

MSFC Water Resource Team Video Transcript

[noise simulating satellite moving overhead in space]

[music]

[Casey Calamaio] "Hi, my name is Casey Calamaio. I'm a senior at UAH studying Earth System Science, focusing on GIS and Remote Sensing"

[Kel Markert] "Hi, my name is Kel Markert. I'm a senior here at UAH studying Earth System Science, focusing on earth's ecology."

[Rob Graham] "Hi, my name is Rob Graham. I'm a senior here at UAH and studying Earth System Science with a concentration in GIS"

[Victoria Florence] "Hello, my name is Victoria Florence and I'm a senior at Bob Jones High School."

[Africa]

[Music]

"The Alabama Department of Environmental Management is responsible for monitoring the water quality of Alabamas public lakes. They are currently limited to field measurements taken at trend stations, normally at fixed points around the lake. ADEM and other environmental management agencies would benefit from having remotely sensed data to measure a larger area of the lake and have a more comprehensive understanding of the conditions on site."

"Lake Guntersville is a large portion of the Tennessee River located in northeast Alabama and is normally quite active with human recreation. In the field, our methods reflected as closely as possible the currnet techniques used to measure transparency in water. A self fabricated Secchi Disk was used to gather our field emasurements and recording GPS points identified the geographic locations of each measurement."

[music]

"The modis sensors, Terra and Aqua, as well as the Landsat & Enhanced Thematic Mapper, were used to observe the correaltion of individual pixel values corresponding to transparency measures around the lake. Both single band estimates, of red, green and blue wavelengths, and band ratios were used to qualitatively observe the relationship of the two datasets. As was determined by previous studies, the red band in the visible light spectrum best correlates with the Secchi disk depth due to its low absorpion and scattering properties."

[music]

"This project was a test bed for future work and successfully acheived the goal of field excursions in tandem with satellite imaging over a geographic region. Although the number of field samples and variability of values was to small for definitive statistical correlation, the reflectance value per pixel and the measured Secchi Disk Depth display similar changes per location. A visual representation of the transparency is evident from Landsat 7 and

MODIS images and shows the expected results qualitatively. A greater force of data collection is required for a comprehensive quantitative analysis. Future work also consists of identifying the correlation of pixel values to chlorophyll and phosphorus concentrations, as well as surface temperature of fresh water lakes."

[ending]