WORKING FOR CLEAN WATER

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2013 IOWA WATERSHED SUCCESSES

COVER
Lost Island Lake by Ben Curtis

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Big Wall Lake: Bruce Voigts

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WE ALL LIVE IN A WATERSHED

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. Excessive nitrogen and phosphorus from Iowa and the Mississippi River basin have created a "dead zone" in the Gulf of Mexico, an area devoid of 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.

Lake Macbride in Johnson County.

IT'S A PARTNERSHIP EFFORT

PARTNER GROUP INITIALS:

Iowa Department of Natural Resources (DNR)

Iowa Department of Agriculture and Land Stewardship (IDALS) - Division of Soil Conservation (DSC)

County Conservation Board (CCB)

Soil and Water Conservation District (SWCD)

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)

USDA-NRCS Mississippi River Basin Initiative (MRBI)

Resource Conservation and Development (RC&D)

U.S. Environmental Protection Agency (EPA)

Resource Enhancement and Protection (REAP)

Watershed Improvement Review Board (WIRB)

Conservation Reserve Program (CRP)

Iowa State University (ISU)

The most successful water quality improvement efforts are led by groups and communities partnering with organizations like the DNR to put together and implement comprehensive, long-term plans to improve the land and water. A group can pool resources, generate new ideas and raise support and awareness to strengthen how Iowans value our waters and to make actual changes in water quality.

The DNR has approved watershed management plans for 24 watersheds in Iowa, opening up funding opportunities to help those groups put their plans in action. At least another six plans are under development. Since 2009, the DNR has awarded $344,284 in grant funding to help Iowans gather information and create plans to improve their water quality.

However, most projects need additional funding to reach their goals. It also takes more than funding to make watershed improvement happen. It takes the knowledge, labor, energy and passion of many different individuals, agencies, organizations, businesses and other groups.

As watershed groups move to put their management plans into practice, they're working with Pheasants Forever, Trout Unlimited, Ducks Unlimited, the Iowa Soybean Association and other groups interested in conserving our natural resources. They draw on the expertise of county conservation boards, soil and water conservation districts, the DNR, the Iowa Department of Agriculture and Land Stewardship and the USDA Natural Resources Conservation Service and other agencies. Friends groups and other community organizations spread the word and help raise additional funds.

"Sound planning is the foundation of any successful effort, but it takes the resources and knowledge of many partners to make it happen," says Allen Bonini with the DNR's Watershed Improvement Program. "Plans support long-term efforts and strategies to improve our water and keep it clean. Each year, we're excited to see groups' progress as we help them implement sound watershed management plans. The successes keep coming."

Friends groups can raise additional funds for park improvements.


Local partnerships are critical for improving water quality.

Fishing Green Valley Lake near the park campground.

GREEN VALLEY LAKE SHINES AGAIN

CRESTON

PROJECT PARTNERS

Iowa DNR

IDALS-DSC

USDA-NRCS

Union CCB

Union SWCD

City of Creston Waterworks

Southern Iowa Rural Water

High Lakes Outdoor Alliance

Green Valley Chemical

Union County
Secondary Roads

You know a lake renovation went well when anglers flock to the lake in droves…in the middle of winter.

"There were people swarmed every day out here ice fishing and people kept coming all summer long," says Gary Sobotka, DNR fisheries biologist. Last winter, ice fishing use at Green Valley Lake was 20 times higher than historic levels, he said. The campground has seen an almost 25 percent increase in campers since the lake and park improvements, including a complete renovation of the campground. Park ranger Alan Carr hears compliments from campers weekly on the fishing, boating, trails and camping.

But the lake wasn't always the shining center of the park. There were serious algal blooms. Sediment clouded the water and completely filled two silt retention ponds built in the 1980s. Carp from a nearby marsh invaded the lake and further degraded water quality and fishing. "The water quality before was a little brown, a little gray, very little vegetation – it was like this for 20 years," says Sobotka. The DNR partnered with the Union SWCD to start a restoration project with other local and state partners.

