

## Hydrological Method to Evaluate Environmental Flow: Case Study of Gharasou River, Ardabil

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**Abstract :** Water flow management is one of the most important parts of river engineering. Non-uniformity distribution of rainfall and various flow demand with unreasonable flow management will be caused destroyed of the river ecosystem. Then, it is severe to determine ecosystem flow requirement. In this paper, Flow duration curve indices method which has hydrological based was used to evaluate environmental flow in Gharasou River, Ardabil, Iran. Using flow duration curve, Q90 and Q95 for different return periods were calculated. Their magnitude was determined as 1-day, 3-day, 7-day, and 30 days. According to the second method, hydraulic alteration indices often had low and medium range. To maintain river at an acceptable ecological condition, minimum daily discharge of index Q95 is  $0.7 \text{ m}^3 \cdot \text{s}^{-1}$ .

**Keywords :** Gharasou River, water flow management, non-uniformity distribution, ecosystem flow requirement, hydraulic alteration

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