



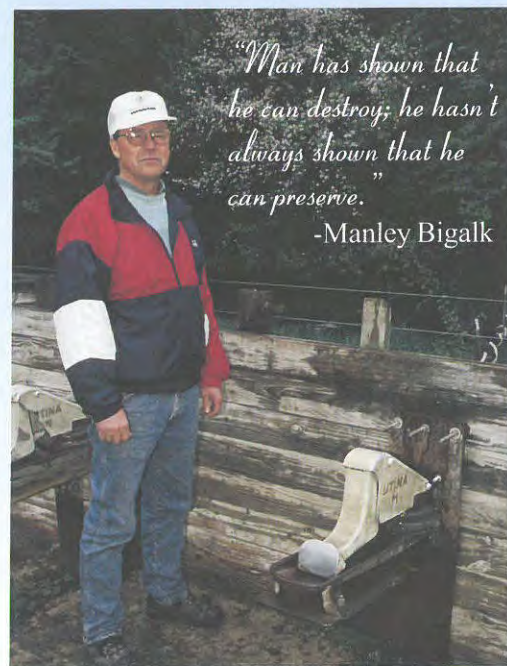
Bigalk Creek

*Preserving
A Treasure*

How it all got started

Bigalk Creek used to be a mess. All of the cropland in the fishable part of the stream's watershed was considered highly erodible. Livestock grazed right into the creek, tramping down the streambank. The stream had been stomped down to the point where portions of it were shallow, wide and unsuitable for trout.

Manley and Linda Bigalk were the first producers to step forward on behalf of the creek that bears the family name. In 1992, the Bigalks, using money appropriated by the DNR, fenced off their cattle herd from the stream and installed nose pumps to provide water to the livestock. Tree



"Man has shown that he can destroy; he hasn't always shown that he can preserve."
-Manley Bigalk

Manley Bigalk with a nose pump that allows his cattle to continue using Bigalk Creek for water, but keeps the livestock away from the stream.



Prior to fencing off the stream, cattle had free access to Bigalk Creek which caused severe damage to the streambank.

plantings, streambank stabilization, trout habitat structures and a cattle crossing were also added to the Bigalks' property along the creek.

"It's interesting and satisfying to see the improvements we've made to water quality. There's a lot less algae growth and just an overall naturalness to the stream now," said Manley Bigalk of the farm that has been in his family for 115 years.

"I like having the cattle out of the stream," Bigalk adds. "It seemed like the cows were always having calves in the stream and they were just much more prone to accidents."

The work completed on the Bigalk property became the catalyst for an overall watershed improvement project for Bigalk Creek focusing particularly on a subwatershed of 3,140 acres closest to the 1.2 mile segment of the stream where trout are stocked.

The Project: Exceeding Expectations

The primary goal of the Bigalk Creek Project was to improve water quality and improve fish habitat on the spring-fed, cold-water stream north of Cresco.

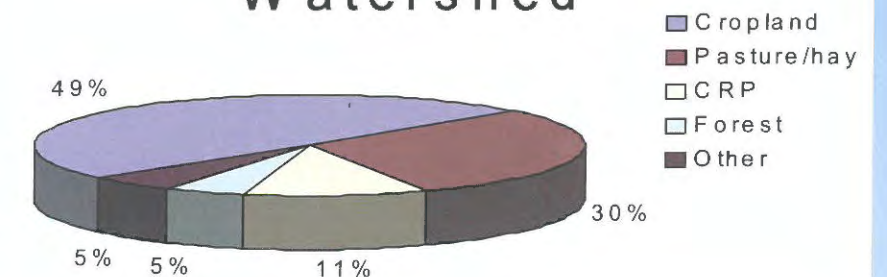
Using funding from the DNR through Section 319 of Clean Water Act, State of Iowa Water Protection Funds and Water Quality Improvement Funds (WQIP) from the U.S. Department of Agriculture, the project had five main objectives:

- Demonstrate the feasibility of several resource management systems that are new and innovative
- Reduce sediment delivered to the creek by 50 percent



The improvements made in the watershed have helped increase the flow and clear the water in Bigalk Creek, says Alan Schatz.

Bigalk Creek's Watershed



- Reduce the amount of livestock manure reaching the stream by 50 percent
- Create an awareness of the amount of fertilizer and pesticides presently being used within the watershed
- Reduce the amount of sediment from streambank erosion by 60 percent

All of the objectives were met and the results far exceeded expectations by working with private landowners. Not only are the results visible in the form of much clearer water, but Bigalk Creek has now become only the third stream in Iowa that has natural reproduction of rainbow trout.

