

Together at Last

Keynote speaker advocates the integration of GIS and remote sensing

"For years, remote sensing has been a technology in search of a problem to solve," observed Kass Green in her Keynote Address at the ESRI Remote Sensing and GIS 2009 conference.

"It [remote sensing] has its origins in the defense industry. However, for years there has been a disconnect between technology providers and problem solvers." Green explained why she sees that situation coming to an end in her address, Remote Sensing Comes of Age.



Kass Green, immediate past president of the American Society for Photogrammetry and Remote Sensing, was the keynote speaker for the ESRI Remote Sensing and GIS 2009 conference.

Green is the immediate past president of the American Society for Photogrammetry and Remote Sensing and president of Kass Green & Associates, a firm that consults on geospatial strategy. In numerous articles and book chapters, she has advocated for the integration of GIS and remote sensing to improve environmental and policy analysis.

Twenty years ago, Green said she couldn't imagine using GIS software without remote sensing and vice versa. The two have an intimate and long-standing relationship. Many GIS practitioners don't appreciate the contributions of remote sensing to GIS in the past and its tremendous potential contributions. Green said the perception of remotely sensed data needs to change. "We need to see it more as a database of numbers and less as a pretty picture."

Ongoing developments in the remote-sensing industry and in GIS technology have made classification a more automated process and limited the time between the capture and use of imagery.

GIS practitioners now have more imagery and imagery that is more current and consistently available to them than ever before. In addition to imagery supplied by new commercial satellites that offer higher resolution, more spectral bands, and short revisit periods, some imagery, from programs such as Landsat and the National Agriculture Imagery Program (NAIP), is available at little or no cost.

"However, with all this progress, some problems still remain," said Green. Imagery is still hard to use and large imagery files are still cumbersome. Perhaps more worrisome is that the United States is still uncommitted to continuous observation.

Now more than ever, there is a need to integrate GIS and remote sensing to handle the challenges of making policy and locating and evaluating resources. This requires making data more accessible to more people more quickly.

In closing, Green urged attendees to effect change. "You have the education and experience that empower you to make a difference. Use the data and software at your fingertips to deliver truth, not conjecture. We don't get a second chance to do this right."

Note: The second edition of *Assessing the Accuracy of Remotely Sensed Data*, coauthored with Russ Congalton, is featured in the GIS Bookshelf section of this issue of *ArcUser*.

More than a Pretty Picture

Remote sensing summit stresses the importance of imagery

"This UC is the world's biggest imagery conference," quipped Lawrie Jordan, ESRI director of imagery enterprise solutions, referring to the ESRI International User Conference (ESRI UC) as he welcomed attendees to the ESRI Remote Sensing and GIS 2009 conference held in conjunction with the ESRI UC. His comments underlined the importance ESRI assigns to remotely sensed data in the GIS enterprise. In its second year, the event was held July 12 in San Diego, California. Attendance more than doubled last year's conference.

"Imagery is a core component of a modern GIS," said Jordan. He noted that speed matters in decision support, and imagery is driving GIS because there is now a flood rather than a dearth of imagery. As he sees it, the challenge now is not the availability of imagery but making it accessible because data must be both timely and authoritative.

"People want imagery now and in the format they want," Jordan also noted. With the focus on serving the enterprise, people want an application that is simple and science based. Jordan asserted that GIS and imagery belong together and always have, although people didn't always realize this. "They are two sides of the same coin."

ArcGIS provides a comprehensive platform for managing imagery via an information-centric workflow. Unlike traditional imagery workflows that are subject to bottlenecks and suffer from latency, ArcGIS combines processing and serving in a workflow that can grow and scale with user requirements.

ESRI staff members Peter Becker and Lindsay McGreevy detailed the components of the ArcGIS information-centric workflow for imagery as well as unveiled the new functionality related to image management available in ArcGIS 9.4.

With the release of 9.4, ArcGIS becomes an image analyst workstation with the new Image Analysis window, better support for large images and more formats, and better access to Image Services as mosaics and catalogs. In the geodatabase, there are a new mosaic raster catalog and improved geoprocessing tools.

ArcGIS Server will be optimized for serving imagery and rasters with improved API access and server-based rendering. The ArcGIS Server Image extension can serve mosaics, has improved APIs, allows download of dynamic properties, and can serve JPEG2000 format data as JPIP streams.

Following this presentation, two case study speakers addressed the conference. Aurelie C. Chapiro, a remote-sensing specialist for World Wildlife Fund, spoke of her work with conservation. Lilian Pintea, director of conservation science for the Jane Goodall Institute's Africa Program, described how satellite imagery is being used for great apes conservation.

Marten Hogeweg, ESRI senior project and product manager, outlined the special challenges of geoportals that primarily provide imagery data. In his presentation, Improving Access and Use of Imagery with Interoperable Off-the-Shelf Technologies, Hogeweg advocated a solution for geoportals based on using an assortment of services rather than one application. This avoids isolating data and reduces the latency between collection and availability. These strategies enhance the value of geoportals for imagery by extending the use of observation data, information services, and products beyond the use originally intended.

In response to comments by last year's attendees, an additional panel discussion was added this year. A panel of imagery data providers that included John Auble of DigitalGlobe, Joel Campbell of GeoEye, Russ Cowart of i-cubed, Roger Mitchell of MDA Federal, and Gerry Kinn of ESRI fielded questions that had been submitted by the audience.