

A Brief History of Drought in Georgia

Compiled by María Helena Dolan, November, 2007**

BACKGROUND: The U.S. Geological Survey (USGS) began documenting precipitation/drought in Georgia in the 1890s. It continues to do so. Study their records, as well as those of the U.S. Weather Bureau, and National Oceanic and Atmospheric Association (NOAA) and it is clear that Georgia's precipitation levels have varied widely over the almost 120 years of records. Incontestably, we have suffered droughts of varying severity and length numerous times during this period.

One fact is clear: Our water supplies for municipalities, industries, power generation, agriculture, forests, wetlands, stream water quality, navigation, and recreation have been severely impacted over time. Unfortunately, Georgia has not been at all proactive in regulating consumption, preferring instead to encourage usage through largely unregulated growth of population, industry and agriculture. If policy-makers and citizens would only consider the larger picture of how the hydrological cycle works, and what our state can reasonably expect based on historic experience, I submit that we would be making dramatically different choices than we are today re: consumption patterns.

In an effort to assist in this process, I have compiled a summary of the **most notable** droughts in Georgia history since 1900, judged by the severity of their impact. I did not include **all** droughts:

1. **1903–05 drought:** According to the USGS, this is “The **earliest recorded severe drought in Georgia.**” In **1904**, the U.S. Weather Bureau reported, “Levels in streams and wells were the lowest in several years. Many localities had to conserve water for stock and machinery and many factories were forced to close or operate at half capacity.”

2. **1924 – 1927 drought:** The U.S. Weather Bureau detailed, “The rivers in many places reached the lowest stages ever known. The scarcity of water had a profound influence on industrial and agricultural conditions in Georgia.” NOTE: **This was the first time Georgia media used the term “Drought of the Century”**

3. **1930 – 35 drought:** The USGS reports that the **severity of this drought “exceeded a 25-year recurrence interval*** in central and southwestern Georgia and affected much of the United States. In extreme northern and southeastern Georgia, the recurrence interval was 10–25 years. “ This period was referred to as the **“Drought of the Century.”** [NOTE: The Library of Congress (LOC.gov) contains collections of photographs taken of abandoned and eroded farms as well as painfully destitute farmers and sharecroppers whose plight resulted from this calamity. In fact, the character of our state began fundamental demographic change at this time, as desperate people migrated from parched lands and closed factories to urban areas or other states.]

4. **1938 – 44 drought:** Many of the same areas that suffered during the 1930–35 drought endured severe drought again. “In the upper Coosa and Chattahoochee River basins, **the recurrence interval exceeded 50 years**, and in much of central and southern Georgia, it exceeded 25 years” according to USGS. Again, land abandonment as well as industry closures resulted.

5. “The **1950 – 57 drought** (caused) most streamflows (to have) recurrence intervals exceeding 25 years.” (USGS) According a recent issue of the farm publication Farm27, “The...catastrophic drought in 1954...devastated the crops of the area.” This event earned the sobriquet **“Drought of the Century.”**

6. **1976 – 78** “Beginning in **1976**, the weather over southwest Georgia and southeast Alabama turned towards a persistent pattern of late-summer drought. Parts of the Chattahoochee Valley had been under late-summer drought stresses since 1976.” (USGS)

The website of the Federal Emergency Management Agency (FEMA) states that on July 20, 1977, a **Federal Disaster was declared** due to **severe drought** in Alabama and Georgia. [Note that this drought set us up for the droughts in the 1980s.]

7. The **1980 – 82 drought** “**resulted in the lowest streamflows since 1954** in most areas, and the lowest streamflows since 1925 in some areas. Lake Sidney Lanier reservoir levels recede(d) to about 2 feet above the record minimum lake level...**Pool levels at four major reservoirs receded to the lowest levels since first filling.** Nearly continuous declines were recorded in some wells for as long as 20 consecutive months, and water levels remained below previous record lows for as long as nine consecutive months.” (USGS)

8. The **1985 – 89 drought** “(caused) streamflows in northern Georgia (to be) **near the lowest (levels) of the 1900’s.** The U.S. Army Corps of Engineers drastically decreased water release from Lake Lanier in 1986. However, lake levels eventually filled to about 2 feet above the record minimum. **This was yet another “Drought of the Century.”**

The September 2006 issue of New Scientist magazine documented that “**1987 was the warmest year (globally) since records began.**” (Additionally, the article explicates that even the coldest years in the 1980s were overall warmer than the warmest years of the 1880s.)

