

## **Adaptive cycles and changing resiliency in Byzantine Cappadocia**

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Recent developments in how palaeoenvironmental, palaeoclimatic and archaeological data sets could be combined and integrated have included the application of adaptive response and resilience behaviour concepts (Nelson *et al.*, 2007 *Ann. Rev. Environment and Resources* 32, 395-419; Redman, 2005 *Am. Anthropologist* 107, 70-77). The question of socio-economic adaptation and adjustability, as identifiable in the archaeological record, might therefore be examined in light of variable and longer-term environmental and climatic changes. A 'resilience theory' conceptual framework is used here to assess and characterise the changing periods of human occupation and coincident climatic and environmental changes identified from ITRAX XRF core scanning of Nar Lake sediments and archaeological settlement data from Cappadocia, Turkey. The adaptive model applied in the Cappadocian context suggests that at no point throughout the Byzantine period were climatic and environmental variability seen as the sole drivers of societal change, but there were periods when they became important factors in shaping levels of societal resilience, particularly during periods of sustained political instability and Arab invasions. This is most evident from 680-900AD, a time which coincides with rural abandonment, reduced agriculture and a shift in climatic conditions towards wet and cold.