WORKING FOR CLEAN WATER

WORKING FOR CLEAN WATER

2016 IOWA WATERSHED SUCCESSES

COVER
Clear Lake
by Ben Curtis

ARTICLES
Jessie Brown

PHOTOS
Ben Curtis
Brian Button
Clay Smith

From the director 3

We all live in a watershed 5

Northeast Iowa goes wild for trout 7

Family grows conservation ethic 9

Lasting effects in Decatur County 11

River at the heart of Charles City 13

Community rallies behind Catfish Creek 15

12 Mile Lake reclaims its reputation 17

Clinton goes green for stormwater 19

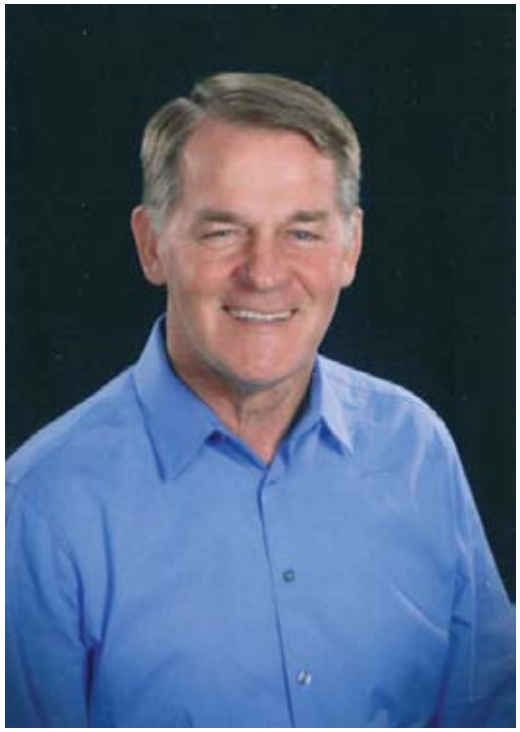
Creating connections with creeks 21

Take the next step 23

www.iowadnr.gov
www.facebook.com/iowadnr
www.twitter.com/iowadnr
www.instagram.com/iowadnr
www.pinterest.com/iowadnr
www.youtube.com/iowadnr

FROM THE DIRECTOR

When we look to our state's lakes, rivers and streams - and the land that surrounds them, our watersheds - we know that improvement is not an overnight success. But we also know that it's not a one-hit wonder, either.



This is our tenth edition of this annual watershed improvement success story compilation. To mark the event, we're looking back at some of the "greatest hits" we've featured in those 10 booklets (as well as some new efforts) – watching how these local, community-driven efforts have improved water quality and impacted the quality of life for Iowans over the last decade.

We look at Charles City, where after terrible flooding, the city embraced the riverfront with a new whitewater park and went to work in neighborhoods to improve stormwater practices. There's Twelve Mile Lake near Creston, where things had deteriorated to the point where the city switched to another drinking water source. Today, the once ubiquitous fishing tournaments have returned and Creston once again pulls water from the lake for its drinking water treatment plant.

And of course there are northeast Iowa's iconic trout streams, where water quality has improved to allow for natural trout reproduction in 45 streams - that's up from 32 streams in 2007 and just six in 1980. And that's good news for tourism in those communities, too.

The work done by countless citizens, organizations and agencies in all of these stories is holding up – and that's because these Iowans are in it for the long haul. They recognize that improving water quality is a long-term effort, a lifelong commitment. Just as you have to maintain a home or car for it to retain its value, a watershed effort is the same – continual improvement is crucial to holding on to what we've already achieved and as we keep moving forward.

So as we look forward to the next 10 years, I know that Iowans will continue to embrace their local waters and work to improve the lands that surround them. We all live in a watershed, and I know too that Iowans answer the call when work needs to be done.

—DNR Director Chuck Gipp

Little River Lake in Decatur County.

WE ALL LIVE IN A WATERSHED

PARTNER GROUP INITIALS:

Iowa Department of Natural Resources (DNR)

Iowa Department of Agriculture and Land Stewardship (IDALS)

County Conservation Board (CCB)

Soil and Water Conservation District (SWCD)

Watershed Management Authority (WMA)

U.S. Fish and Wildlife Service (USFWS)

U.S. Department of Agriculture (USDA)

USDA Farm Services Agency (USDA-FSA)

USDA Natural Resources Conservation Service (USDA-NRCS)

U.S. Environmental Protection Agency (EPA)

Iowa State Revolving Fund (Iowa SRF)

Resource Enhancement and Protection (REAP)

Watershed Improvement Review Board (WIRB)

Conservation Reserve Program (CRP)

Iowa State University (ISU)

Iowa Department of Transportation (DOT)

Resource Conservation and Development (RC&D)

We all live in a watershed, an area of land that drains to a lake or stream. What we do on that land — whether it's a yard, farm, business or factory — affects the health of our lakes, streams and rivers.

It impacts our drinking water, recreation, economic development, fish and wildlife, and our quality of life. Clean water starts with us.