Alan Schatz was one of the farmers that was part of the solution and he is particularly pleased with the results.

"Erosion was reduced by 12,285 tons of soil in the Bigalk Creek watershed during the project. If current sediment control structures remain in place, it is estimated that erosion will be reduced by more than 5,000 tons a year in the future."

-Frank Moore, project coordinator

"I can remember when the stream was cloudy every day. Even with a really wet spring, I can remember only one day this spring when it was cloudy," Schatz said.

But Schatz said the project had more of an impact than just water quality improvement. Participants also became better producers.

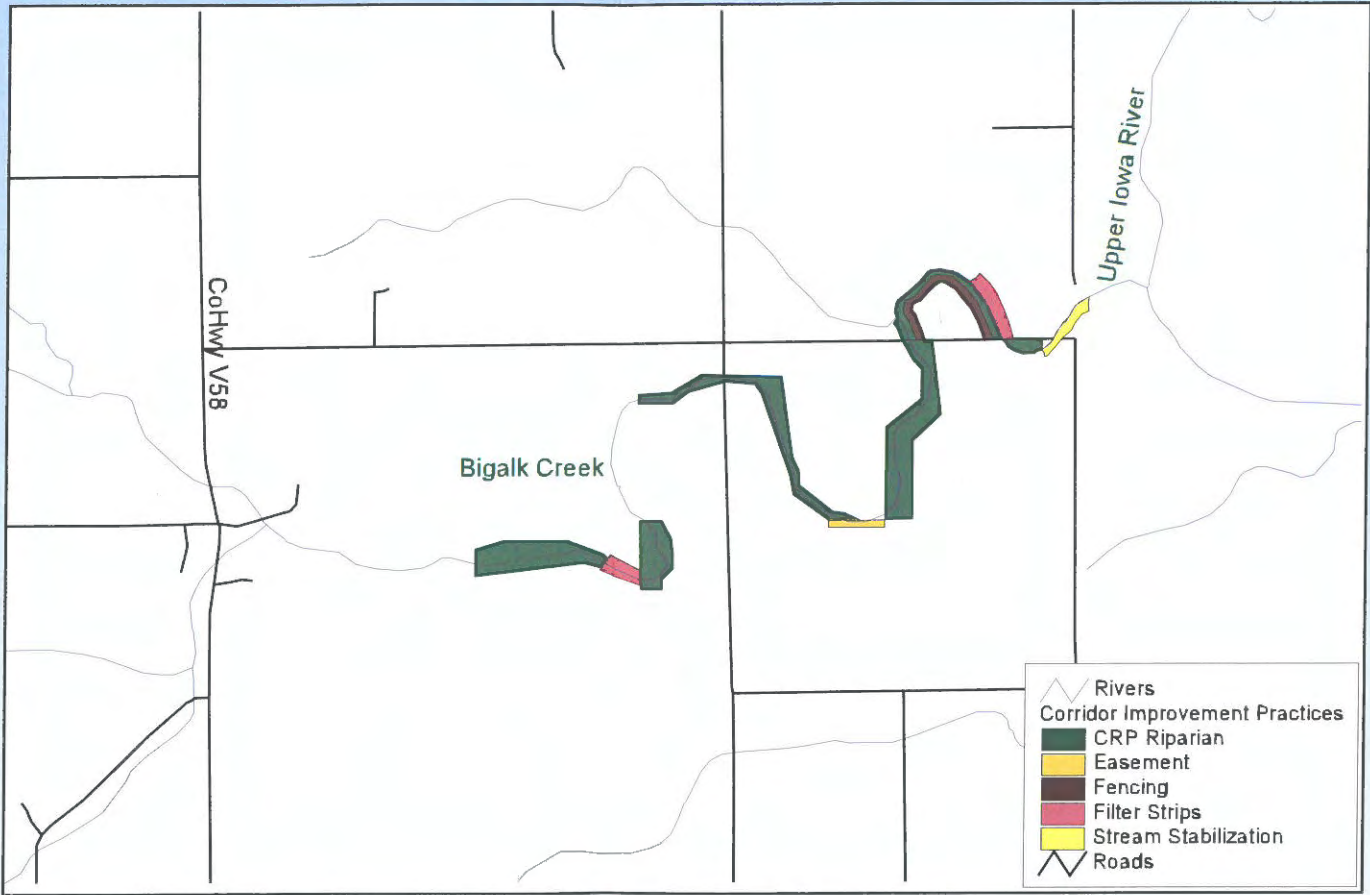
"It made me much more aware of what was happening to what we put on the ground, what was staying and what was moving. It also educated us on our costs. Knowing where we are at and where we are going from a management standpoint is paying off on the bottom line," Schatz said.

