



Associate Professor of Anthropology Clark Erickson in a dugout canoe on the San Joaquin River in the Bolivia Amazon

## DOMESTICATED LANDSCAPE

If you leaf through a coffee-table book on archaeology, you're likely to see photos of magnificent relics and ruins. Much of our knowledge of ancient civilizations comes from archaeological sites—points on a map where archaeologists dig, layer by layer, back into time to study, piece by piece, the artifacts buried there.

“The site is like a sacred category that organizes all of archeology,” says Clark Erickson, an associate professor of anthropology. But what about the map itself, the expanses of land where the coffee-table-book sites are situated? “We think a site has clear boundaries,” he notes, “so all the space around it has been pretty much ignored by archaeologists. Over the years, I’ve gotten more and more interested in what all that landscape between sites can tell you.”

Erickson is curator of the American section of the Penn museum. He is a specialist in—and a pioneer of—landscape archaeology, particularly of the pre-Columbian civilizations that peopled the Amazon in Bolivia and Peru. In that part of the world, Erickson has discovered forgotten trails, silted canals and eroded earthworks crisscrossing savanna and forest from horizon to horizon. Seen from an airplane, the geometric patterns of straight lines, perfect circles and elevated rectangles leave no doubt that these “geoglyphs” are the works of human hands. “In Amazonia,” he argues, “nature more closely resembles an abandoned garden than a pristine wilderness.”

Erickson and his colleagues occasionally excavate a trench through some of the earthworks to date the layers of original construction and renovations by later inhabitants. “So much of landscape archaeology is just reading the pattern on the surface at different scales,” he comments, “from satellite imagery all the way down to walking the area on the ground to get that human perspective.” He spotted many ring-ditch geoglyphs using Google Earth.

The prodigious feats of ancient digging and piling of dirt, Erickson surmises, took more labor than went into the building of antiquity’s greatest monuments. The

earthworks he studies make up a vast, engineered system designed to capture water during the wet season and move it through a network of canals, raised fields for crops, fish weirs and settlement mounds. “They completely transformed these landscapes,” Erickson says, “disturbing the soil, in many cases, a meter below the surface.” He estimates the countryside supported tens of thousands of people with hundreds of miles of causeways and canals. Carbon dating suggests some raised fields were built as long as 3,000 years ago and fell out of production around the time the conquistadors arrived 500 years ago.

“In many societies, the state collapses and the big cities are abandoned, but people go on living out in the countryside as if nothing had happened,” he says. “They were able to sustain large populations, densely packed on these landscapes, and they lived pretty good lives. A vast indigenous knowledge spanning hundreds of generations is physically embedded in the landscape. We could learn a lot from the Amazonians.”