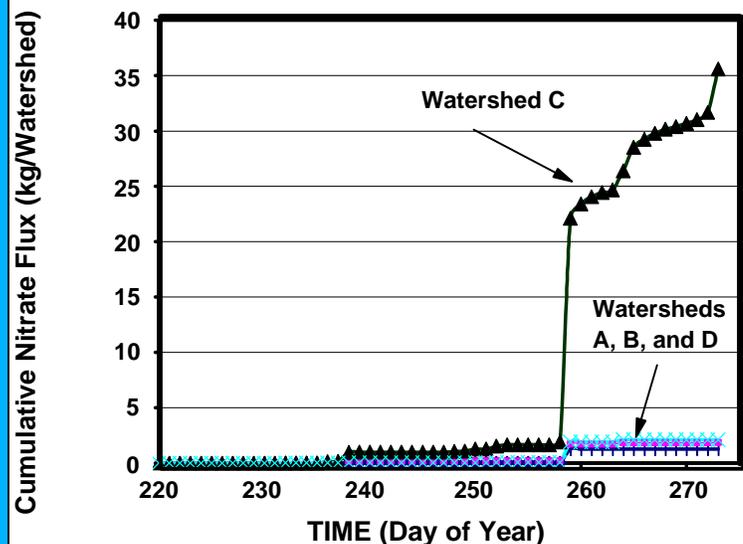


# Surface Runoff as a Function of Climate and Management

Determining the impact of management practices can be very difficult since soil properties, landscape position, climate also influence surface runoff. The infrastructure of OPE3 provides a meaningful comparison of runoff from agricultural production systems because the research site is large enough to capture the spatial variability of crop and soil parameters, yet not so large that the fields themselves are in different climatic or geologic settings (Site photo below left).



OPE3 has four hydrologically bounded watersheds, about 4 ha (over 10 acres) each, which feed a wooded riparian wetland and first-order stream. Three of the small watersheds (A, B, and D) are very similar while watershed C is in a different hydrologic setting due to the existence of seepage zones.



The figure (above and right) depicts surface runoff for part of 1999 and illustrates the importance of side by side watershed comparisons. Although all four watersheds have similar textures, climate, and landscape position, watershed C is quite different due to the existence of seepage zones. Runoff data like this accompanied by detailed soil moisture values will allow scientist to more accurately model runoff events at the watershed scale and will be essential in developing recommendations to minimize runoff.

**Contacts:** Timothy Gish [tgish@hydrolab.arsusda.gov](mailto:tgish@hydrolab.arsusda.gov)  
Tom Meixner [thomas.meixner@ucr.edu](mailto:thomas.meixner@ucr.edu)  
Ali Sadeghi [SadeghiA@ba.ars.usda.gov](mailto:SadeghiA@ba.ars.usda.gov)

**Link to Publications:**