Environmental Sciences Graduate Program Student Seminar Series

Using High Resolution Aerial Image and LiDAR DEM to Identify Wetlands Area

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March 26th, 2021 | 2:00-3:00 PM

Join Zoom Meeting

https://osu.zoom.us/j/99820921442?pwd=d3hpTS9wYnc2Z29uZDR4NE4wNy81UT09

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Abstract

Wetlands are known as the “world’s kidney” because of their ability to store, assimilate, and transform contaminants lost from the land before they reach waterways. However, approximately 35 percent of the world's wetlands were lost between 1970-2015. With the improved computational power, wider availability of data, and more various data science algorithms, remote sensing has become one of the main tools for wetlands delineation that benefits wetland management. The goal of my research is to review the existing methods for remote sensing image classification and wetland identification then use the high-resolution aerial image and LiDAR DEM to extract wetland extent. In this study, two classification methods were applied to three huc-12 watersheds in Northeast Ohio to identify wetland area using NAIP imagery, OSIP LiDAR DEM, NWI, and SSURGO soil data. The overall accuracy of the two methods were 77.9% and 82.3% respectively. The results indicated the potential of high-resolution imagery and LiDAR data in characterizing wetlands. In the meanwhile, the limitations and potential improvements of this study were proposed.