

HDR Photography on Mayan archaeology architecture.



With Canon EF 14mm F/2.8 USM wide angle lens.

Nicholas Hellmuth

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Updates and improvements

If you find any errors or permission in this report, or if you know anything that we missed, please let us know to consider it. Write to FrontDesk@FLAAR.org

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Introduction

This report is a tool for archeologist who are interested in learning which camera equipment is best adapted to do Mayan Archeological architectural research, in this report you will find the best tools used by Dr. Nicholas Hellmuth based on his years of experience in digital photography and archeological research.

Equipment Used:

- 21 mega-pixels Canon EOS-1DS Mark III
- Canon EF 14mm F/2.8 USM wide angle lens
- Gitzo and Mamfrotto tripods and tripods heads.
- SCA 300 60 CT-4 Mecablitz Flash System.
- Adobe Photoshop CS5
- Photomatix Pro HDR Software
- Hoodman Compact Flash Cards



Dr. Nicholas Hellmuth with photography equipment used.

HDR Photography

High Dynamic Range is the a process to get everything correctly exposed in a digital photograph, no underexposed shadows, no blown out highlights, this will enhance the detail in the image.

There are various ways to get this process done, with special software and camera techniques. We are going to do this with Photomatix Pro HDR software and Phosothop CS5 help.

First thing to do: is to take 3 to 4 different photos one for the highlights, one for the mid tones, one for the shadows, then you have to combine them in the software to get a better exposed image.



Overexposed image, to get the dark areas without shadows that obscure detail



Over exposed image, to get the high-lights and midtones



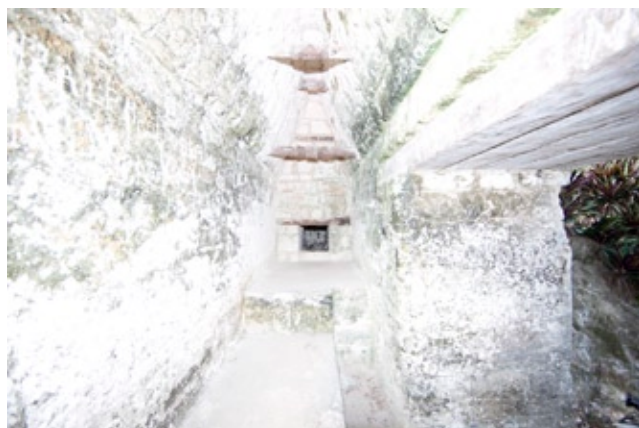
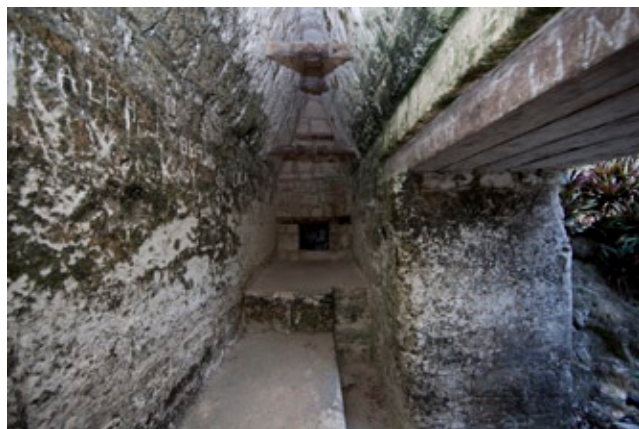
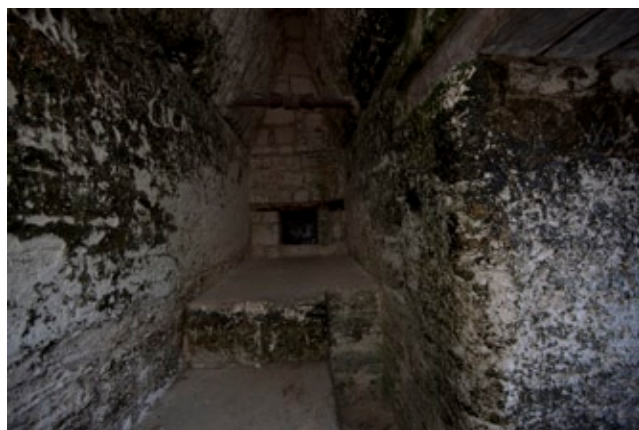
Underexposed image, so the light areas are not burned out.



