



# NEW YORKVIEW REMOTE SENSING ACTIVITIES 2014 – 2015



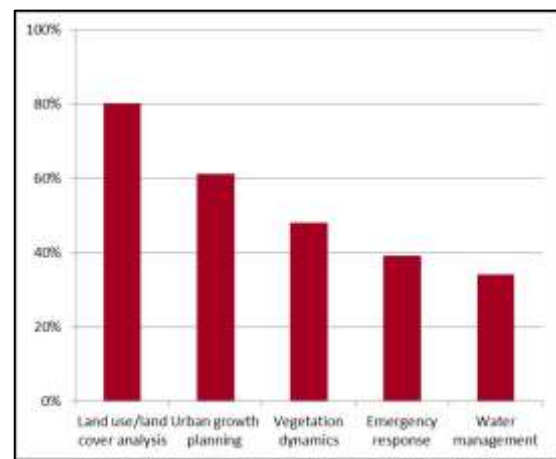
## UNDERSTANDING REMOTE SENSING APPLICATIONS IN NEW YORK STATE

Remote sensing provides an extraordinary tool for helping scientists and non-scientists alike understand and characterize the condition and change of the natural and built environment. With access to imagery archives dating back decades, researchers have significant opportunities to explore New York State (NYS) from this birds-eye view.

New YorkView (NYView) became a member of the AmericaView Consortium in 2014. One of the first activities completed by NYView was a survey to understand current applications of remote sensing data within NYS. This project was important to identify applications that remote sensing tools and data can support and determine any limiting factors that analysts have in using remotely sensed imagery. The survey particularly aimed at better understanding user needs within the state and defining the ongoing focus of the NYView consortium. The survey also sought to identify opportunities to establish partnerships to support state needs.

The survey was prepared by a NYView-funded graduate student working at the State University of New York (SUNY) College of Environmental Science and Forestry. The student developed a Qualtrics survey and reached out to existing consortium members and other remote sensing users throughout the state. The majority of the 44 survey respondents came from academia (66%), with a smaller portion coming from private sector (16%), government (14%) or non-profit organizations (5%).

The survey showed that 61% of respondents used remotely sensed data in education and 59% of respondents performed applied research using remote sensing data sources. The figure below shows the top five application areas reported.



Top five remote sensing-focused application areas for researchers in New York State.

Land cover and land use inventory or change analysis, urban growth planning, vegetation dynamics, and emergency response drew significant attention. However, respondents also reported interest in a broad range of applications including ecology, geology, geography, phenology, education, forestry, and agriculture. Survey respondents also identified key remotely sensed data sources: NYS orthoimagery (84%), Landsat (75%), USGS/USDA high spatial resolution imagery (66%), commercial high spatial resolution imagery (34%), and MODIS (30%). Of the respondents, 89% downloaded data from the NYS GIS Clearinghouse (gis.ny.gov), 66% downloaded data from Earth Explorer (earthexplorer.usgs.gov), and 43% used the Global Visualization Viewer (glovis.usgs.gov).



Natural color Landsat 5 Thematic Mapper (TM) image acquired on October 10, 1992 (top) and Landsat 8 Operational Land Imager (OLI) image acquired on September 18, 2015 (bottom). The TM image shows algal blooms in Oneida Lake, in Central New York State.

New YorkView 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 Website: [www.AmericaView.org](http://www.AmericaView.org)  
Roberta Lenczowski, Executive Director: [roberta.lenczowski@sbcglobal.net](mailto:roberta.lenczowski@sbcglobal.net)  
Debbie Deagen, Program Manager: [debbie.deagen@montana.edu](mailto:debbie.deagen@montana.edu)  
Russell Congalton, Board Chair: [russ.congalton@unh.edu](mailto:russ.congalton@unh.edu)

## BENEFITS TO NEW YORK STATE

Completion of the survey was important to identify researchers, educators, and scientists working with remote sensing data within NYS and define critical state needs that remote sensing tools and data can support. The survey also sought to identify challenges that might limit the application of remote sensing imagery.

Survey respondents identified issues related to three primary areas: data, website access, and analysis. In addition to challenges with management of data volume, people expressed concern about the availability of data and suitable supporting metadata. They wanted to find clear and complete metadata with descriptions to support and guide suitable data applications. Several respondents expressed frustration with the constantly changing web interfaces of many data distributors. They sought a website with a stable interface that best supported frequent data updates. Most researchers preferred preprocessed imagery, particularly in terms of rectification and atmospheric correction, to balance challenges associated with the time needed to perform both data preprocessing and analysis. Survey respondents also mentioned challenges associated with data distribution and inconsistent availability of key datasets such as lidar.

Study sites varied in scale from local to global; however, the majority of survey respondents were working within New York State. Researchers are using imagery to solve issues faced within the state and develop new methods to improve efficiency.



*Natural color Landsat 5 TM image acquired on April 4, 2010 (left) and Landsat 8 OLI image acquired on April 2, 2015 (right) showing several of the Finger Lakes and southeastern Lake Ontario. With the colder spring in 2015, much of the region—over land and water—is still ice-covered and there is little sign of plant growth.*

## NEW YORKVIEW CONSORTIUM MEMBERSHIP

Current NYView consortium members include: the State University of New York (SUNY) College of Environmental Science and Forestry (ESF), the Institute for Resource Information Sciences (IRIS) at Cornell University, SUNY Fredonia, and SUNY Plattsburgh.

NYView aims to continue to add consortium members to support collaboration and enhance remote sensing activities across the state. Interested researchers and users of remote sensing data should visit the NYView webpage ([www.esf.edu/nyview](http://www.esf.edu/nyview)) or contact the NYView Principal Investigator for more information.



Cornell University



New YorkView Principal Investigator:

Lindi Quackenbush

SUNY College of Environmental Science and Forestry

1-315-470-4727

[ljquack@esf.edu](mailto:ljquack@esf.edu)



<http://www.esf.edu/nyview>