



Searching: **Academic Search Premier** | Choose Databases >

Search input fields with labels: in Select a Field (optional), AND, in Select a Field (optional), AND, in Select a Field (optional)



UNIV OF MINNESOTA - TWIN CITIES

Basic Search | Advanced Search | Search History

Results may also be available for: **Lowder, Ladder, LiDo, EPP, WEPT, REPP**

You may want to try your search again after following one or more of these tips:

- Check the spelling of your search terms. Correct any misspellings and re-run the search.
- To broaden your search, use the Boolean operator OR. For example, type: Siamese OR cats.

See [hints](#) for suggestions.

Result List | Refine Search | 1 of 2

Detailed Record

Find It Check SFX for more information

Find Similar Results using SmartText Searching.

EFFECTS OF DEM SOURCE AND RESOLUTION ON WEPP HYDROLOGIC AND EROSION SIMULATION: A CASE STUDY OF TWO FOREST WATERSHEDS IN NORTHERN IDAHO.

Authors: Zhang, J. X.¹ xzhang2@fsc.edu
Wu, J. Q.^{2,3}
Chang, K.⁴
Elliot, W. J.^{1,5}
Dun, S.⁶

Source: Transactions of the ASABE; Mar/Apr2009, Vol. 52 Issue 2, p447-457, 11p, 9 Charts, 3 Graphs

Document Type: Case Study

Subject Terms: *CASE studies
*HYDROLOGIC models
*SOIL erosion
*TOTAL suspended solids
*WATERSHEDS -- Idaho

Geographic Terms: IDAHO

Author-Supplied DEM

Keywords: Forest watershed
GIS
LIDAR
Water erosion modeling
WEPP

Abstract: The recent modification of the Water Erosion Prediction Project (WEPP) model has improved its applicability to hydrology and erosion modeling in forest watersheds. To generate reliable topographic and hydrologic inputs for the WEPP model, carefully selecting digital elevation models (DEMs) with appropriate resolution and accuracy is essential because topography is a major factor controlling water erosion. Light detection and ranging (LIDAR) provides an alternative technology to photogrammetry for generating fine-resolution and high-quality DEMs. In this study, WEPP (v2006.201) was applied to hydrological and erosion simulation for two small forest watersheds in northern Idaho. Data on stream flow and total suspended solids (TSS) in these watersheds were collected and processed. A total of six DEMs from the National Elevation Dataset (NED), Shuttle Radar Topography Mission (SRTM), and LIDAR at three resolutions (30 m, 10 m, and 4 m) were obtained and used to calculate topographic parameters as inputs to the WEPP model. WEPP-simulated hydrologic and erosion results using the six DEMs were contrasted and then compared with field observations. For the study watersheds, DEMs with different

Tools

- Add to folder
- Print
- E-mail
- Save
- Cite
- Export
- Create Note
- Permalink
- Bookmark

resolutions and sources generated varied topographic and hydrologic attributes, which in turn led to significantly different erosion simulations. WEPP v2006.201 using the 10 m LIDAR DEM (vs. using other DEMs) produced a total amount of as well as seasonal patterns of watershed discharge and sediment yield that were closest to field observations. [ABSTRACT FROM AUTHOR]

Copyright of Transactions of the ASABE is the property of American Society of Agricultural & Biological Engineers and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use. This abstract may be abridged. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material for the full abstract. (Copyright applies to all Abstracts.)

Author ¹Assistant Professor, Department of Geo/Physical Sciences, Fitchburg State College, Fitchburg, Massachusetts
Affiliations: ²ASABE Member Engineer
³Associate Professor, Department of Biological Systems Engineering, Washington State University, Pullman, Washington
⁴Professor, Department of Tourism, Kainan University, Luzhu, Taoyuan, Taiwan
⁵Team Leader, USDA Forest Service, Rocky Mountain Research Station, Moscow, Idaho
⁶Graduate Associate, Department of Biological Systems Engineering, Washington State University, Pullman, Washington

ISSN: 21510032

Accession 39660569

Number:

Database: Academic Search Premier

[◀ Result List](#) | [Refine Search](#) | 1 of 2 ▶

[Top of Page](#)

[EBSCO Support Site](#) | [Privacy Policy](#) | [Terms of Use](#) | [Copyright](#)

© 2011 EBSCO Industries, Inc. All rights reserved.