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Calendar of Events: November 2005

November 7-9: Seven Hills Regional Users of GIS Annual Conference, Tallahassee, FL; (Alex Wood of AGI will be presenting on aquifer vulnerability on Nov. 8)

November 16: GIS Day, check website here for local events in your area

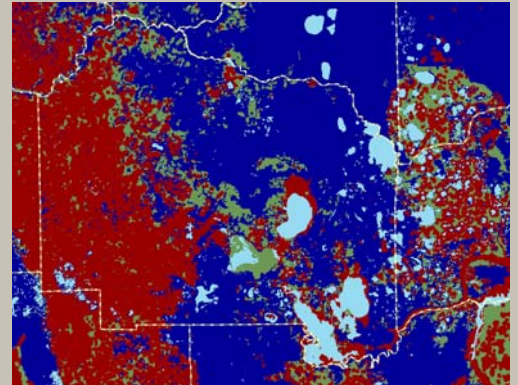
October 1 – December 31, Geospatial Information & Technology Association (GITA) Online Convention and Expo, ONLINE

Using GIS as a Prediction Tool

The power of GIS in developing accurate representations of the real world using data with spatial coordinates is well known. An expanded benefit of GIS is the ability to perform spatial operations with these geographic datasets. By harnessing the potential in these datasets to develop new information, GIS analysts are able to identify spatial relationships between data, locate suitable locations for specific uses, and predict incidents or events that are likely to occur.

A wide variety of examples have been developed in which spatial analyses are implemented through GIS. Among them are predictive or probabilistic

models, which are tools that are utilized to indicate the probability of encountering an event within a particular study area. They can also be referred to as sensitivity maps since they are indicative of locations that are more prone to an activity than others. These predictive maps typically consist of favorability zones ranging from high probability areas – where sites are likely to occur – to low probability areas – where sites are not likely to be found. Probabilistic models have been used to locate [potential archaeological sites \(here, too\)](#), [sanitary sewer overflows](#), [areas vulnerable to wildfire](#) and in [crime analysis](#). Other applications of predictive models include [locating favorable mining sites](#) as well as [aquifer vulnerability in Florida](#).



Probability models are an important consideration in the decision making process because they provide a cost-effective way of identifying high risk or high probability areas. When certain features and the relationships affecting the occurrence of something unknown or uncertain are analyzed then patterns are developed. If construction projects, for example, can be modified to avoid or target certain areas as a result of the application of spatial analysis, then the result can be more cost-effective planning.

The dependability (or confidence) of these models is reliant on their performance. This can be examined and tested by comparing a predictive model to actual field surveys or existing field data. By comparing existing sites to the modeled predictions, it is possible to determine, with

Category of Links

*The US. Dept of Interior has overhauled the Geospatial One-Stop website:
www.geodata.gov*

*Searching for geographic data? Try www.mapdex.org.
An index of geographic data and map services*

*More free GIS links:
Quantum GIS at
<http://qgis.org/>*

*User friendly Desktop Internet GIS
<http://udig.refractions.net/confluence/display/UDIG/Home>*

YOUR INPUT

Interested in submitting an article or letter to be included in the GeoSpatial Advisor? Email your piece to Alex Wood at awood@adgeo.net and we will be happy to consider it.

(AGI reserves the right to excerpt, condense and/or grammatically edit your document to fit our newsletter format.)

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confidence, how accurately a model performs. Field testing a model is an essential component of demonstrating its reliability. It is important to note that predictive models do not indicate specific site locations; however, they do reveal the relative potential for finding sites within those areas.

Tips and Tricks: Introducing the CAD Transformation Toolbar

Occasionally new data is acquired that does not align with your existing data in your GIS project. These files may be images, such as aerial photographs or a scanned engineering sheet. These sources of data that occasionally have no spatial reference might be drawing files (.dwg) created using AutoCAD®. Using the CAD Transformation Toolbar in ArcGIS you can align the CAD drawings to your existing data in much the same way images are georeferenced.

Tools for repositioning the CAD drawing include: "fit to display", "rotate", "flip", "scale", "shift", and "add links". Linking interactively transforms the CAD drawing by registering a set of points. The first link moves the file to the desired location. The second set of links rotates and scales the drawing in the GIS. Once the transformation has been completed and your data is aligned, the results can be applied to the other CAD layers in the map file or saved out to a world file.

To install the CAD Transformation Toolbar, navigate to the directory "C:\Program Files\ArcGIS\DeveloperKit\samples\CAD" and unzip the four files located there. Then in the ArcMap module add a new customized toolbar by going to the "Tools" drop down menu and selecting "Customize". In the dialog that opens up choose "Add from file" then navigate to the location of the toolbar (as listed above) and select "Add".

Miscellaneous - More Google Earth Hacks and Mash-ups!

In an effort to provide you an entertaining break in your day while sharing ideas about GIS, and to display the functional variability of Google Earth hacks and mash-ups, try downloading this [KML file](#) which displays UFO sightings around the world. The UFO sightings are categorized by year, and, by clicking on each one, you can view the date information as well as a report.

Another application that takes advantage of the Google Earth platform is called "AntWeb". This site is very interesting for several reasons; first, it shows a scientific application or catalog of features, and second it is a simple way for scientists around the globe to share information. Visit the web site [here](#).

For more information on the Google Earth Community go to the website [here](#). There you can search for other interesting place marks and discussions.

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