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Indian Creek Watershed Project: Key Takeaways for Success

Overview

The Indian Creek watershed project focused on improving water quality in a small agricultural watershed in central Illinois. The project encouraged local landowners to voluntarily adopt conservation practices and systems proven to improve on-farm nutrient use efficiency. Project staff members offered education, outreach, and information about cost-share funding. Their goals were to treat half of farmed acreage in the watershed and to measure water quality in Indian Creek to determine if large-scale voluntary adoption of such practices and systems improved water quality.

The Conservation Technology Information Center (CTIC) led the project in partnership with the Livingston County Soil and Water Conservation District (SWCD), the Illinois Environmental Protection Agency (IL EPA),

USDA Natural Resources Conservation Service (NRCS), and many other conservation agencies and organizations, local citizens, and farmers. The watershed project was funded in large part by a Section

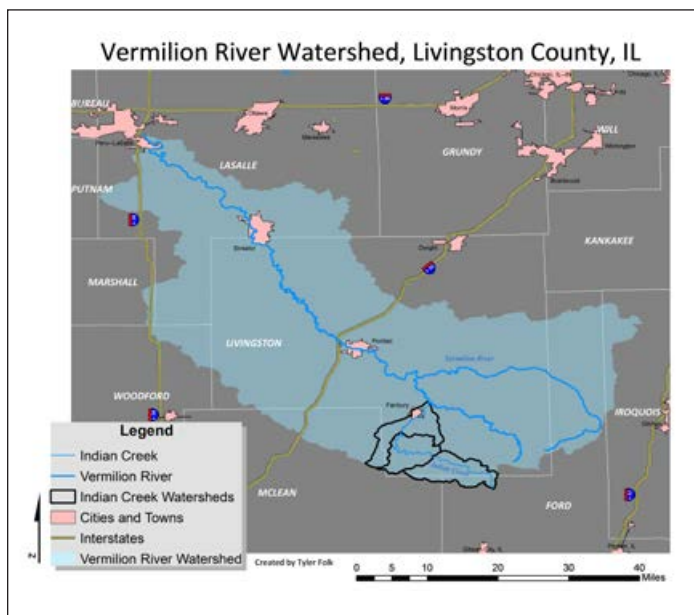
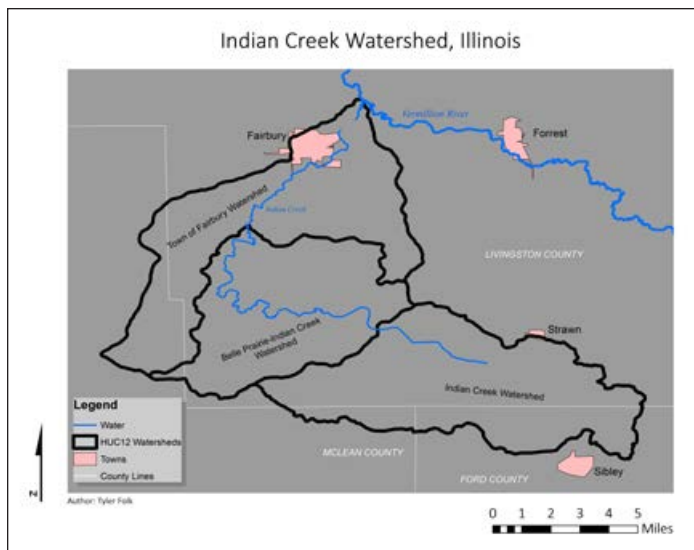


FORESTRY
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319 nonpoint source pollution abatement grant from IL EPA.

CTIC engaged Purdue University to evaluate the project and document key project elements that contributed to the Indian Creek watershed project's success. What follows is a summary of key findings from that project evaluation. Additional information on the Indian Creek project itself and on the project evaluation can be found in the Indian Creek Watershed Social Science Evaluation Report.



Context

The Indian Creek watershed is a 51,243-acre drainage area primarily used for agriculture and made up of three subwatersheds (12-digit Hydrologic Unit Code watersheds). Indian Creek is not considered impaired or threatened, however it flows into the Vermilion River, which is listed as impaired. The Indian Creek watershed sits almost entirely within Livingston County, which in 2013 had an estimated population of 38,186. The principle community located on the creek is Fairbury (2013 population 3,689). The section of the Vermilion River downstream from the Indian Creek watershed provides drinking water for Pontiac (2013 population estimate 11,688) and Streator (2013 population estimate 13,422).

CTIC, NRCS, and the Livingston County SWCD secured two important funding sources for the Indian Creek watershed project:

- The Livingston County SWCD and the Indian Creek watershed steering committee secured Mississippi River Basin Healthy Watersheds Initiative (MRBI) cost-share funding from the Illinois NRCS. These program funds were targeted specifically to producers in the Indian Creek watershed.
- Clean Water Act Section 319 funds from IL EPA for the outreach, demonstration, and education portions of the Indian Creek project.

Goals

The project had three main goals.

