WATER ALLOCATION METHODOLOGY TO MAINTAIN INSTREAM FLOWS IN UNREGULATED RIVERS: CASE STUDY APPLIED TO THE LOWER SUWANNEE RIVER, FLORIDA

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ABSTRACT

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A general methodology is proposed for allocating water withdrawals in an unregulated river basin. The approach insures that instream flows are maintained to preserve the ecological integrity of the riverine system. This approach utilizes flow duration curves and ecological control points and can be applied to a simple or branching reach. As a case study, the proposed methodology was applied to the Lower Suwannee River in Florida. Through application of the methodology to the Lower Suwannee River the approach was shown to 1. allocate water within a simple or branching reach, 2. adjust withdrawal volumes for routing or allocation effects, and 3. maintain instream flows that differ by reach. The results show that offline water storage can increase available water during low flow conditions.