

## News From the Watershed

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Jennifer will be taking a few weeks off from writing, to concentrate on her most recent adventure, motherhood. In her last article, she covered some delicious dairy recipes for Super Bowl Sunday. Unfortunately for her and her husband, they did not get to enjoy any of the treats because her son was born during the first quarter of the game. Mother and son are doing fine and bonding during her time off from work. In the interim, Jennifer's colleagues in the Natural Resources Department will be trying their hands at filling in the gap.

Right now, we are at the mid-point of the dry season in Florida, and though there were some hopes that the El Niño conditions in the Pacific would bring us increased rainfall, those forecasts didn't materialize. Most of our rainfall occurs from June through October, averaging 35 to 40 inches of rain. During a normal dry season we tend to get an average of 15 to 20 inches of rain. The December 2006 rainfall was a little below average, and put most of Highlands County in the 'very dry' column on the Southwest Florida Water Management District's (SWFWMD) monthly report. January's rainfall was even further from its historical average.

According to the SWFWMD report, water levels for the district's sample lakes in the Lake Wales Ridge region, which includes six lakes in Highlands County and three in Polk County, decreased an average of 3 inches in January alone. This corresponds to an average lake level for the sample lakes that is 3.27 feet lower than what it was one year ago. Even though this number sounds drastically low, none of the lakes have reached their historical lows. For example, Lake Jackson is currently at an elevation of 99.42 feet, which is 3.04 feet down from its level one year ago, at 102.46 feet. Lake Jackson's historical low is 97.16 feet, which occurred in May of 1982.

There are many factors to consider when trying to understand the impact that rainfall, or the lack thereof, will have on our lakes. It is important to look at the watershed of a lake, which is all the land that drains, or sheds water, to a lake. In Highlands County, the water in a watershed can come from groundwater seeping through the soil or from sheet-flow and runoff. If a lake has a large watershed in comparison to its size, chances are that even a relatively small amount of rain will have a significant impact. If the watershed is small in comparison to the size of the lake, then a substantial rain event or a long period of rain would be needed to notice a change in lake level. An example would be to compare Lake Jackson with Lake Sebring. Lake Jackson is a 3500 acre lake with about 4500 acres of watershed. Lake Sebring is a 450 acre lake with a watershed of 7550 acres. This helps to explain why there is a drastic difference in water level changes between these two lakes. While Lake Jackson's water level has dropped over three feet since last year, Lake Sebring's deficit, only one foot, has not been nearly as noticeable.

It is also important to note whether a lake has inflows that contribute to its water level. These could be tributaries or streams that connect lakes together, or they could be drainageways collecting water from various sources. Either way, they contribute water to a lake in addition to direct rainfall.

Visually, some lakes appear to be lower in level than other lakes, or they can seem lower simply because sand bars have appeared. When water levels drop, the shoreline of a lake is further out than it used to be, exposing the lake bottom. The bathymetry, or bottom contours, of a lake can be changed by simple wave action. A lake is like a bowl of water with lots of sand on the bottom. If the water in the bowl is sloshed to and fro, the sand on the bottom will move and settle in a different spot. Essentially, this is why some of our lakes have a lot more exposed lake bottom than might have been seen in the past. In the recent past, severe changes in lake bottom contours were probably caused by hurricanes.

It is difficult to foresee how a lake will respond to rainfall. The upcoming rainy season may not be as productive as 2006. But have no fear. Eventually, the lakes will replenish, and probably hit their historical highs in the future.

For more information on selected lake levels and rainfall, visit the Southwest Florida Water Management District website at [swfwmd.state.fl.us](http://swfwmd.state.fl.us).