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WATER USAGE—WHO CARES?: AN HISTORICAL PERSPECTIVE

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Water has had and still has an important role in the history of civilization. Early man created a social order and formulated social values that led to development of irrigation systems in areas of sparse precipitation. Although early settlers in Nebraska also looked to the rivers for agricultural stability in times of drought, it was not until technology and a strong federal government came of age that the discharge of rivers was significantly affected by diversions for irrigation. Now, few rivers are unaffected by one or more storage, diversion, or return structures. Additional roles for surface water are now sought. Among these are minimum streamflow to support fisheries and riverine wildlife, assimilate pollution, provide recreation and aesthetic enjoyment, and recharge valley aquifers. Another role is the preservation of wild and scenic reaches for memorials to our heritage and for the joy of future generations. To the question "Water use—who cares?," one must answer "Everybody." Our task is to identify the social values of today for management of the resource.

† † †

Water, vital to our everyday survival, has also been a contributing force in the development of civilization. Historical records show that the first civilizations were also hydraulic civilizations. These civilizations formed to build the irrigation systems that were beyond the capabilities of tribes or individuals. Once the systems were built, laws were needed to establish rights, and kings were needed to enforce the laws.

It is no coincidence that the earliest civilizations developed in the Middle East. Here were natural limits to the growth of nomadic tribes. Here also, vividly portrayed around the oasis, was the role of water in plant growth. It was a logical step for thinking man to divert water from the rivers to promote plant growth in fertile but otherwise dry soil. His future existence in this area was thus assured.

To preserve social order and to represent social values in the use of these irrigation systems, early man needed a new form of organization. The emergence of kings and pharaohs met the need for social order in large populations. The seeds of the appropriative rights and priority-of-use doctrines were germinated at this time to represent social values.

Continued growth of population with the new social order eventually exceeded the capacity of the water resources of the area. Migration into uncivilized parts of the world started. These emigrants, in contrast to wandering nomadic tribes, carried the seed of civilization. Wherever coupled with bountiful resources, this seed spurred the growth of new civilizations. Government had arrived.

One may wonder what this discussion has to do with water usage in Nebraska. I will draw on this important historical perspective for the insights it can provide to the question, "Water Usage in Nebraska: Who Cares?"

Early settlers recognized the nature of Nebraska's water resources. The rivers were the lifeline for survival. Few risked venturing into upland areas where dependable water supplies were not readily available. Nebraska's history is filled with accounts of the variability and unpredictability of precipitation. Following in the footsteps of their ancient ancestors, Nebraskans looked to the rivers for relief.

The early surface-water developments had only a small impact on the rivers. The technology and resources did not exist to alter stream flows significantly. Because water supplies were obtained locally the development of diversion structures in the West was of no consequence to the cities of the East. The frontier attitude of rugged individualism prevailed. There was no need or desire for governmental involvement. The limits of the resource had not been reached. Still, the settlers recognized the nature of the resource, as indicated by this story:

Crossing a sandbar was a moment of great tension for both passengers and crew. The drama of the situation is illustrated by a story told of a captain whose vessel was at the critical point, halfway over a bar, with engines straining to the breaking point, when a woodchopper came down the bank and scooped up a bucketful of the

river. Above the pounding of engines and the groaning of the overload(ed) equipment, the captain's voice was heard as he roared, "Hey, you put that back!" (Welsch, 1978).

Dreams, ambition, improved technology, and the resources represented by a federal government soon started the march toward the conflict described in the folklore story. Today few rivers in Nebraska resemble their ancestors. No longer does the Platte River rage out of its banks each spring, scouring new routes and clearing its channels of debris. Instead we have a much more placid river with paralleling groves of trees, which in some places are slowly choking the channel. The amount of flow past a point is determined in large part by its position with respect to a storage, diversion, or return structure (Fig. 1). The flows of childhood memories no longer exist.

The ancient civilizations recognized the role of water in survival. Modern civilizations have come to recognize additional roles for water. Minimum streamflows are desirable for wildlife survival, aesthetics, and waste absorption. Water-based recreation is one form of relief for an increasingly complex society. Wild and scenic rivers provide a glimpse of our heritage and thus need preservation. The industrial growth of our region and the growth of our cities are dependent on the availability of water. To further complicate matters, the interaction of surface water and groundwater has to be considered in any water usage. And finally, the effects of water quality on health have been recognized. Nearly all Nebraska citizens

can now respond "I do" to the question, "Water Usage in Nebraska—Who Cares?"

