



Lake Lanier Update – Annual Inflow Statistics

Brett Whitin, Hydrologist

Issued: April 4th, 2008

Key Points:

- Inflow Volumes Over the Past 2.5 Water Years Have Been About 56% of Normal
- After a Low Inflow Winter, 2008 March Inflows Are Near Median Conditions

Figure 1 on the following page shows cumulative inflow volume into Lake Lanier for water years 2005 through 2007, and part of water year 2008. A water year is defined as the twelve-month period starting on October 1st of the previous calendar year to September 30th of the current calendar year. For example, the current water year (2008) started on October 1st of 2007, and will end on September 30th of 2008. The water year is broken up into this time frame to capture the annual hydrologic cycle. The water year begins with the start of the soil moisture recharge season, includes the maximum recharge (winter-spring), and ends after the season of maximum evapotranspiration (summer). In other words, it goes from “dry season” to “dry season.”

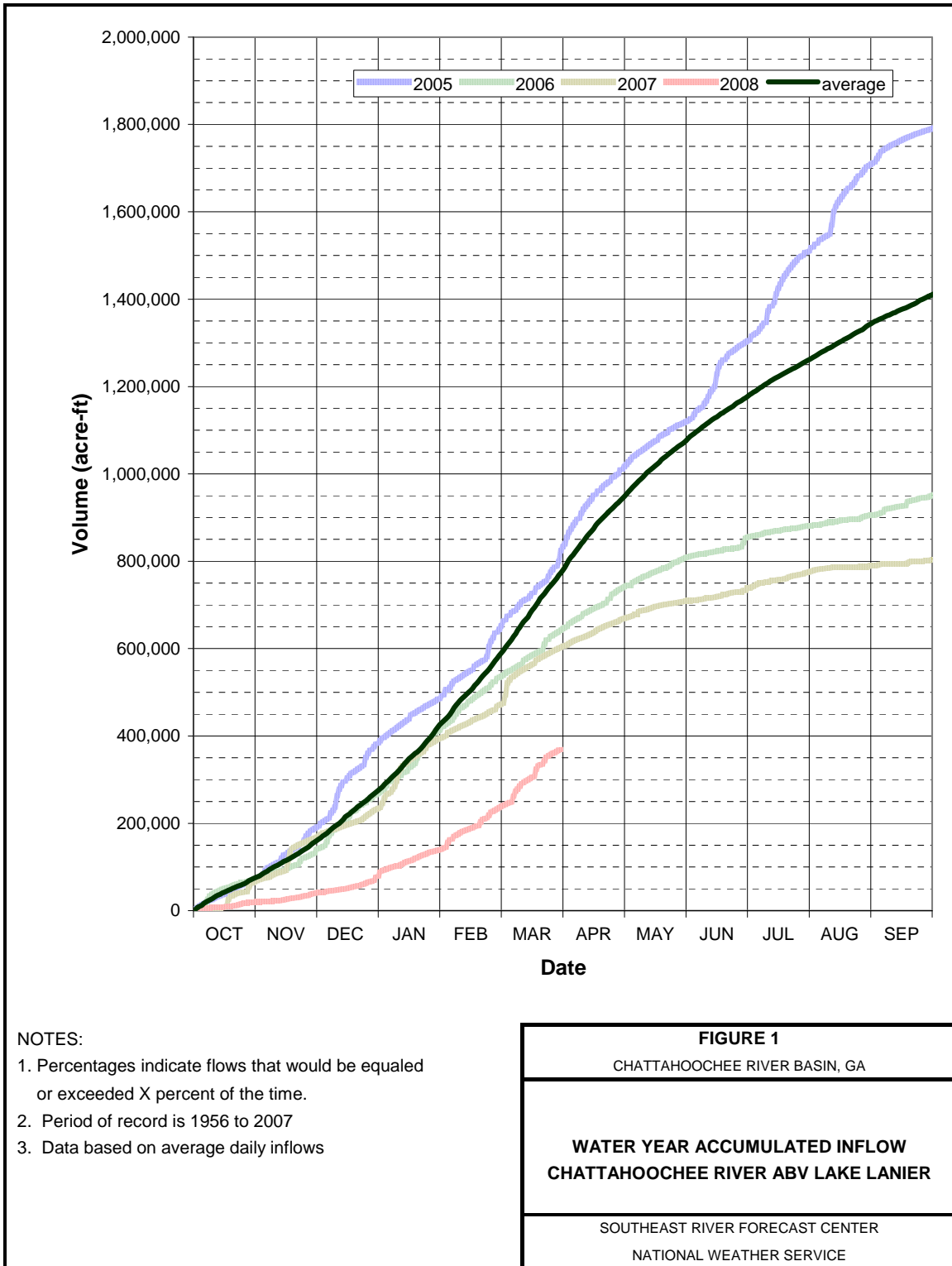
As seen in the Figure 1, water year (WY) 2005 was the last productive inflow year for Lake Lanier. That WY ended with a total of 1.80 million acre-feet of inflow. This is approximately 1.7 times the conservation pool volume in Lake Lanier, and 130% of the average WY inflow volume. Ever since then, the annual inflow volumes have been drastically lower. The following table summarizes the inflow volumes over the past few years, along with the averages:

