

## Abstract

A total of 44 soil cores were collected and described across a hillslope (approximately 20 hectares) in southeastern Minnesota within the Major Land Resource Area 105. In 2007, 2008 and 2009, ten piezometers collected water table depths every two hours continuously throughout the growing season. The hydrologic monitoring of the study site was used to associate water depth and duration of saturation to the soil morphology and stratigraphy. This study's objectives are (1) to describe soil profiles and identify redoximorphic features and link them with actual zones of saturation, (2) develop a landscape model of water table depth across the entire hillslope and (3) determine if predictions of water table elevations can be made using certain attributes (slope, plan curvature and profile curvature) of the landscape along with precipitation data. The soil landscape model is a 3-dimensional image of how soil stratigraphy and bedrock interact and influence subsurface hydrologic processes. The prediction of water table elevations are shown by an animation of a selection of data that were generated and manipulated using Avizo, a general-purpose visualization, analysis and 3D reconstruction software. This project is a prelude to a new approach for communicating soil survey information. It was found that the redoximorphic features found on site were contemporary features that were associated with an active hydrology. Animations of the site can provide a tool for education for non-soil scientists to understand landscapes in time and space.