Advanced Terrain Modeling and Erosion Simulation Tools for Improved Military Land Management: a GIS Tutorial. (A02-hohmann124202-Poster)

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Abstract:

Soil destabilization and erosion are critical concerns on Army installations because they impact environmental compliance and Army mission requirements. Erosion impacts include: loss of carrying capacity and training land sustainability, siltation of waterways, runoff of contaminated sediment, offsite flooding, damage to threatened and endangered species habitat, and increased establishment and spread of non-native invasive weeds. Consequently, it is imperative that accurate methods of estimating soil erosion and deposition over complex landscapes are available to land managers. To meet this Army need, ERDC has supported research on the development and enhancement of empirical and process-based erosion modeling tools. Here we present applications of these erosion modeling tools using examples at a hierarchical set of data resolutions and scales. An electronic tutorial of the erosion modeling tools, with application examples and software downloads, is available on DENIX. The tutorial includes: 1) descriptions and discussion of data preparation, 2) advice on running the erosion models, and 3) descriptions of analyses, summary statistics, and preparation of meaningful maps.

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