

Precipitation and Runoff from Two Watersheds

Dennis R. Frame

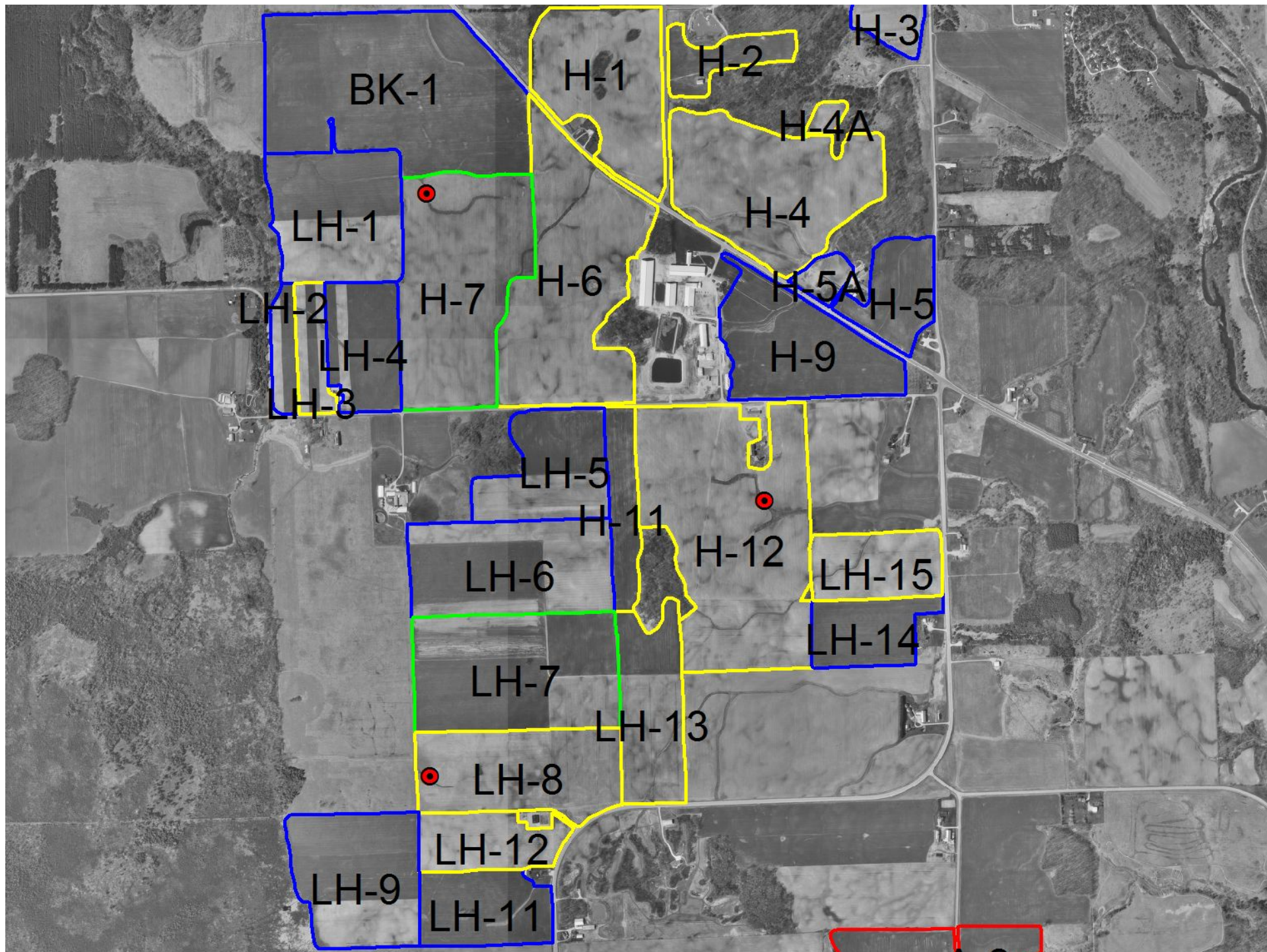
UW – Discovery Farms

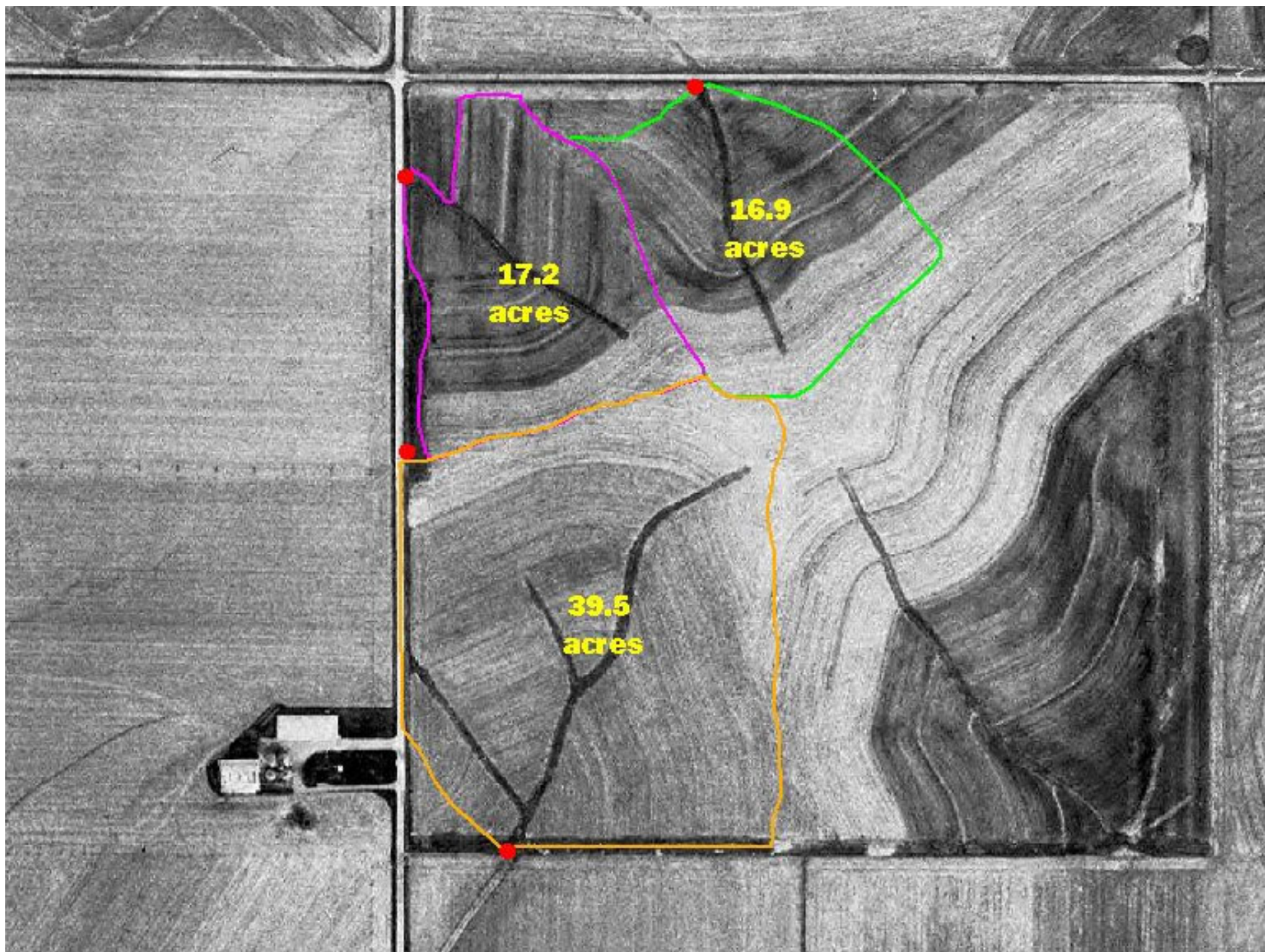
UW - Extension



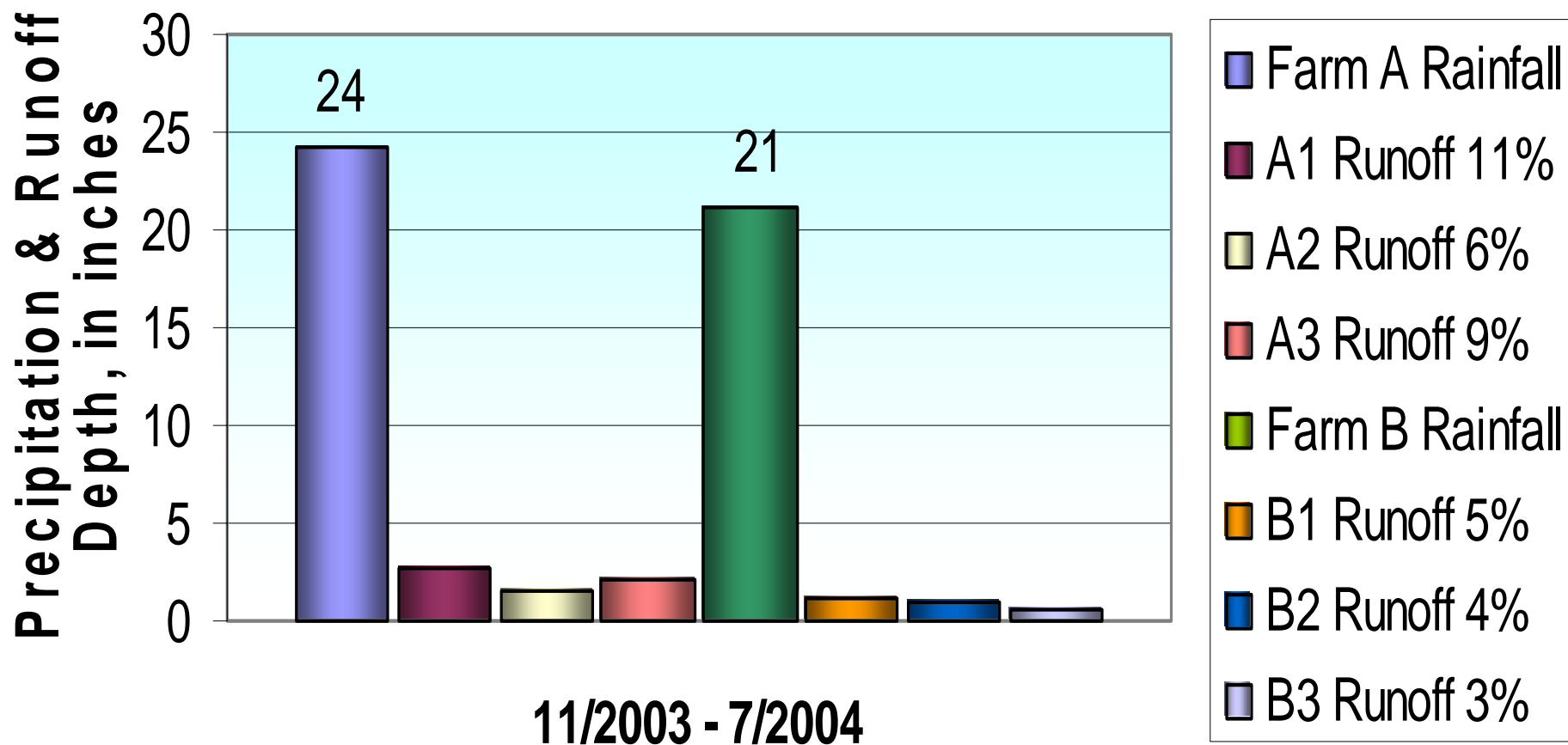
Farming System Comparison

- Two farms with monitoring in 3 watersheds
- Monitoring equipment installed in waterways
- Farm A
 - Minimum tillage
 - Basins all in alfalfa
- Farm B
 - No tillage
 - Two basins in corn, one in soybeans

