

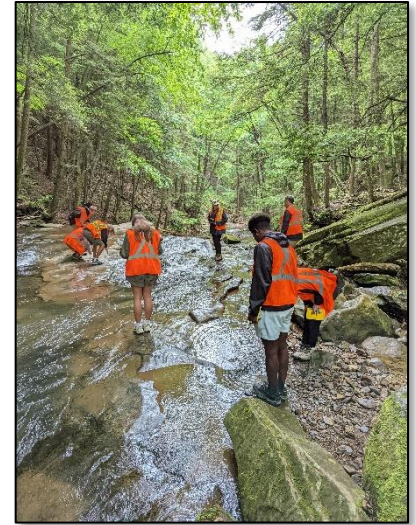


PENNSYLVANIAVIEW 2021 - 2022

AmericaViewSM
Empowering Earth Observation Education
americaview.org

PENNSYLVANIAVIEW 2021 - 2022 ACTIVITIES

In service to the AmericaView initiatives of PennWest University – California (formerly California University of Pennsylvania), multiple projects were completed or developed during the academic year Fall 2021 to Spring 2022 and through the following summer and fall of '22. Most of those projects fall within the scope of the Pike Run Watershed but serve the broader communities within Washington, Fayette, and Allegheny Counties of southwestern PA and extended reach to eastern Ohio, northern West Virginia, and northwestern PA. Projects include course-related education involving PennWest – California (PWUC) students in Hydrology, Geomorphology, Introduction to Soils, Watershed Evaluation and Management, and Advanced Environmental Geology. Over three entire semesters, over 100 students participated in field experiences involving stream flow and water quality measurements using equipment and materials secured through AmericaView funding. One example of impactful student opportunities included using GIS and database management, in addition to spatial data for the region of eastern Washington County. Students evaluated historical maps and aerial imagery against modern imagery and satellite data to identify land use changes and determine potential sources of sediments and nutrients to regional streams.



Students working on stream flow and water quality.



Table work of drilling.

In Spring 2022, a special symposium in concert with the Pittsburgh Geological Society (PGS) and multiple environmental consulting firms invited students, professionals, and community members to the "SAI Farm" of PWUC's Student Association, Inc. This "drilling workshop" leveraged academic and environmental professionals' experience to share common challenges of resource extraction and legacy industries in western PA. Participants used historical and modern maps and air photos to determine potential environmental hazards, predict the behavior of contaminants, and establish potential remedial strategies. During the workshop, three faculty members (PWUC – 2, Slippery Rock University – 1), five professionals, including drillers, 25 students, and 12 community members participated. After "table" work simulating Phase I site investigations using spatial and tabular data, and participants spent the following day in the field on a drill rig site with professional demonstrations of geotechnical and environmental techniques.



Drill Work.

PennsylvaniaView 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. AmericaView is funded by USGS grant agreement G18AP00077.

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BENEFITS TO PENNSYLVANIA

PennsylvaniaView's projects are not just focused on southwestern Pennsylvania. We are a consortium of members throughout the Commonwealth of Pennsylvania. Our primary goal is to educate the public about remotely sensed imagery and provide any information in a public forum. Here is one example:

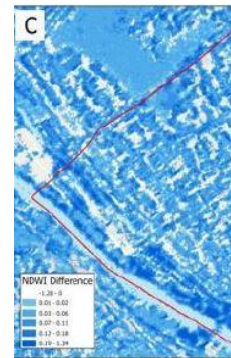
Villanova University Project

Imagery was acquired from multiple sources (Planet Lab and SPOT-6 1.5m pan-sharpened, orthorectified imagery) to piece together data of the City of Philadelphia before and after Hurricane Ida hit. One neighborhood in particular was used as a case study in this research which had reported significant impacts from flooding during Hurricane Ida as well as a previous tropical storm that occurred in 2020, Tropical Storm Isaias. Each image included RGB and Near-Infrared bands that allowed researchers to utilize the Normalized Difference Water Index (NDWI), a calculation which enhances open water features while reducing the reflectance of soil and vegetation features.

The results indicate that Hurricane Ida caused widespread moisture increases, and likely areas of storm water inundation, especially within the neighborhood of Manayunk.



Post Hurricane Ida in Manayunk



Results of the NDWI calculation.

PENNSYLVANIAVIEW CONSORTIUM MEMBERSHIP



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