

Accuracy of GeoWEPP in estimating sediment load and runoff from a tropical watershed.

ABSTRACT

GeoWEPP, an integration of WEPP and TOPAZ within a GIS interface, was used to predict sediment load and runoff at the Lui Watershed, Selangor, Malaysia. Input files for land cover, slope, climate, soil, and management were generated within GeoWEPP and WEPP interfaces and topographic data comprising 1017 hillslopes were parameterized using TOPAZ algorithm. CLimate GENerator (CLIGEN) was used to estimate stochastic climatic parameters. Soil properties such as frequency of soil particles, CEC, OC, and rock fragment were utilised to define a reasonable range of soil parameters. A management file was generated using EPIC algorithm for different land use types and for all hillslopes during the simulation period 1996 - 2008. The results showed an over-estimation of sediment load and an underestimation of runoff compared to measured data. This work shows that GeoWEPP is able to predict runoff more accurately than sediment load.

Keyword: GeoWEPP; Sediment load; Runoff; Watershed; GIS.