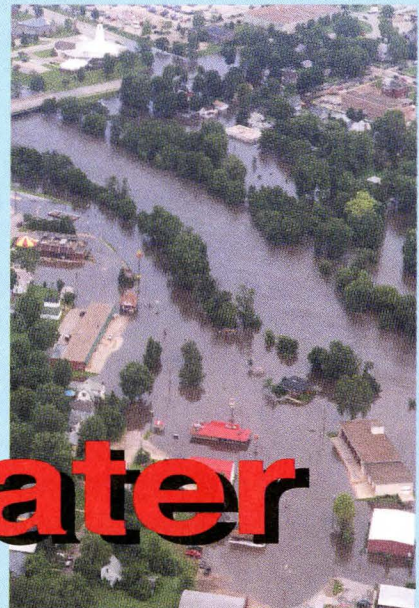
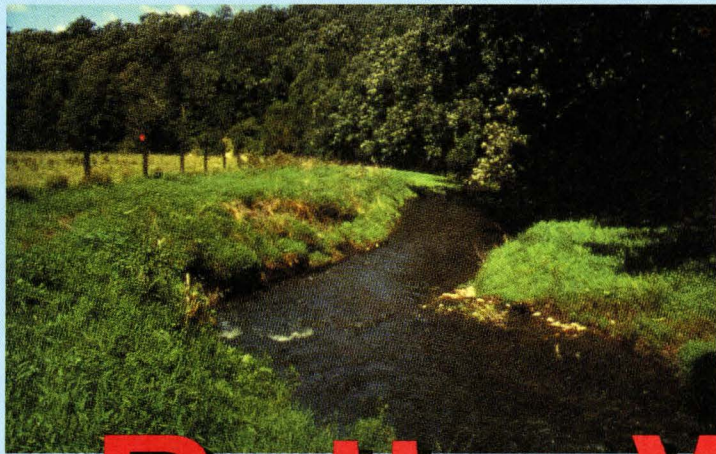


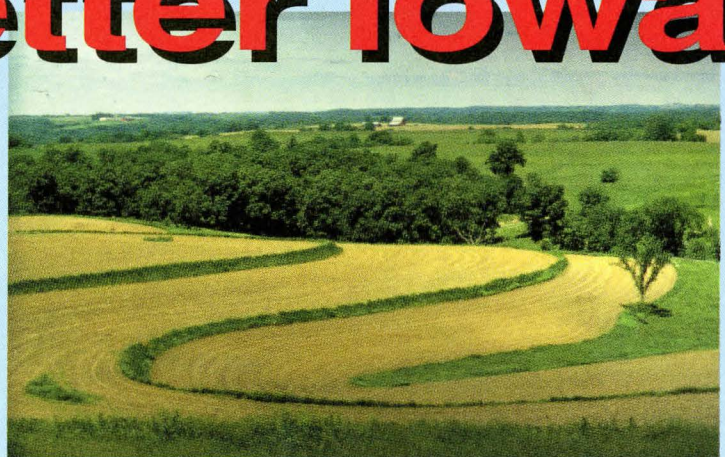
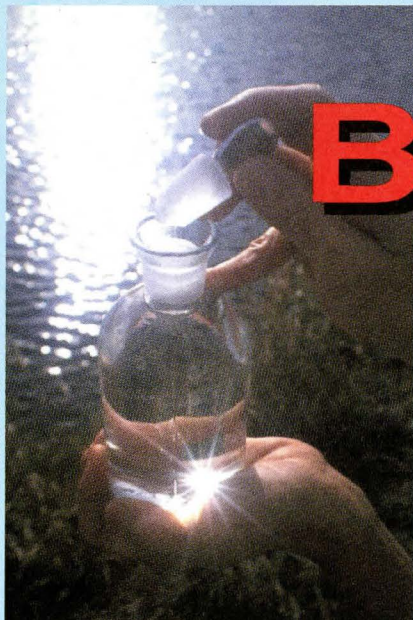
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# The Iowa Water Quality Initiative



**Better Water**  
for a  
**Better Iowa**





# Clean Water Starts With You

As Iowans, we have always held closely to our community ties. We hold very dearly our loyalties to our state and our cities, counties and school districts. Our quality of life has been enhanced by the dedication of citizens to improve these communities.

