

Precontact Population Decline and Coalescence in the Southern Southwest Project Summary

How did 40,000 people vanish from the southern Southwest a century before the introduction of European pathogens? This question has both intrigued and vexed archaeologists, anthropologists, and the broader public for more than a century. Advances in method and theory and data accumulation make this an opportune time to reconsider this question. This project will examine the causes, tempo, and spatial variability of this decline. This project will have a broad public impact through sharing of results with professionals, the public, and government policymakers.

The Center for Desert Archaeology's (CDA) pan-Southwestern *Coalescent Communities* settlement database indicates that this reduction in population occurred gradually, beginning circa A.D. 1300 and continuing into the early 15th century. This pace is supported by recent CDA research in the lower San Pedro valley where demographic decline was a complex process associated with coalescence, including long distance migration and aggregation. After a century of gradual population loss, boundaries between social groups slowly dissolved as groups continued to coalesce to maintain irrigation systems and social networks. By A.D. 1450, the San Pedro valley was abandoned by a remnant population comprised of descendants of both local and migrant groups. This scenario forms the basis of our proposed model and test implications for other areas in the southern Southwest.

A complex problem requires a multi-scalar approach. The proposed model will be evaluated in four key study areas that highlight the variation in the region: the Phoenix Basin, Tonto Basin, Perry Mesa, and Safford Basin. Each area provides a unique perspective on these processes. Consistency in approach will facilitate comparison among study areas.

A complex problem also requires multiple analytical strategies. To test the proposed model in each study area we will use existing collections and conduct surface collections to:

- enhance the temporal resolution of demographic reconstructions utilizing a revised ceramic seriation based on Salado polychrome and other late tree-ring dated pottery
- assess the occurrence and scale of migration through the reconstruction of enculturative boundaries and patterning in technological style
- examine interaction between defined groups in each study area through settlement pattern analysis and petrographic sourcing of Salado polychromes and other relevant pottery types
- examine inter-regional interaction based on patterns of obsidian exchange
- reconstruct environmental and agricultural variables in a GIS, including terrain, arable land, streamflow, and temperature
- review bioarchaeological data for evidence of nutritional stress, disease, trauma, and changes in fertility and mortality rates

The various threads of evidence will be synthesized by a research team with over a century of combined regional and topical experience relevant to resolution of our central question.

The results of this project will be broadly disseminated to the professional community and the general public. The *Coalescent Communities* database will be made available upon request to professional researchers. Furthermore, all artifact data generated by this project will be fully available on-line at CDA's website. Synthetic results of this project will be disseminated to the professional community in several formats, including a conference that includes a panel of independent researchers, presentations at national meetings, and articles in professional journals. The project results will also be presented in a format accessible to the general public through various media, including an issue of *Archaeology Southwest* (CDA's quarterly magazine) and local meetings attended by avocational archaeologists. In addition, outreach lectures will be held in Tucson, Phoenix, and smaller communities in southern Arizona that highlight the importance of site preservation. Finally, presentations will be made to tribal governments and cultural resource specialists of Native American groups.

Sites from this late precontact period are particularly threatened by looters and rapid population growth, and expanded preservation is a major public benefit of this project. CDA will use information from this project to expand our site purchase and conservation easement preservation program. The information will also be shared with national preservation organizations. Project results will improve interpretation and management policy at two large new National Monuments (Ironwood and Agua Fria, which cover over 200,000 acres total) that focus on archaeological resources. The results will also benefit state policymakers through incorporation in the Arizona State Historic Preservation Plan through a related CDA initiative.