Habitat and in-lake work by the DNR's Lake Restoration program would improve fishing and water quality, but work in the watershed would protect that effort by keeping additional sediment and nutrients out of the lake. Working with landowners, the watershed effort used terraces, grassed waterways, ponds and grade stabilization structures to keep 3,402 tons of sediment a year out of the 338-acre lake. That's enough dirt to fill a mile-long line of dump trucks.

"Every property in the watershed has some terraces," says Paul Goldsmith, who was the USDA-NRCS district conservationist during the watershed project. Some people had made improvements to their fields in a watershed project 20 years earlier, but since then, some land with problem areas had changed ownership to people interested in conservation efforts.

"What I've done are things that most people should be doing," says Bill Bollinger, a Green Valley farmer. "I was lucky money was available, otherwise I wouldn't have been able to do any of this."

Bollinger addressed erosion and gullies that made it difficult to farm the land by adding terraces, basins, grassed waterways, ponds, no-till, contouring, native prairie plantings and more.

In the lake, the DNR added underwater rock reefs, placed trees for fish habitat, deepened and stabilized shoreline, and extended boat docks. The two filled-in silt retention structures were rehabilitated and a new structure was added. The DNR redid the lake spillway, added a fish barrier and renovated Mitchell Marsh to keep carp from entering the lake. "Carp are a major contributor to poor water quality," says Chris Larson, DNR fisheries supervisor for southwest Iowa. The DNR restocked the lake with bluegill, channel catfish, largemouth bass and crappie.

Following the renovation, Larson says you can see 9 feet down in the clearer water. Biologists are establishing aquatic plants, which will use up nutrients in the water, keeping algal blooms at bay. "The reputation is going to get out and we'll get more visitors," says Sobotka. "Everything's going in the right direction. We're looking at a pretty bright future for Green Valley."

Kayaking the Turkey River at Motor Mill . Jessica Rilling photo.

RIVER BRINGS REGION TOGETHER

NORTHEAST IOWA

PROJECT PARTNERS

Turkey River Watershed Management Authority

Turkey River Alliance

Northeast Iowa RC&D

Chickasaw County

Clayton County

Fayette County

Howard County

Winneshiek County

Allamakee SWCD

Chickasaw SWCD

Clayton SWCD

Delaware SWCD

Fayette SWCD

Howard SWCD

Winneshiek SWCD

23 communities

Iowa Economic Development Authority

U.S. Department of Housing and Urban Development

Iowa DNR

Iowa Flood Center

Elkader, sitting at the bottom of the Turkey River watershed and reeling from the historic 2008 flood, contemplated its next move. Raise levees? Flood walls?

"You can only go so high and you have to look at other ways to affect the amount of water going through our town," says city administrator Jennifer Cowsert. That meant talking to other groups and people upstream, helping people realize that what they do on the land has effects downstream. Water needed to slow down and the soil needed to hold more water to reduce flooding – and in doing that, water quality would also benefit. Those are the goals of the Turkey River Watershed Management Authority, a recently formed group of 23 communities, five counties and seven soil and water conservation districts that represents the million-acre watershed in northeast Iowa.

Watershed management authorities, or WMAs, allow political entities to come together across city limits and county lines. "Watershed issues such as flooding and water quality transcend our artificial political boundaries," says Mary Beth Stevenson, Iowa-Cedar basin coordinator with the DNR. "The only way to truly address these issues is to take a comprehensive watershed approach, which depends upon cooperation between urban and rural areas as well as neighboring cities and counties."

The Turkey River WMA, one of 10 WMAs now underway in Iowa, grew out of the Turkey River Alliance, which had been meeting informally for about three years to address water quality issues. The alliance continues on as the technical expertise arm, while the authority focuses on decision-making, policy and involving watershed residents in the effort. "In a state where flooding has created havoc, it's work together to solve this. You'll never fix flooding by putting on more sandbags and levees," says Lora Friest with Northeast Iowa RC&D. "We're trying to reach everybody to get everyone to do something. The only way to get it to work is to have everyone working together."