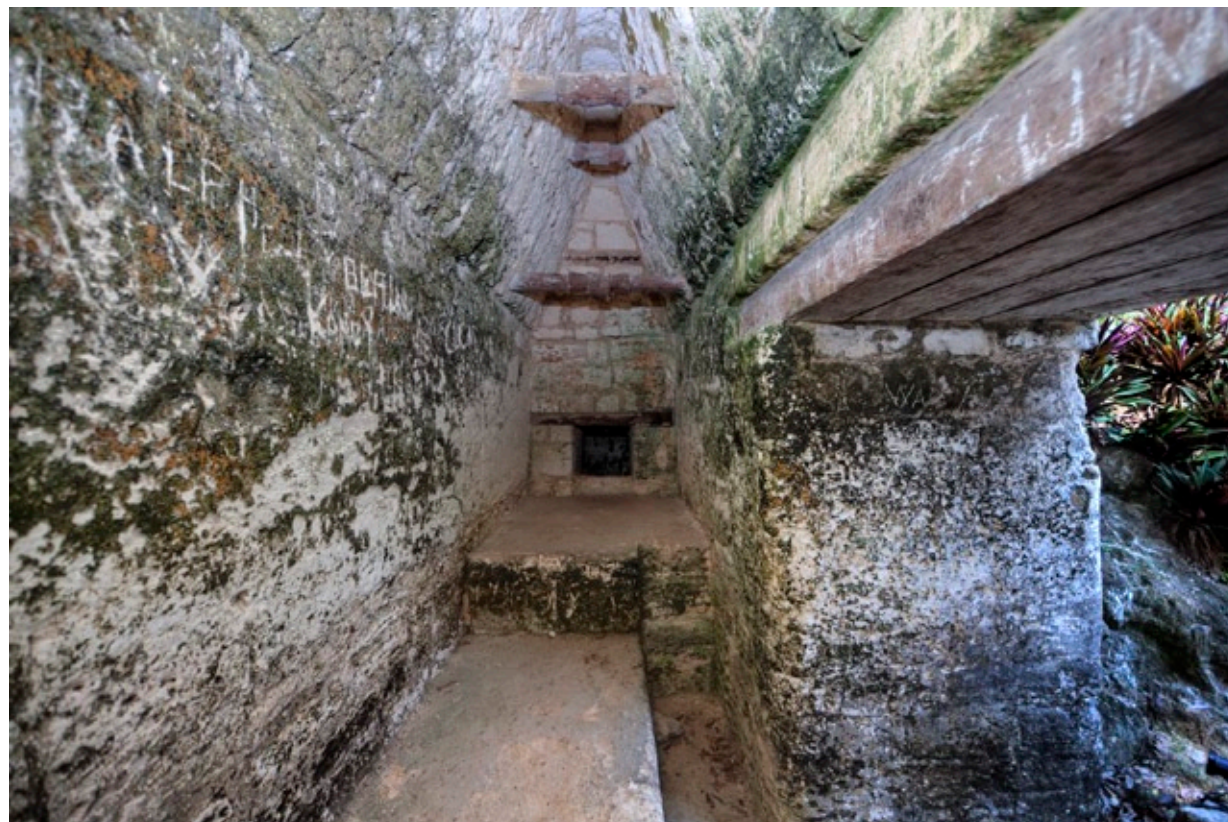
Four images of the same subject at different exposures for later processing to get a HDR photograph.



HDR photograph of a Mayan archaeology vault.



3 images of the same subject at different exposures for later processing to get a HDR photograph.