But each of us lives in another community as well, one that is often overlooked and taken for granted. These communities are watersheds. It is the rainfall and the snowmelt running from the watersheds that form our lakes and streams.

Just as many of our cities and school districts have benefited from the attention of our citizens, some of our waterbodies have suffered from apathy and abuse. Our water resources, like our communities, are a direct reflection of the amount of care and pride we devote to them.

Anyone familiar with Iowa knows this state has a "working landscape." Most of our open space uses the state's rich natural resources for agriculture. These vast resources that have made our state the envy of the world in terms of food production have also become our top environmental challenge.

This challenge is to maintain the most efficient food production system in the world while doing a better job of protecting Iowa's natural resources. Excessive erosion translates to more than just dirty water to us. It also reflects a failure to adequately protect the highest quality farmland in the world. We simply cannot afford to let our rich soil flow away to the Gulf of Mexico. We cannot fail to recognize that clean water is an essential element to maintaining our quality of life.

The good news is that we know how to address many of the water quality problems we face today. We know that terraces hold soil on the land; that filter strips prevent chemicals and soil from going into streams and that wetlands filter contaminants from the water. New technologies, such as geographic information systems (GIS), allow us to accurately pinpoint problem areas within watersheds so that we can focus our attention and resources in best possible places to achieve noticeable results.

We also know, from experience, that Iowans working together is our most effective tool of all. Together, we can meet these challenges.

This past year, Iowa's governor and Legislature recognized the importance of our water resource and the need to focus more attention on improving water quality. This \$11.2 million Water Quality Initiative is the most aggressive step toward improving water quality in Iowa taken since the 1987 Groundwater Protection Act. While this effort will not solve all of the state's water problems, it is an important first step toward improving water quality and the quality of life for all of Iowans.

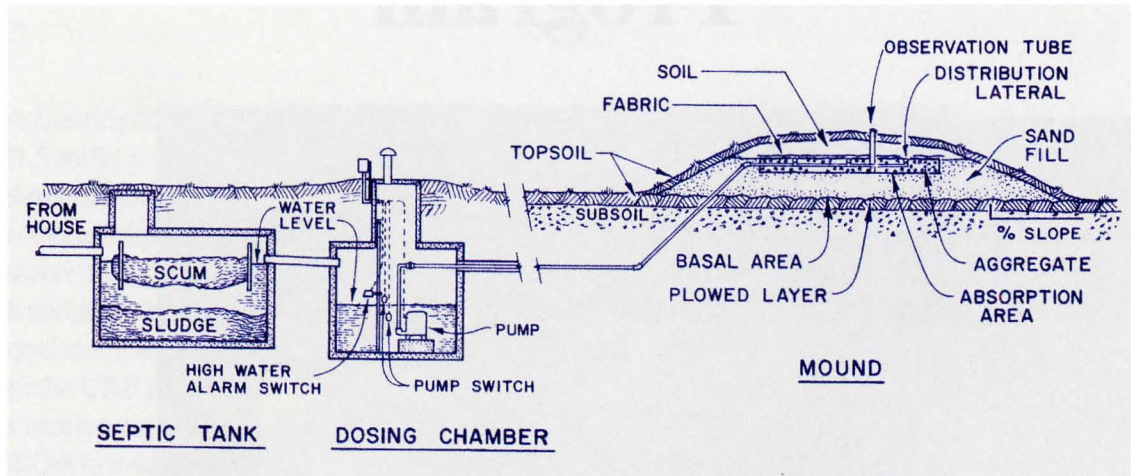
We also hope that this becomes an important step in the recognition by Iowans that we all are part of and have a responsibility to the other "communities" known as watersheds.

Patty Judge  
Iowa Secretary of Agriculture

Lyle Asell  
Interim Director, Iowa DNR



# Septics



*The Wisconsin Mound System is an alternative where high groundwater table or bedrock create a problem with traditional soil absorption systems commonly used in Iowa.*

**Project Description:** Provides \$600,000 in state funds to match with \$2.4 million in federal funds for low-interest loans to homeowners to renovate septic systems.

