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WATER USAGE—WHO CARES?: AN ENVIRONMENTAL VIEWPOINT

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In answer to the rhetorical question, Water usage—who cares?, I considered listing the thousands of species of aquatic plants and animals that inhabit and depend upon the surface waters of Nebraska. But this would take too long, and I don't know them all anyway. However, I must defend the non-human species' rights to habitat. There are many frameworks to justify their continued existence: economic, aesthetic, and philosophic, to name a few.

Having been active in the environmental movement of the 70's in Nebraska, I can assure you that it has so diverse a following that I cannot possibly presume to speak for all of them. Thus my remarks primarily reflect my feelings, but probably mirror the thoughts and feelings of many Nebraska environmentalists and conservationists.

Nebraska's environmental and conservation groups and individuals care about our water resource. They have spent much time and money in the state because they want to bring about wise use of our water resource. Water issues have occupied a strong majority of the efforts of Nebraska environmental groups in the past.

Unfortunately, much of this effort has gone to fighting river impoundments. The environmentalists of the state would have rather spent their time pursuing positive matters regarding water management and use. There is no question that reservoirs are good for some fish and wildlife species. Nebraska's fishing would certainly not be what it is today without reservoirs. There are many residents who greatly enjoy the impoundments for boating and skiing. Reservoirs have added a recreational dimension not present in Nebraska's natural landscape, and flood control and irrigation benefits have been well documented.

But we have enough dams, say environmentalists. Nebraska's streams are now adequately controlled and developed; we need to leave a few free flowing streams. The public of Nebraska seems to agree with the environmentalist position on damming Nebraska's streams. In a 1973 Platte River Basin

public attitude survey, a majority of basin residents felt that flood control needs were being met fairly well or very well (66 percent); boating and swimming needs were being met, fishing and water fowl hunting was okay (74 percent); and water supply for irrigation was adequate (84 percent). These responses should not be interpreted as an outcry for more flood control, more recreation, and more irrigation reservoirs.

Consider irrigation. Much of the water impounded by existing reservoirs in Nebraska is used for irrigation purposes. The consumptive loss of water from irrigated agricultural crops has meant there are decreases in the total yearly amount of water flowing in our streams, when compared to pre-development flow rates. Gene Hornbeck of the *Omaha World-Herald* recently wrote:

The environmental battle to clean up the nation's waterways has made great strides in the past decade. Here in Nebraska, however, we are now faced with a different, far more serious problem of maintaining the state's waterways. If current laws and water resource regulations are not changed, there won't be any free-flowing, year-around streams to pollute. . . . The threat to our free-flowing streams isn't coming just from the diversion or impoundment of water. It is also coming from a depletion of our ground water tables by deep-well irrigation. . . . The aimless, unregulated rush to grow corn at the expense of our many other natural resources, including water, fish and wildlife, isn't causing concern only for those who believe in them. It is pitting neighbor against neighbor in the agricultural community. . . . I frankly get the opinion that our lawmakers continually prostitute themselves in their search for a wedding of the water problems. It seems reasonable that we should first evaluate and index the available resource and then allocate it to serve the needs and desires of all the people. . . . I find it mind-boggling, as a conservationist, hunter and fisherman, to observe the hundreds of laws governing my conduct on our lakes and streams . . . and yet as I stand in those waters I see them recede, dry up and die because there are no laws

to assure me I will have a place to practice the other ones (Hornbeck, 1976).

Although no one has been prosecuted for pumping a river dry, it has been done, and Nebraskans apparently don't feel that it is right. Remember that Platte River Basin survey I mentioned earlier? It showed that 88 percent of the people polled felt that agricultural water users should not be allowed to withdraw all the water at any given point in a stream or river; 65 percent felt that half or over half of the stream flow should be left for recreational, fishing, or wildlife uses.

Our state legislators must get on with updating Nebraska water law. Recreation and fish and wildlife should be legally protected. Isn't it ironic that aquatic species don't have prior rights to the water anyway? Who was here first? Minimum flow legislation would be beneficial for perpetuation of aquatic wildlife, but would require much research before minimum flow figures could be established and optimized with other uses.

Agriculture, although an important economic asset to the state, dominates the thinking of some of our policy makers almost to the exclusion of other possibilities. For example, in the Platte River Basin poll, about one-half the people surveyed would like to see an increase in tourism in the state. With corn surpluses at a near all-time high, and energy costs to grow irrigated corn spiralling upward, perhaps we need to reconsider other revenue sources, such as tourism, more vigorously.