When water runs off the land, it can carry pollutants with it. Rainfall can send loads of exposed soil and nutrients from fields and bare ground into our waterways. Motor oil and other wastes can wash off driveways and lawns and into storm sewers, which dump directly into a lake or stream without treatment. If we don't make changes to the way we manage the land to keep soil, nutrients and other materials where they belong, they'll end up in our water.

We want to keep our rich Iowa topsoil on the land, not just because of its value to farming, but because of how it impacts our water and aquatic life. Excess sediment clouds the water, making it difficult for sight-feeding fish to see. It can smother fish eggs and mussel habitat. Nutrients often attach to sediment or come into our waters through runoff or tile drainage. Too many nutrients in our water lead to algal blooms, which can affect oxygen levels for aquatic life.

However, we have many ways to address these problems on rural and urban lands. Farmers and rural landowners can change how they manage cropland, livestock facilities and other lands to slow and filter runoff or even prevent it. There are many ways to conserve our soil and slow and filter the runoff entering our lakes and streams.

Urban residents can use rain gardens, native landscaping and more to treat the rain and snow that falls on their yards. Cities and businesses can make changes to how they handle wastewater and stormwater.

While what we do individually makes a difference, coming together as a community can make a large impact. In Iowa, water quality improvement is built on a solid foundation of traditional conservation approaches based on watershed and community research and brought to life through strong partnerships.

With renewed interest in our waters comes many benefits for our communities. Better water often translates into a better quality of life for residents. Kids have cleaner water to swim and play in. Drinking water treatment costs can go down and the impact of flooding may decrease. Hunters notice improved wildlife habitat. Economic development picks up as tourists come to town to investigate the improved fishing or to put in the kayak.

Future efforts to protect our lakes, rivers and streams will grow upon today's innovative efforts. By taking a strategic approach — identifying waterbodies most in need of help and developing and implementing watershed management plans to solve problems — Iowans can continue to make a difference in their water quality.

Improvements in Iowa's trout streams and watersheds help make events like Casting for Recovery, a weekend of trout angling for breast cancer survivors, possible.

NORTHEAST IOWA GOES WILD FOR TROUT

NORTHEAST IOWA

PROJECT PARTNERS

Iowa DNR

WIRB

IDALS

USDA-NRCS

Local SWCDs

Local CCBs

Anglers

Private landowners

Hawkeye Fly Fishing Association

U.S. EPA Section 319

Things are getting even wilder in northeast Iowa.

Watershed projects on northeast Iowa's famed trout streams over the last two decades have improved water quality, and in turn, wild trout populations, fishing and tourism. By changing the way water comes into trout streams, watershed projects have kept excess sediment, nutrients and bacteria out of the water.

Along with in-stream work by DNR fisheries staff to improve trout habitat, trout are thriving again. Take Coldwater Creek – in 1999, there were zero brown trout per mile. By 2002, there were 467 brown trout per mile and in 2011, that number rose to 2,128 per mile.

In 1980, only six streams in Iowa sustained a trout population without stocking. In 2007, it grew to 32 streams and today, trout reproduce naturally on 45 Iowa streams, thanks to improvements. With cleaner water, trout can spawn naturally and better feed on aquatic insects, resulting in greater fish diversity. That's a boon for anglers and local communities. Anglers have noticed, for sure. Trout stamp sales for both residents and non-residents hit an all-time high in 2015, at 45,472 licenses sold.

The continual increase in anglers visiting Iowa trout streams comes from a variety of factors, says DNR fisheries supervisor Mike Steuck. "There's the improved coldwater habitat for trout through watershed and land use improvement projects as well as the habitat improvements we made in the stream," he says. "We've improved our stocking efforts with more wild-strain brown trout collected from naturally reproducing populations of Iowa trout, too."