	Inflow Volume (acre-ft)	% of Average
WY 2005	1,800,000	130
WY 2006	960,000	67
WY 2007	800,000	56
WY 2008	380,000 ¹	46 ²

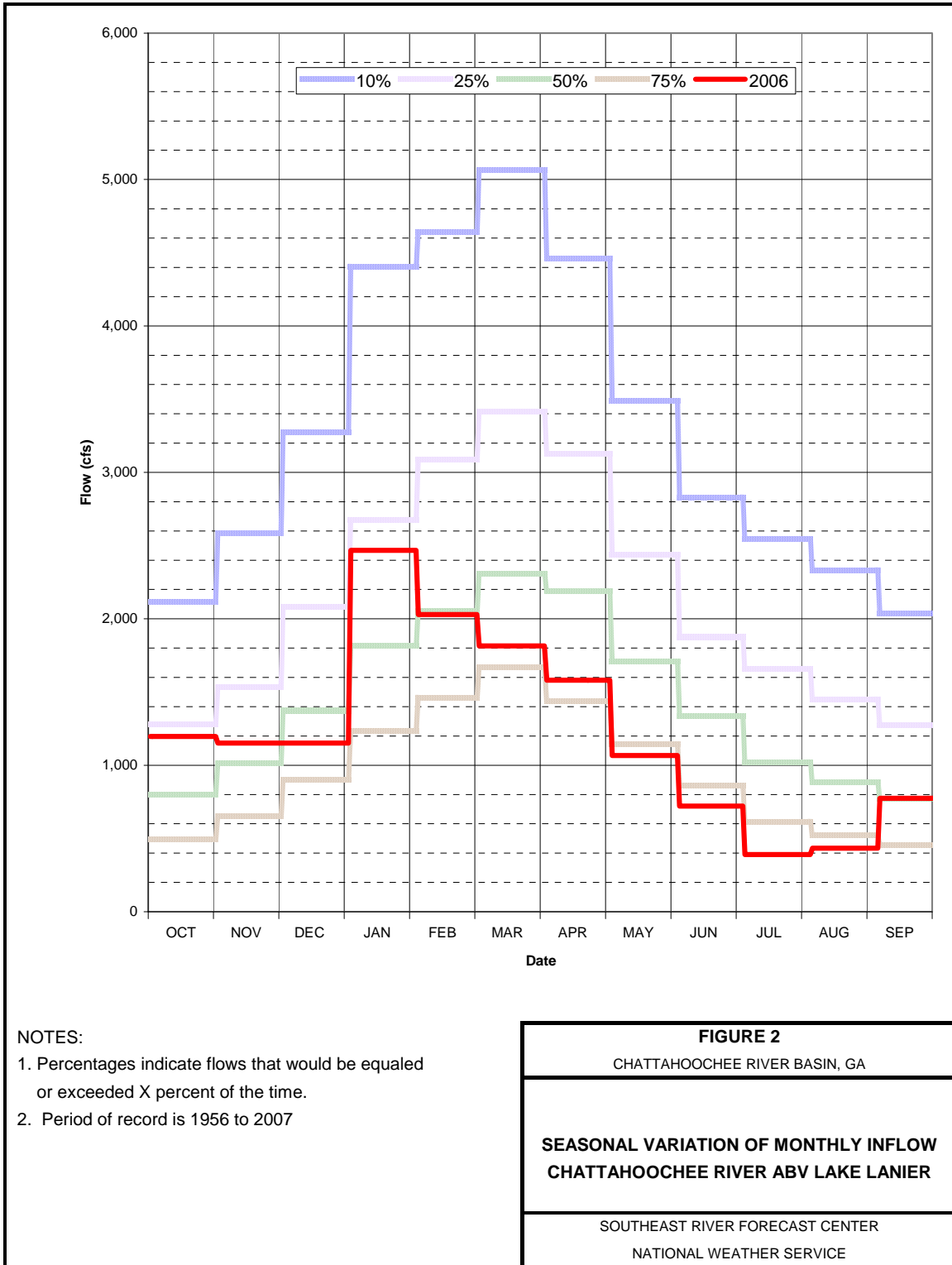
notes – ¹ inflow volume is based on the end of March
² percent of average as of March 31st.