How much land can we irrigate in Nebraska and still have recreational and wildlife use of our lakes and rivers? Vincent Dreeszen, head of the Conservation and Survey Division of the University of Nebraska-Lincoln, was recently quoted as saying that irrigated acreage in Nebraska may level off at about 8 to 9 million acres by the year 2000 (Fussell, 1978). This compares with about 6.4 million now irrigated (Fussell, 1978). That's an additional 2 million acres. Many conservationists feel that this additional 2 million acres or more will be lands that should not be irrigated because of too steep topography, sandy soil texture, or the need to carry out trans-basin diversion projects. In other words, maybe we are at an optimum acreage of irrigated lands now.

So much for quantity. Now I will consider what usage does to the quality of water.

The most serious pollutant of many of our streams and lakes in Nebraska is silt and clay caused from water erosion of our soils. In addition to carrying pesticides and nutrients, excessive erosion causes turbidity problems in our streams and lakes. Another serious but localized pollution problem in Nebraska is the nitrate pollution of ground water along the Platte River, in Holt County and elsewhere. Most nitrate pollution has been attributed to agricultural fertilizer application on

sandy soils with leaching due to excessive irrigation (Spauling, et al., 1978).

The turbidity and nitrate problems have several things in common. For one, both problems primarily stem from land uses on only a small fraction of our land surface. In my home county (Buffalo), for example, 80 percent of cropland soil erosion occurs on class 4 and 6 lands. Statewide, 30 percent of the cropland erosion comes from land classified as class 4 (making up only 13 percent of the area) and 18 percent from class 6 lands, making up only 5 percent of the state's cultivated land area. In other words, about 48 percent of our soil erosion problem could be addressed by proper treatment of less than 18 percent of our land (Natural Resources Commission, 1970).

Land use regulations for requiring class 6 lands to be left in permanent vegetation would go a long way toward diminishing our silt pollution problem. Class 4 lands should have restricted uses and required land treatment mandated by law. I don't like regulations any more than the next person, but municipalities, industry, and business can be fined for polluting waterways; isn't silt pollution just as damaging? In any case, we should be promoting the concept that property owners are only short-term guardians of a valuable resource and that the present owners have a stewardship responsibility to use land and water wisely, so that they may pass it on to future generations with minimum impairment.

Likewise, the nitrate pollution of ground water could be greatly reduced by land use changes on porous sandy soils. If these lands were planted to legumes or non-fertilized pastures, the nitrate problem could be reversed. I might note that University of Nebraska personnel are making good efforts to reduce the nitrate problem by promoting better irrigation and fertilization practices (McCabe, 1978).

There is another aspect of the erosion problem. Rangeland and pasture covers almost two-thirds of Nebraska (62 percent) and its management thus becomes a concern to water use since much of the infiltration of precipitation occurs there. Traditionally, rangelands, with their native vegetation cover, were thought of as areas where infiltration was great and water erosion almost nil. Yet in the Middle Platte Basin, soil erosion rates on pasture and rangeland are almost 85 percent that of cropland. Why is this? A look at the percentage of lands in various range conditions across Nebraska explains it very well (Bose, 1977). Most of the counties in Nebraska outside of the Sandhills have the majority of their rangeland and pasture in fair-to-poor condition. Only the Sandhills' ranchers have done a good job of maintaining good-to-excellent range conditions with foliage and litter cover.

I don't mean to sound as if I'm anti-agriculture. It is just that when one talks about water usage in Nebraska, one has to talk about agriculture. Nationwide, agriculture uses 80 percent

of our consumed water. In Nebraska, this figure is perhaps over 90 percent. With farmers and ranchers being the prime users of water, they, by their nature, will conflict with wildlife and recreational uses. Maintaining adequate water quantity and quality in Nebraska requires a complete ecosystem management approach. We cannot look at ground water alone, streams alone, or even just water alone. We must consider the complex water-soil-climatic-organismic-economic system with all the interactions to manage properly our precious water resource. As Bill Vogt of the National Wildlife Federation said in a recent article in answer to the question "Must the Platte Die?": "The answer to that question is in the hands of the people. In the final analysis, they control the destiny of any river. That's why we need a whole new way of looking at water" (Vogt, 1978).

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