County engineers scout rural areas where conservation practices can slow water and urban communities look for better ways to manage stormwater and runoff as the WMA works on putting together a comprehensive watershed management plan. That plan will detail the problems in the Turkey River watershed and propose solutions. Response from farmers and residents has been positive, says Rod Marlatt, WMA chair. "Now we're able to do practices that landowners wanted but couldn't get cost-share for before. They've responded pretty well."

Coming together as a WMA also drew the attention of the Iowa Flood Center at the University of Iowa, which selected Otter Creek, a tributary of the Turkey, for a demonstration project that will put $1.5 million worth of conservation practices on the ground. The Iowa Flood Center will place 11 water sensors in the Otter Creek watershed and use the sensor data to track results of the conservation practices, which will slow water, and test the accuracy of the center's flood modeling.

Watershed management authorities benefit from pooled resources, shared technical knowledge and expertise. Cowsert, who also represents Elkader on the WMA board, says her city staff are now talking with farmers and the SWCD. "Our work never really overlapped before, and it should have," she says.

Deer and paddler in Turkey River. Jessica Rilling photo.

Clear Lake in Cerro Gordo County.

CLEAR LAKE ANCHORS COMMUNITY

CLEAR LAKE

PROJECT PARTNERS

Association for the Preservation of Clear Lake

Hancock SWCD

Cerro Gordo SWCD

IDALS-DSC

USDA-NRCS

Iowa DNR

EPA Section 319

City of Clear Lake

City of Ventura

Cerro Gordo County

U.S. Army Corps of Engineers

Iowa State University

WIRB

"Not many cities have Main Street on the waterfront," says Nelson Crabb, Clear Lake mayor.

"Dredging the lake, watershed projects, citizens reducing phosphorus use and shoreline stabilization have improved Clear Lake's clarity from a foot to more than a meter," he says. "Cleaning the water has boosted our image as a resort. Several new businesses have opened along Main Street — small unique places that people like to shop when they are on a weekend getaway." But keeping the water clear and the lake healthy is a challenge. For every acre of lake, there are 2.3 acres of land that drain into it — that means what occurs on the land significantly impacts the lake.

Formed in the 1930s, the Association for the Preservation of Clear Lake (APCL) witnessed the lake's recent decline. In 1994, APCL instigated the watershed-wide Clear Lake Enhancement and Restoration project (CLEAR) to connect people with opportunities and partners to help clean Clear Lake. "APCL focused on outreach, inundating the watershed with water quality information," says APCL's Deb Tesar. David Knoll, now a DNR environmental specialist, was hired as CLEAR coordinator in 2000. In the meantime, Iowa State University conducted a several-year, comprehensive water quality analysis and shared recommendations for restoring water quality in 2001. The following year, Clear Lake landed on Iowa's impaired waters list. The primary contaminants: phosphorus and sediment. Bacteria was added in 2004. Then, algae and turbidity were entering the lake from Ventura Marsh, a carp domain.

CLEAR focused on helping reduce runoff from agricultural and urban land practices that added phosphorus and sediment to the lake. More than 700 acres of cropland was converted to prairie and wetlands, protecting a portion of the watershed, plus about a mile of shoreline was stabilized with rip-rap. Landowners built 2,000 feet of terraces and implemented nutrient and pesticide management on 1,400 acres. All actions were voluntary, with federal, state and local assistance. In Clear Lake and Ventura, stormwater filtration systems were installed to keep out sediment and nutrients. Public rain gardens, pervious pavement and infiltration trenches now absorb runoff. A city ordinance prevents new development and improvements from increasing stormwater runoff. To address bacteria, homeowners use $3,000 grants to update unpermitted septic systems that likely empty into ditches or streams flowing into Clear Lake. The cities of Clear Lake and Ventura and the Clear Lake Sanitary District are inspecting and repairing all sewer systems as needed. A beach cleaner/sand sifter machine reduces goose litter on Clear Lake's three beaches.

Improvements will continue under the 2011 Clear Lake Watershed Management Plan, created with help from APCL, DNR and NRCS. First up: improving the density and diversity of aquatic vegetation in Ventura Marsh to dissipate waves and hold down sediment.

