

Climate change and human occupation in the dry puna of Argentina during the period of the Little Ice Age.

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In recent decades climate change has become a central issue not only for the academia but also to the media, politicians, investors, and business and technology projects. The objective of this research is to advance paleoenvironmental studies in the Dry Puna of Argentina, through the incorporation of new pollen analysis from the sedimentary profile of Lapao 2 (1400 - 1800 cal AD). This study seeks to contextualize human occupations which inhabited the in the area for this period. This chronology correspond to the weather phenomenon named the Little Ice Age, considered one of the most recent global climate variations (decreased temperature and increased precipitation) historically recorded (~ 1350-1850 AD) mainly in the Northern Hemisphere. Recognition of this period in the Puna of Argentina is still poorly understood but has been detected in South America, although disputes over it particular climatic characteristic remain. Some authors postulate a cold-wet period, while others postulate that alternate between wet and dry-cold occurred. The Lapao 2 profile measured 1.60 m in height and has a high resolution chronological sedimentation. Twenty-eight samples for pollen analysis and sedimentological studies were taken. The results allowed to identify two moments in the composition of vegetation:

1 - A mixed steppe with higher proportion of Poaceae, accompanied by the expansion of vega, that indicate a wetter moment.

2 - Also a mixed but with a higher proportion of Asteraceae, where continues and reaches its maximum indicators of the vega. Finally retracts and presents with lower percentages, that would Indicates a drier moment.

In this case, there is no evidence of significant changes in vegetation composition and water availability in Quebrada Lapao that could have drastically affected the characteristics of human occupations in this area. These results are interesting because they show the potential of this line of evidence to reflect changes in vegetation and indirectly in the environment in restricted timescales.

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