

## Iowa's Raccoon River and Walnut Creek Watershed: Where People and the Forest Connect for Clean Water



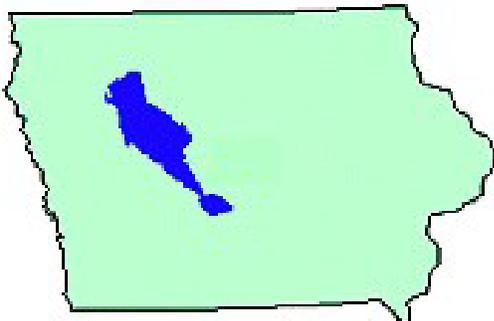
### BACKGROUND

The Raccoon River Watershed is a subwatershed of the Mississippi River Basin, which has made news regarding hypoxia in the Gulf of Mexico. Iowa and Illinois contribute about 35 percent of the total nitrate load to the Mississippi River Basin. The Raccoon River Watershed is ranked as the highest source of nitrate loading into the Mississippi River. Several water bodies located within the watershed contain unacceptable levels of nitrate-nitrogen, fecal coliform, turbidity, organic enrichment, siltation, nutrients, and exotic species.

The Walnut Creek Watershed is a 55,000-acre subwatershed of the much larger Raccoon River Watershed. It provides the primary drinking water for the greater Des Moines Metropolitan Area, which contains more than 400,000 people. The upper two-thirds of the watershed is agricultural with rapid urban development on the lower one-third. Des Moines and West Des Moines Water Works have struggled with high nitrate, turbidity, and coliform problems.

### LOCATION

The Raccoon River and Walnut Creek Watershed are located in central Iowa and cover parts of 17 counties. Walnut Creek empties into the Raccoon River along a stretch of river impaired by coliform bacteria and nitrates, and is in close proximity to the primary water intake of the Des Moines Water Works. The Des Moines Water Works has the largest nitrate removal system in the U.S. The Walnut Creek Watershed encompasses 60 primary communities (most of which have fewer than 10,000 residents) and Des Moines.



Raccoon River Watershed.

### ISSUES BEING ADDRESSED

Drinking water quality has been one of the major issues for urban residents in the Des Moines Metropolitan Area. Many have experienced alerts that restrict drinking water use when nitrate loads are high.

Urban residents are unaware of how natural vegetation plays a role in maintaining good water quality. Attitudes and actions need to be changed by demonstrating the value of forests in producing clean water.

Thirty percent of the Walnut Creek Watershed is urban, and urban development is expanding at alarming rates. While many Iowa organizations have worked with farmers regarding the link between forested buffers and clean water, no project has been conducted to educate urban dwellers about watershed and riparian stewardship.

### GOALS

- Form a partnership called the Walnut Creek Corridor Alliance. Targeted members include: mayors, local water utility personnel, local legislative representatives, schools, city councils, manufacturers and business owners, larger property owners, developers, Pheasants Forever, Izaak Walton League, and the media. To encourage a better understanding of problems within the Walnut Creek Watershed, decision makers within communities can become advocates of this project, assist in building the public's awareness of the issues concerning the watershed and its forests, and help create and support future initiatives.
- Identify interested property owners who are committed to working within their neighborhoods to promote clean water, protect existing forests, and identify opportunities for riparian forest stewardship.
- Create a cadre of volunteers called Watershed Stewards who will help inventory the trees and vegetation along the stream corridor, monitor the watershed, and commit to raising awareness of the watershed among their neighbors.
- Conduct a media campaign within Polk and Dallas Counties to increase the public's awareness of the value and importance of the Raccoon River, the Walnut Creek Watershed, and riparian forest stewardship.

Since 1999, the Northeastern Area and the Northeastern Area Association of State Foresters have sponsored a cooperative challenge grants program to promote watershed health and restoration through the conservation, restoration, and sound stewardship of trees and forests.

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## METHODOLOGY

The Iowa Department of Natural Resources (IDNR), Division of Forests and Prairies, administered the project.

- Train neighborhood leaders, property and business owners, school and local government officials, and community residents living and working within the 100-year flood plain area of the Walnut Creek Watershed about forested watersheds.
- Build a Walnut Creek Corridor Alliance through meetings with city councils, public works officials, corporations, and neighborhood leaders.
- Identify interested property owners who are committed to working within their neighborhood to promote clean water, protection of existing forests, and opportunities for riparian forest stewardship.
- Provide information regarding the forest and water quality to the residents of Polk and Dallas County communities.
- Direct university students to research citizen attitudes and ideas about the urban forest, riparian buffers, land stewardship, watersheds, and clean water to develop public education and awareness materials. This information will be used in evaluating the success of the project's efforts.
- Ask neighborhood residents to serve as watershed leaders through direct mailings.

## OUTCOMES AND ACCOMPLISHMENTS

The project is complete, and the final report is being developed.

- An aerial poster of the watershed was created, distributed to residents, and displayed in public areas and schools to explain where drinking water comes from. A brochure was created from the poster and distributed to watershed residents.
- Maps were created to show changing landscapes from the past to the present using historical records.
- A 10-person Walnut Creek Corridor Alliance was formed through door-to-door and letter campaigns.
- Leadership training was held for 195 people in 19 neighborhoods. Many residents volunteered to become Watershed Stewards as a result of the training.
- Watershed Stewards made PowerPoint presentations to other residents and became involved in "Celebrate Urban Waterways," sponsored by the Des Moines Water Works and Urban Environmental Partnership to introduce people to watershed values. Hundreds of people attended these presentations.
- An informational packet on water quality and watershed management was distributed to the Watershed Stewards for dissemination.
- Drake University senior class journalism students conducted focus interviews with residents and developed five marketing campaigns for the Walnut Creek Corridor Alliance to use to increase awareness and change attitudes.
- GIS layers of watershed boundaries as well as historical and recent vegetation were developed and used as part of an awareness campaign and educational events.

- The DNR urban forester, Watershed Stewards, and other volunteers completed urban tree inventories.
- A trained forestry volunteer that assembled and summarized the data completed riparian vegetation inventories.

## PARTNERS

- Iowa Department of Natural Resources (IDNR) – Division of Forests and Prairies
- Raccoon River Watershed Project (RRWP)
- Des Moines and West Des Moines Water Works
- Dallas and Polk County Soil and Water Conservation Districts
- Iowa State University – Forestry Department

## FUTURE PLANS

An evaluation and report of the successes and challenges of the project are being developed. Behaviors and attitudes of Walnut Creek Watershed residents need to be analyzed along with the acceptance within local neighborhoods of the advocacy and educational components of the project. In addition, a plan will be developed and delivered to Walnut Creek Corridor Alliance members and the Watershed Stewards to encourage the continuation of the Alliance and Steward project components.

The information developed by this project and the case study will be a model for similar watersheds in Iowa and other states.

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