



USDA-CSREES 2005 National Water Quality Conference

Water Quality Protection in Agroecosystems: A Three Year Summary of Accomplishments

Abstract:

The purpose of our 406 project is to integrate science, technology, and policy within the context of the agricultural Midwest and two major federal environmental statutes: the Clean Water Act (CWA, 1972) and the Safe Drinking Water Act (SDWA, 1974). In the context of science, we applied screening techniques to extensively mine existing databases and show that there are significant differences between and within-watersheds, and that in most cases only a few contaminants are of concern in any one sub-watershed or water supply. In the area of technology, we developed software to facilitate organization, sorting, and analysis of large water quality databases, experimented with different visual representations of uncertainty, and constructed GIS-based models to connect land attributes to water quality parameters. In the context of policy, we conducted focus groups and analyzed existing SDWA and CWA monitoring provisions and other requirements, and proposed place-based alternatives in light of our scientific findings—utilizing our technology products to facilitate integration of science and policy.

In order to accomplish the goals set forth in our proposal, it was necessary to coordinate, partner with, and obtain data and valuable consult from several organizations, including the Iowa Department of Natural Resources Geological Survey Bureau, University Hygienic Laboratory, Center for Health Effects of Environmental Contamination, US Geological Survey, Heartland Water Quality Initiative, and others. Materials from our science, policy, and technology findings have been included in several courses, and are in the process of being published in journals, books, our website, and a CD-ROM. Project personnel addressed the Iowa Science Teachers Conference in October, and a CD-ROM containing our findings and other materials will be distributed to every high school in Iowa through the Iowa Department of Education and Area Education Agencies

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