



Critical Issue: Will Our Reservoir Refill By Spring?
A Focus on Lake Allatoona – Georgia

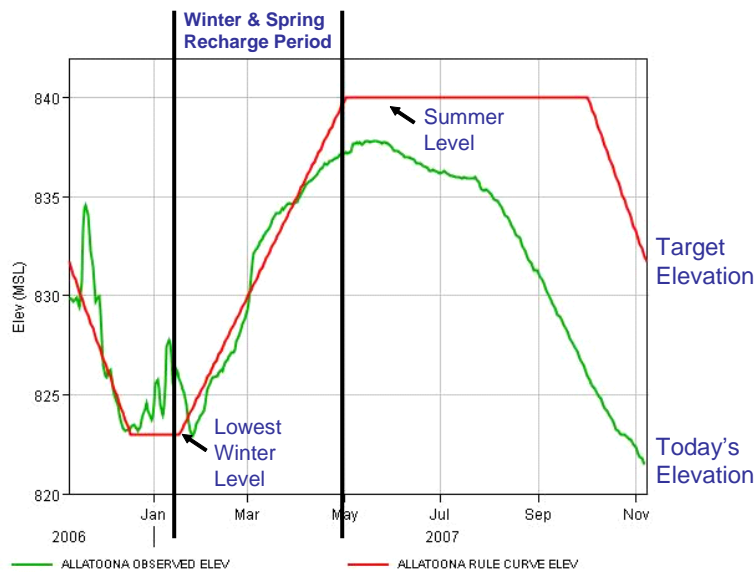
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Reservoir operators typically have guidelines established for seasonal lake elevation levels. These target levels are often defined in operating “rule curves.”

For larger reservoirs such as Lake Allatoona in North Georgia, the reservoir is drawn down in winter to allow for anticipated winter and spring rains. This action also allows for flood storage capacity, if needed.

The seasonal rainy period tends to fill up the reservoirs to their summer pool levels, which works quite well for summer recreational needs.

Lake Allatoona “Rule Curve”



The U.S. Army Corps of Engineers rule curve for Lake Allatoona calls for the following target levels.

April 30 – September 30 = 840.0 feet
December 15 – January 15 = 823.0 feet

Thus, each year there is a fall and winter draw-down, followed by late winter and spring rains, which allow the lake to refill to full summer pool levels.

With the current exceptional drought in place over the Lake Allatoona drainage, you might wonder about the possibility of winter recharge. Since the reservoir first reached

full pool in 1951, there have been 7 years where the lake did not reach the 840-foot summer pool: 1953, 1954, 1955, 1956, 1986, 1988 and 2007.

*** 88% of the time (49 out of the past 56 years) Lake Allatoona has refilled to full pool level (840 feet) by summer.**

This recharge period can occur fairly fast or slow, depending on the winter and spring rainfall patterns.

From the date of lowest winter level to the date reaching the summer pool of 840 feet:

*** The shortest refill time was only 13 days (from heavy rains in January of 1972, while the longest time was 207 days in 1987**

*** The average time for Lake Allatoona to refill is 95 days**

The years that the lake did not refill align well with established drought years in Georgia:

1953 – 1956

1986 – 1988

2007 – Current Exceptional Drought

The current Lake Allatoona Elevation is 821.4 feet. Let's look at past records to see historical probabilities of falling further.

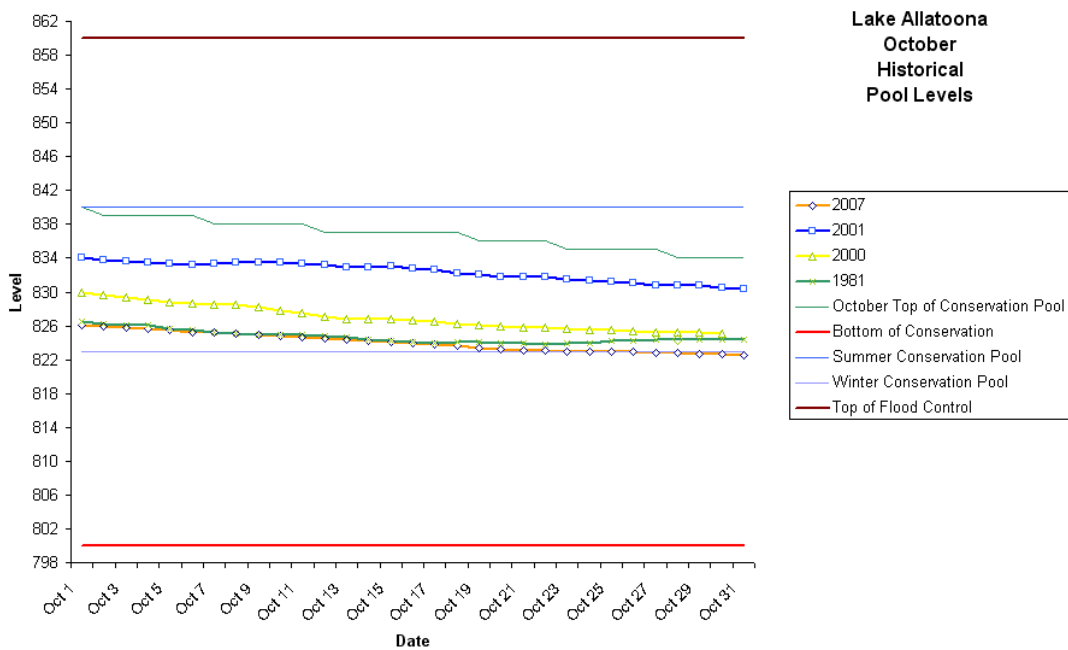
Lake Allatoona Has Fallen Below...	Number of Years	Percent of Years Reaching This Level
821.4 feet	Current Level	
820 feet	9 (last time in 1963)	16%
819 feet	7	12%
818 feet	4	7%
817 feet	4	7%
816 feet	3	5%
816 feet	1	1%
809.34 feet	Record Low December 4, 1954	

* The above events all occurred prior to the change in the regulation rule curve from 820 to 823 feet in 1968.

Let's take a look back at the record books to see what Lake Allatoona did during other dry years.

Year	Lake Elevation	What Happened?
November 1, 2007 (this year)	822.33 feet	Down 3.8 ft. since October 1
November 1, 2000	824.90 feet	Continued falling to 822.37 feet on Jan. 5, 2001, and then rose to 843.0 feet in April 2001
November 1, 1981	824.38 feet	Continued falling to 820.86 feet on Dec. 23, 1981, and rose to 847.95 feet in February 1982.

Note: Many years, Lake Allatoona will lower to the 822 to 823-ft. level (slightly below winter pool), but in 1985 it reached 821.52; in 1986 it reached 821.24; and in 1987 it reached 821.10. Lake Allatoona's all time low is 809.34 ft on Dec 4, 1954.



The above graph shows Lake Allatoona 2007 pool levels this October compared with previous dry years. It is interesting to note that the current lake pool level is below other recent drought years of 1981 and 2001.

Summary:

Most of the time (88%), Lake Allatoona does refill to target levels by Spring. However, there have been years when this recharge did not occur. These years correspond closely to past drought years.

Note: Specific forecast information for Lake Allatoona and Carters Lake will be issued by the SERFC tomorrow.

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