Using Cutting-edge LiDAR Technology at El Pilar (Belize-Guatemala) in Discovering Ancient Maya Sites—There is still a need for Archaeologists!

Ellison 5824
12:00 p.m. Tuesday, 15 October 2013

Abstract. LiDAR, a remote sensing instrument capable of penetrating vegetation, is creating a shift in Mesoamerican archaeology that will transform research in forested areas world-wide. The secrets of ancient Maya sites have been hidden from view beneath the forest canopy. Yet today, LiDAR technology can provide detailed coverage of surface and forest characteristics sufficient to revolutionize archaeological fieldwork, especially densely forested areas. Nevertheless, LiDAR results must be interpreted and validated in the field.

The Maya Forest Alliance recently received a gift of LiDAR imagery covering the 20 sq km El Pilar Archaeological Reserve in Belize and Guatemala. High-resolution data were gathered on the forest canopy and ground surface in a “point cloud.” We are identifying features using a new algorithm with superior LiDAR processing results for cultural features. We are field validating features to devise a protocol for the production of a topographic and cultural map of El Pilar. Unusual features have been detected: a “citadel” and a sunken plaza connecting the offset causeways—neither feature ever recorded before. These discoveries change our understanding of ancient Maya land use and the city of El Pilar, but their existence and scope can only be proven by field validation. Our 2013 field set the stage for our discovery strategy to confirm features illuminated in LiDAR imagery setting up a protocol recording the nature of landscapes to share with others working with such imagery.

Anabel Ford is a research archeologist and Director of the Mesoamerican Research Center at the University of California at Santa Barbara. She received a Ph.D. in Anthropology from UCSB. She is recognized for her work on decoding settlement-environment relationships of the ancient Maya landscape and for discovery of the Maya city of El Pilar. On the contemporary border of Belize and Guatemala, the site promises to be the first cultural and natural Peace Park of the world and provides opportunities through research to link an understanding of ancient Maya forest practices to resolving problems of contemporary international politics, conservation, and development.

The objectives of the ThinkSpatial brown-bag presentations are to exchange ideas about spatial perspectives in research and teaching, to broaden communication and cooperation across disciplines among faculty and graduate students, and to encourage the sharing of tools and concepts.