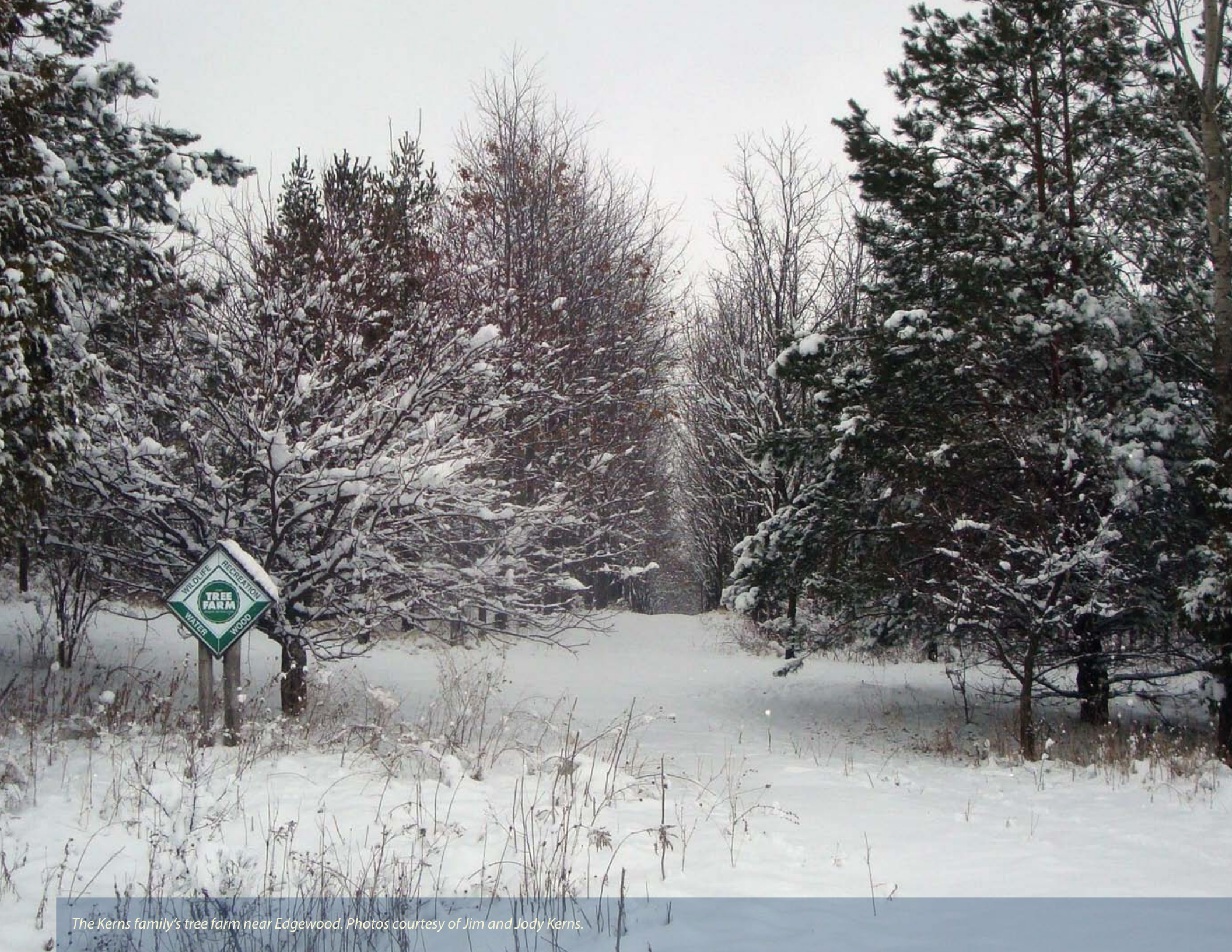
That includes the coldwater portion of the Upper Maquoketa River, where the DNR recently completed in-stream habitat work, and where there's a water quality and angler easement. It's also a favorite spot of Cedar Falls trout angler Pete Lilja.

"From an angler's perspective, this is a huge improvement. It's such a terrific stretch of river and adding these features will only make it better," Lilja says. "Over the last few weeks I've been there weekly and it's gotten better each trip with more fish in the holds. The water flows seem just right for drifting flies. I fished yesterday where the recent stream work was done. After the flood, the scour holes are getting to be very nice and deep and holding fish in numbers I haven't seen before. It's really developing nicely there."

Having invested anglers like Lilja bodes well for Iowa businesses, too. Trout anglers come to Iowa streams for a two-day trip, if not a week, and bring family and friends, according to local business owners. They spend time and money in local sports stores, hotels, gas stations, restaurants and shops.

For many small northeast Iowa businesses, most – if not all – of their business depends on trout anglers. According to the most recent DNR trout angler survey data from 2011, licensed anglers made an estimated 582,851 trips to Iowa trout fisheries. At about $46 per trip – that includes food, lodging, transportation and equipment – anglers spend more than $19.8 million annually on trout fishing in Iowa. With another survey currently underway, numbers are expected to rise.

Brown trout are a native species to Iowa.



The Kerns family's tree farm near Edgewood. Photos courtesy of Jim and Jody Kerns.

FAMILY GROWS CONSERVATION ETHIC

EDGEWOOD

PROJECT PARTNERS

Kerns Family

Edgewood-Colesburg Schools

Iowa DNR

IDALS

NRCS

Jim and Jody Kerns' belief in conservation and education is as deeply rooted as the trees that protect the banks along their Volga River property.

The couple has farmed their cropland, pasture and timber near Edgewood since 1986, growing their family and serving their community along the way. For almost 20 years, their land has served as a living classroom for Edgewood-Colesburg students and their own six children.

In second grade, each Kerns child named their own grove and had their entire class help them plant all the trees. Even when there's not a grove to plant, it's the field trip most second graders (and their parents) look forward to for years. Each year, fifth graders learn how to identify, plant and care for trees. High schoolers taking a quarter-long environmental science course attend class every day on the land. In those two decades, students have recorded improvements in water quality on the property and watched aquatic life and wildlife thrive. Some students have gone into environmental science careers following their experience.

Conservation is at the heart of the family and farm, with land in the Conservation Reserve Program and the Conservation Security Program. The river property is in CRP, prairie, pasture and managed timber. "Ultimately, we've kept conservation a priority because we've always been mindful of the fact that conservation's important – period – when you have six kids that are the future," says Jody. Tree plantings are added often, there are habitat projects, and three acres they're restoring to savanna.

