

THIRTY-FIVE YEARS OF GEORGIA WATER USE INFORMATION: WHAT DO WE KNOW FROM THE DATA AND ITS TRENDS?

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Understanding the movement of water from its natural source, through its interaction with human activity, and the quantities of water consumed or returned back to the natural water system is paramount to resource sustainability and societal prosperity. Knowledge of the amounts withdrawn by source, surface water and ground water, and the amounts consumed or returned for further use, is necessary to effectively manage the water resources of Georgia to ensure that all water users have sufficient water supply to meet current and future needs. Water use information, including water withdrawals, deliveries, consumptive use, return flows and losses, have been collected and compiled in Georgia since 1980 as part of an ongoing cooperative agreement between the USGS, South Atlantic Water Science Center and the Georgia Department of Natural Resources, Environmental Protection Division. Statewide, annual water withdrawal totals have averaged 5.6 billion gallons per day since 1980 and showed a decrease from year 2000. During the 35-year history of the Georgia water-use program, natural and human-induced alterations have resulted in observed changes in water use. Driving forces behind the observed water-use changes include 1) population changes in number and location; 2) Five periods of major drought 3) Water conservation efforts and education programs initiated by state and local governments and water utilities, and; 4) changing water needs for power generation, industry, and agriculture activities.

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M. Harris comments: I know there are a lot of mark-ups and comments, but all in all I think it's a good abstract. The material you are covering will be of interest to multiple audiences. Keep this presentation in your repertoire; there will probably be requests/opportunities for you to present it at other conferences. It's fitting (and maybe ironic) that my WSC, the LMG, was reminded a few days ago about the basic guidelines for the content of conference abstracts. Apparently, supervisors have reviewed a few abstracts that don't follow USGS fundamental science practices. Here's what they sent out to us in brief: 1. Data that are published in approved reports, data releases, or databases can be included without reservation; 2. Interpretive statements drawn from approved reports can be included without reservation; 3. Provisional, unpublished data may be included with appropriate qualifiers--"Preliminary analysis shows an increase of about 7 percent in nitrate concentrations between 2008 and 2012."; 4. Interpretive statements attributing cause and effect should NOT be included UNLESS they appear in an approved interpretive report. The basic principle is that we should never use abstracts as the sole publication for important interpretive results. This reminder refocused my review of your abstract. And I have a couple of concerns with the interpretive statements in your abstract. My concern with the statements of "natural and human-induced changes...resulted in observed changes in water use" and "driving forces behind water-use changes in GA include..." are that they are interpretive statements based on water-use data that were published for 1980 – 2010, but 2015 data have yet to be published (right? I may be wrong). Also, these statements appear to me to be cause and effect statements (because of natural and human-induced changes, we observed water-use changes and they are due to 1 – 5 driving forces), or are the results correlation rather than causation? They will have to be backed up with explicit methodology and citations where necessary. I think you will be able to do that with driving forces 1 – 4. I am concerned about driving force #5, though. How do you make the connection between how water saving technologies and water efficiency measures effect changes in water use (I'm assuming decreases in withdrawals and consumption)? I'm sure you explain that in your presentation, I just want to make sure the connection between more efficient technologies/measures and decrease water use is either clearly expressed or that the results are worded in a way that doesn't imply "water saving technologies and water efficiency measures resulted in decreased water use" without any backup evidence. I've seen that in multiple water-use reports and presentations and the science program wants to move away from blanket statements like that. Please be vigilant in your interpretations.

Program reference: 4.5.1