



Ancient Approaches to the Age-old Problem of Water – How Archaeology Can Contribute to the Water Management Discourse of Socio-Hydrology

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As “the study of old things”, archaeology is concerned with material remnants of the human past. At first glance, archaeology may not appear to align well with the purpose of socio-hydrology. Archaeologists attempt to understand past society by analyzing the materials and architecture that provide them with evidence of how people lived and organized their lives. One aspiration of doing so is to gain a contextualized perspective of how contemporary society became the way it is. Human interaction with water is recorded – among other forms of material evidence – in forms of infrastructure and architecture that people construct to control water’s flow and preserve this life-supporting resource in times of human need. Building structures, such as water canals or reservoirs, represent society’s endeavor to reconcile nature’s incalculable influence on society while subtly revealing humanity’s penetration into the natural hydrological cycle. Thus, a bi-directional – or reciprocal – relationship between society and nature exists. Socio-hydrological approaches to water management also attempt to understand this relationship.

This contribution introduces an archaeological example of how to conceptualize the human-nature dynamic that can be used to understand the socio-political aspects that envelope water management. To evaluate how the Hittite civilization of Late Bronze Age Anatolia (ca. 1600-1200 B.C.) controlled water resources, the author adopts a socio-ecological approach informed by theories of socio-cultural memory and geomorphological analysis. Critical assessment of Hittite written and cultural evidence are compared with hydraulic infrastructure installations to determine how the Hittites used knowledge of their physical landscape to their advantage. In doing so, a framework for interpreting water management practices is formulated that indicates that solutions to water collection and storage were case-based and highly contextualized. Furthermore, legitimate congruencies between archaeology, socio-hydrology and methodologies of integrated water resource management (IWRM) are presented. This primary research ultimately attempts to ameliorate the theoretical and methodological incongruencies of such a highly interdisciplinary field such as socio-hydrology. This approach will fuel a debate within the IWRM discipline about how an archaeological approach for analyzing water management strategies of the past can be used in modern water-management-related issues that encompass human-infrastructure, human-irrigational and human-agricultural systems.

Keywords: Socio-hydrology, Bronze Age Archaeology of Anatolia, Hittites, Water Management, Integrated Water Resource Management, Socio-cultural Memory, Perception, Phenomenology, Vulnerability, Human-environment dynamics