

Title: El Niño, upwelling, anchovies, and the foundation of Andean civilization.

Abstract:

The relationship of climate change to culture is often depicted as destructive. This bias conceals how economic opportunities presented by climate variability may have contributed to key periods of innovation in human history. In the case of coastal Peru, it has been argued that maritime resources provided the foundation of Andean civilization, thus suggesting a link between culture and coastal climate. An intriguing contemporaneity exists between significant changes in the Peruvian archaeological and paleoclimate records just after the middle Holocene/Late Prececeramic (about 5000 years ago). Around that time, El Niño frequency begins to increase coincident to periods of rapid expansions of economic complexity. This creates a paradox in that El Niño's most devastating economic impacts in this region are to fishing and irrigation agriculture, yet as El Niño begins to recur more frequently, people choose to become more dependant on anchovy fishing and irrigated crops. This talk will explore a possible link between climate and human economics in which Peruvian coastal upwelling leads to increased marine productivity. Human exploitation of this productivity in turn may have required technological and agricultural innovation leading to the apparent economic complexity seen in sites such as Caral, Banduria, and El Paraiso.