"We've enjoyed doing a little more experimenting with the type of tree plantings were doing in terms of species and like to challenge ourselves," Jim says. "We've also done some pollinator plantings and enjoyed the new learning opportunities that came with that in terms of having the opportunity to teach our kids and the students the importance of the pollinators."

However, the Kerns' impact expands far past their land. "Their conservation ethic goes beyond their property boundaries through their service on local, regional and statewide boards and committees," says Iowa state forester Paul Tauke. "Land stewardship and service is not just something that they do – it is something they purposefully weave into the very fabric of their family and their lives." Other conservation professionals agree.

"Over the years, the Kernses have adopted many diversified soil and water conservation practices," says Jeff Tisl, a regional basin coordinator for IDALS. "Many were innovative, even to the agency staff assisting them. Undaunted, they took the time to investigate and applied what they learned."

Maintenance of the tree plantings and other conservation projects has been less of a chore and more of a bonding opportunity, even an investment. "We never lost sight that when we're out there working, we need to have fun," Jody says. Jim adds, "we learned to invest in what we like to call our 'working retirement account.' We were able to invest in the land, improve and manage the woodlands and land as a long-term investment that can provide us profits through sustainable harvest. Yet this entire time we've been able to share this experience with our children, teach them, and always have fun on the land together."

The Kerns Family enjoying morel mushroom hunting on their land.

Park use at Nine Eagles State Park has increased following watershed improvements.

LASTING EFFECTS IN DECATUR COUNTY

DECATUR COUNTY

PROJECT PARTNERS

Iowa DNR

Decatur CCB

IDALS

USDA-NRCS

U.S. EPA Section 319

Improving water quality is not an overnight success or a quick fix. It takes time, but it can also be sustained over the long haul – which two southern Iowa lakes have shown over the last decade.

In the early 2000s, efforts began to improve the lakes in Nine Eagles State Park and Slip Bluff (County) Park in Decatur County. Both lakes were struggling with excessive sediment clouding the water, and both lakes had the unique opportunity that most of the lake's watershed lies within park boundaries.

At Nine Eagles, the DNR constructed new sediment retention basins to catch and filter sediment before it could reach the lake, and work on trails and in forested areas aimed to reduce erosion in the first place. Slip Bluff's efforts focused on cutting back erosion in wooded areas of the park and along the shoreline, using basins and structures to trap sediment and riprap to hold the shoreline in place.

The efforts reduced sediment delivery to Nine Eagles Lake by 85 percent, which improved water clarity to where you could see almost 6 feet down in the water. At Slip Bluff, sediment delivery was knocked down by 64 percent and resulted in a 50 percent improvement in water clarity. They were Iowa's first two DNR watershed improvement efforts recognized nationwide by EPA as success stories.

The most recent water clarity reading done at Nine Eagles by DNR Fisheries staff was 95 inches – meaning you could see almost 8 feet down in the water. Add in aquatic plants and work to bolster bluegill and crappie populations, and Nine Eagles is a great place to reel in a fish.

"Nine Eagles has a high abundance of aquatic vegetation, which helps improve water quality and provides fish habitat," says Andy Jansen, DNR fisheries biologist, noting good fishing for largemouth bass and redear sunfish at Nine Eagles, and good crappie and largemouth bass fishing at Slip Bluff.

"The water quality has held up very well," says Richard Erke, director of the Decatur County Conservation Board, of Slip Bluff. "There are aquatic plants growing along some of the shoreline and you can still see 8 to 10 feet down. Fishing has increased a little and we have had an increase in people paddling the lake in canoes and kayaks."

Additional work to maintain woodlands, reduce invasive species and encourage native plant growth has also helped control runoff by filtering runoff and absorbing it before it can reach the lake, Erke added.

Bud Taylor, park manager at Nine Eagles, echoes Erke, noting that park use has increased since the improvements, especially with swimmers. "Heavy rains would muddy up the water with silt and it would take weeks to clear up," said Taylor in 2005, after the project's completion. Now, he adds, "I get a lot of comments about how clear the water is – you can see the bottom of lake in some places."

Fishing improved at both Nine Eagles (pictured) and Slip Bluff.

Kayakers test a course at Charles City's whitewater park. Photo courtesy of Iowa Tourism.

RIVER AT THE HEART OF CHARLES CITY

CHARLES CITY

PROJECT PARTNERS

Iowa DNR

City of Charles City

Upper Cedar Watershed Management Authority

Iowa Economic Development Authority

Iowa Department of Cultural Affairs

State Revolving Fund

Floyd County Community Foundation

Iowa SRF

Charles City residents and businesses

After Cedar River floodwaters hit hard in 2008 and 2016, even washing away the iconic century-old suspension bridge in 2008, you wouldn't expect Charles City to embrace the river.

Instead, the town's made the Cedar a destination and works to protect it. The vision of a downtown whitewater park began in 2006 and quickly grew into a full-blown riverfront redevelopment, and has been paired with water quality improvements. "The Cedar has always been a uniting feature," says Mayor Jim Erb. "This tends to fit in that history and provide a foundation for everything to economic development, recreation, conservation and environmental benefits."

