



# NEW YORKVIEW REMOTE SENSING ACTIVITIES 2015 – 2016



## USE REMOTE SENSING TO CHARACTERIZE A CHANGING NEW YORK STATE

In New York State (NYS), remote sensing analysis is applied to land cover and land use inventory and change analysis, urban growth planning, vegetation dynamics monitoring, and emergency response and water management. Remote sensing provides an extraordinary tool for helping scientists and non-scientists alike understand and characterize change to the natural and built environment. NYView identified a series of U.S. Geological Survey (USGS) Landsat-based change-pair images that reflect the wide range of applications of remotely sensed data applied by researchers working in New York State in order to facilitate communication of the utility of remote sensing analysis to the general public.

During the current grant year NYView utilized the results of a survey performed in a prior year to identify several target applications. The focus was creating a collection of Landsat-based change images to enhance understanding of how imagery can support such applications for those not trained in remote sensing. The collection includes image pairs that demonstrate seasonal, annual, and decadal change, such as the images of western New York shown to the right, which highlight annual variability in snow cover. These change pairs are available for direct download from the NYView web site, which now hosts more than twenty different change pairs organized by time interval and thematic coverage.

NYView consortium members presented a poster built around the change pairs in various locations around New York State including the NYGeoCon meeting in Albany, NY on Oct 29–30, 2015, and the Hudson River Environmental Society Symposium, at SUNY New Paltz, on May 4, 2016. The change pair images were also incorporated in a 4-H Educator Professional Development session at Cornell University on 15 June, 2016.



*Landsat 8 Operational Land Imager (OLI) imagery acquired over Lake Erie and western New York on February 20, 2015 (top) and February 7, 2016 (bottom) highlighting the variability in temperature and snow fall experienced within the region.*

## ENHANCING DATA ACCESS THROUGH METADATA DISTRIBUTION



*Thumbnails of 2015 and 2016 Landsat 8 OLI cloud-free imagery over Central New York highlighted in the NYView metadata collection.*

To complement the broader outreach focus of the change pair activity, NYView enhanced the consortium web presence to facilitate greater application and more efficient use of remote sensing data through a metadata distribution interface. This activity built on work completed in the prior year to distribute metadata to increase and improve statewide applications of remote sensing data. Dataset generation for the website focused on several target datasets identified through the GY14 survey. The NYView website points to a range of publicly available data in New York, with an initial focus on the area around Syracuse across multiple decades. The data highlighted includes a listing of multi-season Landsat imagery, as well as aerial passive imagery, such as the NYS orthoimagery and other publicly available image sets. Within the Landsat imagery, a subsene cloud-cover percentage was determined to facilitate efficient data selection. The metadata archive also includes data products, such as land cover maps at various scales, e.g. National Land Cover Database (NLCD) products, which are often critical reference datasets. The interface does not serve data, but rather aims to facilitate efficient access to data already served elsewhere.

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.



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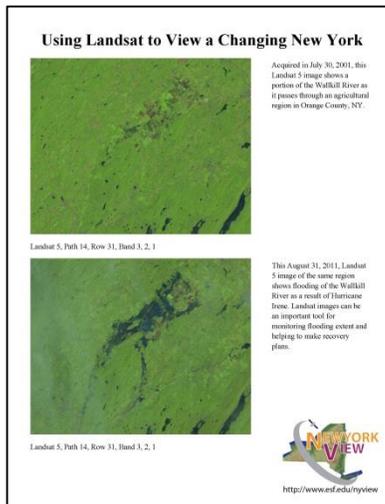
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## BENEFITS TO NEW YORK STATE

Remote sensing research within New York State covers a diverse range of applications including land cover and land use inventory and change analysis, urban growth planning, vegetation monitoring, and management of emergency response. Researchers are applying remotely sensed imagery in ecology, geology, geography, education, forestry, and agriculture. However, what is common to all these studies is the need to clearly understand data availability and have access to supporting metadata. Development of a metadata interface on the NYView web page directly supports data access and enhances efficient project execution.

Complementing the research focus of the metadata archive, the change pairs posted on the NYView webpage provide an important means to communicate the value of remote sensing data to the non-scientist, including students, teachers, and the broader community. Understanding potential applications of this technology is critical to see it fully utilized.



Sample change pair sheet (left) and participants utilizing NYView materials (right) during a workshop at Cornell University, 15 June 2016.

## 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.



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

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