

## Professor Maps Ancient Burial Sites Using Radar Technology by Naomi McMillen



Anthropology Professor Lawrence Conyers knows just how challenging and rewarding field research can be. He has crisscrossed the globe – from El Salvador to Australia – exploring and mapping ancient burial sites using ground-penetrating radar (GPR) technology.

Conyers' next project will take him back to the rugged Australian outback, where he will assist the Mapoon Aboriginal Community in identifying graves within ancient burial mounds. He has already successfully assisted the community in locating ancestral gravesites elsewhere that were threatened by mining activity.

“I was able to very accurately map graves that were European, and also others that were pre-contact traditional aboriginal burials,” said Conyers. “The Aborigines were really excited, too, as I had a very good method that could identify their ancestors' graves without having to dig them up,” he said.

Due to his success at identifying and understanding gravesites, Conyers has been invited back to Australia. The Mapoon Aboriginal Community hopes to understand other possible burial mounds, and protect them from the encroaching mining activities. Large scale aluminum ore mining threaten many of these that have yet to be discovered or formally marked. While the Mapoon people know the general locations of the burial mounds, they hope that Conyers' use of ground penetrating radar technology can point to their exact locations so surface markers can be placed.

Ground-penetrating radar (GPR) involves the transmission of high frequency radar pulses from a surface antenna into the ground. The elapsed time between when this energy is transmitted, reflected from buried materials or sediment and soil changes in the ground, and then received back at the surface is then measured. When many thousands of radar reflections are measured and recorded as antennas are moved along transects within a grid, a three-dimensional picture of soil, sediment and feature changes can be created. More information on Conyers website, <http://www.gpr-archaeology.com/books/>

Conyers first developed an interest in ground penetrating radar while doing field research in graduate school.

“I was working on my PhD dissertation in El Salvador trying to understand a buried Mayan site from the year AD 600. In order to reach the buried features, holes had to be dug about 3-5 meters through volcanic ash. I kept thinking that there must be a better way to do this,” said Conyers, who has a PhD in anthropology from the University of Colorado in Boulder.

Upon seeing preliminary results of this new technology, Conyers knew that it could be beneficial to his research.

“I was able to get help from a professor at the Colorado School of Mines who was instrumental in inventing this new technology and many others over the years,” Conyers said. “I was able to take what was then a very new technology and apply it to archaeological problems,” he said.

While he enjoys field work, Conyers is first to admit there are challenges associated with conducting research in an exotic locale.

“Conditions are often rough with lots of bugs, Saltwater Crocodiles and other animals that bite and kill people all the time. The food is also something that needs some getting used to, such as canned beef and crackers for breakfast or partially rotten squid on noodles for dinner,” he said.

Conyers hopes that his next project will keep him a little closer to home.

“I am getting a little tired of flying half-way around the world to eat rotten squid for dinner just to do fun geophysical work in exotic locations. So perhaps some nice living conditions nearer to home would be good for a change,” Conyers said.

*[Photo: Conyers, left, with an Aborigine elder, sitting on the grave of one of his relatives who was buried in a European fashion]*