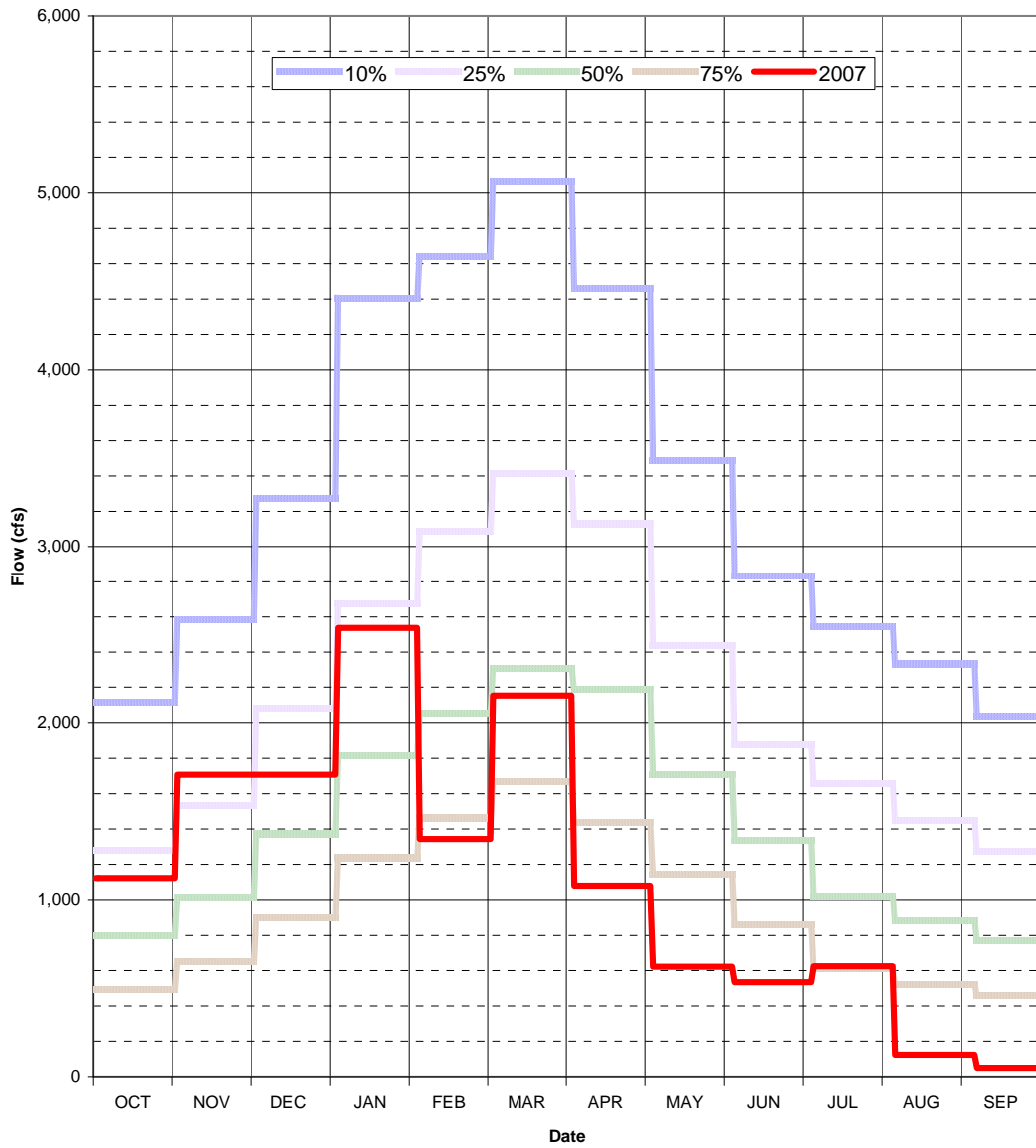
Over the past 2 ½ water years, the inflow volume has been approximately 56% of normal. The annual cumulative inflows have been dropping over the past two water years, and this water year is starting off well behind the average pace. The WY 2008 cumulative runoff volume as of March 31st was 370,000 acre-feet, which is 48% of average for this date. The current water year has gotten off to such a slow start for a couple of reasons – low baseflow and below-normal precipitation. Baseflows are the main inflow component during the beginning of a water year (fall), and they have been