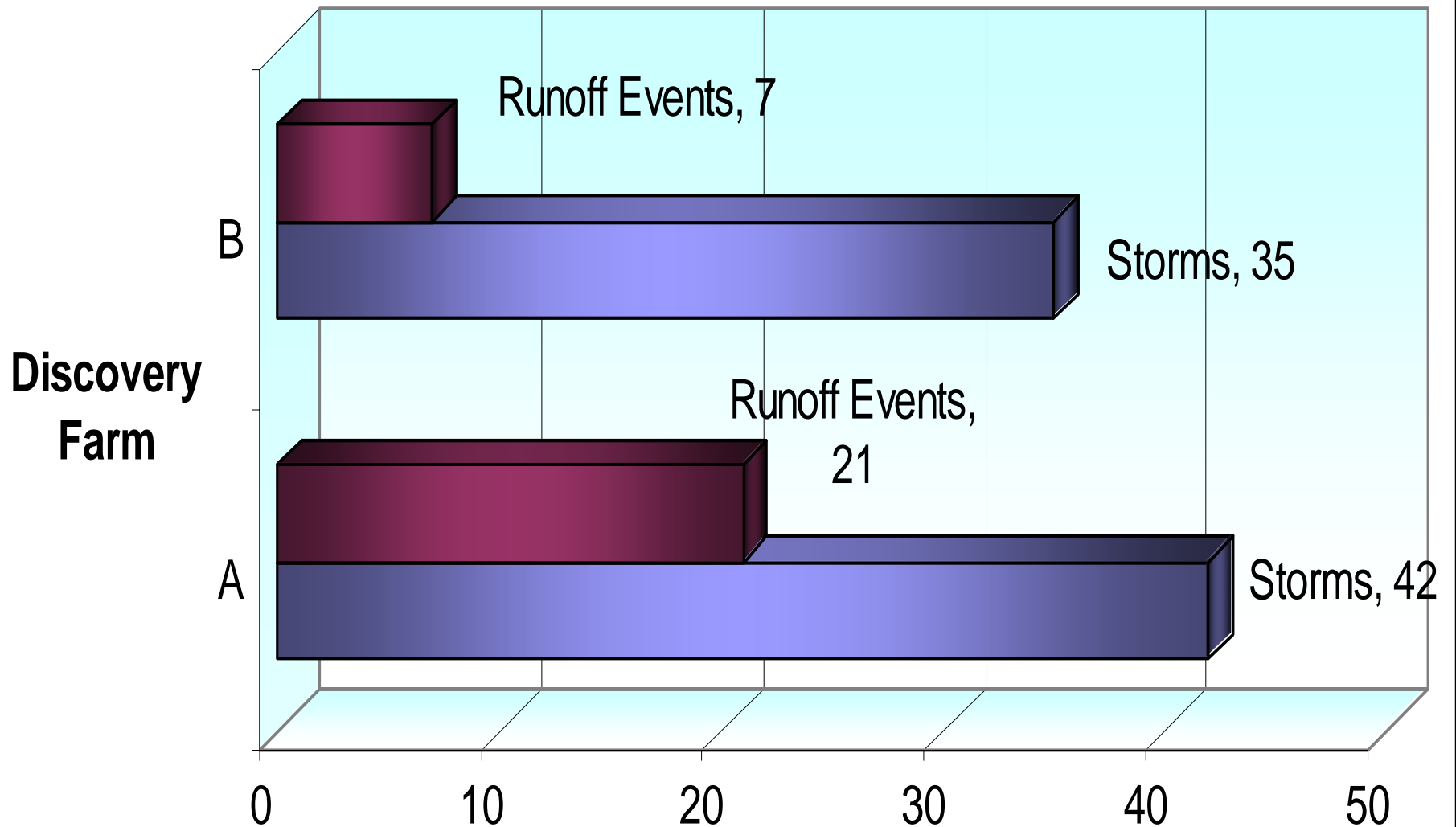




Precipitation & Runoff Depths: Comparison of Discovery Farms A & B

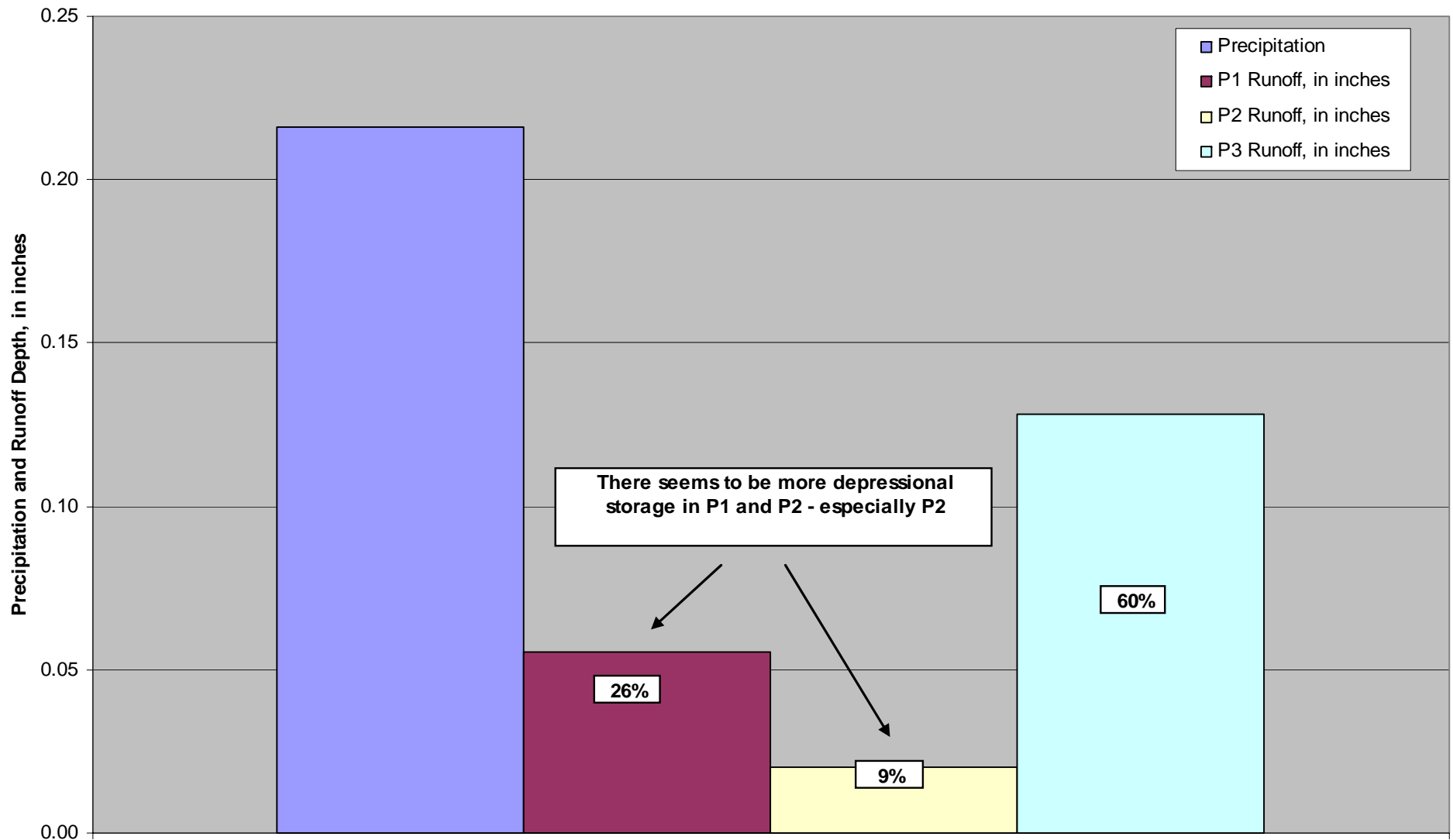


Total Storms vs. Runoff Events



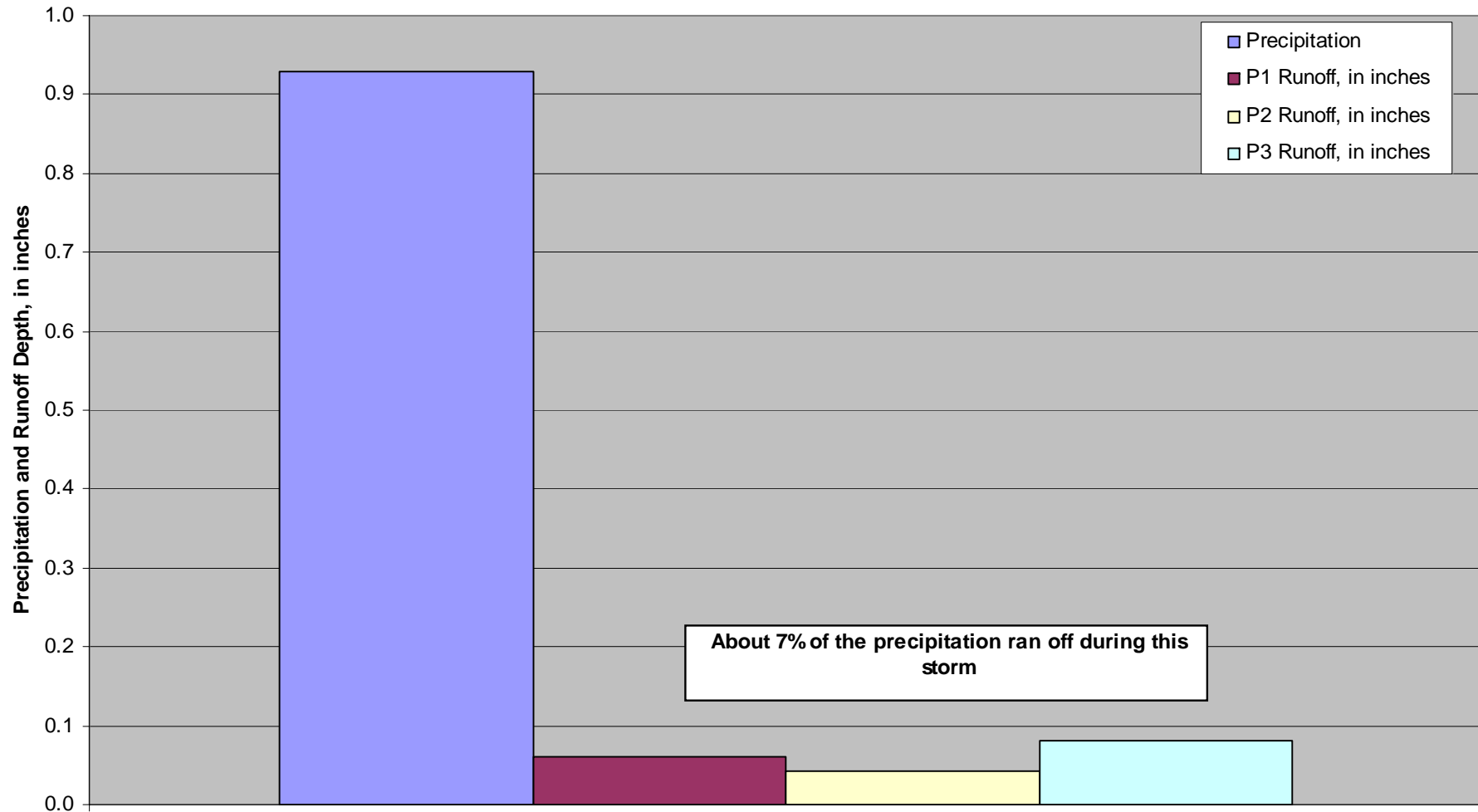
Farm A Precipitation and Runoff Depths: Comparison of Basins

