

THE EVOLUTION OF GEORGIA'S INSTREAM FLOW POLICY

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Abstract. Georgia's instream flow protection policy has evolved over the past 30 years. The evolution of that policy has been influenced by incremental growth in our scientific understanding of the complex functions of our aquatic ecosystems. It would be naïve to not recognize that evolution of that policy has also been influenced by political and economic considerations. Aiding the continued evolution of Georgia's instream flow protection policy requires some appreciation of how these influencing factors interact to create the momentum required to move the policy forward.

BACKGROUND

Georgia's surface water resources include approximately 70,000 miles of streams and 418,000 acres of publicly owned lakes. The State is divided into four major physiogeographic provinces: the Blue Ridge, the Valley and Ridge, the Piedmont, and the Coastal Plain. In Georgia some 50 inches of annual average rain falls on 14 river basins; 13 of these originate entirely within Georgia. Surface water is the primary source of water supply in the Piedmont province, home to more than 65% of Georgia's population. Storage facilities are required to assure adequate water supplies during dry times. Stream flows are larger and generally more reliable in the major rivers of Georgia's Coastal Plain; however, the Coastal Plain has much greater reliance on groundwater for municipal, industrial, and agricultural uses.

Since the early 1970's, the Georgia General Assembly has passed laws that provide the Environmental Protection Division (EPD) of the Department of Natural Resources with regulatory tools necessary to manage the use of groundwater and surface water resources for any withdrawal in excess of a monthly average of 100,000 gallons per day. Assurance of adequate stream flows during these drought periods is of broad importance. Protecting these instream flows falls under the purview of EPD.

PRE-2001 LOW FLOW REQUIREMENTS

EPD has a coordinated low flow protection policy implemented through the collective efforts of several

permitting programs. Reviews of water withdrawal permit applications are coordinated for resolution of issues of competing water use, and for purposes of assuring that non-agricultural, post-1977 (i.e., non-grandfathered) water uses are accompanied by permit conditions that require protection of adequate stream flows. Georgia's instream flow requirements, as they relate to non-agricultural water uses, changed rather dramatically in 2001. The pre-2001 instream flow requirements were as follows:

1. A flow equivalent to the annual "7Q10", if the Division determines that such a flow would not produce unreasonable adverse effects to the stream or downstream water users. "7Q10" is defined as the lowest seven-day average instream flow expected to occur with a frequency of once in ten years.
2. A "non-depletable flow" (equivalent to the annual "7Q10" plus a pro rata share of the withdrawal requirements of previously existing downstream water users), if no unreasonable adverse effects to the stream or other water users are foreseen.
3. Other appropriate instream flow limit as established by the Director of EPD.

Fundamental to establishing this instream flow policy, absent severe negative departures from "natural" rainfall and runoff conditions, was the need to ensure that withdrawals were managed in a fashion that would not compromise the ability of streams to assimilate the quantities of treated wastewater the Division allowed under a series of NPDES permits. Permitted discharge limits were established based upon the presumed existence of a stream flow roughly equivalent to the monthly "7Q10" for dilution of point-source discharges. Surface water withdrawal permits generally require a low flow monitoring plan that outlines the procedure to be used by the applicant to monitor and protect the required instream flow (generally identified in the permit special conditions).

THE BEGINNINGS OF CHANGE

In December 1994, senior managers of the Wildlife Resources Division (WRD) met with the Director of EPD

and several EPD managers to express concern about the adequacy of EPD's instream flow policy (essentially maintenance of a stream's seven-day ten-year low flow). In December of 1995, WRD published a paper entitled *A Recommended Method to Protect Instream Flows in Georgia*. The paper describes WRD's recommended instream flows for streams of three types: trout streams, non-trout streams, and regulated streams. All of WRD's recommended instream flows were substantially more than the flows protected under EPD's "7Q10" policy.

The 1990's was a decade of record growth in Georgia; the State's population grew by 26%. Metro Atlanta and north Georgia received national and international publicity as preparations were made in the region to host the 1996 Summer Olympics. Additionally, Georgia's economy was red hot, and producing almost 100,000 new jobs per year. Evidence clearly suggested that substantial growth was likely to continue throughout the decade. It was reasonable to conclude that municipalities and water authorities in the northern third of Georgia, which depend almost exclusively on surface sources, were likely to increase their pursuit of new or expanded water supply reservoirs to accommodate their growing populations. This prospect led to expression of growing concerns regarding the sufficiency of EPD's policy.

During the summer of 1996, the Directors of EPD and WRD agreed to empanel a multi-disciplinary team of stakeholders to review WRD's paper and make recommendations on whether EPD's instream flow protection policy should be modified to specifically provide protection of aquatic habitats and species. The team consisted of representatives from a wide array of interests, including WRD, EPD, Georgia Wildlife Federation, Georgia Water and Pollution Control Association, Georgia Municipal Association, Chattahoochee River Keeper, Trout Unlimited, and the Atlanta Regional Commission. The team conducted eleven (11) meetings between September 1996 and May 1997, and produced a near-consensus recommendation package after having thoroughly argued all major points of contention. In May 1997, a final recommendation package was presented to the two division directors.

