Curry's Fork Watershed Plan
Technical Committee Meeting
Thursday, February 17, 2011
9:00 A.M. to 10:30 A.M.
Oldham County Fiscal Courthouse, La Grange, KY

Curry's Fork Upland Erosion

1) Welcome and Introductions

Paul Maron (Strand Associates) welcomed the nine stakeholders in attendance to the meeting. Representatives from University of Louisville, Kentucky Division of Water, Oldham County Fiscal Court, and Oldham County Sewer District were also in attendance.

2) Upland Erosion

Previous focus had been primarily on in-stream bank erosion. Efforts by U of L show additional opportunities to control sediment via upland erosion mitigation before sediment enters the streams.

3) GeoWEPP Modeling Efforts

a) Overview of Model

Mike Croasdaile (U of L) explained more about the modeling efforts and why upland erosion was being taken into further consideration. Previous efforts by U of L had catalogued many of the sediment delivery systems in Curry's Fork but had not directly addressed upland erosion or hill slope storage. Additional efforts were made using a GeoWEPP model (Geographic Water Erosion Prediction Project) to further define the connection between upland erosion, hill slope storage, and upland channel systems connection to streams.

The GeoWEPP model incorporates various factors to determine upland erosion rates. These factors include soil types, land use, topography, and climate. Results of the GeoWEPP model were compared to data collected from pond surveys performed by U of L to verify model outputs. Figure 1 shows the GeoWEPP model results. Figure 2 shows model results correlated well with data collected from the eleven pond surveys with no overall over or under prediction of erosion rates.

Figure 1 shows the results of the GeoWEPP model for the entire watershed.

