



## **The USDA-ARS Walnut Gulch Experimental Watershed, Arizona, USA**

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The United States Department of Agriculture (USDA) has been supporting research and data collection at instrumented watershed throughout the country since the dust bowl era of the 1930's. In 1953, the USDA established the Walnut Gulch Experimental Watershed (WGEW) in southeastern Arizona near Tombstone to conduct hydrologic and erosion research to quantify the unique rainfall-runoff characteristics of semiarid regions and to understand the downstream effects of conservation practices implemented in watershed uplands. Instrumentation and research on the WGEW has expanded to include meteorological and flux measurements, soil moisture, and ecosystem responses. In addition, the WGEW serves as a validation site for aircraft and satellite based remotely sensed instruments. Core measurements have been used to quantify semiarid rainfall, runoff, infiltration, and transmission losses; develop and validate simulation models, and support broader, regional, basin scale research. The long-term database is a critical resource for advancing the scientific understanding of semiarid ecohydrological processes. The WGEW, its history, significant contributions to instrumentation development, and the current WGEW data collection program in the context of contemporary research questions will be presented.