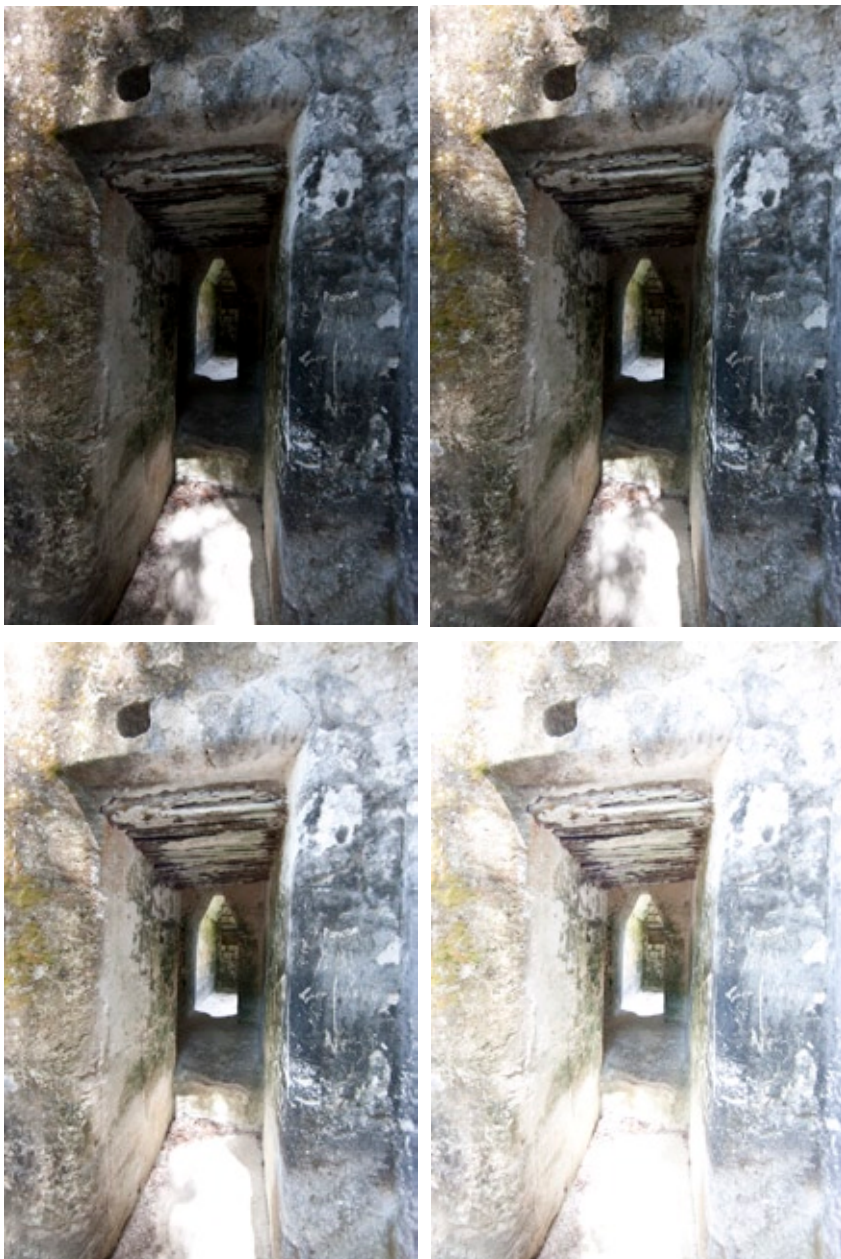
Finished photo that results from HDR software and taking, in advance, all the needed exposures, knowing how you will handle them later back in the computer.