**Project Need:** It is estimated that only about half of the estimated 200,000 private septic systems in rural Iowa performs adequately. The remainder do not meet minimum treatment standards and many dump raw sewage into streams or tile lines. Contamination from these systems can spread dysentery, even hepatitis, and cause unpleasant odors around households, in addition to depletion of oxygen and habitat destruction in surface waters.

**First-year goal:** To renovate 500 private septic systems using low interest loans from the program.

**What is being done:** To implement this program requires the development of new administrative rules — planned to be finalized in October — and the involvement of many Iowans to make these rules as effective and reasonable as possible. As proposed, rural homeowners in eligible counties will work with their county health officials to obtain a permit for renovation of their on-site wastewater system. With the permit, the homeowner would work with a local lender and if approved for a loan, could borrow from \$2,000 to \$10,000 on a less-than-one-percent interest, 10-year loan. Eligibility requirements for counties may limit statewide participation in the early months and years, depending on the rules that are adopted in October.

The DNR will work with local news media, local health officials and community leaders on news releases, brochure dissemination and other public communications to “sell” the first participants whose success will then be made widely known, beginning in October. The first successful counties will be used to encourage other counties to qualify and spread the program to the rest of the state.

For more information, contact program manager  
Brent Parker, 515-281-7814





# Soil Conservation Cost Share Program



**Program Description:** Provides \$2 million in financial incentives to install conservation practices on private farmlands. These practices provide erosion control to protect the long-term productivity of our soils, and improved water quality by preventing sediment and other agricultural pollutants from washing into our lakes and streams. Five percent of the funding is directed to private lands in the watersheds of high priority, publicly-owned lakes in the state. Practices in these watersheds provide important protection for municipal water supplies and high-value recreational lakes.

**Program Need:** Erosion control is one of the state's highest environmental priorities because soil productivity is the basis of Iowa's economic strength. Reduction of sediment damage is crucial to maintain and improve water quality. Sediment and sediment-borne chemicals are the reason many lakes and streams are on the state's impaired waters list.

**First Year Goal:** Provide *permanent* soil conservation protection for 6000 acres of cropland statewide and in priority watersheds, and to reduce *annual* soil loss from those acres by up to 50,000 tons per year, now and in the future.

**What is Being Done:** Funds have been allocated to soil and water conservation districts across the state. Landowners have made application for these funds, or are being contacted by district staff regarding cost share assistance available. Engineering designs for conservation practices are being completed by field office staff. Practice construction is expected this summer or fall, following harvest.

For more information, contact  
Bill McGill, 515-281-6148





# Buffer Initiative

**Project Description:** Provides \$1.5 million to accelerate implementation of the continuous sign-up Conservation Reserve Program (CRP) through soil and water conservation district field offices. Through the CRP program, farmers receive payments from USDA to establish riparian buffers, grassed waterways, contour buffer strips, field borders and other buffers on private farmlands. The buffer initiative will provide funding for additional field office staff to prepare



materials, contact prospective participants and process applications. Local government and private, non-profit organizations are being challenged to provide matching funds to further leverage the initiative. Funds are also being used to provide \$100/acre sign-up bonus payments for eligible practices of contour buffer strips, shallow water areas for wildlife, and cross wind trap strips.

**Project Need:** Conservation buffers adjacent to streams and strategically located in crop fields can reduce soil erosion, improve water quality and stabilize streambanks. Erosion can be reduced by more than 50%. Shallow, subsurface water movement into streams can be improved through the removal of nitrates and some agricultural chemicals. Buffers also provide excellent wildlife habitat and increase landscape biodiversity. More than 30 species of birds have been found in established riparian buffers compared to 8 species in similar unbuffered areas. Fish habitat is improved by providing more diversity in the food chain and reducing sediment deposition.

**First Year Goal:** Enroll an additional 100,000 acres in the continuous sign-up Conservation Reserve Program.

**What is Being Done:** Cooperating agencies and organizations have discussed their interests and goals for the program. Program guidance was sent to soil and water conservation districts in July, with implementation expected to begin in August. Results will be monitored quarterly.

