

Current Status of Monitoring Runoff, Precipitation, and Soil Moisture at the Walnut Gulch Experimental Watershed

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ABSTRACT

Arid and semiarid environments cover more than one-third of the world's land surface. Sound water and soil management in these areas is crucial because those resources are particularly sensitive to climate variability and anthropogenic effects. Assessment of water resources requires knowledge and full understanding of both the water quantity and the water quality processes. Consequently, monitoring hydrological data is an important undertaking to assess surface and groundwater resources and to calibrate and verify water balance and water budget models used in developing surface or groundwater allocation frameworks. It is well established that variability in precipitation is among the most important causes of variability in soil moisture and runoff. There is a significant pressure in all communities to monitor hydrologic data, and policy-makers, scientist, practitioners, and the society itself recognize this pressure. The purpose of this paper is to provide an overview of the monitoring practices being carried out to collect data on runoff, precipitation, and soil moisture at the Walnut Gulch Experimental Watershed. The Southwest Watershed Research Center, Agricultural Research Service, U.S. Department of Agriculture operates the watershed near Tombstone, Arizona.