March 7, 2004, just after snowmelt

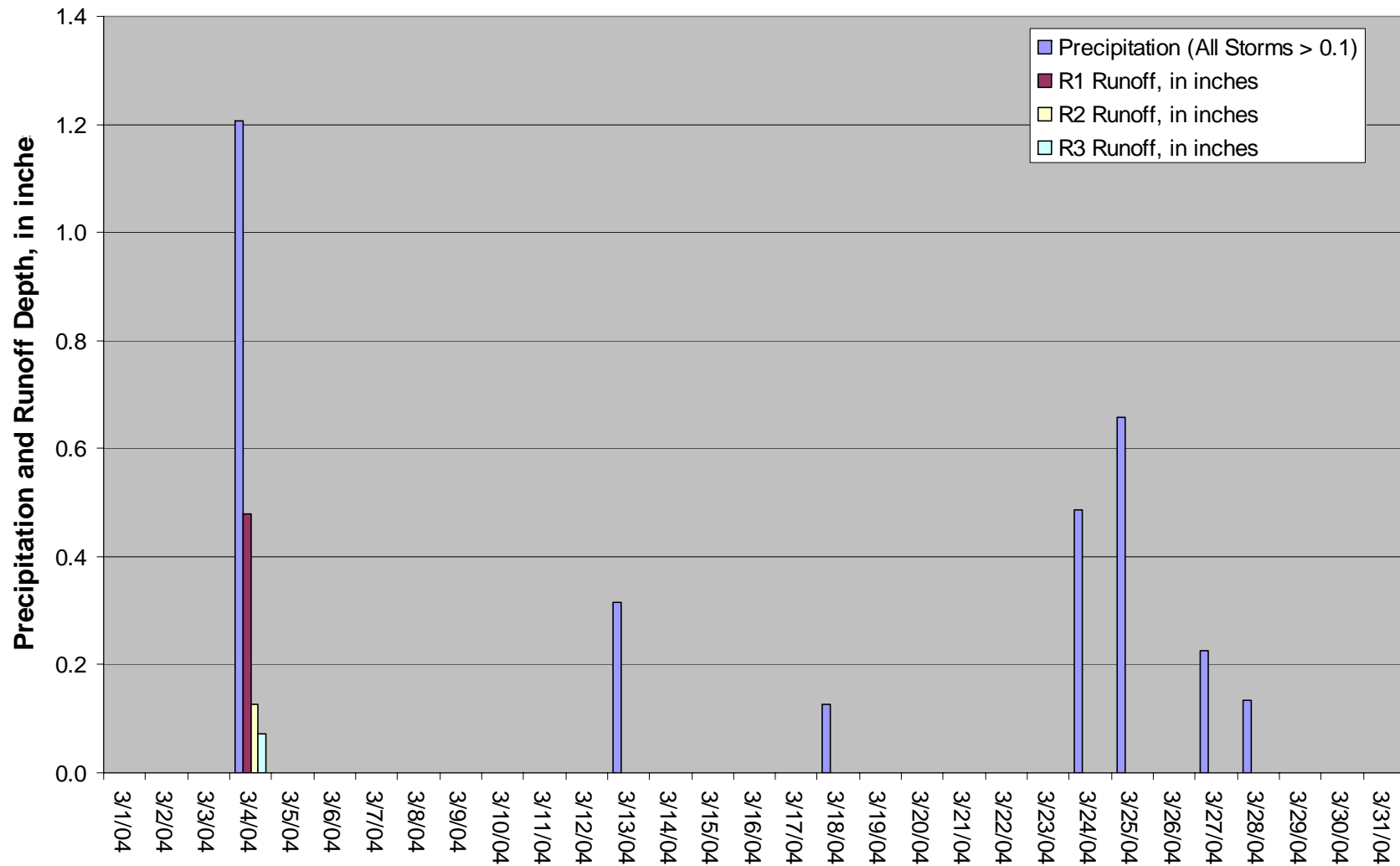


Farm A Precipitation and Runoff Depths: Comparison of Basins

June 16, 2004

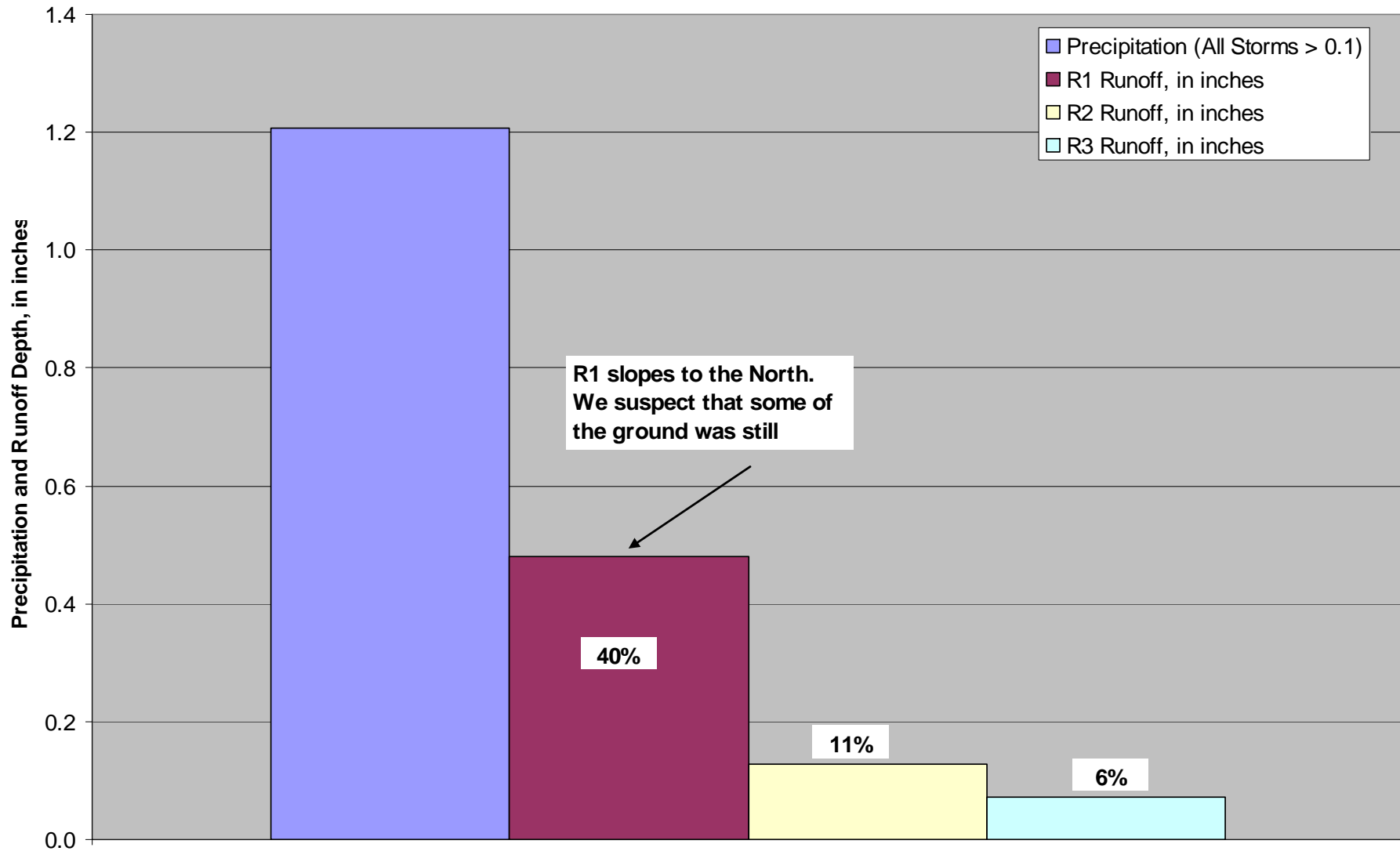


Farm B Precipitation and Runoff Depths: Comparison of Basins March, 2004



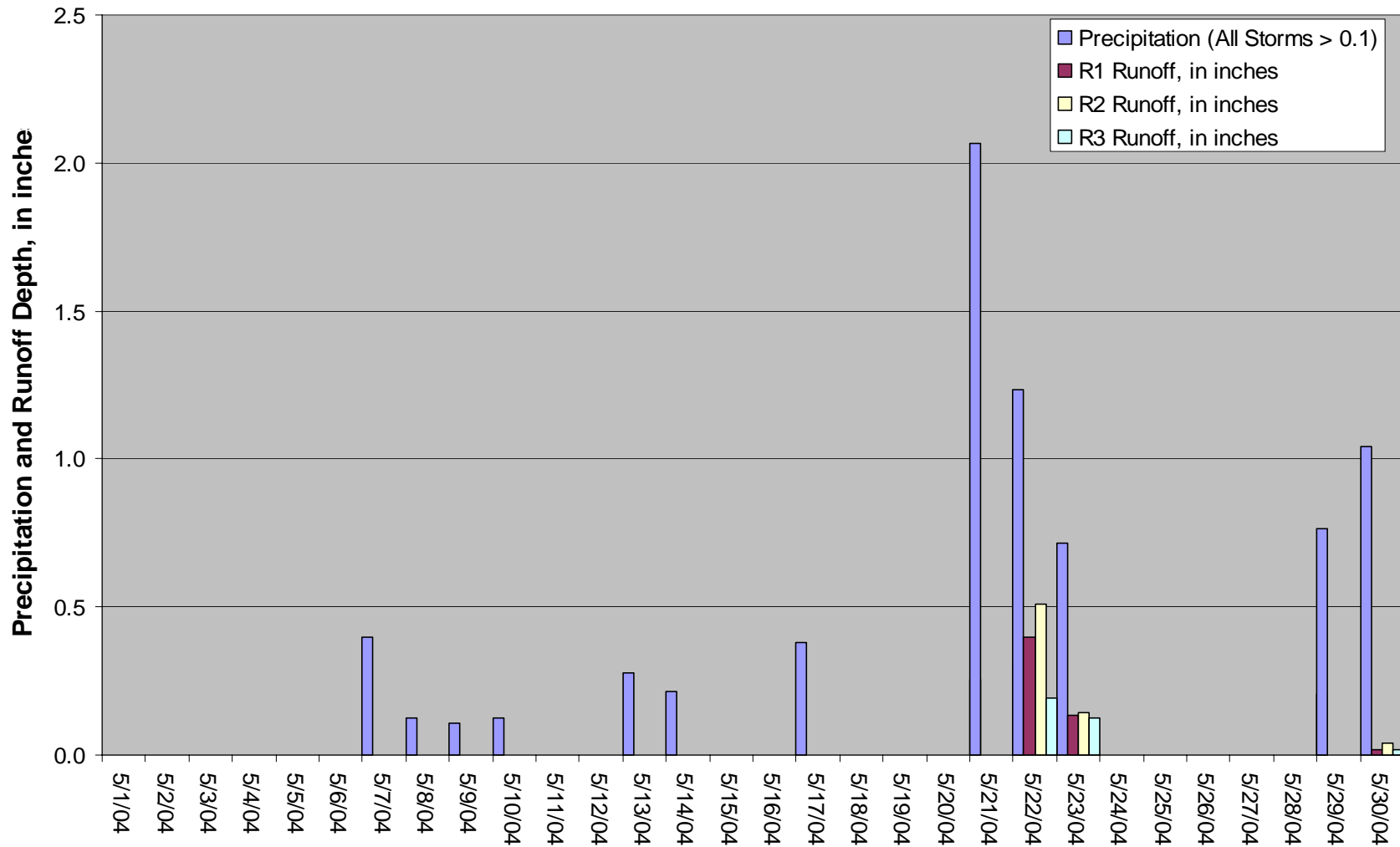
March 2004. Seven measurable rainfall events. One measurable runoff event.

