

# Water Quality Issues in the Heartland

## Iowa, Kansas, Missouri, Nebraska

**Background:** The four-state Heartland Region, home to almost 13 million people, contains 306,500 farms and one-quarter of the nation's harvested cropland. Market value of its agricultural products exceeds \$48 billion. Heartland states rank in the top 10 for production of cattle, swine and poultry. As a result of this intensive agricultural production, nonpoint source water quality issues are almost universally linked to agriculture and rural land use, and the region is a significant source of nutrient and pesticide loading to the Upper Mississippi and Missouri Rivers.

**The goal** of the Heartland Regional Water Coordination Initiative is to build institutional partnerships and increase the capacity of citizens, land-owners, agencies and community leaders to better address water quality concerns. Capacity building for citizens is especially crucial in that the proportion of rural residents in Heartland states is about twice the national average, and the area of publicly-held lands among the lowest in the nation.



**Heartland Water Issues Survey:** An important part of capacity building is the creation of common knowledge and understandings. One kind of knowledge that educators, technicians, scientists and community leaders need is a sense of the perceptions, beliefs and viewpoints of those they wish to engage. It is these attitudes and beliefs, in combination with social connections and social pressures that motivate citizen actions to manage and protect water resources.

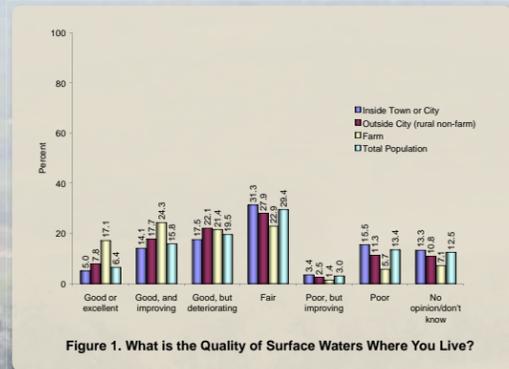
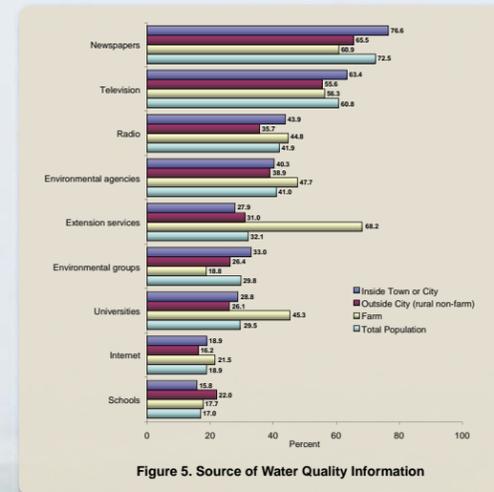
In 2006, the Heartland Initiative cooperated in a 4-state survey conducted by Dr. Robert Mahler, Professor Soil and Environmental Science at University of Idaho as a USDA National project. The survey concerned individuals' knowledge, attitudes and willingness to act on water issues. It was mailed to 1,925 randomly selected residents in Iowa, Kansas, Missouri and Nebraska; 1,042 surveys were returned (54%).

### Citizen Sources of Water information

Newspapers (72.5%) and television (60.8%) are the most common sources of information about water, followed by radio and environmental agencies (Figure 5). Farm respondents are more likely than others to have received information from Cooperative Extension (68%) and university sources (45.3%).

### Learning Opportunities

When offered a list of learning opportunities, 56.8% of respondents said they would be likely to read printed fact sheets, bulletins and brochures (Figure 6). Almost 55% said they would read a newspaper article or watch TV coverage. Of the three groups, farmers tended to be most interested in active learning opportunities such as attending demonstrations and short courses, or conducting a farm assessment. While one-third of all respondents would visit a web site for tips on water quality, the proportion was almost 50% for those age 50 and under.



**Results:** There was a high level of concern for most water issues, with clean drinking water rated "extremely important" by over 80% of respondents. However, the survey found significant differences among farmers (7.6% of respondents), rural nonfarm (22.6%) and city residents (69.8%) in their knowledge and concerns about water issues, as well as their opinions of which entities should be responsible for action to protect water. Selected regional findings of the survey are shown. Complete state and regional summary reports are available on Heartland web site <http://www.heartlandwq.iastate.edu>.