- Implement conservation practices on 50 percent or more of the Indian Creek watershed's farmed acreage.
- Measure water quality in Indian Creek to determine whether voluntary implementation of priority conservation systems on at least 50 percent of the land in the watershed over the six-year timeframe of the project is sufficient to improve water quality.
- Provide watershed producers with educational assistance that describes and encourages using the right fertilizer, at the right rate, time, and place (the 4R Nutrient Stewardship framework) to make overall improvements to water quality in Indian Creek.

Details

Through MRBI cost-share contracts, producers put into practice conservation projects centered on nutrient management, including different approaches to nitrogen application focused on the elements of the 4R Nutrient Stewardship framework, tissue testing, the use of precision technology for nutrient management, and writing a nutrient management plan. Other popular practices included use of cover crops, conservation crop rotation, grassed waterways, and residue and tillage management.

CTIC used Section 319 funding to hire agronomists Harold Reetz (Reetz Agronomics) and Tim Smith (CropSmith, Inc.) to help producers set up nutrient use efficiency demonstration plots on their farms. The plots provided local data to those producers and to the community at large.

The Section 319 grant also funded one winter/annual meeting per year and one summer field day per year. Demonstration plot data results were shared at these events, as well as information about connections between agricultural practices, water quality, and soil health. In addition, producers discussed with each other demonstration plot data and their experiences with conservation practices.

Local NRCS and SWCD leadership was important. Terry Bachtold, SWCD resource conservationist, met face-to-face with every producer in the watershed to inform them of the Indian Creek watershed project and the cost-share programs available. Eric McTaggart, NRCS district conservationist, provided technical support to interested producers and recommended the program best suited to the producers' needs.

The Indian Creek watershed project had a hands-on, empowerment focus. The project put information into producers' hands through experimentation with changes in farm management, through the implementation of demonstration plot testing of nutrient management strategies, and through sharing of demonstration results and lessons learned at project-sponsored meetings and events.

Many partners came together on this project, each adding strength to the project. Partners included: watershed farmers, Conservation Technology Information Center, Livingston County Soil and Water Conservation District, USDA Natural Resources Conservation Service, Illinois Environmental Protection Agency, Illinois Department of

Agriculture, American Farmland Trust, the local watershed community, local agricultural retailers, agronomists, retail sponsors, United States Geological Survey, Illinois Soybean Association, Illinois Corn Marketing Board, Illinois Council of Best Management Practices, and Illinois Nutrient Research and Education Council.

Challenges and Improvements

Interview data revealed a disconnect between the intended goal of improved water quality and the perceived improvements reported. Although the people interviewed understood that improvements to water quality can take many years, they wanted to see more water data and to understand whether changes in farm management practices had a positive impact on water quality. They also showed concern over the lack of baseline data on water quality in Indian Creek prior to the project's start. Lack of this baseline made it difficult to determine the water quality impact of conservation practices on the acreage enrolled.

Another issue that emerged was concern over the amount of time and funding needed to implement the project. It was apparent that funding needed to cover cost-share programs and outreach components of the project would be difficult to replicate or scale-up nationwide.

At the farm level, several interviewees mentioned that they felt more comfortable trying new conservation practices because of the high price of corn during the watershed project. Good corn prices alleviated financial risk associated with establishing cover crops. Interviewees said that if commodity prices decline, experimenting with conservation practices or new nutrient management strategies would expose them to too much financial risk.

Some people interviewed also said the Conservation Stewardship Program contract process requirements were seen as burdensome for three reasons:

- For some producers, filling out the contract paperwork was perceived as not worth their time in relation to potential benefits. They also noted the risk that the project may not even be accepted.
- A few landlords did not want to be locked into a contract with one producer for a 5-year time period.
- One producer wanted more flexibility in meeting yield goals than a contract would allow.

Key Takeaways

Structure of the Project

Local leaders who knew the community, were trusted, and worked well with local producers, were a key component of producer participation in the Indian Creek watershed project. In addition, the people interviewed said that it was important to **involve local producer-leaders** in the project. These producers needed to be people **respected** in the community whom others watched to see how they managed their farms. The leaders had to be **willing to commit** to implementing conservation practices and/or demonstration plots and to **speak** about their experiences and farm management data.

Purdue recommendation:

We recommend identifying dedicated local leadership within potential conservation project communities. Ideally these people should know and understand the community, work well with producers, be seen as knowledgeable and trustworthy, be a visible part of the project, and be dedicated to working through challenges and barriers to achieve project goals.



Photo by Conservation Technology Information Center

The project was community-driven and locally led. Local leadership convened a **steering committee of diverse partnerships** prior to the project's inception to apply for government funding. The committee was locally led, the producers had a strong voice, and the diversity of the people involved played to the strengths of each group. No single person or entity carried the committee. Rather, it was the strength of the whole. The partnerships developed on the steering committee helped move the project forward, kept it going for five years, and gave the project a sense of legitimacy. After the project, there was a sense among steering committee members that they would continue to meet after the project officially ended, if not as often. In addition, many saw participation of **local agricultural retailers** on the steering committee as key to project success. Interviewees told us that including agricultural retailers who work regularly with the watershed producers added to the project's legitimacy and credibility. Moreover, it brought the entire agriculture supply chain on board with nutrient loss reduction strategies.