Farm B Precipitation and Runoff Depths: Comparison of Basins March 4, 2004



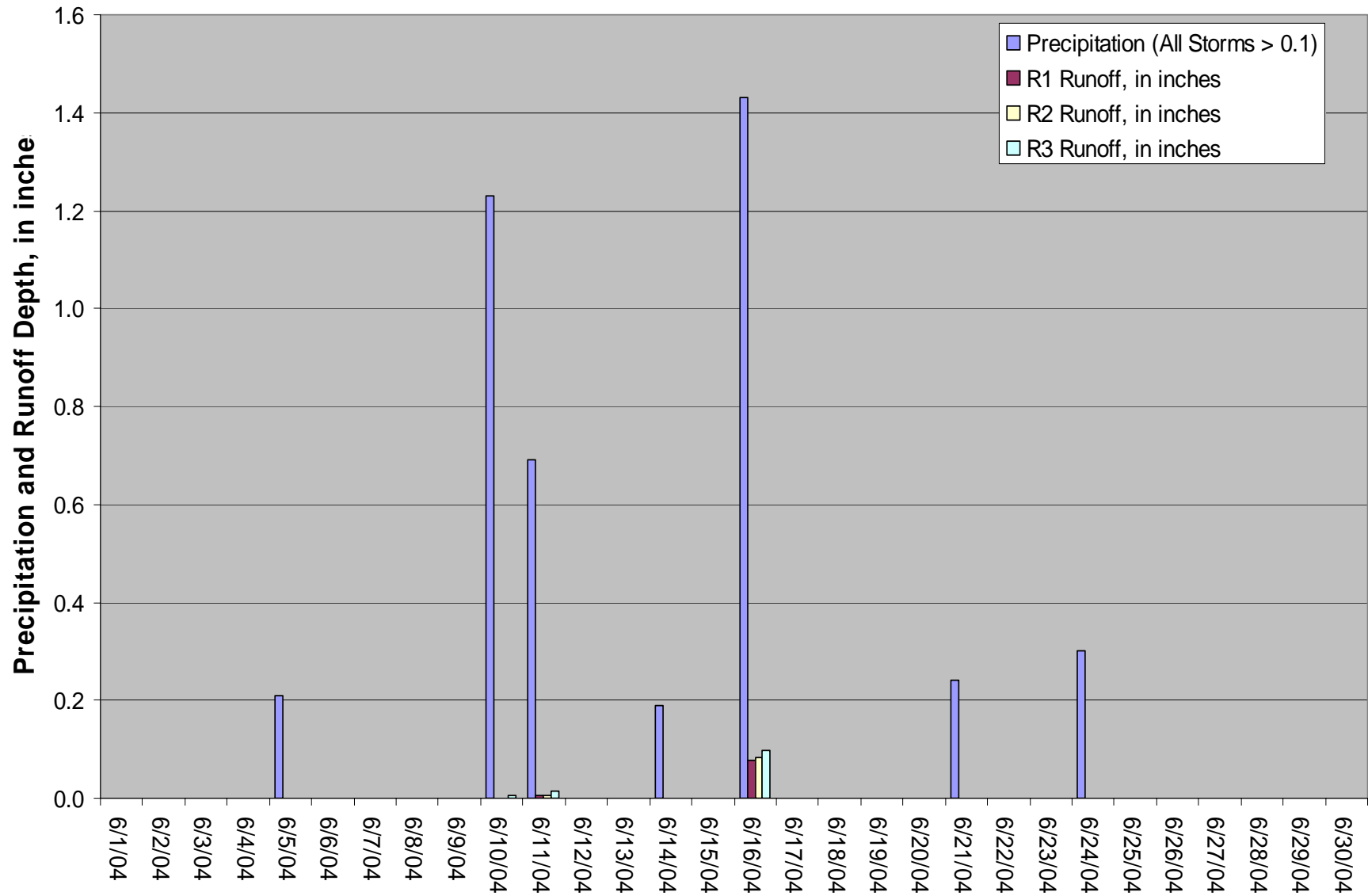
A closer look at 3-4-04 storm

Farm B - Precipitation and Runoff Depths May, 2004

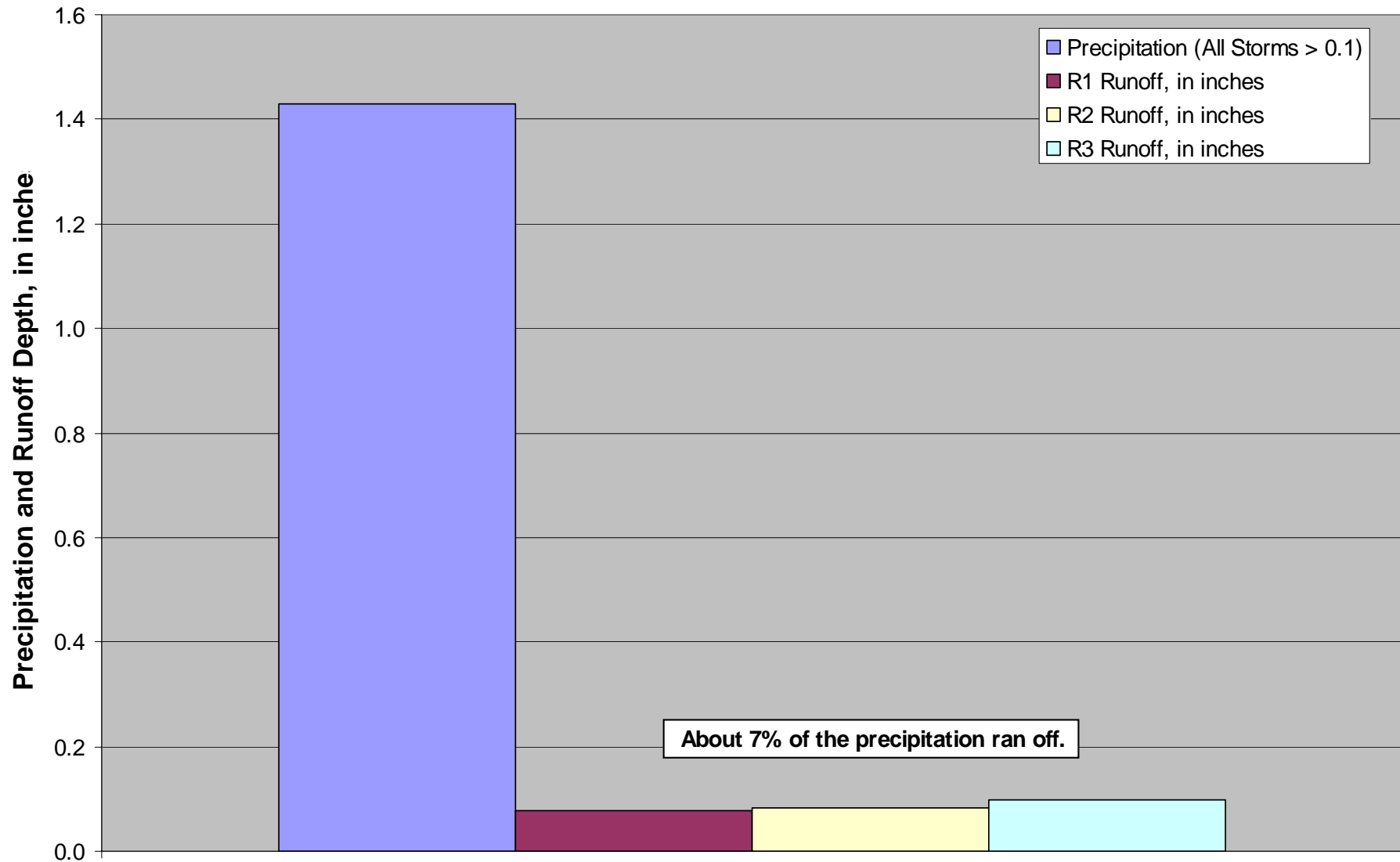


May 2004. Twelve measurable rainfall events. Three measurable runoff events.

