

GISette



A quarterly newsletter to broaden people's understanding of mapping, geography and the City's Geographic Information System

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For Marlborough's Public GIS Web Site Visit the Following Link:

<http://gis.marlborough-ma.gov>

Welcome to the eighth edition of the *GISette*! I'll keep reminding everyone that *PIMA*, Marlborough's GIS website, is available to the general public! Marlborough's geographic information system continues to aid the general public, professionals and city employees alike. Please pass the word to anyone you think can benefit from its use. We continue to have great success with it! I will continue to include the 'Tips and Tricks' section to the newsletter in the hopes that it will make the web mapping site easier to use. There are a lot of tools built in to the new site.

Marlborough's, *PIMA* website let's you:

- Create customized abutters lists
- Identify property and ownership information
- Utilize Google and Bing for enhanced viewing
- Create and print fully customizable maps
- Turn on and off layers, displaying a range of information
- View and download utility plans

Aerial Archeology

Modern Snapshots into an Ancient Past

"We do not follow maps to buried treasure and X never, ever marks the spot." – Indiana Jones

In the last edition of the *GISette*, we talked about aerial photography and remotely sensed data. In keeping with that theme for one more newsletter, I thought I would touch on one facet of archeology and how it is using modern mapping techniques.

I think we tend to look at archeology as boring, dusty work in some far off place, the only tangible result of which is some half painted chip from an old pot. That's largely true, but there is another, more exciting side to it.

For over a thousand years, the remains of the ancient Mayan civilization have been laying hidden in the rainforests of Central America. They have been consumed by the jungle. On the ground, 60 to 100 foot trees and dense undergrowth obscure objects as close as ten feet away. You could literally walk right through an ancient city and not even know it. From the air, however, it is a different story. From space, satellites look down at the seemingly impenetrable jungle and see patterns that the human eye cannot. Knowing this, archeologists teamed up with NASA to look for as yet undiscovered sites deep beneath the jungle canopy.

First using infrared satellite imagery taken of known, existing sites in the jungle, they set out to look for tell tale patterns in the photographs. What they found was

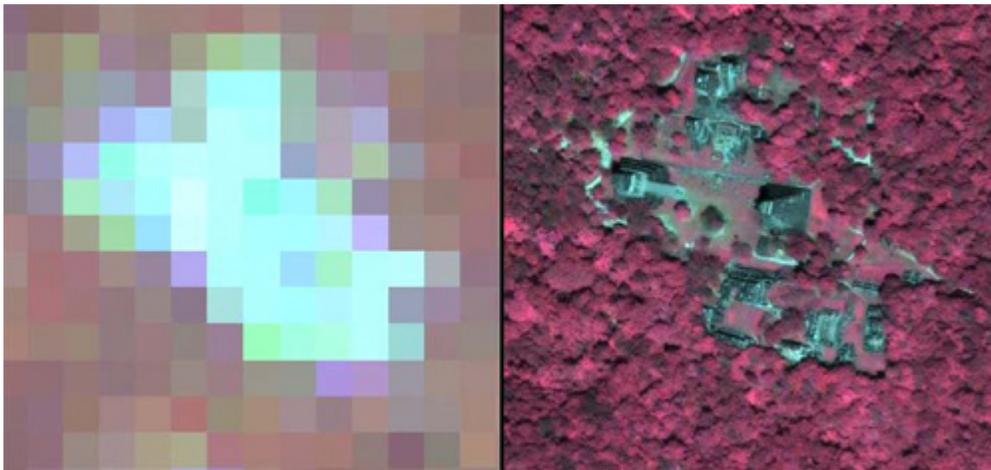
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Aerial Archeology cont.

that around each known ruin, there was a direct correlation between the color and reflectivity of the surrounding vegetation. Why? The Maya used local limestone to build their cities and towns. Over time, as that limestone weathered and crumbled, it leached into the surrounding ground. This changed the chemical makeup of the soil surrounding the various sites. As a result, some plant species died off and others were kept at bay. They now knew what to look for in previously unexplored areas of jungle. Based on this new found knowledge, they expanded their study. What unfolded was a roadmap of sorts. They began to find undiscovered Mayan sites exactly where the satellite images predicted they would be. These new locations can now be entered into a GIS and relationships can now be examined. Remember, the power of GIS lies in its ability to show relationships between different types of data and information. The locations of cities and temples can be tied to known ancient road networks. Depending of the type of ruins discovered, that may lead archeologists to further discover farming patterns and practices, migration routes, religious practices and even develop climate models based on deforestation caused by the Maya. GIS gives the archeologists and scientists an ability to tie variables together that may have eluded them decades even though they may have been looking right at them all along.



False color satellite images of Tikal, deep in the Guatemalan rainforest. The image on the left examines the difference in the pattern of foliage and floral discoloration. The other image on the right shows a more conventional view the same location.

TIPS AND TRICKS

PRINTING A COPY OF YOUR CUSTOM MAP

1. Open the site and navigate to the area of interest.
2. Once your map has been finalized to your liking, click on the “Print” icon  at the top of the page.
3. A new window will appear called “Print Preview”.
4. Be sure that your area of interest is covered by the Red shading that now appears on your map. This is the print area.
5. You can title your map and add a second line of text should you need it by typing in the boxes provided.
6. Select the size and layout of the map you would like to create.
7. Click “Print”
8. The program will create a PDF map that you can print, save, or attach to an email.



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