Did climate conditions contribute to the settlement pattern shifts within the Agua Fria watershed in the late AD 1200s?

Population Movement
People lived within the Agua Fria river watershed, which runs south from central Arizona to the Salt River in the Phoenix Basin, for hundreds of years, farming on the mesa tops, in the canyons and in the foothills area directly north of Phoenix.

Around AD 1250-1300, people shifted their residences within the watershed, depopulating the lower Agua Fria, while population increased in the upper Agua Fria. Could climatic conditions have contributed to this movement of people within the watershed?

Climate and Population Change
A period of higher precipitation may have contributed to the population increase in the upper Agua Fria watershed in the A.D. 1300s. It is not clear, however, that extreme climatic conditions contributed to the depopulation of the lower Agua Fria watershed in the late 1200s.

Precipitation and Temperature Combined in their Effect on Agricultural Potential

Temperature
- Warm: wet = positive, dry = negative
- Cool: wet = positive, dry = negative

Climate Variables Affect Population Movement through Agricultural Potential

Precipitation Extremes and Population
- Lower Agua Fria: depopulation is not preceded by or coincident with extreme dry periods
- Upper Agua Fria: population pulse is coincident with extremely wet periods

Population Movement and Human-Environment Interaction

Understanding the interactions between people and their environment is of increasing importance in the American Southwest today with its growing human population and limited water resources.

Further research into the effects of climate on population movement will be valuable not only for increasing knowledge on population movement in the late 13th century, but also for decision makers today as they implement water and land-use strategies affecting agriculture, livestock business, and human population.

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