

Human Response to Climatic Variability in the Central Andean
Highlands: 10,000-3200 BP

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Although it is obvious that climate has changed in the Central Andes throughout the Holocene, what is less apparent is the nature of human response to those changes. This is especially true of the Early and Middle Holocene. Relatively little archaeological research has been done within this time frame in comparison to the vast amount of work that has been done on later time periods. Consequently, while we have a sense of the nature and direction of cultural change over this time frame, we understand very poorly how such cultural changes articulate with climatic change in a detailed way. For instance, while we know that both indigenous plants and animals were domesticated in the Andes, we do not have a good understanding of how such processes articulated with environmental variability. This is unfortunate, because competing theories about plant domestication characterize the role of environmental change in contradictory ways. Some risk management models argue that incipient plant cultivars are added to the diet when environmental conditions worsen, whereas other models postulate their addition to diet under conditions of climatic improvement. The lack of detailed environmental parameters, then, makes it impossible to evaluate the explanatory adequacy of models of cultural change in the region.

However, we can discuss a number of broad trends that characterize the early prehistory of the region, and at least on the scale of archaeological time, we can show how these articulate with known climatic changes. These trends include:

- 1) the initial discovery of the highlands (11,000-9000 BP)
- 2) the adaptive radiation of humans into unoccupied ecological niches (8000-5000 BP)
- 3) the reduction of residential mobility (5000-3500 BP); and
- 4) the expansion of agropastoral settlement and the initiation of small-scale political centralization (3500-3200 BP and beyond)

Although these trends are broadly representative of cultural change across the Andean highlands, it is also the case that there is considerable local variation in the pace and timing of these changes and the climatic contexts within which they occur.

To facilitate our understanding of these changes, I will illustrate them through the comparison of three areas in the Andes in which our reading of early prehistory is better than most:

- 1) the Junin puna
- 2) the western flanks of the Andes in southern Peru and extreme northern Chile; and

3) the Lake Titicaca basin

What I will show in this paper is that while some of the trends seen in prehistory are easily correlated with climatic change, such as the "discovery" of the highlands following extensive deglaciation in the Late Pleistocene/Early Holocene, the degree to which other the other trends have an explicit environmental causation is subject to serious question. Through this illustration, I hope to point paleoclimatologists toward the kinds, quality, and scale of data archaeologists will need if they are ever to understand the role of climatic variability in human affairs in the Andean highlands.