

## **COMPARISON OF WATER INTERCEPTION AND INFILTRATION BY SELECTED GRASS DOMINATED COMMUNITIES**

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*Abstract:* Water interception and infiltration are important interactions between vegetation and rainwater. Above ground vegetation and root systems play significant roles in rates of interception and infiltration. The goal of this study was to determine how interception and infiltration rates differ in four grass communities with differing levels of diversity. The treatments consists of (1) control-monoculture stand of Kentucky bluegrass, (2) mixed stand of Kentucky bluegrass and smooth brome, (3) mixed stand of the previous two grasses and 5 native warm-season grasses and (4) mixed stand of seven previous grasses plus an additional 33 forbs species. We hypothesized that diverse plots would have higher rates of interception and infiltration and monoculture plot would have the lowest. The study began in May 2009 with burning of the treatment areas. Sampling was done from June to August. In June 2009, vegetation and root samples were taken to determine above ground and root biomass. Interception pans were placed in each plot and measurements were taken after rainfall in early June to mid-August. A Cornell Sprinkle Infiltrometer was used to determine infiltration rates three times during the summer. Results from the first season of sampling show significantly higher interception rates ( $p < 0.001$ ) in the warm-season grass plots than in the Kentucky bluegrass and mixed brome plots. Infiltration rates were significantly ( $p < 0.001$ ) higher in the warm-season grass plots compared to the low diversity plots. The addition of forbs to the warm-season grass plot did not significantly increase infiltration or interception. Summer 2010 results will be discussed.