

# MULTI-OBJECTIVE ANALYSIS FOR ACF RESERVOIR SYSTEM OPERATION

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REFERENCE: *Proceedings of the 2011 Georgia Water Resources Conference*, held April 11–13, 2011, at the University of Georgia.

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**Abstract.** Apalachicola-Chattahoochee-Flint (ACF) River basin in Georgia has four federal reservoirs with three reservoirs having large storages and multiple purposes and objectives. It is the largest and the most complicated river basin in Georgia. It is also a focal point of tri-state water war among Florida, Alabama and Georgia since it covers three states, therefore, attracts extensive researches and studies on the operation of the reservoir system. In this paper, a multi-objective analysis approach is applied to ACF reservoir system operation and analysis of multiple objectives such as reservoir storage, downstream flow targets, water supply and power generation etc. Optimization methods such as Linear Programming (LP) / Dynamic Programming (DP) are used to simulate operation of the system and optimize objectives. The impact of climate changes on the system is considered. Trade-off solutions among multi-objectives are computed. The results and analysis may provide useful information to decision makers for the solution of the problem.