Farm B - Precipitation and Runoff Depths: June, 2004

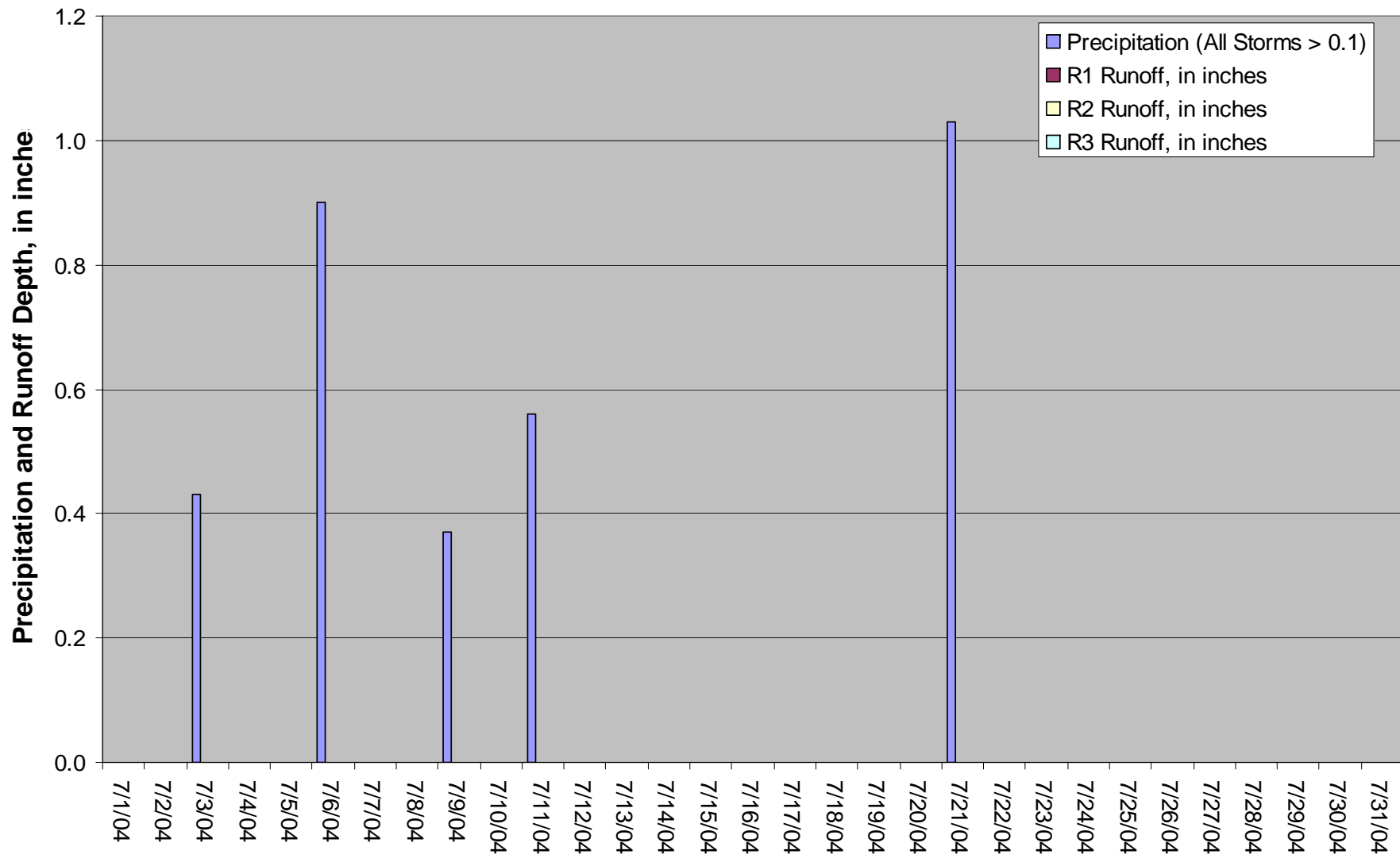


Farm B Precipitation and Runoff Depths: Comparison of Basins June 16, 2004



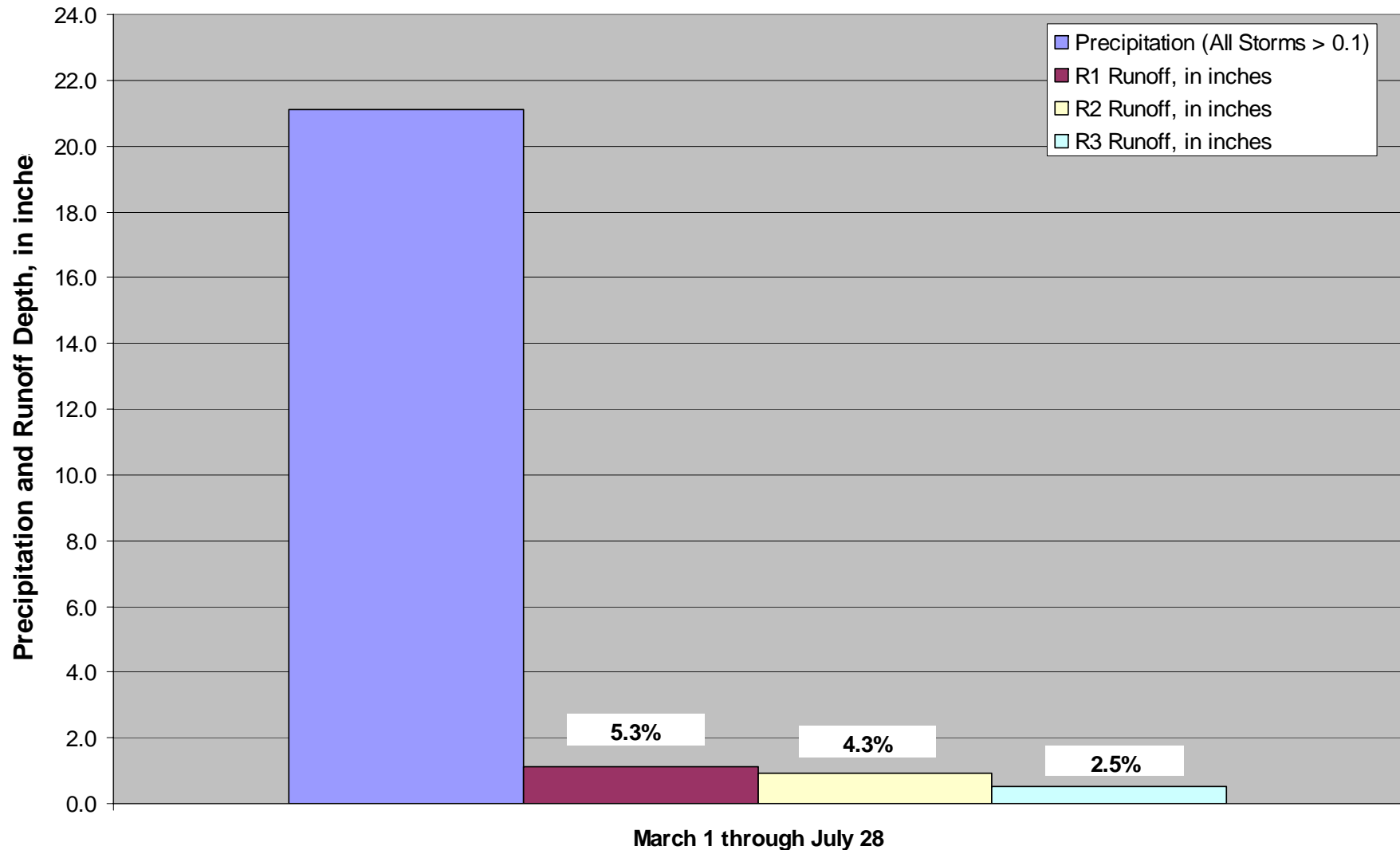
A closer look at 6-16-04 storm

Farm B Precipitation and Runoff Depths: Comparison of Basins July, 2004



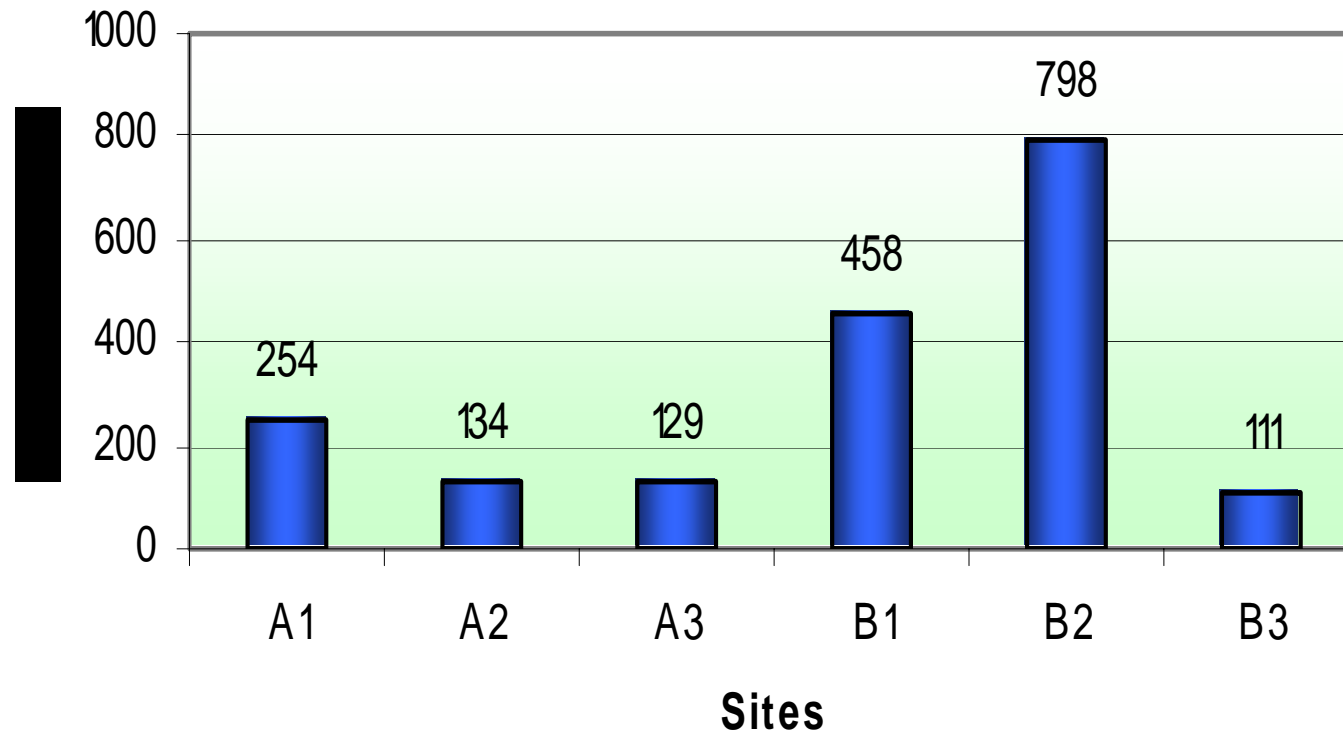
Farm B Precipitation and Runoff Depths: Comparison of Basins