With grants and local donations, Charles City hired a respected Colorado firm to design the whitewater course. Plans came together to turn a little-used park into a major draw with a boat launch, amphitheater, ravine play area and stormwater fountain. Ensuring the safety of course users meant removing the low-head "beauty" dam, despite some anglers' reservations. However, that allowed fish back upstream and created habitat. "Never fails – you go over the Brantingham bridge and you'll see somebody out there," says Steve Diers, City Administrator.

The park, which covers 26 acres of land and 11 acres of water, officially opened in summer 2011, drawing residents riverside, and luring kayakers from Iowa, Nebraska, Minnesota, Wisconsin, and even the coasts. "I was impressed with the community coming out to watch the boaters and use the river. I saw kids out fishing, older folks out for a stroll. Everyone was extremely nice and welcoming," said Omaha paddler Marijo Bosiljevac in 2011. "It was clear from the start that the investment in the river created a beautiful and usable space for the community."

Torrential rains in September 2016 put the town's hard work to the test, when 6 inches of rain fell in one night alone. "It's held up well and performing as designed," says Diers. The work extends beyond the park – 15 blocks of a historic neighborhood just upstream, where homes and infrastructure date back 100-plus years, were repaved with cobblestone-esque permeable pavers following the 2008 floods. Along with vegetated bioretention strips, rainfall now soaks through into the ground, easing street and basement flooding. The pavers and plants slow runoff and filter pollutants before they reach the river. The system can handle up to 7 inches of rain in one day at one intersection. The system should last 50 years and will likely cut nitrogen reaching the river from the neighborhood by 65 to 100 percent and phosphorus from 30 to 65 percent. "There's been no real pushback. People like the cosmetics of the design and appearance of the new streets," Erb says. Diers adds, "In winter, those are the first streets to melt – it just sucks the water away."

Other cities visit to tour the work. The city, building off its success, is working with private developers for permeable pavers in new housing developments and partners with groups and landowners north of town to use conservation practices like cover crops, bioswales, no-till and more. "Hopefully we can have less water coming in to Charles City," says Diers. "And to restrain nitrates and keep them where they do the most good," adds Erb.

The city's participation in the Upper Cedar Watershed Management Authority also works to improve conditions for other communities along the Cedar. "They're very concerned with what happens upstream and the effect that they have downstream," says the Upper Cedar chair, Sherman Lundy. "The city has been a key player in the Upper Cedar WMA and has taken the lead with Floyd County as an integral part of the WMA."

Permeable pavers help soak up and filter runoff from rain and snow.

Catfish Creek. Photo by Dean Mattoon.

COMMUNITY RALLIES BEHIND CATFISH CREEK

DUBUQUE COUNTY

PROJECT PARTNERS

City of Dubuque

Dubuque County

Dubuque Soil & Water Conservation District

Dubuque County Conservation Board

Catfish Creek Watershed Management Authority

University of Dubuque

Iowa DNR

IDALS

USDA-NRCS

Iowa SRF

WIRB

Iowa Economic Development Authority

Agricultural and urban landowners

U.S. EPA Section 319

The urban development surrounding Upper Catfish Creek had taken its toll.

Newly-paved sidewalks and streets provided an easy route for sediment and pollution to run off into the coldwater stream. Excess runoff sped up erosion in the stream and raised water temperature, threatening naturally reproducing trout and other aquatic life. In 2007, watershed project coordinator Eric Schmechel brought together a diverse crowd of local partners to form a watershed council, monitor water quality, clean up streams, install conservation practices, and more. Now, almost a decade later, what began as a 9,000-acre watershed project has snowballed into a county-wide water quality effort.

A watershed authority board formed in 2011, and a strategic Watershed Management Plan for the 46,000-acre basin followed in 2012, spanning urban, agricultural, industrial and commercial areas. Since the beginning of the project, Dubuque's college community has helped monitor water quality. "There was a lot of momentum in the area to continue that original project, and partnerships kept growing," says Schmechel, now the urban coordinator for the Dubuque County SWCD. In addition, the City of Dubuque had a $1.4 million sponsored project through the Iowa State Revolving Fund, which the city suggested go toward the watershed effort. "After we did the upper portions (of Catfish Creek) and pilot urban projects, we had officials that recognized the importance of these practices," Schmechel says. He adds that Dubuque was one of the first Iowa counties to pass an erosion and stormwater ordinance, and it's working on a comprehensive plan that focuses on watersheds.

Citizens had their say as well. Over the course of about a year, Schmechel walked creek banks with landowners and held public forums to gather input into the watershed management plan. "Having the public involved in that planning process was big," he says. Now, the management plan is being put into action, with streambank restoration, permeable pavers, biocells, soil quality restoration, and other conservation practices going into place, all cost-shared through the watershed authority board.

And a decade's worth of work already pays dividends. When the project began, the portion of the creek that supports trout – known locally as Swiss Valley – was ranked 21st in angler use among trout surveys. In the 2011 survey, it rose all the way to the fourth spot. "Water quality is an essential habitat component for all fish, and trout are particularly sensitive to thermal stress, excessive sediment, and pollutants," says DNR fisheries biologist Dan Kirby.