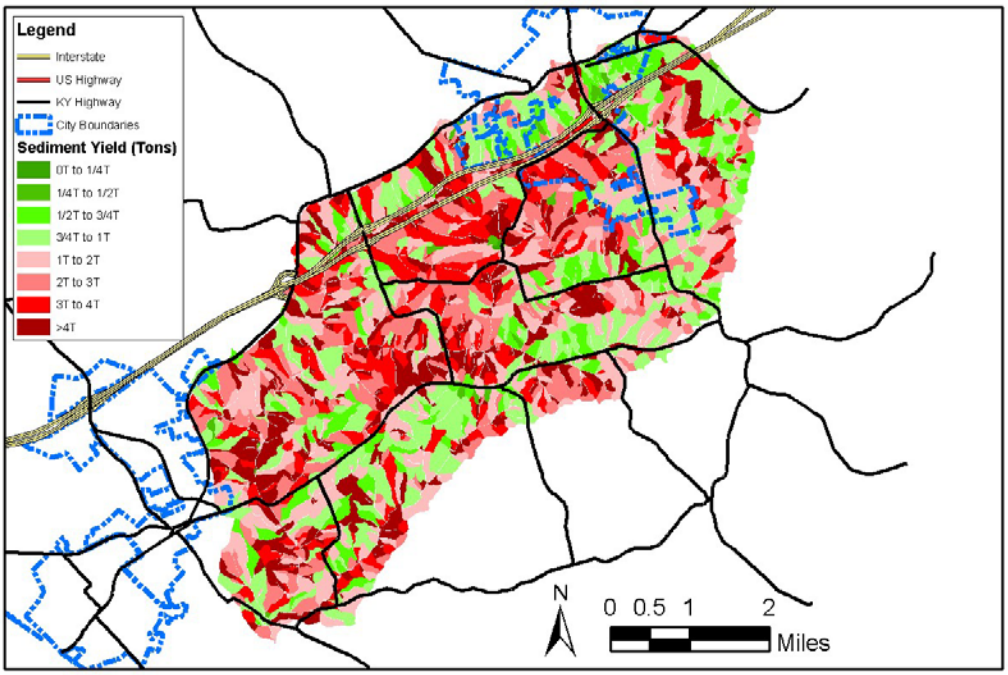

Figure 1 - GeoWEPP Model Results

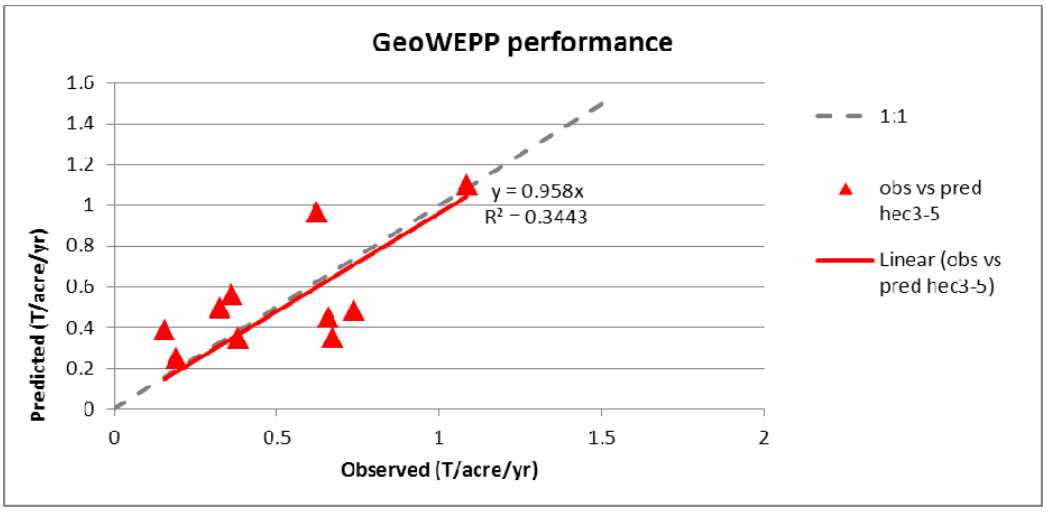

Figure 2 - GeoWEPP Model and Pond Survey Correlation

b) Model Results and Discussion

Mike emphasized that the estimated erosion rates through the GeoWEPP model and pond surveys did not indicate Curry's Fork had exceptionally high erosion rates, but that there appeared to be a lack of hill slope storage to prevent sediment from upland sources from entering streams.

A number of factors can cause the removal of sediment storage areas, such as development and construction but also the natural progression of streams. Model results also did not indicate any specific watershed as having significantly higher or lower erosion rates compared to each other.

There was not a direct connection of land use to increased erosion rates. It was indicated the agricultural lands, often assumed to have high levels of erosion from the surface, typically had lower erosion rates. This could be due to the fact they are not active and/or farmers are taking care of their land and actively trying to prevent surface erosion. Development has impacted upland erosion but it is not entirely responsible for it.

Paul Maron described the spatial analysis that was performed to determine a weighted average sediment erosion rate for each subwatershed and the entire watershed. Table 1 shows the results of this analysis.

Watershed	Weighted Average Sediment Yield (Tons)
Curry's Fork Main Stem	2.31
South Curry's	2.25
North Curry's	2.21
Ashers Run	1.88
Entire Watershed	2.20

Table 1 - Average Sediment Yields

The results of this analysis also indicate there is no watersheds with significantly higher or lower erosion rates. All subwatersheds are within 20 percent of each other and excluding Ashers Run, the remaining subwatersheds are within 5 percent of each other. From a modeling standpoint, this indicated they are essentially the same. The model is an excellent tool to determine trends and larger areas that may have higher erosion rates but not to determine specific erosion rates at specific areas within the watershed.

4) Watershed Solutions

Due to model results showing similar results across the watershed, only watershed wide solutions were considered for discussion.

The following are proposed solutions that were discussed

1. Encourage producers with marginal pasture lands to put land into conservation easements
    i. CREP, NRCS programs, and KDOF programs are all potential funding mechanisms or organizations that could be contacted for additional information
2. Promote Land Stewardship programs
    i. During the meeting, it was stressed to find ways to instill a sense of maintenance and pride about land. Many smaller upland streams and erosion areas are on private property. Educating homeowners benefits of maintaining property

3. Promote and/or expand existing tree planting programs
    i. High potential to work with existing programs. State organizations and other organizations such as the Arbor Day Foundation have tree planting programs. Potential to also partner with school system for tree planting events and other educational opportunities.
4. Strategically placed basins or wetlands to increase hill side storage
    i. Use model and local knowledge of technical committee to identify areas with potential
5. Further promote Low Impact Development (LID) and construction erosion control practices.
    i. These practices are driven by past mind sets of not doing it and by economics. It was stressed that creative ways are needed to implement incentives for including LID.
6. Expand ordinances for increased floodplain/stream protection zones
7. Promote BMPs in upland areas to maximize infiltration and reduce runoff

It was stressed again that erosion rates in Curry's Fork are not as severe as other watersheds. It was agreed upon that upland erosion control measures should be more protection based since sediment is not considered the primary cause of non-supporting water. Solutions should targeted to improve stream habitats and to potentially have side benefits of upland erosion control. Solutions targeting upland erosion should also be more focused for retrofits and for protection of further damage.