For more information, contact  
Jim Gillespie, 515-281-7043





# Water Quality Monitoring

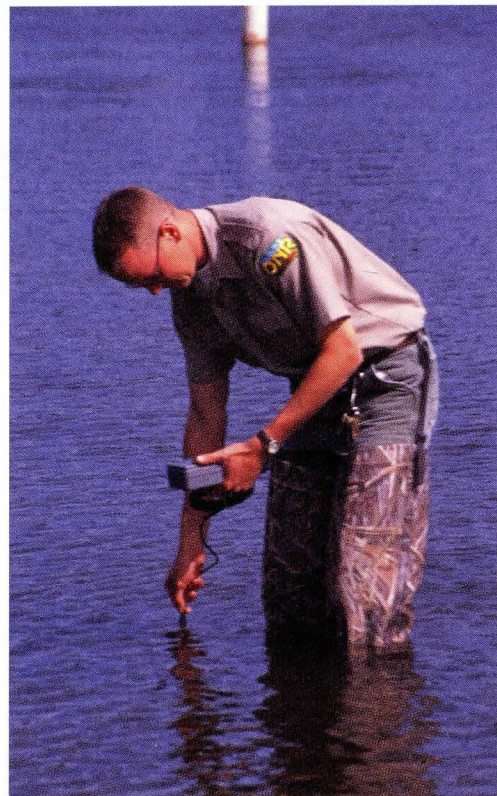
**Project Description:** Provides \$1.95 million to conduct an ongoing assessment of Iowa's rivers and streams, lakes, groundwater, beaches, wetlands, and precipitation. The program also focuses on public education on water quality issues, and encourages participation in volunteer water quality monitoring. Only \$120,000 from federal sources was being spent on water monitoring in Iowa two years ago.

**Project Need:** Iowa has more than 72,000 miles of streams, 184 lakes, 6 major groundwater aquifer systems, and 125,000 acres of wetlands. These resources are critical to sustain economic growth, provide a place where people want to live, and to sustain our natural heritage. Water monitoring provides a credible measure of the impact of Iowa's complex society on the aquatic environment. It identifies water quality problems and can also be used to identify possible solutions.

## Goals:

- ◆ Obtain credible data on nutrients, synthetic organic compounds, sediment and aquatic organisms from interior streams throughout the state in cooperation with other resource agencies.
- ◆ Measure variability of the aquatic environment to improve collection of new data and to better use existing information.
- ◆ Develop a database called Storet with public access through the Internet.
- ◆ Increase public knowledge about Iowa water resources and involve the public in meaningful data collection and education activities.
- ◆ Convene the first annual Iowa water monitoring conference to convey monitoring results and solicit ideas on improvements to our water-monitoring program.

**What is being done:** The DNR will continue working with an advisory group of experts, both inside and outside the department. Through contracts with the DNR, the University of Iowa Hygienic Laboratory is obtaining most of the chemical and biological data from rivers and streams; with some data coming from the Corps of Engineers, Iowa State University and the University of Iowa. Iowa State University is conducting most of the lake monitoring. The U.S. Geological Survey is cooperating on most of the groundwater data collection, and is also involved with investigations of some new compounds. The DNR is working closely with the EPA and private contractors in developing public access to the database. Citizen monitoring will be enhanced through more training sessions throughout the state and a mini-grant program will enhance coordinated, local citizen efforts. More than 500 Iowans have already been trained as volunteer water quality monitors this spring and summer.



For more information, contact  
Bernie Hoyer, 319-335-1571





# Improved Water Quality Planning, Standards and Assessment

**Project Description:** Provides \$372,000 to implement improved water quality standards, planning, and assessment. Funds will be used to contract for assistance in these critical water quality areas.

**Project Need:** Water quality standards are a state's yardstick to measure how good or bad water quality is. The standards are used in programs such as: listing impaired waters, calculating total maximum daily loads (TMDLs) for pollutants, and establishing discharge limits for wastewater treatment plants. Accurate standards are essential for cost effective pollution control programs. Significant challenges lie ahead for Iowa agriculture with federal plans for nutrient standards and the TMDL program. In addition, Iowa is involved in a lawsuit challenging the state's lack of a comprehensive water quality planning process. These resources are the first step in updating water quality standards and program planning. Without this commitment, Iowa was facing the real possibility that EPA could take over permit programs, such as NPDES permits and the regulation of animal feeding operations.

**First Year Goal:** The first year goal is to hire and train several contract staff to help develop new water quality standards and assessment techniques. This will form the basis of a comprehensive water quality planning program in successive years.

