



KENTUCKYVIEW REMOTE SENSING ACTIVITIES 2015 - 2016



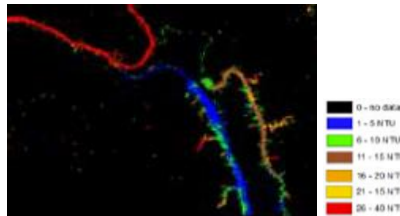
INLAND WATER QUALITY MONITORING PROGRAM

KentuckyView has been involved with Kentucky water quality mapping projects to establish a methodology for mapping water quality parameters. Factors included total suspended solids (TSS) concentrations, turbidity and Chlorophyll-a (an indicator of phytoplankton biomass) using Landsat-8. For this high-impact study, named the "Inland Water Quality Monitoring Project," Landsat-8 imagery was utilized to develop the needed methodology. This activity is the first key step in establishing a state-wide water quality monitoring program in support of environmental planning and modeling activities.

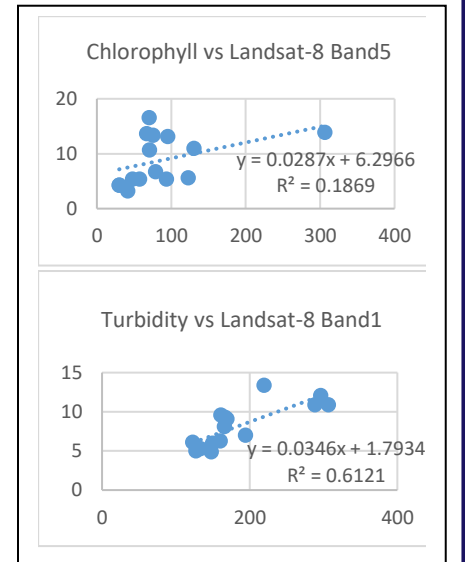
During 2015-2016, Landsat-8 surface reflectance data and water quality data obtained from ground surveys were used in a regression analysis to map the three water quality parameters, TSS, turbidity and Chlorophyll-a, for Kentucky. These initial products were used to develop a general methodology for mapping water quality parameters that can be used nationwide.



Water bodies in Kentucky



Western Kentucky water quality map (turbidity)



Linear regression plots of Chlorophyll-a and turbidity versus Landsat-8 band values

TRAIN-THE-TRAINER (TTT) TEACHER WORKSHOP

A Train-The-Trainer (TTT) teacher workshop was held at Murray State University on September 23, 2016. A total of 11 pre-service students attended the TTT workshop. Several USGS and NASA products, such as Landsat-5, 7 and 8, and elevation models, were utilized. The students worked on five remote sensing modules, and wrote a report for each module and answered questions related to the exercises in the modules. One of the AmericaView developed modules, Remote Sensing Memory Game, was used to show students how environmental change is interpreted using remote sensing.



Workshop participants are using the "Remote Sensing Memory Game"



Winners of the "Remote Sensing Memory Game"

BENEFITS TO KENTUCKY

The primary focus of KentuckyView is the use of images collected from spaceborne and airborne sensors, as well as other geospatial technologies, to support K-16 education, applied research, and public outreach. The Inland Water Quality Monitoring Program have improved understanding of environmental conditions, allowing Kentucky to manage agricultural and water resources more efficiently. Remote sensing education and outreach activities helped inform and educate teachers, students and the public.

- Support K-16 education
- Applied research
- Public outreach
- Improved understanding of environmental conditions
- Efficiently manage water resources
- Collaboration among institutions
- Hands-on workshops
- Citizen scientist involvement

KentuckyView 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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ADDITIONAL KENTUCKYVIEW ACTIVITIES

The 2016 Earth Observation and Earth Day Events

Date of Event: Tuesday, April 26, 2016

Title of Event: 2016 Murray State University Earth Day and Earth Observation Day Meeting

Organizer: Dr. Haluk Cetin

Number of Teachers: 5

Number of Students: 32

Number of Visitors (Public):3

Earth Observation Day celebrations were held at the Blackburn Science Building of Murray State University on April 26, 2016. The event started at 2:00PM with a presentation by the keynote speakers, Chris Lamm, GIS Manager, City of Murray, KY and Mary Lamm, the Service Hydrologist, the National Weather Service Office, Paducah, KY. The presentations were well received. Undergraduate and graduate students of Dr. Cetin presented their term project results. A poster session followed the student presentations.

The event was sponsored by AmericaView/USGS, KentuckyView, ASPRS and the Department of Geosciences.



Chris Lamm, GIS Manager, City of Murray, KY and Mary Lamm, the National Weather Service Office, Paducah, KY



Keynote presentation by Mary Lamm, the National Weather Service Office, Paducah, KY

KENTUCKYVIEW CONSORTIUM MEMBERSHIP

- Morehead State University - Department of Earth and Space Sciences
- Kentucky Division of Geographic Information
- Kentucky Geological Survey
- Eastern Kentucky University - Department of Geography
- Jefferson Community and Technical College
- Kentucky State University
- Murray State University - Mid-America Remote Sensing Center and the
- Department of Geosciences (official member of record)
- University of Kentucky - College of Agriculture
- Western Kentucky University - Department of Geography and Geology
- University of Louisville - Center for Geographic Information Sciences
- Northern Kentucky University - History and Geography Department



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