Developing Unimpaired Flow (UIF) Data In The Savannah River Basin

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Abstract. Unimpaired flow (UIF) data are developed for the period of 2009 – 2013 in Savannah River basin. The basic hydrologic inputs include stream flow data, reservoir operational and meteorological data, and water use data. Reservoir precipitation data are developed using Inverse Distance Weight method and evaporation data are developed by combining the long-term average value and the potential evapotranspiration using the Hamon method. To reduce the uncertainty in the pump-back data for pump-back reservoir systems, the monthly total amounts of the impaired local incremental flow are redistributed into daily by the daily patterns that are constructed from the nearby tributary stream flow data. The verification shows the reservoir elevations computed from UIF are close to observed ones.