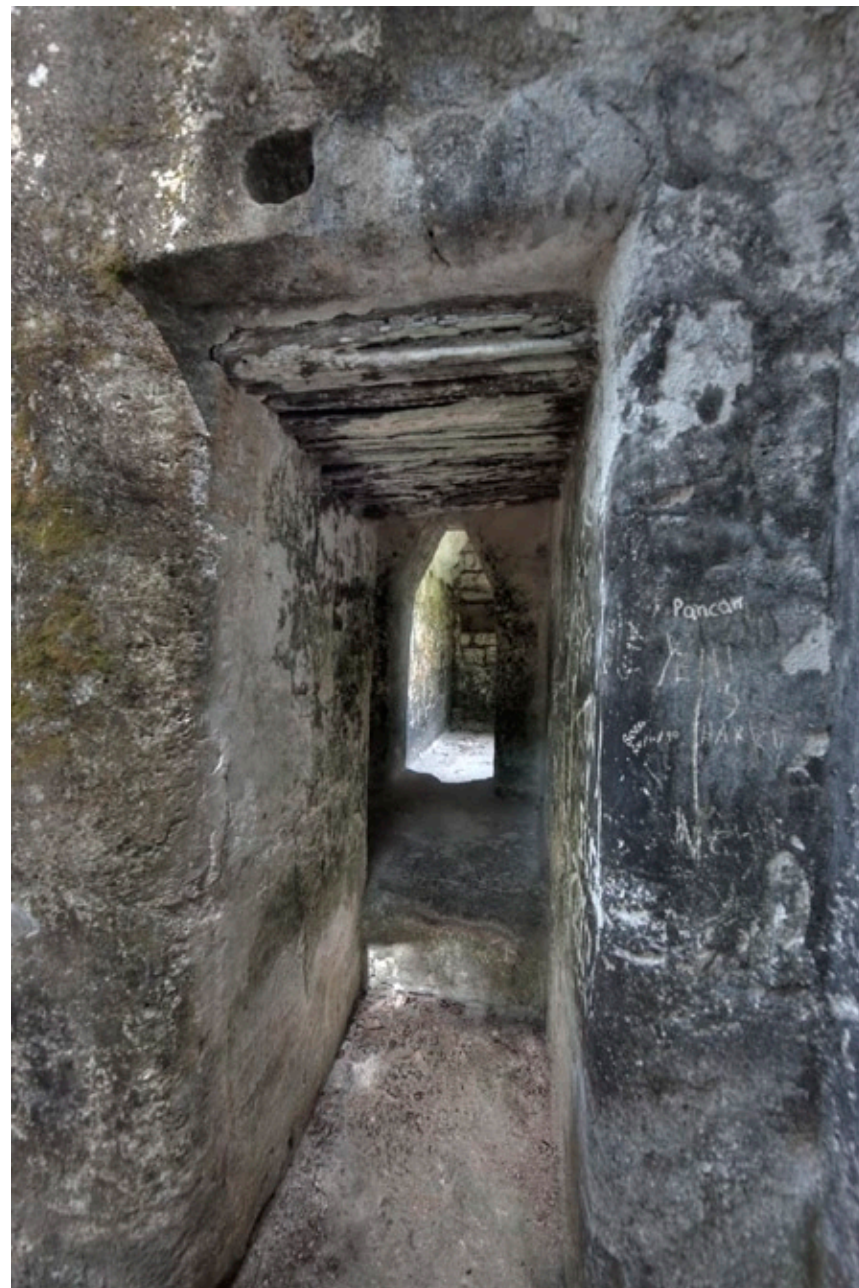
4 images of the same subject at different exposures for later processing to get a HDR photograph.



HDR photograph of a Mayan archaeology vault.



4 images of the same subject at different exposures for later processing to get a HDR photograph.



HDR photograph of a Mayan archaeology vault.



4 images of the same subject at different exposures for later processing to get a HDR photograph.



HDR photograph of a Mayan archaeology vault.

HDR Photography with wide-angle lens compared with single flash photography.

FLAAR Reports did to kinds of photography the single Flash Photography for Mayan Volts with SCA 300 60 CT-4 Mecablitz Flash System and also did four-exposure photography for later HDR process. These are the comparison and results of the photography.



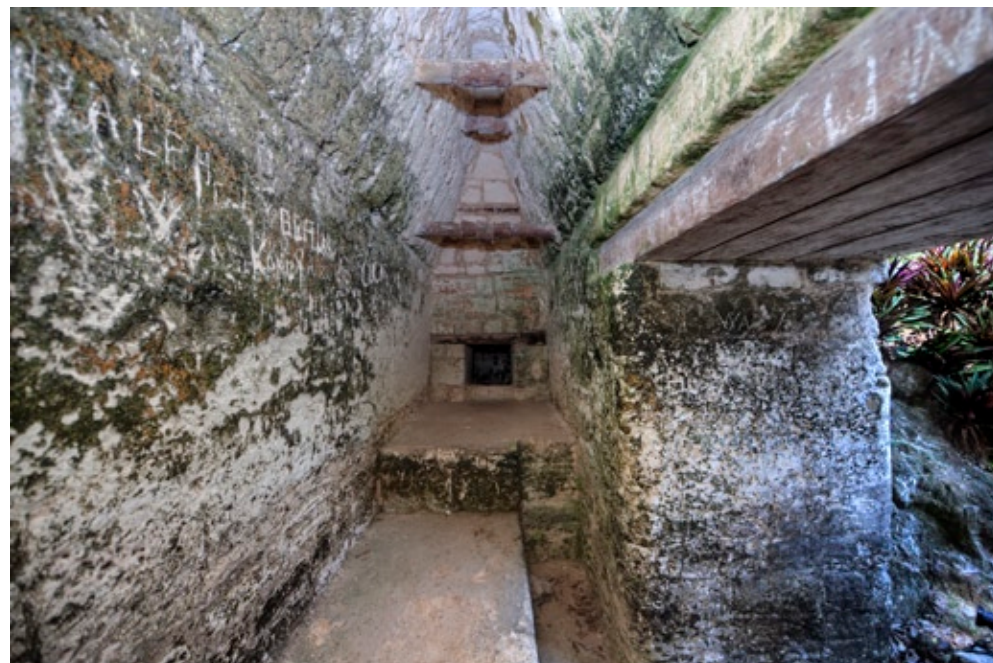
*Mayan archaeology architecture with single flash
Mecablitz SCA 300 60 CT-4 flash.*



