

Tropical forest composition and CO₂ concentration during the Late-glacial

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The transition from the Last Glacial Maximum (LGM) to the Holocene, the Late-glacial (LG), is a key period for understanding the mechanisms of abrupt climatic changes. In terrestrial records there is considerable uncertainty about the exact timing, rate and magnitude of these changes and the globality of the changes remains in debate. These intervals were dated in many sites in Europe yielding the following chronology, Younger Dryas: 12,5-11 cal kyr B.P., Bølling /Allerød: 14,5-12,5 cal yr B.P. interrupted by three decade to century scale events Inter-Bølling Cold Period (IBCP), Older Dryas and Inter- Allerød Cold Period (IACP), Oldest Dryas: 15,5-14,5 cal yr B.P. In Amazonia it is often difficult to detect such rapid changes in environment as a short and an abrupt change in precipitation will hardly be perceptible in an environment where 2000 to 4000 mm annual precipitation is recorded. Decrease in temperatures are more susceptible to be recorded if we get the right indicator species such as Podocarpus or Araucaria which are used in paleoenvironmental and paleoclimatic reconstructions in Brazil .

When resolution is high enough in sites located on the periphery of the Amazon Basin rather than inside Amazonia (e.g. Caco Lake (Brazil), Siberia (Bolivia) records) it is often easier to detect rapid changes in precipitation and temperature as their boundary conditions induce a quicker response of the environment to climatic changes. Some particular species assemblages could be directly related to atmospheric CO₂ decrease or increase recorded in ice cores from Greenland or Antarctic.