

Climate, Economy, and Scale: The Development of Cities and Structure in the Valley of Mexico
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An archaeological survey in the 1960s and 70s identified thousands of sites in the Valley of Mexico between 900 B.C.E. and the destruction of Tenochtitlan in 1521 C.E. The economic and political institutions of the valley exploited environmental zones and allocated resources on a variety of scales. Long-term oscillations between centralized polities and warring states, as well as mercantilist and government-controlled economic systems, suggest that environmental determinism alone cannot explain the variety of systems in the area. The project thus seeks to examine the properties of these different strategies on several scales.

Locally, discrete settlements were the primary functioning unit for the region, ranging in size from hamlets of single families to cities of over 100 ha in area. People settled on a variety of landscapes with different geographic and climatic properties that affected agriculture and political influence alike. Many of these sites were inhabited across multiple periods, allowing comparison between geographic and cultural factors in urban development. Patterns should emerge on the individual and regional level concerning the rates of growth and development under different conditions.

On a larger scale, the valley as a whole functioned as a means of supporting a population, in some cases largely urbanized, in a highly variable climate. Previous literature has investigated settlement organization in a variety of ways, but generally chooses either economic or geographic models, each of which presents a variety of problems. Combining environmental and urban data with spatiotemporal clustering, one can construct a network to model flows of excess agricultural and labor production to areas with higher demand. The stability of such a network should lend insights into the long-term maintenance requirements of the region as a whole.