Saving a stream and profitability

Most of the 3.5 miles of Bigalk Creek has now been protected through the work of private landowners rather than the purchase of public land. A variety of different practices have been put in place to protect the corridor of the stream including Conservation Reserve Program riparian buffers, filter strips, livestock fencing and streambank stabilization. (see map).



Sediment retention ponds (above) and contour farming (right) were two structural practices used to reduce sediment delivery to Bigalk Creek.



Streambank stabilization (above) is used to prevent erosion. Project Coordinator Frank Moore (below right) works with producer Alan Schatz on integrated crop management.



A nose pump (left) is used by cattle (right) as an alternative to giving livestock direct access to a stream.



The transformation of a stream



Those who haven't seen Bigalk Creek in the last 10 years might not believe their eyes. The creek has made a stunning transformation from live-stock pasture to high-quality trout stream.

While improvements of farming practices were being made throughout the watershed, the DNR tackled the task of restoring the stream corridor. The project included reshaping the streambank, installing

"We are now seeing that the combined work of improving the stream corridor and reducing sediment is paying dividends."

- Bill Kalishek, DNR Fisheries Biologist

rock riprap, constructing fish hides and reseeding the area.

A survey of the creek by DNR biologists in the summer of 1999 counted 80 rainbow trout, a 600 percent increase from the 1992 sample of the same segment. Biologists also noted that 20 percent of the rainbow trout caught could be classified as "naturalized" meaning the fish had been in the stream long enough to get their natural colors. The presence of naturalized rainbow trout also means that a natural diet of insects and small fish is available and that natural reproduction can occur -- a fact documented by the recent survey.



Bigalk Creek is now a top-notch stream and a beautiful setting for trout anglers of all ages (right). The angler in the top picture is fishing near the intake of a nose pump where cattle had once trampled the streambank. The photo above shows one of the fish hides added to the stream corridor by the DNR.



From cattle to trout

Bigalk Creek becomes Iowa's third rainbow trout producer



DNR biologists surveying Bigalk Creek found a welcome surprise in the summer of 1999 -- young rainbow trout -- making it only the third stream in Iowa where natural reproduction of that species has been documented. Another key indicator of the stream's good health is the presence of invertebrates (right).



"Our effort at Bigalk Creek shows that we can make substantial improvements to water quality on our cold-water streams by working with individual landowners and without having to purchase land to do it"

-Ubbo Agena,
DNR Nonpoint Pollution
Program Coordinator



Bigalk's Partners

Assisting private landowners during the project were:

- Howard County Soil and Water Conservation District
- Howard County Farm Service Agency
- Iowa DNR
- Iowa Dept. of Agriculture and Land Stewardship
- U.S. Natural Resources Conservation Service
- U.S. Environmental Protection Agency
- Iowa State University Extension

Bigalk to Bohemian Water Quality Project

Protecting the water we can't see

The unique geological formation of northeast Iowa provides some of the most spectacular surface water in the state including cold-water streams and high-bluffed rivers.

But the same geological formations also produce some of the most fragile groundwater systems. Fractured limestone bedrock that is found throughout northeastern Iowa allows contamination from the surface to seep quickly into groundwater with very little filtration.

A new effort, The Bigalk to Bohe-



"Integrated Crop Management is all about putting the right product in the right place at the right time in the right amount."

- Frank Moore, project coordinator

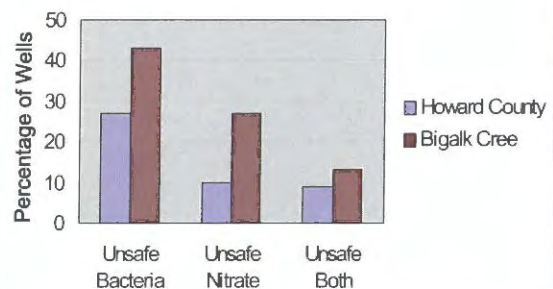
This photograph of fractured limestone topography provides a vivid illustration of why the potential for groundwater contamination in Howard County is of particular concern. The chart below shows contaminants are being found in the shallow bedrock wells of Howard County and within the Bigalk Creek watershed.

mian Water Quality Project, is now underway.

The goal of the new project is not only to reduce potential groundwater contamination, but also to increase profits for producers.

"The use of ICM means they're not using a 'blanket' program of fertilizer and pesticides. They're putting on these products only when needed and in the proper amounts at the proper times. This has to result in a savings for producers," according to Frank Moore, coordinator of the project and a local farmer.

Howard County Well Test Program, 1989-97



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