**What is being done:** Searches are underway for contract employees. The most visible result will be a proactive effort to develop and revise Iowa water quality standards.



For more information, contact program manager  
Jack Riessen, 515-281-5029





# Conservation Reserve Enhancement Program (CREP)

**Project Description:** Provides \$1.5 million to work with private landowners to restore or construct wetlands where they intercept tile runoff from agricultural lands. These wetlands will be designed to provide water quality benefits through the removal of nitrates and other soluble pollutants from the runoff water. They will also be the source of additional wildlife habitat, recreation opportunities, and increased landscape biodiversity. CREP is a cooperative initiative, with state funds leveraging USDA funds to establish long-term contracts or easements with landowners.

**Project Need:** Considerable amounts of nitrates are released into our lakes and streams from intensively tile-drained farmland. These nitrates cause drinking water quality problems, and contribute to nutrient enrichment problems in our lakes, streams and ultimately the Gulf of Mexico. Restored and constructed wetlands can remove nitrates from these waters, reducing the environmental impact and improving water quality.

**First Year Goal:** Complete a CREP application, approved by USDA, and successfully initiate the program. It is anticipated that contracts and/or construction can be initiated for up to 2,000 acres of wetlands, intercepting drainage from more than 150,000 acres of cropland. These wetlands can be expected to remove 50% or more of the nitrates that enter them.



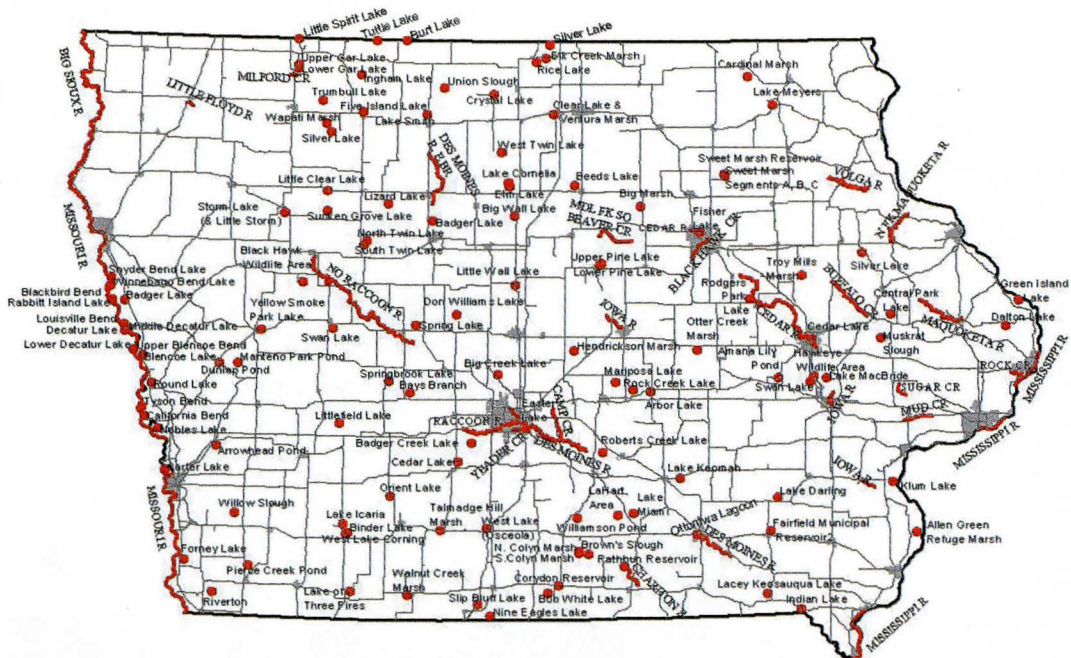
**What is Being Done:** An advisory committee of agencies, organizations and producers has reviewed a draft proposal for the program. Additional meetings with landowners and soil and water conservation districts are being planned to develop program components and processes. A final proposal will be completed in August for submission to USDA. A grant application for a marketing and outreach component has been submitted to EPA and is likely to be approved. During the USDA proposal review period, staff will prepare program materials and provide initial field office training to staff. If USDA review and approval can be completed by November, program staff will begin working with land owners and encouraging sign-up for the program after fall harvest. Wetland restoration and construction is anticipated to begin in the spring of 2001.

