



A fisherman enjoys the Boone River. © Jason Whalen

# Boone River Watershed

Iowa's Boone River watershed once boasted vast expanses of lush wetlands that stored and slowly filtered water flowing into the river. It's a natural process that resulted in cool, clean freshwater and healthy populations of unique fish, bird and mussel species. After being released into the Boone, these waters followed a journey that included feeding into the Des Moines and Mississippi rivers before emptying into the Gulf of Mexico.

Like much of the Midwest, many of the wetlands within the 895-square mile watershed of the Boone River have been drained and converted to farmland for corn, soybeans and other crops. Today, The Nature Conservancy and many

“By improving the quality of this small river, we will improve an entire system of rivers reaching all the way to the Gulf of Mexico.”

**Eileen Bader**, Boone River Project Manager and Freshwater Specialist for The Nature Conservancy

partners work with farmers to find ways to keep valuable soil and nutrients, like nitrogen and phosphorous, on farm fields and out of streams.

## **The Nature Conservancy**

With a presence in 50 states and in 30 countries, The Nature Conservancy works at large scales to conserve whole

ecological systems that reach beyond political boundaries drawn on a map. The Boone River fits that bill since its waters feed into the Mississippi River and eventually the Gulf of Mexico.

The Nature Conservancy works on the ground to conserve river systems like the Boone and in other places around





Farmer Arlo Van Diest practices strip tillage on his corn and soybean fields in the Boone River watershed. © Jason Whalen

**We're Scientists** – The Conservancy has more than 500 staff scientists working on the cutting edges of conservation—from regrowing coral reefs to planning dams to mapping wildlife corridors.

**We're Collaborators** – The Conservancy is an expert at building coalitions and forging partnerships with local communities, governments, businesses and non-profits—especially to increase financing and support for conservation.

**We're Local and Global We** – work in more than 30 countries and all 50 United States, and we use our resources wisely—focusing on effectively protecting the world's most ecologically important places.

**We Leverage Results** – Some groups specialize in policy, others in landscape conservation—but only the Conservancy is positioned to do both. That's how we can expand our best projects to scales where they make a difference.

“The Nature Conservancy offers expertise on what’s living in the Boone and what constitutes healthy habitats. They convey this well to landowners. They are another needed voice with a message that helps with the overall health of the watershed. They speak in a way that gets everyone excited and on board.”

Marvin Hoffman, NRCS



The Nature Conservancy is working to find ways in which the Boone River watershed can support a healthy, working landscape that benefits both people and wildlife. © Jason Whalen

the world through its Great Rivers Partnership, which convenes diverse stakeholders—spanning sectors from industry and navigation to academia and government—to develop and implement science-based, innovative solutions to issues threatening freshwater sustainability. At the Boone, the aim is to find ways in which the watershed can operate as a whole, functioning system that supports a healthy, working landscape to benefit both humans and wildlife for many years to come.

### The Nature Conservancy in the Boone

Around the world, The Nature Conservancy works with foresters, anglers and farmers—people who make a living from the land and who also know it best. They are true conservationists.

In Iowa, The Nature Conservancy’s vision includes focusing on the Boone

River watershed as an asset that can provide healthy wildlife habitat, clean water, productive agriculture and a good quality of life for local residents. Working under the assumption that a local economy can thrive alongside of healthy wildlife habitats, the Conservancy has joined with other organizations and stakeholders in the watershed to identify and implement land and water management practices that will protect freshwater quality and species while sustaining agriculture.

Pursuing these goals began with a water quality assessment of the Boone. Although the watershed proved to be among the healthiest in Iowa, the Conservancy determined that changes in water quality, stream flow and physical habitat were jeopardizing plants and animals. This led to projects aimed at keeping valuable nutrients in agricultural soils and out of local waterways.



Cover crops help prevent soil erosion and fertilizer runoff, contributing to higher concentrations of nitrogen, phosphorous and other pollutants in the Boone River and its tributaries. © Eileen Bader

## What's At Stake

- **Wildlife Habitat** – especially areas designated as critical for survival of the federally-endangered Topeka shiner and other rare mussel and fish species;
- **Drinking Water** – in the Des Moines River, which is fed by the Boone River—a secondary water source for the city of Des Moines;
- **Larger River Systems** – like the Mississippi River and the Gulf of Mexico, where hypoxia—the loss of oxygen in the water caused large vegetation blooms resulting from excess run-off—threatens plant and animal life.
- **Local agricultural economy** – which suffers when once rich and healthy soils become depleted by erosion and an increasingly developed landscape.

- **Cover Crops** — Twenty producers in Wright and Hamilton counties have dedicated about 3,400 acres to trying cover crops, which help prevent the erosion of soil and fertilizer from washing away with rain.
- **Strip Tillage** — Tilling only a small strip of soil 6-10 inches wide requires fewer passes over a field, resulting in less erosion, lower fuel costs and reduced soil compaction from driving.
- **Oxbow Restoration** — The Conservancy and partners inventoried and assessed oxbows in the watershed and recently completed the first restoration at White Fox Creek with plans to do more.
- **Bio-reactors** — Thanks to funding from the Iowa Soybean Association and the federal MRBI program, farmers in the Boone River watershed can receive assistance with

“The Conservancy has a long-term interest in the health of the Boone’s biodiversity but recognizes that it is a privately owned and managed landscape. They respect the landowners and operators and work together with them.”

Roger Wolf, Iowa Soybean Association

implementing these underground trenches filled with woodchips to redirect nitrate-laden tile water away from waterways.

### Mississippi River Basin Healthy Watersheds Initiative (MRBI)

The Nature Conservancy’s work in the Boone River watershed advances a federal initiative aimed at conserving the Mississippi River Basin. The Mississippi

River Basin Healthy Watersheds Initiative (MRBI) was launched in 2009 in response to hypoxia resulting from increasing amounts of nitrogen, phosphorous and other pollutants reaching the Gulf of Mexico from places like the Boone River. After a wave of severe weather, snow melt and historic flooding during the spring and summer of 2011, the MRBI gained increasing attention and support.





*This oxbow restoration near White Fox Creek, a tributary of the Boone River, was constructed on Conservation Reserve Program land. It provides water filtration and flood storage, while creating habitat for birds and fish, including the endangered Topeka shiner. © Eileen Bader*

In response, the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) announced \$14.4 million in MRBI funding during 2011 targeted at projects in eight states including Iowa. In each of these states, the NRCS is working with partners like the Conservancy to provide technical and financial assistance to landowners voluntarily promoting water quality, restoring wetlands and enhancing wildlife habitat in ways that still preserve the nation's most productive agricultural landscape. MRBI funds are directed to priority small watersheds through the Cooperative Conservation Partnership Initiative and the Wetlands Reserve Enhancement Program.

In Iowa, farmers in eight subwatersheds covering sections of Wright and Hamilton counties within the Boone River watershed are eligible to receive MRBI funds to support conservation practices that help avoid, control and trap nutrient runoff, improve wildlife habitat and maintain local agricultural productivity. Farmers participating in this new initiative have the opportunity to contribute to a more naturally flowing Mississippi River which will help to prevent future devastation, improve water quality, and return the landscape to its original beauty and productivity.

### Partners in Conservation

- Iowa Soybean Association
- Iowa State University
- Local landowners
- Iowa Department of Natural Resources
- Fishers & Farmers Partnership
- Wright and Hamilton County Soil & Water Conservation Districts

### Learn More

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