Evaluation of Stream Flow and Associated Ecological Needs at Chattahoochee River National Recreation Area in the Context of Upstream Dam Operation Modifications

Hannah Schurman and Christopher J. Anderson

Affiliation: Auburn University, Dept. of Forestry and Wildlife Services, Auburn University, Auburn AL 36849

Reference: McDowell RJ, CA Pruitt, RA Bahn (eds.), *Proceedings of the 2015 Georgia Water Resources Conference*, April 28-29, 2015, University of Georgia, Athens.

Abstract. The Chattahoochee River National Recreation Area (CRNRA) consists of 48 miles of river and 16 land based park units adjacent to the Chattahoochee River north of Atlanta. CRNRA is an important ecological and cultural resource and provides 70% of metropolitan Atlanta's green space. Situated downriver from Lake Lanier, CRNRA is directly affected by dam release and resulting flow from Buford Dam. Severe flow alterations related to short-term and high-velocity dam releases can reduce ecological and cultural resources provided by rivers and adjacent lands. At CRNRA, numerous reports have documented declines in water quality, recreational opportunities, shorelines, and fish populations (including native shoal bass and recreationally important trout species) as a result of managed river flows. Our objective is to evaluate critical flow requirements for sustaining the ecological and cultural resources at CRNRA while ensuring ample flows to maintain lake and river management requirements. At the completion of our study, we will have 1) synthesized all available studies examining flow and its potential effects on CRNRA, 2) identified gaps in the knowledge base, and 3) developed a comprehensive conceptual model to assess how flow affects the various ecological and cultural resources of the river. Workshops involving academics, natural resource managers, government personnel, and other relevant scientists will help fill in information gaps and develop consensus on critical elements of the river flow regime. Data from the literature and experts will be synthesized into a conceptual model to determine optimum flow regimes for CRNRA while accommodating downstream flows and other stakeholder needs.