

Sensitivity of Statistical Thresholds in Stream Flows

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Abstract. Instream Flow Protection Threshold (IFPT), such as monthly, annual 7Q10, 30% of annual average daily discharge (AAD), or site-specific conditions per Georgia DNRs Interim Instream Flow Protection Policy, plays an important role in deciding safe yield of water supply facilities including water supply reservoirs. IFPT is calculated using the historic time series data of “undisturbed” streamflow, generally defined as flow from a predominately rural basin minimally affected by direct human activities such as diversions, discharges, and dam regulations. When drought conditions take place in a natural stream network, as experienced in GA in periods including 1985-89, 1998-03, and 2007-08, the value of IFPT can be significantly lowered from extending the period of hydrologic record and including these drought years. Understanding how sensitive the values of IFPT to various low flow conditions should serve both regulated community and decision-makers in the regulatory review process. In this study, systematic analysis on the impact of low flow conditions in various regions of Georgia to the values of IFPT is performed and the results will be presented.