



Measuring forest floor and canopy interception in a savannah ecosystem

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Interception is an important process that influences antecedent soil moisture conditions that are important for flood generation. It is however, one of the most underestimated processes of the hydrological cycle. Most investigations on interception have been carried out in Europe and America but little is known about interception measurements in Africa. A study was carried out to measure forest floor and canopy interception in a savannah ecosystem (Harare, Zimbabwe) and to analyse the influence of meteorological factors and vegetation characteristics. The water storage capacities of different vegetation types were determined. Results indicate that interception is a threshold process which is affected by both meteorological factors and vegetation characteristics. The water storage capacity of the forest floor depends on the Leaf Area Index with more storage for a higher Leaf Area Index. The water storage capacity depends on the storm intensity with high intensity storms having less static storage capacity and less intense storms having a higher static storage capacity. The static storage represents the amount of water detained in the forest floor when free drainage ceased after rain. This amount can only be removed by evaporation. Of most importance, the study revealed that combining canopy and forest floor interception yields a value of approximately half the amount of precipitation received thus interception should be given greater consideration in rainfall-runoff studies.