



Estimating flow duration curve in the humid tropics: a disaggregation approach in Hawaiian catchments

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Islands that are concentrated in developing countries have poor hydrological research data which contribute to stress on hydrological resources due to unmonitored human influence and negligence. As studies in islands are relatively young, there is a need to understand these stresses and influences by building block research specifically targeting islands. The flow duration curve (FDC) is a simple start up hydrological tool that can be used in initial studies of islands. This study disaggregates the FDC into three sections, top, middle and bottom and in each section runoff is estimated with simple hydrological models. The study is based on Hawaiian Islands, toward estimating runoff in ungauged island catchments in the humid tropics. Runoff estimations in the top and middle sections include using the Curve Number (CN) method and the Regime Curve (RC) respectively. The bottom section is presented as a separate study from this one. The results showed that for majority of the catchments the RC can be used for estimations in the middle section of the FDC. It also showed that in order for the CN method to make stable estimations, it had to be calibrated. This study identifies simple methodologies that can be useful for making runoff estimations in ungauged island catchments.