The surface-water resources of Nebraska cannot meet a of the needs of the citizens. There are few reaches of wild an scenic rivers left. The economies of several parts of Nebrask are dependent on continued diversions of surface water fo irrigation. A new wildlife population has evolved that is de pendent on present river flows. The principal cities of the stat need the recharge to their well fields that is provided b surface flow. There is an upper limit to the quantity of wate that is available. In some basins the needs have reached the limit. In other basins there is still room for choice (Fig. 1). What choice(s) to select is the difficult question.

The ancient civilizations have provided us with a soci order. Our great task is to provide the social values of thi age.

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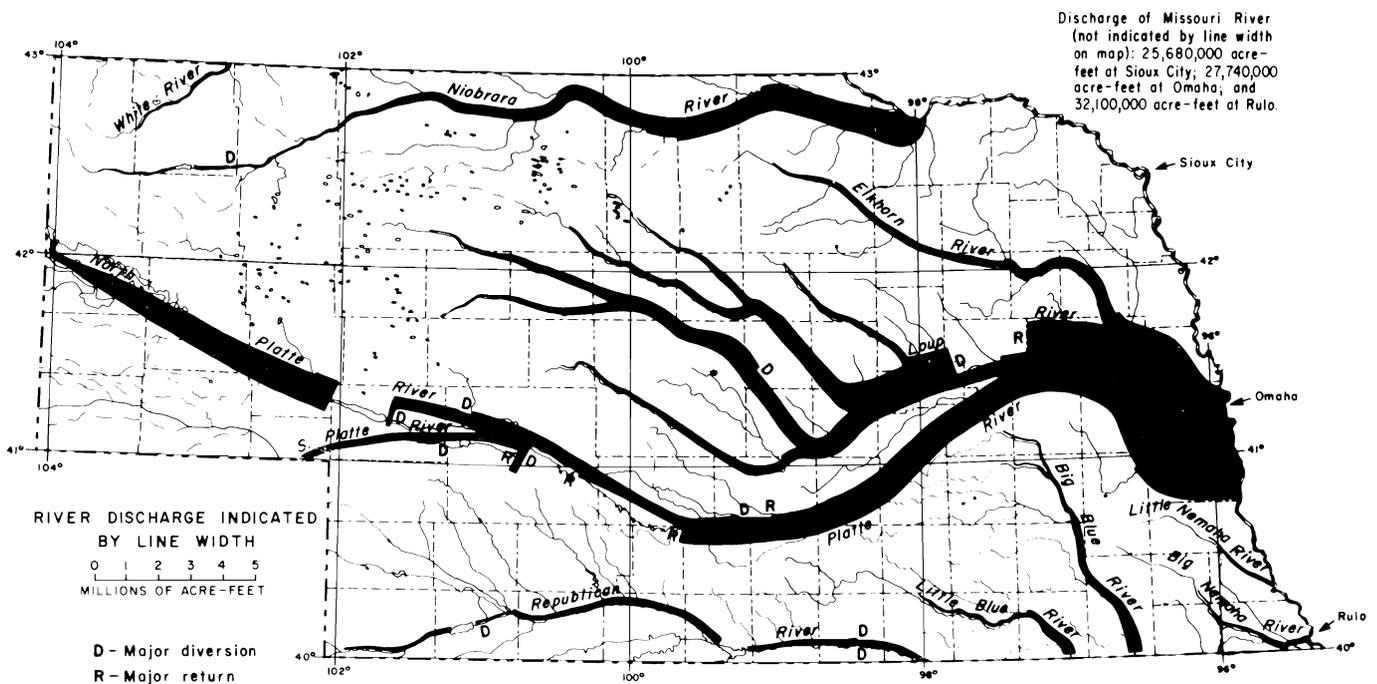


Figure 1. Discharge of Nebraska's principal rivers in Water Year 1975. (After Bentall and Shaffer, 1978.)