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Introducing GIS to the Next Generation

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Precollege Education

Introducing GIS to the Next Generation

By:
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At James Madison University, we've been developing training and activities to help K-12 teachers and students learn about geospatial technologies. In this article, we'll introduce our various projects and in future articles we'll provide more details.

Throughout our work with students and teachers in grades 4-12, our focus is on building spatial thinking and analysis skills, not just learning how to push buttons in a particular software package. This is an important distinction from how many software packages are used in school settings.

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For students in younger grades (grades 4-7), we've developed a series of basic activities that use ESRI's Arc Explorer – Java Edition for Education (http://www.esri.com/aejee). This free software package has many of the basic features of standard GIS software but with a simplified interface. For example, in one activity students explore the use of buffers as they examine how well a small city is covered by the current fire stations (and where a new fire station would be most needed). The activity goes on to explore which streets would need to be closed should a presidential visit be planned for this town. This activity and others we've developed are available at http://www.esri/com/arclessons.

For students in middle grades (grades 6-9), we've developed activities that go with field study in Shenandoah National Park. These activities focus on the risk of fire and how you decide which parts of the Park are most at risk from fire. These activities (and relevant data) are available at http://www.isat.jmu.edu/common/projects/godi/

For students in high school, we've been working with Technology Education teachers and the Virginia Department of Education (especially George Willcox) to develop a new course for high school students. This year, the first offerings of a geospatial technology course began across the state. We're excited about the possibilities of growth in this area and look forward to more schools adding this coursework.

We're piloting a new project starting in Fall 2005. The Geospatial Semester project will

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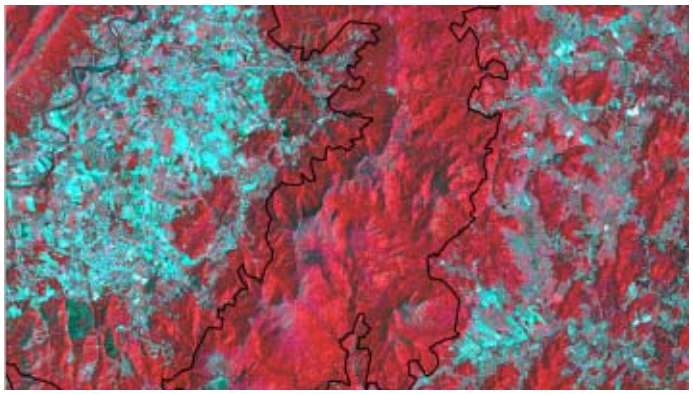
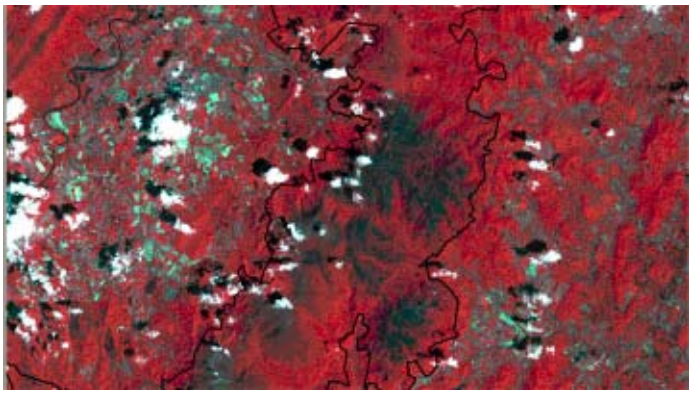
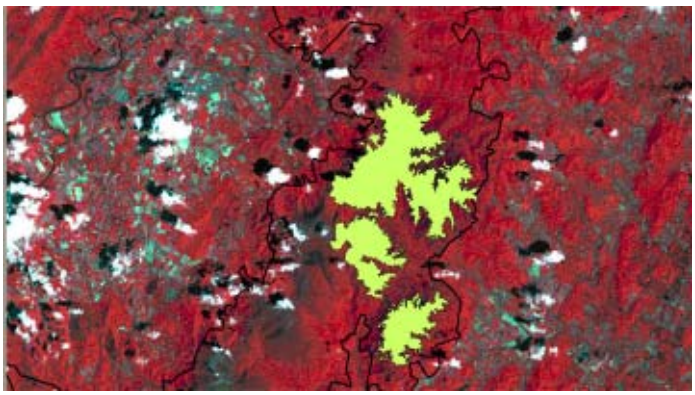


A Landsat image of the central part of Shenandoah National Park. Luray, VA is visible on the left side of the image. This image was taken prior to the fires in 2000.



Landsat image after the fires of 2000.



Student work tracing the perimeters of the fires (they also calculate the damaged acreage and compate with work done by park personnel).

GPS Adventure 2005!

By:
Mike Clifford
Extension Agent Emeritus

"Bubba the Lost Hunter" was saved again! For the fifth consecutive year, intrepid teams of "wilderness rescue rangers" used GPS receivers and topographic maps in a race to locate the hypothermic Bubba in the howling wilds of the Appomattox-Buckingham State Forest.

The Bubba hunt is the culminating field exercise in the annual GPS workshop for adults and older teens held in late winter at Holiday Lake 4-H Educational Center. Twenty-five hardy souls took part in *GPS ADVENTURE 2005* on March 4th and 5th. The Friday evening-all day Saturday course covered basics of the Global Positioning System, GPS applications for work and play, using topographic maps and magnetic compasses in combination with GPS, digital mapping programs, GPS equipment updates, and other related topics.

Workshop participants included 4-H leaders and members, educators, foresters, natural resource professionals, real estate agents, and folks from several other backgrounds.
...But they all ended up with one common goal - *find Bubba!*

The instructors for the workshop were Dick "Ol' Grizz" Higgins and Mike "Snake Man" Clifford, neither of whom are related to Bubba.

For information about future workshops, contact Mike Clifford via email (preferred) at ***mjc4h@vt.edu*** or by phone at 804/561-5411 .

Bubba the Lost Hunter (on back row, clinging to tree) was saved by several teams of "wilderness rescue rangers" during the March 4-5 GPS Adventure 2005 workshop. Not all participants are pictured; some are still wandering around in the state forest.

GIS for the Next Generation

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initially work with five high schools across Virginia to introduce geospatial technology and geospatial research to students and while they do their projects, they'll earn up to 15 credit hours at JMU. We're looking forward to connecting with geospatial professionals near these schools to advise on the projects. This project holds the promise of building geospatial skills with many students across the state. We're very excited about it and you'll hear more about it in the coming months.

As you can see, my colleague, Kathryn Keranen, and I have been very active working across the range of K-12 grade levels. One point we want to stress is the importance of professional development for

the teachers and in providing data sets for them to use. Think of your own experience in learning how to use GIS and you can appreciate why teachers need to have some help. If we want to bring this exciting technology to the next generation, we all need to help. For more information about our projects, please contact me at kolvoora@jmu.edu.