March 1, 2004 through July 28, 2004

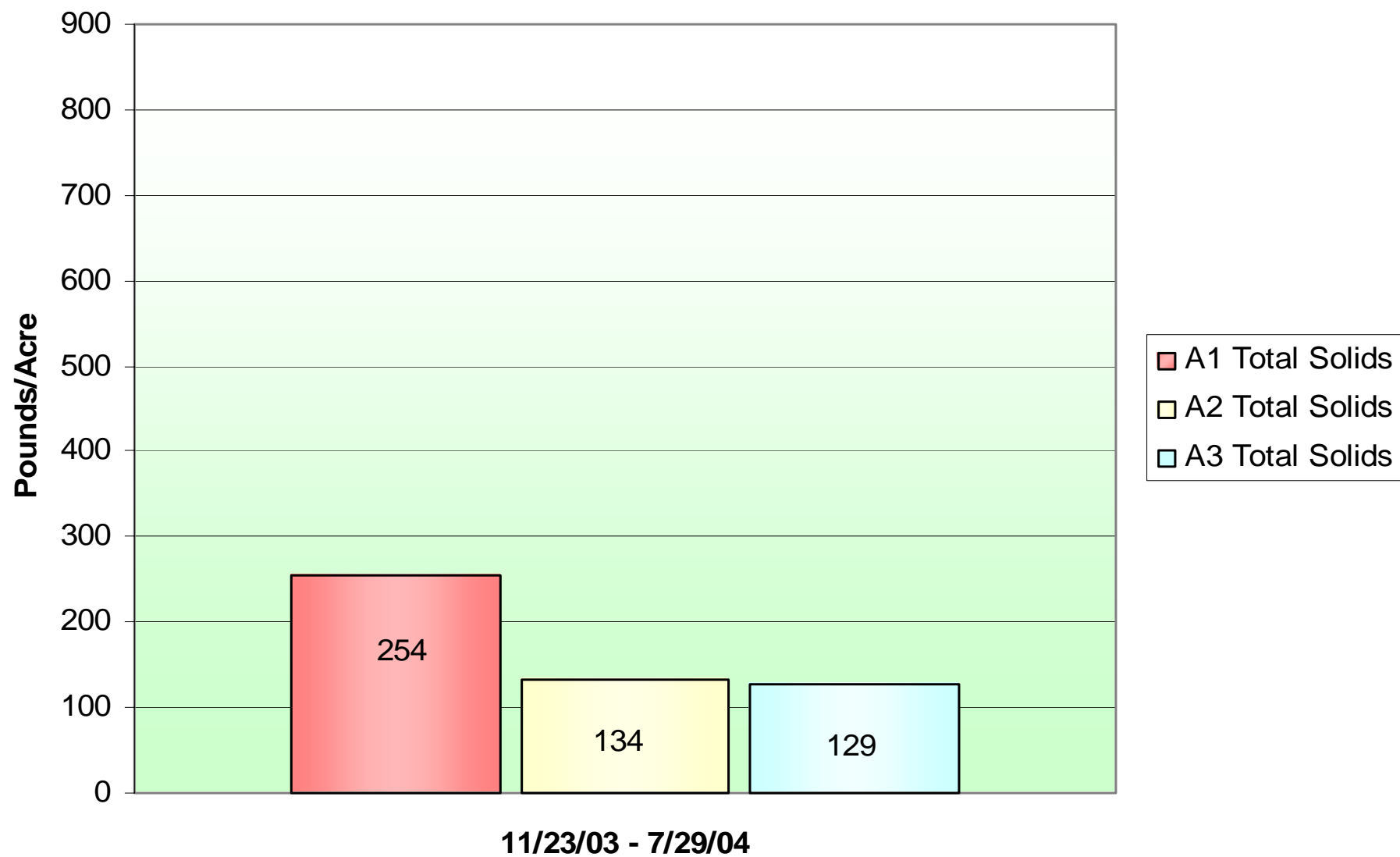


Slowing the runoff with conservation practices allows for infiltration and crop utilization: 21 inches of rain resulted in less than 2 inches of runoff.

