

Mysterious Maya Decline

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The remarkable history of the Maya ended in mystery. In the late 800s, the Maya suddenly abandoned many of their cities. Invaders from the north, the Toltec, moved into the lands occupied by the Maya. These warlike peoples from central Mexico changed the culture. The high civilization of Maya cities like Tikal and Copán disappeared.

No one knows exactly why this happened, though experts offer several overlapping theories. By the 700s, warfare had broken out among the various Maya city-states. Increased warfare disrupted trade and produced economic hardship. In addition, population growth and over-farming may have damaged the environment, and this led to food shortages, famine, and disease. By the time the Spanish arrived in the early 1500s, the Maya were divided into small, weak city-states that gave little hint of their former glory.

As the Maya civilization faded, other peoples of Mesoamerica were growing in strength and sophistication. Like the Maya, these peoples would trace some of their ancestry to the Olmec. Eventually, these people would dominate the Valley of Mexico and lands beyond it

What Was Behind Mysterious Collapse of the Mayan Empire?

Wynne Parry, LiveScience Senior Writer | August 22, 2012 08:55am ET **Name** _____

The city states of the ancient Mayan empire flourished in southern Mexico and northern Central America for about six centuries. Then, around A.D. 900 Mayan civilization disintegrated.

Two new studies examine the reasons for the collapse of the Mayan culture, finding the Mayans themselves contributed to the downfall of the empire.

Scientists have found that drought played a key role, but the Mayans appear to have exacerbated the problem by cutting down the jungle canopy to make way for cities and crops, according to researchers who used climate-model simulations to see how much deforestation aggravated the drought.

"We're not saying deforestation explains the entire drought, but it does explain a substantial portion of the overall drying that is thought to have occurred," said the study's lead author Benjamin Cook, a climate modeler at Columbia University's Lamont-Doherty Earth Observatory and the NASA Goddard Institute for Space Studies, in a statement. [Dry and Dying: Images of Drought]

Using climate-model simulations, he and his colleagues examined how much the switch from forest to crops, such as corn, would alter climate. Their results, detailed online in the journal *Geophysical Research Letters*, suggested that when deforestation was at its maximum, it could account for up to 60 percent of the drying. (The switch from trees to corn reduces the amount of water transferred from the soil to the atmosphere, which reduces rainfall.)

Other recent research takes a more holistic view.

"The ninth-century collapse and abandonment of the Central Maya Lowlands in the Yucatán peninsular region were the result of complex human–environment interactions," writes this team in a study published Monday (Aug 20) in the journal *Proceedings of the National Academy of Sciences*.

The team, led by B.L. Turner, a social scientist at Arizona State University, concurs that by clearing the forest, the Mayans may have aggravated a natural drought, which spiked about the time the empire came to an end and population declined dramatically.

But this is just one contributing factor to their demise, Turner and colleagues write, pointing out that the reconfiguration of the landscape may also have led to soil degradation. Other archaeological evidence points to a landscape under stress, for instance, the wood of the sapodilla tree, favored as construction beams, was no longer used at the Tikal and Calakmul sites beginning in A.D. 741. Larger mammals, such as white-tailed deer, appear to have declined at the end of empire.

Social and economic dynamics also contributed. Trade routes shifted from land transit across the Yucatán Peninsula to sea-borne ships. This change may have weakened the city states, which were contending with environmental changes. Faced with mounting challenges, the ruling elites, a very small portion of the population, were no longer capable of delivering what was expected of them, and conflict increased.

"The old political and economic structure dominated by semidivine rulers decayed," the team writes. "Peasants, artisan – craftsmen, and others apparently abandoned their homes and cities to find better economic opportunities elsewhere in the Maya area."