



Location: **Inflows into Lake Allatoona - Georgia**

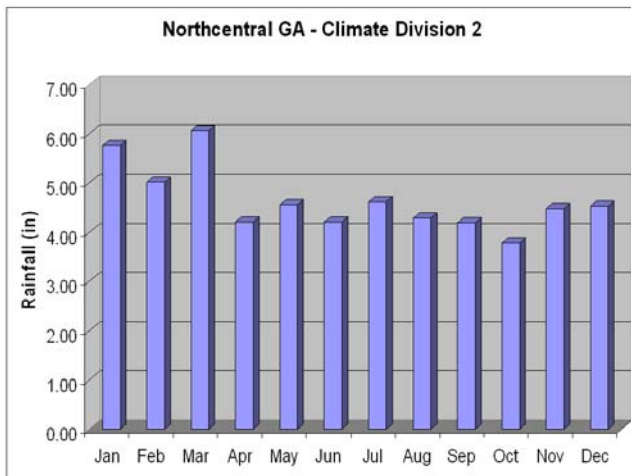
Updated: October 23, 2007

**Our Forecast – Key Points**

- Less than a 2% Chance that Average Inflows into Lake Allatoona will Reach Average Outflows through November.
- Moderate La Nina Points Towards a Tendency for Continued Below-Normal Rainfall Heading into Winter.
- Better Chances for Rain the Rest of October, but Not Likely to Significantly Help Overall Reservoir Conditions Before Drier Weather in November.

**Hydrometeorological Basin Analysis**

October is typically the driest month over North Georgia. One would not expect significant recharge into Lake Allatoona during the fall season. Furthermore, the month started off with temperatures well above normal which enhanced evaporation rates.

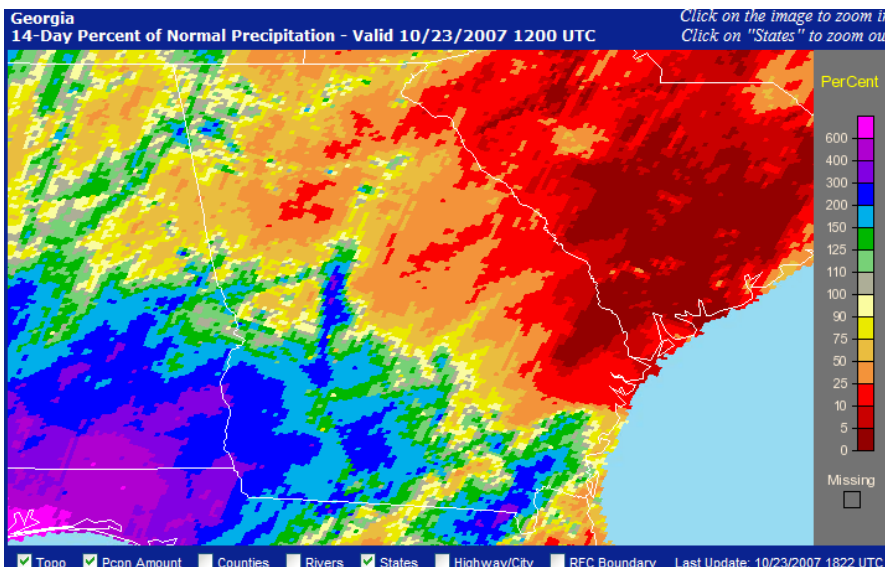


Seasonal Rainfall

Towards the middle of the month there was a modest increase in rainfall events. Generally, 1.0 to 2.0 inches of rainfall fell over the basin which is only slightly below normal.

However, due to the fact that October typically does not receive much rain and that upper soils are so dry and likely soaked up most of the rain, actually runoff into the lake would be minimal.

Inflows in the lake have been running well below seasonal normals for the month (-16 cfs vs 924 cfs).



Over the past few weeks, rainfall over the Lake Allatoona Basin has been only slightly below normal.

## Looking Ahead into Early November

The frequency of rain events picked up a bit heading into mid October. A cut off low has brought in much needed moisture from the Gulf of Mexico and is expected to remain nearly stationary across the lower Mississippi Valley until late in the month. This is a fairly unusual pattern for this time of year and one that has the potential for increasing rain chances.

While this has the potential to increase rainfall rates, unfortunately the low level wind flow (850 mb jet) might not be strong enough to transport much heavy rainfall far inland. Recent rain events have brought heavier rain to areas south and west of Georgia, but rain has consistently tapered off nearing North Georgia.

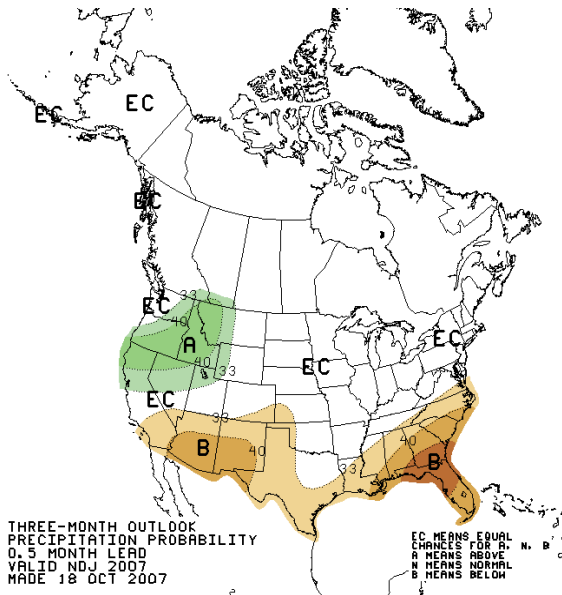
It is not uncommon for numerical weather models to over-forecast heavy rain for North Georgia when the ground is as dry as it is. In the last rain event, from October 21<sup>st</sup> to October 23<sup>rd</sup>, models were predicting an areal average of 1.0 to 1.5 inches of rain, however only a quarter to half inch resulted. Heavy rain has been occurring across parts of Mississippi and Southwest Alabama but it has tended to decrease in intensity and coverage before it reaches Georgia.