HDR photograph process with Photomatix Pro.



*Mayan archaeology architecture with single flash
Mecablitz SCA 300 60 CT-4 flash.*



HDR photograph process with Photomatix Pro.



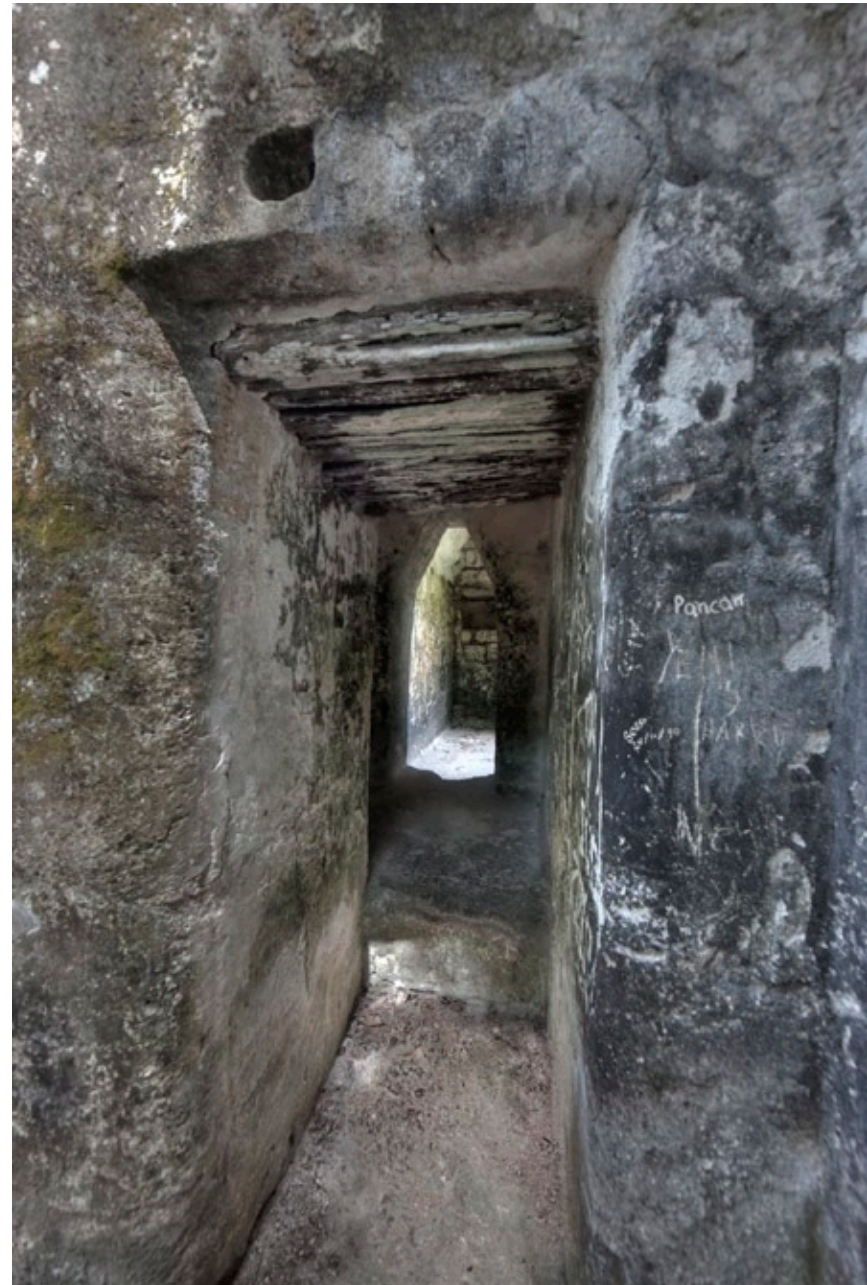
Mayan archaeology architecture with single flash Me-cablitz SCA 300 60 CT-4 flash.