For more information, contact  
Dean Lemke, 515-281-3963





# TMDLs



*157 streams have been classified as impaired;  
most impairments being soil particles and excess nutrients.*

**Project Description:** Provides \$153,000 to develop an efficient total maximum daily load (TMDL) program. As required by the EPA, the DNR must calculate how much pollution a waterbody can carry before it is classified “impaired.” You may liken it to a “pollution budget” for a lake or stream. This project will be used to better define and assess sources of water impairment that do not meet state water quality standards and are listed on Iowa’s 303(d) list of impaired waters.

**Project Need:** Iowa’s 1998 list of impaired waters included 157 waterbodies that do not meet state water quality standards. The cause of impairment for many of these waters are ill defined or unknown. Calculating accurate TMDLs and developing realistic plans to bring waters up to quality standards requires a detailed knowledge of the sources of a pollutant, how it gets into the water, and what happens to it once it is in the water. The project will begin to look at several impaired waters, in-depth, to better define the physical processes involved. For efficiency’s sake, it is hoped that the information gained will be applicable to other impaired waters with similar problems.

**First Year Goal:** Identify 6 impaired waterbodies for which intensive monitoring and assessment will be implemented; identify the needed level of work; and begin the needed monitoring and assessment by next spring.

**What is being done:** The DNR is developing a TMDL work unit and has initiated TMDL work on the following waters: Rock Creek State Park Lake (Jasper), Cedar Lake (Linn), Fairfield Reservoir #2 (Jefferson), 9-Eagles State Park Lake (Decatur), Slip Bluff Lake (Decatur), Lake Miami (Monroe).

For more information, contact  
Bill Ehm, 515-281-8143





# Floodplain Education

**Project Description:** Provides \$200,000 for education of local floodplain managers through a manual and training course on various aspects of floodplain management.

**Project Need:** The DNR can delegate its floodplain permitting authority to local governments IF the local government adopts and administers a comprehensive floodplain ordinance. Currently, more than 150 local governments have this authority. An additional 600 communities are participating in the National Flood Insurance Program. However, many of these local governments do not have full-time floodplain administrators, nor are they fully aware of the issues involved in floodplain permitting decisions.

**First Year Goal:** Hire a consultant to develop a training curriculum and manual; and enter into an agreement with FEMA and the Iowa Emergency Management Division to assist in training local government officials.

**What is being done:** A consultant is being sought to work closely with DNR staff to develop the manual and training program over the next year.



*Photo courtesy Mason City Globe Gazette*

For more information, contact program manager  
Jack Riessen, 515-281-5029





# Review of NPDES Permits



**Project Description:** Provides \$250,000 for contracts to assist in the review and issuance of National Pollution Discharge Elimination System (NPDES) permits. These are the permits required for virtually any wastewater treatment plant or effluent into waters in Iowa (e.g. city sewage plants, industrial effluents, livestock). This permit program is set in federal law, although it is administered by the state through the DNR. This project will enable DNR to acquire professional assistance to staff to reduce the backlog of expired NPDES permits.

**Project Need:** Currently, about 400 of Iowa's more than 1,700 NPDES permits have expired. The EPA has made the reduction of NPDES permit backlogs a national priority. Failure to address the backlog problem could result in the state losing its authority to run the NPDES program (i.e., the EPA would take over the program). This, in turn, could result in operational difficulties for all of those with NPDES permits, in having to deal with a large, federal agency in Kansas City, rather than the DNR in Des Moines. In addition, requests for new permits (e.g., for a new industry) are often delayed due to the existing backlog.

**First Year Goal:** The first year goal would be to reduce the permit backlog to 15% versus the present 25%.

**What is being done:** A consultant is being sought to work with existing NPDES staff on the permit backlog. As long as funding is available for the project in future years, the backlog will continue to be reduced and the processing time for new permits will be shortened.

For more information, contact program manager  
Jack Riessen, 515-281-5029





# Integrated Farm and Livestock Management Demonstration Program

**Project Description:** Provides \$850,000 to demonstrate effective and adaptable practices for nutrient and pesticide management, livestock waste utilization, air quality protection, and soil and water conservation. The program will work in partnership with Iowa State University, community colleges, and producers. Environmental benefits and economic implications will be featured as a part of each education program and demonstration site. Public information will be a principal element of the program.

