Spatial Considerations Associated with Analysis of Tropical Steepland Erosion Processes and Impacts. (A06-thurow143411-Oral)

Authors:

- T.L.Thurow* - *University of Wyoming*
- A.S.R.Juo - *Texas A and M University*

Abstract:

A six-year comparison of plot-scale (2 m by 22 m)and field-scale (0.3 ha) measurements conducted on steepland Alfisols in southern Honduras illustrated that erosion estimates differed by orders of magnitude. About 94% of the erosion that occurred on the field-scale plots was attributed to landslide processes; the plot-scale research was only suitable for measuring interrill erosion. Conservation treatments tested on these two scales led to different conclusions (e.g., plot-scale research indicated that mulching or herbaceous cover crops would be cost-effective, sustainable soil conservation solutions; field-scale plots indicated that only much more expensive treatments that tie the soil to the hillside would be sustainable). Landslide patterns associated with Hurricane Mitch confirmed the field-scale plot conclusions. Landslide patterns were used to develop a huristic model of landslide risk that is useful for targeting soil conservation investment to achieve greatest economic benefit within the watershed (protection of downstream interests offered the greatest economic rationale for targeting steepland conservation investments).

Corresponding Author Information:

Thomas Thurow
University of Wyoming
Renewable Resources Department
Laramie, WY 82071

phone: 307-766-5130
fax: 307-766-6403
e-mail: tthurow@uwyo.edu

Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 8:20 am

Keywords:

erosion, tropical steepland, spatial processes, impact assessment