HDR photograph process with Photomatix Pro.



*Mayan archaeology architecture with single flash
Mecablitz SCA 300 60 CT-4 flash.*



HDR photography process with Photomatix Pro.

Notice that in all most in all the flash photography there are overexposed parts in the image. With the HDR photography all the image is perfectly exposed.



*Mayan archaeology architecture with single flash
Mecablitz SCA 300 60 CT-4 flash.*



HDR photograph process with Photomatix Pro.

Acknowledgements

Since we wish to have high quality photographs to send to a top quality wide-format inkjet printer, we evaluate the cameras, lenses, tripods to hold the camera. Then we evaluate printers, inks, and the media to print on. We publish all the results of our evaluations so that other botanists can see which cameras and printers they can use for their botanical gardens.

Our Canon camera equipment and printers we tend to obtain from Parrot Digigraphic. If you get things low-bid from a box pusher (Amazon.com is one good example) you don't get to speak with a person who knows anything about cameras or printers. So if you wish to understand the difference between an Epson, an HP, and a Canon printer, Parrot Digigraphic can help you. Plus they can explain the difference between medium format and 35mm DSLR cameras, since they offer Hasselblad in addition to Canon cameras. You can contact them at info@ParrotColor.com

We thank Hoodman USA for the RAW CompactFlash memory cards which we use in our Phase One, Canon, and Nikon cameras. You can contact Hoodman via Toll Free (800) 818-3946 (U.S. Only), from elsewhere in the world you can reach them at +1 (310) 222-8608 (Torrance, California time zone), Fax (310) 222-8623, sales@hoodmanusa.com

Since FLAAR is dedicated to professional quality photography in archaeology, ethnography, ethno-botany, ethno-zoology, and geology, as well as macro, pano, landscape, architectural and fine art photography, we have many Canon cameras, many Nikon cameras, GigaPan, Hasselblad, and several large format Cambo cameras plus we just added a Silvestri 6x9 format camera (all digital). Thus we need a tripod for each camera.

Since each camera is different size, shape and application, it helps when each tripod is ideal for the camera and kind of location where we are photographing (studio or outside in swamps). We appreciate the tripods from both Gitzo and Manfrotto, as well as pertinent tripod heads, courtesy of Bogan Imaging.

You can see the Gitzo and Manfrotto tripods at Photokina, Photo Plus (Photo East in New York) and other professional photography equipment expos. Telephone: (201) 818-9500; Fax: (201) 818-9177;

E-mail: info@manfrottodistribution.us

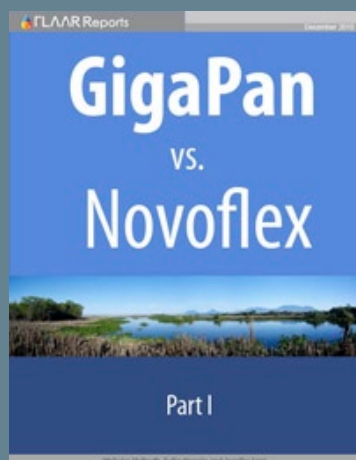


Nicholas Hellmuth and FLAAR staff at FLAAR Mesoamerica garden, with Gitzo and Manfrotto tripods, holding the Hoodman compact flash memory cards.



Photographs taken within the Tikal National Park were taken with respective permission as part of a cooperative program whereby FLAAR Mesoamerica provides free photography to the park programs and FLAAR Mesoamerica provides enlargements for photo exhibits for the park museums. We appreciate the permission of the Parque Nacional Tikal to undertake photography of flora and fauna related to the Maya culture which is protected by the Ministerio de Cultura y Deportes. We thank Biologa Mirtha Cano, Coordinadora de la unidad de biología at the park. Tikal is a UNESCO World Heritage Site in addition to being a reserve for endangered plants and animals.

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