eutrophic* range.) When one or more of the four LAKEWATCH parameters falls into different trophic ranges, **LAKEWATCH uses the total chlorophyll averages to determine the overall trophic state**. Since the total chlorophyll measurement indicates how much algae is actually being produced in a waterbody, it's the most direct indicator of biological productivity. The other three parameters are more limited in that they only provide information about the *potential* for biological productivity.

Don't be alarmed if LAKEWATCH parameters for your waterbody fall into different trophic ranges. If this happens, it simply suggests that you might want to take a closer look to determine why. Feel free to talk with the LAKEWATCH staff to see if there is cause for concern or if perhaps further study is warranted.

*** These criteria were developed by two lake scientists, Forsberg and Ryding in 1980. For more information, see the *Trophic State: A Waterbody's Ability to Support Plants, Fish, and Wildlife* handout .**

Florida Lake Regions* Summary

Which Lake Region is Irma in?

Irma is located in the Orlando Ridge Region which is described as:

This is an urbanized karst area of low relief, with elevations from 75-120 feet. Phosphatic sands and clayey sand are at a shallow depth. Lakes in this region can be characterized as clear, alkaline, hard-water lakes of moderate mineral content. They are mesotrophic to eutrophic, but it is difficult to distinguish between effects of urbanization and natural phosphatic levels. Lakes are more phosphatic and green than the Crescent City/Deland Ridges located to the north, and only slightly more than the Apopka Upland located to the west.

How does Irma compare to other lakes in its region?

Irma has been sampled by LAKEWATCH volunteers from **October 17, 1994** to **March 20, 2009** for a total of **22** months. An average has been calculated for each parameter sampled (total phosphorus, total nitrogen, total chlorophyll, and water clarity or "Secchi Depth" and is referred to in the table below as the "Average for Irma". Averages were also calculated for other lakes in the Orlando Ridge Region. These averages have been grouped into ranges from low to high and are shown in the table below. Using the table, you can see how Irma compares to other water bodies in this region.

Orlando Ridge Region				
	Total Phosphorus (µg/L)	Total Nitrogen (µg/L)	Total Chlorophyll (µg/L)	Secchi Depth (ft)
Average for Irma	55	761	18	4.7
Low Range ¹	6 - 21	118 - 650	<1 - 14	1.3 - 3.3
Low to Middle Range ²	21 - 31	650 - 761	14 - 22	3.3 - 4.3
Middle to High Range ³	31 - 47	761 - 940	22 - 35	4.3 - 6.2
High Range ⁴	47 - 179	940 - 2177	35 - 116	6.2 - 26.6
Number of lakes used to define each range	89	89	89	85

Keep in mind that if the number of lakes that were used to define each range (shown in the bottom row of the table) is small, the range of water chemistry conditions listed may not present an accurate picture of your Lake Region's typical characteristics. Don't be alarmed if Irma is at one end of the spectrum (High Range or Low Range) or perhaps outside the range altogether. The existence of an extremely high or low value merely indicates there are factors you might want to take a closer look at in order to identify the cause. If you have a concern, we encourage you to talk with the LAKEWATCH staff about it.

¹Low range represents the minimum value to 25th percentile. This means that 75% of the lakes sampled in this study have values higher than Irma.

²Low to middle range represents the 25th to 50th percentile. This means that 50% of the lakes sampled in this study have values higher than Irma, and at least 25% of the lakes sampled have values lower.

³Middle to high range represents the 50th to 75th percentile. This means that 25% of the lakes sampled in this study have values higher than Irma, and at least 50% of the lakes sampled have values lower.

⁴High range represents the 75th to maximum value. This means that at least 75% of the lakes sampled in this study have values lower than Irma.

* This classification system was created by grouping lakes based on similarities in physiography, geology, soils, hydrology, water chemistry, vegetation, and climate. This project resulted in the definition of 47 regions, which are described in a final report Lake Regions of Florida (Griffith, G.E., et al. 1997), published by the U.S. EPA (EPA/R-97/127). For more information see the Florida Lake Regions Classification System handout.