"CLEAR is a great example of successful partnerships between private landowners and government agencies to improve water quality," says Knoll. "The people here are passionate about cleaning their lake. They seek solutions, volunteer their time and are changing the way things have been done."

L to R: Nelson Crabb, Clear Lake mayor; Robert Amosson, county supervisor; David Knoll, former coordinator; Scott Grummer, DNR; George Simpson, Ventura mayor.

Herons at Ventura Marsh.

VENTURA MARSH SPRINGS BACK

VENTURA

PROJECT PARTNERS

Iowa DNR

U.S. Army Corps of Engineers

EPA Section 319

Association for the Preservation of Clear Lake

Clear Lake Enhancement and Restoration project

Up to the 1970s, Ventura Marsh provided water quality benefits to adjoining Clear Lake. In a span of 20 years, the marsh became a carp wasteland with nearly four times the phosphorus and turbidity than the lake it once helped clean.

The problem during those 20 years was the lack of a cyclic drought, making Ventura Marsh unable to undergo its natural renewal period. The bottom didn't dry out and emergent wetland plants couldn't grow in the cloudy water caused by the abundance of carp grubbing for food.

The 740-acre marsh could no longer take up enough phosphorus from the mud and algae blooms became more dense. Fine-grained mud and nutrients were constantly suspended in the water. Water clarity, water quality and the diversity of fish and insects plummeted, as carp thrived in the environment they havocked.

The U.S. Army Corps of Engineers and water quality experts agreed: the best way to restore and enhance Clear Lake was to draw down the water in Ventura Marsh and remove the carp. The first order of business became installing a new pump station to remove water from the marsh and flow it into Clear Lake. A flow channel was dredged so the entire marsh would drain and ensure a winter fish kill.

In the spring, the pump continued to keep water out of Ventura Marsh. It dried and exposed bottom sediments to the air, allowing the marsh bottom to firm up. Oxygen reinvigorated the decomposition of organic matter and germinating plants took up nutrients. Waterfowl returned to feed on the insects thriving in the vegetation.

The DNR eradicated the carp population and replaced the fish barrier. Just as in the past, human activity, including people transporting the fish, resulted in carp re-entering the marsh last spring. Fortunately, the capability to pump the marsh dry is in place.

With the reduction of carp in Ventura Marsh, Clear Lake's carp population is not reproducing as abundantly as it had. Also, a sediment control basin is trapping excess sediment from streams that enter Ventura Marsh.

Today, Ventura Marsh is healthy and providing water quality benefits once again to Clear Lake, as well as recreational opportunities for hunters, trappers, birders and boaters.

Painted turtle in Ventura Marsh.

Aquatic vegetation in Ventura Marsh.

Prairie plants overlooking Lost Island Lake.

FISH STRUCTURES PROTECT IOWA'S WATERS

STATEWIDE

PROJECT PARTNERS

Iowa DNR

U.S. Fish and Wildlife Service

Lost Island Lake:

WIRB

Palo Alto CCB

Clay CCB

Lost Island Protective Association

Palo Alto County Gaming Development Corporation

Palo Alto SWCD

Ducks Unlimited

Lost Island Ruthven Betterment Association

Lizard Lake:

Pocahontas CCB

Ducks Unlimited

Ricky Post, landowner

"The most influential internal factor affecting lake water clarity and quality is common carp," says Mike Hawkins, DNR fisheries biologist.

Two strategies effectively control carp, he says. "Take away their spawning areas and remove the adults or eliminate them completely with a total renovation." Common carp were introduced to U.S. waterbodies by the U.S. Fish Commission in the 1870s and 1880s when a growing national population had government concerned about how it would feed people during weather adverse for farming. Within 15 to 20 years, the Commission learned it had made a huge mistake.

Common carp deposit 100,000 to 500,000 eggs that hatch in less than a week. Fast-growing, carp soon outgrow predators and become the dominant species, feeding on other fishes' eggs, invertebrates, plants and algae. Their foraging behavior stirs up silt and nutrients, reducing water clarity and quality. Submergent plants needing sunlight for growth disappear, leaving unused nutrients which then support abundant algae growth. Fish that eat by sight and reproduce in submergent plant areas vanish.