**Project Need:** Iowa has a great opportunity to improve agricultural input management. Particular opportunities include integrating livestock waste management and use with environmental protection; enhanced surface and groundwater quality; and rural community and economic development. It is *imperative* that Iowa maintain its position as a leading commodity and livestock producer, and improve its environment and quality of life for its people.



## First Year Goals:

- ◆ Raise producer and public awareness of the importance of input management in relation to environmental protection.
- ◆ Develop a framework for the types of field demonstration programs to be implemented next crop season.
- ◆ Begin education programs on input management following harvest this fall.

**What is Being Done:** Eight focus groups are being organized to examine input management, determine opportunities and develop the framework for the education and demonstration features of the program. Education programs will begin this fall after harvest. Demonstration programs will be designed this fall for next year's crop season.

For more information, contact  
Jim Gulliford, 515-281-6146.





# Volunteer Program

**Project Description:** Provides \$70,000 in state funds to match with \$304,200 in federal funds for field coordinators and support of the DNR volunteer programs: Keepers of the Land, IOWATER and Adopt-A-Stream. Keepers of the Land includes a substantial expansion of the volunteer-generating DNR AmeriCorps program. All of these programs focus on water quality improvement.

**Project Need:** Iowa's environmental future lies in the hands of its citizen. Because more than 95% of Iowa's acres are privately owned, local, state and federal agencies simply can't do all the work that needs to be done. The continuation and expansion of strong volunteer programs are essential to foster Iowans in becoming stewards of their natural resources. These programs are designed to make it easy for Iowans to volunteer and become involved, thereby gaining a deeper understanding, knowledge and appreciation of our natural resources.

**First-Year Goal:** Increase the number of DNR volunteers and volunteer hours by 15%.

**What will be done?** AmeriCorps staff will help support the volunteer efforts for the IOWATER, Adopt-A-Stream and the Keepers of the Land programs by coordinating projects, and by helping to recruit, support, retain and recognize volunteers. Field coordinators will help develop pilot programs in schools and communities for IOWATER and Adopt-A-Stream, and will design and help implement specific projects. They will help design a "Volunteer Project Directory," for water quality improvement volunteer projects across the state. They will be the "person-behind-the-programs" in local communities, and build grassroots support for the natural resources volunteer efforts.



For more information, contact program manager  
Diane Ford-Shivvers, 515-281-0878





# Data for Local Watershed Groups

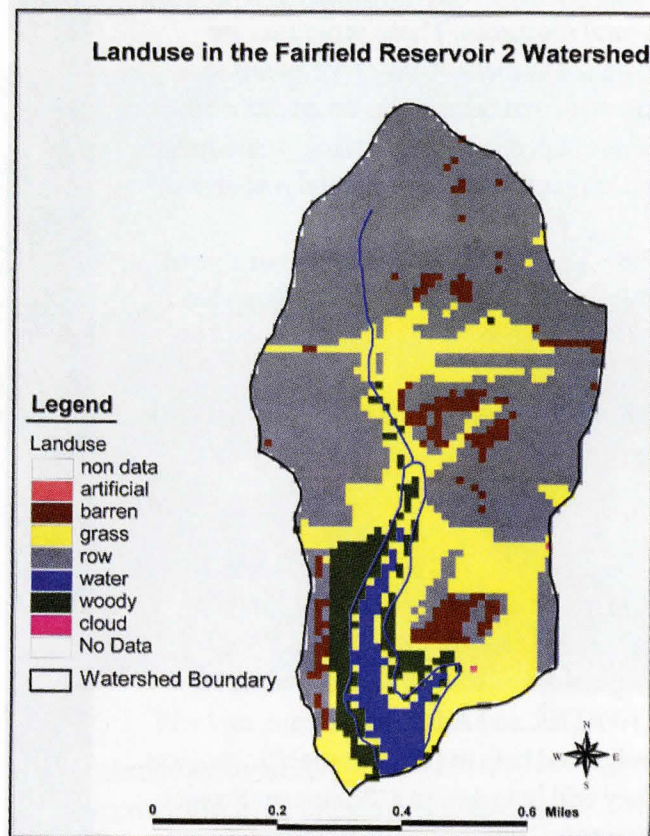
**Project Description:** Provides \$195,000 of up-to-date and accurate geographic information system (GIS) data to local watershed groups so they can help determine effective water quality management strategies. This data can also be used to measure progress and keep the public informed of water quality issues.