Purdue recommendation:

We recommend a similar approach to future conservation projects. Ideally the steering committee would be made up of all representatives of the agricultural community, including community members, to bring all stakeholder voices and strengths into decision-making processes. The inclusion of local agricultural retailers should be considered an important component of the makeup of the steering committee, as these people routinely advise producers; producers and retailers can work together toward implementation of on-farm conservation practices.

Common Goals

Indian Creek flows through the Fairbury community and runs into the Vermilion River, which provides drinking water for the neighboring communities of Pontiac and Streator. Many producers were concerned that their practices might have an influence on their downstream neighbors. This **local goal** perhaps meant more than an abstract problem hundreds of miles away in the Gulf of Mexico, because the producers we interviewed wished to help their **neighbors and community**.

Purdue recommendation:

We suggest that conservation project communities incorporate local/community issues. Whether this is concern over fish, taking a float trip, providing drinking water, or improving the long-term sustainability and viability of local/personal farmland, people can better envision local community identity and concern than problems many miles away.

The **regulatory environment** provided another common goal for producers in this area. The Illinois Nutrient Loss Reduction Strategy offered a convenient framework for producers in the Livingston County area to show that they take water quality seriously and were working toward better farm management for the greater good as well as their own farm's sustainability. One successful aspect of the Indian Creek watershed project expressed by the people interviewed was that producers could try different practices to see what worked best for their own farms; this trial-and-error process was perceived to be more successful and beneficial than strict mandates on what to do when or how much fertilizer to use, etc.

Purdue recommendation:

*Producer motivation to implement conservation practices is of concern in any conservation project. Motivators such as farm stewardship, improving neighbors' drinking water quality, or a sense of off-farm environmental responsibility may be a more sustainable way to influence farm management practices over the long term. However, "fear" of regulation is very real. We suggest that **linking voluntary conservation measures with statewide programs** such as the Illinois Nutrient Loss Reduction Strategy can put conservation projects, and what project leaders are asking producers to do, in a larger context.*

In this case, because of the regulatory context, many producers expressed that they were working together as a community to show "regulators" that they can address environmental quality issues on their own. This sense of community and pride should not be underestimated. We recommend that conservation project communities identify their own issues that might foster a sense of community to work toward a common goal.



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Awareness-Building Among Producers

The project included **hands-on learning** by producers, allowing them to see which conservation practices made the most sense on their own farms. Through their own and others' experiments and data, producers learned alternative ways of managing their farms as well as the impact of agriculture on water quality and soil health. The education and outreach process contributed to producers' **awareness** that there were environmental problems (both on and off the farm) and that different management practices could improve their own efficiencies while improving environmental quality.

Purdue recommendation:

If producers are not aware of a problem or don't believe the sources that say there is a problem, then they cannot or will not change their farming practices and routines—there is no need to fix something that works. The education on water quality and soil health provided at various meetings and field days, the hands-on nature of conservation practice implementation, and the sharing of nutrient management data was key to building awareness of agriculture's various impacts on the environment and various solutions to those impacts. This awareness then led to more curiosity and more effort to read and learn. We therefore recommend this multifaceted approach to learning and change for future conservation projects.

Watershed Scale

The people we interviewed told us that they felt the watershed was small enough that they could reach every farmer, yet big enough that there were enough producers to make enrolling 50 percent of the watershed's farmed acreage feasible. We were told that, because of this project, land enrolled in this project is now being managed in a different way. The success of this project has the potential to impact producers in neighboring counties and watersheds through data and information-sharing. Indeed, the Indian Creek project partners have secured MRBI funding to expand into Vermilion River watershed headwaters.

Purdue recommendation:

We suggest that future conservation projects consider the scale of the watershed as an important factor in choice of project context/location. The scale should carefully correspond with project goals.

Funding

Many of the people interviewed noted that **funding** was an important part of the project's success. **Cost-share funding** served as an incentive for producers to try new conservation practices, while Section 319 funds and sponsorship money were used by CTIC to lead **outreach efforts, fund demonstration plots, and cover costs associated with marketing and communication**. These funding sources helped get producers to the table, fund numerous cost-share projects, and bring demonstration plot data into outreach meetings to help producers think about different ways of managing nutrients on their own farms.

Purdue recommendation:

Voluntary cost-share programs are a popular way to incentivize producers to adopt conservation practices. Therefore, in this environment, having several funding sources to accomplish education and outreach, media relations, demonstration plots, and cost-share projects may contribute to a watershed's likelihood of success.

Goals and Data

Many producers spoke of water quality as a primary goal of the Indian Creek watershed project. Despite this, almost everyone questioned whether their efforts actually improved water quality.

Purdue recommendation:

We suggest that if water quality goals are an explicit aspect of a watershed project, it is important to provide transparent water data, as well as connections between agricultural practices and water quality. This data must be trusted and transparent, with little room to question the legitimacy of stated problems and goals. If such transparency is not possible, then other goals should be brought to the forefront of the conversation (e.g., soil health, long-term farm viability, etc.).



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This document contains highlights from an extensive evaluation conducted on the Indian Creek watershed funded by the Illinois soybean checkoff.

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