



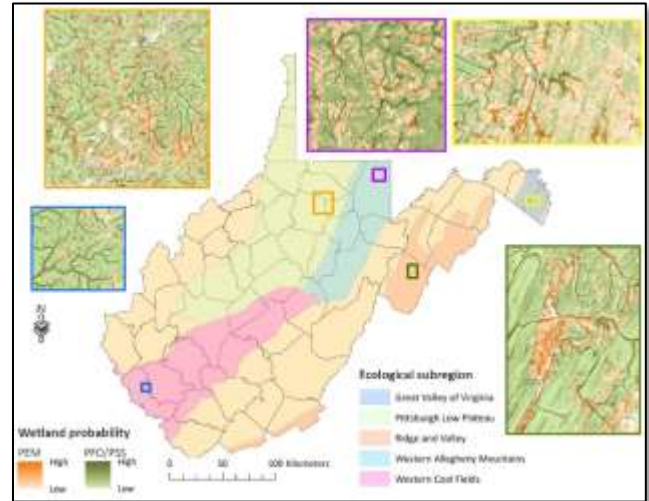
WEST VIRGINIA VIEW REMOTE SENSING ACTIVITIES 2014 - 2015



PREDICTING THE PROBABILITY OF WETLAND OCCURRENCE IN WEST VIRGINIA

The goal of this West Virginia View project was to map the likelihood of palustrine wetland occurrence based on topographic variables derived from National Elevation Dataset (NED) digital elevation data. Random forest machine learning was used to generate the map. Palustrine wetlands are a key habitat for many species of interest to conservationists, hunters, tourists and the public at large.

The outcome of the classification was a probability surface, representing the likelihood of palustrine wetland occurrence. This data set will be of value for updating and improving the National Wetland Inventory (NWI). Although the NWI dataset is highly accurate overall, it is not an exhaustive map of every wetland, particularly in the case of palustrine wetlands. In addition, the probability surface could also be used as a screening tool to focus evaluation, refinement and updating of previously delineated wetlands. This work was conducted at Alderson Broaddus University by the Alderson Broaddus Geospatial Lab, and involved an undergraduate student. The project was completed with assistance from the West Virginia Division of Natural Resources (WVDNR).



Example of palustrine forested/palustrine scrub shrub (PFO/PSS) and palustrine emergent (PEM) wetlands occurrence probabilities in selected regions in the state of West Virginia. (Note: inset maps are keyed to the rectangles in the main map.)

HIGH SPATIAL RESOLUTION LAND COVER CLASSIFICATION OF PRESTON COUNTY, WEST VIRGINIA



Land cover classification for Preston County, WV.

The land cover of Preston County, West Virginia was mapped using a variety of inputs including National Agriculture Imagery Program (NAIP) photography, light detection and ranging (LiDAR) data, US Census road data, and mapped manmade structures. The map was produced using object-based image analysis as implemented in the software tool eCognition and random forest machine learning using the software tool R.

This research highlighted the value of incorporating a variety of remotely sensed data types and advanced classification methods for generating a high resolution land cover map at the county level. The land cover map will be of use to state and non-profit natural resource agencies.

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West Virginia View is a member of the AmericaView Consortium, a nationally coordinated network of academic, agency, non-profit, and industry partners and cooperators that share the vision of promoting and supporting the use of remote sensing data and technology within each state.



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BENEFITS TO WEST VIRGINIA

West Virginia View, and the projects sponsored by the consortium, provide a variety of benefits to the Mountain State, including:

- A framework for formal cooperation between the major West Virginia remote sensing organizations.
- Promotion of community outreach.
- Support for undergraduate and graduate remote sensing and geospatial education.
- Enhancement of opportunities for undergraduate and graduate research.
- Access to geospatial data via the website wvview.org.
- Promotion of theoretical and applied research relevant to the needs of West Virginia.
- Generation of maps for the state or regions in the state, including:
 - Land cover
 - Wetlands
 - Forest type



Remote sensing and geospatial research lab (Alderson Broaddus Geospatial Lab) established at Alderson Broaddus University in Philippi, WV with support from West Virginia View.

WEST VIRGINIA VIEW CONSORTIUM MEMBERSHIP



USDA FOREST SERVICE



Federal consortium members identified above do not receive funding from AmericaView.

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