Controlling carp populations is important for improving water clarity, but it's difficult and expensive. Watershed partnerships are installing a variety of fish barriers around lakes to keep carp out and improve water quality. "Many of the outlets and inlets to Iowa's natural lakes are not designed to stop common carp. Carp are aggressive fish and naturally swim upstream. Low spillways with no physical barrier are easily passed over by carp," says Hawkins, adding that four carp barriers were rebuilt at Lost Island Lake. "We built in key locations using a combination of techniques that have proven nearly carp-proof. Each carp barrier must be carefully engineered for its specific location."

Grates on corrugated metal pipe openings keep carp from entering through lake outlets, but debris builds up and requires continuous upkeep. A velocity tube fish barrier, installed downstream of the outlet structure at Lizard Lake, allows debris to flow through, but its steep grade keeps carp out. Removing carp from spawning areas in marshes and shallow lakes requires drawing down the water or using chemical renovation techniques. Depending on the complexity of the lake and adjoining wetlands, a combination of techniques is appropriate. For a large lake, like 1,200-acre Lost Island Lake, those include water level management controls, chemical treatment of carp in adjacent wetlands, fish barriers to spawning areas, funding to encourage commercial harvesting of adult carp, and stocking predatory fish such as walleye, northern pike and largemouth bass to feed on young carp.

"Once carp numbers are reduced, we're witnessing ecological integrity return to lakes. The water quickly clears up and submergent aquatic plants begin to grow back," Hawkins says. "Native fish spawn where their young can feed and hide in the aquatic plant life. Fish that find food by sight are thriving. It is unlikely we will be able to remove all common carp in some large lakes — there are too many variables we can't control — but we're making great strides in our management and understanding of this species."

Mike Hawkins inspects the fish structure at Lost Island Lake.

Fishing the Yellow River. Photo by Adam Kiel.

COUPLE PRESERVES IOWA LEGACY

WINNESHIEK COUNTY

PROJECT PARTNERS

Iowa DNR

Winneshiek County SWCD

EPA Section 319

IDALS-DSC

USDA-NRCS

The history of Dennis and Donna Blumhagen's farm goes back to 1889, when Dennis' great grandfather settled there, and the Blumhagens want to ensure they're preserving a legacy.

For years, the Blumhagens raised beef cattle, hogs, chicken and sheep on their Castalia farm, but recently the couple decided to get out of the cattle business and focus on conservation.

"It was obvious to me we were sending a lot of soil down the river," Dennis says. "The timing was right to get rid of the beef cows and turn pasture into grass and trees to protect the quality of the water."

Before, the cows left 6- to 7-foot cutbanks all along the stream. Since removing the cows, the banks have an abundance of plants, anchoring the unstable banks to slow erosion and keep sediment out of the river.

"It's amazing how fast wildlife comes back," says Corey Meyer, the watershed coordinator at the local soil and water conservation district.

The Blumhagens signed up for the Conservation Reserve Program to create a riparian forest buffer, working with Meyer to plant 49,000 trees on 70 acres, protecting 2.5 miles of the Yellow River stream corridor. They planted the trees four years ago, which include cottonwood, swamp white oak, hackberry, Scotch pine, Norway spruce, cedars, bur oak, red oak, walnut, white oak and silver maple.

The Blumhagens, along with 16 other landowners, have established more than 13 miles of riparian buffers that filter, trap, and reduce the effects of runoff, sediment and nutrients.

"Trees are a long-term investment," says Dennis. "Somebody has to make the first step or it never will be there. That was the right thing to do, in my opinion. I've always believed in trees. They do a lot of good things."

They also added sediment basins and terraces to decrease erosion. The Blumhagens' farm covers part of the Yellow River watershed. Decreasing runoff on their land reduces the amount of sediment in the Yellow River.

"It's been a community effort," says Meyer. "In this area, people have a real tie to the land. They understand the value of the land."

Dennis agrees. "If we don't take care of it, it's going to be gone," he says. "Not just for me and my family, but for everybody else. Everything we do affects a lot of other people. My policy is that hopefully I'll leave it in better condition than it was when I found it. I'm not done doing conservation work."