**Project Need:** GIS data provides a strong visualization of land and water resource information that helps people understand their watershed. A clear understanding of vegetative cover, locations of utility lines, drainage systems, roads, ownership and much, much more is necessary to effectively plan water resource projects. GIS is more detailed, accurate and useful than aerial photography for most purposes because of the ease of use of information and that it can be overlaid or separated out from other background data.

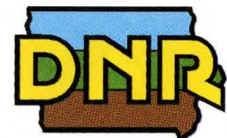
As you might expect, there is a substantial amount of technology that is needed to develop and portray GIS information. However, many of our watershed “communities” cannot afford the investment required. The DNR has the technology and staff available and this project provides the funds to improve the gathering and distribution of GIS data so that more Iowans can use it for water quality planning.

**First Year Goal:** Divide the state into 1,600 watersheds then run a soil erosion and sediment delivery potential model for each of them. Generate a “watershed atlas” for each watershed, consisting of electronic maps on the Internet that can be viewed, downloaded and printed to a local printer. The atlas will include results of the erosion and sediment models, and maps of soils, land use and other topographic information.

**What is being done:** GIS specialists have worked with local watershed managers to determine their need and want from GIS. New computer programs are being developed for application and data from existing programs are being supplied to local planners, project coordinators, educators and others.



For more information, contact program manager  
Todd Bishop, 515-281-5815





# Iowa Watershed Protection Program

**Project Description:** Provides \$2.7 million to develop and encourage integrated approaches to meet multi-objective water quality protection, flood control, erosion control, recreation, wildlife habitat, and other resource protection issues. It provides funding for watershed solutions to water quality and water management problems that impact local communities, the state, and the country.

**Project Need:** Iowa needs to coordinate efforts and improve communication among federal, state and local entities charged with solving the broad range of resource management challenges that face our people. The watershed approach has proven to be the most comprehensive, efficient and effective way to solve complex resource management challenges.

**First Year Goal:** Financially support more than 20 local watershed protection projects that are providing improved flood protection and erosion control, and beginning to address the water quality problems of the state's impaired waters. Assistance will be provided to local communities and soil and water conservation districts for the development of water quality projects and funding applications. The Watershed Task Force will complete its study of Iowa watershed protection efforts, and will report (with recommendations) on the status of watershed protection needs, program capacity, and local initiatives.

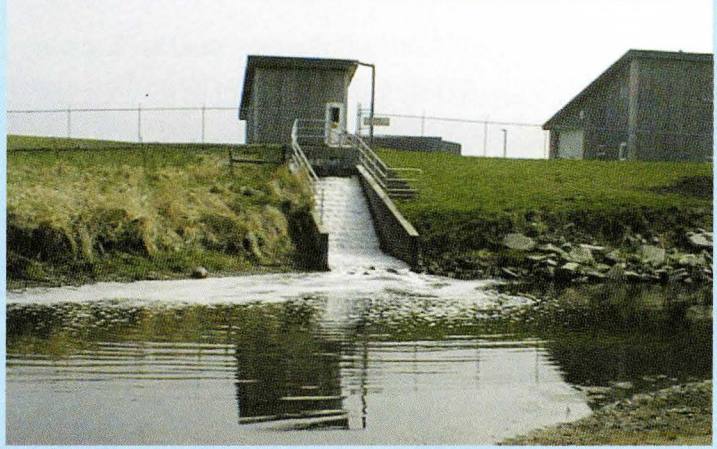
**What is Being Done:** More than 50 watershed and water quality protection project applications were received and reviewed by cooperating agencies and organizations. Projects selected for funding will be initiated in August. Watershed protection development grants will be offered in September to assist local leaders in the development of new water quality projects and funding applications. The Iowa Watershed Task Force is expected to complete its study of the State of Iowa's watershed protection programs and processes in January of 2001.



For more information, contact  
Dean Lemke, 515-281-3963







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