Trout eggs and larva are even more sensitive to water quality than adult trout, so successful trout reproduction especially depends on good water quality all year. "Swiss Valley receives considerable fishing activity on a year-round basis and at periods not associated with a catchable fish stocking – I believe this is a reflection of improved water quality," Kirby says. "As the Swiss Valley watershed is by no means perfect, we need to remember that water quality requires continuous work by everyone involved in and living in the watershed."

Moving forward, the watershed effort will continue its work to put practices on the ground and to educate residents about the importance of water quality and watershed improvement. Kiosks at Mines of Spain State Recreation Area and Swiss Valley Nature Center educate visitors on the issues, and an annual low-impact development conference helps advance urban stormwater efforts.

Wading in Catfish Creek. Photo by Eric Schmechel.

Water quality at Twelve Mile Lake near Creston has improved following a watershed effort there.

12 MILE LAKE RECLAIMS ITS REPUTATION

CRESTON

PROJECT PARTNERS

Iowa DNR

USDA-NRCS

WIRB

IDALS

Union CCB

Union SWCD

City of Creston

Landowners

This is one lake that's hit its stride.

Not to say things weren't rough for a while. During its peak in the late 1990s, Twelve Mile Creek Lake, near Creston, held nearly 30 fishing tournaments yearly. By 2004, that number dropped to a mere two. Common carp wreaked havoc, stirring up sediment and turning Twelve Mile's formerly clear water into a murky brown. Fewer people came to the lake. Drinking water drawn from the lake required more chemicals for treatment.

"It got to the point where Creston started drawing water from Three Mile Lake because it was less expensive to treat. It was obvious the lake had a problem," said Paul Goldsmith, who coordinated watershed efforts as District Conservationist for USDA-NRCS in Union County.

Work to repair the lake began in 2005, partially draining the water and deepening more than 1,000 feet of shoreline to roughly 30 inches deep. Rocks (rip rap) placed almost entirely around the perimeter of the lake stabilized the shoreline. Terraces, buffers and structures placed in the watershed years before would help protect the restoration work. The DNR removed common carp and then restocked fish.

The lake bounced back, sustaining its improvements over the last decade. Fishing tournaments returned quickly and are back to about 30 a year. The last water clarity reading showed you could see down in the water 5 feet. Creston uses Twelve Mile as a drinking water source again, in addition to Three Mile.

"The lake has developed into a great fishery since renovation," says Andy Jansen, DNR fisheries biologist, noting sampling at Twelve Mile has found bluegills larger than 10 inches and crappies exceeding 12 inches, plus 14- to 18-inch walleyes and 12-inch perch.

Wildlife has taken notice, too. "With good water quality comes good vegetation. With bad water quality you get no vegetation. All one has to do is pay attention to waterfowl in the spring and fall to understand that they use areas like Twelve Mile Lake with clean water and healthy vegetation," says Chad Paup, DNR wildlife management biologist at the Grand River Wildlife Unit, which includes Twelve Mile. "Iowans are without a doubt looking at water quality and understand the benefits that go with it. They can see it with their own eyes and if it doesn't look healthy, then they will avoid it. At Twelve Mile Lake they apparently like what they see."

Part of Twelve Mile's continued success comes from an ongoing commitment. The DNR added more fishing habitat in 2015, and both NRCS and WIRB funded additional conservation practices in the watershed to keep sediment in check.

WIRB provided funding to the Creston City Water Works to buy 98 acres of land upstream and to install a sediment detention dike, which has reduced the amount of sediment. WIRB also worked with the Union Soil and Water Conservation District to install grade stabilization structures, terraces, water and sediment control basins and grass waterways in the watershed, which have reduced sediment reaching the lake by more than 2,400 tons.

Twelve Mile Lake has become a popular fishing destination again.

Major changes to the Clinton streetscape beautified the area and now help absorb runoff and improve water quality. Courtesy of Jason Craft.

CLINTON GOES GREEN FOR STORMWATER

CLINTON

PROJECT PARTNERS

Iowa DNR

City of Clinton

Iowa SRF

Move over, gray. Clinton is going green.

The City of Clinton, located along the Mississippi River, has been working over the past decades to separate their combined sewer system, where both the treated wastewater from the sanitary sewer and the untreated stormwater runoff combine. Separating the two will also reduce the amount of untreated water discharging directly to the river. Clinton uses the Clean Water State Revolving Fund (CWSRF) to finance the project, and an additional award helped them take stormwater efforts a notch higher.

"With the help of a CWSRF Water Resource Restoration Sponsored Project, Clinton has used a green stormwater infrastructure approach to address urban stormwater quality and quantity associated with combined sewer overflows," says Patti Cale-Finnegan, Iowa SRF coordinator with the DNR.

Instead of using traditional "gray" infrastructure, which has a lower initial cost, the city chose to use greener practices in making streetscape improvements to a historic district. With the goal of soaking up more rain and snowmelt into the ground rather than having it run off into the storm sewers, the city installed permeable pavers in parking bays and alley ways – a big improvement for residents over the rough gravel alleys.