Dennis and Donna Blumhagen

Aerial view of Big Wall Lake in its hemi-marsh state. Photo by Bruce Voigts.

PLANNING GIVES LAKE NEW LIFE

WRIGHT COUNTY

PROJECT PARTNERS

Iowa DNR

Wright SWCD

IDALS-DSC

USDA-NRCS

Prairie Partners RC&D

EPA Section 319

Local landowners

Wright County Board of Supervisors

"You couldn't see the bottom of the lake, and it's only a foot and half deep," says Connie Roys about Big Wall Lake.

Local legend has it that back in the 1920s, big investors wanted to turn the "big walled lake" into a resort – but by the 1990s, the Wright County marsh had turned into a muddy mess dominated by carp and a commercial wild rice cultivar. While stories abound, no one really knows how the carp or rice entered the lake – but their effects were painfully obvious.

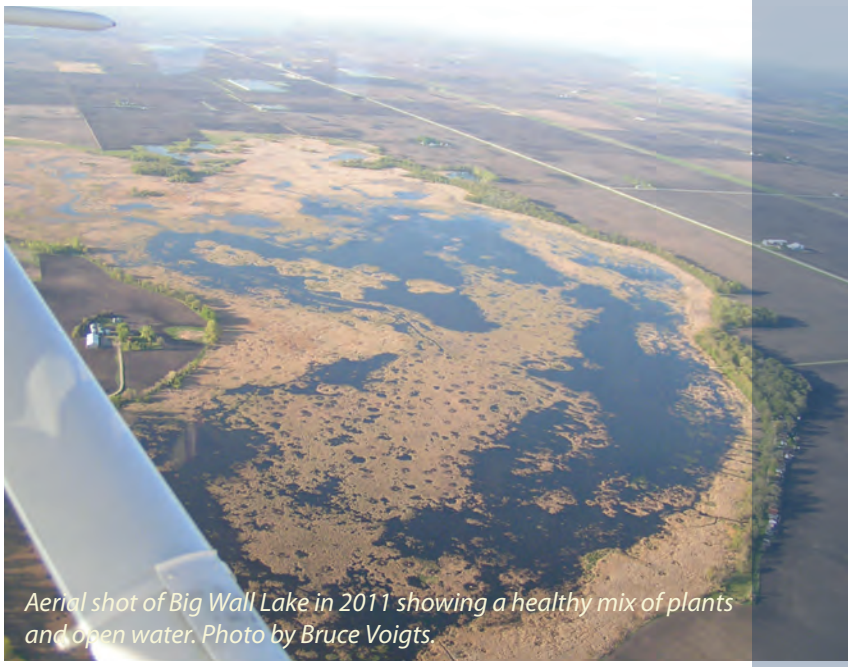
The carp uprooted vegetation, which meant the plant roots were not holding down bottom sediments, allowing the fish to stir up sediment into the water, clouding it over. The cloudy water made it hard for plants to grow. Marshes naturally go through a drought cycle, where new vegetation sprouts out of mud flats when the marsh is low. Since wild rice only needs water to germinate, it overtook vegetation, covering 80 percent of the marsh. While ducks loved the feast, duck hunters couldn't get boats through the water or retrieve ducks they'd shot. And vegetation needed by other migrating waterfowl couldn't grow. "The return of migrating waterfowl is number one," says Roys, USDA-NRCS District Conservationist for Wright County.

Knowing something had to be done, the Wright County SWCD, USDA-NRCS, DNR and IDALS started a restoration effort in 2006, meeting with local residents, landowners and cabin owners to create a plan to improve the 978-acre shallow glacial lake. "The first thing we needed to do was get rid of the carp," says Doug Janke, the DNR wildlife biologist on the project. The group drew down the lake and installed a new outlet structure, allowing the DNR to better manipulate water levels to mimic the lake's natural drought cycle. The carp were killed off, and the drawdown allowed new, beneficial vegetation to sprout. Wild rice remains, but is struggling to outcompete other plants.

