



IndianaView

Remote Sensing Activities

2012 - 2013



Improving Utilization of Remote Sensing Resources

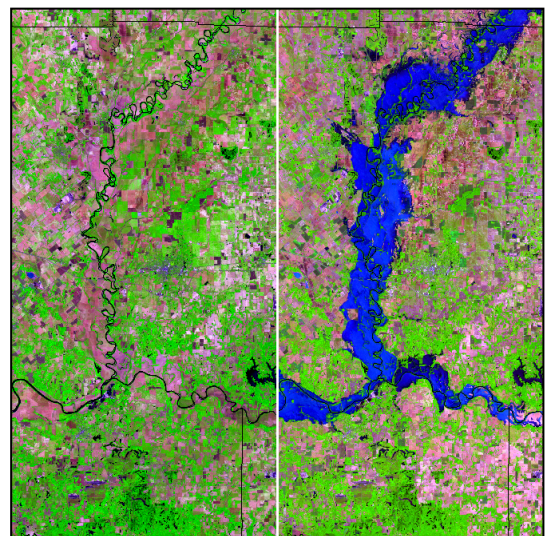
High School Geospatial Lesson Plans Utilizing Data from State Initiatives



The 11/5/2009 Landsat 5 (left) and the 4/22/2013 Landsat 8 (right) images illustrate land cover change due to construction of the new Interstate 69 corridor in southwestern Indiana east of the city of Washington.

A partnership with the Geography Educators' Network of Indiana (GENI) developed two interactive class lessons directed towards high school students that utilize state-wide Landsat and orthographic images from familiar areas to teach spatial technology skills. The lessons are tied to the Indiana Academic Standards. This project was a result of a need identified by several IndianaView consortium members for education and outreach materials that use and highlight the state geospatial data initiatives conducted during 2011-2013.

The topic for the first interactive lesson was land-use/land-cover. The second topic was water & drought: two sides of the same coin. The data used for the inter-actives include Landsat data and the aircraft orthographic and LiDAR data collected for the state. The inter-actives are available from the GENI web site (www.iupui.edu/~geni) and include images, maps and videos along with lesson plans for the teachers.



The 6/9/2007 (left) and 6/11/2008 (right) Landsat 5 images illustrate land cover change due to flooding (deep blue) of the White River in southwest Indiana in June 2008. Landsat 5 bands 5, 4, 3 displayed as red, green, blue.

Benefits of Activity to Indiana

These geospatial lessons introduce high school students to GPS, Remote Sensing and GIS in the context of data for Indiana. The activities include 1) IndianaMap with over 270 layers or maps of geographic information for Indiana, 2) Landsat data using USGS' LandsatLook Viewer, 3) the IndianaView website with access to Indiana Landsat data and the MultiSpec software program (described below) and 4) LiDAR data.

The lessons highlight the state geospatial initiatives by introducing the students to the ortho-images and LiDAR data that have been recently acquired for Indiana and how to access and use these data. A 25-year temporal sampling of Landsat data has also been made available for eight of the most populous counties so that the students can work with images of areas that they are familiar with.

IndianaView 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 Web Site: www.americaview.org

Chair of the AmericaView Board: Dr. Rebecca Dodge
rebecca.dodge@mwsu.edu
(940) 397-4475

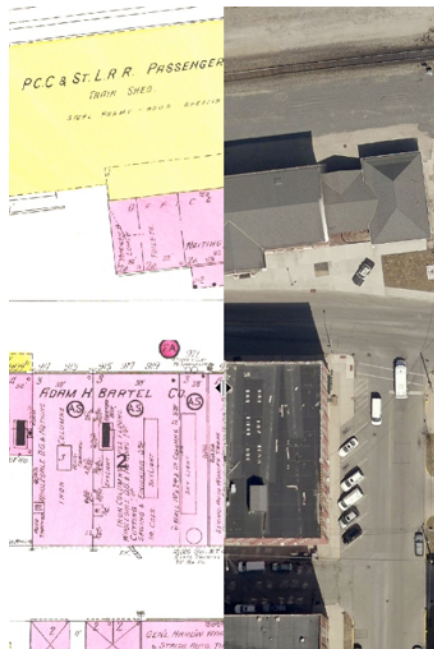
Program Manager: Ms. Debbie Deagen
debbie.deagen@montana.edu

Other IndianaView Projects

Mini-grants fund projects conducted by the consortium partners to promote the use of remote sensing image data. The 2013 mini-grant funded a project to rectify 228 scanned Sanborn Historic map sheets (1891-1913) so that they can be used in the Wayne County GIS system. The new layers of rectified historic image maps provide the basis for long-term land use change studies. As the mini-grant was being finished, the layers explained a complication encountered during a construction project in the county that required it to be stopped and re-scoped.

IndianaView GloVis: <http://www.indianaview.org/glovis/index.html>
This portal provides easy access to analysis-ready images of Indiana including Landsat, ASTER and other image data such as MODIS Leaf Area Index (LAI) products and USDA National Agriculture Statistics Service crop data layers. Links are provided to 1) a portal operated by a consortium member, Indiana University, which provides the aircraft acquired orthographic image data and to 2) IndianaMap which provides many geospatial layers of information operated by consortium members IGIC & the Indiana Geological Survey. A link is also provided to a subscription service called PRESTIGE for near-real time MODIS data from Purdue's Terrestrial Observatory.

MultiSpec (<https://engineering.purdue.edu/~biehl/MultiSpec/>) is a free remote sensing application that is used for education and research. There were seven updates during 2012-13. A release in early 2013 allows users to more easily combine the separate Landsat (including Landsat 8) band files provided by USGS into a single GeoTIFF image file.



Side by side comparison of the 1909 Sanborn map of the Pennsylvania railroad depot with the current buildings from recently acquired ortho-image data in Richmond, Indiana.

IndianaView Consortium



INDIANA UNIVERSITY



Researchers and educators at partner institutions Indiana State University, Indiana University, Martin University, University of Notre Dame, the Indiana Geographic Information Council and CUSIS have participated in the IndianaView mini-grant program with projects involving K-12 education, general public outreach, research studies and educational lab development. Fact sheets are available at:

<http://www.indianaview.org/apps.html>

Indiana University provides an easy access portal to the available aircraft-acquired orthographic data for Indiana (<http://gis.iu.edu/>) to augment the spacecraft-acquired data available on the IndianaView portal.

Partners have used the Landsat data available from the IndianaView GloVis portal and have shared image data from their own research libraries to be added to the portal.

PI and Coordinator
Larry Biehl
Purdue University
155 South Grant Street
West Lafayette, IN 47907-2108



Phone: 765-494-3529
E-Mail: biehl@purdue.edu
Website: www.indianaview.org