A Silva Cell system for tree planters provided not only beautified sidewalks with permeable brick pavers, but the 4-foot chamber below filled with topsoil and sand allows tree roots to stretch out and water to soak in, not run off. A bioretention cell with native prairie plantings adds color and drinks up runoff. A city park lawn had a soil quality restoration to loosen up the soil and allow it to take on more rainwater. The practices also filter out pollutants and avoid overloading the separated sewer system.

Having the funds available from the SRF sponsored project allowed the project to go green, says Jason Craft, Clinton City Engineer. "This allowed us to focus on proactive stormwater management and treatment and filtration, rather than just standard storm sewer installation – gray infrastructure. The money made available by SRF allowed a cleaner and greener project to be constructed."

Residents took notice and learned about water quality along the way. "The public really enjoys the attractiveness of the permeable pavers, and it is always interesting to them to hear the stormwater quality aspects of the project," says Craft. "Green infrastructure instead of grey is so much more satisfying to the public. While it may cost a small percentage more, the environmental and aesthetic value of the project is something that cannot be measured."

In addition, the Iowa League of Cities named Clinton an All-Star Community, and Craft received the 2016 Iowa Stormwater Award for the project. "With Clinton being situated on the banks of the Mississippi, we realize its importance as a natural resource which is vital to our community. We want to do our part to reduce the nutrient pollution from our drainageways," Craft says. They're not done yet, either. Another sewer separation project a block north of this project will include about 2 acres of permeable pavers.

Workers install a permeable paver system in Clinton.

Motorists take note of which stream they're crossing thanks to highway signs, including this one on Lux Creek. Photo courtesy of Michelle Turner.

CREATING CONNECTIONS WITH CREEKS

STATEWIDE

PROJECT PARTNERS

Iowa DNR

Iowa DOT

County Secondary Roads Engineers

County Board of Supervisors

County SWCDs

U.S. EPA Section 319

WIRB

Thousands of motorists drive over Iowa's waterways, big and small, each day. But unless it's a major river, most people are crossing these streams unaware of what's below.

The Iowa Department of Natural Resources, in partnership with the Iowa Department of Transportation, has been placing signs identifying creek crossings at bridges along state and federal highways over the past four years.

"We all live in a watershed, but not many people are aware of which one or even what a watershed is," says Steve Hopkins with the DNR's Watershed Improvement Program. "We want people to understand more about the creeks they cross over every day, and drawing attention to them with these signs is a great first step."

In phase one of the project, the DNR worked with the DOT's Tim Crouch and Kurtis Younkin to install signs at almost 40 stream crossings in nine different watersheds: Big Creek Lake, Badger Creek Lake, Dry Run Creek, Duck Creek, Easter Lake, Lake Geode, Lake Rathbun, Silver Creek and Tete des Morts Creek. All nine watersheds had active watershed improvement projects, funded by the DNR through the EPA's Section 319 nonpoint source program.

Phase two focused on placing creek crossing signs on all federal and state highways in the Turkey, Boone and Floyd river basins. More than 60 locations received signs, including creeks and river tributaries, like the Little Turkey River, that had not been signed before.

"We hope that by increasing Iowans' awareness of the waters they travel over, they can better understand issues affecting local water quality and what residents can do to improve conditions," Hopkins says.

In western Iowa, John Klein has led the charge to help draw attention to local streams. While it's now a volunteer effort for the retired former Missouri and Mississippi Divide Resource Conservation and Development NRCS coordinator, it all began on the job back in 2010.

"We wanted, naturally enough, people to know the significance of their watersheds, and their streams. The signs give rural areas a name – that bridge with signs becomes a landmark, and having that area identification is important to rural people and how they develop personal concern about their watershed," says Klein. "It also explains the greater geologic history of glaciers that shaped their lands. It helped explain why landforms were so different east and north of Carroll than south and west, where the glaciers stopped."

Thanks to his efforts, and the work of many partner groups, 83 stream crossings in Audubon, Guthrie, Carroll, Pottawattamie and Clarke counties now boast creek signs, with more planned. WIRB and other groups have funded sign projects in other parts of the state as well.

"Each sign up is a victory for conservation," says Klein. "It is great environmental education that lasts for years, hopefully long past my life. It makes people better understand their place in the watershed and natural landscape. I am hoping that with the signs installed, that it will make the work of naturalists, park rangers, and science teachers easier in the future when they explain the importance of watershed level management."

Whitebreast Creek. Photo courtesy of John Klein.

Family canoeing at Lake Ahquabi in Warren County.

