

## **ASPRS – CNY - 6th Annual New York State Remote Sensing Symposium**

**Marguerite Madden**, Center for Remote Sensing and Mapping Science (CRMS)  
Department of Geography, University of Georgia, Athens, Georgia USA

### **Visualization and Analysis of Natural Resources with Case Studies of Forest Communities in Southeastern National Parks**

The Center for Remote Sensing and Mapping Science (CRMS) at The University of Georgia Geography Department has worked cooperatively with state and federal resource management agencies for 23 years to develop digital databases for the preservation of natural and cultural resources in 21 National Park Units of the southeastern United States. Originally created from manually interpreted large-scale color infrared (CIR) aerial photographs, recent research has involved developing efficient methods for vegetation database updating and the preservation of expert knowledge on vegetation interpretation. Object-based image analysis (OBIA) is a new and exciting field for combining expert knowledge, existing geographic databases, contextual segmentation and fuzzy classification for vegetation mapping. Case studies from Great Smoky Mountains National Park in the southern Appalachian Mountains and other National Park units mapped as part of the National Park Service and U.S. Geological Survey National Vegetation Mapping Program will be presented. Digital data sets of association-level forest classes were correlated with physical terrain characteristics of elevation range, slope and aspect to develop models of vegetation patterns. These models, in turn, were used to derive context rules for object-based classification. Progress on the success of this transition from manual to object-based automated techniques will be reported, along with geovisualizations used to assess vegetation patterns and provide information that can be used for forest mapping. It is hoped that results from these studies will provide resource managers with geospatial tools and spatial information needed management decisions.

**Bryan A. Merritt and Mark S. Coon**, Erdman Anthony and Associates

### **Advances in Geospatial Technology: Merging terrestrial LiDAR and conventional survey data**

#### **Abstract**

One of the fastest growing segments of our business is digital data. We will discuss in this presentation the newest form of collecting digital data, High Resolution 3d Laser Imaging, and how it is merged with conventionally collected survey data.

Recent advancements in technology are changing our traditional ways of thinking regarding gathering information on existing plants, facilities, or structures. Engineers, Architects and Planners all recognize the tremendous need for accurate as-built information required on almost every project we are involved in. Many of us have experienced the frustration of wading through piles and piles of often-conflicting design and as-built drawing information as projects are contemplated and evaluated. Often

times this leads to the same end result, hours, days or weeks of tedious field measurements and surveying.

But at times a combination of conventional surveyed data and 3d laser imaging may be the solution. The how's, why's and what-for's of integrating the data will be discussed. Discussion will be centered around the different "tools in the tool box" and how they can be used in combinations to provide the client the deliverable they desire.

**Tim Ruhren**, New York State Office of Cyber Security and Critical Infrastructure Coordination,

### **Experience with Digital Sensors in New York State Orthophotography Program**

#### **Abstract**

The specifications and contracts for the New York Statewide Digital Orthoimagery Program (NYSDOP) have been written to be as technology neutral as feasible. The goal has been to encourage the introduction of different or new technologies whenever and wherever they can improve the deliverables, decrease costs, increase efficiencies, and/or solve unique problems. Since the first flights in 2000, the NYSDOP has moved from completely film-based capture systems to flights in 2006 and 2007 where only digital mapping cameras are being used. During the transition, the NYSDOP team has gained experience with imagery from several digital sensors and seen considerable changes from one year to the next.

**Nate Krause, Dan Deneau and Matt Mercurio**, Institute for the Application of Geospatial Technology (IAGT)

### **SERVIR Viz: A 3D Visualization Tool for Mesoamerica.**

#### **Abstract**

SERVIR Viz is a customized version of NASA's WorldWind, which is a freely distributed, open-source, web-enabled, 3D earth exploration tool. IAGT developed SERVIR Viz in a joint effort with SERVIR research partners to create a visualization framework for geospatial data resources available to the SERVIR project. SERVIR Viz is customized by providing users with newly developed custom tools, enhancements to existing open source tools and a specialized toolbar that allows shortcut access to existing tools. Another key feature is the ability to visualize remotely-hosted framework GIS data layers, maps, real-time satellite images, and other SERVIR products relevant to the Mesoamerica region using the NASA WorldWind visualization engine and base mapping layers. The main users of SERVIR Viz are the seven countries of Mesoamerica, SERVIR participants, educators, scientists, decision-makers, and the general public. SERVIR Viz enhances the SERVIR project infrastructure by providing access to NASA GEOSS data products and internet served Mesoamerica centric GIS data products within a tool developed specifically to promote use of GIS and visualization technologies in the

decision support goals of the SERVIR project. In addition, SERVIZ Viz can be toggled between English and Spanish to support a wide cross section of users and development still continues to support new data and user requirements.