

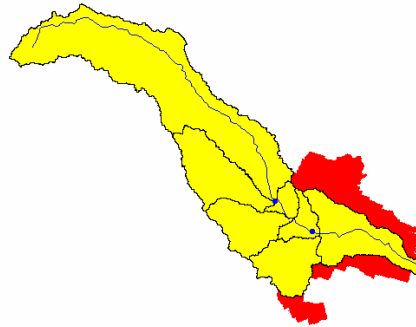
Measured Estimates of Sediment Loadings in Cowhouse Creek on Fort Hood



1. Texas Agricultural Experiment Station
Blackland Research and Extension Center
720 East Blackland Road
Temple, Texas 76502
(254) 774-6000

2. Texas Water Resources Institute
Texas A&M University
College Station, Texas 78743
(979) 458-3315

W. D. Rosenthal¹, W. Fox², and D. Hoffman¹



Background

- The Blackland Research & Extension Center (BREC), ITAM, DPW, and the Texas Water Resources Institute are conducting a project that will quantify sediment loading contributions from Ft. Hood in Cowhouse Creek into Lake Belton. The watershed area covers many training areas at Ft. Hood. Preliminary contribution estimates from training areas are determined from measured flows and sediment loadings coming into the installation at Pidcoke and leaving the training areas at West Range Road.

•Cowhouse Creek

- Used BREC monitored data from 1996-2005 at stations located at FM116 (Pidcoke) and West Range Road

- Monitored flow using ISCO 4230 Flow Logger

- Sediment samples collected with ISCO 3700 Storm Water Samplers

- Use Manning's Flow equation to estimate discharge with depth

- Calibrated BREC flow at Pidcoke with measured USGS data at the same site

- Difference in loadings at West Range Road and Pidcoke determine the contribution of sediment loadings from training areas.

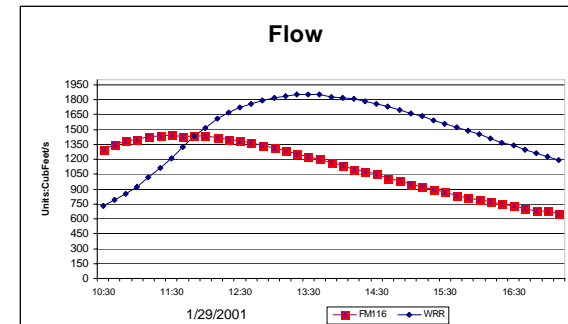
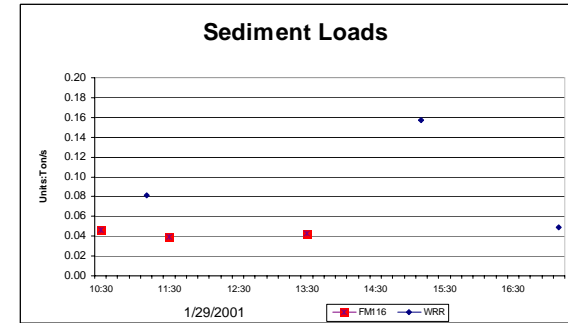


Aerial view at Pidcoke

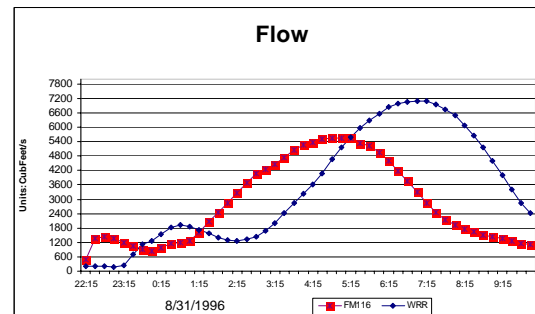
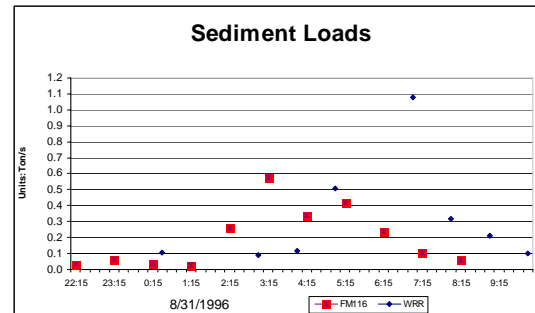


Aerial view at West Range Road

Monitoring sites at Pidcoke and West Range Road (points).
72% of the watershed is outside of Fort Hood; 28% of the watershed is within Fort Hood.



January 2001 Storm Event—Flow and Sediment Loads



August 1996 Storm Event—Flow and Sediment Loads

Conclusions

- Flow and sediment loadings are greater at West Range Road
- Specific storm events had a range of sediment loading from training areas of 2160 T (6 hr) to 32,400 T (12 hr)
- Based on BREC monitored data there has been a decrease in sediment loadings since 1996. The reduction may be due to the effectiveness of implemented BMPs.