Developing interfaces for the APEX and WEPP models

National Soil Erosion Research Laboratory

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Research studies on non-point source pollution generally have received intense attention in recent years due to the seriousness and pervasiveness of the problem. Computer models generally can help estimate levels of non-point source pollution and the effects of management practices that can help alleviate the problem. Currently, popular models include the soil and water assessment tool (SWAT) model, the agricultural policy environmental extender (APEX) model, and the water erosion predict project (WEPP) model, among others. SWAT is a watershed scale model. APEX and WEPP are more at the field or small watershed scale. Application of SWAT at the watershed scale has been conducted extensively in supporting policy makers dealing with large scale problems. Comparatively, field scale simulation has received much less attention than needed. Simulation at the field scale could be more effective than at the watershed scale since fields or small watersheds are the exact places where non-point source pollution happens. In addition, effectiveness of management practices varies greatly across fields and requires site-specific analysis. However, there is a lack of a handy interface for the APEX model to conduct field scale simulation. During the past three years, I have developed two interfaces for the APEX model to facilitate field scale simulation and added a small modification to the WEPP model interface. During this presentation, I will provide some background and demos for the interfaces that I have developed.