

## *Lysimeter experiments to assess the influence of afforested vegetation on effective infiltration and recharge in a semi- arid area*

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The Mu Us desert is located in the semi-arid area of Northwestern China. The major environmental problem is desertification. To effectively control and prevent desertification, a policy called “Returning Farmland to Forest and Grassland” has been implemented since 2000 which resulted in large afforested areas. Groundwater is an important source of water for the local people and ecosystems. The influence of these trees on the hydrological cycle and groundwater resources has not been studied in detail and accurate experimental data are needed to quantify how trees affect effective infiltration, groundwater recharge and water table dynamics. We designed four lysimeters: two with different depths to groundwater and bare soil as well as two additional lysimeters again with two different depths to groundwater and each with a planted tree (*Salix Psammophila*). In all the lysimeters, we monitored profiles of soil water content and the groundwater dynamics. The data suggest that the presense of tree increases the minimal amount of rainfall to trigger infiltration. Moreover, no groundwater recharge was observed for the vegetated lysimeters. The trees triggered a significant drop of the water table. These data have important implications for future water resources management.

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