



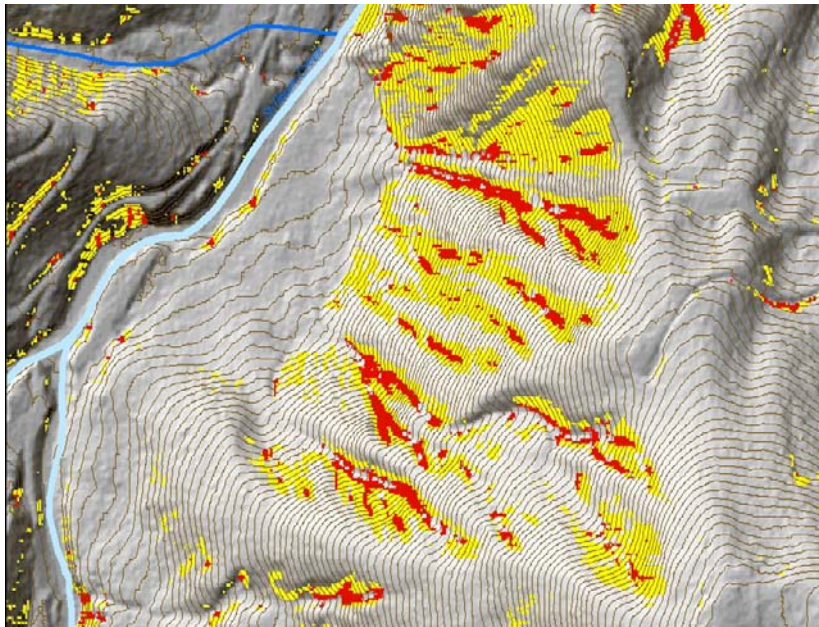
WASHINGTON STATE DEPARTMENT OF  
**Natural Resources**  
Peter Goldmark - Commissioner of Public Lands

## EARTH SCIENCES PROGRAM FOR STATE TRUST LANDS Recent and Current Projects

**Shallow Landslide Source Area Identification**

Shallow landslides are a significant source of sediment on managed forestlands in the Pacific Northwest. Earth Sciences Program staff are developing a computer-based screening tool to identify Forest Practices rule-identified landforms recognized as potential source areas of management-related shallow landslide initiation. Using two-meter resolution Light Detection and Ranging (LiDAR) digital elevation models in a geographic information system environment, staff successfully have used slope angle and slope convergence to identify landforms commonly recognized as shallow landslide source areas (colluvial hollows and low-order inner gorges). The use of slope angle and slope convergence shows great promise as a means of remotely identifying high hazard landforms.

The goal of the project is to produce a new, LiDAR-based screening tool to allow natural resource managers to identify hazardous landforms during early stages of planning for forest management actions. As a result, this will decrease the rate of shallow landslides associated with various activities in trust forests.



Example output from the LiDAR-based SLIPS tool

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