extremely low this fall due to the extremely dry spring and summer of WY 2007. Precipitation has also been below normal for most of the fall and winter, which has only exacerbated the low inflow problem.



The following three figures show how Lake Lanier's average monthly inflows vary over the water year, and how the past few water years compare to exceedence levels.





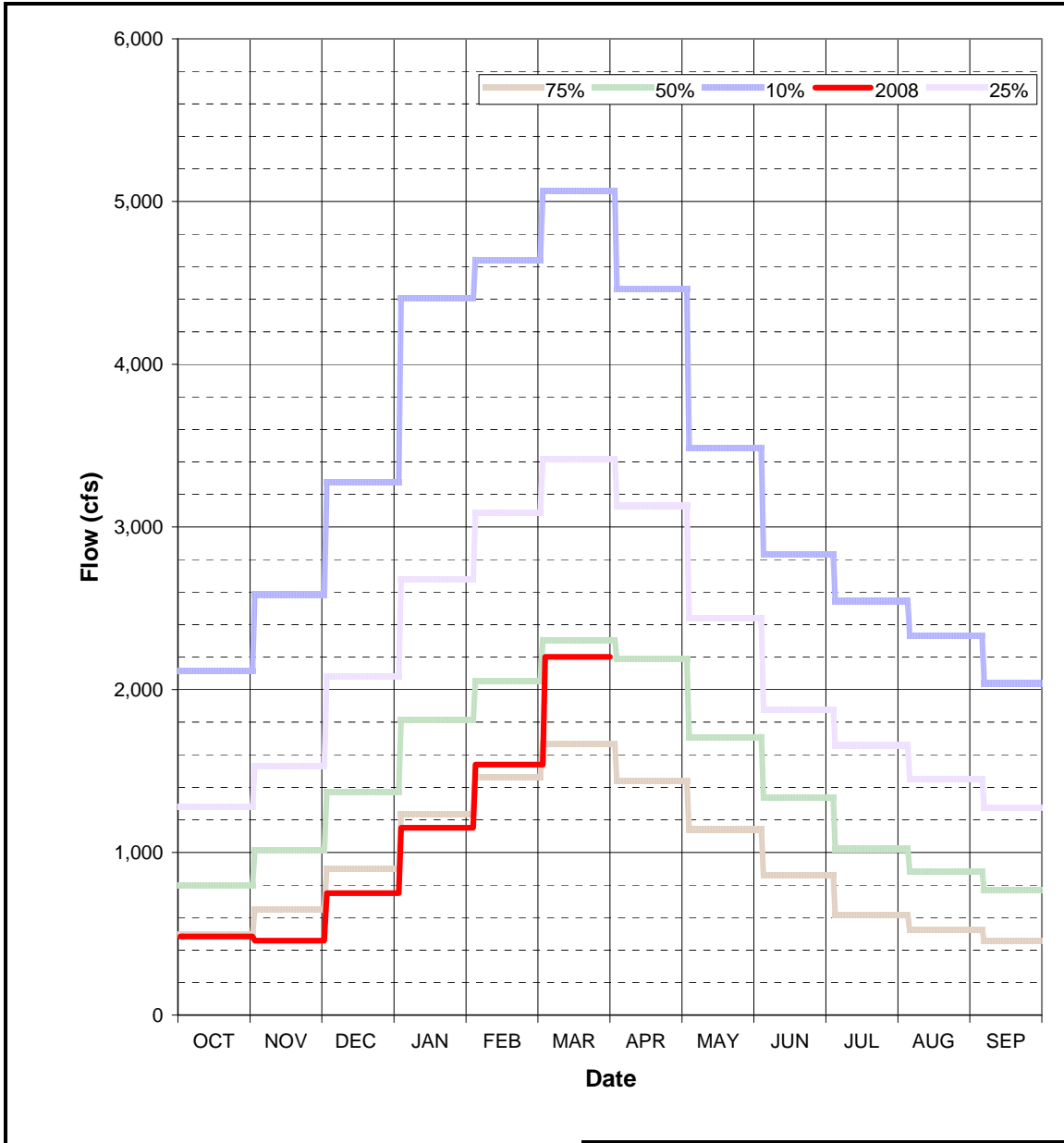
NOTES:

1. Percentages indicate flows that would be equaled or exceeded X percent of the time.
2. Period of record is 1956 to 2007

FIGURE 3
CHATTAHOOCHEE RIVER BASIN, GA

**SEASONAL VARIATION OF MONTHLY INFLOW
CHATTAHOOCHEE RIVER ABV LAKE LANIER**

SOUTHEAST RIVER FORECAST CENTER
NATIONAL WEATHER SERVICE



NOTES:

1. Percentages indicate flows that would be equaled or exceeded X percent of the time.
2. Period of record is 1956 to 2007

FIGURE 4
CHATTAHOOCHEE RIVER BASIN, GA
SEASONAL VARIATION OF MONTHLY INFLOW CHATTAHOOCHEE RIVER ABV LAKE LANIER
SOUTHEAST RIVER FORECAST CENTER NATIONAL WEATHER SERVICE

As you can see from these figures, March is the month where we typically see the largest inflows, with the three largest months being February through April. Figures 2 and 3 show how WY 2006 and 2007 stack up against various exceedence thresholds. By looking at these two figures you can see that the fall and winter for both of these water years were fairly productive. However, the spring and summers were well-below the median (50% exceedence) level, resulting in well-below normal inflow years. Figure 4 shows a slightly different story for WY 2008. The current water year started off very dry, tracking close to the 75% exceedence level through the winter months. **However, this March has been much more productive.** The average inflows for this March are just slightly below the median level of 2,300 cfs. The 2007 WY had a March inflow similar to this year, but the rest of the spring and summer was well below normal. The year's March pace will need to continue through the rest of the spring and summer in order to be in good shape for the start of next water year.

Because this fall and winter were so dry, it is unlikely that the cumulative inflow volume will be larger than what we have seen the past couple of water years. However, near-normal inflows this spring and summer could help get things back on track for next water year.