

What can we learn about the Classical Maya collapse?

Josué M. Polanco-Martínez*(1,2) & Martín A. Medina-Elizalde(3)

*(1)Basque Centre for Climate Change (BC3) & (2)UMR CNRS 5805 EPOC (Environnements et Paléoenvironnements Océaniques et Continentaux), Université de Bordeaux
(3)Department of Geology, Amherst College, Amherst, MA. USA.*

There are many evidences that socio-political conflicts, human pressure on environmental and climate forcing (e.g., climate change) were of the main mechanisms that triggered the disintegration of classical Maya civilization (750 - 950 A.D.) (Demarest et al., 2004; Gill, 2000; Hodell et al., 2005; Hodell et al., 1995; Medina-Elizalde et al., 2010; Medina-Elizalde and Rohling, 2012; Medina-Elizalde et al., 2016). This historical event brings a unique opportunity to study the role of climate change in this complex phenomenon and how several factors interact among them. The aim of this talk, which is open to discussion with the attendees, is threefold: 1) present a state of the art of this topic, 2) to build a link between researchers that are working in paleoclimate, ecology and human sciences and 3) to obtain knowledge and a wide perspective on the role of climate change in the classical Maya collapse and how this can be used to face the current and future climate change in the Yucatan Peninsula.

Key References

Demarest, A. A., Rice, P. M., and Rice, D. S., 2004, The terminal classic in the Maya lowlands: collapse, termination, and transformation, Boulder, CO, University Press of Colorado, 676 p.

Gill, R. B., 2000, The Great Maya Droughts: Water, Life, and Death Albuquerque, University of New Mexico Press, 445 p.

Hodell, D. A., Brenner, M., and Curtis, J. H., 2005, Terminal Classic drought in the northern Maya lowlands inferred from multiple sediment cores in Lake Chichancanab (Mexico): Quaternary Science Reviews, v. 24, no. 12-13, p. 1413-1427.

Hodell, D. A., Curtis, J. H., and Brenner, M., 1995, Possible role of climate in the collapse of Classic Maya civilization: Nature, v. 375, no. 6530, p. 391-394.

Medina-Elizalde, M., Burns, S. J., Lea, D. W., Asmerom, Y., von Gunten, L., Polyak, V., Vuille, M., and Karmalkar, A., 2010, High resolution stalagmite climate record from the Yucatan Peninsula spanning the Maya terminal classic period: Earth and Planetary Science Letters, v. 298, no. 1-2, p. 255-262.

Medina-Elizalde, M., and Rohling, E. J., 2012, Collapse of Classic Maya civilization related to modest reduction in precipitation: Science, v. 335, p. 956-959.

Medina -Elizalde, M., Polanco-Martínez, J.M., Lasas-Hernández, F., Bradley, R., Burns, S.J., 2016. Testing the “tropical storm hypothesis” of Yucatan Peninsula climate variability during the Maya Terminal Classic Period. Quat. Res. (in review).