

**PRECIPITATION TRENDS FROM 1956-1996 ON THE WALNUT GULCH EXPERIMENTAL WATERSHED**

Mary H. Nichols, Kenneth G Renard, and Herbert B. Osborn\*

**ABSTRACT:** Precipitation data have been collected in Southeastern Arizona on the USDA-ARS Walnut Gulch Experimental Watershed since 1954. The longest continuous records are analyzed to identify trends in precipitation characteristics from 1956 - 1996. During this period, annual precipitation increased. Although summer precipitation accounts for over 60% of the annual total precipitation in southern Arizona, the annual precipitation increase can be attributed to an increase in precipitation during non-summer months. The increase is paralleled by an increase in the proportion of annual precipitation contributed during non-summer months. Detailed event data were analyzed to provide insight into the characteristics of precipitation events during this time period. Precipitation event data were characterized based on the number of events, event precipitation amount, 30 minute event intensity, and event duration. The trend in non-summer precipitation appears to be a result of increased event frequency since the number of events increased during non-summer months, although the average amount per event, average event intensity, and average event duration did not. During the summer "monsoon" season, the frequency of recorded precipitation events increased but the average precipitation amount per event decreased. Knowledge of precipitation trends and the characteristics of events that make up a precipitation time series is a critical first step in understanding and managing water resources in semiarid ecosystems.

\* Respectively, Hydraulic Engineer, Hydraulic Engineer (retired), and Hydrologist (retired), USDA-ARS Southwest Watershed Research Center, 2000 E. Allen Rd., Tucson, AZ 85719. Phone: (520) 670-6380, Fax: (520) 670-5550.

**AWRA**

**AMERICAN WATER RESOURCES ASSOCIATION**

**ANNUAL  
WATER  
RESOURCES  
CONFERENCE**

**ABSTRACT  
PROCEEDINGS**

**NOVEMBER 12-15, 2001**

**ALBUQUERQUE, NEW MEXICO**

**American Water Resources Association**

Advancing Multidisciplinary Water Resources Management and Research