Now refilled, Big Wall is a healthy hemi-marsh, a good mix of plant life and open water. The lake has an average depth of 2 feet, but is 6 feet deep at its deepest – and as landowners found on a flat-bottom boat tour to celebrate the project's completion – you can now see to the bottom.

Residents have noticed, saying they've appreciated the renovation work, says Bruce Voigts, who was an assistant SWCD commissioner during the renovation and now serves as an area watershed coordinator. "They always wonder what you're doing to the lake, but I haven't heard much negative," Voigts says. Some special tourists have also made Big Wall a stop, according to Janke. "In 2010, we had a spring migration count of more than 10,000 ducks, which is uncommon for Big Wall," he says.

Back to serving its original purpose as a stop for migrating wildlife, the marsh is again in its normal life cycle. "It's been six years since the lake refilled and it still looks tremendous," Janke says. "It ended up being a great cooperative effort. We've had a fantastic lake as a result and more interest in work of this kind on shallow lakes."



Aerial shot of Big Wall Lake in 2011 showing a healthy mix of plants and open water. Photo by Bruce Voigts.

Cabin on the shore of Little River Lake.

SAVING LITTLE RIVER LAKE

DECATUR COUNTY

PROJECT PARTNERS

Iowa DNR

Decatur County

USDA-NRCS

WIRB

IDALS-DSC

EPA Section 319

Southern Iowa Rural Water Association

Decatur CCB

Decatur SWCD

City of Leon

Local landowners

Gary Sobotka saw the fishery at Little River Lake falling apart. "I saw the good it had, and then I saw it slipping away."

Sobotka, a DNR fisheries biologist, adds, "Then the last 10 years, or even five years especially, we had water clarity down around a foot."

Little River Lake in Decatur County, created in 1985, is used for boating, fishing, swimming and as a source of water for the city of Leon. Little River Lake suffered from cloudy water caused by the overabundance of carp, shoreline erosion and silt deposited from the watershed.

In fall 2011, local and statewide groups joined together to develop a plan to fix the lake. The first goal was to reduce silt coming into the lake from the watershed. To do that, they expanded a wetland above the lake, nearly doubling the wetland's storage capacity. The expansion allowed for water level control and improved habitat in the lake by decreasing the amount of silt runoff into the lake.

Once the watershed and wetland weren't dumping silt into the lake, attention turned to the lake itself. The next things addressed were shoreline erosion and a very large common carp population. Work on the shoreline deepened and stabilized it, but carp still decreased water quality.

"Carp stir up bottom sediment and cause cloudy water," says George Antoniou, DNR Lake Restoration program coordinator. "They also root up aquatic plants. Their sheer numbers meant they were outcompeting the preferred game fish."

To remove the carp, the city of Leon switched to an alternate source of water while the lake was drained to half its depth. Chemicals added to the lake killed the carp. Once the chemicals dissipated, the city was able to use the lake as a drinking water source again. The lake was also restocked with walleye, largemouth bass, bluegill, crappie and channel catfish.

Since these projects, Little River Lake has shown improvement. Fish are growing at an above average rate.

"We're starting to see fish of moderate sizes, a lot of mid-sized individuals," says Sobotka. "But it's going to take a little while for them to get big. This spring is going to be really good. The lake has full access to all of its uses again, and the public can expect a lot of benefits from the renovation. You need to look at it as a destination – one of the best places in southern Iowa."

Water clarity has also improved. "This spring we had 7 to 8 feet of water clarity," says Sobotka. "This summer we have about 7 to 10 feet of water clarity." Plants are rooting, which will help keep back algal blooms. The cleaner water has also reduced the cost of treating water for drinking.

"The various agencies all had parts to play in the process," says Sobotka. "Everybody took care of their job."

Gadwall (flying) and American coot (on the water) enjoy Little River Lake.

Kayaking at Lake Rathbun near Centerville.

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.

With DNR Watershed Planning Grants, local groups can receive funding, 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, and DNR Watershed Implementation Grants can help. Use these grants to launch your plan, making changes on the land to improve the water. Implementation Grants offer more than funding — DNR staff provide technical and outreach assistance, and guidance. Our partners, IDALS-DSC and NRCS, also offer additional grant funding and technical assistance.