By 1988, “the drought had reached **recurrence intervals of 50–100 years** in extreme northern Georgia, 10–25 years in central Georgia, and less than 10 years in southern Georgia.” (USGS)

NOTE: Government entities in the United States keeping records since the 19th century also report that 1987 was the warmest year ever tracked. Additionally, they agree that the coldest years in the 1980s were warmer than the warmest years of the 1880s. It is important to realize that this fact also means that **even more surface water was lost to evaporation than normal, compounding drought effects.**

9. The **1998 – 2003 drought** was severe enough that **even the BBC** (British Broadcasting Corporation) beginning in 1999 reported on the “**Drought of the Century**”. Typical headline = “Drought agony continues for US farmers.”

During the 1998 - 2003 period, streamflow-gauging stations throughout the state established new record daily low flows, with recurrence intervals ranging from about 20 years to greater than 50-year recurrence interval low flows. By the summer of 2000, the Georgia Department of Natural Resources (DNR) had to implement statewide restrictions on outdoor water use.

In 2001, the US Geological Survey confirmed that during 2000, Alabama, Florida, Georgia, Louisiana, and Mississippi suffered the driest May–October period on record ever. (Yet between 1990 and 2000, **water use in Georgia increased 30 percent.**)

10. **The drought of 2007 began in 2006**, with lower than normal rainfall. The Oct. 3, 2007 issue of Southeast Farm Press reported that “John Beasley, University of Georgia Extension peanut specialist, said...that everyone who was around at the time says **the current drought is worse than the one in 1954.**”

At the end of August 2007, the Associated Press reported that National Weather Service’s Climate Prediction Center believes that “this year’s exceptional drought could continue well into next year, with below-average rainfall meaning months more of brown crops, dead grass and exposed lake bottoms.” **Also a “Drought of the Century.”**

In the 21 years since 1986, Georgia had the following precipitation levels:

Normal = 6 years

Above-Average = 3 years

Drought = 8 years

Severe Drought = 4 years

Thus: Normal + Above-Average years = 9 out of 21 years, or 42.86%

Drought + Severe Drought years = 12 out of 21 years, or 57.14%

Despite recent rainfalls, **all indications are that we will continue to be afflicted by drought more often than not. And the severity level will constitute a significant percentage of those drought periods.**

A reasonable conclusion to be inferred from this brief, tip-of-the- (melting) iceberg review would be that Georgia must now realistically implement clear, mandatory and standardized measures to:

1. Understand that drought is not only part of our lives, but an increasingly, a recurring part of our lives.
2. Water that is not used is available when water supplies are short, so we must curb water usage.
3. “More reservoirs” is not a rational response to drought, due to several factors, including the inevitable and large-scale evaporation issue.
4. We must understand the complete hydrological cycle and use that knowledge to rationalize water usage.

Sources include, but are not limited to:

<http://ga.water.usgs.gov/publications/ofr00-380.pdf>

U.S. Geological Survey Report 83-4158, USGS National water summary 1988-89, USGS Water-Supply Paper 2375

http://southeastfarmpress.com/mag/farming_maybe_havent_learned/index.html

<http://www.decaturdaily.com/decaturdaily/news/070830/drought.shtml>

http://www.farm27.com/index.php?option=com_content&task=view&id=22&Itemid=30

* The **recurrence interval** is the average time between droughts of a given severity. For instance, in a drought with a *25-year recurrence interval*, the low streamflow levels associated should occur, on average, once every 25 years. Also,

- The longer the interval, the more severe the phenomenon. Hence, a 25-year recurrence interval reflects a more severe drought situation than a 10-year level. And the 25-year interval is much less severe than a hundred year interval.
- When time frames are accelerated, we experience drought severity in an “unnatural,” unpredictable, and more critical fashion.

** NOTE: The author is a Quality Assurance and Test Engineer, Certified Quality Auditor (ASQ), Level II Thermographer and concerned citizen who lives in Decatur. She elected to add emphasis to some of the data.