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Nature of the Problem

I am embarking upon a study of changing practices and perceptions of water use in Texas, from 1830 to the present. Texas is a good location for this study because it straddles the border between the humid east and the arid west. The west has always known that water was a problem; the east has yet to learn, and Texas is in the process of learning. The timeframe under consideration corresponds to that of Anglo settlement in the state.

I propose that practices and perceptions of water use do not change gradually, or in a linear fashion, but rather in episodes of punctuated equilibrium. If this is in fact the case, I should be able to identify critical periods of change, followed by relatively stable water-use regimes. Events triggering critical periods of change might include: (1) the opening of the Texas frontier to Anglo settlement, (2) establishment of municipal water utility companies, (3) the drought of the 1950s, and (4) 1997 Senate Bill 1. These events could lead to relatively durable water use regimes such as: (1) the water self-sufficiency of early settlers, (2) a shift to local government responsibility for water distribution, (3) state responsibility for surface water problems brought about by drought and floods, and (4) groundwater regulation and commodification caused by increased demand.

This is how I envision the framework as I begin the process. Admittedly this scheme is provisional. Different layers of technology, the increasing reach of government, legal complexities, and the transition from frontier to rural to urban all are factors in water use transitions. The regimes may change. The critical question is what triggers the change in a water use regime. I intend to follow geographer Carville Earle's advice and locate the origin of each new regime. Presumably the triggering challenge will be found near the triggered response. By understanding what causes Texans to change how they perceive and use their water resources, it is hoped that more efficient water utilization policies and habits can be developed.

My methodology is geographic. Locate change on a map and track changes on a timeline. Where do settlements first occur? What is their water supply? Where are the first water wells drilled? Where does irrigation first occur? How does irrigation spread? When do municipalities begin assuming the role of water provider for a community? Where does this occur and how does it spread? Where do flood control measures originate? How and where are these responsibilities transferred to the state? When does water become a commodity? How does the perception of water's availability affect public response to government regulation? What triggers conservation measures? Can Texans be convinced that water is a finite natural resource?

I propose to begin by reconstructing water budgets and ascertaining how they have changed since the early Anglo settlement of Texas. This will entail archival research that

will take me initially to Austin and then to other parts of the state. I will construct a timeline of major Texas water events. This will be integrated with census data, precipitation data, plus relevant historical data. Causal events and their longer-term consequences will be considered. Particular attention will be paid to combinations of events that result in changing habits of water use and in changing perceptions of the value of water. These changes will then be organized and analyzed in terms of relevant social theory (Dodgshon, Robert. 1998 Society in Time and Space: A Geographical Perspective on Change. Cambridge: Cambridge University Press) and current Texas water policies (Kaiser, Ronald A. 2002. Handbook of Texas Water Law: Problems and Needs. College Station: Texas Water Resources Institute). I do not know what the conclusion will be, but I believe this research will be of interest to all whom share a concern for Texas water resources.

This project is not part of a larger grant, and a Mills scholarship would certainly be helpful. It is not just that the funds that would be appreciated, but more important to me is validation that my idea has some merit-that there are others who share my concern that the water issue in Texas is vital and that understanding the human element is a critical and underappreciated part of any equation aimed at finding a long-term solution to more efficient water usage by all Texans.

Intended Career Path Statement

My career path to-date has involved natural resource exploration for hydrocarbons in Texas. Armed with a PhD and a GIS certificate I intend to conduct research related to Texas water resources at a major research university in Texas. My first aspiration is to publish a book on changing water usage within the state. I am also interested in how the hydrologic cycle has been altered by human endeavors. My background is in the physical sciences but I intend to bridge the divide between the physical and social sciences with Texas water being the focal point. Hydrocarbons fueled much of the Texas economy in the 20th century, but I believe water will be the most important natural resource in our state in the 21st century. There is much good quantitative research going on related to Texas water quality, but I see a need for a better understanding of the human dimension in the hydrologic cycle. It is powerful and poorly understood, but is a significant factor to be reckoned with.