SUMMARY OF MAJOR RECOMMENDATIONS

The team recommended that EPD employ an interim instream flow policy that allows applicants for new or modified withdrawal permits (for increased withdrawals) flexibility to select from one of three (3) instream flow maintenance options. Current water withdrawal permit holders would not be required to retroactively implement these recommendations. Choices would include:

1) use of a monthly 7Q10 instream flow policy

- 2) a site-specific instream flow study from which seasonal instream flows would be derived, or
- 3) one of the methodologies recommended by WRD in its December, 1995 paper entitled *A Recommended Method to Protect Instream Flows in Georgia* (i.e., on unregulated streams allow the lesser of 30% of the mean annual flow of the stream, or the inflow, to pass the instream withdrawal point; on regulated streams, water supply reservoir releases should be the lesser of 30% of the mean annual flow or inflow during the months of July through November; 60% of the mean annual flow or inflow during the months of January through April; and 40% of the mean annual flow or inflow during the months of May, June, and December).

The team also recommended that the Department of Natural Resources make efforts to conduct and/or require in state, site-specific studies on which to base a final modified instream flow policy to be presented to the Board of Natural Resources for adoption by January 1, 2003. The recommendation further stated that if DNR (or others) have not completed such studies and a final modified policy by January 1, 2003, then the interim modified policy would continue to be employed.

DIRECTORS' DECISION

After several months of deliberations, in fall of 1997 the directors elected not to implement the team's recommendations. A major concern was that the policies recommended by the group were not sufficiently based upon site-specific scientific research conducted within the rivers and streams in the State. Georgia therefore continued to employ the instream flow protection policy that had been in place for 20 years.

THE 1998 – 2002 DROUGHT

Beginning in May of 1998 in Georgia, and across much of the southeastern U.S., seasonal rainfall totals took a significant downward departure from normal. The severity of this departure was largely imperceptible for many months, and during that period Georgia's job and population growth continued to be robust. When normal winter 1999 – 2000 rains did not materialize, and after almost two years of rainfall deficit, Georgia was approaching historic low flows in streams in many parts of the State. Consequently, with Georgia approaching its June – September peak water use period, in June of 2000 EPD Director Harold Reheis announced the first statewide outdoor water use restrictions in Georgia's history.

This historic action set in motion a water-focused news media frenzy that served – among other things – to draw significant attention to the health of aquatic systems

under the stress of drought. Undoubtedly influenced by perhaps the most intense and sustained news media coverage of water resources issues ever experienced in Georgia, the 2001 session of the Georgia General Assembly passed several major pieces of water resources management legislation and resolutions.

One such resolution created a Joint House-Senate State Water Plan Study Committee (JWSC). The principal charge to the committee was to study Georgia's major water issues and define a process for producing the State's first comprehensive statewide water plan. The Board of Natural Resources saw value in "assisting" the JWSC with its charge, and saw fit to develop a water white paper that would frame many of Georgia's looming water resources policy issues. Inasmuch as the instream flow issue was pertinent to any discussion of the health and welfare of Georgia's aquatic environs, it necessarily commanded some of the Board's attention in development of the water white paper. In the winter/spring of 2001 the DNR Board reviewed the 1997 recommendation from the stakeholders' team and made a policy decision to adopt – with minor modifications and updates – the stakeholders' document as its own. The Board included this policy decision in its *Water Issues White Paper*, and instructed EPD to implement this new instream flow policy effective April 1, 2001.

WHERE DO WE GO FROM HERE?

The policy adopted by the Board retained language relative to the need to conduct site-specific scientific instream flow studies in Georgia to serve as the foundation for an eventual "permanent" policy. Regrettably, no such State-funded instream studies have been completed since the Board's 2001 adoption of the interim policy, but at least one is underway in the Flint River basin. This absence of State funding is partly due to revenue difficulties Georgia experienced over the period, but it can be argued that this is also possibly due to lack of sufficient focused efforts to obtain State funds for such studies. Since the middle of 2004, State revenues have shown a demonstrable turnaround from the prior 3-year period. As revenues continue to recover, there are surely many postponed priorities that will find their way to the top end of funding priority lists. The continued evolution of Georgia's instream flow policy would be well served if these instream flow studies were to somehow get selected for funding.

With an appreciation of the Board of Natural Resources' desire for a sound scientific foundation on which to build its instream flow policy, and with somewhat of an appreciation for the recent history of no State funding for this effort, in the winter of 2004 a team of associates from EPD, WRD, and the Coastal Resources Division prepared – with the assistance of the United

States Geological Survey – an application for a U.S. EPA grant to move the work forward. Unfortunately this team was informed in the fall of 2004 that the application was not selected for funding. Efforts are underway to find other potential federal grant opportunities.

LITERATURE CITED

- Georgia Department of Natural Resources, Wildlife Resources Division, 1995, *A Recommended Method to Protect Instream Flows in Georgia*.
- Georgia Water Quality Control Act Amendments of 1977
- Georgia Ground-water Use Act of 1972
- Georgia Department of Natural Resources, *Water issues White Paper, Revised May, 2001*.