

# An Abandoned City in Laos

BY ELIZABETH G. HAMILTON AND JOYCE C. WHITE

Laos is one of the least archaeologically explored countries in the world, largely because geopolitics of Southeast Asia through much of the 20th century made the country too dangerous for research.

The Middle Mekong Archaeological Project (MMAP), directed by Joyce White, Penn Museum Consulting Scholar and head of the Institute for Southeast Asian Archaeology, has been conducting surveys and test excavations since 2001 in northern Laos, mainly in the area around Luang Prabang, the former royal capital. (See *Expedition* 52.2: 6–7.) Her work has built upon the Museum's long research in northeast Thailand, especially at the site of Ban Chiang.

In the winter of 2018, we worked with Dr. Peter Cobb, then Kowalski Family Teaching Specialist in the Museum's Center for the Analysis of Archaeological Materials (CAAM), and Jared Koller, a researcher



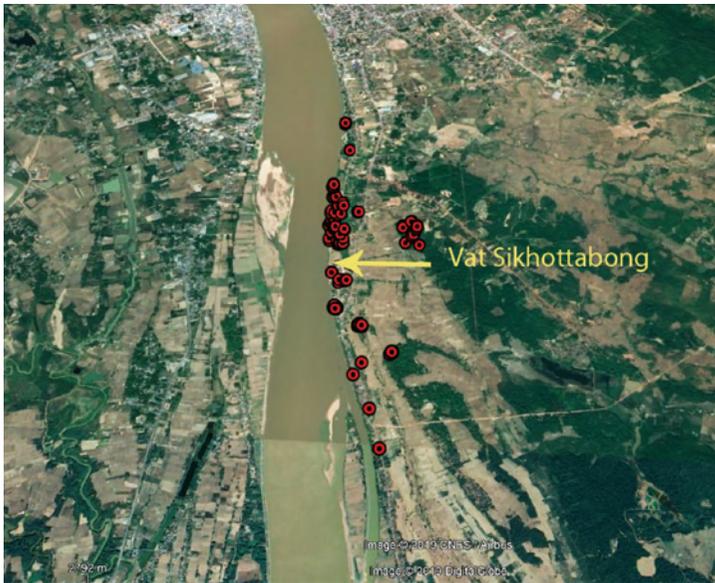
ABOVE: Research areas of the Middle Mekong Archaeological Project: Thakhek, Luang Prabang, and Ban Chiang. Map by Ardeth Anderson.

at the Smithsonian Institution's Asian Cultural Heritage Program, on a project in Laos. The aim was to conduct survey in a new area at a location that had never been recorded by archaeologists: an old abandoned city along the Mekong to the south of Thakhek, Laos. There were two goals: first, to produce a digital map of the historic temple complex at Vat Sikhottabong, and second, to map the extent of the abandoned city surrounding the temple. The project was funded through an Asian Development Bank-financed program to enhance tourism facilities at the renowned site.

## Rapid Assessment Survey

The rapid ground survey along the Mekong River included local cultural heritage managers who were familiar with collapsed stupas, sculptures, brick mounds, walls, and platforms in the Thakhek area. Using a smartphone with an app configured to link photographs to GPS coordinates, the team documented more than 140 above-ground features in one week. Traditionally, people in this area lived in wood or bamboo dwellings. Permanent structures, made of stone or brick, were reserved for religious buildings. The brick features reflected the past

LEFT: A drone's eye view of the main stupa and temple at Vat Sikhottabong at sunset. Photo by Jared Koller.



ABOVE LEFT: Google Earth map of the survey features discovered. The features were recorded with a smart phone using an app designed by Peter Cobb that linked GPS coordinates and archaeological data to a photo. ABOVE RIGHT: The top half of a fallen Buddha head, with hair, top-knot, and eyebrows. Offerings to the statue made by local residents can be seen at the base of the sculpture. Photo by Elizabeth Hamilton.

use of this area as a vast ritual landscape; the only surface remains of a city now vanished.

Data recorded in this quick survey provided the evidence to create the map showing the location and extent of the old city. The team also collected potsherds from exposed surfaces to quickly estimate the age of the city and the extent of its international trade connections. Analysis of the sherds by Naho Shimizu, an independent researcher specializing in Asian trade ceramics and Ph.D. candidate at Waseda University, Japan, revealed that the sherds date to between the 14th and 18th centuries, and some originate as far away as Japan.

### Drone Survey

The second objective of the field season was to test new mapping technologies. The survey team used drones and Emlid Reach RS+ GNSS (Global Navigation Satellite System) receivers to precisely locate points in the main temple complex and surrounding features linked with GPS. To quickly create a contemporary map of the temple compound itself and a nearby location with remains of the old city, the team obtained the positional data and images needed for a 3-D model of Vat Sikhottabong. Drone pilots, both western and Lao, flew DJI Mavic 2 Pro drones up to 75 meters over the site's surface, flying back and forth to see every part of the site from multiple

angles. Photogrammetry software will then determine the location of millions of points on the ground by comparing the photographs, thus constructing a model of the site's surface with a photographic overlay.

### What Happened to the Old City?

The city appears in European records in a 17th-century publication by the Dutch merchant explorer Gerrit van Wuysthoff. He noted that the city, called Lochoen or Lakhon, was a major trading and commercial hub with 20–25 temples, located on important trading routes up and down the Mekong River as well as to Vietnam and the interior of Thailand. But the late 18th and early 19th centuries saw constant regional warfare among the numerous kings and warlords from Burma (now Myanmar) to Vietnam. Cities, towns, and villages were sacked and whole regions depopulated. It is possible that Lakhon was destroyed in the early 19th century, when the Siamese sacked and burned Vientiane. ●

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