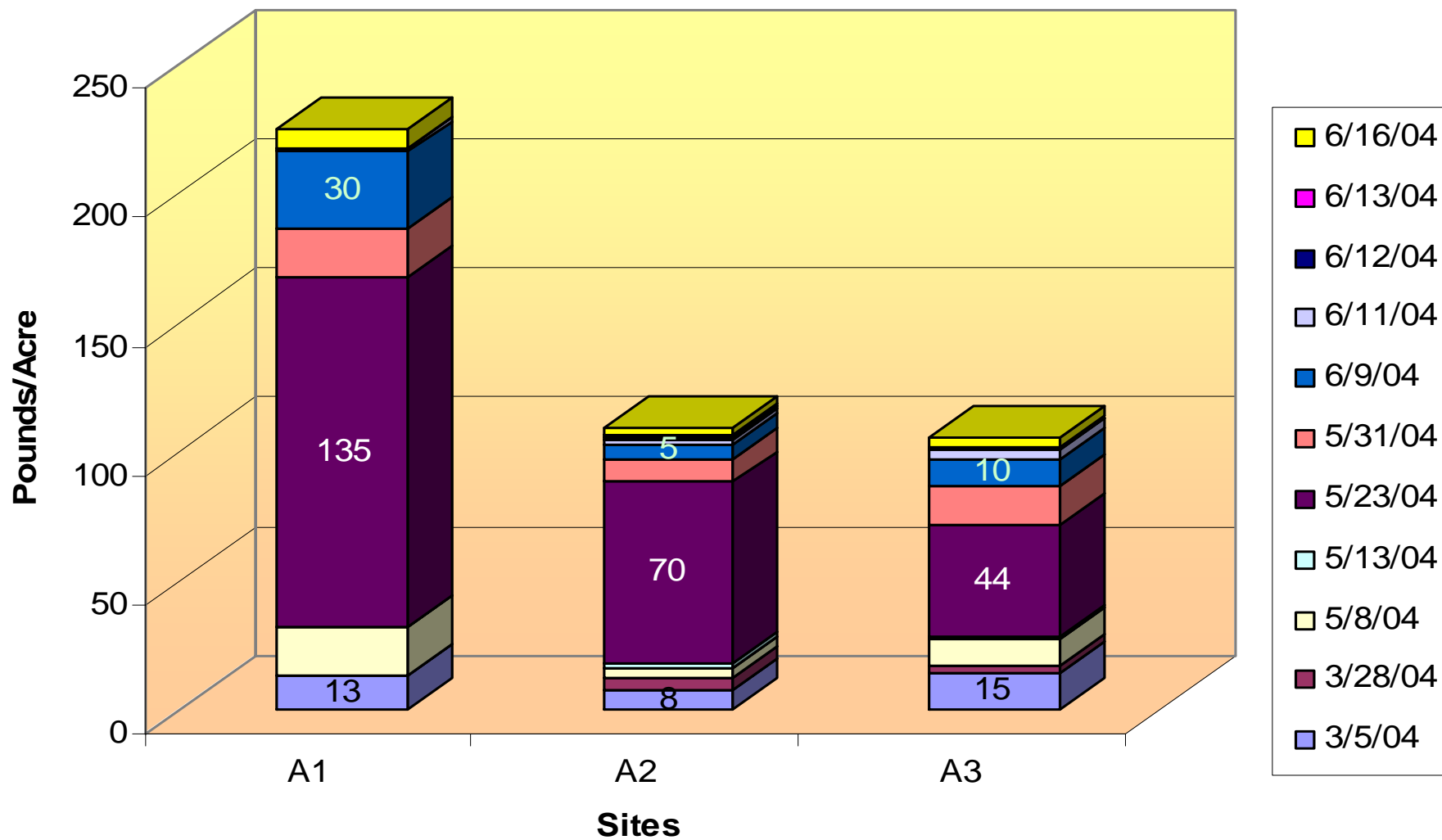
Total Solids Loss Discovery Farms A & B



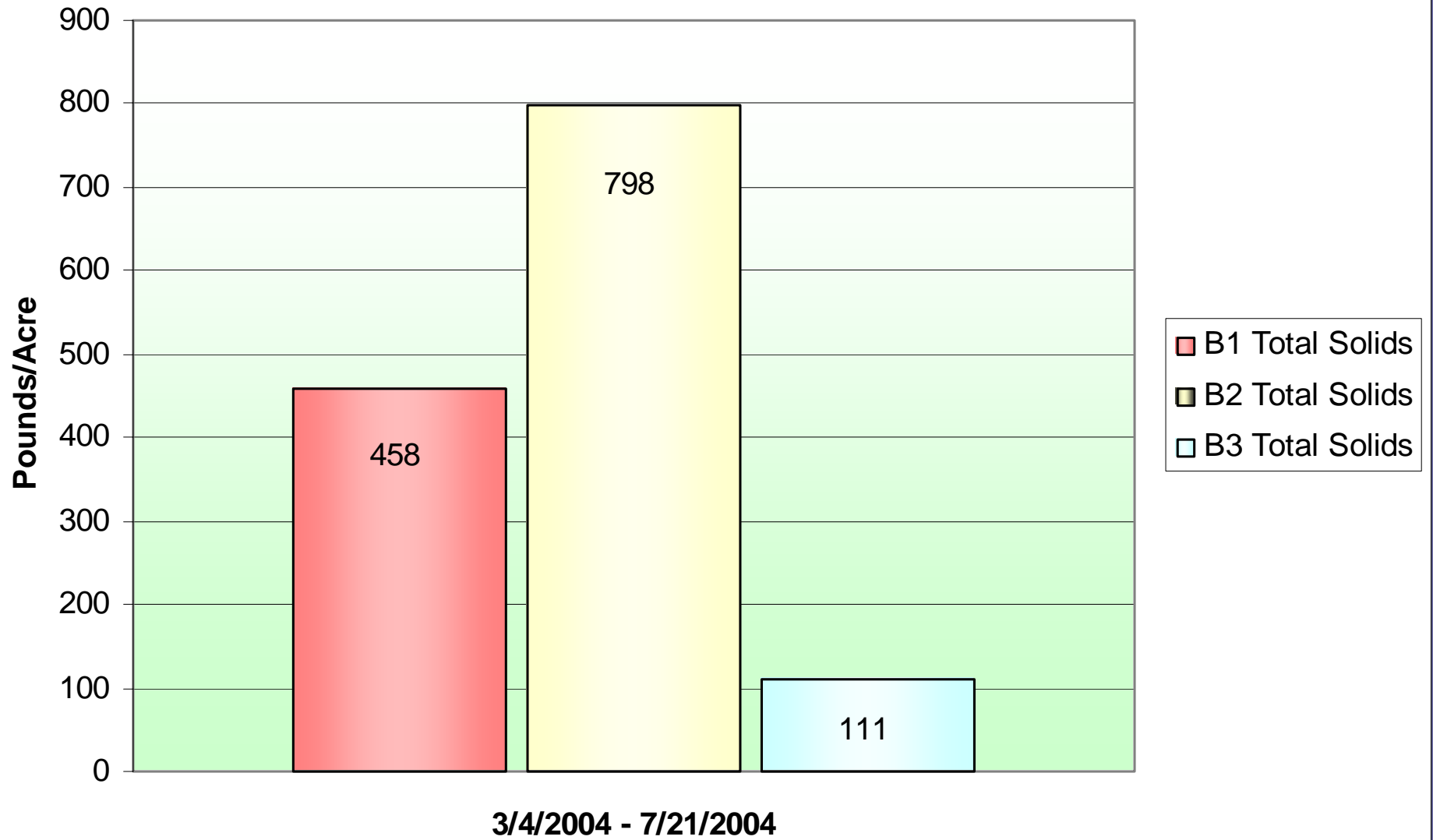
Total Solids Loss Discovery Farm A



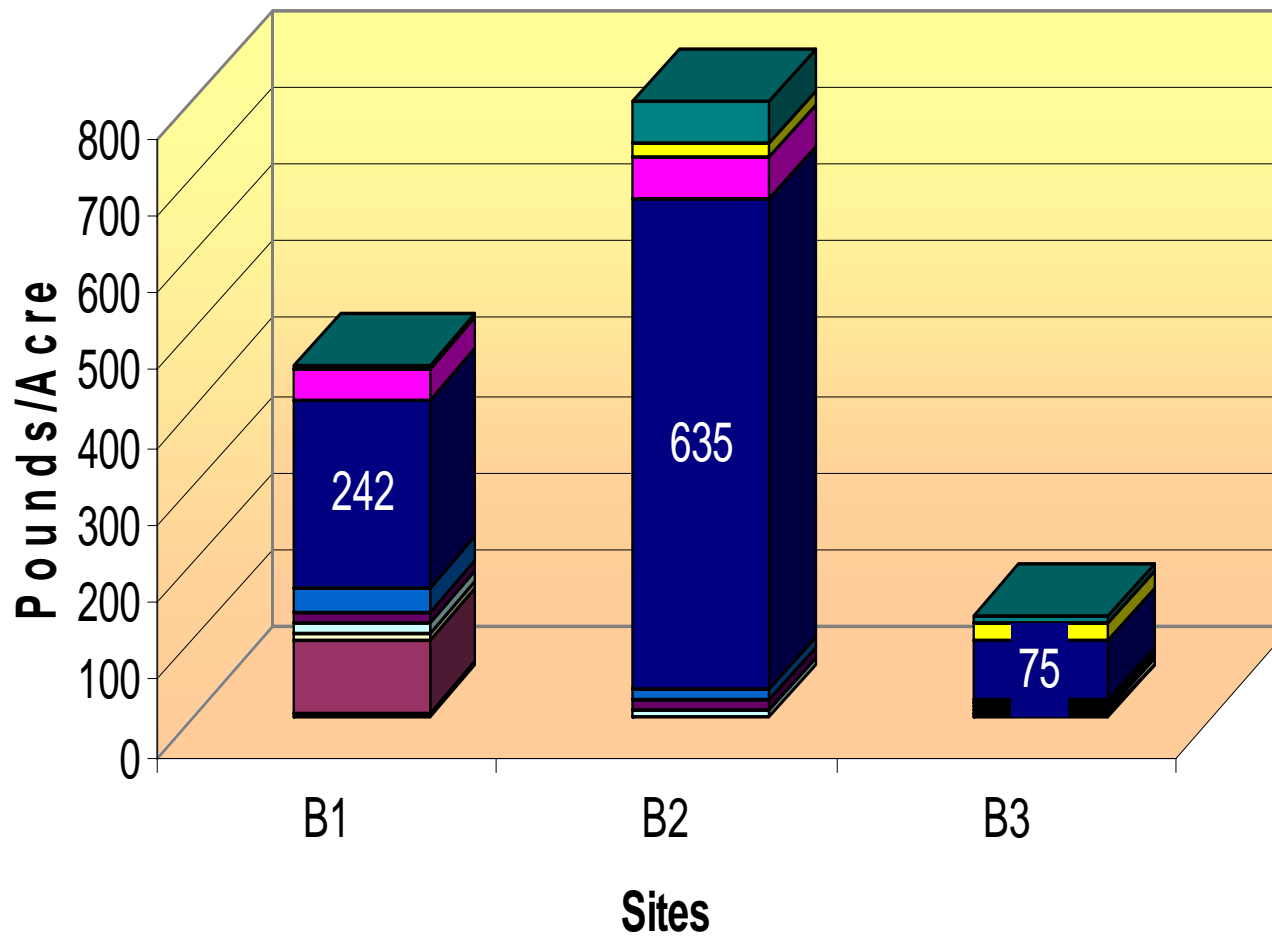
Total Solids Loss/Event **Discovery Farm A** **3/5/04 - 6/16/04**



Total Solids Loss Discovery Farm B



Total Solids Loss/Event **Discovery Farm B** **2/20/04 - 6/16/04**



Conclusions

- Only one year of data
- Both watersheds had significant infiltration rates (92% and 96% of the rain infiltrated)
- Surface runoff is only a portion of the total water budget. We need to get a better understanding of water losses through tile drainage before we can determine the environmental impact of these farms.