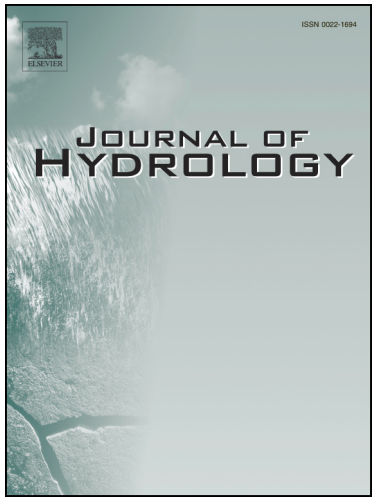

Research papers

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PII: S0022-1694(18)30085-4
DOI: https://doi.org/10.1016/j.jhydrol.2018.02.009
Reference: HYDROL 22558

To appear in: *Journal of Hydrology*

Received Date: 22 September 2017
Revised Date: 23 December 2017
Accepted Date: 6 February 2018

Please cite this article as: O'Neil, G.L., Goodall, J.L., Watson, L.T., Evaluating the Potential for Site-Specific Modification of LiDAR DEM Derivatives to Improve Environmental Planning-Scale Wetland Identification using Random Forest Classification, *Journal of Hydrology* (2018), doi: https://doi.org/10.1016/j.jhydrol.2018.02.009

Evaluating the Potential for Site-Specific Modification of LiDAR DEM Derivatives to Improve Environmental Planning-Scale Wetland Identification using Random Forest Classification

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Abstract

Wetlands are important ecosystems that provide many ecological benefits, and their quality and presence are protected by federal regulations. These regulations require wetland delineations, which can be costly and time consuming to perform. Computer models can assist in this process, but lack the accuracy necessary for environmental planning-scale wetland identification. In this study, the potential for improvement of wetland identification models through modification of digital elevation model (DEM) derivatives, derived from high-resolution and increasingly available Light Detection and Ranging (LiDAR) data, at a scale necessary for small-scale wetland delineations is evaluated. A novel approach of flow convergence modeling is presented where Topographic Wetness Index (TWI), curvature, and Cartographic Depth-to-