TAKE THE NEXT STEP

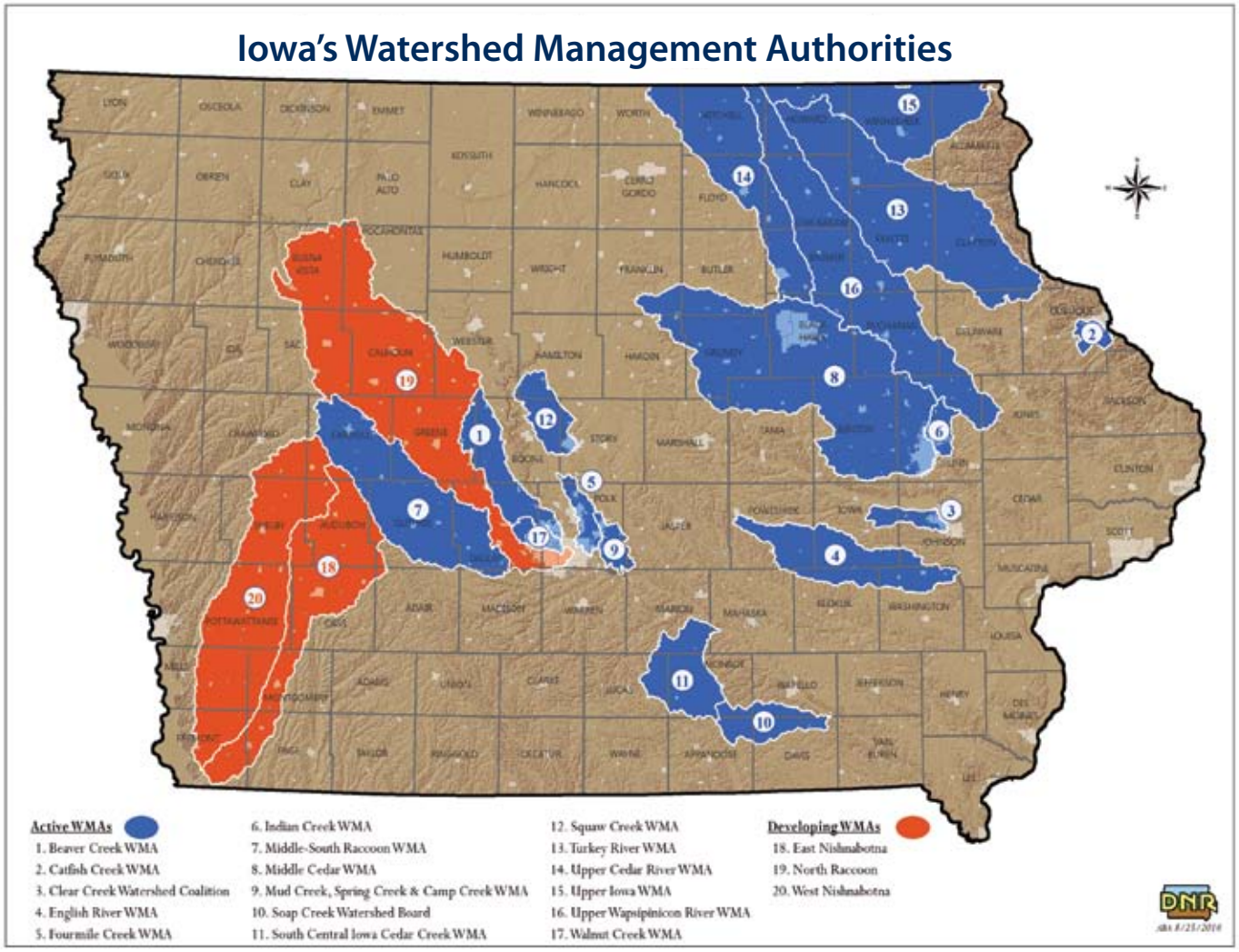
We're with you every step of the way. When Iowans come together in their communities with the common goal of improving their lake, stream or river, the DNR and our partners can help you take action.

Local groups can receive technical assistance and guidance to create a Watershed Management Plan. The plan assesses the watershed for problems, develops solutions and involves your community in the effort. The plan, much like a road map, moves you toward success and helps you get back on track if detours pop up along the way.

Once you have a plan, you need to put it in action. DNR can help you identify available grant fund opportunities to get you started. Use these grants to help you launch your plan, making changes on the land to improve the water. DNR staff can continue to provide technical and outreach assistance, and guidance along the way. Our partners, IDALS and USDA-NRCS, also offer additional financial and technical assistance.

For more information about DNR Watershed Improvement:
Steve Hopkins, 515-725-8390 or
Stephen.Hopkins@dnr.iowa.gov
www.iowadnr.gov/watershed

Iowa's Watershed Management Authorities



The publication of this document has been funded by the Iowa Department of Natural Resources through a grant from the U.S. Environmental Protection Agency under the Federal Nonpoint Source Management Program (Section 319 of the Clean Water Act). Federal and State laws prohibit employment and/or public accommodation (such as access to services or physical facilities) discrimination on the basis of age, color, creed, disability (mental and/or physical), gender identity, national origin, pregnancy, race, religion, sex, or sexual orientation. The contents of this document do not necessarily reflect the views and policies of the Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use. If you believe you have been discriminated against in any program, activity or facility as described above, or if you desire further information, contact the Iowa Civil Rights Commission, 1-800-457-4416, or write to Iowa DNR, Wallace State Office Building, 502 E. Ninth St., Des Moines, Iowa, 50319.

IOWA DEPARTMENT OF NATURAL RESOURCES

Leading Iowans in caring for our natural resources

www.iowadnr.gov