For more information about DNR Watershed Improvement:
Steve Hopkins, 515-281-6402
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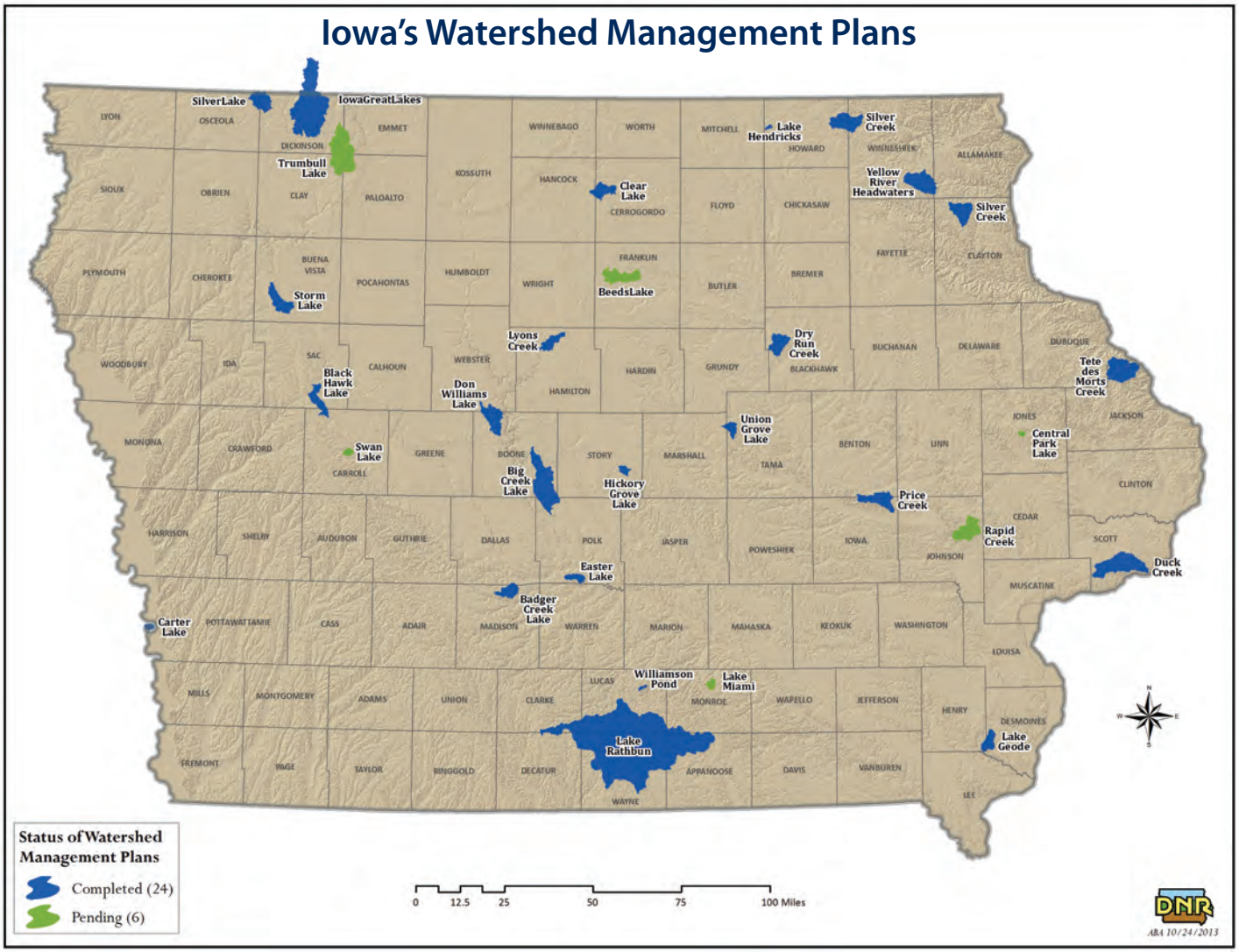
watershed.iowadnr.gov



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