We appear to be about two to three weeks behind schedule in transitioning into a normally cool, dry autumn in North Georgia. This could mean the first half of November could be what October is normally like, dry.

With the cut off low to our west, the next two weeks will see occasional chances for rain, however much of this rainfall will be scattered in coverage. The main hydrologic benefit will be to wet upper soils, with only limited runoff or significant reservoir recharge anticipated.

Once this low moves off or dissipates, which is anticipated towards November 1<sup>st</sup>, dry conditions will once again prevail.

## Longer-Term Outlook



This map is the seasonal outlook distributed by the NWS Climate Prediction Center (CPC). This outlook is for the months of November and December of 2007 and January of 2008.

The white category denoted by the "EC" symbol stands for "Equal Chances." "Equal Chances" indicates that there is a 33.3% chance of above-normal rainfall, a 33.3% chance of normal rainfall, and a 33.3% chance of below-normal rainfall.

An EC outlook indicates that there are no clear signals to indicate that the

area is going to deviate above or below normal during this time frame.

The dark brown area indicates a 50% chance of below normal rainfall. This means that there is a 50% chance that there will be below-normal rainfall, a 33.3% chance of normal rainfall, and a 17.7% chance that there will be above-normal rainfall.

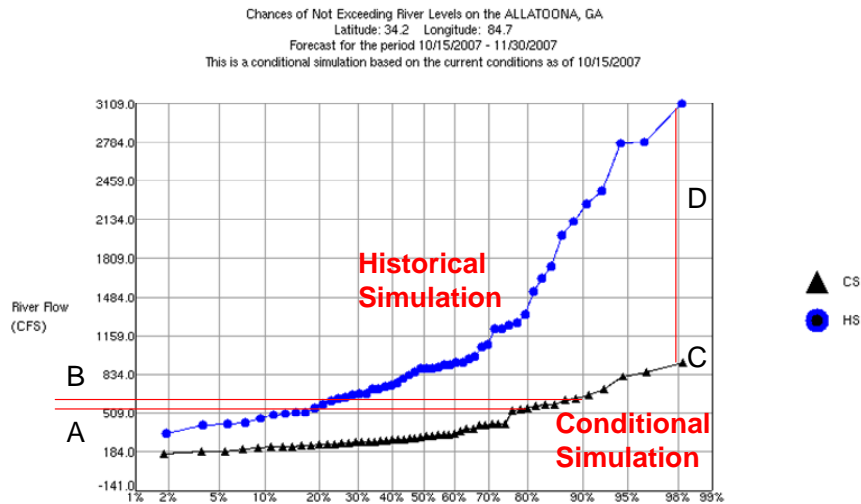
The forecast of below-normal rainfall centered along the South Georgia/North Florida border is based to a large degree on climate models expecting moderate to strong La Nina conditions in the equatorial Pacific through the winter.

The La Nina event is expected to intensify, and these conditions look to continue through most of the winter and into early spring.

The Lake Allatoona Basin is towards the northern edge of the below-normal precipitation area. This means there is a 40% chance of below-normal rainfall, 33.3 chance of normal rainfall, and 26.7% chance of above-normal rainfall.

While below-normal rainfall is forecast, it is important to remember that there will be a number of rain events during this period, some of which will bring heavy rainfall. However, in consideration of the alleviation of the overall drought, the frequency of rain events, intensity of rain, and overall basin coverage will be key factors to watch.

### Technical Discussion



The above graph is an ensemble stream flow non-exceedance plot looking at potential inflows into Lake Allatoona through the end of November. 1 cfsd (cubic foot per second day) is the volume of water represented by 1 cubic foot per second for 24 hours. This is equivalent to 86,400 cubic feet, or 646,317 gallons. Recent average outflows from Lake Allatoona have been 877 cfsd with a minimum of 319 cfsd and a maximum of 1802 cfsd. Average inflows into Lake Allatoona so far this month have averaged -2% of normal, indicating outflows and evaporative losses have exceeded inflows. For quite some time now, there has been a significant discrepancy between inflows and outflows. For this reason, the pool continues to fall.

The above graph gives an indication of what might be expected for inflows over the next 45 days. The historical simulation (HS) represents an historical model simulation of inflows from 1951 through 2004. Compare this historical simulation to the conditional simulation (CS) represented by the triangles and black line on the graph. The CS is produced by re-running each of those 53 years using current soil moisture conditions (as of October 15) which are much drier than normal. The conditional simulation (model forecast) indicates that there is less than a 2% chance of having an average inflow that equals or exceeds the average outflow over the next 45 days.

A – There is an 80% chance that daily average inflows into Lake Allatoona over the next 45 days will not exceed about 510 cfs.

B – There is a 90% chance that daily average inflows into Lake Allatoona over the next 45 days will not exceed about 600 cfs.

C – There is a 98% chance that daily inflows into Lake Allatoona over the next 45 days will be less than daily average (historical) inflows over the next 45 days.

D – This indicates the “gap” between historical inflows and modeled inflows using current soil moisture.

Note: This forecast is for average inflows for the 45-day period. It is likely that individual daily flows will reach or exceed outflows from time to time.

The above information likely will change in some form in the future. It is based on existing soil moisture and outflow information as of 10/15. Both of these parameters are likely to change with time. Updates will be issued about every two weeks. These updates will incorporate any additional rainfall or changes to outflows.

For more information, contact Todd Hamill, John Feldt, or Brad Gimmestad at (770) 486-0028 ext. 1.