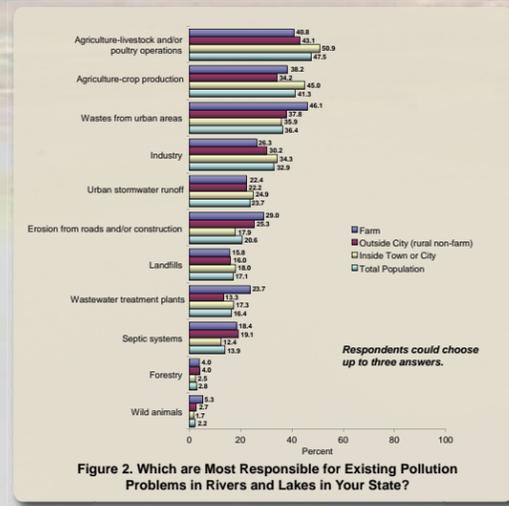
### What is the quality of surface water where you live?

Farmers are the most confident about the quality of their surface waters (Figure 1). Town and rural non-farm residents are most likely to believe it is fair or good but deteriorating.

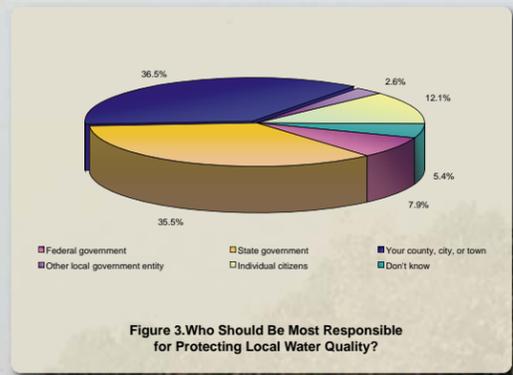
On average almost 46% thought their surface waters were fair, poor but improving, or poor.

### Sources of pollution problems in your state?

Agriculture- livestock/poultry operations, agriculture crop production and wastes from urban areas were ranked as the top three sources of existing pollution problems in rivers and lakes (Figure 2).

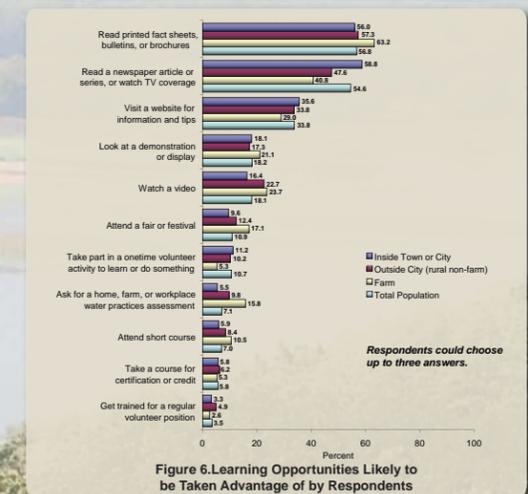
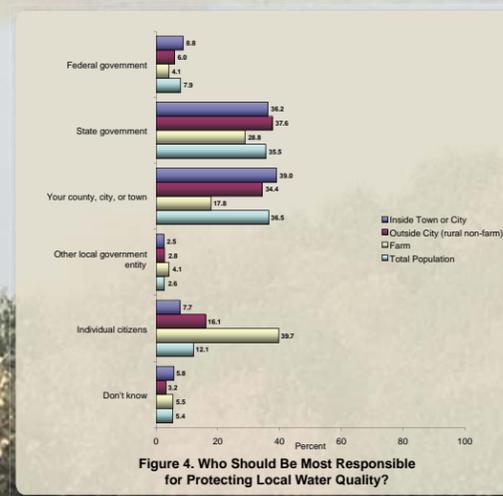


*"It is citizens' attitudes and beliefs in combination with social connections and social pressures, that motivate citizen actions to protect land and water resources."*



### Who should be responsible for protecting local water quality?

There is a significant split by place of residence in respondents' beliefs (Figures 3 and 4). Almost 40% of farmers say protection of water is the individual citizen's responsibility, compared to 7.7% of city/town residents and 16.1% of rural non-farm. Concerning the role of governments, overall more than two-thirds of respondents think their local or state government should be most responsible for water quality protection, and less than 8% would assign this responsibility to the Federal government.



Prepared by  
 Lois Wright Morton, Ph.D., Department of Sociology, Iowa State University  
 Susan S. Brown, Ph.D., Department of Agronomy, Iowa State University  
 Graphic layout, Renea Miller, Department of Sociology, Iowa State University

Heartland Water Coordination Initiative Leadership Team  
 Gerald A. Miller, Iowa State University  
 Charles J. Barden, Kansas State University  
 Bob Broz, University of Missouri  
 Daniel L. Devlin, Kansas State University  
 Damon Frizzell, U.S. EPA Region 7  
 Sandra S. Hodge, University of Missouri  
 Richard K. Koelsch, University of Nebraska  
 John Lawrence, Iowa State University  
 Charles S. Wortmann, University of Nebraska